ALAMEDA MARINA MASTER PLAN

Final Environmental Impact Report
SCH # 2016102064

Prepared for
City of Alameda

May 2018

ESA

Exhibit 4
Item 7-A, May 29, 2018
Planning Board Meeting

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Prepared for
City of Alameda
Planning and Building Department
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May 2018

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CHAPTER 1
Introduction and List of Commenters

1.1 Purpose of this Document

This Final Environmental Impact Report (Final EIR) document includes all agency and public comments received on the Draft Environmental Impact Report (Draft EIR, SCH #2016102064) for the Alameda Marina Master Plan project (proposed project). Written comments were received by the City of Alameda during the public comment period from December 27, 2017 through February 15, 2018. Verbal comments were also received during a public comment session before the Alameda Planning Board on February 12, 2018. This document includes written responses to each comment received on the Draft EIR. The responses correct, clarify, and amplify text in the Draft EIR, as appropriate, and these text changes are included in Chapter 3 of this document. These changes do not alter the conclusions of the Draft EIR.

This Final EIR document has been prepared in accordance with the California Environmental Quality Act (CEQA), and will be used by the decision-makers during project hearings.

1.2 Organization of the Final EIR

The Final EIR is organized as follows:

Chapter 1 – Introduction and List of Commenters: This chapter summarizes the project under consideration and describes the contents of the Final EIR. This chapter also contains a list of all of the agencies, organizations, and individuals that submitted comments on the Draft EIR during the public review period.

Chapter 2 – Comments and Responses: This chapter contains the comment letters received on the Draft EIR, followed by responses to individual comments. Letters are grouped by agencies, organizations, and individuals, but are otherwise presented in the order in which they were received. Each comment letter is presented with brackets indicating how the letter has been divided into individual comments. Each comment is given a binomial with the letter number appearing first, followed by the comment number. For example, comments in Letter 1 are numbered 1-1, 1-2, 1-3, and so on. Immediately following the letter are responses, each with binomials that correspond to the bracketed comments.

Some comments that were submitted to the City do not pertain to CEQA environmental issues or do not address the adequacy of the analysis contained in the Draft EIR. When a comment does not directly pertain to environmental issues analyzed in the Draft EIR, does not ask a question about the adequacy of the analysis contained in the Draft EIR, expresses an opinion related to the merits of the project, or does not question an element of or conclusion of the Draft EIR, the response notes the comment and may provide additional information where appropriate. The intent is to recognize the comment. Many comments express opinions about the merits or specific aspects of the proposed project and these are included in the Final EIR for consideration by the decision-makers.

Chapter 3 – Revisions to the Draft EIR: This chapter summarizes refinements and text changes made to the Draft EIR in response to comments made on the Draft EIR and/or staff-initiated text changes. Changes to the text of the Draft EIR are shown by either a line through the text that has been deleted, or is underlined where new text has been inserted. The revisions contain clarification, amplification, and corrections that have been identified since publication of the Draft EIR. The text revisions do not result in a change in the analysis and conclusions presented in the Draft EIR.

Chapter 4 – Mitigation Monitoring and Reporting Program: This chapter contains the Mitigation Monitoring and Reporting Program (MMRP) to aid the City in its implementation and monitoring of measures adopted in the EIR, and to comply with the requirements of Public Resources Code Section 21081.6(a).

Appendices: This Final EIR contains two appendices that provide additional clarification for several issues, as requested by several commenters. These additional informational resources do not result in a change in the analysis and conclusions presented in the Draft EIR.

- **Appendix A:** *Alameda City Attorney Memorandum Regarding California Housing Laws, Encinal Terminals Project, and Future Housing Project Decisions*. February 8, 2018.
- **Appendix B:** Economic & Planning Systems, Inc. *Alameda Marina Master Plan Market Assessment*. November 18, 2016.

1.3 Summary of Proposed Project

The project sponsor, Alameda Marina, LLC, is proposing a Master Plan and Density Bonus Application for the redevelopment of Alameda Marina, a new residential and mixed use waterfront community on both land and water. The project would include the following components, which would be constructed on the approximately 44-acre Alameda Marina project site:

1. Approximately 160,000 square feet of non-residential commercial space.
2. Approximately 760 residential units comprised of multifamily units and attached townhomes. For the purposes of this EIR, a maximum of 779 units was also analyzed for environmental impacts.

3. A Transportation Demand Management Program that includes transit passes for all residents and employees, annual surveys of resident and employee travel habits, and annual assessments to fund transportation services.
4. Improvements to existing roads on the site and provision of public access from Clement Avenue at Alameda Marina Drive, Schiller Street, Lafayette Street, Stanford Street, and Willow Street; with Emergency Vehicle Access (EVA) provided from Clement Avenue between Chestnut Street and Stanford Street.
5. Park areas, paths, trails, and shoreline improvements, including new waterfront and Bay Trail Open Space which would provide a new segment of the San Francisco Bay Trail, providing bicycle and pedestrian access throughout the site, with access to public open space on the site, a maritime boardwalk promenade, parks/maritime amenity areas, and open space areas on both sides of the existing graving dock.
6. A Maritime Commercial Core design, to maintain a working waterfront environment, with limited public waterfront access in this portion of the site.
7. Other components, such as the replacement of existing onsite infrastructure with new systems including:
    - Repair or replacement of approximately 4,000 linear feet of seawalls and bulkheads, including the existing graving dock, which would be retained;
    - Flood and sea level rise protection measures with elevated shorelines and/or floodwalls for sea level rise of a minimum height of 36 inches;
    - Stormwater management system updates that incorporate current stormwater treatment measures for water quality standards, with new inlets and pipelines within project site ROWs and with new outfall structures to the Oakland Estuary;
    - New onsite wastewater collection system to include new pipelines within the project site ROWs with connections to existing buildings to be preserved, new buildings and the Marina uses, connecting to the City of Alameda Sewer System which conveys flow to the EBMUD Interceptor trunk main at Clement Avenue;
    - New potable water distribution throughout the project site to provide domestic and fire water supply;
    - Dry utility updates including electric, natural gas, and telecommunications;
    - Marina (water side) infrastructure updates, including plans for ongoing dredging, dock maintenance, potentially some reconfiguration of Pier 1, and maintenance of the existing graving dock.

The project would be developed in up to four phases, with shoreline and land side infrastructure improvements occurring in each phase as necessary. All private and public improvements within the Master Plan area would be consistent with the requirements of the final Master Plan, and with the Alameda Municipal Code.

1.4 Required Jurisdictional Approvals

City of Alameda

Project implementation would require a series of interrelated planning and regulatory approvals by the City of Alameda, as Lead Agency. Specifically, the City is considering taking the following approval actions:

- Certification of the Alameda Marina Project EIR pursuant to CEQA;
- Approval of Master Plan and Planned Development Plan;
- Subdivision Map Approval;
- Approval of Design Review Permits for the design of structures, common areas, and Marina spaces;
- Certificate of Approval for Demolition by the Alameda Historical Advisory Board;
- Other local approvals that may be required, such as:
  - Construction Waste Management Plan (for construction waste),
  - Grading permits,
  - Demolition permits,
  - Encroachment permits,
  - Building permits,
  - Other City approvals as necessary to develop the project, and
  - Lot line adjustments if the Tidelands boundaries are adjusted.

The project would require review and recommendation by the Planning Board to the City Council, followed by consideration and action by the City Council. The EIR is intended to provide the CEQA-required environmental documentation for use in considering these and any other City approvals required to implement the project.

Other Governmental Agency Approvals

As the Lead Agency and as appropriate under CEQA, the City also intends this EIR to serve as the CEQA-required environmental documentation for consideration of this project by other Responsible Agencies and Trustee Agencies which may have limited discretionary authority over development proposals associated with the project. Under the CEQA *Guidelines*, the term "Responsible Agency" includes all public agencies, other than the Lead Agency, which have discretionary approval power over aspects of the project for which the Lead Agency has prepared an EIR (Section 15381); and the term "Trustee Agency" means a state agency having jurisdiction by law over natural resources affected by the project which are held in trust by the people of California (Section 15386).

Responsible Agencies and Trustee Agency approvals for the project may include, but are not limited to, the following:

Local Agencies

- Alameda County Congestion Management Agency review of the traffic analysis is required because the project is expected to result in an increase in peak hour traffic of more than 100 trips.
- Alameda County Environmental Health Department review and permits may be required, if wells or soil borings are required (for environmental cleanup, for example), or if abandoned wells or septic tanks, if any, are proposed to be destroyed during construction.

Regional and State Agencies

- East Bay Municipal Utility District (EBMUD) approvals will be required for water hookups and water lines as well as for sewer hookups and any upgrades to the backbone sewer system. EBMUD review of the project's water needs assessment will also be required.
- San Francisco Bay Conservation and Development Commission (BCDC) approvals will be required for Bay fill and shoreline development within 100 feet of the mean high tide line.
- San Francisco Bay Regional Water Quality Control Board (RWQCB) required approvals will include:
  - National Pollution Discharge Elimination System (NPDES) General Permit for storm water discharges associated with construction activity;
  - Clean Water Act Section 401 Water Quality Certification and Notice of Intent for construction activities;
  - Storm Water Pollution Prevention Plan (SWPPP) for on-site storm water management and pollution prevention; and
  - Lead agency review and oversight over remaining remediation of contaminated soils or groundwater impacting the project site, including approvals related to Remedial Action Plans, Remedial Action Completion Certifications, and No Further Action Letters.
- California State Lands Commission (SLC) for approval of uses within the tidelands leasehold for consistency with the Public Trust and approval of tidelands exchange, if pursued.
- Bay Area Air Quality Management District (BAAQMD) review of project plans may be required.
- California Department of Fish and Wildlife (CDFW): CDFW would review and comment on specific sensitive species aspects of the project if potential effects are found.

Federal Agencies

- U.S. Army Corps of Engineers (USACE) approval of Section 404 Permit under the Federal Clean Water Act for project impacts to jurisdictional waters of the United States resulting from fill in waters of the U.S. and Section 10 of the Rivers and Harbors Act for work in the waters of the United States; for construction of storm drain outfalls or alterations to the shoreline revetment; and as lead for federal Endangered Species Act (ESA) and Essential Fish Habitat (EFH) consultations.

- Dredged Material Management Office (DMMO) – Review of dredging; would include dredged material characterization requirements and a separate permit for dredging (separate from USACE).
- USFWS approval involving a Section 7 Consultation/Biological Opinion may be required under the Federal Endangered Species Act for project impacts to federally-listed special status species or their habitat.
- NOAA Fisheries approval involving a Section 7 Consultation/Biological Opinion may be required under the Federal Endangered Species Act for project impacts to federally-listed special status marine species or their marine habitat.
- U.S. Coast Guard (USCG) approvals may be required under Section 10 of the Federal Rivers and Harbor Act.

1.5 Public Participation and Review

The City of Alameda has complied with all noticing and public review requirements of CEQA. This compliance included notification of all responsible and trustee agencies and interested groups, organizations, and individuals that the Draft EIR was available for review. The following list of actions took place during the preparation, distribution, and review of the Draft EIR:

- On October 27, 2016, the City sent a Notice of Preparation (NOP) to the State Clearinghouse [SCH No. 2016102064], responsible and trustee government agencies, organizations, and individuals potentially interested in the project. The NOP requested that agencies with regulatory authority over any aspect of the project describe that authority and identify relevant environmental issues that should be addressed in the EIR. Interested members of the public were also invited to comment. A scoping meeting was held on November 14, 2016.
- Based on input from the public, and following consultation with the City, a revised Master Plan was submitted in May, 2017, and a revised NOP was released on July 13, 2017. The revised NOP was distributed to the State Clearinghouse and interested parties in an identical manner as outlined above.
- On December 27, 2017, a Notice of Completion (NOC) was filed with the State Clearinghouse to announce the availability of the Draft EIR. Copies of the Draft EIR were distributed to the Clearinghouse and interested agencies following the requirements of CEQA Guidelines Sections 15085 and 15206. Notices of the Draft EIR's availability were also distributed to interested agencies, organizations, and individuals using the same distribution process as outlined above. An announcement was also posted in a newspaper of general circulation. The Draft EIR was also published on the City's website and filed at the County Clerk's office. The 45-day public comment period began on December 27, 2017, and ended on February 15, 2018.
- On February 12, 2018, a hearing and listening session was held before the City of Alameda Planning Board to solicit public comment.

1.6 List of Commenters

The City received 15 comment letters during the comment period on the Draft EIR for the proposed project, and also received verbal public comments from the public during a City Planning Board hearing held on February 12, 2018. The table below indicates the numerical

designation for each comment letter, the author of the comment letter, and the date of the comment letter. Letters are grouped by agencies, organizations, and individuals, but are otherwise presented in the order in which they were received.

COMMENT LETTERS CONCERNING THE ALAMEDA MARINA MASTER PLAN DRAFT EIR

Letter #	Entity	Author(s) of Comment Letter/e-mail	Date Received
Agencies			
1	East Bay Municipal Utility District (EBMUD)	David J. Rehnstrom, Manager of Water Distribution Planning	January 26, 2018
2	California Department of Fish and Wildlife (CDFW)	Arn Aarreberg, Environmental Scientist	February 5, 2018
3	Alameda County Transportation Commission (ACTC)	Saravana Suthanthira, Principal Transportation Planner	February 15, 2018
Organizations			
4	Pacific Gas and Electric Company (PG&E)	Plan Review Team	February 5, 2018
5	Alameda Citizens Task Force (ACT)	Paul S. Foreman, Board Member	February 7, 2018
6	Alameda Architectural Preservation Society	Christopher Buckley, President	February 15, 2018
7	Island Yacht Club	Chris Nicholas, Commodore	February 15, 2018
8	Save Alameda's Working Waterfront (SAWW)	Author not specified	February 15, 2018
Individuals			
9		Alan Teague	February 12, 2018
10		Amelia Rose	February 12, 2018
11		Charles Olson	February 15, 2018
12		Nancy Hird	February 15, 2018
13		Rachel Mansfield-Howlett	February 15, 2018
14		William J. Smith	February 15, 2018
15		Eugenie P. Thompson	February 15, 2018
Public Hearings			
16	Planning Board Hearing	Multiple commenters	February 12, 2018

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CHAPTER 2
Comments and Responses

2.1 Introduction

This section contains the comment letters that were received on the Draft EIR. Following each comment letter is a response by the City intended to supplement, clarify, or amend information provided in the Draft EIR or refer the reader to the appropriate place in the document where the requested information can be found. Comments that are not directly related to environmental issues may be discussed or noted for the record. Where text changes in the Draft EIR are warranted based upon the comments, those changes are discussed in the response to comments and also included in Chapter 3, *Text Changes to the Draft EIR*.

2.2 Master Responses

This section presents responses to environmental issues raised in multiple comments. Rather than responding individually, master responses have been developed to address such comments comprehensively and these master responses are organized per topic in this section. The Master Response number is then identified in the individual response to comment so that reviewers can readily locate all relevant information pertaining to the following issues of concern.

Master Response 1: MX and MF Zoning Ordinances, General Plan Consistency, and Regional Housing Needs Allocation

Several comments raised concerns over the level of density proposed under the Master Plan and the Master Plan's consistency with the General Plan.

Generally, the density of a development project is not considered to be a California Environmental Quality Act (CEQA) issue. However, because some commenters have suggested that two significant and unavoidable traffic impacts identified in the Draft EIR might be eliminated if the City had correctly calculated the project's permissible residential density under state and local law and that the density calculation made by the City is inconsistent with the City's General Plan, the following discussion is provided for informational purposes to assist the public and decision-makers in evaluating this issue.

The City determined the maximum allowable density for the Alameda Marina Master Plan based upon Alameda's General Plan, Alameda Municipal Code (AMC) zoning regulations, including AMC Section 30-17 Affordable Housing Density Bonus, State Density Bonus Law (Government

Code §§ 65915-65918) and the size and current zoning designations of the applicant's property. A number of comments were submitted concerning the number of residential units allowed under the Mixed Use (MX) and Multifamily Housing (MF) designations and the number of additional units allowed under the State Density Bonus Law. Some commenters have asserted that the density bonus should be based upon the "net residential land" available at the project site by deducting the acreage of that portion of the site that is planned to be used for streets, parks, commercial or other non-residential uses. The City Attorney has issued a legal opinion concerning this issue, and has prepared a memorandum for use by the City Council and other City entities to assist them in determining the City's obligations under the law. That memorandum is attached to this Final EIR as Appendix A (Memorandum Regarding California Housing Laws, Encinal Terminals Project, and Future Housing Project Decisions dated February 8, 2018), and is incorporated by reference. Although the City Attorney memorandum focuses in part specifically on the Encinal Terminals Project, its analysis and conclusions are also applicable to Alameda Marina as both properties are zoned MX/MF.

Zoning

The proposed project has a base density of 30 units per acre. The project site's zoning designation under the zoning ordinance is MX, with a MF overlay. Between the two zoning designations, MF is controlling for proposed residential use pursuant to AMC 30-4.23(b)(1), which states, "Proposed residential use within the MF district shall comply with the provisions of the MF District, the provisions of the underlying zoning district and all other provisions of the Alameda Municipal Code. In the event of a conflict between the provisions of the MF Combining District and the provisions of the underlying district or the Alameda Municipal Code or Alameda City Charter Article 26, the provisions of the MF District shall govern."

The MX zoning designation permits the density of residential development to be one dwelling unit per 2,000 square feet of lot area for land designated on the Master Plan for residential use [AMC 30-4.20(e]. However, the maximum permitted residential density under the MF overlay zoning designation is 30 units per acre, which is greater than the permitted residential density under the MX zoning [AMC 30-4.23(e)]. Additionally, while the MX zoning designation indicates that density should be calculated based on the portion of a project site designated for residential use on a Master Plan, the MF zoning designation contains no such limitation. The MF zoning designation, which permits the higher residential density, and which does not restrict the calculation of residential density to a portion of a site designated on the Master Plan for residential use, is thus in conflict with the underlying MX district, and therefore governs the permitted residential density for the project site per the requirements of the Alameda Municipal Code. Assertions that there is no conflict between the two zoning districts ignore the express language contained in AMC 30-4.23(b)(1), and the maximum residential densities permitted under the MX and MF designations.

General Plan Housing Element and Land Use Element Consistency

Contrary to the assertions of some commenters, there is no inconsistency between the City's Housing Element and the Land Use Element with regards to the proposed residential density allowed in the Alameda Marina Master Plan. The goals and policies cited by some of the

commenters ignore the fact that the Alameda Marina project site has a General Plan land use designation of Specified Mixed Use, which does not specify residential density, unlike other areas of Alameda that are given the land use designation of Residential under the General Plan. Accordingly, this situation does not fit within the concept that "[a] document that, on its face, displays substantial contradictions and inconsistencies cannot serve as an effective plan because those subject to the plan cannot tell what it says should happen or not happen" [see *Concerned Citizens of Calaveras County v. Board of Supervisors* (1985) 166 Cal. App. 3d 90, 97]. The City's General Plan is clear as to the goals and policies it seeks to promote under both the Housing Element and the Land Use Element for the Alameda Marina site and adjacent Northern Waterfront sites.

The Alameda Marina Master Plan is also consistent with the City's General Plan Land Use Element. Pursuant to the City's Land Use Element, the Alameda Marina Master Plan site has a General Plan designation of Specified Mixed Use, 'MU4 Northern Waterfront, Grand Street to Willow Street;' it does not have a land use designation of Residential as suggested by some commenters. The guiding and implementing policies in the Land Use Element provide flexibility for land uses and residential density in Specified Mixed Use areas. For example, Implementing Policy 2.4k in the Land Use Element for residential areas states, "Include a specified minimum number of residential units in appropriate Specified Mixed Use areas. *This policy ensures that housing will be included in mixed-use development proposals. Other uses also could be required or some Specified Mixed Use areas could be developed exclusively for housing at the discretion of the developer. See Section 2.6.*" (Emphasis in original). Section 2.6 provides that the purposes of the Specified Mixed Use classification are to stimulate economic development, encourage creativity, provide flexibility, and avoid monotony in development of large sites. The guiding policies in Section 2.6 of the Land Use Element set broad limits to the use mix for each mixed use area and establish a minimum required housing component where appropriate.

Housing Element, Regional Housing Needs Allowance and "Realistic Capacity"
Some comments incorrectly assert that the project site is limited to the "realistic capacity" stated in the Housing Element of Alameda's General Plan. In fact, and as noted in the City Attorney's memorandum, the "realistic capacity" and the suggested ratios for development are not established or required by state law, but were included at the California Department of Housing and Community Development (HCD)'s direction as a precondition to certifying the City's Housing Element. (See City Attorney's memorandum, page 5.) The "realistic capacity" identified for the Alameda Marina (Site #4a and 4b) in the City's Housing Element is not a limitation on the number of units permitted on the site.

State law requires Alameda to adopt a Housing Element as a component of the City's General Plan to demonstrate it has adequate sites available to accommodate the City's Regional Housing Needs Allocation (RHNA) for lower income, moderate income, and above moderate income households. A Housing Element must include an inventory of land or list of sites that includes the number of housing units that can be accommodated on the sites given zoning and other constraints. HCD is responsible for reviewing every Housing Element to determine its compliance with State law, and HCD's approval is required before a local government can adopt

its Housing Element as part of its overall General Plan. As part of HCD's review of both the 2007-2014 draft Alameda Housing Element and the 2015-2023 draft Alameda Housing Element, HCD directed Alameda to use different ratios depending on zoning to determine a "realistic capacity" for each site included in the land inventory, as typical mixed-use projects in the Bay Area include a residential component. Based on the City and HCD's evaluation of current development standards, the City assumed a 60 percent realistic unit capacity for mixed-use sites, and a 90 percent realistic unit capacity for sites solely devoted to residential uses. However, the percentage ratios provided for the realistic unit capacity are not mandated by State law, and are merely HCD's estimate of how much land would be needed to accommodate buildout of Alameda's full RHNA.

The City's Housing Element identifies the Alameda Marina project site as vacant and/or underutilized, and thus available to help meet the City's RHNA. The realistic capacity identified for Alameda Marina (Site #4a and 4b) is 396 units. This calculation is based on the estimated total acreage of the site, approximately 22 acres, multiplied by a density of 30 units per acre, yielding a potential total of 660 units. Sixty percent of 660 units results in a "realistic capacity" of 396 units, which should be taken as a floor for development for the Alameda Marina project site, with an upward base density capacity of approximately 660 units prior to any density bonus calculation.

City Charter and the Housing Accountability Act

Charter cities are subject to state law preemption on matters of statewide concern. Some commenters have incorrectly cited *Domar Electric, Inc. v. City of Los Angeles* (1994) 9 Cal.App.4th 161 for the general proposition that "any act that is violative or not in compliance with the charter is void," however, the particular facts of the case relate to competitive bidding and that particular city's relevant charter provisions, and are inapplicable to the Alameda Marina Master Plan. In this instance, the plain language of the State's Housing Accountability Act (HAA) applies to charter cities because the Legislature has found that the shortage of housing in California is of statewide concern [Government Code § 65589.5(g)]. As such, the HAA applies to all housing development projects, whether affordable, market rate, or mixed use, where at least two-thirds of the square footage is designated for residential use. The HAA protects housing development projects that comply with all applicable objective General Plan, zoning, and subdivision standards and criteria, unless the local agency can make specific written findings supported by a preponderance of the evidence on the record that the following two conditions exist: (1) the housing development project would have a specific, adverse impact upon the public health or safety unless the project is disapproved or approved upon the condition that the project be developed at a lower density; and (2) there is no feasible method to satisfactorily mitigate or avoid the adverse impact identified other than the disapproval of the housing development project or the approval of the project upon the condition that it be developed at a lower density [Government Code § 65589.5(j)(1)(A) and (B)].

The Alameda Marina Master Plan qualifies as this type of housing development project because it complies with all objective general plan, zoning, and subdivision standards and criteria, such as numerical setbacks, height limits, universal design requirements, lot coverage, and parking

requirements. At least two-thirds of the square footage for the Alameda Marina Master Plan will be designated for residential use.

The HAA's standards apply to the Alameda Marina Master Plan and restrict Alameda's ability to deny, reduce the density of, or make infeasible a project when it is consistent with objective development standards, putting the burden of proof on the City to justify any action to deny, reduce the density of, or make such a housing project infeasible [Government Code § 65589.5(j)(1)]. The Alameda Marina Master Plan is thus entitled to the density allowed by the zoning and the General Plan unless the City makes a finding that the full density proposed would result in a specific, adverse impact on public health and safety that cannot be mitigated unless the housing project is denied or the density is reduced. In order to make such a finding, the City would have to point to an objective, identified written public health or safety standard, policy, or condition as existed on the date the application was deemed complete. Inconvenience resulting from lack of parking, traffic congestion, or longer wait times are not public health or safety impacts, nor are any of the other objections that have been raised by commenters.

State Density Bonus Law

The project sponsor has submitted a density bonus application for a 20 percent density bonus pursuant to the requirements of the City's local ordinance, AMC Section 30-17, which was adopted in compliance with the State Density Bonus Law. The requirements of the State's Density Bonus Law thus apply to the Alameda Marina Master Plan. As discussed in the City Attorney's memorandum and below, the "net residential land" interpretation being presented by the commenters is in conflict with the State Density Bonus Law because the law requires that density be calculated based upon the total acreage that is zoned residential, i.e. gross residential density.

If a developer agrees to build a certain percentage of affordable housing that meets statutory criteria, the State Density Bonus Law requires a jurisdiction to permit the construction of additional residential units for a project and to allow other regulatory incentives and additional concessions for a project, if requested by the developer. The law was amended in 2016 to explicitly state that the law must be interpreted liberally to produce the maximum number of housing units [Government Code § 65915(r)]. The amendments also clarified that each component of any density bonus calculation resulting in a fractional unit must be rounded up to the next highest whole number, including the base density, the number of bonus units, and the number of units necessary to qualify for a density bonus [Government Code § 65915(q)].

As defined in the State Density Bonus Law, "density bonus" means "a density increase over otherwise maximum allowable *gross* residential density as of the *date of application* to the city, county, or city and county, or, if elected by the applicant, a lesser percentage of density increase, including, but not limited to, no increase in density" [Government Code § 65915(f) (emphasis added)]. For density bonus projects that provide on-site affordable housing, base density is thus based on "gross residential density" (i.e., the entire site, including those portions of the site that might otherwise be netted out because of development constraints). This means that for the purposes of the density bonus calculation, the site acreage should not be reduced to account for

open space, topography, streets, or other non-buildable features. As stated in the City Attorney's memorandum, the law's use of the term "gross" when describing residential density in Section 65915(f) reflects the Legislature's intent that the entirety of the site be utilized in calculating the base density for density bonus projects that provide on-site affordable housing.

The "maximum allowable residential density" means the density allowed under the zoning ordinance and land use element of the general plan [Government Code § 65915(o)(2)]. In the land use element of Alameda's General Plan, the Alameda Marina Master Plan site has a General Plan designation of "Specified Mixed Use, MU4 Northern Waterfront, Grand Street to Willow Street." The land use element does not provide a range of residential densities for MU4 Northern Waterfront. As such, the maximum residential density allowed can be found in the City's zoning ordinance for the site. As discussed above, sites with the MF overlay zoning designation have a maximum residential density of 30 units to the acre as the base density, which can be increased from 36 to 41 units per acre with a density bonus of 20 percent to 35 percent, depending on the number of affordable units being proposed.

In the case of the Alameda Marina Master Plan, the gross residential density is based on the MX/MF zoned portion of the property, which is 21.62 acres. The MX/MF designation allows for a base density of 30 units per acre, which would yield a total allowable residential density of 649 units for that portion of the property. Based on the number of affordable units being proposed, the project developer has applied for a 20 percent density bonus, which would provide for an additional 130 units, for a total of 779 residential units at the property. This is the number of units presented in the Project Description on page 3-14 of the EIR. As provided above, the proposed residential density on the Alameda Marina Master Plan project site is in compliance with the requirements of State law, as well as the requirements of the City's General Plan and the Alameda Municipal Codes zoning regulations. Assertions otherwise are incorrect.

Master Response 2: Affordable Housing

Some commenters indicated that the project should develop more affordable housing units or suggested that the Draft EIR must also analyze the impact of displacement on low-wage workers, but these comments do not present any environmental issues that have not been adequately addressed in the Draft EIR.

Generally, affordability of housing is an economic and social effect that is not treated as a significant effect on the environment under CEQA (see CEQA Guidelines Section 15131). Evidence of social or economic impacts that do not contribute to, or are not caused by, physical impacts on the environment are beyond the scope of CEQA [see Public Resources Code Section 21082.2(c) and CEQA Guidelines Section 15384]. No evidence has been provided by any commenter relating to displacement of low-wage workers leading to physical environmental impacts. Indeed, the purpose of CEQA is to analyze a project's impacts on the environment of persons in general, not whether particular persons will be adversely affected [see *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477]. Potential effects on property values need not be analyzed under CEQA, no matter how potentially severe [see

Porterville Citizens for Responsible Hillside Development v. City of Porterville (2007) 157 Cal. App. 4th 885, 903]. Pressure on housing prices from the development of new market-rate units therefore does not need to be analyzed as part of the CEQA process.

The project would provide 103 affordable housing units, which is in excess of what is required by the City. Many other residential units would be small in size and "affordable by design." Overall, units would range from studios to 4-bedrooms containing between approximately 700 to 2,300 square feet. There is a substantial market for these housing types, and the project would assist the City in meeting the region-wide shortage of housing for families of varying income levels. Comments suggesting that work force market rate units are not affordable or that the low-income houseboat community is threatened by the proposed project merely represent the opinions of the commenters and do not raise any environmental issues. No further analysis is required.

One commenter expressed support for a so-called Affordable Housing and Preservation Alternative that would preserve more historic buildings by constructing 528 market rate units and 528 affordable units in 4-8 story buildings located on the easternmost 10 acres of the project site. As required by CEQA, the Draft EIR provided an analysis of a range of reasonable alternatives to the proposed project. A lead agency is not required to consider every project alternative proposed by members of the public or project opponents [CEQA Guidelines Section 15126.6; see also *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477 (EIR need not consider in detail every conceivable variation of alternative stated)]. Nonetheless, the proposed alternative, while likely reducing somewhat the significant and unavoidable impacts on historical resources, would not fully eliminate the impact on historic resources or on tribal cultural resources and would likely exacerbate significant and unavoidable transportation and circulation impacts because of the nearly 300 additional units on the site. In addition, the soil conditions in portions of the eastern area of the site make 8-story construction problematic. For a more complete discussion of this constraint, please see response to comment 14-1, below. Per CEQA, the Draft EIR does not choose an alternative; it simply evaluates the alternatives. It is the City Council's decision whether to choose the proposed project or a proposed alternative.

In summary, the various comments provided with respect to affordable housing do not alter the conclusions of the Draft EIR, nor do the comments present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

Master Response 3: Feasibility of Alternatives

Numerous commenters presented their views concerning project alternatives, particularly with respect to the feasibility of the alternatives evaluated in the Draft EIR and other alternatives put forth by the commenters. This master response is divided into various subheadings, each of which respond to the major themes as presented in the comments.

CEQA requires that an EIR describe a range of reasonable alternatives to the proposed project, or to its location, that would feasibly obtain most of the project's basic objectives while reducing or avoiding any of significant effects of the project, and to describe the comparative merits of the

alternatives as compared to the project. CEQA Guidelines Section 15126.6(a). The term "feasible" is defined in Public Resources Code Section 21061.1 as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." CEQA Guidelines Section 15364 also adds legal factors to be taken into account when determining feasibility. The discussion of the alternatives should also include sufficient information about each alternative to allow evaluation, analysis, and comparison with the proposed project. CEQA Guidelines Section 15126.6(d). Per CEQA, the Draft EIR does not choose an alternative; it simply evaluates the alternatives. It is the City Council's decision whether to choose the proposed project or an alternative.

The Alameda Marina Master Plan EIR adequately describes a range of reasonable alternatives to the project. As discussed in Chapter 5 of the Draft EIR, these include Alternative 1: Preservation Alternative, Alternative 2: Extensive Adapted Reuse Alternative, Alternative 3: Reduced Project Alternative and Alternative 4: No Project Alternative. The EIR need not analyze every possible alternative; the lead agency need only identify suitable alternatives that meet the threshold criteria of reducing significant environmental impacts, attaining most of the basic project objectives, are potentially feasible, and are reasonable and realistic. Candidate alternatives that do not satisfy all four criteria may be excluded from the EIR. CEQA Guidelines Section 15126.6(c).

Contrary to the assertions of several commenters, the project sponsor has never indicated that the only reason for the proposed project is "to pay for the bulkhead repair and/or replacement." While developing an economically sustainable and financially sound development that can fund the construction of public facilities and services is one of the project objectives, it is not the only one. As presented in Section 2.4, Project Objectives, of the Draft EIR, the project has thirteen project objectives, of which three touch on the need for infrastructure upgrades and one addresses economically sustainable development. This latter objective simply mirrors one of the City's objectives for the Northern Waterfront General Plan amendment and reflects the reality that the City lacks sufficient resources to repair its aging shoreline infrastructure. Other project objectives include providing housing to fulfill the goals of the City's Housing Element and to meet the City's RHNA, providing different options of housing that meet the needs of a wide demographic, developing a mixed-use project that includes a mix of compatible uses at the site, and fulfilling the project sponsor's obligations under the Tidelands Lease, amongst others.

Feasibility of Off-Site Land Swaps

Some commenters present the option of a "land swap" between Alameda Point, which is owned by the City, and the fee simple portion owned by the project sponsor at Alameda Marina. This proposed alternative ignores the proposed project's underlying purpose to create a mixed-use development at the Alameda Marina project site that maintains a maritime focus and to integrate existing uses with new opportunities to provide employment, residents, and recreation for current and future residents of the City as stated in Section 2.4, Project Objectives, of the Draft EIR. An alternative that analyzes the impact of developing a property located elsewhere has no relevance as to the decisions that must be made about the Alameda Marina project site. Such an off-site alternative would not achieve the proposed project's fundamental goal of developing the Alameda

Marina project site for its best use. *See City of Long Beach v. Los Angeles Unified Sch. Dist.* (2009) 176 Cal.App.4th 889 (upholding exclusion of alternative sites that would not provide suitable location for new school); *Concerned Citizens of S. Cent. L.A. v. Los Angeles Unified Sch. Dist.* (1994) 24 Cal.App.4th 826 (upholding agency determination that alternative sites beyond those discussed in the EIR were not large enough to serve as suitable school site). In addition, the "land swap" proposal also ignores the necessity of obtaining the cooperation of the underlying fee owner for Alameda Point. Any potential land swap would require four affirmative votes from the City Council so its likelihood is very uncertain. See CEQA Guidelines Section 15126.6(f)(3) ("An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative."). A "land swap" is therefore excluded as a proposed alternative as infeasible because the project sponsor does not control the land of Alameda Point. This proposed alternative also precludes the project sponsor from meeting several of its project objectives, including developing a mixed-use project and fulfilling its obligations under the Tidelands and Marina Lease, which requires the project sponsor to develop a higher value project at the Alameda Marina site.

Physical Feasibility of Alternatives

Other comments relate to building high value market rate homes or apartment buildings around the graving dock and eastern edge of the Alameda Marina project site, or shifting the location of potential residential housing types around the project site to either preserve or rehabilitate some of the existing historic buildings in order to expand a full service boatyard. However, these proposed alternatives were not considered because of various environmental and economic factors that render such proposals infeasible. For example, the underlying soil conditions of Building 12, as described on page 4.6-6 of the Draft EIR, show lead at concentrations in excess of 100 milligrams per kilogram in all samples, and PCE to be present, which raises the question of PCE origin and would lead to substantial costs in rehabilitating Building 12 and removing contamination from underneath its foundation. Other existing buildings, like Buildings 33 and 34, are located on lands subject to the public trust, which must be reserved for uses related to commerce, navigations and fisheries, and cannot be used for the suggested purpose of high value housing units. Any such proposal for the rehabilitation and development of Buildings 33 and 34 would have to involve an exchange of tidelands area with the State Lands Commission, and the success of a tidelands exchange is unknown because the project sponsor does not have control over the agency's decision.

Proposals for building higher density housing or more housing units beyond the 779 housing units proposed were also deemed infeasible. Developing higher density housing would result in a reduction of space available to be used for open space purposes or to provide access to the shoreline, in conflict with stated policies and requirements from the City and the San Francisco Bay Conservation and Development Commission. The project sponsor has examined the general soils condition for the eastern side of the Alameda Marina project site, which consists mainly of artificial fill overlying bay mud. These soils place limitations on the type of construction that can be built. The soils cannot support taller and correspondingly heavier buildings with more floors and more units without specialized construction techniques, which would substantially increase the cost of construction. Any suggestion to build additional housing units, above the analyzed

number of 779 housing units in the Draft EIR, would also increase identified significant and unavoidable impacts to traffic and circulation.

Feasibility of Larger Boatyard

Numerous comments have also suggested that the proposed boatyard contained in the Alameda Marina Master Plan should be expanded. As part of its application for approval of the Alameda Marina Master Plan by the City Council, the project sponsor submitted a market analysis conducted by Economic & Planning Systems, Inc. (EPS) of the proposed uses of the Alameda Marina property, which included a thorough analysis of trends in the maritime economy located across waterfront sites in the City. That market analysis is attached to this Final EIR as Appendix B (Economic & Planning Systems, Inc., Alameda Marina Master Plan Market Assessment, November 18, 2016). EPS found that in many case studies located in and around the City, maritime location and/or the presence of some maritime activity had little effect on the overall business mix and market performance of the surrounding real estate, and there was little evidence of notable increasing maritime economic activity. For example, Svendsen's Boat Works was acquired by Bay Ship & Yacht in 2017, and since then, Bay Ship &Yacht announced plans to move the former Svendsen's uses to Bay Ship & Yacht's boatyard located in the City of Richmond. The project sponsor would also have to locate a proposed operator for the boatyard. Despite the challenges related to developing the City's maritime economy, the project sponsor has allocated approximately 250,000 gross square feet (gsf) for maritime and commercial uses, which includes the anticipated amount of space necessary for any proposed boatyard. The proposed project would rearrange the uses on the existing project site into a more efficient footprint for maritime and commercial uses as described on pages 3-11 to 3-14 of the Draft EIR, such that approximately 7.98 acres of the landside portion of the project site would be dedicated to such uses, including approximately 57,500 gsf for the boatyard (20,000 gsf for the boatyard building, 24,000 gsf for the boatyard land area, and 13,500 gsf for the boatyard water area). About 17.10 acres of the site would continue to be dedicated to marina operations. An expanded boatyard would also not meet the project's objectives of providing housing of various types to fulfill the City's Housing Element goals and RHNA, provide various options for housing for a wide demographic, and lessens the ability of the project to create better and new open space and recreational areas for the Bay Trail.

Feasibility of Reduced Residential Density

Any alternative that is similar to the Reduced Project Alternative, which would provide approximately 180 units of housing, would not meet the project's objective to fulfill the goals of the City's Housing Element and meet the City's RHNA for the site. As discussed above in Master Response 1, the State's Housing Accountability Act (HAA) applies to the Alameda Marina Master Plan and restricts the City's ability to deny, reduce the density of, or make infeasible the project when it is consistent with objective development standards, putting the burden of proof on the City to justify any action to deny, reduce the density of, or make such a housing project infeasible. Government Code § 65589.5(j)(1). The project sponsor has proposed to include the maximum residential density allowed by the City's zoning ordinance and the General Plan in order to comply with the stated policies and goals of the HAA, and to address the social factors relating to California's housing crisis. The HAA prevents the City's Planning Board and City

Council from reducing the density of the project unless the City is able to make a finding that the proposed project would result in a specific, adverse impact on public health and safety that cannot be mitigated in any other way. A project with reduced residential density would thus be legally and socially infeasible. *See Sequoyah Hills Homeowners Ass'n v. City of Oakland* (1993) 23 Cal.App.4th 704 (reduced density alternative for housing project infeasible because no finding of adverse impact on health and safety could be made under Government Code § 65589.5(j)).

Furthermore, the City's funding capabilities and ability to obtain loans or grants are not relevant in analyzing the feasibility of the chosen alternatives.

Feasibility of the Preservation Alternative

As discussed on pages 5-7 to 5-9 of the Draft EIR, and in Table 5-13 of the Draft EIR, the Preservation Alternative's ability to meet the project objectives are marginally better than the No Project Alternative, but are much less than the proposed project. The proposed project would provide up to 779 housing units as compared to the Preservation Alternative's 475 housing units, and as such, it is axiomatic that by providing more housing units, there will be more capital generated for shoreline and infrastructure rehabilitation work. However, it is not the only goal of the proposed project to fund the marina's needed shoreline infrastructure improvements, but also to support the City's RHNA goals and its General Plan Housing Element goals and policies and to meet the project sponsor's obligations under the Tidelands Lease. As discussed above in Master Response 1 and in this Master Response 3 regarding the feasibility of a project with reduced residential density, the HAA limits an agency's ability to reduce the density of a proposed project absent a finding of specific, adverse impacts to public health and safety [Government Code § 65589.5(j)]. The Preservation Alternative would therefore be unable to meet any of the project objectives related to housing.

One commenter incorrectly asserts that "approval of the demolition violates CEQA unless alternatives to demolition are infeasible." CEQA does not guarantee that agency decisions that may adversely affect historical resources will always favor historical preservation against potential demolition. *See Foundation for San Francisco's Architectural Heritage v. City & County of San Francisco* (1980) 106 Cal.App.3d 893, 913 (upholding agency's determination that EIR's preservation alternatives for building listed in national Register of Historic Places and listed as state historic landmark were infeasible due to many factors including the difficulty and cost of rehabilitating the existing building under the alternatives); *Dusek v. Redevelopment Agency of the City of Anaheim* (1985) 173 Cal.App.3d 1029 (CEQA does not require the retention of old buildings solely in the name of historical preservation and the redevelopment agency properly found that demolition of a historic building fostered its goal of redevelopment of the site). The Draft EIR has adequately analyzed the implementation of the project and its impacts on the significance of the historic resources located on the project site, and identifies feasible mitigation measures and alternatives to demolition of historic resources.

The Preservation Alternative would also prohibit the development of an aesthetically pleasing, cohesive and pedestrian-oriented development that would activate and reconnect the community to the waterfront because more than half the project site would have to retain its historic

commercial and industrial configuration. Existing spacing between the buildings, the size of the streets, and the orientation of the buildings do not allow the opportunity to create public amenities and opportunities for gathering spaces, or else allow for the development of new open space areas for the public to access the shoreline edge. The Preservation Alternative would therefore be unable to meet the project objective of fulfilling the project sponsor's obligations under the Tidelands Lease, which requires the development of a new higher-value project, and expressly allows for the demolition of potentially all existing improvements on the project site.

Other Proposed Alternatives from Commenters

As stated above, the Draft EIR does not need to consider every conceivable alternative to a project, but it does require that the lead agency consider a reasonable range of alternatives. CEQA Guidelines Section 15126.6; *see also Mira Mar Mobile Community v City of Oceanside* (2004) 119 Cal.App.4th 477 (EIR need not consider in detail every conceivable variation of alternative stated). The range of alternatives is governed by the "rule of reason", which only requires that an analysis of alternatives is necessary to permit a reasoned choice. The lead agency's duty to consider alternatives is not conditioned on project opponents demonstrating that other feasible alternatives exist. *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 405. While some of the comments have proposed suggestions relating to a larger boatyard, more affordable housing units, preservation of certain buildings, or other reconfigurations of the project site, CEQA also does not require that the lead agency study specific alternatives that are suggested by other members of the public or other agencies. *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 234 Cal.4th 214, 256. Some comments merely assert the commenter's opinion on how the project should be developed and do not present any environmental issues that have not otherwise been adequately addressed by the Draft EIR. Other comments merely solicit that financial information or a detailed economic analysis needs to be presented in the Draft EIR, but conflate the fact that feasibility of alternatives is considered at two stages in the process: once when selecting alternatives to be included in the EIR, and once at the project approval stage when an agency's decisionmakers weigh the relative advantages or disadvantages of the project and the proposed alternatives in the EIR. Such comments ignore that an EIR is an informational environmental report, and as such need not contain analysis or ultimate conclusions as to the economic feasibility of the project or alternatives. *See Flanders Found. v. City of Carmel-by-the-Sea* (2012) 202 Cal.App.4th 603, 618 (holding that evidence of economic infeasibility does not need to be presented in the EIR itself, and can be in the supporting administrative record); *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656, 689 ("As is self-evident from its name, an EIR is an *environmental* impact report. As such, it is an informational document, not one that must include ultimate determinations of economic feasibility." (emphasis in original)).

While more alternatives can always be proposed in comments, this Master Response adequately addresses why certain alternatives were rejected because they did not satisfy project objectives, did not offer substantial environmental advantages, or were otherwise infeasible given economic, environmental, legal or other factors involved.

Master Response 4: Impacts to Historic Resources

A number of comments were received concerning impacts to historic structures on the site.

Several commenters asserted that proposed modifications to the interior of Building 19 and other historic buildings on the project site would constitute a significant impact under CEQA that was not disclosed in the Draft EIR. In response, commenters are referred to *Martin III v. City and County of San Francisco* (135 Cal.App.4th 392). As found in the court's opinion, modifications to the *interior* of a privately-owned structure are not subject to review under CEQA, even when the structure is listed as a landmark or is located within a designated historic district. Building 19, along with every other structure on the Alameda Marina site, is privately owned. The court also found that a local jurisdiction has no discretion to deny a permit to renovate the interior of a privately-owned structure when the plans comply with the jurisdiction's applicable building codes and zoning ordinances, so long as those interior modifications would not affect surrounding properties or residents. Since renovations to a privately-owned building's interior are not subject to CEQA, it thus follows that such renovations do not constitute an impact under CEQA.

This City's Historic Advisory Board Resolution No. HAB-17-07, which designated the Alameda Marina Historic District, did not address the interiors of any of the 17 contributing buildings to the District, including Building 19. It is also worth noting that even if interior modification to Building 19 do not meet the Secretary of the Interior's Standards, it does not necessarily mean that the building would not be eligible for the National Register, since the standards with respect to interiors are much more liberal than they are for exteriors, and allow for a greater degree of modification. Therefore, the assertions by commenters that any interior modifications to the structure would render it ineligible for listing is purely speculative, and is not supported by any evidence to demonstrate that it is not.

While the project's effects on the interiors of historic structures are not an impact under CEQA, effects to the *exteriors* of historic structures can be considered an impact under CEQA, since a building's exterior is viewable by the public, and is therefore an impact on the environment. As stated on page 4.4-17 of the Draft EIR, the impacts to Buildings 16, 19, and 27 would be less than significant, since the project applicant has committed to rehabilitating the exteriors of those structures to the Secretary of Interior's Standards [see CEQA Guidelines Section 15064.5(b)(3)]. However, the project's impact to some historic contributing buildings and the potential historic district would be significant and unavoidable, since many of the existing structures on the site would be demolished as part of the project's implementation, and the proposed location, arrangement, and design of the new buildings would not be consistent with the character-defining features of a shipbuilding and commercial maritime cultural landscape site (land uses, industrial activity, and the spatial and organizational relationships between buildings on the site during World War II), and there is no feasible mitigation available that would adequately lessen those effects below applicable significance thresholds. These findings were all disclosed in the Draft EIR under Impact CUL-1. Therefore, the findings of the Draft EIR are valid, and the commenters have not provided any additional or new information that would change those findings. For

purposes of clarification, updated information has been added to Chapter 3 of this Final EIR. Specifically, Page 4.4-16, Impact CUL-1, is revised to read:

> **Impact CUL-1: Project implementation would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines, Section 15064.5. (*Significant and Unavoidable, with Mitigation*)**
>
> CEQA Guidelines Section 15064.5 requires the lead agency to consider the effects of a project on historical resources. A historical resource is defined as any building, structure, site, or object listed in or determined to be eligible for listing in the California Register, or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California based upon substantial evidence.
>
> Though the property as a whole appears ineligible for listing in the California Register due to loss of integrity, there are three buildings that appear individually eligible for the California Register under Criteria 1 and 3, including Buildings 16, 19, and 27. These three buildings are recommended as historical resources under Section 15064.5(a) of CEQA (Verplanck, 2017). Also, Buildings 1, 4, 6, 12, 15, 16, 17, 19, 21, 22, 27, 28, 29, 31, 32, 33, 34, and the graving dock are included as contributing buildings/structures to the locally designated Alameda Marina Historic District.
>
> The project includes the demolition of 26 of the 37 buildings in the project area. Of the 17 buildings and one structure in the Alameda Marina Historic District, 11 would be demolished (Buildings 1, 4, 6, 12, 22, 28, 29, 31, 32, 33, and 34). Buildings 13, 14, 16, 17, 18, 19, 21, 25, 26, and 27 would remain. All three individually eligible buildings (16, 19, and 27) would be retained and rehabilitated, as needed, as part of the adaptive reuse of the structures. The demolition of many of the District's contributing buildings, which have been determined to be historical resources, and the construction of new residential and/or commercial buildings within the District boundaries is considered a significant impact under CEQA. This impact cannot be reduced to a less-than-significant level; however, implementation of the following mitigation measures would reduce impacts, to the extent feasible, to historical resources by documenting the resource and preserving the history of the site and buildings. Overall, the proposed project would cause a substantial adverse change in the significance of a historical resource, and this impact would be *significant and unavoidable with mitigation*.
>
> > **Mitigation Measure CUL-1a: Treatment of Historic Properties (Buildings 16 19 and 27).** Alterations, to the exteriors of Buildings 16, 19 and 27, shall conform to the Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, if feasible (NPS, 1995) and PRC 5024.5.
> >
> > **Mitigation Measure CUL-1b: Documentation.** The project proponent shall prepare a treatment plan including but not limited to photo documentation and

public interpretation of the Alameda Marina Historic District (Buildings 1, 4, 6, 12, 15, 16, 17, 19, 21, 22, 27, 28, 29, 31, 32, 33, 34, and the graving dock). Photo documentation will be overseen by a Secretary of the Interior–qualified architectural historian, documenting the affected historical resource. in accordance with the National Park Service's Historic American Buildings Survey (HABS) and/or Historic American Engineering Record (HAER) standards. Such standards typically include large-format photography using (4x5) negatives, written data, and copies of original plans if available. The HABS/HAER documentation packages will be archived at local libraries and historical repositories, as well as the Northwest Information Center of the California Historical Resources Information System.

Mitigation Measure CUL-1c: Interpretive Display. Public interpretation of historical resources shall be provided and could include a plaque, kiosk, or other method of describing the Alameda Marina Historic District's historic or architectural importance to the general public. The design and placement of the display(s) shall be reviewed and approved by the City of Alameda Historic Advisory Board.

Rehabilitation of the exteriors of Buildings 16, 19 and 27 consistent with the Secretary~~'s~~ of Interior's Standards would mitigate the impacts to these historic resources to a less-than-significant level. The recordation of a building or structure to HABS/HAER standards and public interpretation efforts would reduce impacts on significant historic buildings and ~~structures~~ the District, but such efforts typically do not reduce those impacts to a less-than-significant level (CEQA Section 15126.4(b)(2)). Impacts to significant historic buildings ~~or structures~~ and the District under these circumstances would remain significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

This additional information does not alter the conclusions of the Draft EIR, nor does this comment present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

Master Response 5: Impacts to Aesthetics

A number of comments were received concerning the proposed project's aesthetic impacts, particularly views from Clement Avenue to the waterfront. The commenters generally asserted that views of and through the project site would be adversely affected by the proposed project, resulting in a potentially significant impact.

Aesthetic impacts are by their nature subjective, since what constitutes an agreeable or disagreeable view is highly dependent upon the preferences of each viewer. Section 4.1.2 of the Draft EIR presents an overview of the visual environment at the project site, which is primarily dominated by marine industrial and commercial uses, with a substantial portion of the site that is

not occupied by buildings dedicated to dry boat storage and parking areas. The site's frontage with Clement Avenue is dominated along much of its length by a series of multi-story industrial buildings that directly abut the roadway and adjacent sidewalk, with no setbacks or landscaping. The line of buildings along Clement Avenue essentially form a wall along much of the site's frontage. Those portions of the frontage that are not occupied by buildings are fronted with chain link security fencing with strands of barbed-wire atop the fence. The fences themselves are interwoven with wooden or metal slats that block views into the site. The several gated entryways into the site provide the only views into and through the site, and views through those gated areas are generally blocked by trailered boats, parked vehicles, and intervening structures. The few views that are available into the site are principally of an industrial and commercial compound, which are generally not resources that are considered scenic.

As presented in Section 4.4.1 of the Draft EIR, CEQA Guidelines Appendix G lists a number of thresholds that are to be used to determine potential impacts to visual resources. As analyzed in the Draft EIR, the site is not a scenic vista, which are view corridors that capture the total field of vision from a specific viewpoint, and that generally encompass a large geographic area for which the field of view can be quite wide and extend into the distance. Scenic vistas are formed by built and natural physical elements that guide lines of sight and control view directions available to pedestrians and motorists. Based upon the physical layout of the existing Alameda Marina site, there are no areas that constitute a scenic vista. As such, there are no scenic vistas on the site that could be impacted by the proposed project. Rather, and as determined in the Draft EIR, the layout of the proposed project would improve and enhance views through and from the site, and would eliminate most of the existing visual effects of buildings and other structures that lie immediately adjacent to Clement Avenue. New project buildings, even though some could be taller than what is currently present, would be set back from Clement Avenue, and those setback areas would be landscaped. Points of entry and roadways into the site would also be landscaped and would pass directly through the site, and views to the waterfront generally would not be blocked by fences, gates, parking and boat storage areas, and intervening buildings as is the case currently. Landscaping would be abundant throughout the site, which is not the case currently. The existing fences and gates along the Clement Avenue frontage would be removed. These project features would constitute an improved view of and through the project site when viewed from Clement Avenue, and views from within the site would also be improved. This is the same conclusion as that presented in the Draft EIR.

Several comments suggested that the project would be a de facto gated community, and would be uninviting to those outside of the project area. In fact, and as disclosed in the Draft EIR, the project's design would have the opposite effect, in that entryways would no longer be gated, and would instead be broad and landscaped, with sidewalks leading into the site. Visitors would retain access to commercial areas on the site, and would be provided with access to the public open space, waterfront parks and promenades, and other recreation areas. Finally, a Bay Trail segment would be constructed through the site along the shoreline, allowing pedestrians and cyclists to access and pass through the site from either side, once trail segments on the adjoining property to the east are completed. This is in contrast to existing conditions, where the site is fenced and gated and generally presents the look of a restricted compound, with some shoreline areas closed

to public access due to safety concerns raised by deteriorated infrastructure. Ultimately, the visual appearance of the site would be much more inviting to residents and non-residents alike, and public access to the area would be enhanced. This would represent an improved condition, which is the same conclusion as that presented in the Draft EIR.

In summary, while the project would change the visual character of the site, it would not substantially degrade that character, which is the criteria established in the CEQA Guidelines for determining a significant impact. While some commenters may have a preference for the existing visual characteristics of the site, or have a preference for a project that would present a different appearance than the one that is proposed, the proposed project would not substantially degrade or create a significant impact to aesthetics. Ultimately, the various comments provided with respect to aesthetics are only asserting the opinion of the authors as to how the project should be developed. The comments do not raise any new environmental issues that have not been thoroughly analyzed and disclosed in the Draft EIR, and additional analysis is not required (*Twain Harte Homeowners Ass'n v. County of Tuolumne* (1982) 138 Cal.App.3d 664, 679).

Master Response 6: Transportation Impacts

Some commenters argued or implied that the Draft EIR did not adequately disclose the transportation impacts of the project and that the impacts associated with the project would be worse than those disclosed by the Draft EIR.

Section 4.12, *Transportation and Circulation*, of the Draft EIR presents the impacts of the proposed project on various aspects of the transportation network serving the project area under Existing and Cumulative (2040) conditions. The data collected, and the assumptions and methodologies used to complete the transportation impact assessment for the project is consistent with State, regional, and City of Alameda guidelines and requirements. Specific aspects of the analysis raised by the commenters are discussed below.

Significant and Unavoidable Impacts

The Draft EIR found that the proposed project would result in significant and unavoidable transportation impacts. The Draft EIR recommended mitigation measures to reduce the severity of the impacts, but acknowledged that the measures would not result in the elimination of the significant impacts. Under CEQA, a significant and unavoidable environmental impact is the most severe impact that can be disclosed. There is no worse impact than a significant and unavoidable impact. As such, the assertion that the severity of transportation impacts was understated in the Draft EIR is not supported.

The Alameda County Transportation Commission's (ACTC) Travel Demand Model

To evaluate the potential transportation impacts of the project, the Draft EIR analysis used the standard transportation engineering models and methodologies recommended by regional transportation agencies. As described on page 4.12-27 of the Draft EIR, the Draft EIR analysis utilized the latest available version of the Alameda CTC Travel Demand Model to estimate the impacts of the project on the local and regional roadway system. As described below, both the land use database and transportation network in the Model were reviewed and modified to better

reflect the expected developments and roadway network in and around Alameda. As such, the assertion that the Draft EIR understates the project's impacts is not supported.

All Future Development and Future Roadway Changes Considered
The Alameda CTC Model that was used to forecast the 2040 traffic volumes accounts for both expected future developments and funded and approved transportation network changes in Alameda, Oakland and beyond. Overall, the Model assumes about 7,000 new households and about 10,000 new jobs between 2010 and 2040 in the City of Alameda. The Model land use database was reviewed and modified to accurately reflect the approved and planned development projects in Alameda. Appendix G.F of the Draft EIR shows the changes made to the Alameda CTC Model land use database to better reflect the planned development projects. Appendix G.F also lists the major development projects that are included in the Model land use database.

Similarly, the Model transportation network was also reviewed and modified to account for approved and funded transportation projects. The Draft EIR considered the anticipated changes to the transportation network that would likely occur over the next 25 years, including but not limited to:

- The I-880 Improvements at 29th Avenue and 23rd Avenue Overcrossings, which are currently under construction and would reconstruct the overcrossing structures at 23rd and 29th Avenues, reconfigure several on and off-ramps, extend the northbound auxiliary lane along I-880, and include various changes to the local roadway network around the ramps.
- The Clement Avenue extension between Entrance Road and Atlantic Avenue and through the Shell Oil property.
- The Cross Alameda Trail project, which includes a Class IV separated bikeway on the south side of Atlantic Avenue between Webster Street and Constitution Way.

The Model assigns peak hour traffic, including the project generated traffic, to the roadway network based on the relative travel time on each corridor. Thus, the analysis accounts for peak hour traffic diverting to less-congested corridors as long as it does not result in overall increased travel time. As discussed on page 4.12-23 of the Draft EIR, the project trip assignment is based on the results of the Alameda CTC Model (shown on Figure 4.12-4, *Trip Distribution*, of the Draft EIR), which accounts for estimated future congestion along all local and regional roadways resulting from traffic generated by current and future developments throughout the region. As such, the assertion that the Draft EIR understates the project's impacts is not supported.

Congestion Management Program (CMP) Analysis
As required by the Alameda CTC, the Draft EIR (pages 4.12-40 and 41, and Appendix G.I) includes an analysis of project impacts on the CMP roadways, which consists of freeways and major arterials in and around Alameda under 2020 and 2040 conditions. The analysis was completed using the Alameda CTC Model, which is described above.

Travel Time Analysis
As requested by the City's Planning Board, the Draft EIR evaluated the impacts of the proposed project on travel times along the major corridors connecting Alameda to the regional

transportation system: Webster/Posey Tubes, Park Street, and Fruitvale Avenue. As described on page 4.12-5 of the Draft EIR, the reported intersection delays are based on the delay at the intersection solely due to the intersection configuration and control, not downstream delays. Thus, the Draft EIR also evaluated the impacts of the project on travel time along the major corridors, which is more representative of drivers' experience along these corridors during the weekday peak congestion periods.

Vehicle Miles Traveled (VMT) Analysis
As described starting on page 4.12-4 of the Draft EIR, Senate Bill (SB) 743 (Steinberg, 2013) mandates a change in the way impacts on transportation are evaluated under CEQA. Thus, consistent with State of California Office of Planning and Research (OPR) guidelines, the Draft EIR evaluates VMT per capita to comply with SB 743. For the VMT analysis, the Draft EIR used the significance criterion and the methodology recommended by the OPR in its published guidelines.

Consistency with Previous Environmental Documents
The environmental document for each development project is prepared based on the existing conditions at the time, latest future forecasts, regulatory requirements, analyses methodologies, and tools available at the time. Considering that all these factors can and do change, environmental documents prepared at different times use different assumptions and methodologies and as a result, may have different conclusions. Thus, potential undisclosed impacts from previous environmental documents, such as for the Alameda Point Project or the Encinal Terminals Project, are not relevant to this project.

2.3 Individual Responses

This section contains the responses to comments submitted during the public review period. Commenters on the Draft EIR, their associated agencies, and assigned letter identifications are listed in the table below. This section presents the comment letters received on the Draft EIR and comments made during the public hearing on the proposed project held before the City's Planning Board on February 12, 2018. Each comment letter received during the public comment period was bracketed to identify individual topics, and individual responses to those comments are provided. In situations where the comment issue(s) was identified in multiple letters, a "Master Response" was prepared to address the general concern, and the response to comment may refer the reader to one of the Master Responses provided above. If a subject matter of one letter overlaps that of another letter, the reader may be referred to more than one group of comments and responses to review all information on a given subject. Where this occurs, cross-references are provided.

COMMENT LETTERS CONCERNING THE ALAMEDA MARINA MASTER PLAN DRAFT EIR

Letter #	Entity	Author(s) of Comment Letter/e-mail	Date Received
Agencies			
1	East Bay Municipal Utility District (EBMUD)	David J. Rehnstrom, Manager of Water Distribution Planning	January 26, 2018
2	California Department of Fish and Wildlife (CDFW)	Arn Aarreberg, Environmental Scientist	February 5, 2018
3	Alameda County Transportation Commission (ACTC)	Saravana Suthanthira, Principal Transportation Planner	February 15, 2018
Organizations			
4	Pacific Gas and Electric Company (PG&E)	Plan Review Team	February 5, 2018
5	Alameda Citizens Task Force (ACT)	Paul S. Foreman, Board Member	February 7, 2018
6	Alameda Architectural Preservation Society	Christopher Buckley, President	February 15, 2018
7	Island Yacht Club	Chris Nicholas, Commodore	February 15, 2018
8	Save Alameda's Working Waterfront (SAWW)	Author not specified	February 15, 2018
Individuals			
9		Alan Teague	February 12, 2018
10		Amelia Rose	February 12, 2018
11		Charles Olson	February 15, 2018
12		Nancy Hird	February 15, 2018
13		Rachel Mansfield-Howlett	February 15, 2018
14		William J. Smith	February 15, 2018
15		Eugenie P. Thompson	February 15, 2018
Public Hearings			
16	Planning Board Hearing	Multiple commenters	February 12, 2018

EAST BAY
MUNICIPAL UTILITY DISTRICT

January 26, 2018

Andrew Thomas, Assistant Community Development Director
City of Alameda Community Development Department
2263 Santa Clara Avenue, Room 190
Alameda, CA 94501

Re: Notice of Availability of a Draft Environmental Impact Report – Alameda Marina Master Plan and Density Bonus Applications, Alameda

Dear Mr. Thomas:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Draft Environmental Impact Report (DEIR) for the Alameda Marina Master Plan located in the City of Alameda (City). EBMUD has the following comment:

WASTEWATER SERVICE

Section 3.14.6 Utility Improvements of the Draft EIR states that the new wastewater collection system would be connected to EBMUD's interceptor pipeline on Clement Avenue; however it appears that the City has sewer lines on Clement Avenue, Stanford Street and Chestnut Street. EBMUD suggests that the City consider connecting the new sewer system to the City sewer system, rather than directly to the EBMUD interceptor. The last sentence in the Wastewater section of Section 3.14 should then be edited to state "The proposed system would connect to the City of Alameda Sewer System which conveys flow to the EBMUD Interceptor." If a new connection to the EBMUD interceptor is required, the City will be required to submit to EBMUD an application for an interception connection. 1-1

If you have any questions concerning this response, please contact Timothy R. McGowan, Senior Civil Engineer, Water Distribution Planning Section at (510) 287-1981.

Sincerely,

David J. Rehnstrom
Manager of Water Distribution Planning

DJR:SIR:dvs
sb18_0126

RECEIVED
JAN 30 2018
PERMIT CENTER
CITY OF ALAMEDA, CA 94501

cc: Motorola Marina LLC
c/o Bay West Development
2 Henry Adams Street, Suite 450
San Francisco, CA 94103

Letter 1 **David J. Rehnstrom, East Bay Municipal Utility District (EBMUD)**
Response January 26, 2018

1-1 The City appreciates EBMUD's interest in the project, and any suggestions it may have for improved utility service associated with the project. The City and the project applicant will continue to coordinate with EBMUD during the development of detailed utility designs.

ANDREW THOMAS

From:	Aarneberg, Ann@Wildlife <Ann.Aarneberg@wildlife.ca.gov>
Sent:	Monday, February 5, 2018 9:44 AM
To:	ANDREW THOMAS
Subject:	Alameda Marina Master Plan DEIR

Mr. Thomas,

My name is Ann Aarneberg. I work with the Marine Region of CDFW and conduct the CEQA/CESA review for Projects in San Francisco Bay that have impacts below the mean high water line. I have reviewed the draft EIR for the Alameda Marina Master Plan. Due to my schedule and time constraints, I will not be able to provide a comment letter. However, from my initial review, it appears that the mitigation measures described within the DEIR are in line with what CDFW would recommend. I am providing this email so that the City of Alameda has my contact information, see below, when the Project gets to the permitting phase. I will be your contact for the Marine Region of CDFW. 2-1

I look forward to working with the City of Alameda on the Alameda Marina Project. If you have any questions for me, please let me know.

Ann Aarneberg
Environmental Scientist
Marine Environmental Review and Water Quality Project
California Department of Fish and Wildlife - Marine Region
5355 Skylane Blvd. Suite B, Santa Rosa, CA 95403
Office: (707) 576-2889 Cell Phone: (707) 791-4195
Ann.Aarneberg@wildlife.ca.gov
www.wildlife.ca.gov

Letter 2 Response — Arn Aarreberg, California Department of Fish and Wildlife (CDFW)

February 5, 2018

2-1 The City appreciates the Department's interest in the project. The City and the project applicant will continue to coordinate with the Department as the project moves forward.

ALAMEDA County Transportation Commission

February 15, 2018

Andrew Thomas
Assistant Community Development Director
City of Alameda
2263 Santa Clara Avenue, Room 190
Alameda, CA 94501

SUBJECT: Response to the Draft Environmental Impact Report for the Alameda Marina Master Plan and Density Bonus Applications

Dear Mr. Thomas,

Thank you for the opportunity to comment on the Draft Environmental Impact Report (DEIR) for the Alameda Marina Master Plan and Density Bonus Applications. The proposed project redevelops a 44-acre site located at 1801 Clement Avenue, within the City of Alameda, adding 360,000 square feet of commercial space and 960 residential units. The project also includes rehabilitation and reconstruction of up to 4,000 feet of existing seawalls and bulkheads, the existing seawall, and existing infrastructure and utilities. The waterfront site is located along Clement Ave between Grand Ave and the United States Navy Support Center.

Alameda CTC respectfully submits the following comments on the DEIR:

- Alameda CTC notes that the project's residential uses are estimated to generate 509 new pm-peak trips—most of which would be new automobile trips. Transportation Demand Management (TDM) measures outlined in Impact TRA-1 (pages 4.12-26 and -27) include transit passes for residents and employees, unbundled parking, and car-share access. These TDM measures are estimated to reduce the Vehicle Miles Traveled (VMT) between five to seven percent and divert some auto trips to walking, biking, and transit trips. 3-1
- Page 4.12-22 of the DEIR lists the Congestion Management Program (CMP) roadways located within the project study area and also includes information on the significance criteria for the CMP roadway impact analysis purposes. However, the DEIR does not include the impact analysis details for these CMP roadways as identified in Alameda CTC's response to the Notice of Preparation of a DEIR for this project, dated November 30th, 2016. 3-2
- The DEIR states that southbound SR260 (the Webster Tube) from Seventh St to Atlantic is "grandfathered" under the CMP. While grandfathered segments are statutorily exempt from preparing a deficiency plan if found operating at LOS F during an LOS monitoring cycle, they are not exempt from review under the Land Use Analysis Program. Please include this roadway in the impact analysis. 3-3

- The DEIR concludes that the impacts to transit will be less than significant. However, the DEIR also states that there likely will be significant and unavoidable auto delay at the Park Street Bridge due to the increased demand created by the project. Since, several bus routes also use this same roadway/bridge, there will be an impact to transit performance as well. Therefore, these inconsistent findings need to be clarified in the DEIR. 3-4
- To calculate volume-to-capacity (V/C) ratios, the DEIR provided per-lane capacity assumptions (pages 4.12-41) of 2,000 vehicles per hour for freeway segments, 800 vehicles per hour for surface streets, and 900 vehicles per hour for arterial roadways. The report should provide a source for these assumptions. 3-5
- The TDM measures outlined in Mitigation Measure TRA-1 (page 4.12-26) are robust and consistent with established best practices. To further reduce the amount of Vehicle Miles Traveled by the project, the project team could consider the list of TDM measures Alameda CTC publishes in the CMP (see Chapter 5, TDM Element, page 71-81). 3-6

Thank you for the opportunity to comment on this DEIR. Please contact me at (510) 208-7426 or Chris G. Marks, Associate Transportation Planner at (510) 208-7455, if you have any questions.

Sincerely,

Saravana Suthanthira
Principal Transportation Planner

cc: Chris G. Marks, Associate Transportation Planner

Letter 3 Response **Saravana Suthanthira, Alameda County Transportation Commission (ACTC)**
February 15, 2018

3-1 Comment Noted. The comment states the project trip generation and the effectiveness of the project TDM Plan as summarized in the Draft EIR.

3-2 The CMP impact analysis is discussed on pages 4.12-40 and 4.12-41 of the Draft EIR. As stated on page 4.12-41, Appendix G.I presents the detailed calculations for the CMP impact analysis.

3-3 As stated on pages 4.12-22 and 4.12-40 of the Draft EIR, SR 260 (Webster Tube) is evaluated in the CMP analysis. Appendix G.I presents the detailed calculations for this segment.

3-4 As stated on page 4.12-18 of the Draft EIR, the project's impact on transit is considered significant if the project would degrade transit travel speed by 10 percent or more along transit corridors. Pages 4.12-33 thru 4.12-35 of the Draft EIR evaluate the project's impact on transit speeds along the major corridors serving the project, including Park Street, under both Existing and 2040 conditions. As stated in the Draft EIR, the project would have a less than significant impact on transit because it would degrade travel speeds along the transit corridors, including Park Street, by less than 10 percent.

3-5 For purposes of clarification, updated information has been added to Chapter 3 of this Final EIR. As presented therein, the second sentence of the first paragraph on page 4.12-41 of the Draft EIR is revised to the following:

> For freeway segments, a per-lane capacity of 2,000 vehicles per hour (vph) was used~~. F~~, and for surface streets, a per-lane capacity of 800 vph was used, based on the general hourly capacities in the Alameda CTC Model.

This revised information does not alter the conclusions of the Draft EIR, nor does this comment present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

3-6 The TDM Measures listed in Mitigation Measure TRA-1 were selected because, considering the project size, location, and uses, they are the most appropriate measures to reduce the project's identified significant impact on VMT to a less than significant level. However, as the project applicant develops the detailed Project TDM Plan that will be reviewed and approved by the City's Planning Board, additional measures, such as those listed in Chapter 5, TDM Element, of the Alameda CTC Congestion Management Program, will also be considered.

Pacific Gas and Electric Company

Plan Review Team
Land Management

[illegible]

[illegible]

February 5, 2018

Andrew Thomas
Assistant Community Development Director
City of Alameda
2263 Santa Clara Avenue, Room 190
Alameda CA 94501

Re: Alameda Marina Master Plan and Density Bonus
1801 Clement Ave, Alameda CA

Dear Mr. Andrew Thomas

Thank you for giving us the opportunity to review your plans. The proposed Alameda Marina Master Plan and Density Bonus does not appear to interfere with any PG&E's facilities or easement rights; therefore, we have no objection to your proposed plan. 4-1

Should your plans change or if you have any questions regarding our response, please resubmit or contact the PG&E Plan Review Team at (877) 259-8654 or pgeplanreview@pge.com.

Sincerely,

PG&E Plan Review Team
Land Management

Letter 4 **Plan Review Team, Pacific Gas and Electric Company (PG&E)**
Response February 15, 2018

4-1 The City appreciates PG&E's interest in the project, and any suggestions it may have for improved utility service associated with the project. The City and the project applicant will continue to coordinate with PG&E during the development of detailed utility designs.

Letter 5

ACT

Alameda Citizens Task Force

Vigilance, Truth, Civility

February 7, 2018

Andrew Thomas, AICP
Assistant Community Development Director
Planning and Building Department
2263 Santa Clara Avenue, Room 190
Alameda, CA 94501

RE: Alameda Marina DEIR: Submission of Comment and Request For Response

Dear Mr. Thomas:

Section 2.5 of the Alameda Marina Master Plan Draft Environmental Impact Report (DEIR) identifies two traffic impacts, TRA-2 and TRA-3 which are stated to be "unavoidable" and several other mitigatable traffic impacts. However the placement of 700 to 779 housing units on this site severely exacerbates all of these impacts and is in violation of our MX and MF Zoning Ordinances

Sec. 3.5 at page 3-7 states that the MX MF zoned portion of the parcel contains 25.62 acres. Sec. 3.6 establishes the proposed land uses for that acreage at 7.98 acres for commercial use (pp. 3-11) and 4.25 acres for open space. (p. 3-14) While residential acreage is not stated, simple subtraction establishes the residential use acreage at 9.39 acres.

AMC 30-4.20 - M-X, Mixed-Use Planned Development District, Sec. c.12 states that the density calculation only applies "for land designated on the Master Plan for residential use." AMC 30-4.23 - Multi-family Residential Combining Zone, at Sec. b.1.c states that the provisions of the underlying zoning district shall apply if not in conflict with the overlay ordinance. There is no conflict regarding density calculation

The application of the above Ordinances to the Alameda Marina Master Plan requires the calculation of maximum housing units by multiplying 9.39 times 30, yielding a unit count of 282 units plus the applicable 20% density bonus to reach a total of 338 units. It is unknown how the calculation of 779 units was achieved by multiplying the total 21.63 MX/MF zoned acres by 30, yielding 649 units and adding the 20% density bonus.

This calculation not only violates the above Zoning Ordinances, but also contradicts our Housing Element which identifies a reasonable capacity of residential units for Alameda Marina at 396 units based on an estimate that only 60% of the parcel would be

5-1

residential). Thus calculating the unit count solely in relation to residential use total acreage.

The only avenue currently open to calculate the 779 unit calculation is by establishing that our Municipal Code is pre-empted by State Law. Our examination of the relevant State Laws concerning housing reveals no such law. Therefore we ask for a response citing specific legal authority for this calculation. If, as we maintain, there is no such authority we seek a response that either amends the DEIR Project Description to provide for no more than 538 residential units or admits that an amendment to the MX Zoning Ordinance will be needed to allow for your 779 unit project description.

5-1 cont.

Sincerely,

Paul S. Foreman, Board Member and Authorized Correspondent
Alameda Citizens Task Force

Letter 5 Response **Paul S. Foreman, Alameda Citizens Task Force (ACT)**
February 7, 2016

5-1 Please refer to Master Response 1 in Section 2.2 of this chapter for a discussion of the project's consistency with the MX and MF zoning ordinances, as well as how the project's residential density was calculated pursuant to the City's General Plan and Zoning Ordinance and the State Housing Density Bonus Law.

ALAMEDA
ARCHITECTURAL
PRESERVATION
SOCIETY

February 15, 2018

Andrew Thomas, AICP
Assistant Community Development Director
City of Alameda
2263 Santa Clara Avenue, Room 190
Alameda, CA 94501

RE: Alameda Marina DEIR: Submission of Comments and Request for Response

AAPS Contact: Nancy Hird, 510-523-0825
Nancy.alameda1@att.net

Dear Mr. Thomas,

The Alameda Architectural Preservation Society (AAPS) welcomes this opportunity to comment on the Draft Environmental Impact Report for the Alameda Marina.

Alameda is fortunate to have 37 fairly well preserved buildings as remnants of WWII ship building efforts contributing to our country's successful campaign in the Pacific during this war. The Alameda Historical Advisory Board determined these buildings form a Cultural Landscape and 11 of the buildings are included in Alameda's Alameda Marina Historic District. It is most unfortunate that the study completed by ESA fails to identify any alternative which does not result in Significant and Unavoidable Impacts. 6-1

Chapter 5 of the Draft Environmental Impact Report (EIR) identifies some Alternatives to the Alameda Marina Project proposed by Bay West. These alternatives include:

1. The Preservation and "environmentally superior" Alternative which retains the 11 structures of the Alameda Historic District along with the Graving Dock
2. The Extensive Adaptive Reuse Alternative which retains only 6 of the 11 Historic District buildings
3. The Reduced Project Alternative which has not been studied for its economic feasibility
4. The "No Project" Alternative which does not provide the revenue required to repair the Tidelands Trust infrastructure

The following additional Alternatives be studied and considered as part of the EIR. These alternatives include:

1. The City of Alameda could swap properties. “Site A” at Alameda Point, which is owned by the City, could be exchanged for the fee simple portion of the Alameda Marina that is owned by the developer. Allowing the developer to build at Alameda Point will pay for the replacement of the bulkhead/seawall at the Marina, which is the primary goal of the project. (Both entities say this is the given reason for the Project.) 6-2

2. Build high value market rate homes around the graving dock on the east end of the property to pay for the infrastructure on the Tidelands Trust property at the Marina. Rehab some of the historic buildings 9, 10, 31 and 36 as examples for live/work spaces in affordable buildings located towards the eastern end, and potentially at the western end, in buildings 28 and 29. Try to meet RHNA numbers assigned but not required since Alameda has already exceeded its number of approved market rate homes. 6-3

3. Build two apartment buildings on the eastern end that are tall enough to contain enough units to meet the financial goal to replace the bulkhead. 6-4

4. Consider “Master Plan #3” to expand the “Commercial Core” to include the area currently planned for a 6-story, 225 unit apartment building and move that building easterly to the location of the 3-story, 48 unit building, shifting it east to the land designated for the 148 unit duplex homes, and omit the duplex homes. This would at least allow retention of the boatyard but would not save additional historic buildings. 6-5

Regardless of the approach selected, AAPS is aware the developer intends to create a commercial center in Building 19 (Alameda Marina Building) by adding 3-4 stories within the frame of the building. This action would alter the interior of an otherwise intact and eligible resource for national recognition. AAPS would vigorously oppose this action.
Thank you for your consideration.

Please contact Nancy Hird at 510-523-0825 or Nancy.alameda1@att.net if you have questions or would like to discuss these comments

Christopher Buckley, President
Alameda Architectural Preservation Society

cc: Mayor and City Council (by electronic transmission)
Planning Board (by electronic transmission)
Historical Advisory Board (by electronic transmission)
AAPS Board and Preservation Action Committee (by electronic transmission)

Letter 6 Response — Christopher Buckley, Alameda Architectural Preservation Society
February 15, 2018

6-1 The City appreciates the Society's interest in the project and its interest in architectural preservation throughout the City. In response to the Society's introductory comment, we would refer you to Master Responses 3 and 4 in Section 2.2 of this chapter, which provide additional detail on the feasibility of alternatives and the project's impacts to historic resources, respectively.

6-2 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of the feasibility of proposed alternatives.

6-3 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of the feasibility of proposed alternatives.

6-4 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of the feasibility of proposed alternatives.

6-5 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of the feasibility of proposed alternatives.

6-6 Please refer to Master Response 4 in Section 2.2 of this chapter for a discussion of the project's impacts to historic resources.

Letter 7

Island Yacht Club
Alameda Marina
1853 Clement Ave., Building 14
Alameda, CA 94501

February 15, 2018

To whom it may concern:

Island Yacht Club was founded in 1970 by a group of friends who liked recreation boating for family outings, racing after work, or sailing across the Pacific. Though long retired and now in their 80's, some of those same sailors attended our race this week, as they have ever since that time they were starting families and working long hours at startup companies. We are also the home to the Sea Scouts troop of the Boy Scouts, organized to promote better citizenship, water safety, boating skills, social and service experiences, and knowledge of our maritime heritage.

7-1

Recreational boating is a lifelong, social activity people, and Island Yacht Club's role is the social fabric that binds friendship, the boating community, and volunteering with Alameda Marina.

We want to grow that community. Towards that end, we would like to see the 'cost of entry' to recreation boating become as minimal as possible, and would like to see accommodation for

individual watercraft: rack space for stand-up paddle boards, kayaks, and individual rowing sculls. People would rent storage space for these craft from the marina, but instead of requiring a hoist, they should instead be able to launch with a hand dolly down a ramp, onto a section of dock low enough to slide boats on and off by an individual.

7-1 cont.

We believe direct, minimal cost access to individual watercraft after work or after school by complete novices at Alameda Marina would be in everyone's best interests and can be accommodated, perhaps by the graving dock, with minimal design impact.

Sincerely,

Chris Nicholas
Commodore, Island Yacht Club

ANDREW THOMAS

From: Chris Nicholas <chrisgrnicholas@att.net>
Sent: Wednesday, February 14, 2018 7:30 PM
To: ANDREW THOMAS
Subject: Re: Alameda Marina project

I have also been asked by several of our members with trimarans to say the preliminary plan does not accommodate their class of boats on trailers, that majority of which are currently stored at Alameda Marina 7-2

We would like some portion of the dry storage allocated for this larger class of boat

Chris Nicholas
Commodore
Island Yacht Club

On Monday, February 12, 2018 11:07 AM, Chris Nicholas <chrisgrnicholas@att.net> wrote:

greetings -

I am wondering when the 45 day period for public commentary regarding the Draft EIR are due: is that today?
Or is that Feb 15th?

thank you

Chris Nicholas
Commodore, Island Yacht Club
510-390-2960 mobile

Letter 7 Chris Nicholas, Island Yacht Club
Response February 15, 2018

7-1 The City appreciates the Island Yacht Club's comment, and acknowledges that the project's design and development is important to the Club and its mission. We encourage the Club and its members to continue to work with the City and the project applicant concerning the project's design to ensure that the project meets the needs of the boating community. The project would provide areas for storage and use of individual watercraft.

7-2 Comment noted. Please see the above response to Comment 7-1. The project would provide dry storage that can accommodate trimarans. The trimarans would be able to utilize the City of Alameda's boat ramp, which is located adjacent to the proposed dry storage area.

Save Alameda's Working Waterfront (SAWW)

Alameda Marina Development

Draft Environmental Impact Report: Public Response

Save Alameda's Working Waterfront

Andrew Thomas, AICP
Assistant Community Development Director
Planning and Building Department
2263 Santa Clara Avenue, Room 190
Alameda, CA 94501

15 February 2018

ALAMEDA MIXED USE PROJECT: SCH No. 2016102064 Response to the DEIR

TABLE OF CONTENTS

Purpose

This document is a public response to the Draft Environmental Impact Report (DEIR) published by the City of Alameda for the proposed Alameda Marina mixed use development in Alameda, California.

This document is published by *Save Alameda's Working Waterfront* (SAWW) and is a contribution of responses by several individuals from Alameda and Northern California.

Chapter 2, Summary

Reference Page 1.1

Regional Setting

Regional access to the City of Alameda is provided by a variety of transportation modes. Interstate 880 (I-880) through Oakland—the nearest freeway to the project site—provides regional access for automobiles and transit. Regional traffic accesses the project site via State Route 61 (SR 61) through the Webster-Posey Tubes, the Park Street Bridge, the Miller Sweeney Bridge and the High Street Bridge connecting the island of Alameda and the City of Oakland.

Response: California State highway 61 is a regional highway and should be considered, and studied, as part of the regional traffic access. Highway 260, i.e. Webster Street, connects to highway 61 at Webster and Central Avenue, passing along Central Avenue to Encinal Avenue, then along Broadway, to Otis Drive and finally connects with Doolittle Drive at the Bay Farm Island Bridge. As the Northern transit corridors become increasingly congested, southbound traffic will overflow onto these city streets.

Alameda egress streets are already congested long after the commute hours. There has been reports that AC Transit and BART ridership were down 6% in 2017. The cause of the downturn has to be determined and resolved before continued traffic is added to our bridges and the tubes.

8-1

Reference Page 1-3

Project Description

The project would be developed in up to four phases, with shoreline and land side infrastructure
improvements occurring in each phase as necessary.

Response: Completion of shoreline improvements need to be required to be completed in the first phase. Improvements to the shoreline are the driving reason for this development of the Marina and would be in jeopardy if later development phases fail to be completed.

8-2

Reference Page 1-4

Improve and Enhance the Maritime Commercial Marina

Maintain Alameda Marina as a working waterfront and retain and/or promote Alameda Marina's maritime uses by creating a Maritime Commercial Core that utilizes the maritime footprint more efficiently.

Response: Utilizing the maritime footprint more efficiently really means reducing the maritime business area to a size that dooms the maritime and boatyard business to

8-3

failure. It is impossible to operate a boatyard in this reduced space. The proposed layout from Exhibit 1, Item 7-B June 12, 2017 Planning Board meeting shows the boatyard at just 0.98 acre and fails to utilize the existing features that are required for a fully functional boatyard.

8-3 cont.

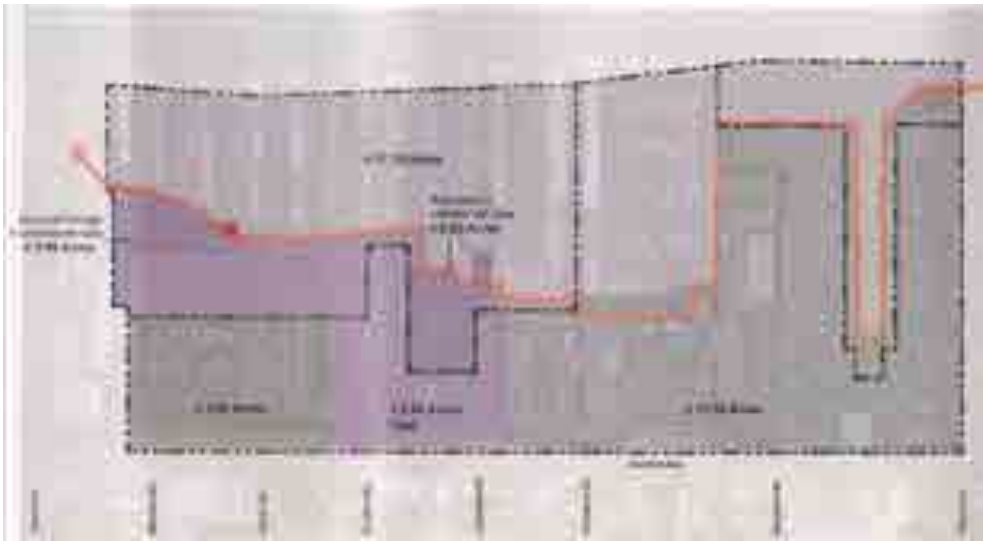


Exhibit 1, Item 7-B June 12, 2017 Planning Board meeting Page A4.1

Create a Dynamic New Neighborhood for Everyone

Provide options for housing that meet the need of a wide demographic that includes universally designed units, affordable, rental, work force market-rate and market-rate units.

Response: The term "Work force market-rate units" usually refers to smaller units that are more affordable for the developer to build. They still will not be affordable for Alameda's middle class work force.

8-4

See Attachment One: AFFORDABILITY OF HOUSING IN ALAMEDA

Reference Page 1-5

2.5 Proposed Project Impacts

Impact TRA-2: The proposed project would increase traffic volumes such that traffic conditions at the Park Street/Blanding Avenue and Park Street/Clement Avenue intersections

**would either deteriorate from LOS D to LOS F or the proposed project would increase traffic
volumes by three percent or more.**

Response: The Boatworks Residential Project DEIR, SCH No. 2009102040, Mach 2010 has already determined that the intersections of Park Street/Blanding Avenue and Park Street/Clement Avenue will deteriorate to a level F. In a development where several large projects are planned, it is important that the all environmental elements be considered for cumulative effect on the Northern Waterfront district and the City of Alameda as a whole. Later discussion regarding cumulative effects in this DEIR does not adequately weigh problems that will be caused by the planned developments.

8-5

TABLE 4.B-14
CUMULATIVE (2030) BASE PLUS PROJECT PEAK-HOUR INTERSECTION LEVELS OF SERVICE (LOS)

Intersection	Traffic Control	AM Peak Hour				PM Peak Hour			
		Cumulative (2030) Baseline		Cumulative Base Plus Project		Cumulative (2030) Baseline		Cumulative Base Plus Project	
		Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS
1. Park Street and Blanding Avenue	Signal	>120.0	F	>120.0	F	101.6	F	>120.0	F
2. Park Street and Clement Avenue	Signal	100.0	F	109.1	F	>120.0	F	>120.0	F
3. Park Street and Buena Vista Avenue	Signal	13.0	B	13.0	B	19.3	B	19.3	B
4. Oak Street and Clement Avenue	AWSC	>60	F	>60	F	>60	F	>60	F
5. Oak Street and Buena Vista Avenue	Signal	10.6	B	10.9	B	12.7	B	13.5	B
6. Oak Street and Lincoln Avenue	Signal	14.2	B	14.2	B	163.7	B	16.9	B
7. Tilden Way and Blanding Avenue	Signal	119.5	F	>120.0	F	80.3	F	81.9	F
8. Grand Street and Clement Avenue	SSSC	12.9	B	13.3	B	32.5	C	34.3	C
9. Atlantic Avenue and Webster Avenue	Signal	49.9	D	48.1	D	41.1	D	41.2	D
10. Atlantic Avenue and Constitution Way	Signal	41.5	D	41.6	D	53.7	D	54.0	D
11. High Street and Fernside Boulevard	Signal	>120.0	F	>120.0	F	>120.0	F	>120.0	F
12. Clement Avenue and Project Access	SSSC	N/A	N/A	58.1	F	N/A	N/A	58.8	F
13. Oak Street - Blanding Avenue and Project Access	SSSC	N/A	N/A	16.1	C	N/A	N/A	20.7	C

[a] The LOS/Delay for Side-Street Stop-Control (SSSC) intersections represents the worst movement or approach. For Signalized intersections, the LOS/Delay represents the overall intersection.
Bold signifies significant impacts
SOURCE: Dowling Associates, Inc., 2009.

Reference Page 1-5

Proposed Project Impacts

Impact TRA-2: The proposed project would increase traffic volumes such that traffic conditions at the Park Street/Blanding Avenue and Park Street/Clement Avenue intersections would either deteriorate from LOS D to LOS F or the proposed project would increase traffic volumes by three percent or more.

Impact TRA-3: In the event that the planned Clement Avenue extension is not completed prior to project opening, the proposed project could increase traffic volumes at intersections on Buena Vista Avenue such that traffic operations could deteriorate to substandard conditions.

Response: Section 2.5 of the DEIR identifies two traffic impacts, TRA-2 and TRA-3, which are stated to be "unavoidable" and several other mitigable traffic impacts. However the placement of 760 to 779 housing units on this site severely exacerbates all of these impacts and is in violation of our MX and MF Zoning Ordinances.

8-6

Chapter 3, Project Description

3.2.1 Project Overview

Reference Page 3-1

The project would include the following components, which would be constructed on the approximately 44-acre Alameda Marina project site:

6. A Maritime Commercial Core design, to maintain a working waterfront environment, with
limited public waterfront access in this portion of the site.

Response: Public access to the boatyard area can be continued as it is today. There should be no problem with the Bay Trail along the waterfront. Some work areas can be safely separated with proper signage. In addition, the placement of building 12 or the proposed new building in its place will act as a barrier to the boatyard from the eastern approach.

8-7

Reference Page 3-2

This section states the project objectives for the CEQA review of the project. Clarifying information is provided for each objective. The project objectives are:

Improve and Enhance the Maritime Commercial Marina

Maintain Alameda Marina as a working waterfront and retain and/or promote Alameda Marina's maritime uses by creating a Maritime Commercial Core that utilizes the maritime footprint more efficiently.

Response: As stated earlier, the proposed Maritime Commercial Core is not large enough to provide for a viable boatyard or active maritime businesses. Most of the present features that have made the boatyard a productive business are scheduled to be demolished by the development.

A commercial goal should include space that will include light industry, maker space, blue economy and maritime space, R&D, technology, hospitality as well as retail space. Alameda needs a better jobs/housing balance and this project does little to address that in the near or far future.

8-8

3.3.2 Project Site (present)

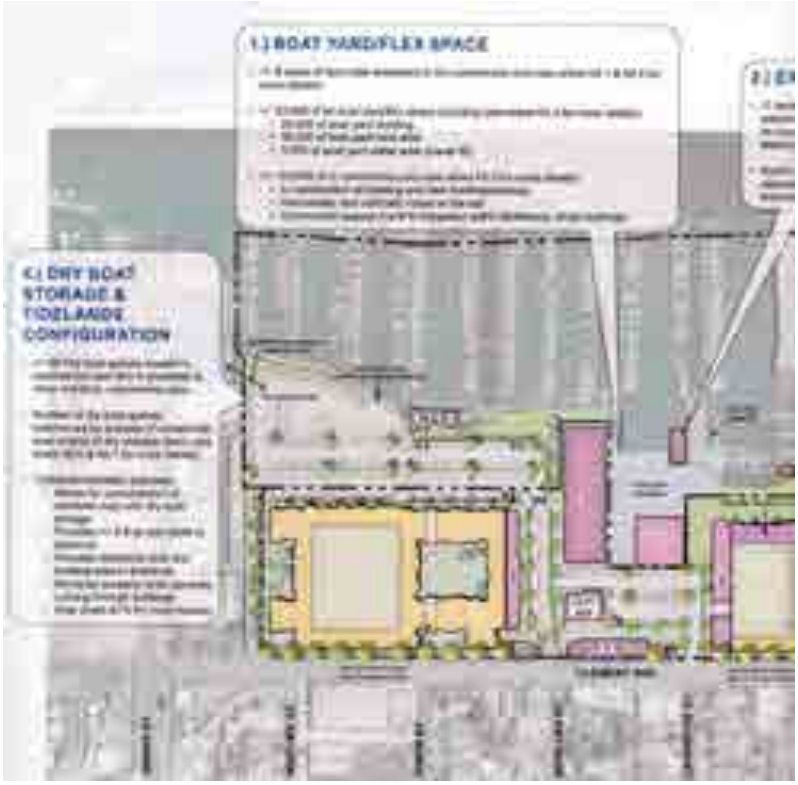
Reference Page 3-4

The land side of the site contains approximately 250,000 square feet of maritime, commercial and retail, warehouse, and dry storage uses.

Response: Reducing the present maritime, commercial and retail, warehouse, and dry storage to just 53,000 square feet is only 21% of the existing square footage. Reducing the boatyard and the dry storage of boats from approximately 300 to just 60 will leave the boating community in Alameda without resources to serve the present 3600 boating population. Boaters are already leaving the Alameda marinas to take their boats to other yards within the Bay Area.

Traveling to other cities on the San Francisco Bay to berth or service their boats is an inconvenience to residents of Alameda. Alameda is home to approximately 3600 berthed or dry stored boats. Traveling to Berkeley or Richmond to enjoy or service them is time consuming and adds to the traffic congestion on regional transits system.

8-9



Reference Page 3-7

Existing Zoning Designations

2. Approximately 21.62 acres of adjacent uplands lies within the City's MX Mixed-Use Planned Development and MF Multi-Family Residential Combining zoning designations. The 21.62 acres is owned by PSI. In addition, PSI owns 5.46 acres of adjacent submerged land, which is zoned M-2.

Reference Page 3-11

Commercial Uses

TABLE 3-1
PROPOSED PROJECT LAND USE PROGRAM
Shoreline Open Space 4.25 acres

Approximately 7.98 acres of the landside portion of the site would be dedicated to commercial uses.

Response: Sec. 3.3 at page 3-7 the MX zoned portion of the parcel is quantified as 21.62 acres. Sec. 3.4 establishes the proposed land uses for that acreage at 7.98 acres for commercial use (p. 3-11) and 4.25 acres for open space. (p. 3-14) While residential acreage is not stated, simple subtraction establishes the residential use acreage at 9.39 acres.

8-10

Residential Uses

Reference Page 3-14

All residential buildings would be no taller than 65 feet, ranging from three to five stories.

Response: Replacing the "brown wall" along Clement Avenue is stated as an advantage of the project. The buildings along Clement are historical buildings and part of Alameda's history during the WWII effort. The tallest of these buildings are 3 stories.

8-11

DEIR Page 4.1-5

The project proposes replacing the historical buildings along Clement Avenue with varied heights, but two of the buildings would be 5 stories high and will stretch a long distance along Clement. The rest of the buildings will be 3 stories high in areas where there are presently shorter buildings.

8-11

Exhibit 1 Item 7-B, 6/12/2017 Planning Board Page 3.0

The project references views of the waterfront. The only views that will be available to those who travel down Clement Avenue will be down the streets that will be extended from Clement into the site. Actual views will be less than they are today with the existing historical buildings when three story buildings are replaced with five story buildings.

8-11 cont.

Demolition

Reference Page **3-19**

• Demolition of the boat yard "elevator."

Response: The Barnhill Marina is home to 41 houseboats which have been authorized by BCDC. The houseboat community is considered "low income housing" which is deficient in Alameda. Some of these houseboats will be unable to be maintained under a present plan to maintain them so we will actually loose affordable housing.

8-12

The houseboat community is dependent on the elevator at the Alameda Marina for service on the underside of their homes. The elevator can lift a houseboat out of the water for repairs. If the elevator is removed, that service will no longer be available in Alameda without considerable effort and expense. Houseboats would have to be lifted by crane onto a barge, 3 at a time, and moved to another location within Alameda. Bay Ship and Yacht, in Alameda, has a boat repair facility near the Main Street Ferry on the estuary because that enterprise specializes in big commercial boats. Bay Ship and Yacht would be able to repair the houseboats, but such an operation would have to be performed on 3 houseboats at a time.

The repair yard in Berkeley does not have an elevator, but its operators state they would be able to work on houseboats under 16' wide. Each houseboat would have to be towed to Berkeley through choppy bay waters. Houseboats are not built to be out in the bay so the trip would be perilous and their survival could not be guaranteed.

Any alternatives for obtaining repairs for the houseboats would be a very expensive endeavour for the boat owner. Without the elevator and an adequate working boatyard in Alameda, the future of all houseboats slipped in Alameda would be very uncertain.

8-12 cont.

3.4.7 Project Construction

Reference 3-22

Conceptual Project Phasing

As shown in Figure 3-10, the project is anticipated to be developed in up to four phases, with the completion of the marina and shoreline improvements phase running parallel to the other phases. Construction is anticipated to begin in 2019 and complete by 2024.

Response: Also, all bulkhead improvements need to be completed prior to any permits being issued for housing units instead of being done in phases as building is done. This is a requirement in the Encinal Terminals project. Since bulkhead improvements are the reason for the project, this arrangement protects the city from the developer not completing all phases of the project which would leave the bulkhead improvements unfinished.

8-13

Reference Page 3-24

Grading and Site Preparation

Preparation of the site for construction of the proposed project would include the removal of remnant hardscape elements, as well as extensive site grading. Building demolition and site clearance are estimated to generate approximately 40,000 cubic yards (cy) of concrete, asphalt, and other waste materials, at least half of which would be reprocessed and reused

on site as road base and fill. Approximately 40 existing trees would be removed from the site, as would about 3,300 linear feet of inactive and abandoned railroad spurs.

Response: The London Plane tree trees along Clement Avenue are city street trees and should be saved. The trees are a great asset to this part of town and, with proper care, they can be protected during construction. Any mature trees within the site should be saved if at all possible.

Trees are especially important along a truck route because they help clean the air by absorbing odors and pollutant gases (nitrogen oxides, ammonia, sulfur dioxide, and ozone), and they filter particulates out of the air by trapping them on their leaves and bark.

As an example, several mature street trees were saved at the 2100 Clement project presently under construction just one block east of the project site.

8-14

Reference Page 3-26

Local Agencies

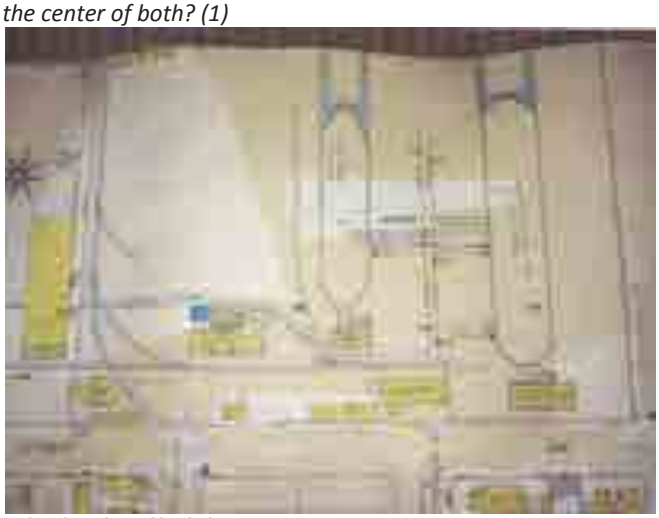
• Alameda County Environmental Health Department (CCEHD) review and permits may be required, if wells or soil borings are required (for environmental cleanup, for example), or if abandoned wells or septic tanks, if any, are proposed to be destroyed during construction.

Response: (Refer to Attachment 2 at the end of this document) - History of the Prevention of Fouling (Boat Fouling).

The Alameda Marina shipyard began in 1917, with two marine railways used for hauling ships out to clean and repaint the ship bottoms. Marine railways continued operation in

8-15

the same two locations until this shipyard closed around 1955. It's a fair conclusion that a lot of bottom paint was splashed or spilled there during all those years. We know that bottom paints used during the early years of the shipyard often contained the toxins arsenic sulfide and/or mercuric oxide as well as copper oxides. Why were only two core samples done on the perimeter of only one of the two historic marine railways but not in the center of both? (1)



Railroad Tracks Oakland Library

Over the years, the land surrounding the marine railways was built up with dredged fill, making the marine railways look like two scars in the earth. These two scars then were filled in with soil and debris after the early Pacific Shops owner called out to contactors to dump their fill for free in the two trenches that were formerly the marine railways. Since there is no proof of who dumped their loads and the characteristics of the dumped materials, shouldn't that also make it important to investigate further and to clarify what materials are there? This is especially true next to Building19 and SAWW request that additional bore samples be obtained from this area in its Nov. 2017 letter.

In 1966, the area became a small boatyard where the bottom paints of choice contained Tributyltin (TBT) mixed with paints rich in copper oxide -- until around 1955 when TBT was banned for small boats because of its damaging affects to a wide variety of non-target marine life. Did the area become a reservoir of TBT contamination? I did not find a record of any testing for this compound or its tin ion breakdown product when I was looking through the lab test data.

Review of a 1915 report on water wells in the eastern San Francisco Bay (2) includes a map that shows three water wells on the land that was to become Alameda Marina. All three wells indicated in that area saw intense shipwork activity. We did not dig deeper in the report for additional details, but we understand that it includes both well depth and casing diameter for each mapped well.

8-15 cont.

The map shows Chestnut Street going all the way to the estuary, with one well on the northwest side of Chestnut and two more close by on its southeast side. The EIR's "Hydrology Water Quality" section (4.7) admits that the developer might have to dig deep enough to find groundwater. It also admits that water might have to be pumped out of the excavation and treated for contamination before draining it into the sewer system. The water wells probably were not closed properly and could have let shipyard toxics flow directly into the aquifer. There is no mention of any previous water wells in the Steller Environmental property maps and reports, nor in maps in the appendix, nor is there any mention of them in Section 4.7, so what to do when a contactor finds them is not even addressed! The EIR maps should include locations of the old wells so they can be rediscovered, if possible, and dealt with by the appropriate experts.

8-15 cont.

Sources
(l) Marine Fouling and Its Prevention
Contribution No. 580, Woods Hole Oceanographic Institute
Chapter 11. History of the Prevention of Fouling
(c)l 952 US Naval Institute, Annapolis, Maryland.

(2) Sources of Water Supply
East Region of San Francisco Bay
by J.H. Dockweiler, l9l5

Chapter 4, Environmental Setting, Impacts, and Mitigation Measures

Cumulative Impact Studies are Inadequate ..... Attachment 3 Page

4.1 Aesthetics

Reference Page 4.1-17 Additional References Page 2-8

Impact AES-1: The project would not have a substantial adverse effect on a scenic vista nor substantially damage scenic resources. (No Impact)

"The only scenic vista or scenic resource in the vicinity of the project area is the Oakland-Alameda Estuary, as defined in the land use policies of the City of Alameda. … The proposed project, on the other hand, would remove many of the physical barriers that currently block public views through the site to the Estuary."

Response: The removal of the physical barriers (2-3 story buildings) that currently block the public's view will then be substituted by large blocks of 4-5 story apartment buildings resulting in the continued lack of views of the estuary from the street. The overall "wall" effect does not change for the people living in the neighborhood on the south side of Clement Avenue.

Views in some areas along Clement, specifically at the East end, are not presently blocked by large buildings. The project would add buildings in this area that would block these views.

8-16

View from Clement Avenue, looking East, at the East End Gate 4

Even though the streets will be extended into the Marina, it will not make the area inviting to those who exist outside of the development. The development is a de facto gated community, uninviting to those on the outside. Also, those inside will not become part of the community outside other than to go shopping or to leave town.

Removal of the gates to the development area may create a more inviting view from the street which will necessitate building gates at the entryways to the docks to provide security for the boats.

8-16 cont.

Reference Page 4.1-18 Additional References Page 2-8

Impact AES-2: The project would not substantially degrade the existing visual character or quality of the site and its surroundings. (Less than Significant, No Mitigation Required)

Response: As stated in AES-2, "The project would change the visual character and visual quality (collectively, "visual conditions") of the project site and its surroundings." The Master Plan does not indicate that there will be any additional waterside park facilities. In fact, the only planned areas for children to play in are the proposed parking lots. It can be argued that the project is not consistent with the city's General Plan in that it does not add to the visibility of the shoreline, does not contribute to a "small town feel", does not show respect for the city's historical contribution to the WWII effort, and does not aid in the retention of maritime industries or boating activities.

8-17

AES-2 further states, "… A number of the existing and historic industrial-style buildings on the site would be retained, which would serve to preserve substantial portions of the site's existing appearance. For instance, Building 19, which is the largest and most visually prominent and distinctive structure on the site, would be retained."

Response: Of the 37 historical buildings (17 in a designated historic district) currently located at Alameda Marina, only 11 will be saved, including Building 19. Building 19 is eligible for listing on both the State and National Registers of Historic Places as it stands today. The developer plans, "if feasible," to create 4 levels within the shell of Building 19 which will destroy its eligibility for any historic recognition. This plan is discussed briefly in the developer's Master Plan without Design Guidelines to preserve and restore existing historic buildings which could include restoration of the corrugated steel cladding. Note that the Glass Factory at the Fruitvale Bridge could be a resource for corrugated steel as it is demolished.

8-18

Alameda's General Plan currently states (as it applies to City Design Element and Alameda Marina):

3. CITY DESIGN ELEMENT

Implementing Policies: Edges, Vistas, Focal Points

3.2.d Maintain views and access to the water along streets and other public rights-of-way that extend to the bulkhead line. Construct benches, ramps, rails, and seating appropriate for viewing and access, and provide walls or other screening where needed to protect adjoining property. Westline Drive, Grand Street, Park Street, Central Avenue and Encinal Avenue are candidates for architectural or landscape features that would enhance the meeting of land and water.

3.2.e Encourage landmark structures at prominent locations. The Housing Authority site at the southwest corner of Webster and Lincoln is an example of such a location.

3.2.f Work to establish continuous greenways adjoining Main Street and Atlantic Avenue extending east through the railroad yard to Sherman Street, provided that the greenway design on each parcel allows for connection throughout the length of the greenway. (GPA 96-4)In addition to providing bike and pedestrian ways, a 100-foot-wide greenway could have landmark trees in the sector of the City that is most in need of a greater presence of nature.

3.2.g Work with BCDC staff to prepare a schematic plan for development of the 100-foot-wide strip above mean high tide on properties likely to require BCDC development approval. The schematic plan should provide for public access and provide shoreline streets wherever possible. Specific opportunities for shoreline streets should be identified. The plan should include design standards and guidelines for buildings, streets, pedestrian and bicycle routes, signage and landscaping.

3.2.i Ensure that sections of the Estuary waterfront remain visually unobstructed. Most of the Estuary waterfront not devoted to industrial use is developed as marinas which block vistas. The proposed Estuary Park will be on the most prominent viewpoint.

3.3.e Develop detailed design guidelines to ensure protection of Alameda's historic, neighborhood, and small-town character. Encourage preservation of all buildings, structures, areas and other physical environment elements having architectural, historic or aesthetic merit, including restoration of such elements where they have been insensitively altered. Include special guidelines for older buildings of existing or potential architectural, historical or aesthetic merit which encourage retention of original architectural elements and restoration of any

missing elements. The design guidelines include detailed design standards for commercial districts.

3.3.f Regulate development in neighborhood business districts to maintain a street-wall, with most structures built to the property lines, entrances directly facing the sidewalk, and parking at the rear.

4.2 Air Quality and Climate Change

Reference Page 4-2.7

Diesel Particulate Matter

Mobile sources such as trucks and buses are among the primary sources of diesel emissions, and concentrations of DPM are higher near heavily traveled highways and rail lines with diesel locomotive operations.

Response: Clement Avenue is the truck route for large trucks that must enter Alameda across the Fruitvale Bridge. All truck traffic to locations West of Park Street will travel on Clement Avenue. Even if Clement is not extended through Penzoil, trucks will travel on Clement Avenue between the Fruitvale Bridge and Grand Avenue, going past the Alameda Marin project site, emitting diesel particulate and greenhouse gasses directly in the neighborhood.

Alameda Marina lies within 0.76 of a mile of I880, a major, multi-lane highway, major rail lines, and the BART rail tracks. While prevailing winds are normally East to West, off shore winds do come from the inlands and will blow pollutants from the highway and rail traffic directly onto the Alameda Marina site.

8-19

Reference Page 4.2-8

Sensitive Receptors

The closest existing residences are immediately across Clement Avenue at several locations along the southern project boundary, with dense single-family housing abundant further south. There is also a relatively new residential neighborhood approximately 300 feet north west of the project site north of Fortmann Way. Although not technically a "sensitive *receptor" for air quality, there are likely vessels used as live-a-board's within the marina.* Other existing receptors include Henry Haight School which is located at 2025 Santa Clara Avenue, approximately 0.6 mile southeast of the site.

Response: The 2100 Clement Avenue (Mulberry Homes) development of 52 units, presently under construction, is approximately 1000' east of the project site. Boatworks, a proposed development of 182 units is 0.5 mile east of the project site. Both projects are downwind from the development site. While Boatworks does not have a projected date for start of construction, it could overlap during the 15 years the Alameda Marina will be under construction.

8-20

Reference Page 4-2.13

Bay Area Emissions

The City of Alameda is expected to increase its annual GHG emissions to 329,867 tons of CO_2e by 2020 based on a 0.65 percent annual population growth rate;

Response: From World Population Review @ http://worldpopulationreview.com/us-cities/alameda-ca-population/
Alameda California's estimated population is 78,906 according to the most recent United States census. A 0.65% increase would be 512 persons per year.

From this document on Page 4-10.1 Project Area, the average projected household populations will be 2.51.

> *"The project site is located in the City of Alameda, California, within U.S. Census Tract 4272, which covers an area in the north central portion of Alameda Island that measures about 20 blocks in length by 6 blocks wide, and also includes Coast Guard Island. As of 2010, this Census tract had a population of approximately 4,107 persons living in approximately 1,595 households, with an average persons-per-household rate of 2.51. The median income for a household in Census Tract 4272 was $63,344 per year and the labor force comprised approximately 3,392 workers"*

Presently Alameda has approximately 5046 units projected that should be completed between 2015 and 2035. This increase in units with a household population of 2.51 would mean that the yearly population would increase by 844. That means the population projections in this DEIR are miscalculated by 40%.

8-21

Reference Page 4.2-13 Additional reference page 2-28, 4.10-5

Impact POP-1: The proposed project would not induce substantial population or housing growth directly or indirectly. (Less than Significant)

"Up to 779 residential units could be constructed on the site pursuant to the State Law Density Bonus; the project sponsor is proposing to develop 760 units, comprised of approximately 569 multifamily wrap units, 48 multifamily elevator stacked flats, and 143 multifamily townhouse units, with approximately 103 of these dwelling units offered as affordable housing units distributed throughout the site."

Page 4.2-13 of the Alameda Marina DEIR states:

> "The City of Alameda is expected to increase its annual GHG emissions to 329,867 tons of CO2 e by 2020 based on a 0.65 percent annual population growth rate"

Response: Applying this information to the current Alameda population of 78000 x .0065 = 507 population increase projected for each year -- If all the approved developments are populated by 2020.

Approx. units proposed 4000
Alameda per house hold 2.57

Increase in population 10,280 when present approved housing is completed.
2015 to 2020 (5 years) 2056 population increase per year.
Even at 10 years (2025) 1028 population increase per year.

Alameda has a jobs/housing imbalance. This project has already displaced many jobs to off-island locations which means that Alamedans are crossing the few bridges and one tube to join the commuters on 880 and beyond. Exiting the island during commute hours in the morning hours becomes a greater problem every time a job that pays a living wage leaves Alameda. We should be adding local jobs that allow workers and families to stay on the island – not changing commercial and light industrial space into residential space which this project is proposing and actually doing.

8-22

As more housing developments are approved, the amount of acreage left where new businesses can be established diminishes.

Reference Page 4.2-37

Construction Health Risk Impacts

Construction-related exposure would be temporary because construction emissions would only occur during active construction of Phases 0, 1, 2, and 3.

Based on an analysis of construction of Phases 0, 1, 2, and 3 (assuming each phase immediately follows the preceding phase and Phase 0 occurs concurrently), the maximum project-level impact would occur during construction of the last few months of Phase 2 and construction of all of Phase 3. The maximum impact occurs during this period because of the project construction schedule, geographic distribution of the emissions on the project site relative to the locations of sensitive receptors, wind patterns, and the following set of conservative assumptions: (1) the Phase 3 project site is located relatively close to the sensitive residential receptors to the south of Clement Avenue; therefore the associated sources of construction emissions during Phase 3 are also located close to these sensitive receptors and thus generate the highest concentrations of diesel particulate matter at sensitive receptors according to the AEMOD dispersion modeling analysis; (2) in order to identify maximum health risk impacts, it was assumed the Phase 3 exposure at the sensitive receptor with the highest diesel particulate matter concentration would occur during the age 0 < 2 age cohort, which has the overwhelmingly highest age sensitivity and breathing rate exposure factors compared to all other age groups.

Response: Since this project will span 7 to 10 years, and occur in four phases, it is very likely that sensitive receptors at age 0 < 2 years of age will live in the housing units constructed in the previous phase. The above " Construction Health Risk Impacts" does not reference sensitive receptors actually living on the construction site.

8-23

Reference Page 4.2-38

The combined-level impacts are also summarized in Table 4.2-7. The combined-level impacts include health impacts associated with vehicles traveling on Clement Avenue based on BAAQMD's Roadway Screening Analysis Calculator (BAAQMD 2015), and health impacts associated with stationary sources within 1,000 feet of the project site based on BAAQMD's Stationary Source Screening Analysis Tool (BAAQMD 2012c). The totaled combined-level cancer risks, hazard indices and PM2.5 concentrations would not exceed the BAAQMD thresholds for multiple sources The maximum combined-level impacts would occur at the sensitive residential uses to the south of the project site on the south side of Clement Avenue.

Response: One thousand feet south of the project site does not stop at the Clement Avenue but extends past Eagle Avenue to Buena Vista Avenue and covers several blocks along the project site. The number of sensitive receptors is much greater as Eagle Avenue and Buena Vista are more heavily populated than the south side of Clement Avenue which is predominately industrial.

8-24

Reference Page 4.2-40

PM_{10} emissions result from vehicle exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles. Since much of the project traffic fleet would be made up of light-duty gasoline-powered vehicles, a majority of the PM_{10} emissions would result from entrainment of roadway dust from vehicle travel.

Response: Presently Clement Avenue is and will continue to be a truck route for trucks traveling to and from parts of Alameda north of Park Street. The combined effect of existing truck traffic together with construction truck traffic must be considered.

8-25

Impact AQ/CC-3: The proposed project would not expose sensitive receptors to substantial pollutant concentrations (*Less than Significant*)

Reference Page 4.2-42

Impact AQ/CC-3: The proposed project would not expose sensitive receptors to substantial pollutant concentrations (*Less than Significant*)

The transportation analysis indicates that the highest volume intersection in the project area is Webster Street and Atlantic Avenue with an existing volume of 3,036 and a with-project volume of 3,089 vehicles per hour.

Response: Webster Street and Atlantic Avenue will be the primary exit intersection for traffic leaving the site for Oakland, San Francisco and other places to the North. With 779 units, it is illogical to believe that only 53 cars will be added to the traffic flow during peak

8-26

traffic times. Also, once all the traffic from the other proposed Northern Waterfront units will be added to the intersection, traffic will be even greater.

8-26 cont.

Reference Page 4.2-45

Reference Page 4.2-46

TABLE 4.2-11
MASTER PLAN CONSISTENCY WITH APPLICABLE CONTROL MEASURES OF THE 2017 CLEAN AIR PLAN

TR13 - Parking Policies - The master plan specifies that the TDM program may also include unbundled parking programs as part of the overall TDM strategy.

Response: Unbundled parking will result in more parking on city streets and in the commercial areas of the project site.

8-27

Reference Page 4.2-50

Cumulative Impacts

Methodology

Electricity and Natural Gas. **Buildings represent 39 percent of United States primary energy use**
and 70 percent of electricity consumption (USDoE,2003). Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel.

Response: Calculations should consider Alameda Municipal Power reliance on renewable energy production for electricity.

8-28

4.3 Biological Resources

Project Site and Vicinity – Marine Resources
Open Water, Aquatic, and Subtidal Habitat

Reference Page 4.3-5

Although it is not federally or State protected species, the San Francisco Bay Pacific herring fishery is one of the last remaining such fishery in the San Francisco Bay, and is currently suffering significant declines.

Reference Page 4.3-11

Special Status Terrestrial Species

The special-status species list presented in Table 1 of Appendix C includes marine animal species tax for which potential habitat (i.e., general habitat types for breeding or foraging) occurs in the general vicinity of the project or can reasonably be expected to be affected by project activities.

Response: The cumulative work on Alameda Marina and Encinal Terminals must be considered. Alameda Marina lies between 2200' and 4400' from the Encinal Terminals project. Both projects are extremely large, will span many years, and will repair the bulkheads and replace pilings in the Estuary waters. The Brooklyn Basin project may also be doing bulk head and shoreline work at the same time.

Extreme caution must be taken to make sure the cumulative work from these projects does not do more damage to all species than would be considered for each project on its own.

8-29

Local

5.1 Open Space for the Preservation of Natural Resources

5.1.j Use the City of Alameda Street Tree Management Plan as the guiding reference when considering action which would affect the trees contained in the urban forest. After presenting a thorough inventory of the location, composition, condition, and maintenance needs of City-maintained trees, the Street Tree Management Plan presents recommendations for planting and tree maintenance.

Response: As stated earlier, the existing Clement Avenue London Plane street trees must be saved.

8-30

Reference Page 4.3-35

Operational Impacts

Construction disturbance from building demolition or vegetation and tree removal during breeding bird season in support of the proposed project could result in incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment of active nests within project structures or in trees of buildings in the vicinity of the proposed project site.

Response: Manmade nesting structures should be placed where nesting trees must be removed within the construction site. The manmade structures should remain until replacement trees mature enough to support re-nesting.

8-31

Reference Page 4.3-37

Nesting Birds

Mitigation Measure BIO-1e: To the extent practicable, construction activities including building renovation, demolition, vegetation and tree removal, and new site construction shall be performed between September 1 and January 31 in order to avoid breeding and nesting season for birds. If these activities cannot be performed during this period, a preconstruction survey for nesting birds shall be conducted by a qualified biologist.

In coordination with the City, surveys shall be performed during breeding bird season (February 1 – August 31) no more than 14 days prior to construction activities listed above in order to locate any active passerine nests within 250 feet of the project site and any active raptor nests within 500 feet of the project site. Building renovation, demolition, tree and vegetation removal, and new construction activities performed between September 1 and January 31 avoid the general nesting period for birds and therefore would not require pre-construction surveys.

Response: Climate change has been altering our normal weather patterns. Especially in California, spring is coming earlier and fall is lasting longer. Bird migration patterns have been changing. Since this project will extend several years, care must be taken to verify the beginning and end of migration times so construction does not interfere with nesting.

https://www.cbsnews.com/news/california-ponders-bird-migration-changes/

8-32

Reference Page 4.3-39

Fish-Eating Birds

Dredging and pile removal associated with rehabilitation or replacement of deteriorated wharf pilings could potentially affect submerged aquatic vegetation on the Bay floor or attached to wharf pilings, as well as affect native oysters or mussels. Potential effects from dredging and pile removal could range from short-term to permanent, depending on the extent and degree of disturbance, and would be expected to result in possible mortality, physical injury, or physiological stress resulting from reduction in habitat suitability, and physical disturbance/removal. Dredging and pile removal could result in direct mortality of native oysters. While eelgrass beds are not known to occur within the project area, their

presence in the Oakland-Alameda Estuary, approximately two miles northwest of the project, may subject them to indirect disturbance from such in-water work. Any such impacts resulting in significant damage to eelgrass beds or native oyster beds would be potentially significant because eelgrass beds are considered to be of critical importance to Bay marine life and native oysters are still generally quite rare throughout the Bay.

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Response: "While eelgrass beds are not known to occur within the project area, their presence in the Oakland-Alameda Estuary, approximately two miles northwest of the project, may subject them to indirect disturbance from such in-water work."

Dredging and pile work will create a greater danger to eelgrass beds if the water work is done at the same time as dredging and pile work is happening at the Encinal Terminals project directly North West of the Alameda Marina job site.

Quote from page 4.3-51, this document.
"Although the project would develop the area with commercial, residential, recreational, and maritime uses that could disturb sensitive species or habitat, the project would implement mitigation measures that would ensure these impacts are less than significant. While there is no sensitive habitat located on land within the project site, the project could disturb aquatic habitat in the Oakland-Alameda Estuary. Other projects are located along Alameda's waterfront, and some will involve in-water work, such as Encinal Terminals and Shipways at Marina Village. These areas have limited habitat value for wildlife as they are already primarily or fully developed. However, the proximity of some projects to the waters of San Francisco Bay and the Oakland-Alameda Estuary could lead to potential cumulatively significant impacts on waterbirds and marine life and demolition of existing buildings or removal of existing vegetation could lead to significant cumulative impacts on nesting birds. <u>These projects would include many of the same activities as would occur under the proposed project (e.g., dredging, pile driving, wharf improvements, increased boat traffic) and can be assumed to have similar effects on marine biological resources, resulting in a potentially significant cumulative impact."</u>

In addition to the developments in Alameda, the city of Oakland also is planning large housing developments simultaneously which will add to the disruption of marine life and biological resources in the Alameda Oakland Estuary.

8-33

4.4 Cultural Resources

--Page 4.4-16 Additional References Page 2-18, 5-4, 5-37, 6-1

Impact CUL-1: Project implementation would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines, Section 15064.5. (Significant and Unavoidable, with Mitigation)

"CEQA Guidelines Section 15064.5 requires the lead agency to consider the effects of a project on historical resources."

Response: Both the consultant hired by the developer (VerPlanck) and the city's consultant (Corbett) agree that Buildings 16, 19, and 27 appear individually eligible as historic resources under Section 15064.5(a) CEQA for the California Register under Criteria 1 and 3. There is a difference of opinion regarding the integrity of the remainder of the WWII buildings at Alameda Marina, all built prior to 1942, affecting their eligibility for protection under CEQA. (Buildings 1, 4, 6, 12, 15, 17, 21, 22, 28, 29, 31, 32, 33, 34, and the graving dock) VerPlanck downgraded the integrity findings primarily because the corrugated metal cladding had been replaced by plywood which is easily remedied by replacing the plywood with corrugated metal siding. Corbett, hired by the city in 1988 and again in 2017, disagreed with the findings of VerPlanck. The city's Historical Advisory Board further demonstrates a

8-34

will to protect the buildings by creating a Historic District which includes 25 Contributor buildings, all located on the western two-thirds of the parcel. Further, the City of Alameda's Municipal Code Section 13-21.7 protects all the buildings from demolition at Alameda Marina because they were built prior to 1942.

Serious consideration should be given to the Preservation Project Alternative described in the DEIR in chapter 5.

8-34 cont.

Page 4.4-17 Additional References Page 2-18

Mitigation Measure CUL-1a: Treatment of Historic Properties (Buildings 16 19 and 27). Alterations, to the exteriors of Buildings 16, 19 and 27, shall conform to the Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, if feasible (NPS, 1995) and PRC 5024.5.

*Response: The developer is stating that they will treat the **exteriors** of the buildings according to the Department of the Interior's Standards **if feasible**. The addition of four floors in Building 19 will alter the interior of that building in a manner that will destroy its eligibility for inclusion on state and national historic resource lists. The statement "If feasible" does not commit the developer to the Department of the Interior's Standards.*

8-35

Page 4.4-17 Additional Reference Page 2-18

Mitigation Measure CUL-1c: Interpretive Display. "Public interpretation of historical resources shall be provided and could include a plaque, kiosk, or other method of describing the Alameda Marina Historic District's historic or architectural importance to the general public." The design and placement of the display(s) shall be reviewed and approved by the City of Alameda Historic Advisory Board.

Response: See Comment to CUL 1b
Response: Comment- Photo documentation filed in a library or other historic repository does not offer a citizen of Alameda or visitor the opportunity to appreciate the expanse of the operation undertaken to ensure a successful conclusion in the Pacific during WWII.

8-36

Cumulative Mitigation Measures for CUL-1

Response: As the DEIR states, the above mitigations "typically do not reduce those impacts to a less-than-significant level (CEQA Section 15126.4(b)(2)). Impacts to significant historic buildings or structures under these circumstances would remain significant and unavoidable."

8-37

Page Reference 4.6-2 & 4.6-3

4.6.2 Environmental Setting

Soil and Groundwater Contamination

The lists and databases comprising the Cortese List were reviewed to identify any active cleanup sites at or within 1,000 feet of the project site (project vicinity). (Statuses of Cortese List sites are updated periodically and would need to be revisited prior to construction of the project.) Within the project site and vicinity, there are six listed LUST Cleanup sites, five Cleanup Program sites, one Voluntary Cleanup site, two Military UST sites, and one Military Cleanup site currently identified in the State Water Resources Control Board Geotracker and DTSC Envirostor databases, as described in Table 4.6-1 below (DTSC, 2017; SWRCB, 2017). No other cleanup sites were identified that could have the potential to affect the project site through migration of contaminants onto the project site.

Response: The "Former J.H. Baxter Facility", locally referred to as "The Dutra Property," is still an active clean-up site and is within 1000' of the east end of the Alameda Marina development location.

8-38

EnviroStor site at California State DTS: Active cleanup site.
http://www.envirostor.dtsc.ca.gov/public/map/?myaddress=201632++%E2%80%90++2199+CLEMENT+AVENUE+%E2%80%90+DUTRA+PROPERTY

Google Earth measurement from east end of site to Dutra site.

Reference Page 4.6-16

City of Alameda General Plan

Policy SN-45 Encourage residential, commercial and industrial property owners to test their properties for elevated levels of radon gas (more than 4 pico curies per liter).
Policy SN-45 Regulate land uses within designated airport safety zones, height referral areas, and noise compatibility zones to minimize the possibility of future noise conflicts and accident hazards.

Policy SN-46 Policy SN-46 Maintain a high degree of readiness to respond to aircraft crashes through participation in preparedness drills and mutual aid activities with the City and Port of Oakland to ensure quick and effective response to emergencies.

Response: This area is on the edge of the 5 mile restricted zone surrounding the Oakland International Airport. The Estuary is used as an air highway by small planes and helicopters. Coast Guard helicopters frequent Government Island. The aircraft using this air highway are flying at a relatively low altitude so noise is a frequent result of this air traffic .

8-39

4.5 Geology, Soils, and Paleontological Resources

4.6 Hazards and Hazardous Materials

Page 4.6-27

Impact HAZ-5: Development of the project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and could result in a safety hazard to the public or environment through exposure to previous contamination of soil or groundwater. (Less than Significant with Mitigation)

"As discussed above, the project site has a history of maritime industrial use, and releases of hazardous materials at the site have been well documented."

"SAMPLING APPROACH & LOCATON RATIONALE

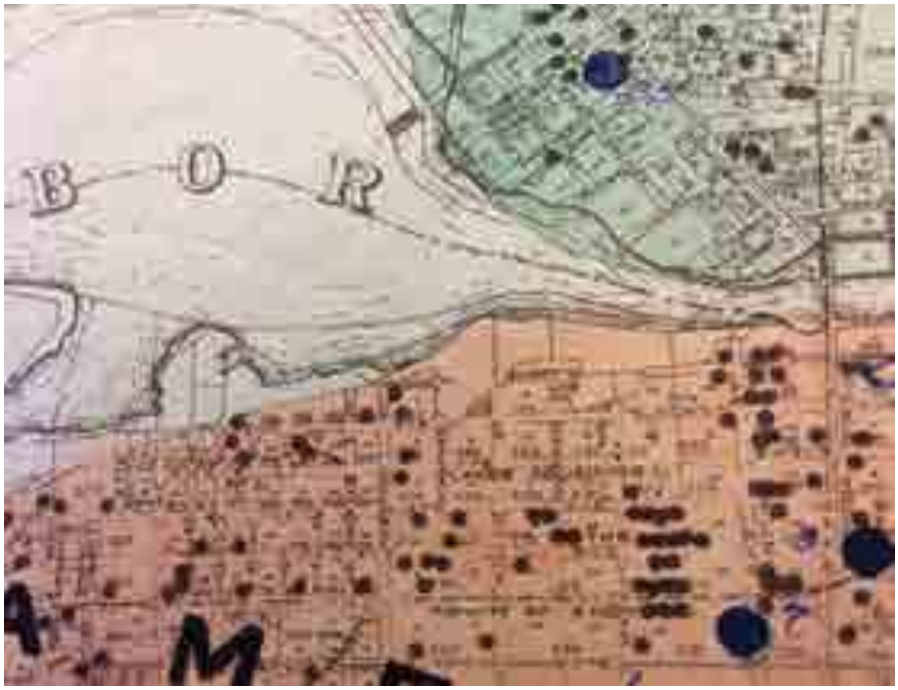
This section provides a general description and rationale of the sampling locations and the media and analyses selected. The bore locations and proposed sampling and analyses are based on the historical site data and the general development plans to determine the extent of the presence of soil, soil gas and groundwater contamination. Figure 2 shows the site plan with proposed bores. The six areas of general concern are described as follows:
1) Former (Potential) Coal Gas Manufacturing Plant (may be distribution only)
2) Historical and remnant Underground fuel storage tank(s), oil lines;
3) Railways spurs;
4) Plating and Paint shops;
5) Offsite and onsite VOC sources from general industrial uses; and
6) Elevated metal concentration associated with onsite fill material

RATIONALE FOR EXPLORATORY INVESTIGATION SAMPLE LOCATIONS

There are known, suspected and possible contaminants of concern at the Alameda Marina that the SAP is designed to identify or eliminate as potential chemicals of concern COCs). The known contaminants include the hydrocarbons associated with former USTs and the VOCs (specifically PCE) associated with onsite trenching data and a known offsite source. The suspected contaminants include potential PAHs /PNAs associated for the former coal gas manufacturing area, pesticides/herbicides associated with historical weed suppression and wood treatment, and metals associated with fill material. Unlikely COCs include PCBs and the full suite of SVOCs. If initial boring and sampling verifies the presence of COCs in the sample on which the full analytical suite is run, the soil samples held by the lab can be run for the identified additional COCs. Locations of subsequent exploratory borings, if needed, will be positioned to evaluate the soil and or groundwater quality within the lease area after permissions granted by the City of Alameda. The sampling matrix presented on the following pages presents the location rationale and sampling approach for the investigation across the three Alameda Marina parcels."

Response: On November 24, 2017, the Save Alameda's Working Waterfront (SAWW) group sent the City of Alameda a letter requesting that close attention be paid to the soil at the location of the original graving dock next to Building 19 when soil samples were studied to determine the existence of potentially dangerous contaminates in the soil. Stellar Environmental Services did not evaluate this area when they completed their studies of the parcel's subsurface soils. Since this letter was sent, SAWW members have identified an additional area of concern north of Chestnut Avenue. Both these locations were identified as graving docks on the 1897 Sanborn Maps (inserted below). These maps were used by the Stellar Consulting agency as listed in their bibliography, so it is surprising they did not identify these potentially contaminated areas when they were collecting soil samples.

8-40



1897 Sanborn Map

4.8 Land Use and Planning

Reference Page 4.8-7

Development of the Bay and Shoreline, Appearance, Design, and Scenic View

Policy 2 All Bayfront development should be designed to enhance the pleasure of the user or viewer of the Bay. Maximum efforts should be made to provide, enhance, or reserve views of the Bay and shoreline, especially from public areas, from the Bay itself, and from the opposite shore.

Response: Presently the project area is very open, views of the Oakland hills and the Estuary are great, and the land is open to the public. The public is welcome to come in and visit the shoreline. Since there are tall fences along the property edge on Clement Avenue, the public may not understand that the Alameda Marina is open space and that they may visit at any time during the day. Unfortunately, most of the gates seem to be locked on weekends making it harder to visit on days when most families are out and about. Gate #7, at the end of Schiller Street is always open during weekends until 9:00 p.m.

With the addition of 5 and 3 story buildings covering most of the land space, the Alameda Marina will become less inviting. The actual open space that will be left after construction is quite small. Views of the Oakland Hills and the Estuary will be blocked from most places within the project site and from Clement Avenue. Extending city streets into the property will not create an inviting feeling.

8-41

Reference Page 4.8-12

City of Alameda Zoning Ordinance

Alameda Municipal Code (AMC) Section 30-4.20 states that the purpose of the MX, Mixed-Use Planned Development District Zoning District is to: Alameda Municipal Code (AMC) Section 30-4.20 states that the purpose of the MX, Mixed-Use Planned Development District Zoning District is to: "...encourage the development of a compatible mixture of land uses which may include residential, retail, offices, recreational, entertainment, research oriented light industrial, water oriented or other related uses. The compatibility and interaction between mixed uses is to be insured through adoption of Master Plan (defined in subsection 30-4.20f) and development plan site plan (defined in subsection 30-4.20h), which indicate proper orientation, desirable design character and compatible land uses to provide for:

Response: Alameda City Ordinance AMC 30-4.20 - M-X, Mixed-Use Planned Development District, Sec. e (1) states that the density calculation only applies "for land designated on the Master Plan for residential use." AMC 30-4.23 - Multi-family Residential Combining Zone, commonly referred to as the Multi-family Overlay, at Sec. B (1), states that the provisions of the underlying zoning district shall apply if not in conflict with the overlay ordinance. There is no conflict regarding density calculation.

8-42

The application of the above Ordinances to the Alameda Marina Master Plan requires the calculation of maximum housing units by multiplying 9.39 times 30, yielding a unit count of 282 units plus the applicable 20% density bonus to reach a total of 338 units. It is obvious that the developer reached their calculation of 779 units by multiplying the total 21.62 MX zoned acres by 30, yielding 649 units and adding the 20% density bonus.

The developer's formula not only violates the above Zoning Ordinances, but also contradicts our Housing Element which identifies a reasonable capacity of residential units for Alameda Marina at 396 units based on an estimate that only 60% of the parcel would be residential, thus calculating the unit count solely in relation to residential, not total, acreage.

With our Municipal code clearly invalidating the developer's formula based on total acreage, the only avenue open to confirming that formula is by establishing that our Municipal Code is pre-empted by State Law. Our examination of the relevant State Laws concerning how to meet our housing needs reveals no such stipulation. Therefore we ask for a response citing specific legal authority for this calculation of 779 units or a response that amends the DEIR Project Description to provide for no more than 338 residential units.

8-42 cont.

Reference Page 4.8-13

Topics with No Impact or Otherwise Not Addressed in this EIR

The project would not conflict with an adopted habitat conservation plan or natural community conservation plan. The Habitat Conservation Plan nearest to the project site is the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP; ECCCHC, 2017 and EBRPD, 2017), whose closest boundary is located approximately 18 miles east of the project site across several urbanized areas (Oakland/Fruitvale, Moraga, Danville, etc.). The project site is not located within an area identified in a habitat conservation plan or natural community conservation plan. In addition, there are no habitat conservation plans or natural community conservation plans proposed for adoption that would include the project site. Thus, the project would have no impact on a habitat conservation plan or a natural community conservation plan. A discussion of special-status species that the project could potentially impact can be found in Section 4.3, *Biological Resources*.

Response: It's interesting that the only "Habitat Conservation Plan" found for this DEIR was 18 miles from Alameda Marina while Alameda Point is listed and is within just a couple miles from the future construction site.

8-43

The SFPUC Alameda Watershed Habitat Conservation Plan (HCP) will provide long-term conservation measures for threatened or endangered species that could be affected by ongoing water system operations and maintenance efforts within the

SFPUC-owned portion of the Alameda Watershed, or by recreation, lease, and easement activities. https://sfwater.org/index.aspx?page=412

Page 4.8-15 Additional Reference Page 2-27

Impact Analysis

Impact LU-2: The proposed project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the General Plan and zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)

"The MX and MF overlay designations for Alameda Marina and other sites adopted in 2012 designate Alameda Marina as a site for mixed use/multifamily housing bring the City's General Plan and Alameda Municipal Code into conformance with State Law. The proposed project is, therefore, compatible with the existing and planned land use within the surrounding area. Consistent with the General Plan's Land Use Element, the proposed project would support the intent of the current City of Alameda General Plan. In particular, the project would be consistent with the General Plan's policies for waterfront sites, mixed use housing development, shoreline 4. Environmental Setting, Impacts, and Mitigation Measures 4.8 Land Use and Planning Alameda Marina Master Plan 4.8-16 ESA / 160044.01 Draft Environmental Impact Report December 2017 access, and policies regarding architectural resources and historic resources."

From the developer's Master Plan: "Marina uses would remain relatively unchanged from that which is currently provided, with approximately 550 boat slips in the water. Currently, more than 50 percent of the existing boat slips are in need of repair or rebuilding. Dry boat storage is proposed to cover a maximum of approximately 1.75 acres on the north east end of the site with the capacity for 90 dry boat storage spaces (approximately 75 sail boats and approximately 15 power boats).

The proposed project would include approximately 250,000 sf of commercial space, with 115,000 sf dedicated to maritime uses and the other 135,000 sf for office and retail. The proposed maritime square footage would increase the existing maritime footprint by approximately 20 percent. Commercial space would be located in individual buildings centered around a Maritime Core and would include the preservation and repurposing, *if feasible*, (emphasis added) of several of the existing buildings on the site (one of them being the Alameda Marina building) for old and new maritime businesses"

Response: The number of housing units the developer can legally build on the acreage present at Alameda Marina depends the method used when calculating the number of units - whether based on the total acreage or the proportionate-use method. Per Robert Sullwold, a local attorney who writes the Blog "Alameda Merry-Go-Round", January 28, 2018:

8-44

"The latest master plan for the Alameda Marina proposes a mixed-use development on a site on which 21.62 acres of land are zoned MX-MF and 4.89 acres are zoned for industrial use. The plan calls for 7.98 acres of commercial use and 4.25 acres of public open space. Assuming these uses will take place in the area zoned MX-MF, 9.39 acres will be left for residential development. Under the proportionate-use method, the maximum number of units on the site will fall to 282 (before any density bonus) from the 760 shown in the master plan (which includes the bonus units)."

8-44 cont.

It is important to remember that the primary reason to complete this project is to fund the bulkhead repair and replacement. Enough housing units must be built to accomplish this goal.

*Alternatively, the city may seek low cost governmental loans to replace the bulkheads, may include the bulkhead replacement in an infrastructure bond, or may partner with other local jurisdictions and/or manufacturing companies to both repair bulkheads and attract new businesses to Alameda Marina. Visit: http://dbw.parks.ca.gov/?page_id=28715 to learn the grants and loans available in California for boating concerns including infrastructure. For example, the CA Boating Infrastructure Grant described here which was for last calendar year: Boating Infrastructure Grants (BIG) **APPLICATION DEADLINE: August 1, 2017***

8-45

Division of Boating and Waterways (DBW) is now accepting applications for U.S. Fish and Wildlife, BIG Tier I and Tier II grants. DBW is the designated State entity for administering these programs. Funding is through the Wildlife and Sport Fish Restoration Program. These Federal grants are for boating infrastructure improvements that service transient recreational vessels at least 26ft long. Transient vessels are those "passing through" staying 15-days or less.
Projects completed using BIG funds must provide public access and may be publically or privately owned.
BIG Program is intended to Enhance access to recreational, historic, cultural and scenic resources

- *Strengthen community ties to the water's edge and economic benefits*
- *Promote public/private partnerships and entrepreneurial opportunities*
- *Provide continuity of public access to the shore*
- *Promote awareness of transient boating opportunities*

***Tier I**: Up to $200,000 is available for projects in California. All Tier I grants must meet the eligibility requirements of 50 CFR 86.20. Each Tier I grant cannot exceed $200,000; however, the State of California may award more than one (1) Tier I grant as long as the total amount of awarded grants doesn't exceed $200,000.*
***Tier II**: Up to $1.5 million may be awarded to a California project in the national competition. A total of $8 million is available for Tier II projects nationally. All Tier II grants must meet the eligibility requirements of 50 CFR 86.20.*
Grant applications and supporting documentation must be received by DBW on or before AUGUST 1, 2017.

Division of Boating and Waterways
ATTN: Lisa Fernandes
One Capital Mall, Suite 500
Sacramento, CA 95814

In addition, Alameda's General Plan currently states (as it applies to Land Use and Alameda Marina):

LAND USE ELEMENT CHAPTER 2

Medium-Density Residential: Two family or one family units. Medium density residential development will provide at least 2,000 square feet of site area per unit. Existing densities range up to 70 units per net acre on blocks with mixed single- and units. Density range for additional units: 8.8 to 21.8 units per net acre. Projects of five or more units with 20 percent of the units affordable to lower-income households earn a state-mandated density bonus permitting up to 26.1 units per net acre. Congregate housing and single room occupancy facilities would be permitted and their density would be regulated by the bulk standards (setbacks, height, lot coverage) in each zoning classification.

Measure A Exception: The City Council agreed in the Settlement Agreement on the Guyton vs. City of Alameda case that Section 26-2 of the City Charter allows the Alameda Housing Authority to replace, with multifamily housing, 325 low cost housing units. Three hundred and twenty five represents the number of low cost units lost when the former Buena Vista Apartments were converted to Bridgeport Apartments. The City agreed that the 325 units of multifamily housing can be built at densities allowed as of January 1, 1990, even if Zoning and General Plan changes are subsequently adopted which reduce allowable densities.

SPECIFIED MIXED USE
Nine areas designated on the General Plan Diagram are to have combinations of uses specified to implement General Plan policies. Development programs that include limitations on development intensity are described in Sections 2.6. (See Table 2-1.)

The Specified Mixed Use Areas labeled on the General Plan Diagram are:

MU 1-3 Listed
MU4 Northern Waterfront (Grand Street to Willow Street)
MU 5-9 Listed

Guiding Policies: Residential Areas

2.4.a Maintain and enhance the residential environment of Alameda's neighborhoods.

2.4.d Limit residential development to one family detached and two family dwellings, in accord with the provisions of Measure A. Up to 325 low cost units may be built in Alameda as multifamily housing as replacement housing for the low cost units lost when Buena Vista Apartments were converted market-rate housing in 1988. Some or all of these replacement units may be located at one or more of the mixed-use sites, or in any area of the City where residential units are permitted.

Implementing Policies: Residential Areas

2.4.j Schedule hearings to consider amendments to the Zoning Map that would reclassify predominantly residential areas zoned for nonresidential use to bring the Zoning Map into consistency with the General Plan Diagram.

2.4.p Amend the Zoning Ordinance and zoning map to be consistent with Measure A, as necessary.

Chapter 2 - 14 - Land Use Element

2.4.q Require that all new development pay appropriate development impact fees.

Guiding Policies: Specified Mixed Use Areas

2.6.d Grand to Willow Street (Northern Waterfront): Continue efforts to minimize industrial -residential conflicts on the south side of Clement Avenue where current zoning matches current use at most locations. Live-work space for artists and artisans would be an appropriate use in many cases. To ensure maintenance of a working waterfront and to avoid employment densities that would create heavy traffic, office and retail space is to be limited to approximately its current share of total floor area. The intent is to maintain an environment suited to the types of businesses now located in the area—both those that are related to the waterfront and those that are not.

Chapter 2 - 24 - Land Use Element

The proposed Business and Waterfront Improvement Project would provide public actions to stimulate development of this site.

2.6.f (Northern Waterfront): Create a continuous shoreline access along the Estuary from the Miller Sweeney Bridge to the western tip of Alameda Point.
Implementing Policies: Specified Mixed Use Areas

2.6.h Grand to Willow Street (Northern Waterfront)**: Limit office/industrial/retail development to .5 FAR, excluding area serving open uses, providing shoreline access, or used for vehicular access to other facilities within the Specified Mixed Use area. **The intent of this provision is to support waterfront related and non-waterfront related uses of the types now existing. The policy would prevent overbuilding that would occupy open area needed to support viable marine-related activities. The industrial character is not to be replaced by typical business park landscaping or building intensity.

2.8.d Continue working to eliminate residential-industrial conflicts. Where there is agreement that a boundary is firm, it is reasonable to expect development approvals to require developers to pay for improvements that mitigate conflicts.

2.8.e Maintain maritime character where the Northern Waterfront is to remain in industrial use.

Specified Mixed Use Area development programs in Policies 2.6.b,

2.6.d and 2.6.i provide safeguards against displacement of water related industries by offices or other commercial development.

2.8.f Encourage major employers to contribute towards child care facilities and/or programs to help attract and maintain a productive work force.

Implementing Policies: Business Parks and Industrial Areas

*2.8.g Revise zoning regulations to remove cumulative provisions that permit all uses except housing in industrial areas. This policy may be critical to preservation of the sea-rail link and the existing industries that use it. If zoning regulations in force in 1990 are not revised, a strong demand for office space or waterfront hotels could suddenly displace industry**. If future economic conditions warrant a major change from the designated industrial use, the City of Alameda should initiate revision of the General Plan.***

2.8.h Review zoning regulation performance standards and revise if necessary to improve equity and enforceability. Current (1990) regulations permit uses from which "noise, smoke, dust, noxious fumes and gases, glare, heat and vibration are confined to the premises or held to volumes, intensities and levels at the perimeters of individual properties which are no greater than those in the general area. This does not meet regional standards and cannot be effectively enforced.

2.8.i Require that all new development pay appropriate development impact fees.

Guiding Policies: City-owned Land

2.10.a Establish long-range management policies for City-owned real property based on comparative evaluation of potential for public use and enjoyment, public- or joint-venture enterprise development, or lease for development. ***A Port Authority Task Force appointed by the City Council in 1989 has discussed steps that could lead to more profitable asset management by the City as part of the Task Force's investigation of ways to ensure preservation and development of marine/harbor facilities in the public interest.***

2.10.b Investigate and pursue potential opportunities to acquire underused State or Federal property in Alameda.

2.10c Stop the trend toward private use of public property.

10. NORTHERN WATERFRONT GENERAL PLAN AMENDMENT

10.1 Challenges and Issues

Financially Sound Development The General Plan policies and land use designations are designed to ensure that new development will fund the public facilities and services that are needed to serve the new development and that redevelopment of the area does not result in a negative financial impact on the City's ability to provide services to the rest of the City.

Facilitating a Jobs/Housing Balance. With an emphasis on mixed use development, the General Plan policies for the area are intended to facilitate a jobs housing balance in the area and in the City for the purpose of reducing citywide traffic and the associated environmental, economic and social impacts of long commute trips.

10.3. Guiding and Implementing Policies

The guiding and implementing polices provide a regulatory framework and guidance for the successful redevelopment of the area.

Guiding Policies: Land Use

10.3.a. Require that development in the Northern Waterfront is sensitive to the character of Alameda and the unique waterfront setting.

10.3.b. Require a mix of uses and open space near the Estuary and shoreline that provides for a lively waterfront and a pedestrian friendly environment.

Implementing Policies: Land Use

10.4.f. Encourage the development of residential units on the upper floors of small commercial buildings in the Mixed-Use designated areas, in compliance with the City Charter.

10.4.g. Consider opportunities for a houseboat community in the Northern Waterfront area.

Implementing Policies: Circulation and Infrastructure

10.6.f. Non-residential uses should be located adjacent to the Clement Truck Route to minimize disturbances to residents from truck traffic on Clement Ave.; however, if residential uses are proposed adjacent to the Clement Truck Route, residential structures shall be adequately set back and/or provide design features to minimize disturbances to future residents. In accordance with policy

10.8.f, sound walls shall not be used to buffer residential uses from the truck route.

10.6j. Establish connections to the Bay Trail and other regional circulation systems.

10.6.k. Ensure that the public access path along the waterfront includes a separated path for bicyclists or is wide enough to minimize conflicts between pedestrians and bicyclists.

10.6.o. Require new development to provide facilities for pedestrians, bicyclists, and transit riders.

10.6.p. Ensure that all streets and pedestrian pathways include tree plantings.

Transit and other Alternatives to the Automobile

Northern Waterfront General Plan Amendment – Adopted March 17, 2007

10.6.q. Develop shuttle services to minimize parking demand and traffic in the area.

10.6.r. Establish a Transit District, amend the Citywide Development Fee Ordinance, or establish a comparable mechanism to fund expanded Northern Waterfront transit services in corridors through and between the Northern Waterfront and the high ridership generators inside and outside the City such as Oakland BART stations, airport, and transit hubs.

10.6.s. Maintain a public right of way for a future rail/transit corridor along Clement Avenue from Grand Street to Sherman Street as part of a citywide transit corridor.

10.6.z. Ensure that police, fire, educational, parks, opens space, and other public services are adequately funded to serve new development.

10.6.aa. Consider creation of a Northern Waterfront Assessment District to fund public improvements and or municipal services required to support new development in the area.

10.8 Urban Design
Guiding Policies: Urban Design

10.8.a. Improve the visibility and public access to the Northern Waterfront Plan area and Oakland/Alameda Estuary.

10.8.b. Require that buildings at waterfront locations be designed with attractive and varied architecture style.

10.8.c: To ensure design compatibility with adjacent developments and neighborhoods; limit new building heights to 60 feet.

Implementing Policies: Urban Design and Aesthetics

10.8.b. On large sites with multiple buildings and with individual tall buildings adjacent to the water, require building heights to "step down" as they approach the water.

10.8.c. Require that new development provide a pedestrian-friendly scale with building sizes consistent with adjacent and historic land uses in the area.

10.8.d. Require new buildings to "face" the street.

Response: When city officials determined all the property along the Northern Waterfront could be used for housing, because it was "vacant and underutilized", they were not aware that 250 people (many Alamedans) were employed at 85 businesses located in 37 historic buildings at Alameda Marina. The land at Alameda Marina was already being used for its highest and best purposes. Furthermore, the Alameda Marina is located east of the Northern Waterfront PDA, not within it.

In fact, a regional boatyard which is critical for maintenance of recreational small craft for mariners south of the Bay Bridge and the manufacturer of submersible craft used in deep ocean research and submersed infrastructure are being displaced. Alameda Marina was home to a microcosm of maritime businesses that served all the needs of the recreational boater in one location. These businesses supported the families of professional, technical, and skilled labor workers who were able to live and work on the island of Alameda. Recreational boaters were able to enjoy their hobby without traveling to off-island locations because the marina offered both wet and dry boat storage facilities. These amenities contributed to the small town feel of Alameda. The developer plans to reduce the number of dry storage spaces from 500 to 50 requiring Alamedans to leave our city to travel to far away marinas to store their boats and this has already begun happening due to the poor operations of the developer and lack of proper hoist maintenance resulting in the inability for sailors to put dry-stored vessels into the water as needed for races.

With or without the development, the amount of shoreline accessible to Alamedans does not change. Citizens can recreate at Alameda Marina riding their bicycles, walking their dogs or picnicking at the shoreline. As described above with the dry storage and hoist

8-46

situation, Alamedans are already experiencing a reduction in the enjoyment of the shoreline accessibility due to the actions of the developer. If anything, the development reduces general access because Alamedans who live in other areas of the island will consider the apartment complex to be a neighborhood for the residents of the apartments. This development, as well as the adjacent planned developments, will reduce the ability for Alamedans to get to the shoreline due to the volume of traffic in a small area.

10.4.g Suggests consideration of a houseboat community on the Northern Waterfront. The loss of a boatyard to service the city's existing houseboats has already been identified as problematic because of the dislocation of the boatyard at Alameda Marina. Adding more houseboats would compound the problem.

The developers planned demolition of the elevator at the marina would make it impossible for the houseboats to receive service in Alameda without greatly increased expense and inconvenience. The Berkeley boatyard reports that they can only service small house boats. Towing a houseboat through the bay waters would subject the houseboat to wave action that could tear the houseboat apart. Without service in Alameda houseboats would eventually be abandoned in the Estuary.

In 2016, members of the Alameda Planning Board's Sub-Committee determined the following attributes as priorities for Alameda Marina:

a. *There should be a maritime commercial focus and plans should provide the space and facilities to support a boatyard which may allow for flexible space since the city does not control the market.*
b. *The commercial plans should preserve the greatest number of existing buildings to provide opportunities for maritime and other commercial businesses and create a more interesting development plan to include a combination of the old existing and new buildings on the site.*
c. *The Graving Dock should be preserved (The developer's Master Plan in the Appendix describes using the graving dock as a place to fill in using dredging materials. "The walls of the graving dock, which is a fully concrete-lined structure excavated from the uplands, are failing, and the slip either needs to be filled, or extremely expensive repairs need to be undertaken to preserve the failing walls. The project sponsor proposes placement of dredged material or other soils from the site into this structure to allow the reclaimed land to be used to provide open space, provide access to public docks and launching areas, and to improve site circulation. Any dredged material and soils exceeding the fill capacity of the graving dock would be disposed of in-bay, offshore, or at an approved upland landfill or beneficial reuse site A new dock system would be constructed at the east end of the marina to accommodate the dry storage launching area and a public access launching area, which would include a hoist. The new system would include transient staging area for kayaks, small boats, and other uses.")*
d. *Consider adjusting the Tidelands property configuration to allow for consolidation of maritime uses such as dry dock boat storage with the other maritime facilities adjacent to the boatyard and to remove property lines that run through the middle of existing*

8-46 cont.

buildings. There should be at least 50 dry boat spaces. Currently there are 500. The boating community lobbies for many more than 50.

8-46 cont.

4.10 Population, Housing, and Employment

Reference Page 4.10-6 Additional reference page 2-28

Impact POP-2: The proposed project would not displace substantial numbers of people or housing units, necessitating the construction of replacement housing elsewhere. (Less than Significant)

Response: The Barnhill community of 41 houseboats is greatly impacted by this development. The boatyard loss where the hulls of these homes are maintained is critical. The houseboats can't traverse the waters of the San Francisco Bay to obtain services in the North Bay where the remaining boatyards with facilities large enough to do the work are located. The only alternative for keeping these households in Alameda is for multiple homes to schedule their maintenance simultaneously at Bay Ship and Yacht when needed. As previously stated, this would cause a great expense and inconvenience for those who live aboard the houseboats.

8-47

Page Reference 4.9-5

Existing Noise and Vibration in the Project Vicinity

Noise Environment

Long-term (48-hour) noise monitoring was conducted on the project site in August of 2017. The long-term noise monitoring location (LT-1) was at the southeastern end of the project site, approximately 50 feet from the center of Clement Avenue, on the portion of the site that is closest to the airport. Additionally, short-term (15-minute) noise monitoring was conducted at noise sensitive land uses surrounding the project site.

Response: As indicated earlier, Clement Avenue is a truck route now and will continue to be such in the future. Large trucks make more noise and generate more vibration than general transit. This could be a problem for those units that are next to the sidewalks on Clement Avenue's north side. Low flying air traffic along the Estuary could also be a noise problem.

8-48

4.10 Population, Housing, and Employment

Reference Page 4.10-7

Cumulative Impacts

Impact C-POP-1: Development facilitated by the proposed project, in conjunction with potential past, present, and future development in the surrounding region, would not result in unanticipated population, housing, or employment growth, or the displacement of existing residents or housing units on a regional level. (*Less than Significant*)

So long as the cumulative project scenario generates cumulative population, housing, and employment conditions that are within the projections of the City and ABAG, there would be no significant adverse growth impact related to population, housing, or employment.

Response: Job growth projected for the City of Alameda is not realistic. Most available land is being used for housing so the probability of increased employment is hampered. Companies that would provide good jobs that pay good wages will not happen. Without land for good jobs, there will be an adverse regional growth impact as residents of Alameda travel outside of Alameda for employment.

8-49

4.11 Public Services and Recreation

Reference Page 4.11-2

Schools

The project site is located within the service boundaries of the Alameda Unified School District (AUSD). AUSD operates a childhood development center, ten elementary schools, four middle schools, two comprehensive high schools, a continuation high school, an Early College High School, and an adult continuation school. AUSD's total enrollment was 11,201 students for the 2016-2017 school year (DataQuest, 2017). The District uses a boundary map to assign students to schools by home address. Students residing in the project area are served by Henry Haight Elementary, Wil C. Wood Middle School, and Encinal High School (AUSD, 2017). Henry Haight School is located at 2025 Santa Clara Avenue, approximately 0.6 mile southeast of the site. Wood Middle School is located at 420 Grand Street, about 1.2 miles south of the site and Encinal High School is located at 210 Central Avenue, approximately 2.3 miles from the project site.
Reference Page 4.11-10- Impact PSR-3: The proposed project would result in new students for local schools, but would not require new or physically altered school facilities to maintain acceptable performance objectives. (*Less than Significant*) Students generated from envelopment of the proposed project would attend Henry Haight Elementary School, Wil C. Wood Middle School, and Encinal High School. The AUSD uses a student yield factor as a basis for the determination of students generated by a specific project.

> *Response: Alameda High School is approximately 1 mile from the project site. Encinal High School is approximately 2.3 miles from project site. While Alameda High School is within walking distance from the project site, Encinal High School is not. High school students are of driving age so many will prefer to drive to school rather than take other means. This will put more cars on city streets during morning peak hours and generate a need for more parking space at the Encinal High School vicinity.*

8-50

Reference Page 4.11-3

City Parks and Facilities

There are three existing parks, and one planned park, that are in proximity to the project site and would be within reasonable walking distance from the site:

***Littlejohn Park* is a 3.45-acre park located at 1401 Pacific Avenue, immediately south of the project site. Littlejohn Park features an unlighted multi-use field for baseball, softball, soccer, and football. The park has several picnic areas, two half basketball courts, a 2-12 year-old age group playground, a community building, and open lawn for informal play. There is enhanced planting at the entry near the community building. Parking is on-street only, and the park is surrounded on three sides by residences. There is ADA access to the group picnic area.**

***Marina Cove Waterfront Park* is a 3.2-acre park located at 1591 Clement Avenue that runs**

along the marina from Clement Avenue to the Alameda Yacht Club. The park features open lawn areas at each end connected by a walk overlooking the water, picnic areas, benches, and a play area, all of which provide opportunities to rest and enjoy the views. Park lighting enhances safety.

***Jean Sweeney Open Space Park* is a planned 22-acre park located a few hundred feet to the west of the project site, across Sherman Street. The park will feature passive and active recreation, with a bike path along a proposed extension of the CAT running east to west through the site, a community garden, play areas, lawns, and other features. Construction on the park has begun as of mid-July 2017.**

Response: *https://en.wikipedia.org/wiki/Walking*
Although walking speeds can vary greatly depending on many factors such as height, weight, age, terrain, surface, load, culture, effort, and fitness, the average human walking speed is about 5.0 kilometres per hour (km/h), or about 3.1 miles per hour (mph).

A park should be a 10 minute walk from any residents within the city of Alameda. At 3.1 mph, a ten minute walk would cover 2748 feet. Children will walk slower.

West end of project: 10 minute walk distance.

The West end of the development site is within a 10 minute walk to Marina Cove Waterfront Park. Littlejohn Park is just beyond the 10 minute walk, but the Jean Sweeney Open Space Park would be much further until the Clement Avenue extension is completed through the Penzoil site.

8-51

East end of project: 10 minute walk distance.

The East end of the development site is within a 10 minute walk to the McKinley park which is not listed and is only 1.22 acres. McKinley Park is not a passive park except for very young children. There is only a basket hoop and a small concrete area with it.

Littlejohn Park is going to be extremely over-used. It is at near capacity now with existing neighborhood use.

Marina Cove Waterfront Park is open space only with a small playground for young children.

Jean Sweeney Open Space Park is not planned as an active park. An active park is generally considered to have ball fields for older children and adult, fields which the Jean Sweeney Park will not have. There will be bike riding, jogging, and walking paths plus playgrounds for young children.

8-51 cont.

Reference Page 4.11-8

4.11.4 Impacts and Mitigation Measures

Significance Criteria

Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

Response: The Northern Waterfront section of Alameda is the most park poor area in Alameda. With the cumulative addition of approximately 2000 units between Sherman Street and Park Street, Littlejohn Park and Mckinley Park, substantial physical deterioration of both facilities is assured.

8-52

Reference Page 4.11-11

Impact PSR-4: The proposed project would result in increased use of other governmental facilities, including libraries, but would not require new or physically altered government facilities to maintain acceptable performance objectives. (*Less than Significant*)

The Alameda Free Library offers library services to the residents of Alameda. The West End library branch, located 1.4 miles away from the project site at 788 Santa Clara Avenue, is the closest library. The Library offers a wide range of services, including answering reference questions, staging story times, providing summer reading programs, hosting class visits, and educational events.

Response: The West End branch of the Alameda Free Library at 788 Santa Clara Avenue is nearly twice the distance from the project site as the Alameda Main Library at the corner of Oak Street and Lincoln Avenue.

8-53

Reference Page 4.11-11 - 4.11-12

Impact PSR-5: The proposed project would increase the use of existing neighborhood and regional parks and recreation centers, but not to the extent that substantial physical deterioration of the facilities would occur or be accelerated, nor would it cause the necessity for new or expanded facilities. (Less than Significant)

"The proposed residential uses are located within easy walking distance of existing park and recreation areas that include both neighborhood and regional facilities. Although only a portion of new residents are expected to use neighborhood and regional parks in the area, the proposed project would cause an incremental increase in the use of these facilities with connectivity to park areas, paths, trails, and shoreline improvements.

The proposed project provides for development of up to 779 new housing units that are anticipated to result in a population of approximately 1,932 residents in the project site by 2035. These additional residents would generally utilize the 4.25 acres of public open space and 17.10 acres dedicated to marina open space that are proposed as part of the project, as well as the parks that are located in the vicinity of the project. The proposed project includes improvements to new waterfront and Bay Trail Open Space, which would provide a new segment of the San Francisco Bay Trail. This would provide bicycle and pedestrian access throughout the site, with access to public open space on the site, a maritime boardwalk promenade, a harbor view park, and open space areas on either side of the existing graving dock."

Response: There will not be active park facilities within the development, only passive open space. The closest park will be across Clement Avenue in another new development and 1.22 acre McKinley Park, a 10 minute walk from development. Either park will require travel along Clement, a truck route from Grand to Park which makes the street more

8-54

dangerous. (Clement will remain a truck route even after the cut through to Sherman.) Clement will also be a portion of the route for the Cross Alameda Bike Trail which increases the danger.

Page 4.11-3 states that "about 95 percent of Alameda residents live within ⅜-mile of a park, the maximum radius for effective service as indicated by studies in other cities (City of Alameda, 1991)." The majority of the people who will live at the Alameda Marina development will not live within 3/8 of a mile from a park large enough to accommodate them and the existing community. Three eights of a mile is 1980'.

East end of development: 3/8 mile radius for parks space.

8-54 cont.

West end of development: 3/8 mile radius for parks.

This part of Alameda has the least amount active of park space within Alameda. The park space at Littlejohn Park, while outside the 3/8 mile of the development, is the nearest active park to the development site. Littlejohn, as the only active park space within this part of Alameda, will have to serve all of the planned developments on the Northern Waterfront East of Webster. The Jean Sweeney Park will serve only passive recreation: while there will be playgrounds for small children, walking, jogging, and bike riding will be the only activities allowed within the park.

At 2.5 people per residence in Alameda, this part of Alameda will become one of the most populated areas of the city. Over 8000 people will live within 1/2 mile of this site.

There are no everyday commercial service (food, drug store, liquor) planned for the development so everyone wanting to shop will have to travel on or across Clement for everyday items. While close to Park Street and Marina Village, these shopping activities will generate traffic other than bike and walking.

Alameda's General Plan currently states (as it applies to Public Services and Recreation and Alameda Marina):

6. PARKS AND RECREATION, SHORELINE ACCESS, SCHOOLS AND CULTURAL
FACILITIES ELEMENT

8-54 cont.

Small boats have replaced large ships along most of the Northern Waterfront, as former shipyards and docks have become sites for marina on the General Plan Diagram, is the largest concentration in Northern California. With completion of Grand Marina in 1988 (362 berths), little space remains within the U.S. Pierhead Line for additional berths.

Chapter 6 6-8
Scores of marina-related businesses—from small shipyards and wood workers to yacht brokers and manufacturers of navigational instruments—constitute a thriving sector of the City's economy that has attained a critical mass and can expect continuing growth.

6.2.a Maximize visual and physical access to the shoreline and to open water. Despite recent progress in securing public access, opportunities are still very limited on the north and east shorelines of the Main Island. At marinas where access to the shoreline is available, long floating piers and a forest of masts still may block visual access to open water. Along much of the Northern Waterfront where there are no marinas, the bulkhead and pierhead lines are close together, so access to open water is assured.

Chapter 6 6-9

6.2.b Regulate development on City-owned shoreline property to maximize public use opportunities. Although the City's shoreline properties are under long-term lease, existing terms are sufficiently favorable to the leaseholders to enable development to include substantial public amenities and still be profitable. Unless the City regains full control of its shoreline holdings, this policy appears to be the best available response to the CLUP policy calling for stopping the trend toward private use of publicly owned shoreline.

6.2.c Ensure marina operating standards that prevent degradation of water quality. See also policies within Section 5.1 of the Open Space and Conservation Element.

6.2.d Through design review of shoreline property, give consideration to views from the water.

Implementing Policies: Shoreline Access and Development

6.2e Remove impediments to enjoyment of shoreline access where legal access exists.
Access points that are intentionally blocked or merely allowed to become overgrown prevent public use of public property.

6.2.f Cooperate with property owners adjoining shoreline access points to ensure that public use does not cause unnecessary loss of privacy or unwarranted nuisance.

6.2.g Prepare a Shoreline Access Plan in consultation with BCDC for areas where development proposals are expected to provide opportunities to improve or extend access.

6.2.h Require shoreline access where appropriate as a condition of development approval regardless of whether development occurs within the area of BCDC regulation. Access should be provided even if there is no development within 100 feet of the water's edge.

6.2.i Require off-site access as a mitigation when public access on-site is infeasible.

Reference Page 4.11-12

Impact PSR-6: The proposed project includes recreational facilities and the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. (*Less than Significant*)

As discussed under Impact PSR-5, the proposed project would result in the construction of a new waterfront and Bay Trail Open Space, which would provide a new segment of the San Francisco Bay Trail for bicycle and pedestrian access throughout the site. In addition, the proposed project would provide access to new public open space on the site, and open space areas on either side of the existing graving dock.

Response: The proposed open spaces within the project are passive spaces. Passive open space is not the same as active open space which has fields where children and adults can play soccer, baseball, softball, track running, etc. The entire Northern Waterfront area only has a small amount of active space at Littlejohn Park. Littlejohn Park will be overused with all the new development the Northern Waterfront area is experiencing. The Jean Sweeney Open Space Park will provide only biking, walking, and jogging. There will be no active recreation facilities within that park.

8-55

Reference Page 4.11-15

Summary

The proposed project, in conjunction with other cumulative development, would not have a significant cumulative impact associated with public services and recreation, and the project's
cumulative impact would be less than significant.

Response: The Northern Waterfront has been designated as a primary development area within Alameda. The number of units proposed in this area is greater than 2000 with an

8-56

increase in population of at least 4820 citizens. To state that the cumulative impact is less than significant, and that no mitigation for public services and recreation will be required is certainly not correct.

8-56 cont.

4.12 Transportation and Circulation

Reference Page 4.12-5

Travel Conditions

To provide information to the Alameda community and Alameda decision-makers about the relative impact of the proposed project on the transportation system, this EIR provides a Vehicle Miles Traveled (VMT) analysis, a Travel Time analysis, an intersection level of service (LOS) analysis, a transit LOS analysis, a pedestrian LOS analysis, and a safety assessment.

Response:
*a) This DEIR **does not report all the delay** at the two intersections of Clement and Blanding at Park Street. That omission is due to two things: 1) the use of lower forecasts than previous EIR's, and 2) the use of higher discharge vehicular flows in the delay calculations than possible (i.e. downstream overflows/blockages reduce the discharge rates over the stopbar. For example, the eastbound left turn at Clement cannot discharge when the northbound queue from Blanding on Park Street extends to Clement. All the intersection delay calculations assume downstream free flow conditions, like those conditions one finds in rural areas or outside the urban core. |Those same calculations also ignore the downstream congestion, like that at Clement and Park, which will reduce the discharge rates.*

In addition, existing counts upon which the forecasts are based are lower in this DEIR than historical counts and in previous EIR's. It is possible diversion to other estuary crossings or outbound traveling earlier during the morning commute may have occurred during the DEIR's November 2016 traffic count surveys because of the construction at the 23rd/29th/I-880 project.

Another reason for the lower intersection delay calculations: the existing intersection configuration was assumed for the cumulative condition even though projects have been funded or are likely to occur that will eliminate lanes or add bicycle signal phasing that will result in more delay than has been calculated and reported in this DEIR.

8-57

b) The impact associated with additional travel on Alameda streets due to the increase in population has been omitted from this DEIR. Only Vehicles Miles Traveled (VMT) per capita is checked. First, missing are the additional Vehicles Miles Traveled on Clement and on other streets. Second, due to the constraints at the island crossings Vehicles Miles Traveled to other crossings is occurring today

8-58

and will continue with new projects. This induced additional diverted travel should also be addressed with respect to VMT impact.
c) The DEIR does not check VMT conformity with respect to the required overall reduction of VMT as per SB 743, see page 4.12-16 of the DEIR's Transportation Chapter which states that VMT's are to be reduced.

8-58 cont.

8-59

d) Substantial evidence of the facts regarding the traffic forecasts and the Vehicles Miles Traveled traffic data employed in this DEIR are missing from the appendices and the DEIR. For example, the Traffic Model input and output data was not available for review. What were the assumptions for the land use, the operating speeds, and so on?

A comparison of the traffic forecasts at five intersections in this DEIR with the Alameda Point EIR, Del Monte Negative Declaration, and the Encinal Terminals EIR, indicate grossly different forecasts while the Citywide land use assumptions are similar as per the Land Use Chapters in the EIR's.

Considering an aspect of the Marina Project which is different than other development projects, the majority of the project traffic is destined to travel to and from the island via Park Street. But now in this Marina DEIR, the traffic forecasts for the Park Street intersections at Blanding and Clement Avenues are 25% lower than the Alameda Point EIR, the Del Monte Negative Declaration, and the Encinal Terminal EIR. No evidence whatsoever is provided to explain why this gross reduction. Furthermore, at the west end, the traffic forecasts are grossly higher. This indicates that there are new traffic impacts not yet disclosed in the previous EIR for the Alameda Point Project.

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Reference Page 4.12-8

Intersection LOS Analysis

To provide a baseline for identification of impacts on the local roadway network, existing peak hour traffic conditions were determined at the following eleven project area intersections:
1. Webster Street/Atlantic Avenue
2. Constitution Way/Atlantic Avenue
3. Challenger Drive/Atlantic Avenue
4. Atlantic Avenue/Buena Vista Avenue
5. Grand Street/Buena Vista Avenue
6. Grand Street/Clement Avenue
7. Park Street/Blanding Avenue
8. Park Street/Clement Avenue
9. Park Street/Tilden Way–Lincoln Avenue
10. Tilden Way–Fruitvale Avenue/Blanding Avenue-Fernside Avenue

11. High Street–Gibbons Drive/Fernside Boulevard

Response: As traffic congestion increases with development on the Northern Waterfront, traffic will divert to the Bay Farm Island Bridge and Doolittle Drive. Southbound traffic will choose to enter I-880 more to the south in order to escape the traffic being added to I-880 with new housing in Alameda, Brooklyn Basin, and replacement of the glass factory with housing at the Fruitvale Bridge. The intersection at Fernside and Otis, and at Island Drive and Doolittle are already congested intersections that will get worse and should be added to the study data.

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Reference Page 4.12-10 & 4.12-11

Pedestrian, Bicycle, and Transit Travel Conditions

Pedestrian Travel

Pedestrian access between Downtown Oakland and the west side of the island is provided by a narrow, raised walkway in the Posey Tube that is shared with bicycle traffic. Pedestrians can also take AC Transit buses across the estuary via the Webster or Posey Tubes. The sidewalks across the Park Street and Miller-Sweeney (Fruitvale Avenue) Bridges on the east side of the island also provide pedestrian access between Oakland and Alameda, but these are more than three miles from the project site.

Response: Distance from center of development (Chestnut Street) to Park Street, then on to the Park Street Bridge is 4189'. Distance from center of development (Chestnut Street) to Miller-Sweeney Bridge is 6313'. The walking distance to these two locations is not "more than three miles from the project site". (One mile is 5280 feet.)

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Reference Page 4.12-13

Transit Services

AC Transit provides fixed-route bus service in 13 cities and unincorporated areas in Alameda and Contra Costa counties, extending north to Richmond/Pinole, south to Fremont, east to Castro Valley, and west to San Francisco. Several AC Transit routes operate near the project site, as summarized in Table 4.12-5.

Response: Livermore, Pleasanton, and Dublin are located within Alameda County and are served by AC Transit so transit services provided "east to Livermore" would be correct.

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Page Reference 4.12-24

Impact Analysis

Impact TRA-1: The proposed project would not exceed the regional VMT per capita minus 15 percent. (*Less than Significant, with Mitigation*)

Within Alameda, the neighborhoods on the main island, including TAZ 948, where the proposed project is located, that have easy access and proximity to transit, commercial services, and other daily needs, have a lower average VMT per capita than the City average. The neighborhoods at Harbor Bay and Bay Farm Island, which are more suburban with fewer multifamily housing and less proximity to transit and services, have a higher per capita VMT than the City average.

Response: The higher VMT from Harbor Bay and Bay Farm Island has more to do with the higher per-capita income in this section of Alameda and not the housing type.

Map of household income by tract in Alameda
https://statisticalatlas.com/place/California/Alameda/Household-Income

People who have higher incomes tend to choose to drive rather than take public transit. The income levels required to purchase the new market rate homes in the Northern Waterfront developments will be within the higher percentile. While the location closer to public transit might entice more upper income earners to take such transit, a greater number will still prefer to drive their vehicles.

Young families that start or increase their family size find the need to have a family vehicle increases. Families that do not have a vehicle will soon add one with the first pregnancy.

8-64

Reference Page 4.12-26

Mitigation Measure TRA-1:

Residents of the non-townhome units, who wish to have cars, will be required to lease parking spaces on a monthly basis in a shared parking lot or structure. The cost of the parking will be "unbundled" from the cost of the residential unit, which provides a financial incentive for residents to reduce car ownership and take advantage of the AC Transit passes, which are "bundled" into the cost of their residential units. (The 162 townhomes will have private parking.)

• Unbundling parking for residents (assume each parking space would cost about $50 per month)

Response: If only 162 units of the development will have private parking, 598 will not. With unbundled parking many residents will choose to park on city streets, especially those households that posses more than one car. City streets in this area are already congested. 8-65

Reference Page 4.12-43

Impact TRA-11: The proposed project would generate temporary increases in traffic volumes on area roadways during construction. (*Less than Significant*)

Construction-generated traffic would be temporary and therefore would not result in any long-term degradation in operating conditions on roadways in the project site vicinity. The impact of construction-related traffic would be a temporary and intermittent reduction of the capacities of streets in the project site vicinity because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles. Most construction traffic would be dispersed throughout the day. In addition, prior to issuance of grading and building permits, the project applicant is required to submit a Traffic Control Plan.

Response: The construction period for the project is projected to take 7 to 10 years and possibly as long as 15 years. Seven to fifteen years is not "temporary" so construction disruption to traffic on Clement Avenue from the Fruitvale bridge to the project site will not be temporary. 8-66

Reference Page 4.13-3

Wastewater

Wastewater Treatment

EBMUD operates three wet weather facilities that handle excess sewage during storm events when flows exceed the capacity of EBMUD's MWWTP. The excess flows are largely caused by stormwater and groundwater leaking into the region's aging sanitary sewer collection pipelines and through improper connections that allow stormwater to flow into the sewer system (infiltration and inflow, or "I&I"). These storage basins provide plant capacity for a short-term hydraulic peak of up to 415 MGD during wet weather events.

When the wet weather flow capacity is exceeded, untreated sewage from the wet weather facilities gets discharged to the San Francisco Bay.

Response: If citywide wet weather is already causing local sewer lines to exceed the capacity of the sewer treatment system, the addition of 4000 to 5000 additional homes in Alameda is going to put more pressure on the system and cause more discharges into San Francisco Bay. A citywide problem should consider the cumulative effect of all projects and not one project at a time.

8-67

CHAPTER 5 Alternatives to the Proposed Project

5.2 Factors in the Selection of Alternatives

Reference Page 5-2

5.2.1 Project Objectives

Improve and Enhance the Maritime Commercial Marina

Maintain Alameda Marina as a working waterfront and retain and/or promote Alameda Marina's maritime uses by creating a Maritime Commercial Core that utilizes the maritime footprint more efficiently.

Encourage the retention and development of waterfront and maritime-related job and business opportunities that relate to the area's waterfront location.

Upgrade and rehabilitate facilities, unique buildings, as feasible, and provide land for existing maritime businesses, boat berthing and maintenance, boat storage, and waterfront commercial recreation businesses.

Response: Retaining a working boatyard at the Alameda Marina is a major consideration of city staff and city representation. Existing maritime businesses, boat berthing and maintenance, boat storage, and waterfront commercial recreation businesses do not comprise a working boatyard. While these listed maritime businesses are related to the Alameda marina and the berthing and dry storage of boats, they do not form an active repair boatyard.

8-68

As stated above, the selection of alternatives shall consider the basic objectives of the proposed project. As previously presented in Chapter 3, Project Description, the project objectives are to:

Improve and Enhance the Maritime Commercial Marina

- **Maintain Alameda Marina as a working waterfront and retain and/or promote Alameda Marina's maritime uses by creating a Maritime Commercial Core that utilizes the maritime footprint more efficiently.**

5. Alternatives Alameda Marina Master Plan 5-3 ESA / 160044.01 Draft Environmental Impact Report December 2017

- **Encourage the retention and development of waterfront and maritime-related job and business opportunities that relate to the area's waterfront location.**

• Upgrade and rehabilitate facilities, unique buildings, as feasible, and provide land for existing maritime businesses, boat berthing and maintenance, boat storage, and waterfront commercial recreation businesses.

• Provide sea level rise protection and other infrastructure upgrades to bring Alameda Marina up to date to make it a safe and accessible place.

Activate and Reconnect the Community to the Waterfront

- **Reconnect the community to the waterfront by extending the existing city grid into the site to allow for additional view corridors and access points through the site to the shoreline edge.**

• Create public amenities and opportunities for gathering spaces for existing and future community members by developing new open space areas within and along the shoreline edge with a Bay Trail component.

Create a Dynamic New Neighborhood for Everyone

• Provide housing of various types to fulfill the goals of the City's Housing Element and help meet the City's Regional Housing Need Allocation.

• Provide options for housing that meet the need of a wide demographic that includes universally designed units, affordable, rental, work force market-rate and market-rate units.

• Integrate Alameda Marina's core maritime uses, including those governed by the Tidelands Lease, with renovated and new compatible uses, including various types of housing.

• Develop a mixed-use project that allows for a mix of compatible uses at the site.

• Provide opportunities for the improvement of the existing boat Marina and shoreline infrastructure; maintain and generate new jobs; and create better and new open space and recreational areas.

Provide Financially Sound Development

Reference Page 5-3

• Develop an economically sustainable and financially sound new development that can fund the construction of the public facilities and services that are needed to serve the plan area and achieve General Plan objectives, while avoiding any financial impact on the City's ability to provide services to the rest of the City.

● **Fulfill the project sponsor's obligations under the Tidelands and Marina Lease.**

Response: Both the developer and city staff have repeatedly stated, "The only reason to be doing this project is to pay for the bulkhead repair and/or replacement." This would allow the fulfillment of the last Objective listed above within this DEIR – "to fulfill the project sponsor's obligations under the Tidelands and Marina Lease." The lease states Pacific Shops (developer) "will facilitate the redevelopment of the property (Tideland Trust Lands) and certain adjacent "Fee Property". The lease requires "demolition and/or replacement and/or comprehensive rehabilitation of existing improvements on the property and Fee Property and construction of a higher-value project therein." The lease does not say the project must demolish all the buildings to build housing units. The RHNA allotment proposed for the property equals 396 housing units.

A more realistic statement of the objective of this project would be to garner enough funding to repair or replace the bulkhead and to meet the Regional Housing Needs Assessment (RHNA) required number of housing units (396).

When viewing the alternatives described in the DEIR and applying the realistic objective statement, the following could be met if the correct number and combination of market rate with required 15% reduced income level of housing were built on the eastern 9.75 acres of the Property:

Land Use	*Alternative 1: Preservation Alternative*	*Alternative 2: Extensive Adapted Reuse Alternative*	*Alternative 3: Reduced Project Alternative*
Funding to repair or replace bulkhead	*Yes*	*Yes*	*Yes*
Meet RHNA	*Yes*	*Yes*	*Yes*
Substantially avoids or lessens SU Impact/s	*Yes*	*Yes*	*Yes*

See **TABLE 5-1 DESCRIPTION OF PROPOSED PROJECT AND ALTERNATIVES SELECTED FOR EVALUATION**

8-69

When the lease was introduced to the Alameda City Council on May 1, 2012, then City Manager John Russo wrote: "Alameda Marina proposes to develop a mixed use project where the marina and marine-related industries are an integral component. The project may include a housing component and potentially some office, high-tech, biotech and retail. The final components will be determined based on the economic market."

Table 3-1 on Page 3-11 states that 53,985 square feet will be dedicated to "Maritime (includes boat yard/flex space)". This is not enough square footage to run a viable boatyard and would doom the boatyard to failure.

8-69 cont.

Reference Page 5-5

Higher Density/More Housing Units

The current housing shortage within the Bay Area would suggest that proposed projects should consider alternatives whereby the supply of housing would be increased to the greatest extent possible. For purposes of the proposed project, providing more housing units on the site beyond the 779 proposed could conceivably be accomplished in a number of ways: 1) decreasing open space and other areas of the proposed master plan and placing housing there instead; 2) decreasing commercial areas and substituting that use with more housing; 3) increasing the number of floors on buildings, thus providing more space for additional units; and 4) a combination of some or all of the above.

There are a number of constraints, however, that make a higher density development on the site infeasible, or substantially undesirable. Decreasing open space, for example, would conflict with established City polices concerning provision of open space. Decreases in shoreline public open space and public access would also conflict with San Francisco Bay Conservation and Development Commission (BCDC) policies and requirements.

Further reducing or eliminating commercial uses on the site and replacing those uses with housing would conflict with the public's stated desire (as conveyed during public hearings on the project) to retain maritime commercial uses and maintain a working waterfront on the site. Were these uses to be displaced from the site, they would presumably need to be relocated elsewhere, which would serve to create new impacts at those locations.

Soils on portions of the site and the ability of those soils to support taller and correspondingly heavier buildings present a constraint on constructing taller buildings with more floors and more units. Much of the site is artificial fill overlying bay mud. These soils place limitations on the types of structures that can be placed upon them. These limitations can potentially be overcome with specialized construction techniques, but those techniques substantially increase the cost of construction, and would therefore make the project financially infeasible.

Response: Since the real purpose of completing this project is to fund the replacement/repair of the sea wall, a financial analysis should be completed to test the specialized construction cost with the expense of the sea wall.

8-70

DEIR 5.2.3 Alternatives Considered but Rejected from Further Evaluation

Reference Page 5-6

Off Site Location

…"Because the basic purpose of the proposed project is to redevelop the Alameda Marina site and to fund improvements to the shoreline marina infrastructure there, an alternative site would not be feasible as an alternative to the proposed project. The purpose of the proposed project is to determine the best uses and development standards and requirements for the project site. Consideration of an alternative that analyzes the impact of developing a different property located at some other location would have no practical use or relevance to the decisions that must be made about the development of this particular piece of property. Therefore, an alternative site is not considered a feasible alternative to the proposed project, and is not analyzed in this EIR."

Response: While it is true that this DEIR's purpose is to evaluate the development of this particular site, is it possible that the city of Alameda could exchange land at the Alameda Point that is owned by the City with the land that is at Alameda Marina which is owned by Bay West? Alameda Point Partners have not made progress in obtaining funding for Site A and it would be of an appropriate size and waterfront location which could stimulate development at Alameda Point and provide the city with housing units and the developer with the funds to repair the bulkhead at Alameda Marina, which is the purpose of completing this project.

8-71

Preservation Alternative

Reference Page 5-7 & 5-11

"Under this alternative, mixed-use pedestrian-oriented development at Alameda Marina could only be developed on the eastern and western quarters of the site, leaving more than half of the project site in its historic commercial and industrial configuration. The historic structures and the overall layout of Alameda Marina was originally designed for the movement of large equipment and industrial operations, not for pedestrians and bicyclists."

Response: Whether or not the space was designed for pedestrians and bicyclists, pedestrian and bicyclists currently use the site all day every day. People walk their dogs there and bikes are used throughout the site.

8-72

"The spacing between buildings, the size of the streets and the orientation of buildings were all designed for industrial and commercial uses, not mixed-use development."

Response: The buildings house a variety of businesses creating a true mixed use complex at Alameda Marina that was organically populated over the years.

8-73

"By prohibiting development within the central core and the southern periphery of the site, this alternative would limit development opportunities at the heart of the project. Although this alternative would achieve more of the project objectives than the No Project Alternative, it would not achieve the project objectives as well as the proposed project because it would limit private reinvestment and redevelopment, thus it is less likely to attract sufficient private capital to fund the necessary public infrastructure improvements, build the planned open spaces, and rehabilitate the shoreline and marina infrastructure."

Response: In addition to the private capital to fund necessary public infrastructure improvements, Pacific Shops, as part of its lease obligations for the Tidelands Trust property, is required to maintain the bulkheads and docks of the marina as part of their rental agreement. They are required to spend $1.5M by the end of the first 15 years and $500K at the end of every 5 year time period for maintenance of the marina and shoreline. Pacific Shops keeps 90% of the monthly slip fees they collect from the 530 slip marina facilities – income that they can invest into the project in addition to their earnings on 475 housing units they can build in the Preservation Alternative. The base rent they pay plus percentages of wet slip fees and building rents collected are to be put into Tidelands Trust Funds by the city which are additional funds that can be used to fund the rehabilitation of the shoreline and marina infrastructure.

8-74

As stated earlier, grants and loans are available to assist the City with necessary improvements.

Extensive Adapted Reuse Alternative

Reference Page 5-19

"This alternative would provide for retention of the existing contributing structures of the Alameda Marina Historic District, along with new development within the eastern and western quarters of the site, similar to that of the Preservation Alternative. This alternative would differ from Alternative 1 in that it would allow for adaptive reuse of the existing historic structures on the site rather than utilizing them solely in their current commercial/industrial use. Under this alternative, about 40 percent (100,000 square feet) of the existing structures in the central half of the site would be converted to residential uses, with about 60 percent (150,000 square feet) being retained in their existing commercial/industrial configuration. Such an alternative would provide a similar quantity of

commercial/industrial uses as that provided under the proposed project, while also providing for some expansion of residential uses within the historic core of the site. Under this alternative, it is assumed that the conversion of some of the existing commercial/industrial structures on the site to residential uses could provide for an additional 100 residential units. Together with the 475 units that would be constructed in the eastern and western quarters of the site, this alternative would provide for the construction of approximately 550 total residential units."

Response: A concern from a preservation view, while not discussed in the DEIR, is that the developer has proposed converting the large Alameda Marina warehouse which is eligible for the National and State Lists of Historic Resources into a 4 floor commercial complex thus destroying the integrity of the interior of the structure.

8-75

Reduced Project Alternative

Reference Page 5-26

"The Reduced Project Alternative assumes a mix of development across the site, but at a lower density than that of the proposed project. Rather than a mix of multi-family structures and townhomes, this alternative would include a mix of townhomes and detached, single-family residences. The development of new residential uses could occur throughout the site, and would not necessarily preclude the demolition of existing historic structures to make room for new residential uses. Under this alternative, approximately 100 townhomes would be constructed, and 80 detached single-family residences. Approximately 150,000 square feet of commercial and industrial uses would remain at the site. Although the economic feasibility of this alternative would be required to be confirmed (ability of this alternative to fund the necessary public infrastructure improvements, build the planned open spaces, and rehabilitate the shoreline and marina infrastructure, as well as the ongoing maintenance costs of the public improvements once constructed), this alternative is potentially feasible. The Reduced Project Alternative would generally meet all of the objectives of the proposed project, in that it would transform much of the site into a new waterfront residential community, provide access to waterfront open space for public use, and generate capital investment in the aging marina and shoreline infrastructure. However, conservatively presuming that this alternative would be economically feasible, it would achieve the last objective to a much lesser extent than the proposed project."

8-73

Response: If this alternative's economic feasibility has not been determined, we do not know if the project objective to provide funding for the bulkhead is possible. It does not meet the criteria of the General Plan's or the Planning Board's requirement to preserve historic buildings. The city of Alameda has several new waterfront residential communities

8-76

already approved or being planned and the marina currently has great open space being enjoyed by pedestrians and bicyclers who have access to the estuary vistas.

8-76 cont.

Reference Page 5-37

5.5 Environmentally Superior Alternative

CEQA requires that that a second alternative be identified when the "No Project" alternative is
the environmentally superior alternative (CEQA *Guidelines*, Section 15126.6(e)). Therefore, the **Preservation Alternative** would be the Environmentally Superior Alternative for the purpose of this analysis, even though it would still result in some of the significant and unavoidable impacts associated with the proposed project.

Response: The Preservation Alternative would fulfill the desired outcomes for the project:

- *Repairs the bulkhead/shoreline*
- *Retention of the necessary space for maritime business including retaining the working boatyard which supports good paying jobs*
- *Construction of necessary housing for Alameda*
- *Preservation of an important historical section of Alameda for future generations.*

8-77

Appendix A NOPs and Comments

160044.01 Alameda Marina MP DEIR Appendix DEC2017.pdf states:

Section: Infrastructure and Shoreline Page 4 Para. 3

Flood and Sea Level Rise Protection

"Overall, the infrastructure supporting the maritime uses and protecting the shoreline has weakened to likely unsafe conditions, posing life and safety concerns. In addition, sea level rise poses a potential approximately 24 inch rise which the existing infrastructure does not address. The 24 inch rise prediction is based upon a risk assessment for the life of the project. In addition, the land/water interface presently does not meet modern seismic resistance criteria. Engineering surveys conducted in June 2016 of the shoreline edge resulted in the decommissioning of one of two boat hoists on the site.

Flood and Sea Level Rise Protection
The shoreline would be reconstructed to achieve an elevation that provides built-in sea level rise protection for the waterfront and the project site. Most of the shoreline would be reconstructed as a revetment, sloped with rip -rap. Certain shoreline areas adjacent to existing buildings to be preserved or where other site constraints are present would require installation of a new seawall/bulkhead. Proposed elevations of the public access areas and proposed building foundations would be established to provide built -in protection against a minimum of 24 inches of sea level rise. Shoreline design would also accommodate future adaptive measures for potential future sea level rise in excess of 24 inches. This built-in protection would be estimated to provide protection for 60 to 75 years."

Response: The developer will receive a Development Agreement with the city of Alameda that will cover at least 15 years. The lease on the Tideland Trust property that the developer, DBA Pacific Shops, holds with the city will be in effect until 2037 (19 years left on a 25 year lease) with the ability to extend an additional 41 years, that is, until 2078. Do we expect the housing units located on this property to have a life expectancy of only 60 years? What if the bulkhead is not sufficient to meet the rising sea or the rip rap fails? Will the city of Alameda, i.e. tax payers, be expected to pay for a new bulkhead? By that time, any development fees paid to the city will have been spent. BCDC estimates a 66" sea level rise by 2100 and the state of CA updated its estimate to 85" in April of 2017.

This projected sea level rise translates into a need for higher sea walls, higher raising of the ground elevation, on fill, and in an area that is within full proximity of two earthquake faults, Loma Prieta and Hayward.

In addition to the bulkhead height to combat sea rise, if the developer must add dirt to increase any elevation in order to (1) meet the demands of combating sea rise, and (2) meet the demands of required ground for foundation purposes beneath housing structures, the added weight and compaction action push out the "toe" of the land underwater making the overall structures weaker.

8-78

Developers often receive entitlements and then do not build for a number of years afterwards. Expected Sea Level rates should be used at the time when building actually commences, not when entitlements are given. Also, the entire bulkhead improvements need to be completed prior to any permits being issued for housing units instead of in phases as building is done. This is a requirement in the Encinal Terminals project. Since bulkhead improvements are the reason for the project, this arrangement protects the city from the developer starting work and not completing, which would leave the bulkhead improvements unfinished. It is understood that increased building cost, for whatever reason, will result in a higher number of housing units being built to cover the expense of the bulkhead repair and replacement.

8-78 cont.

Alameda's General Plan currently states (as it applies to Flooding and Sea Level Rise and Alameda Marina):

8.3 FLOODING AND SEA LEVEL RISE

Due to its relatively flat topography and proximity to the San Francisco Bay, Alameda is uniquely sensitive to flooding caused by high tides, storm events, and climate change induced sea level rise. The City of Alameda normally experiences tides that range from -0.2' Mean Lower Low Water (MLLW) to +6.4' Mean Higher High Water (MHHW), based on the NAVD88 datum. (The NAVD88 datum or zero elevation is approximately the same as the elevations used in local tide tables.) The highest tide of the year, or "king tide," normally occurs during the winter months of November thru February, and is usually about 7.4'. Every year, there is a 1 percent chance the king tide will exceed 9.4'. The ten highest king tides recorded by NOAA in Alameda for the last 75 years measured 8.6' to 9.5' elevation.

Global warming and sea level rise will have severe long-term effects on Alameda. The Bay Conservation and Development Commission (BCDC) and Alameda County Flood Control Water Conservation District predict a likely 12-inch increase in sea level on the Alameda County coastline by 2050, and a likely 24-inch increase in sea level in the same area by 2100 (Adapting to Rising Tides: Alameda County Shoreline Vulnerability Assessment, May, 2015). The study identified a 66-inch inundation level when combining the 24-inch sea level rise with a 100-year storm event (see Figure 8-3). In addition to residential and commercial properties, the Webster and Posey Tubes, Ron Cowan Parkway and the Alameda Gateway Terminal Ferry and other major public improvements are vulnerable to inundation.

SN-15.Develop sea level rise adaptive strategies for different areas of the City for public discussion and evaluation, including but not limited to: avoidance/planned retreat, enhanced levees, setback levees to accommodate habitat transition zones, buffer zones, beaches, expanded tidal prisms for enhanced natural scouring of channel sediments, raising and flood proofing structures, and/or provisions for

additional floodwater pumping stations, and inland detention basins to reduce peak discharges.

a. *Develop for public discussion and evaluation potential financing strategies and partnership opportunities with regional and state agencies such as the Oakland International Airport, and other agencies to fund and build selected adaptive strategies.*

SN-16. Protect and upgrade public infrastructure, including but not limited to streets, wastewater systems and pump stations, stormwater systems and pump stations, and electric systems and facilities, to ensure capacity and resilience during storm events, high tides, and sea level rise,and to decrease the chance of flooding of nearby streets, utilities, and private property.

SN-17. Reduce the risk of tsunami inundation through public tsunami education, with special emphasis in low-lying shoreline properties, including the maritime communities and marinas

SN-18. Design street rights-of-way, parks, other public spaces, street trees and landscaping to be resilient to temporary flooding.

SN-19. Require new development adjacent to the shoreline, lagoons and low elevations to plan for 50 years of sea level rise. Ensure that the design of future developments incorporate flood protection measures to protect improvements from a 100-year storm event and anticipated sea level rise.

a. *Require new development to provide adequate setbacks along waterfront areas for the future expansion of seawalls and levees to adapt to sea level rise.*

SN-20. Require the creation and maintenance of easements along drainage ways necessary for adequate drainage of normal or increased surface runoff due to storms.

Transportation

Per the developer's Master Plan: "Bicycle lanes are proposed on Clement Avenue in accordance with the Alameda Bicycle Master Plan. The proposed internal street network and Bay Trail segment within the project site would allow for bicyclists to access the site's commercial core, residential neighborhoods, waterfront, and open spaces"

Alameda's General Plan currently states (as it applies to Transportation and Alameda Marina):

4. TRANSPORTATION ELEMENT

Virtually every street in Alameda is a residential street. Therefore, transportation decisions need to balance the goals of moving traffic smoothly and quickly with Alamedans much loved quality of life. As they have in previous Transportation Workshops, including the 1990 General Plan update meetings, Alamedans have made is clear that they are willing to forgo high speed streets in order to accommodate the community aspects that are fostered by slower speeds.

Policies
4.1.3.a Consider emergency response goals in long-range transportation planning and while designing current projects.

4.1.3.b Work with public safety agencies to adequately consider emergency response needs.

Chapter 4 - 4 - Transportation Element

4.1.3.c Develop a network of emergency response routes, balancing emergency service needs with vehicular, pedestrian and bicycle safety consistent with the adopted street classification system.

3. Develop shoreline access design guidelines.
Objective 4.4.2: Ensure that new development implement approved transportation plans, including the goals, objectives, and policies of the Transportation Element of the General Plan and provides the transportation improvements needed to accommodate that development and cumulative development.

Policies

4.4.2.a Roadways will not be widened to create additional automobile travel lanes to accommodate additional automobile traffic volume with the exception of increasing transit exclusive lanes or non-motorized vehicle lanes.

4.4.2.b Intersections will not be widened beyond the width of the approaching roadway with the exception of a single exclusive left turn lane when necessary with the exception of increasing transit exclusive lanes or non-motorized vehicle lanes.

Response: The addition of approximately 2,000 more people living in developments along Clement Avenue, a truck route between Park and Grand Streets, invites more opportunity for the need of emergency vehicles to transport people to healthcare facilities. Between the volume of lives and safety concerns, emergency routes should be planned and evaluated for timely response in the event a healthcare or accidental crisis occurs.

8-79

Conclusion:

In conclusion, Save Alameda's Working Waterfront (SAWW) advises the city of Alameda to strongly consider the Preservation Alternative to this project which creates enough housing units to meet the RNHA numbers assigned to the site. SAWW believes the profit generated by these units should provide enough revenue to rebuild the bulkhead and utilities. In the event more funding is necessary, both the developer and the city should look into infrastructure grants and low cost loans to complete both the bulkhead and the electrical/sewer to enable the marina to allow the maximum number of live aboard spaces (53 in the 530 slip marina) to help meet the affordable housing needs of the city.

Further, SAWW would like all the housing units to be located on the eastern portion of the property with the understanding that more units may be necessary to cover additional building costs due to soil conditions. This may require more vertical development.

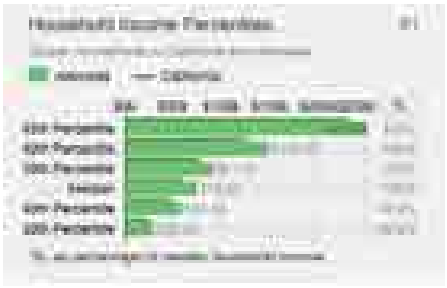
8-80

Attachment 1

AFFORDABILITY OF HOUSING IN ALAMEDA

Affordable: 80% of area median income or less
Workforce: 80%-140% of area median income
Market Rate: 140%-260% of area median income
Luxury: 260% + of area median income or more

https://statisticalatlas.com/place/California/Alameda/Household-Income



Median Income$74,600 = $6216 per month Income
60th Percentile Median Income $91,800 = $7650 per month income

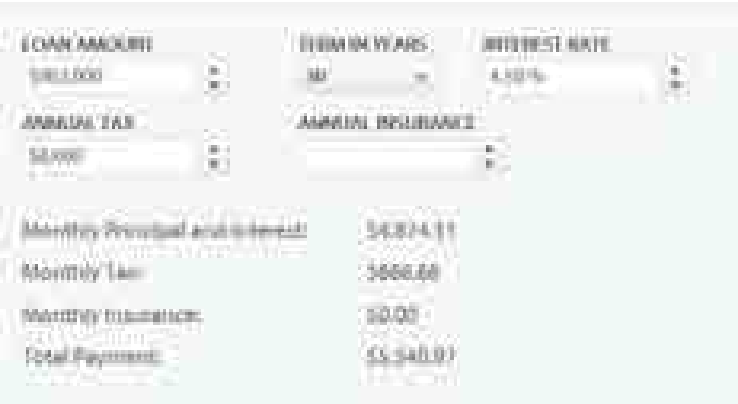
For a $600,000 property:
Median Income$74,600 = $6216 per month. Income with a monthly mortgage + tax payment would be equal to 59.6% of monthly income.

60th Median Income $91,800 = $7650 per month. Income with a monthly mortgage + tax payment would be equal to 48.4 of monthly income.

For an $800,000 property:

Median Income$74,600 = $6216 per month. Income with a monthly mortgage + tax payment would be equal to 75.9 of monthly income.

60th Median Income $91,800 = $7650 per month. Income with a monthly mortgage + tax payment would be equal to 61.7% of monthly income.



Per the chart above, the average 3 bedroom home in Alameda costs $962,000

For a $962,000 property:

Median Income$74,600 = $6216 per month. Income with a monthly mortgage + tax payment would be equal to 89% of monthly income.

60th Median Income $91,800 = $7650 per month. Income with a monthly mortgage + tax payment would be equal to 72% of monthly income.

Note: All property taxes were estimated using base tax plus approved bond issues for a total estimated tax. Calculations also do not take into consideration any down payment which would have to be considerable to get the $600,000 mortgage below the 48.9% of monthly income.

Attachment 2 The History of the Prevention of Fouling

Marine Fouling and Its Prevention
Contribution No. 580 from the Woods Hole Oceanographic Institute

George Banta Publishing Co., Menasha, WI
Original Publishing Date 1897

Response: Fouling is a condition that happens to the hulls of boats that sit in the water. The bottoms of sailboats need to have the hulls scraped every 1 to 3 years. This requires the boats be lifted out of the water and worked on in appropriate areas to collect the residue from the scraping.

This history covers the many materials, some very hazardous, that have been used on boat hulls to prevent fouling.

Boat hull scraping has been a service provided at the Alameda Marina for many decades.

Attachment 8

Marine Fouling and Its Prevention,
Contribution No. 344 from the Woods Hole Oceanographic Institution

George Banta Publishing Co., Menasha, Wis.

1077

CHAPTER 11

The History of the Prevention of Fouling

The effects of fouling have only recently been subject to systematic scientific inquiry. Its occurrence, however, has been recognized from very ancient times. Although written records of the treatment of ship bottoms as early as the 5th century B. C. have been found, the search for an antifouling surface undoubtedly began with even earlier ships about which we have little information.

Historically, the development of these surfaces falls readily into three parts: (1) the repeated introduction and use of metallic sheathing, culminating in the discovery of copper sheathing as an effective antifouling surface; (2) the invalidation of the use of metallic copper on iron hulls because of galvanic effects, which followed the development of iron ships; and (3) the eventually successful efforts to devise antifouling paints that, in the case of iron or steel hulls, could be applied over an anticorrosive coating.

Numerous other antifouling devices were continually being tried or suggested. In periods of peace, the tendency has been to use the current antifouling system regardless of its efficiency. Periods of war have always intensified experimental investigation.

EARLY SHIPBOTTOM SURFACES

The history of both ships and sea power is older than written records, some of the great maritime nations of the ancient world being known to us only through the records of a later period. But even the earliest records, although they say little or nothing about shipbottom treatment, tell of large fleets and big ships, of long voyages and naval battles. We can assume, therefore, that fouling was a problem to ancient ships even though we do not know what measures were taken against it.

The early ships and fleets were larger, and the voyages longer, than is generally realized. Ancient Egyptian ships were sometimes 100 feet long (*2*) and traded as far as the land of Punt (Somaliland) (*22, 77*). The Phoenicians in 1000 B. C. were reputed to have circumnavigated Africa, voyaged to Cornwall in Britain for tin, and as early as the 6th century B. C. explored the west coast of Europe (*60, 73*). Early sea fights involved fleets of hundreds, and sometimes thousands, of ships (*52, 85, 93*). While the warships of the ancient world were often intended to be beached, or even transported overland, the merchant ships were not and were correspondingly larger (*22, 93*). An Egyptian corn ship at Piraeus in Roman times was described by Lucian (*66*) as "180 feet long, over a quarter of that in width, and 44 feet from deck to keel,[1] with a crew like a small army, and carrying as much corn as would feed every soul in Attica for a year".

The earliest mention of fouling that we have found is a casual reference to it in connection with the Echenais or Remora; the fabled "ship-stopper". This comparatively small fish, mentioned by Aristotle as early as the 4th century B. C., is credited by both ancient and modern writers with being able to slow down ships going at full speed, or even to stop them entirely as if they were tied to one spot in the ocean. In commenting on this belief, Plutarch (*67*) pointed out that fouling rather than the Echenais might be responsible. He stated that it was usual to scrape the weeds, ooze, and filth from the ships' sides to make them go more easily through the water. In 1559 Laevinus Lemnius (*64*) wrote "shell-fish and a little fish called Echenais stick so fast that they will stop ships, and hinder their courses, therefore our men use to rub them off with sharp brushes, and scrape them away with irons that are crooked for the purpose, that the ship being tallowed and caressed well and smoothly may sail the faster".[2]

The ancient Phoenicians and Carthaginians were said to have used pitch and possibly copper sheathing on their ships' bottoms (*69*). Wax, tar, and asphaltum also have been used from very early times (*21, 35, 77, 95*). We can not be certain of the purpose of these surfaces even in later times when written records exist. While it is probable that some of them were at least in part an attempt to prevent fouling, they may also have been applied for water-tightness, to achieve a smooth surface, for structural strength, or, particularly in the case of metallic sheathing, as protection against shipworms.

There is a record of the use of arsenic and sulfur mixed with oil in 412 B. C. (*27*). The Greeks are known to have used tar *or* wax, and, at least as

[1] This ship, the Isis, was not unusually large. Ships of 1,000 tons were up to 300 feet long. Even a merchantman, the S.S. Great Eastern was 700 feet in length in the early 1860's.

[2] See Lodge (*60*) for a full discussion of this subject.

early as the 3rd century B. C., lead sheathing (*77, 95*). The wax was applied hot and was burnt into the hull with hot irons, a process that became known as "encaustic" or as "ship-painting". According to Pliny, coatings of this nature applied to vessels "will never spoil from the action of the sun, winds, or salt water" (*81*). When lead sheathing was used, it was attached to the ship's hull with copper or gilt nails, usually over an insulating layer of paper or cloth (*4, 21, 77*). According to Chatterton (*22*), this suggests strongly that the corrosive effect of lead on iron, which finally forced the discontinuance of lead sheathing altogether, was recognized even then.

In spite of its corrosive action, lead sheathing was perhaps the material most frequently tried for the protection of ship bottoms prior to the 18th century. Repeated attempts to use it had been made from the time of the ancient Greeks. The ships of Archimedes of Syracuse (287–212 B. C.), for example, were sheathed with lead and fastened with heavy copper bolts (*9, 95*). The Romans also used lead sheathing (*54*), and several of their ships, with the lead sheathing intact, have been recovered within comparatively modern times (*11, 106*).

Although forgotten for several centuries, lead was used in 15th century England. In the reign of Henry VI (1421–1471), a report of a ship sent on a voyage of discovery records as an "invention" that "they cover a piece of the Keeles of the Shippe with their sheets of Leade, for they have heard that in certain parties of the ocean a kind of wormes is bredde which many times pearseth and eateth through the strongest oake that is". While lead sheathing is a poor antifouling surface, it would be, as this 15th century report suggests, a good protection against ship worms. This report suggests, also, that in England lead sheathing was not usually used at that time. Its use was said to be copied from contemporary Spanish ships (*22*).

Leonardo da Vinci designed a rolling mill in 1500 for making sheet lead (*51*). Early in the 16th century, Spain officially (*34*) adopted lead sheathing, and its use spread to France and England (*34*). In the reign of Charles the Second (1660–1685), a monopoly was granted to Howard and Watson for the use of milled lead for sheathing; and it was ordered that no other sheathing be used on His Majesty's ships (*31, 49*). Accordingly, the *Phœnix* and some twenty other ships were sheathed with lead fastened with copper nails (*16*). Shortly after, however, complaints were made of the corrosive effect of lead on iron,[1] the *Plymouth* and other ships having had their rudder irons so eaten as to make it unsafe for them to go to sea (*68, 78*). In 1682, a commission was appointed to make an investigation, and on the basis of its report, lead was officially abandoned by the Admiralty (*79, 104*).

In spite of the commission's findings, rollers for milling lead into sheets for sheathing were patented in 1687. Even after the successful introduction of copper sheathing in 1761, lead was still occasionally tried. In 1768, the *Marlborough* was sheathed with lead; but two years later, when she was docked at Chatham, the iron fastenings were found to be so deeply eaten away that the lead was stripped off and replaced with wooden sheathing (*104*).[2]

In the time of Henry VIII (1509–1547) and during the 17th century, wooden sheathing was put on over a layer of animal hair and tar. This was reported to prevent the worms from penetrating to the planking, although it greatly increased the cost of building (*22, 30, 104*).[3] An outer wooden sheathing was not new. Although it is said to have been introduced by Hawkins under Queen Elizabeth, it appears to have been used in the 15th century (*22, 49*). In the 18th century, after lead, with which it apparently alternated, had been pronounced a failure, wood sheathing was again in general use (*12, 49*). It was sometimes filled with iron or copper nails having large heads, put in so closely that the heads were touching and formed a kind of metallic sheathing (*38, 69*). This wooden sheathing also was often painted with various mixtures of tar and grease; with sulfur, oil, "and other ingredients"; or with pitch, tar, and brimstone (*12, 18, 38, 49*).

Other early shipbottom surfaces besides wood or lead sheathings were also recorded. The Vikings of the 10th century A. D., although they generally painted their boats above the water line, used nothing on their ships' bottoms (*36, 84*). They tell in one of their sagas, however, of a small boat that was protected from the worms by "seal tar" (*91*). In Aragon, a sheathing of hides was used in the 14th century (*34*). Pitch was commonly used from the 13th to the 15th centuries, sometimes mixed with tar, oil, and resin, or with tallow (*11*). The great Venetian fleets of the 15th century used tar (*63*).

Morison (*74*), in his life of Columbus, says that

[1] Lead was also objected to because it was soft and easily damaged by the shot (*68*), and because unjacketed it was dead weight (*68*).

[2] Allen is saying that the Marlborough was docked, not at Chatham, but at Sheerness, where the lead sheathing was found to have been nearly all torn away by its anchors (*68*). (See also Pitcher (*78*).)

[3] It was also believed to interpose the ship's resistance (in 1634, the officers of a fleet under Sir Thomas Allen failing not to attack the Algerian pretended that they might not have their vessels "so encumbered" (with sheathing); as they would be unable to overtake the light-sailing pirates); records of the source (*104*). A letter from Holland in 1666 pointed out that "the teal, that is, two inch plank of fir which is used to sheath ships, is much subject to the worm" (*7*).

the ships' bottoms of that period were "covered with a mixture of tallow and pitch in the hopes of discouraging barnacles and teredos"—in spite of which the vessels had to be careened every few months to have the marine growths removed. In the time of Vasco da Gama (1469-1524), the Portuguese charred the outer surface of the ship's hull to a depth of several inches; and several centuries later, in 1720, the British built at least one ship, the *Royal Williams*, entirely from charred wood (*7, 69, 86*).

With the discovery of the antifouling qualities of copper sheathing, however, and the subsequent widespread use of copper, these earlier shipbottom surfaces fell quite generally into disuse.

COPPER SHEATHING

The first successful antifouling surface to receive general recognition was copper sheathing. Although it has been stated that copper sheathing was used in ancient times (*55, 86*), the evidence is not clear, and its use as sheathing on ships' bottoms is denied by some authorities (*22, 77*). The actual ships that have been recovered have been lead sheathed (*11, 104*). The first certain use of copper on ships seems to have been in the bronze-shod rams of the Phoenician warships and as copper fastenings in the Greek and Roman boats, rather than as antifouling surfaces.

More extensive early use of copper is certainly possible. Prehistoric civilization knew copper and had shown great technical ability in casting and working copper and bronze for statues and other art work (*72*). Copper foundries of the 10th century B. C. have been excavated (*41*). Copper and tin were a staple in trade in 800 B. C., and the need for tin with which to make bronze was one of the chief reasons for the early voyages to Britain.[1] Thin sheets of copper were known to be in use for roofs from the 12th to the 15th centuries (*72*). However, no authentic case of sheathing ships with copper prior to the 18th century has been established. If copper sheathing was known to the ancients, it is difficult to understand why its use was lost while that of lead sheathing persisted.

The use of copper as an antifoulant was suggested as early as 1625 when a patent was granted for a composition that very probably contained some form of copper (*5, 83 84*). In 1728, another patent was obtained for "a new method of sheathing and preserving the planks of ships" consisting of "reviled" copper, brass, tin, iron, or tinned plates, although no record of its immediate use has been found (*79, 104*). Later in the 18th century, wooden sheathing was filled with copper nails whose heads touched each other (*38, 69*). In spite of these desultory efforts, apparently it was not until the experiment of H.M.S. *Alarm* that the antifouling qualities of copper were recognized.

In 1758 H.M.S. *Alarm*, a 32-gun frigate, was sheathed with thin copper "for an experiment of preserving it against the worm" (*70, 75*). This first authenticated use of copper sheathing was, therefore, probably as a substitute for lead or wood sheathing, and largely for protection against ship worms. The report of the results of this experiment, made on her return from a voyage to the West Indies, is reprinted as an appendix to this Chapter.

The report took note of the plates washed off the bow of the ship where they were exposed to the full force of the sea, and the amount of waste due to the wear of the water. It recorded the soundness of the planking except for one spot that had been rubbed bare at the start of the voyage. It remarked on the freedom of the bottom from fouling, except on the rudder where iron nails had been used purposely to vary the experiment. It notes, with surprise, the corrosion of the iron where it had contacted the copper. Finally, it compared the cost of the copper with the cost of wooden sheathing, finding them about equal.

The report stated three conclusions: that copper was a protection against worms, that it did not injure the planking, and that it did not foul. These advantages were considered so important that further experiments were recommended in which thicker plates and copper nails were to be used throughout; the copper to be insulated from, or kept at a distance from, the iron.

A second ship, the *Aeneas*, was coppered by the British Admiralty in 1765; a third, the *Slag*, in 1770; four more in 1776; and nine in 1777.[2] Within the next three years the use of copper became general throughout the British Navy (*38, 69*). In 1779, the British felt that it would enable them to overtake the faster sailing French vessels that were subject to fouling (*28*). By 1780, two boats had been built in England entirely of copper, "without any planking whatever" (*104*).

The first American naval vessel to be coppered was the frigate *Alliance*. This was done in 1781,

The ships built under the Naval Act of 1794 for the United States Navy were also coppered (70). The *Constitution* was sheathed in 1795 with copper imported from England (40). Robert Fulton's submarine built on the Seine for Napoleon in 1801, was also copper covered (98). The clipper ships of 1843–1869 (25), and the later American whalers were coppered as a matter of course (24).

Although copper was the best antifouling surface known, it was by no means perfect. Its antifouling action was not always certain; and its corrosive effect on iron nearly caused it to be discontinued by the British Navy within a few years of its adoption. Although this was corrected by the use at first of mixed-metal and later of copper bolts, its excessive rate of wear proved a heavy expense. To reduce this expense as much as possible, the British Admiralty started the manufacture of copper sheathing at Portsmouth dockyard in 1803, re-working old copper sheathing and experimenting with different copper ores, and with ways of treating them. In 1821, they sought the advice of the president and council of the Royal Society to determine the best method of manufacturing copper and of preventing, if possible, its excessive wear (10, 38, 49).

In 1824, Sir Humphry Davy read two papers before the Royal Society detailing the results of his experiments on these questions (31, 32). He showed that the corrosion was due, not to the impurities in the copper as had been supposed, but to the sea water reacting with it. Knowing that copper was weakly positive in the electro-chemical scale, he considered that if it "could be rendered slightly negative, the corroding action of sea water upon it would be null." This he accomplished by attaching pieces of zinc, tin, or iron to the copper. By experiment, he found that a piece of zinc as small as a pea would protect 50 square inches of copper from corrosion; and that this was true regardless of the shape of the copper or of the position of the zinc upon it. After several experimental trials, the Admiralty adopted Sir Humphry Davy's protectors for ships in service, using cast iron surfaces of an area equal to 1/250 of the copper surface (33).[1]

The problem was not solved, however, for the protected copper fouled badly. Davy pointed out that the protectors prevented the solution of the copper through galvanic action, and that this was the reason why it fouled. He was thus the first to relate the antifouling action of copper to its rate of solution.

In 1831, after experimenting with shifting protectors, and protectors of mixed-metal, it was decided to use them only on ships lying in harbor. Shortly after, even this was abandoned, although experiments were still carried on with various foreign copper ores in the search for a more durable material (38, 49). The loss of copper was a serious expense, but it was felt that this was fully compensated for by the protection against teredos and fouling (49).

The introduction of iron hulls invalidated the use of copper sheathing because of the corrosive action of copper on iron. Throughout the 19th century, therefore, and in spite of the growing importance of iron in shipbuilding, it was frequently seriously suggested that a return be made to wooden ships that could be coppered (103). Even late in the century most warships and other ships that had to be at sea for long periods were still built of or sheathed with wood for that reason alone (45, 62, 71).

THE PROBLEM OF PROTECTING IRON HULLS

Iron hulls, appearing late in the 18th century,[2] developed so rapidly that in 1810 Sir Samuel Bentham proposed in Parliament that the British Admiralty start building ships of iron (104). At that time, however, there was widespread prejudice against the use of iron, which had not proved altogether satisfactory in shipbuilding, and the motion was voted down (37, 104). Nevertheless, expensive repairs, a serious scarcity of wood, and the introduction of steam engines were already forcing the change from wood to iron (5, 12, 35, 54, 88).

Wooden ships were limited in size and strength, and even with improved methods of construction could not compete economically with iron ships (1, 87, 101). Repairs frequently amounted to more than the original cost (26). Occasionally a ship had to be broken up because of dry rot without making even one sea voyage. The need for proper shipbuilding timbers was acute, and the lack of them often caused long delays, even to badly needed war ships. Nor were the large wooden ships strong enough to support the vibration of the early engines or the propellers (86, 104). It is question-

[1] Cladding was used in preference to zinc because it was cheaper and more easily prepared. Davy also advised successful applications of protectors in which the proportion of the protecting metal varied from 1/70 to 1/110. Differing with Davy's statement, Hay (49) says that the Navy Board ordered protectors of 1/90 of the copper surface.

[2] Although iron had been used even before the 15th century B. C., iron was not used for ships' plates much before 1800. See also Refers [45, 71, 87, 88, 89, 90].

able whether any of them could run their engines at full speed without serious results.[1]

In spite of this, it was not until the middle of the century that the terrible destruction caused to wooden ships by explosive shells at Sinope in 1853, and the success of the French armored floating batteries at Kinburn in 1855, finally proved to the Admiralty the necessity for iron ships (*14*). But aside from prejudice, there were two serious objections to the use of iron hulls: corrosion and fouling (*50*).

Early in the history of iron ships, it was found that copper sheathing could not be used because its electrolytic action corroded the hull dangerously (*10, 79*). Among many similar cases, H.M.S. *Jaskal* foundered at Greenock from the corrosion having eaten through her plates, apparently unnoticed; and H.M.S. *Triton*, in 1862, had her plates corroded to such paper thinness that, according to her commander, she was only kept from foundering by her fouling; practically sailing home on her barnacles (*104*).

Although fouling was by no means a new problem, its importance was so emphasized by the greater speeds, and by the substitution of costly and bulky fuel for sails, that many have felt that fouling became an important problem only with the introduction of iron ships. A man-of-war on commission in foreign waters for an extended period might become so fouled as to be almost unmanageable and unseaworthy before she came home and could be cleaned. The most extreme example reported was an iron whaler on the African coast, only six months out from England. Even though she had been cleaned every month with brooms and ropes, she was not safe, as she could neither sail nor steer, owing to her heavy fouling. So great did the problem become that in 1847 the Admiralty contemplated the total disuse of iron ships, and actually commenced the sale of all the iron ships then in the Navy. They were deterred, however, by the impossibility of meeting naval requirements with any other material (*8, 104*).

As a consequence of having invalidated the use of copper sheathing for an antifouling surface, the adoption of the iron hull started search for some less harmful metallic sheathing, and for some way of insulating copper sheathing from the iron hull.

Zinc, the only metal that could be used to plate the plates of the ship is an electro-negative condition, was tried repeatedly as sheathing. It was claimed that when in contact with the iron hull of a ship, electrolysis increased the exfoliation of the zinc sufficiently to prevent fouling, and at the same time protected the ships' plates from corrosion (*29*). Although zinc sheathing achieved some standing as a substitute for copper, experience showed that it sometimes became brittle and wasted away too fast to be of real value (*56, 65, 67, 79*).

Monel metal, sheet lead, galvanized iron, and nickel were tried, as well as alloys of lead and antimony, and of zinc and tin. Other metals or metallic alloys were suggested, and combinations of metals, such as iron walls covered with lead and copper, sheets of lead and antimony painted with mercury, or zinc plates coated with tin. Many of these sheathings presumably never passed beyond the experimental stage.[2]

Nonmetallic sheathings were also tried or suggested. These surfaces included felt, canvas, and rubber; ebonite, cork, and paper. They also included various forms of glass, enamels, glazes, and tiles. Cement was frequently used, but more as a protection against corrosion than for fouling.

For insulating copper sheathing from the iron hull of the ship, felt soaked in tar was often used; and sometimes cork, rubber, or plain brown paper. At one time, warships were built in a composite fashion, i.e., wooden planks were put on iron frames. While various other considerations led to this development, the practice was favored also because such ships could be coppered safely (*71, 91*). About 1862, this system was replaced by wooden sheathing put on over the metal hull. This was wedged between ridges on the hull, or bolted on in various ways, and then coppered. The wooden sheathing served only as an insulator. Although it was reported to have been satisfactory during the Spanish-American war (1898-99), and was used in both the British and the United States Navies, this method was too expensive for general use (*50, 63*).

A second and more important effect of the introduction of iron hulls, however, was to renew interest in the use of antifouling compositions. This eventually led to the development of the modern paint systems which have replaced copper sheathing almost altogether, except when special needs warrant the extra expense.

[1] In late as 1861, at the Institute of Naval Architects, Admiral Halsted described the English, undergoing an engine test at Chatham, as drifting and scrubbing on their own engines alternately day and, sheathing, "Can God's sun ever shine upon so foul a form as you'll form the ship's keels out of the ship" (*56*).

[2] The formation of these many experiments for copper sheathing is reviewed in the following chapter.

ANTIFOULING PAINTS

The use of some form of paint or composition on ships' bottoms is undoubtedly very old. An early record tells of a mixture in use about 412 B. C. composed of arsenic and sulfur, mixed with Chian oil and applied to a ship's sides so that she could sail through the water "freely and without impediment" (27). Many other examples could be noted, from the tar and wax of ancient Greek boats to the various compositions used on the wooden sheathing of the 18th century.

Although some were said to be for protection against shipworms, in most cases the purpose of these various compositions was not stated. The first coating recorded explicitly as a protection against fouling appears to be a composition patented by William Beale in 1625, which was composed of powdered iron, cement, and probably a copper compound (8, 83, 84). Possibly, this was the first use of copper as an antifoulant.[1] Two other patents for unknown compositions for "gravings against the worm" were also granted in the 17th century; and a third was granted in 1670 to Howard and Watson for a coating composed of tar and resin in a varnish of beeswax, crude turpentine, and granulated lac dissolved in grain alcohol (58, 69).

Three more patents were granted in the following century. One was for a composition containing pounded glass in a mixture of tar, oil, and lime; and a second for molten tin in a paste of zinc, limewater, black soap, and salts of zinc (58). The third, granted to William Murdock in 1791, was for a composition of iron sulfide and zinc roasted in air and mixed with varnish. Arsenic was the topic (8, 69).

But even though these early patented compositions were few and scattered, other unpatented compositions are also occasionally mentioned in the literature; and the use of some form of paint or composition on ships' bottoms was not uncommon.

Nicolaas Witsen, a naval architect, wrote of the surprise of the Dutch that a British yacht captured in 1671 was neither tarred nor painted, which was apparently most unusual (94). Massoffe states that fishermen on the Sea of Tiberias near Palestine are said to have used a mixture of crude turpentine, resin, suet, and asphalt in the 12th century (69). He also tells of a "coat hardening under water composed of suet, resin, fish oil, and sometimes chalk," that was used on the French coast in the 18th century and that is still occasionally employed.

Several compositions were tested comparatively at Portsmouth in 1737. The best of these, a mixture of pitch, tar, and brimstone, was successful enough against ship worms to come into general use, but it was felt that it was highly important to find some surface that would also prevent fouling. Complaints were still being made of ship worms, however, particularly in the West Indies. This was represented to the Admiralty in a letter from the Navy Board in 1761, and in the same letter it was proposed to experiment with copper sheathing on some vessel going to the West Indies (58, 69). The experiment on H.M.S. *Alarm* followed immediately (75). Two years later, the report on this experiment established the antifouling qualities of copper sheathing as to outstanding that for the next forty years there was only negligible interest in antifouling paints or compositions.

With the growing use of iron ships in the 19th century, attempts were made at first to adopt the new methods of sheathing so as to overcome the difficulties introduced by corrosion of galvanic origin. But by 1833 the futility of these efforts began to be recognized and attention was again turned to shipbottom paints.

From that time on, the number of paints and compositions increased rapidly. According to Young, by 1865 more than 300 patents for antifouling compositions had been issued in England alone (104).

The early patented compositions, for the most part, were entirely useless. Their ingredients included every usable material, organic and inorganic, from guano to plain kitchen salt (11, 68, 78, 104). Owing to the great need for protection against fouling, however, many of even the most worthless of them were tried in service; although, as Admiral Sir Edward Belcher said, they seemed designed rather to encourage fouling than to discourage it. The Admiral added that his sailors got ten shillings each for the magnificently oversize specimens of shellfish that the various antifouling paints and manures succeeded in growing on the *Ardent* at Bermuda (13).

Antifouling paints had a bad reputation for many years. Even as late as 1872, Robert Mallet, in presenting the Institute of Naval Architects with a catalog of British shipbottom patents, stated that the majority of them were useless or worse, and that the best were mere palliatives

[1] The copper compound was possibly cinnabar or copper sulfide (11), or a copper-arsenic ore (58). Beale (8) and Massoffe (69), however, state that this ingredient was an antiseptic obtained from England or Wales.

(66). This was due in part to wide-spread lack of understanding of the problem, but not entirely so. Mallet himself, in 1841, had patented an antifouling paint in which slightly soluble coatings of poisonous materials were applied over a coat of varnish.[1] He stated that the paint failed because he could not control the solution rate of the toxics within useful limits, and because of abrasion.

"McInnes" the first practical composition to come into widespread general use, was introduced in Liverpool about 1860. It was a metallic soap composition applied hot, in which copper sulfate was the toxic. This antifouling paint was put on over a quick-drying priming paint of resin varnish and iron oxide pigment (5). Soon after this, a similar hot plastic composition appeared in Trieste, Italy. Known as "Italian Moravian," it was one of the best antifouling paints of that time; and in spite of being both expensive and difficult to apply, was used well into the present century.

In 1863, Tarr and Wonson patented a successful copper paint, a composition of copper oxide in tar, with naphtha or benzene; and later Rahtjen's equally successful shellac type paint, using mercuric oxide and arsenic as the toxics, was introduced. The use of shellac as a rust-preventive coating for ships' bottoms reduced the corrosion of ships to such an extent that in 1861 Admiral Halsted stated that corrosion was no longer important (67).

Owing in part to the commercial value of a successful antifouling paint, nearly all were patented, and our knowledge of them is derived largely from the various patent records. A résumé of this material will be found in the following chapter.

According to these records, the most frequently used toxics were copper, arsenic, and mercury together with their various compounds. They were used both singly and in combination with each other. Often several different compounds of the same toxic would be used in a single composition. Solvents included turpentine, naphtha, and benzene. Linseed oil, shellac, tar, and various resin or shellac varnishes composed the matrix.

By the end of the century, the most widely used paints were the hot plastics such as Moravian and McInnes, the shellac type paints such as Rahtjen, and the various copper paints such as Tarr and Wonson's copper oxide in tar with naphtha or benzene. These paints were generally applied over a first or anticorrosive coat of shellac or varnish, or of the same composition without the toxic. Most naval vessels were using copper over a wood sheathing, or hot plastic compositions on their ships' bottoms. Other ships used the less expensive commercial paints; and wooden ships were still frequently sheathed with copper. These antifouling surfaces, however, although reasonably successful, were expensive, often short-lived, and occasionally uncertain; and fouling was still a major problem.

The commercial shipbottom paints used by the United States Navy prior to 1908 were purchased by competitive bidding; and there were no technical specifications and no inspections other than checking the quantity of paint delivered. In an effort to standardize the quality of the ingredients as well as for various practical considerations,[2] the Navy decided to manufacture its own antifouling coatings; and in 1906, experiments were begun on both shellac and hot plastic shipbottom paints (2, 99, 102).

The first tests of its own experimental paints were begun in June, 1906, at the Norfolk Navy Yard on 21 different shipbottom paint formulations of spirit varnish paints. By October of the following year, these tests indicated that one formula was outstanding. Further tests were made on naval bottoms at various Navy Yards with paints made from this formula, comparing it with commercial shipbottom paints; and on June 8, 1908, a report was made favorable to the Norfolk test paints. Not long after, manufacture of the first naval shipbottom paints was started at Norfolk Navy Yard (2).[3]

The formula of an early Norfolk antifouling paint, as given by Adamson, shows that the toxic was red mercuric oxide suspended in grade A gum shellac, grain alcohol, turpentine, and pine tar oil. Zinc oxide, zinc dust, and Indian red were also added. Although the formula was continually varied, the shellac type paint was used by the Navy from 1908 until 1926, when it was abandoned (2, 3).

From 1911 to 1921 further experiments were conducted at Norfolk, both to find substitutes for scarce materials and to improve the paint. In 1911, gum shellac of an excellent grade could be obtained from India, although the supply was limited. As wider use developed, it became both expensive

[1] For toxics, Mallet used sulphuric of copper and sulfuret of arsenic.

[2] Among the practical considerations were the necessity of maintaining complete stocks of all the various brands of paint used at each of the Navy Yards, and the difficulties caused by the efforts of the competing paint manufacturers to get their paints accepted by the Navy.

[3] Considerable proof of the value of the Norfolk formula, as compared to commercial paints, came from a service test on the ships at the U. S. Fleet as the result assumed that under [illegible]

and difficult to get. Inferior grades lacked adhesion, and experiments with various possible substitutes were carried on. Among these, rosin was of particular interest, both because of its successful use by some foreign navies, and because of the cheap and plentiful supply in this country. A substitute was also sought for the toxic, mercuric oxide, which in addition to being expensive and of foreign origin was difficult to handle (*J*).

In 1921, the American Society for Testing Materials had formed a subcommittee on antifouling paints, with the object, if possible, of setting standard specifications for the toxic ingredients. They found, however, that factors other than the toxic were almost equally important (*J*); and an extensive investigation of the entire problem of fouling was begun in September, 1922, under the direction of the Bureau of Construction and Repair, U.S. Navy (*97*). At this time, most foreign navies were reported to be using commercial paints such as Holzapfel, Rahtjen, and Hempel; and the average effectiveness of the shellac type antifouling paints was said to be about nine months (*J*, *J*).

At the same time, the U. S. Navy renewed experiments with hot plastic paints. In the beginning of the century, the consensus of opinion had been that the Italian Moravian hot plastic was the best antifouling paint available. Analyses of commercial paints of this type had been made at the Brooklyn Navy Yard in 1906, and ways of producing them worked out; but with the official acceptance of the Norfolk shellac type paint in 1908, work on hot plastics had been dropped (*99*).

In 1922, at the request of the Navy Department experiments in hot plastic antifouling paints were begun again by the Chemical Warfare Service at the Edgewood Arsenal. Various hot plastic compositions, based on analyses made at Edgewood in 1922, were made up and tested on steel panels at the Beaufort, N. C., station of the Bureau of Fisheries during the next two years. As a result of these tests, the Navy Department sent representatives from the Edgewood Arsenal to supervise a test application of the U. S. S. *King*, at the Norfolk Navy Yard. After nearly a year's cruising, the ship was docked at Mare Island on April 10, 1923; and it was reported that although the antifouling qualities had been excellent in the panel tests, the paint was not as successful in actual service. The film adherence, however, was good and further experiments were planned (*99*).

About 1926, the Navy substituted a coal tar-rosin formulation[1] for the shellac type antifouling paint (*J*). Although coal-tar-rosin paints were used by the Navy until comparatively recently, the Mare Island Navy Yard, interested by the experiment on the U. S. S. *King*, had also developed a hot plastic shipbottom paint which used cuprous oxide and mercuric oxide as the toxics. Repeated tests have proved the Mare Island hot plastic superior to other available coatings. Extensive experience during the early years of the war has confirmed this superiority, and the hot plastic formula is currently the preferred paint for naval use on steel bottoms.[2]

Hot plastic paints are troublesome because they require elaborate apparatus for application. Since the availability of such apparatus is limited, a need is still felt for superior antifouling coatings which may be applied by brush. This need led to the development of several satisfactory formulations known as cold plastics, which dry by evaporation of the solvent yet produce heavy films having much of the virtue of the hot plastic coatings.

As a result of the improvement in the coatings it is reported that naval vessels are now able to remain out of dry dock as long as 18 months with no reduction in speed or increase in fuel consumption due to fouling (*99*).

RESEARCH AND DEVELOPMENT

The earliest published works concerned with the prevention of fouling of which we are aware are the papers of Sir Humphry Davy which appeared in the Philosophical Transactions of the Royal Society of London in 1824 (*31*, *32*). Doubtless many reports of practical tests, such as that on the *Alarm*, and the tests of bottom compositions made at Portsmouth in 1737, existed in naval archives prior to this date (*38*, *75*). Davy's studies are noteworthy, however, because he made experiments, based on the best scientific knowledge of the time, to develop the principles controlling the fouling and corrosion of copper sheathing, and only then tested the methods which these experiments suggested on ships in service.

[1] Mansfield (97) gives the formula of a Navy standard coal tar-resin antifouling paint of 1926 as:

1,000 gm. asphaltic pitch	833 gm. zinc oxide
666 gm. gloss oil	416 gm. iron oxide
500 gm. coal tar	416 gm. mercuric oxide
833 gm. resin	333 gm. carbonate oxide
	333 gm. silica

For coal tar-resin formulas of 1937, see Addendum (2).

[2] For an account of the history of the development of plastic paints by the Navy and a discussion of their merits, see Reference 62.

(66). This was due in part to wide-spread lack of understanding of the problem, but not entirely so. Mallet himself, in 1841, had patented an antifouling paint in which slightly soluble coatings of poisonous materials were applied over a coat of varnish.[1] He stated that the paint failed because he could not control the solution rate of the toxics within useful limits, and because of abrasion.

"McInnes" the first practical composition to come into widespread general use, was introduced in Liverpool about 1860. It was a metallic soap composition applied hot, in which copper sulfate was the toxic. This antifouling paint was put on over a quick-drying priming paint of resin varnish and iron oxide pigment (3). Soon after this, a similar hot plastic composition appeared in Trieste, Italy. Known as "Italian Moravian," it was one of the best antifouling paints of that time; and in spite of being both expensive and difficult to apply, was used well into the present century.

In 1863, Tarr and Wonson patented a successful copper paint, a composition of copper oxide in tar, with naphtha or benzene; and later Rahtjen's equally successful shellac type paint, using mercuric oxide and arsenic as the toxics, was introduced. The use of shellac as a rust-preventive coating for ships' bottoms reduced the corrosion of ships to such an extent that in 1864 Admiral Halsted stated that corrosion was no longer important (67).

Owing in part to the commercial value of a successful antifouling paint, nearly all were patented, and our knowledge of them is derived largely from the various patent records. A résumé of this material will be found in the following chapter.

According to these records, the most frequently used toxics were copper, arsenic, and mercury together with their various compounds. They were used both singly and in combination with each other. Often several different compounds of the same toxic would be used in a single composition. Solvents included turpentine, naphtha, and benzene. Linseed oil, shellac, tar, and various resin or shellac varnishes composed the matrix.

By the end of the century, the most widely used paints were the hot plastics such as Moravian and McInnes, the shellac type paints such as Rahtjen, and the various copper paints such as Tarr and Wonson's copper oxide in tar with naphtha or benzene. These paints were generally applied over a first or anticorrosive coat of shellac or varnish, or of the same composition without the toxic. Most naval vessels were using copper over a wood sheathing, or hot plastic compositions on their ships' bottoms. Other ships used the less expensive commercial paints; and wooden ships were still frequently sheathed with copper. These antifouling surfaces, however, although reasonably successful, were expensive, often short-lived, and occasionally uncertain; and fouling was still a major problem.

The commercial shipbottom paints used by the United States Navy prior to 1908 were purchased by competitive bidding; and there were no technical specifications and no inspections other than checking the quantity of paint delivered. In an effort to standardize the quality of the ingredients as well as for various practical considerations,[2] the Navy decided to manufacture its own antifouling coatings; and in 1906, experiments were begun on both shellac and hot plastic shipbottom paints (2, 99, 102).

The first tests of its own experimental paints were begun in June, 1906, at the Norfolk Navy Yard on 21 different shipbottom paint formulations of spirit varnish paints. By October of the following year, these tests indicated that one formula was outstanding. Further tests were made on naval bottoms at various Navy Yards with paints made from this formula, comparing it with commercial shipbottom paints; and on June 8, 1908, a report was made favorable to the Norfolk test paints. Not long after, manufacture of the first naval shipbottom paints was started at Norfolk Navy Yard (2).[3]

The formula of an early Norfolk antifouling paint, as given by Adamson, shows that the toxic was red mercuric oxide suspended in grade A gum shellac, grain alcohol, turpentine, and pine tar oil. Zinc oxide, zinc dust, and Indian red were also added. Although the formula was continually varied, the shellac type paint was used by the Navy from 1908 until 1926, when it was abandoned (2, 3).

From 1911 to 1921 further experiments were conducted at Norfolk, both to find substitutes for scarce materials and to improve the paint. In 1911, gum shellac of an excellent grade could be obtained from India, although the supply was limited. As wider use developed, it became both expensive

[1] For control, Mallet used suspensions of copper and sulfonol of arsenic.

[2] Among the practical considerations were the necessity of maintaining adequate stocks of all the various brands of paint used on each of the Navy Yards, and the difficulties caused by the efforts of the competing paint manufacturers to get their paints accepted by the Navy.

[3] Corroborating proof of the value of the Norfolk formula, as compared to commercial paints, came from a service test on the ships of the U. S. Fleet on the cruise around the world in 1907 (102).

and difficult to get. Interior grades lacked adhesion, and experiments with various possible substitutes were carried on. Among these, rosin was of particular interest, both because of its successful use by some foreign navies, and because of the cheap and plentiful supply in this country. A substitute was also sought for the toxic, mercuric oxide, which in addition to being expensive and of foreign origin was difficult to handle (*J*).

In 1921, the American Society for Testing Materials had formed a subcommittee on antifouling paints, with the object, if possible, of setting standard specifications for the toxic ingredients. They found, however, that factors other than the toxic were almost equally important (*J*); and an extensive investigation of the entire problem of fouling was begun in September, 1922, under the direction of the Bureau of Construction and Repair, U.S. Navy (*97*). At this time, most foreign navies were reported to be using commercial paints such as Holzapfel, Ruhtjen, and Hempel; and the average effectiveness of the shellac type antifouling paints was said to be about nine months (*J*, *J*).

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[1] Mumford (*97*) gives the formula of a Navy standard coal tar-rosin antifouling paint of 1925 as:

1,150 gm. refined spirits	912 gm. zinc oxide
225 gm. linseed oil	456 gm. iron oxide
342 gm. coal tar	912 gm. [illegible] oxide
912 gm. rosin	912 gm. cuprous oxide
	228 gm. alum

For coal tar-rosin formulas of 1937, see Adelman (*3*).

[2] For an account of the history of the development of plastic paints by the Navy and a discussion of their merits, see Robertson (*83*).

No man of Davy's scientific stature has since concerned himself with the fouling problem, and for more than three-quarters of a century no one approached the problem from the scientific angle followed by Davy. It is interesting to note in passing that a generation later another great English scientist, Charles Darwin, became the authority on barnacles and thus contributed valuable knowledge of the subject without apparently becoming concerned with its practical aspects.

The development of antifouling compositions during the 19th century appears to have been strictly empirical. The publications of this period consist of general discussions based on the experience of practical men: naval officers, naval architects, and shipbuilders. There was some speculation on how fouling is prevented, but never any controlled experiment designed to test principles or theories. The paints themselves were developed privately as proprietary products. How much systematic investigation underlay the patented or secret formulations is not recorded.

When paint research was first undertaken by the Navy, in 1906, the data available consisted largely of records of submersion tests which compared one commercial paint with another. Very little was known about the formulas. In starting tests, it was necessary to try many combinations of ingredients, and through a process of substitutions, eliminations, and alterations finally to arrive at formulae which would produce satisfactory paints (*1*). Some additional information was obtained by analyzing paints of commercial origin which showed promise (*19, 20, 99*), but because of the nature of paint ingredients the knowledge to be gained in this way was limited. Performance on panel test and in service remained the only guide to performance, and no means of judging the cause of failure was at hand.

The trial and error method of research gradually led to formulations which became more and more complicated, since each component which was introduced into a promising formulation tended to be carried along into subsequent modifications. In 1939 this tendency was reversed by an experiment conducted jointly by the Mare Island Navy Yard and W. P. Wheloo of the Scripps Oceanographic Institution at La Jolla, in which the currently accepted hot plastic formulation was broken down into a series of simplified mixtures of its components (*100*). The object was to determine which ingredients were really essential. The outcome was the demonstration that the mercury and Paris green present in the original formula added nothing to its antifouling characteristics. The tendency to simplification which this experiment initiated is illustrated by a comparison of the composition of formula for a standard Navy paint of 1925, given as a footnote on page 218, which contained nine components, with the present standard wood bottom formula, 16X, which has only five specified ingredients.

Prompted by a desire to obtain more fundamental knowledge of how to prevent fouling, the Navy arranged, from time to time, for biological investigations. This work supplied valuable information on the toxicity of potential paint ingredients to marine organisms, on the nature of the fouling population, its rate of growth, its seasonal and geographical incidence, and the relation of the service in which ships are employed to their tendency to foul (*17, 97*). Similar studies were also conducted in Germany at the Laboratorium für Bewuchsforschung in Cuxhaven, in Turkey, Russia, and Japan (*78*), and in England (*39, 40*).

The proposal that slimes, produced by bacteria and diatoms on submerged surfaces, had an important bearing on subsequent fouling aroused much interest and led to investigations which culminated in the establishment of the Naval Biological Laboratory at San Diego, and also initiated work at the Woods Hole Oceanographic Institution.

While this earlier biological work provided useful background knowledge that was requisite to intelligent attack on the problem, the idea that it would produce some unthought-of method of circumventing fouling proved illusory. However, the study of slimes led indirectly to two important results. First, the variability in the tendency of various paint surfaces to slime, and an apparent relation between slime formation and fouling, focused attention on the question of what property of the paint is responsible for its antifouling action. Second, experiments which were made to study the tendency of slimes to accumulate copper led to the development of techniques for measuring the rate at which copper or other toxics are given off by the paint surface. These methods, in turn, appear to have provided the answer to the above mentioned question: the antifouling action of currently successful shipbottom paints depends upon the rate of solution of the toxic material (*81*).

Armed with a definite physical objective, the problem of formulating antifouling coatings can now proceed in a more rational manner. What needs to be discovered is how to formulate so as

to control correctly the discharge of toxic from the paint surface. The problem becomes one of applied physical chemistry rather than a game of permutations and combinations. Like Sir Humphry Davy, the paint technician can make experiments, based on the best available scientific information, to develop and employ the principles controlling the fouling of paint surfaces. Subsequent chapters contain an account of the first steps toward the development of such principles.

APPENDIX: NAVY BOARD'S REPORT TO THE ADMIRALTY ON THE FIRST COPPERING EXPERIMENT[1]

31st August 1761

Sir

His Majesty's Ship ALARM whose bottom has been covered with Copper for an experiment of preserving it against the Worm, and this Ship being returned from her Voyage to the West Indies to Woolwich, and that We might examine her bottom, and be informed how far the Experiment had answered the intention; We sent directions to Our Officers there, to take an immediate Survey of the State and condition of the Copper, also an Account of the number of Plates that might be rubbed off; and the manner that should be continued on, and to distinguish such as were in a State of decay from those which should appear unimpaired, to examine likewise with regard to the Copper being Clean or foul'd with Barnicles, Weeds, which usually collect and grow upon the bottom of Ships in long Voyages, and in case of finding any of the Plates rubbed off, to observe the effect the Worm had on that part. They were then to cause all the Copper that should be remaining to be carefully taken off and collected: And these several Injunctions being complied with, they were strictly to inspect the Ships bottom, and report their Observations, as well on the Heads aforesaid as on every thing else that might occur in the course of their examination: And having received their report, We send you enclosed a Copy thereof with a profile sketch of each side of the Ship, shewing the manner in which the bottom was at first covered, the part that remains so, and also that which was found uncovered when the Water left her in the Dock; all which We desire you will please to lay before the Rt. Hon^ble the Lords Commiss^rs of the Admiralty, for their information.

And their Lordships having directed Us on the 21st October 1761, to report Our remarks upon this Experiment, We beg you will upon presenting the Sketches, observe that the Copper is most deficient upon the Bows; from thence ranging Aft a little beyond the Midships, and for four or five Strakes under the surface of the Water all which parts are most exposed to the force of the Sea. Upon discovering the Officers on board the ALARM; We find the plates began to wash off from the Bows in fifteen or sixteen Months, after She sailed, gradually wasting in the middle, till reduced to the substance of the finest paper, and too thin to resist the wash of the Sea; the Edges and fastenings only remaining as when first put on.

The plates upon the lower part of the bottom also in the run of the Ship, quite Aft (except a few whose defects can be imputed to Workmanship), are wasted very little.

In two hundred superficial feet that were taken from three parts and Weighed, the plates were found to have wasted in Twenty Months only 13lb 12oz which seems to confirm that the quick Waste of those Plates laid on the Midships forward, can only be from the Wear occasioned by resistance of the Water to those parts. We are further to observe that the Copper which was remaining upon the bottom had been on near twenty Months and had kept perfectly clean without any means whatever having been used to render it so. But the Copper which covered the Rather was foul'd with Barnicles; and this difference We cannot Account for unless it may be supposed, that the Plates there being fastened with Iron Nails which was done to vary the Experiment the rust from thence with what might come from the Straps of the Pintles, draining down and spreading the surface of the Rother should have occasioned it.

The Copper being every where taken off the Plank of the bottom was very carefully examined, as likewise the Caulking, and in neither was there found the least Impression from Worm or any other Cause. The Plank was entirely sound, and the Seams and Butts were full of Oakum, hard and good, except upon one Spot on the Starboard side, distinguished on the Sketch by a red Circle, where the Copper for about a foot Gunwale being rubbed off the Plank was covered with Barnicles as close as it was possible; and upon inspection it was found the Worm had there made a deep impression.

The Copper upon this Spot, We apprehend must have been rub'd off very early, probably before the Ship went out of the River, as in all other parts of the bottom where the Copper had remained till gradually worn away as before described, the Worm had but slightly pitted the Surface, which plainly shews that it was owing to the Copper only that they were preserved from being in the same Condition.

We were greatly surprised to perceive the Effect the Copper had had upon the Iron where the two Metals touch'd; but it was most remarkable at the Rother Iron, and in the fastenings of the false Keel, upon the former, the pintles and Nocks of the Braces were so corroded and Eat,— particularly the two lower Ones, that they could not have continued of sufficient strength to do their Office many Months longer, and with respect to the false Keel it was entirely off.

The loss of the false Keel was at first supposed to have happened from the Ship having been on Shore, but upon examining it, the Nails and Staples that fastened it were found dissolved into a kind of rusty paste; which was also the Case of every Nail that had been used in fastening on the thick Load to the Gripe and fore part of the Keel.

The same effect, but not to so great a degree, was observable upon all the Bolts and Iron under water, except where brown paper (with which the bottom was Covered) remained undecayed, and thereby separated the two Metals; and where this Covering was perfect, the Iron was preserved from Injury.

Having now informed their Lordships of the most material Observations We have made upon this subject, We shall observe upon the whole.

1st That as long as Copper plates can be kept upon the bottom, the Plank will be thereby entirely secured from the Effect of the Worm.

2nd That neither the Plank or Caulking received the

[1] William L. Clements Library, Ann Arbor, Michigan. Reprinted from The American Neptune, July 1941.

least Injury with respect to its duration, by being covered therewith.

2ly That Copper fastenings are not incident to heat by Woods, or any other Cause.

All which are Advantages very desirable to be attained, provided Methods could be fallen upon to obviate the difficulties we have before pointed out; the greatest of which is, the bad Effect that Copper has upon Iron.

It has been shown that where brown paper continued perfect between them, the Iron was not injured, whence We presume, if the Heads of the Bolts and other surfaces of Iron were covered with flannel and a very thin leaf of Lead, they could be better secured from the corosion of the Copper, and with respect to the Rother Irons, if the back and sides of the Stern post and sides and bearings of the Rother were also covered with thin Sheet Lead instead of Copper, the effect that has appeared upon the Pintles and Sticks of the Braces would be kept at least a greater distance and though We doubt it would not answer the end of entirely securing the Rother Irons, and it might lengthen their Service beyond the hazard of falling within a three Years Station.

As to the difficulty about the false Keel, that may be got over by having all the Staples made of Copper.

There is still another difficulty which in the Accident that Copper Sheathing has been found liable to in the Course of this Experiment, but as We imagine these have been partly owing to the thinness of the Plates made use of, which were only twelve Ounces to the foot, it appears to Us this difficulty would be removed by adding to their substance; which would render the Plates stiffer, not so liable to rub off, and also consequently of greater duration, with respect to their Wear.

We must not in Our Observations to their Lordships upon this subject forget the Expence that attends covering a Ships bottom with Copper; That upon the ALARM amounted to about £650, and to increase the Plates to the thickness that would be requisite to answer the aforemention Advantages and bring the Charge to about £945. which is at least an Expence of four times the cost of Wood; but when it is considered how much more durable Copper will be than Fir Sheathing, also the worth of the old Copper when returned, We are inclined to think the difference (if any) in the end will be immaterial, the intrinsic value of the Copper rec[d] back from this Experiment is £199.11.9.

And having maturely considered all the Circumstances that attend the Sheathing Ships with Copper, and seeing the extensive advantages it is capable of, supposing it can be brought into Use, We are induced to recommend it to their Lordships consideration,—whether a further tryal may not be made of it, with the improvements We have mention[d] And in Case a Ship of 32 Guns should be wanted on the West India Station, We would propose that the ALARM may be again made use of for the Occasion, All which is nevertheless submitted to their Lordships by &c[a]

JS. WB. HB. KO.

Philip Stephens Esq[r]

P.S. We have entered a Box to be sent to their Lordships containing several Plates in their different degrees of Wear

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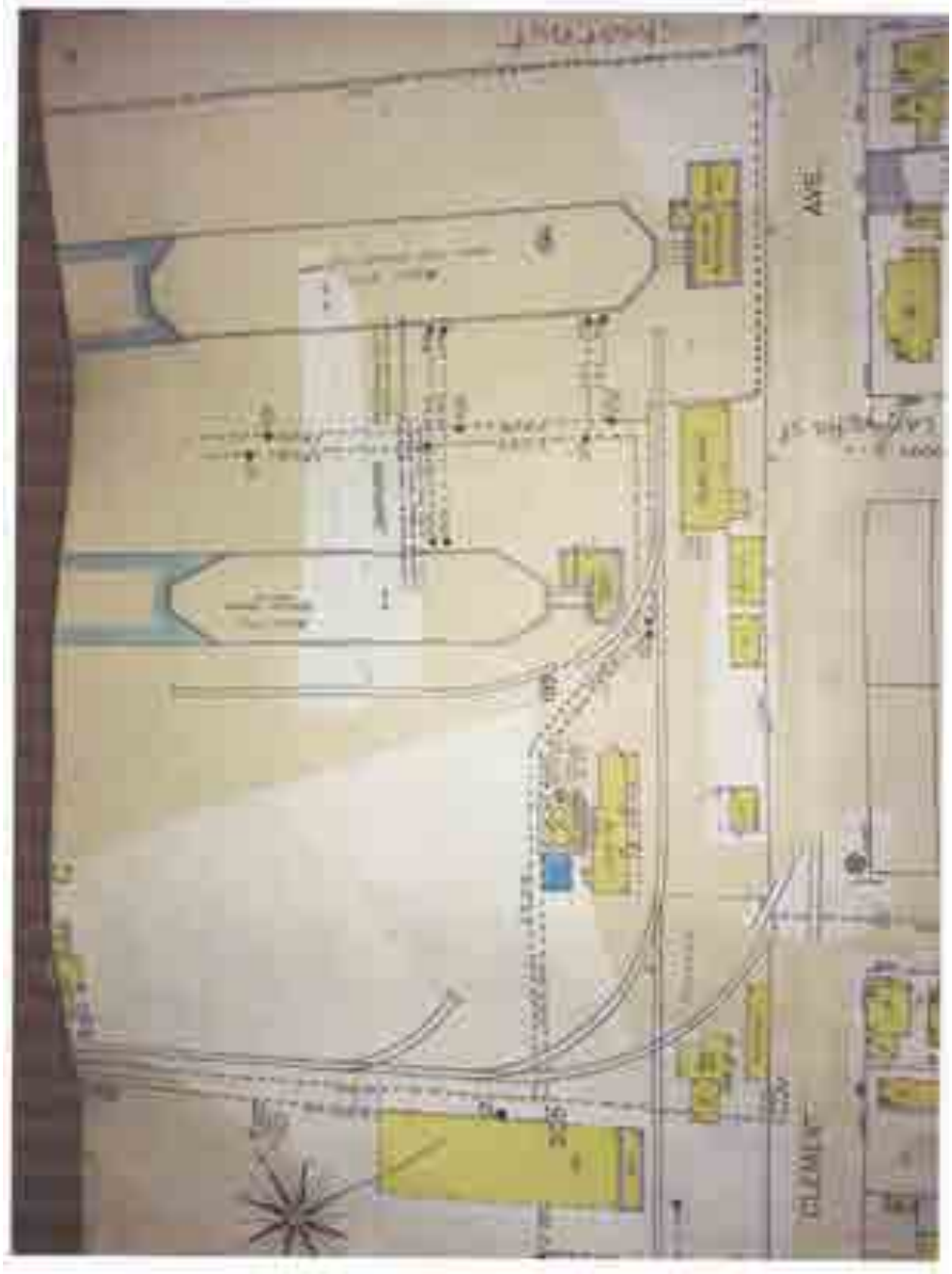

Attachment 3

ADDITIONAL COMMENTS TO THE ALAMEDA MARINA MASTER PLAN EIR PROJECT

COMMENTS TO THE ALAMEDA MARINA MASTER PLAN EIR PROJECT (hereinafter referred to as "DEIR")

1. DISCUSSION OF CUMULATIVE IMPACTS INADEQUATE

Facts:

A. INCLUDED PROJECT IMPACTS. The DEIR misstates the number of units at Alameda Point, which is up to 4000 residential units.

The DEIR omits, **Boatworks,** 182 residential units; **North Housing**, 435 residential units; **Main Street Neighborhood**, 269 residential units; **Corp Yard plus Shelter** 45 residential units; **Pennzoil**, 18 units; **Ron Goode**, 11 units; **Fernside,** 11 units. These misstatements undermine the accuracy of any study of cumulative impacts.

Table 4.0-1 of the DEIR includes only:

Alameda Point Rehabilitation and construction of 1,425 residential units and rehabilitation, reuse, and new construction of approximately 5.5 million square feet of commercial at the former Alameda Naval Air Station.

Alameda Landing construction of approximately 342 residential units and 360,000 square feet of maritime commercial adaptive reuse. Approximately 1.5 miles west of Alameda Marina

Del Monte Adaptive reuse of former warehouse and surrounding land into approximately 380 housing units and 30,000 square feet of commercial/retail space on Buena Vista Avenue approximately one-half mile from Alameda Marina.

Encinal Terminals A proposal to construct approximately 589 housing units and up to 50,000 square feet of commercial uses and waterfront public parks On waterfront approximately one-half mile from Alameda Marina.

Shipways Proposal to construct approximately 300 housing units and an approximately 2.5 acre public park along the waterfront 1100 Marina Village Parkway, approximately 1.5 miles northwest of Alameda Marina SOURCE: City of Alameda, Fehr & Peers, 2017.

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B. OMITTED PROJECT IMPACTS. The DEIR includes none of the impacts of current traffic improvement projects. Although the traffic evidence and assumptions that support any traffic projections are not provided, traffic flows and projections based thereon are referred to as "constricted". These constrictions are based in part on roads and highway access which are under the control of CALTRANS and MTC, and not the City of Alameda. Two major projects currently underway and in which the City of Alameda is an active participant will affect these "constrictions": (1) the Broadway Jackson Interstate 80 project for the Alameda tubes, and (2)

8-82

the I80, 23rd Avenue Improvements project. These projects and their impacts are not addressed in the DEIR. As they have the potential to greatly alleviate or exacerbate traffic flows into and out of Alameda, these projects and their impacts are required to be included in any discussion of cumulative impacts.

8-82 cont.

Applicable Law:

CEQA Guidelines §15130. DISCUSSION OF CUMULATIVE IMPACTS

(a) An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as defined in section 15065 (a)(3). Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

(1) As defined in Section 15355, a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.

(2) When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR. A lead agency shall identify facts and analysis supporting the lead agency's conclusion that the cumulative impact is less than significant.

(3) An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable.

(b) The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact. **The following elements are necessary to an adequate discussion of significant cumulative impacts: (1) Either:**

(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or

(B) A summary of projections contained in an adopted local, regional or state wide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency.

(2) When utilizing a list, as suggested in paragraph (1) of subdivision (b), factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type. Location may be important, for example, when water quality impacts are at issue since projects outside the watershed would probably not contribute to a cumulative effect. Project type may be important, for example, when the impact is specialized, such as a particular air pollutant or mode of traffic.(3) Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used. (4) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and (5) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

(c) With some projects, the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by project basis.

(d) Previously approved land use documents , including, but not limited to, general plans, specific plans, regional transportation plans, plans for the reduction of greenhouse gas emissions, and local coastal plans may be used in cumulative impact analysis. A pertinent discussion of cumulative impacts contained in one or more previously certified EIRs may be incorporated by reference pursuant to the provisions for tiering and program EIRs. No further cumulative impacts analysis is required when a project is consistent with a general, specific, master or comparable programmatic plan where the lead agency determines that the regional or area wide cumulative impacts of the proposed project have already been adequately addressed, as defined in section 15152(f), in a certified EIR for that plan.(e) If a cumulative

impact was adequately addressed in a prior EIR for a community plan, zoning action, or general plan, and the project is consistent with that plan or action, then an EIR for such a project should not further analyze that cumulative impact, as provided in Section 15183(j).

Note: Authority cited: Sections 21083, 21083.05, Public Resources Code. Reference: Sections 21003(d), 21083(b), 21093, 21094 and 21100, Public Resources Code; Whitman v. Board of Supervisors, (1979) 88 Cal. App. 3d 397; San Franciscans for Reasonable Growth v. City and County of San Francisco (1984) 151 Cal.App.3d 61; Kings County Farm Bureau v. City of Hanford (1990) 221 Cal.App.3d 692; Laurel Heights Homeowners Association v. Regents of the University of California (1988) 47 Cal.3d 376; Sierra Club v. Gilroy (1990) 220 Cal.App.3d 30; Citizens to Preserve the Ojai v. County of Ventura (1985) 176 Cal.App.3d 421; Concerned Citizens of South Cent. Los Angeles v. Los Angeles Unified Sch. Dist. (1994) 24 Cal.App.4th 826; Las Virgenes Homeowners Fed'n v. County of Los Angeles (1986) 177 Cal.App.3d 300; San Joaquin Raptor/Wildlife Rescue Ctr v. County of Stanislaus (1994) 27 Cal.App.4th 713; Fort Mojave Indian Tribe v. Cal. Dept. Of Health Services (1995) 38 Cal.App.4th 1574; Santa Monica Chamber of Commerce v. City of Santa Monica (2002) 101 Cal.App.4th 786; Communities for a Better Environment v. California Resources Agency (2002) 103 Cal.App.4th 98; and Ass'n of Irritated Residents v. County of Madera (2003) 107 Cal.App.4th 1383.

2. NO SUBSTANTIAL EVIDENCE TO SUPPORT FINDINGS

Facts:

There is no Substantial evidence to support the Findings. ESA uses erroneous Traffic counts, which are not included in the DEIR; thereupon ESA makes unsupported findings. ESA's "data" show no or relatively minimal VMT impact in spite of actual traffic flows which are reported in concurrent MTC, and CALTRANS actual traffic counts for the same areas, and indicate there will be an increase of over 40% of traffic by 2040. ESA figures "show" traffic increases will result in less traffic than actually exists in 2017. The actual traffic counts must be provided, and any assumptions affecting "constrictions" must be provided to ascertain their adequacy.

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Applicable Law:

CEQA Guidelines §15384 (a) SUBSTANTIAL EVIDENCE "Substantial evidence" as used in these guidelines means enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached. Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency. Argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly erroneous or inaccurate, or evidence of social or economic impacts which do not contribute to or are not caused by physical impacts on the environment does

not constitute substantial evidence.(b) Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts. Note: Authority cited: Section 21083, Public Resources Code; References: Sections 21080, 21082.2, 21168, and 21168.5, Public Resources Code; No Oil, Inc. v. City of Los Angeles (1974) 13 Cal.3d 68; Running Fence Corp. v. Superior Court (1975) 51 Cal.App.3d 400; Friends of B Street v. City of Hayward (1980) 106 Cal.App.3d 988.

3. STATEMENT OF OVERRIDING CONSIDERATIONS

Facts:

The "evidence" used in the traffic impacts and projections, show "No substantial impact" yet the DEIR makes findings of substantial impacts based on VMT thus enabling the Lead Agency to wrongfully make a statement of Overriding Considerations, rather than provide accurate facts. These Overriding Considerations are not based on "traffic counts or their impacts" validly derived from the DEIR and are not based on Findings which is supported by Substantial Evidence.

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Applicable Law:

CEQA Guidelines § 15093. STATEMENT OF OVERRIDING CONSIDERATIONS

(a) CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered "acceptable."(b) When the lead agency approves a project which will result in the occurrence of significant

effects which are identified in the final EIR but are not avoided or substantially lessened, the agency shall state in writing the specific reasons to support its action based on the final EIR and/or other information in the record. The statement of overriding considerations shall be supported by substantial evidence in the record.
(c) If an agency makes a statement of overriding considerations, the statement should be included in the record of the project approval and should be mentioned in the notice of determination. This statement does not substitute for, and shall be in addition to, findings required pursuant to Section 15091.

Note: Authority cited: Sections 21083 and 21083.05, Public Resources Code; Reference: Sections 21002 and 21081, Public Resources Code; San Francisco Ecology Center v. City and

County of San Francisco (1975) 48 Cal.App.3d 584; City of Carmel-by-the-Sea v. Board of Supervisors (1977) 71 Cal.App.3d 84; Sierra Club v. Contra Costa County (1992) 10 Cal.App.4th 1212; Citizens for Quality Growth v. City of Mount Shasta (1988) 198 Cal.App.3d 433; City of Marina v. Board of Trustees of Cal. State Univ. (2006) 39 Cal.4th 341.

4. INCONSISTENCIES WITH THE GENERAL PLAN OF THE CITY OF ALAMEDA

Facts:

The DEIR fails to include inconsistencies with the City of Alameda General Plan. See No. 7, below for some but not all of the inconsistencies not listed in the DEIR which are incorporated by this reference thereto as though fully set forth herein.

Applicable Law:

CEQA Guidelines §15125. ENVIRONMENTAL SETTING

(d) The EIR **shall** discuss any inconsistencies between the proposed **project and applicable general plans**, specific plans, and regional plans. Such regional plans include, but are not limited to, the applicable air quality attainment or maintenance plan or State Implementation Plan, area-wide waste treatment and water quality control plans, regional transportation plans, regional housing allocation plans, regional blueprint plans, plans for the reduction of greenhouse gas emissions, habitat conservation plans, natural community conservation plans and regional land use plans for the protection of the Coastal Zone, Lake Tahoe Basin, San Francisco Bay, and Santa Monica Mountains.

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(e) Where a proposed project is compared with an adopted plan, the analysis shall examine the existing physical conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced as well as the potential future conditions discussed in the plan. Note: Authority cited: Sections 21083, 21083.05, Public Resources Code; Reference: Sections 21060.5, 21061, and 21100, Public Resources Code; E.P.I.C. v. County of El Dorado (1982) 131 Cal.App.3d 350; San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus (1994) 27 Cal.App.4th 713; Bloom v. McGurk (1994) 26 Cal.App.4th 1307.

The Project's potential impacts on neighboring cities include but are not limited to international navigation, seismic safety, green house gases, traffic. All access to Alameda is through its neighboring cities. It has neither direct freeway not transit access. Anything constructed in the estuary has the potential to interfere with navigation and interstate commerce. It is on fill, and adjacent to a multitude of seismic faults.

Applicable Law:

5. CEQA Guidelines §15206. PROJECTS OF STATEWIDE, REGIONAL, OR AREA WIDE SIGNIFICANCE

(a) Projects meeting the criteria in this section **shall be deemed to be of state wide, regional, or area wide significance**.
(1) A draft EIR or negative declaration prepared by any public agency on a project described in this section shall be submitted to the State Clearinghouse and should be submitted also to the appropriate metropolitan area council of governments for review and comment. The notice of completion form required by the State Clearinghouse must be submitted together with the copies of the EIR and may be submitted together with the copies of the negative declaration. The notice of completion form required by the State Clearinghouse is included in Appendix C. If the lead agency uses the on-line process for submittal of the notice of completion form to the State Clearinghouse, the form generated from the Internet shall satisfy this requirement (refer to www.ceqanet.ca.gov).

(2) When such documents are submitted to the State Clearinghouse, the public agency shall include, in addition to the printed copy, a copy of the document in electronic format on a diskette or by electronic mail transmission, if available.

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(b) The Lead Agency shall determine that a proposed project is of state wide, regional, or area wide significance if the project meets any of the following criteria:
(2) A project has the potential for causing significant effects on the environment extending beyond the city or county in which the project would be located. Examples of the effects include generating significant amounts of traffic or interfering with the attainment or maintenance of state or national air quality standards. Projects subject to this subdivision include:

(A) **A proposed residential development of more than 500 dwelling units.**
(B) A proposed shopping center or business establishment employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space.
(C) A proposed commercial office building employing more than 1,000 persons or encompassing more than 250,000 square feet of floor space.
(E) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or encompassing more than 650,000 square feet of floor area.

6. DEIR MINIMIZES SEISMIC RISK BY USE OF OUTDATED MAPS

Facts:

The analysis of Geophysical impacts is based on factually outdated USGS maps whsich minimize the seismic dangers and risks in the Project Area. The Regional Fault Map ESA included as Figure 4.5-1, is Base Map, U.S. Geological Survey, National Seismic Hazards Map - Fault Sources, 2008. As this Base Map was updated in 2014 by USGS, it is unclear why ESA used the outdated map showing lesser fault sources in a DEIR dated December 2017. 8-87

Applicable Law:

See No. 2, supra.

7. CHAPTER 5 ALTERNATIVES TO PROPOSED PROJECT ARE INADEQUATE

Facts:

In considering the Alternatives ESA admits that increasing the density above 30 units **"per acre would conflict with existing City land use and zoning policies, and would require an amendment to the City Charter. Such an amendment would require voter approval, which would be a time-consuming and costly effort, with an unknown chance of success**." (DEIR Page 5-6 Paragraph 4.) However the DEIR fails to include that the Proposed Project itself conflicts with the Charter, General Plan, and Alameda Municipal Codes Sections on density, minimum square footage per footprint per unit, and prohibition against use of common open space to satisfy open space requirements for privately held units. 8-88

Applicable Law:
Inconsistencies with the City of Alameda's Charter, General Plan And Municipal Code were omitted from the DEIR. See No. 4 above, CEQA Guidelines §15125. ENVIRONMENTAL SETTING 8-89
(d) The EIR **shall** discuss any inconsistencies between the proposed **project and applicable general plans**. . . These inconsistencies include but are not limited to the following:

A. CHARTER OF THE CITY OF ALAMEDA

ARTICLE XXVI

Multiple Dwelling Units

Sec. 26-1. **There shall be no multiple dwelling units built in the City of Alameda.**

Sec. 26-2. Exception being the Alameda Housing Authority replacement of existing low cost housing units and the proposed Senior Citizens low cost housing complex, pursuant to Article XXV of the Charter of the City of Alameda.
Sec. 26-3. The maximum density for any residential development within the City of Alameda shall be **one housing unit per 2,000 square feet of land**. This limitation shall not apply to the repair or replacement of existing residential units, whether single family or multiple-unit, which are damaged or destroyed by fire or other disaster; provided that the total number of residential units on any lot may not be increased. This limitation also shall not apply to replacement units under Section 26-2.

B. GENERAL PLAN OF THE CITY OF ALAMEDA

LAND USE ELEMENT CHAPTER 2
Medium-Density Residential: Two family or one family units. Medium density residential development will provide at least 2,000 square feet of site area per unit. Existing densities range up to 70 units per net acre on blocks with mixed single- and units. Density range for additional units: 8.8 to 21.8 units per net acre. **Projects of five or more units with 20 percent of the units affordable to lower-income households earn a state-mandated density bonus permitting up to 26.1 units per net acre.** Congregate housing and single room occupancy facilities would be permitted and their density would be regulated by the bulk standards (setbacks, height, lot coverage) in each zoning classification.

Guiding Policies: Residential Areas

2.4.a Maintain and enhance the residential environment of Alameda's neighborhoods.
2.4.d Limit residential development to one family detached and two family dwellings, in accord with the provisions of Measure A.

2.4.p **Amend the Zoning Ordinance and zoning map to be consistent with Measure A, as necessary.**

Chapter 2 - 14 - Land Use Element

2.4.q Require that all new development pay appropriate development impact fees.
Guiding Policies: Specified Mixed Use Areas

2.6.d Grand to Willow Street (Northern Waterfront): Continue efforts to minimize industrial -residential conflicts on the south side of Clement Avenue where current zoning matches current use at most locations. Live-work space for artists and artisans would be an appropriate use in many cases. To ensure maintenance of a working waterfront and to avoid employment densities that would create heavy traffic, office and retail space is to be limited to approximately its current share of total floor area. The intent is to maintain an

environment suited to the types of businesses now located in the area—both those that are related to the waterfront and those that are not.
2.6.e Willow Street to Oak Street (Northern Waterfront): Provide for redevelopment of existing industrial sites for up to 300 residential units, treating the area north of Clement Avenue as an extension of the residential neighborhood to the south. The proposed Business and Waterfront Improvement project would provide public actions to stimulate development of the site.
2.6.f (Northern Waterfront): Create a continuous shoreline access along the Estuary from the Miller Sweeney Bridge to the western tip of Alameda Point.

Implementing Policies: Specified Mixed Use Areas

2.6.h Grand to Willow Street (Northern Waterfront)**: Limit office/industrial/retail development to .5 FAR, excluding area serving open uses, providing shoreline access, or used for vehicular access to other facilities within the Specified Mixed Use area**. The intent of this provision is to support waterfront related and non-waterfront related uses of the types now existing. The policy would prevent overbuilding that would occupy open area needed to support viable marine-related activities. The industrial character is not to be replaced by typical business park landscaping or building intensity.
2.6.i Willow Street to Oak Street (Northern Waterfront): Rezone existing nonresidential parcels to a residential-industrial mixed use district that would allow industrial use not more intense and not occupying more floor area than the 1990 use or residential development consistent with Measure A. Existing industry would not become nonconforming under zoning regulations, but could not expand in this area. Residential development would occur where a developer has a site large enough to create a residential environment. Uses would change only in accord with the plans and schedules of landowners.
(For most uses, a maximum permitted rate of gross floor area to site area is specified. The floor area ratio (FAR) is a broad control of building bulk that limits both visual prominence and traffic generated.)

Implementing Policies: Business Parks and Industrial Areas
2.8.g Revise zoning regulations to remove cumulative provisions that permit all uses except housing in industrial areas. This policy may be critical to preservation of the sea-rail link and the existing industries that use it. If zoning regulations in force in 1990 are not revised, a strong demand for office space or waterfront hotels could suddenly displace industry. **If future economic conditions warrant a major change from the designated industrial use, the City of Alameda should initiate revision of the General Plan.**

2.10.c Stop the trend toward private use of public property.

3. CITY DESIGN ELEMENT

Implementing Policies: Edges, Vistas, Focal Points

3.2.g **Work with BCDC staff to prepare a schematic plan for development of the 100-foot-wide strip above mean high tide on properties likely to require BCDC development approval.**
The schematic plan should provide for public access and provide shoreline streets wherever possible. Specific opportunities for shoreline streets should be identified. The plan should include design standards and guidelines for buildings, streets, pedestrian and bicycle routes, signage and landscaping.
3.2.i **Ensure that sections of the Estuary waterfront remain visually unobstructed**.
Most of the Estuary waterfront not devoted to industrial use is developed as marinas which block vistas. The proposed Estuary Park will be on the most prominent viewpoint.

3.3.e Develop detailed design guidelines to ensure protection of Alameda's historic, neighborhood, and small-town character. **Encourage preservation of all buildings, structures, areas and other physical environment elements having architectural, historic or aesthetic merit, including restoration of such elements where they have been insensitively altered. Include special guidelines for older buildings of existing or potential architectural, historical or aesthetic merit which encourage retention of original architectural elements and restoration of any missing elements. The design guidelines include detailed design standards for commercial districts.**

4. TRANSPORTATION ELEMENT

Policies

4.4.2.a **Roadways will not be widened to create additional automobile travel lanes** to accommodate additional automobile traffic volume with the exception of increasing transit exclusive lanes or non-motorized vehicle lanes.

4.4.2.b Intersections will not be widened beyond the width of the approaching roadway with the exception of a single exclusive left turn lane when necessary with the exception of increasing transit exclusive lanes or non-motorized vehicle lanes.

4.4.2.c Speed limits on Alameda's new roads should be consistent with existing roadways and be designed and implemented as 25mph roadways.
4.4.2.d **All EIRs must include analysis of the effects of the project on the city's transit, pedestrian and bicycling environment, including adjacent neighborhoods and the overall City network.**

4.4.2.e **EIRs will not propose mitigations that significantly degrade the bicycle and pedestrian environment which are bellwethers for quality of life issues and staff should identify "Levels of Service" or other such measurements to ensure that the pedestrian and bicycling environment will not be significantly degraded as development takes place.**

4.4.2.f Transportation related mitigations for future development should first implement TDM measures with appropriate regular monitoring; transit, bicycle and pedestrian capital projects; and more efficient use of existing infrastructure such as traffic signal re-timing in order to reduce the negative environmental effects of development, rather than attempting to accommodate them. **Should appropriate regular monitoring indicate that these mitigations are unable to provide the predicted peak-hour vehicle trip reductions, additional TDM measures, development specific traffic caps, or mitigations through physical improvements of streets and intersections, consistent with policy 4.4.2.a and policy 4.4.2.b, may be implemented.**
4.4.2.g After the implementation of quantifiable/verifiable TDM measures (verified through appropriate regular monitoring), and mitigation measures consistent with 4.4.2.f and identification of how multimodal infrastructure relates to congestion concerns, some congestion may be identified in an EIR process as not possible to mitigate. **This unmitigated congestion should be evaluated and disclosed (including intersection delay length of time) during the EIR process, and acknowledged as a by-product of the development and accepted with the on-going funding of TDM measures.**

5. OPEN SPACE AND CONSERVATION ELEMENT

Implementing Policies: Open Space for the Preservation of Natural Resources 5.1.n Inventory existing wetlands and water-related and other habitats to create a comprehensive map of sensitive biological and botanical resources, to better protect these resources.
5.1.p Require that proposed projects adjacent to, surrounding, or containing wetlands be subject to a site-specific analysis which will determine the appropriate size and configuration of the buffer zone. The size and configuration of the buffer zone should be based on the characteristics and importance of the wetlands and the proposed project. The purpose of the buffer zone will be to ensure the long-term viability of the wetlands area, which may include provisions for off-site needs such as upland nesting habitat.

Implementing Policies: Climate and Air Quality
5.5.c Encourage use of public transit for all types of trips. See policies in Section 4.3 in the Transportation Element.
5.5.d Encourage development and implementation of Transportation System Management (TSM) programs.
See Transportation Element policies (4.2.a and 4.2.b).
5.5.e **Minimize commuting by balancing jobs and nearby housing opportunities. Buildout of Alameda will create four jobs for every three employed residents, minimizing out-commuting.** A surplus of jobs in Alameda is likely to result in less travel than if these office/business park jobs were at alternative outlying locations.
6. PARKS AND RECREATION, SHORELINE ACCESS, SCHOOLS AND CULTURAL FACILITIES ELEMENT
6.2.g **Prepare a Shoreline Access Plan in consultation with BCDC for areas where development proposals are expected to provide opportunities to improve or extend**

access. 6.2.h **Require shoreline access where appropriate as a condition of development approval regardless of whether development occurs within the area of BCDC regulation. Access should be provided even if there is no development within 100 feet of the water's edge.** 6.2.i Require off-site access as a mitigation when public access on-site is infeasible.

8. SAFETY AND NOISE ELEMENT

8.3 FLOODING AND SEA LEVEL RISE Due to its relatively flat topography and proximity to the San Francisco Bay, Alameda is uniquely sensitive to flooding caused by high tides, storm events, and climate change induced sea level rise. The City of Alameda normally experiences tides that range from -0.2' Mean Lower Low Water (MLLW) to +6.4' Mean Higher High Water (MHHW), based on the NAVD88 datum. (The NAVD88 datum or zero elevation is approximately the same as the elevations used in local tide tables.) The highest tide of the year, or "king tide," normally occurs during the winter months of November thru February, and is usually about 7.4'. Every year, there is a 1 percent chance the king tide will exceed 9.4'. The ten highest king tides recorded by NOAA in Alameda for the last 75 years measured 8.6' to 9.5' elevation.

Global warming and sea level rise will have severe long-term effects on Alameda. The Bay Conservation and Development Commission (BCDC) and Alameda County Flood Control Water Conservation District predict a likely 12-inch increase in sea level on the Alameda County coastline by 2050, and a likely 24-inch increase in sea level in the same area by 2100 (Adapting to Rising Tides: Alameda County Shoreline Vulnerability Assessment, May, 2015). The study identified a 66-inch inundation level when combining the 24-inch sea level rise with a 100-year storm event (see Figure 8-3). In addition to residential and commercial properties, the Webster and Posey Tubes, Ron Cowan Parkway and the Alameda Gateway Terminal Ferry and other major public improvements are vulnerable to inundation.

SN-15.Develop sea level rise adaptive strategies for different areas of the City for public discussion and evaluation, including but not limited to: avoidance/planned retreat, enhanced levees, setback levees to accommodate habitat transition zones, buffer zones, beaches, expanded tidal prisms for enhanced natural scouring of channel sediments, raising and floodproofing structures, and/or provisions for additional flood water pumping stations, and inland detention basins to reduce peak discharges.

a. Develop for public discussion and evaluation potential financing strategies and partnership opportunities with regional and state agencies such as the Oakland International Airport, and other agencies to fund and build selected adaptive strategies.

SN-19. Require new development adjacent to the shoreline, lagoons and low elevations to plan for 50 years of sea level rise. Ensure that the design of future developments incorporate flood protection measures to protect improvements from a 100-year storm event and anticipated sea level rise. a. **Require new development to provide adequate**

setbacks along waterfront areas for the future expansion of seawalls and levees to adapt to sea level rise.

10. NORTHERN WATERFRONT GENERAL PLAN AMENDMENT

10.1 Challenges and Issues

Financially Sound Development The General Plan policies and land use designations are designed to ensure that new development will fund the public facilities and services that are needed to serve the new development and that redevelopment of the area does not result in a negative financial impact on the City's ability to provide services to the rest of the City.

Facilitating a Jobs/Housing Balance. **With an emphasis on mixed use development, the General Plan policies for the area are intended to facilitate a jobs housing balance in the area and in the City for the purpose of reducing citywide traffic and the associated environmental, economic and social impacts of long commute trips.**

10.4.e. **Rezone the Encinal Terminals, Grand Marina, and Pennzoil sites for mixed-use residential development.**
10.4.f. Encourage the development of residential units on the upper floors of small commercial buildings in the Mixed-Use designated areas, in compliance with the City Charter.
10.4.g. Consider opportunities for a houseboat community in the Northern Waterfront area.

Implementing Policies: Circulation and Infrastructure
10.6.e. Extend Clement Avenue through the Northern Waterfront from Grand Street to Sherman to facilitate the movement of trucks, transit and/or rail, bicycles, and pedestrians.
10.6.f. Non-residential uses should be located adjacent to the Clement Truck Route to minimize disturbances to residents from truck traffic on Clement Street; however, if residential uses are proposed adjacent to the Clement Truck Route, residential structures shall be adequately set back and/or provide design features to minimize disturbances to future residents. In accordance with policy 10.8.f, sound walls shall not be used to buffer residential uses from the truck route.
10.6.g. Designate the extension of Clement Avenue through the Northern Waterfront as a Truck Route; remove the Truck Route designation on Buena Vista from Sherman to Grand Street. Do not extend the truck route through the Beltline property.
10.6.h. Implement traffic calming measures to slow and control traffic flow in and around the Plan area and protect adjacent neighborhoods.
10.6.z. **Ensure that police, fire, educational, parks, opens space, and other public services are adequately funded to serve new development.**

10.6.aa. Consider creation of a Northern Waterfront Assessment District to fund public improvements and or municipal services required to support new development in the area.

10.8.c: To ensure design compatibility with adjacent developments and neighborhoods; limit new building heights to 60 feet.

HOUSING ELEMENT 2015–2023

Regional Housing Needs Allocation
In July 2013, the Association of Bay Area Governments (ABAG) issued the Regional Housing Needs Allocation (RHNA). **The City of Alameda was assigned a RHNA of 1,723** units. To address state, regional, and local need for affordable housing, **444 of the units are to be affordable to very low-income households, 248 of the units are to be affordable for low-income** households, and **283 of the units are to be affordable for moderate-income households.** The balance of the units **(748) may be market rate**. The City of Alameda Land Inventory, located in the Housing Resources section of the Housing Element Background Report on page 35, identifies adequate sites for over 2,000 units that are appropriately zoned to address the affordable housing demand. These identified sites provide support for state mandated requirements, but do not represent the full extent of Alameda's available housing sites. In 2010, the City of Alameda, the Alameda Housing Authority, and their non-profit partner Resources for Community Development completed work on Shensi Gardens, a 39-unit multifamily housing project for very-low and low-income Alameda families. The award winning project exemplifies Alameda's successful and ongoing efforts to transform the former Naval Air Station at Alameda into a mixed use, mixed income district.

State law requires that "**the general plan and elements and parts thereof comprise an integrated, internally consistent, and compatible statement of policies." Internal consistency avoids policy conflicts and provides clear policy direction for the future improvement and development of housing within the City. The City is evaluating the consistency of this element with other chapters of the general plan as part of the update process. It will continue to maintain General Plan consistency through ongoing review and revision conducted annually thereafter.**

8. ALAMEDA MUNICIPAL CODE

30-4.20 - M-X, Mixed-Use Planned Development District.

e. Density.
1. The City Council shall determine the number of dwelling units that are appropriate for the M-X and the appropriate area of noncommercial development therein.

2. Residential development within the entire M-X shall not exceed one (1) dwelling unit per two thousand (2,000) square feet of lot area for land designated on the Master Plan for residential use.

30-4.23 - Multi-family Residential Combining Zone.
a. Purpose. The Multi-family residential combining zone (MF District) is an overlay zone intended for lands in Alameda that are well located for transit oriented Multi-family housing, necessary to accommodate Alameda's share of the regional housing need, and available to facilitate and encourage the development of a variety of types of housing for all income levels, including Multi-family rental housing as required by California Government Code sections 65580 and 65583.
k. Affordable Housing Requirements. 1. All residential projects shall provide affordable housing pursuant to Alameda Municipal Code 30-16, Affordable Housing. 2. Projects that qualify for a residential density bonus pursuant to Section 30-17, Affordable Housing Density Bonus and Government Code § 65915 shall be entitled to: (a) Up to a thirty-five (35%) percent increase in maximum allowable density described in provision e of this section; (b) A maximum height of four (4) stories but not more than forty-five (45') feet;
b. Alameda Municipal Code and Underlying Zoning District Provisions and Requirements. 1. Proposed residential use within the MF district shall comply with the provisions of the MF District, the provisions of the underlying zoning district and all other provisions of the Alameda Municipal Code. In the event of a conflict between the provisions of the MF Combining District and the provisions of the underlying district or the Alameda Municipal Code or Alameda City Charter Article 26, the provisions of the MF District shall govern. 2. Proposed non-residential use, if permitted or conditionally permitted by the underlying zoning districts, within the MF District shall comply with the provisions of the underlying zoning district and all other provisions of the Alameda Municipal Code. c. Housing Types Permitted. 1. The following housing types shall be permitted by right, without a conditional use permit or other discretionary review other than design review, in addition to those permitted by the underlying zoning district: (a) Multifamily; (b) Town homes; (c) Senior; (d) Transitional housing; (e) Supportive housing; (f) Shared living; (g) Live/work; 2. For the purposes of the MF District, live/work shall be defined as a residential unit that is the primary residence and place of employment for the owner or occupant of the live/work unit. d. Land Uses Permitted. 1. Residential uses are permitted by right in the MF Combining District in addition to the uses permitted and conditionally permitted by the underlying zoning district. 2. All properties with the MF Combining District designation that front on Park Street or Webster Street shall provide ground floor retail space fronting onto the Park Street or Webster Street public right-of-way. e. Permitted Residential Density and Lot Size. 1. Within the MF Combining District, the maximum permitted residential density shall be thirty (30) units per acre. 2. Minimum lot size requirements shall be modified as necessary to permit construction at the densities allowed by this section. f. Height Requirements. The maximum height permitted shall be three (3) stories or thirty-five (35') feet, except as provided in paragraph k.

30-5.4 - Relationship to Other Regulations to and to Private Restrictions.
a. Where conflict occurs between the regulations of this article and any Building Code or other regulations effective within the City, **the more restrictive of any such regulations shall apply.**

30-5.12 Definition - of required open space.
Usable open space is comprised of private open space and common open space. **Usable open space is that area of a building site which is landscaped or otherwise developed and maintained for recreation or outdoor living by the occupants.** Usable open space shall not include yards or other areas having a width of less than eight (8') feet, except for balconies which may have a minimum horizontal dimension of five (5') feet, or areas devoted to automobile access or storage. The following areas shall constitute usable open space as required by subsections 30-4.2(d)(9), 30-4.3(d)(10), 30-4.4(d)(10), 30-4.5(d)(10), and 30-4.6(d)(10).

30-17.4 - Density Bonus Application.
a. In order to receive concessions and/or incentives, or waivers under this Section 30-17, an Applicant must submit to the City a Density Bonus Application which will be treated as part of the Development Application. At any time during the review process, the Planning and Building Director may require from the applicant additional information reasonably necessary to clarify and supplement the application or to determine the development's consistency with the requirements of this section.
b. The Density Bonus Application shall include the following:
1. **A development plan illustrating that the "base" project meets all existing general plan and zoning development standards.**
2. A description of the Development, including the total number of proposed affordable housing units, senior housing units, or age-restricted mobile home park units; a description of any land the applicant proposes to donate for low income housing units; and any child care facilities the applicant proposes to construct as part of the qualifying housing development premises or on an adjacent property.
3. The zoning and General Plan designations and assessor's parcel number(s) of the project site. 4. A vicinity map showing the location of the proposed project.
5. A set of preliminary project plans that include a site plan showing all building and structure footprints or locations, drive aisles and parking layout; floor plans of all structures and buildings; and architectural elevations of all buildings and structures, all drawn to scale.
6. A request for a concession or incentive shall include evidence to justify why it is necessary to provide for affordable housing costs. Specifically, the application shall include a financial report or pro forma demonstrating: i) whether the concessions or incentives sought would result in identifiable, financially sufficient, and actual cost reductions; ii) whether the concessions or incentives sought are necessary to reduce the cost of the housing project sufficiently to make feasible the provision of the affordable housing units; and iii) how any additional concession or incentive would contribute significantly to the economic feasibility of the construction of the child care facility if a child care facility is proposed.

7. A request for a waiver shall include evidence to justify why it is necessary to allow construction of the development on the site. Specifically, any applicant requesting a waiver of development standards that physically preclude construction at the densities and/or concessions and incentives permitted shall submit evidence in the form of a site plan, drawing or written explanation describing why the waiver is needed to permit the project. A financial report or pro forma is not required to justify a waiver.
8. The Affordable Housing Unit Plan which shall include: (a) The location, structure (attached, semi-attached, or detached), proposed tenure (sale or rental), and size and number of bedrooms of proposed market-rate and affordable housing units and the proposed size of non-residential uses included in the development; (b) The income level to which each affordable housing unit will be made affordable; (c) For phased developments, a phasing plan that provides for the timely development of affordable housing units in proportion to other housing units in each proposed phase of development as required by this section.
9. Any other information reasonably requested by the Planning and Building Director to aid in the implementation of this Section 30-17.
c. In the event that construction of a project is to be: 1) phased over more than two (2) years, and those entitlements are vested by instruments such as a Development Agreement or other similar instrument, and 2) the vesting document(s) allows for the phased submittal of Design Review plans including the floor plans and elevations of proposed buildings, then the applicant may be allowed to phase submittal of the floor plans and elevations required by subsection 30-17.4.5 of all planned residential buildings until such time that the Design Review plans are submitted pursuant to the vesting documents.
d. A project with a Density Bonus Application, including a request for concessions, incentives or waivers, shall be reviewed for approval by the Planning Board; provided, however, that if a development involves another permit or entitlement requiring City Council approval, then the Planning Board may deny the development project or recommend its approval to the City Council.
e. A requested concession, incentive, or waiver shall be approved unless the findings for denial listed in subsection 30.17.9a., "Requests for Incentives or Concessions," or 30-17.12a., "Waivers of Development Standards the Physically Preclude Construction," are made in writing. f. Decisions of the Planning Board may be appealed to or reviewed by the City Council as provided in Section 30-25 of this Code, "Appeals or Calls for Review."

8. PROJECT IMPLEMENTING MF ZONE CANNOT BE APPROVED

Facts:

The Ordinance adopting the Multi-Family Residential Combining Zones, is void as a matter of law. The provision stating that the provisions of the MF District will govern any conflict is not supported in the law.

8-91

AMC §30-4.23 - Multi-family Residential Combining Zone.

a. Purpose. The Multi-family residential combining zone (MF District) is an overlay zone intended for lands in Alameda that are well located for transit oriented Multi-family housing, necessary to accommodate Alameda's share of the regional housing need, and available to facilitate and encourage the development of a variety of types of housing for all income levels, including Multi-family rental housing as required by California Government Code sections 65580 and 65583. b. Alameda Municipal Code and Underlying Zoning District Provisions and Requirements. 1. Proposed residential use within the MF district shall comply with the provisions of the MF District, the provisions of the underlying zoning district and all other provisions of the Alameda Municipal Code. **In the event of a conflict between the provisions of the MF Combining District and the provisions of the underlying district or the Alameda Municipal Code or Alameda City Charter Article 26, the provisions of the MF District shall govern**.

Applicable Law:

In 1916, Alameda became a Charter City pursuant to the California Constitution (Cal. Const. Art 9 §3a.) It's current Charter was adopted by the voters in 1937. Alameda's citizens circulated an Initiative which passed March 1, 1973, adding §§ 26-1 and 26-2, Article XXVI [Multiple Dwelling Units],

"to provide that there shall be **no multiple dwelling units** built in the City of Alameda, exception being the Alameda Housing Authority replacement of existing low cost housing units and the proposed Senior Citizens low cost housing complex, pursuant to Article XXV of said Charter."

This Charter Amendment was further strengthened by another amendment passed by the electorate and added March 5, 1991, § 26-3, Article XVI [Multiple Dwelling Units],

"to limit the maximum density for any residential development within the City of Alameda to **one housing unit per 2,000 square feet of land** excepting the repair or replacement of existing residential single-family or multiple-units which are damaged or destroyed by fire or other disaster and excepting replacement units under Charter Section 26-2."

Article XI, § 3, of the California Constitution states that the Charter can only be amended by vote of the City's electors, while Calif. Elections C. § 9255 provides the procedures for such an amendment. Chapter XXX of the AMC (hereinafter "AMC") was originally adopted to carry out the provisions of Measure A. AMC § 30.51 defines Multiple Dwelling Units, the type specifically excluded in Alameda as:

Multiple dwelling units shall mean a residential building, whether a single structure or consisting of attached or semi-attached structures, designed, intended or used to house, or for occupancy by, three (3) or more families, or living groups, living independently of each

other, located in districts or zones authorized there for. Each such family or group is deemed to occupy one (1) such dwelling unit.

Courts in California and other states, have long held that a charter city many not take any action which conflicts with the City's Charter, and that "(a)ny act that is violative or not in compliance with the charter is void." (*Domar Electric Inc. v. City of Los Angeles* (1994) 9 Cal.4th 161, 171, citations omitted.)

The City did not conduct an election to amend its charter prior to adopting Resolutions No.14718 and Ordinance No.3054 which implemented the MX and MF zoning.

In adopting Ordinance No. 3054, the City acknowledged the existence of conflicts between the new MF District and the Charter. In fact, AMS Subsection 30-4.23b.i. as added to the Code by Ordinance No. 3054, states that "In the event of any conflict between Article 26 and the provisions of the Code regarding the MF District, the latter provisions shall govern."

It is not possible for the City to paper over the conflict between the Ordinance No. 3054 and the Charter by stating that Ordinance No. 3054 controls in the event of a conflict. Rather, under the rationale outlined in *Domar, supra,* and numerous other cases, it is clear that Ordinance No. 3054 is void as a result of the conflict between Ordinance No. 3054, and the Charter.

The DEIR has attempted to circumvent the voters' mandate of Measure A as it applies the Project by using Housing Element and Municipal Code Sections that conflict with the Charter and General Plan, and without a vote of the people. The City of Alameda's Housing Element was certified by the State which constitutes a finding that it identified a sufficient number of vacant parcels to meet the 2023 housing availability requirement.

The City of Alameda has overwhelmingly met and surpassed the ABAG Housing Goals for market rate units. It falls short in the low and affordable income housing goals and this Project is not providing low income and affordable housing to justify the loss of the remaining traffic capacity through the bridges and tunnels to justify implementing a void MF, or MX Overlay without a vote of the people or judgment of a court of law.

8-91

9. THE CITY MAY NOT APPROVE THIS PROJECT AS IT IS INCONSISTENT WITH THE GENERAL PLAN AND OTHER REGULATIONS PRESCRIBED FOR THE USE OF LAND WITHIN THE CITY OF ALAMEDA

Facts:

This Project is inconsistent with the Charter, General Plan and Sections of the AMC. The Project appears to be consistent with some sections of the AMC which are void.

8-92

Applicable Law:

AMC §30-94.1 - Decision by City Council.
a. The City Council shall hold a public hearing, after which it may accept, modify or disapprove the recommendation of the Planning Board.
b. **The City Council may not approve the development agreement unless it finds that the provisions of the agreement are consistent with the General Plan and other regulations prescribed for the use of land.**
(Ord. No. 2189 N.S.)

10. THIS PROJECT VIOLATES STATE PLANNING AND ZONING LAW

Facts:

See No. 9, above. State Law requires that this Project be rejected as there is no basis for making a determination that it complies with local laws as is required under State law.
Applicable Law:

A general plan must be integrated and internally consistent, both among the elements and within each element. (Gov.C. §65300.5). If there is internal inconsistency, the general plan is legally inadequate **and the required finding of consistency for land use approval cannot be made.**
All "lower tier" zoning regulations, approvals an enactments must be consistent with the governing "higher tier" general plan. (Gov. C. §§ 65359, 65454, 65860, *DeVita v. County of Napa*, (1995) 9 Cal.4th 763,803.) "Vertical consistency between an applicable general plan and the various layers of subordinate land use regulations has been aptly termed the "linchpin of California's land use and development laws" because "it is the principle which infused the concept of planned growth with the force of law" *(De Botarri v. City Council*, (1985) 171 Cal.App.3d 1204, 1213.). In order to be consistent with its governing general plan, a zoning ordinance must "further the objectives and policies of the general plan and not obstruct their attainment" (*Corona-Norco Unified School District v. City of Corona* (1993) 17 Cal.App.4th 985, 994.).

If a subordinate land use regulation does not further and promote the policies of a general plan, it must be deemed inconsistent (*Building Industry Ass'n. V. City of Oceanside.* (1994) 27 Cal.App.4th 744, 767.) A land use decision (zoning ordinance) must be deemed inconsistent with a general plan if it conflicts with a single, mandatory general plan or policy or goal (*Families Unafraid to Uphold Rural El Dorado County v. El Dorado County Bd of Sups*. (1998) 62 Cal.App.4th 1332,1341.). A local land use decision that is inconsistent with the applicable general plan is invalid when passed, i.e., void *ab initio.* (*Lesher Communications Inc. V. City of Walnut Creek* (1990) 52 Cal.3d 531,540.).

8-93

General Plan Land Use Element Section 2.4.d includes the policy "to limit residential development to one family detached and two family dwellings, in accord with t he Provisions of Measure A." The Adoption of the Housing Element, and land use designation of Medium Density Residential as well as the Multifamily Combining Zone Conflicts with the General Plan Land Use Element, since it permits "by right" multifamily residential uses in densities greater than permitted under the General Plan Land Use Element. In addition, the City failed to adopt a Schedule to address these inconsistencies.
The City cannot approve the Alameda Marina Project until the General Plan is amended.

8-93 cont.

11. RECIRCULATION OF THE DEIR IS REQUIRED.

Facts:

The (1) Failure to include a complete analysis of the cumulative impacts of all known projects, (2) omission of all of the inconsistencies with the City of Alameda applicable laws, Charter, Municipal Code, General plan, (3) use of outdated Geological information, (4) inadequate traffic impact analysis using erroneous traffic "studies" and failure to include assumptions thereon, which are directly contradicted by traffic measurements and projections used by MTC and CALTRANS, (5) misquoting these inadequate traffic studies which show no impact, basing findings upon them stating there are impacts entitling findings of overriding considerations, among other failures of the DEIR require that the DEIR be amended and updated to include the foregoing, and re-circulated.

8-94

Applicable Law:

CEQA Guidelines §15088.5. RECIRCULATION OF AN EIR PRIOR TO CERTIFICATION
(a) A lead agency is required to recirculate an EIR when significant new information is added to
the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section, the term "information" can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. "Significant new information" requiring recirculation include, for example, a disclosure showing that:
(1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
(2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.
(4) **The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (Mountain Lion Coalition v. Fish and Game Com. (1989) 214 Cal.App.3d 1043)**
(b) Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR.
(c) If the revision is limited to a few chapters or portions of the EIR, the lead agency need only re-circulate the chapters or portions that have been modified.
(d) Recirculation of an EIR requires notice pursuant to Section 15087, and consultation pursuant to Section 15086.
(e) **A decision not to re-circulate an EIR must be supported by substantial evidence in the administrative record.**
(f) The lead agency shall evaluate and respond to comments as provided in Section 15088. Re-circulating an EIR can result in the lead agency receiving more than one set of comments from reviewers. The following are two ways in which the lead agency may identify the set of comments to which it will respond. This dual approach avoids confusion over whether the lead agency must respond to comments which are duplicates or which are no longer pertinent due to revisions to the EIR. **In no case shall the lead agency fail to respond to pertinent comments on significant environmental issues**.

Attachment 4

Economic Development Assessment

Alameda Marina Master Plan Market Assessment Prepared for: Bay West Development Prepared by: Economic & Planning Systems, Inc. December 16, 2016:

"The economic rebound from the 2008-9 recession enjoyed broadly throughout the Bay Area and recent approval of new multifamily housing has supported a modest surge in new residential development in the city in recent years."

Response: Residential development is the most expensive type of development a city can undertake. Impact fees cover the additional expenses or additional city services initially and then the services become a liability for the city. Business development results in long-term revenues in the form of sales taxes that support the city services that are required to support the residents. Between this issue and Alameda's jobs/housing imbalance, the city should be looking at more opportunities to preserve existing industrial and commercial space for long-term revenue generation.

Alameda's geography, an island surrounded by water, lends opportunity to the development of blue economy businesses. The proximity to the Port of Oakland and deep water on the north shore of Alameda is particularly attractive for blue economy business development. Alameda Marina offers existing R&D space, warehouses, and startup/incubator space that is near the water.

The region's population growth has squeezed out waterfront locations that have seen a reduction in water-oriented leisure space as it has become popular for residential development. The 530 berth marina will serve as a magnet to attract new residents who are interested in maritime recreational pursuits to the project site. Changes in zoning to allow specific types of mixed use development and new amenities to actively support maritime operations can help activate the marina and public areas with waterfront access.

Alameda's many yacht clubs are great organizations for new residents to join in with the boating community of Alameda. There are groups that teach sailing to young and old. An active boating community will provide jobs for youngsters.

8-95

Job growth in the City of Alameda has been strong, but employment growth occurring since the recession has been concentrated in restaurant and retail sectors, while other markets in the Bay Area have attracted technology and professional services jobs and associated market demand for new workspace.

Alameda has enjoyed recent increases in its retail supply, and these significant new lifestyle and neighborhood centers have attracted credit tenants which are well positioned to compete with retailers outside the city, as well as internet retailers.

Response: The investment Alameda made in the Alameda Theater and Parking Garage sparked the growth in restaurants on Park and Webster Streets. Residential development at Alameda Landing and other areas brought new retail establishments such as the shopping center at Alameda Landing. Unfortunately, restaurant and retail jobs do not offer living wages to allow employees to live in Alameda so the island job growth has actually served to increase congestion and carbon gases on the nearby freeways and other roads. Alameda needs professional, technical and trade jobs that will keep residents both living and working on the island. The 85 businesses at Alameda Marina prior to Bay West's plans for development provided 250 of these jobs in its workspaces. The Alameda Marina was home to a world renowned Oceanographer who started a business that reached to all corners of the world. Alameda needs to work to retain these types of businesses.

8-96

While Alameda possesses a rich history of maritime economic activity on its waterfront, the primary drivers of maritime business activity have stagnated or are in decline.

Response: Each year the Alameda Community Sailing Center trains about 175 local youth how to sail. In addition, the center also teaches classes to adults and families and has sailing activities for all Alameda residents throughout sailing season. In addition, Encinal Yacht Club also operates a youth sailing summer camp. Both training programs result in new participants who will purchase boats and look for marinas in which to store them. These new sailors will reverse the decline which began with the recession. People are just now beginning to have discretionary income to pursue leisure activities that will involve the use of waterfront activities in Alameda. Many of the new residents will move to Alameda for the marine activities if the services are available.

8-97

Young adults also are showing interest in personal watercraft such as paddleboards and kayaks which require access to the waterfront..

The redevelopment of Alameda Marina will maximize its market potential by offering residential uses, and some ancillary retail may serve as an amenity to the project, while office and industrial/flex space are significantly riskier, as the market reveals existing vacancy, limited recent development, and a strong pipeline of supply.

"Alameda Marina should seek to take advantage of the strong housing market and while some retail and workspace may be desirable for place making, market demand for commercial uses is relatively weak. Office and industrial space likely will be difficult to lease at rates that cover the cost of construction. One exception might be the adaptive reuse of industrial space as "maker space" (i.e., flexible space for artisans, craft manufacturers, or technology businesses). While demand for maritime uses exists, maritime-designated space within the project likely would satisfy the needs of existing Alameda businesses. Again, lease rates likely would be insufficient to cover the cost of construction. A maritime user requirement beyond what the market can support adds significant risk and cost to the project, which might be mitigated through establishment of a more flexible commercial program."

Response: Alameda has 4000 housing units in the pipeline for development. Alameda Marina currently has over 250,000 sq. ft. commercial/industrial space and Bay West proposes to reduce it to 150,000 sq. ft. – "if feasible". Planned development of commercial space other than Alameda Point includes 22,000 at Harbor Bay, 364,000 of warehouse space at Alameda Landing owned by Bay Ship and Yacht for their inventory space, 50,000 sq. ft. at Encinal Terminals, 25,000 sq. ft. at Del Monte and 23,000 sq. ft. at Park Esquina, 712 Lincoln Ave., 1435 Webster St., and 11,000 sq. ft. on Minturn St. The amount of square footage coming online to develop jobs which pay an Alameda living wage is minor when compared to what is being allocated for housing which will further deteriorate Alameda's jobs/housing imbalance.

8-98

(from city website):

Among the Guiding Principles determined by participants of the Economic Development Committee, as reported to City Council on February 21, 2017 under "Strategic Plan Strategies Framework", was to first address Improvement of Alameda's jobs/ housing balance, partially by attracting, retaining and expanding innovative commercial and light industrial businesses while promoting housing affordable to all sectors. Opportunities and Constraints identified that Alameda lags region in growing office-based jobs and that local workers have difficulty finding housing. Among proposed strategies to improve the balance of jobs and housing are to amend the General Plan to include strong policies preserving prime commercial sites for employment-generating uses. (Sites such as at the Alameda Marina where 250 jobs existed before Bay West started planning for this development.)

The second principle determined by participants of the Economic Development Committee was to "Preserve Alameda's "quirky and magical" character and quality of life". The committee sought to preserve and promote Alameda's unique landmarks and destinations, which contribute to making Alameda a creative and inspiring place for innovators. Supporting marine-related industries and
Providing an accessible waterfront for recreational activities were also identified as ways to support this goal for economic development. Opportunities and Constraints identified included Artists and "makers" being attracted to Alameda's inexpensive and "funky" spaces such as those that existed at Alameda Marina. The fact that Alameda is one of few inner Bay Area locations with a working waterfront was seen as an opportunity. Strategies to Preserve Character and Quality of Life included:

- *Exploring the feasibility of a new technology incubator/co-working space*
- *Encouraging development and reuse of buildings to create cooperative spaces for artists and other "makers"*
- *Exploring the feasibility of a new technology incubator/co-working space*
- *Exploring working with other nearby cities that have maritime industries (e.g. Richmond, Oakland, Berkeley, and Emeryville) to identify joint funding and financing options for waterfront infrastructure improvements*

The third principle of Economic Development identified was to maintain Alameda's fiscal stability. One proposed strategy to accomplish this goal was to invest in initiatives to create attractive, vibrant public spaces, especially in existing retail areas and waterfront locations, to attract experiential retailers.

Letter 8 Save Alameda's Working Waterfront
Response February 15, 2018

8-1 Section 4.12 of the Draft EIR evaluates the impacts of the project on the transportation system, including the regional highways. As explained in Master Response 6 in Section 2.2 of this chapter, the evaluation includes analysis of traffic operations at the major intersections along these corridors, analysis of travel times along three corridors connecting Alameda to Oakland, and analysis of traffic operations along major roadway segments as required by the Alameda CTC. Other intersections or roadway segments were not evaluated because the project would add minimal traffic to these locations as shown on Figure 4.12-4, Trip Distribution, of the Draft EIR. This comment does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

The reductions in BART and AC Transit ridership for 2017 referenced in the comment are system-wide and reflect ridership throughout the BART and AC Transit service area. Furthermore, during the same period, ferry ridership in Alameda continued to increase dramatically. The comment does not state how regional transit ridership may affect the traffic analysis presented in the Draft EIR, nor does it state how the proposed project would impact that ridership. Therefore, the comment does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-2 The project sponsor has never indicated that the only reason for the proposed project is improve the shoreline, as suggested by the commenter. Please see the list of Project Objectives at Section 2.4 of the Draft EIR. As discussed in Chapter 3 of the Draft EIR, the project would be developed in phases, with each phase funded and developed in succession. This process would be typical of standard development practice for larger projects, and would ensure that the cash flow and capitalization requirements needed to fund the next phase of development are maintained. In addition, Chapter 6 of the Master Plan for the project provides that shoreline and land side infrastructure improvements would occur in each phase and further provides that a building permit for the first building in the next phase would not issue until shoreline improvements in the prior phase have been completed based on the project sponsor's approved plans for the infrastructure work. Regardless, the comment does not address a specific environmental impact or effect. Rather, the comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required (*Twain Harte Homeowners Ass'n v. County of Tuolumne* (1982) 138 Cal.App.3d 664, 679).

8-3 This comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-4 Please refer to Master Response 2 in Section 2.2 of this chapter for a discussion of affordable housing and the project's requirements under the law. The project would provide 103 affordable housing units, which is in excess of what is required. There is a substantial market for these types of housing, and the project would assist in meeting the region-wide shortage of housing for families of varying income levels. Regardless, the comment does not address a specific environmental impact or effect, and does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-5 As stated in the comment, the Draft EIR is consistent with the Boatworks EIR in identifying both Park Street/Blanding Avenue and Park Street/Clement Avenue intersections as operating at LOS F under Cumulative (2040) Plus Project conditions. As discussed in Master Response 6 in Section 2.2 of this chapter, the Cumulative (2040) traffic impact analyses presented in the Draft EIR accounts for traffic generated by planned and proposed developments in Alameda, including the Boatworks project and other developments in the Northern Waterfront Area.

8-6 Please refer to Master Response 1 in Section 2.2 of this chapter for an overview of the project's consistency with the MX and MF Zoning Ordinances. The Draft EIR disclosed all significant and unavoidable transportation-related effects that would result from the proposed project. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-7 The Master Plan provides for public access throughout the site, with reasonable restrictions for purposes of public safety and security. This comment does not address a specific environmental impact or effect, and does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-8 The Master Plan provides for a mix of commercial uses, including those listed in the comment and as allowed for the site per the City's Municipal Code. The ultimate uses that may occupy the commercial areas of the site will largely be determined by the market, but the principal intent of the Master Plan with respect to commercial uses is to maintain a commercial core that includes a working waterfront centered around maritime uses, particularly in the Tidelands Lease portions of the site. With respect to conversion of a portion of the site to residential uses, the site's General Plan mixed use designation implies a specific

intent to add housing onto a site that is currently 100 percent commercial. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-9 Please see Response 8-8, above. Adequacy of dry boat storage space is an economic and social issue, not an environmental issue, and is thus not subject to analysis during the CEQA process.

8-10 Please refer to Master Response 1 in Section 2.2 of this chapter for an overview of the project's consistency with the MX and MF Zoning Ordinances and how the City calculated the allowable residential density for the project site.

8-11 Please refer to Master Response 5 in Section 2.2 of this chapter for a discussion of impacts related to aesthetics.

8-12 The provision and retention of affordable housing, whether through house boats or residential units on land, is a social and economic issue outside the purview of CEQA. Nonetheless, as the commenter points out, Bay Ship and Yacht would not be able to repair the hulls of houseboats in Alameda if there is no elevator at Alameda Marina. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-13 Please see Response 8-2, above.

8-14 Page 4.3-48 of the Draft EIR assesses the project's impacts with respect to trees, as well as requirements associated with applicable City ordinances for tree preservation, which include specific requirements for street trees. As long as tree removal is consistent with all permitting conditions, such removal would not conflict with local ordinances or policies. As a general rule, however, healthy trees on the site or along the Clement Avenue frontage would be retained so long as they did not directly interfere with development activities. While the number of healthy and mature trees on the site is limited, those trees are viewed as assets and would not be removed unless necessary. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-15 Section 4.6.3 of the Draft EIR provides a listing of applicable federal, state, and local requirements concerning the handling and remediation of hazardous materials that may be present on the project site. Substantial information is available concerning evidence of past contamination and the presence of residual contamination on the site. This information is disclosed in the Draft EIR in Section 4.6.2. Additional information will be gathered through subsequent testing as the development proceeds, and it is possible that additional areas of

contamination may be found in the site's buildings and soils during the construction process. In that event, federal and state laws and regulations provide specific guidance as to how contaminated sites are to be managed, and those laws and regulations contain detailed requirements for remediation. These potential impacts, as well as a discussion of applicable requirements and mitigations are fully disclosed in the Draft EIR, under Impacts HAZ-1 and HAZ-2. Additional requirements would be developed and implemented during the permitting process, in accordance with applicable laws and regulations. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-16 Please refer to Master Response 5 in Section 2.2 of this chapter for a discussion of impacts related to aesthetics.

8-17 Chapter 3 of the Draft EIR, Project Description, cites in a number of instances the types of open space and park facilities that are part of the Master Plan. For instance, Section 3.2.1 of the Draft EIR states as part of the project overview that the project would include "Park areas, paths, trails, and shoreline improvements, including new waterfront and Bay Trail Open Space which would provide a new segment of the San Francisco Bay Trail, providing bicycle and pedestrian access throughout the site, with access to public open space on the site, a maritime boardwalk promenade, parks/maritime amenity areas, and open space areas on both sides of the existing graving dock." Table 3-1 of the Draft EIR shows the proposed land use program, and indicates that 4.25 acres of shoreline open space would be provided as part of the Master Plan. Section 3.2.2 of the Draft EIR lists the following objective related to open space and recreational uses: "Create public amenities and opportunities for gathering spaces for existing and future community members by developing new open space areas within and along the shoreline edge with a Bay Trail component." Section 3.4.4 of the Draft EIR is dedicated to describing the open space and recreational features that would be provided as part of the Master Plan. Figure 3-9 of the Draft EIR shows the conceptual open space plan, and illustrates the extensive areas of shoreline open space and the potential Bay Trail alignment through the project site. Regardless, the Master Plan would be required to comply with existing City requirements with respect to parkland and open space dedications, and as stated on page 4.11-14 of the Draft EIR, would be required to "contribute to public park improvements through the construction of park and recreational facilities included as part of the project, payment of fees, or the dedication of land or conservation easements, as permitted by the Quimby Act and required by the City's development impact fees."

In summary, the commenter's assertion that the project's "only planned areas for children to play are in the proposed parking lots" is not accurate. This comment does not present any additional information on environmental issues that have

not been adequately addressed in the Draft EIR. No additional analysis is required.

8-18 Please refer to Master Response 4 in Section 2.2 of this chapter for a discussion of impacts to historic resources.

8-19 Section 4.2.4 of the Draft EIR describes the methodology used to assess impacts related to air quality. The methodology used follows standard professional practice, as was conducted per the requirements and guidelines of the Bay Area Air Quality Management District (BAAQMD) and the California Air Resources Board (CARB). The models and criteria used to identify impacts consider a substantial number of variables, including emissions source generators, the distance of those generators to sensitive receptors, pollutant dispersal rates, and specific pollutants and toxic air contaminants (TACs) of concern, among others. As described in Draft EIR Section 4.2.4 under Impact AQ/CC-3, impacts of substantial pollutant concentrations upon sensitive receptors were evaluated using the required methodologies. An analysis was specifically conducted to determine the air quality effects of vehicle traffic on Clement Avenue using BAAQMD's Roadway Screening Analysis Calculator. Health impacts associated with stationary sources within 1,000 feet of the project site were also evaluated using BAAQMD's Stationary Source Screening Analysis Tool. In all instances, and as reported in the Draft EIR, the impacts were found to be well below regulatory significance thresholds. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-20 Please see Response 8-19, above. As discussed on page 4.2-48 of the Draft EIR under Impact C-AQ/CC-1, the EIR's air quality analysis considered the cumulative effects of the proposed project, combined with past present, and reasonably foreseeable development in the vicinity, and concluded that the project's effects would be less than significant. It should also be noted that regional models and project growth associated with traffic and air quality include a factor to include likely regional background growth to account for projects that might not be included in a project-specific inventory of cumulative projects. Thus, the regional models provide for a worst-case scenario when determining air quality impacts. Even under this worst-case scenario, the project's effects were found to be less than significant. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-21 This comment is unclear and difficult to follow, but it appears that the commenter's intent was to assert that the population projections utilized in the Draft EIR are incorrect. It also appears that the commenter was trying to extrapolate the average household population of Census Tract 4272 to the entire

City of Alameda, or perhaps vice versa. Regardless, the 0.65 percent annual growth rate factor adopted in the City's Local Action Plan for Climate Projection (LAPCP) is projected only through 2020, and the commenter is comparing that to possible growth factors through 2035 that could arise if all proposed residential units are constructed. The two numbers are not comparable. It is also unclear where the projected number of new households (5,046 new units) was obtained by the commenter, as no reference is provided. In short, the commenter's assertions are not supported, and the comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-22 Please see Response 8-21, above. Again, the population methodology calculations being put forth by the commenter are unclear, and it is difficult for the City to effectively respond. We do note that in this comment the commenter is using as a basis for population projections the unlikely possibility that 4,000 additional housing units will be constructed and occupied in the City by 2020, which is only two years in the future. Ultimately, the comment closes with an opinion by the commenter as to how the project should or should not be developed. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-23 As described on page 4.2-29 of the Draft EIR, the toxic air contaminant (TAC) analysis considered a number of conservative, worst-case scenarios, such as the assumption that truck idling sources would be located on the project site on the north side of Clement Avenue directly across the street from the residential uses to the south of Clement Avenue, which is a distance of less than 70 feet. Even at this close proximity, and as shown in Table 4.2-8 of the Draft EIR, the mitigated construction health risk impacts would be well below BAAQMD thresholds. These same conclusions could be extended to future residents of the project site that could be in residence during later phases of construction. For purposes of clarification, updated information has been added to Chapter 3 of this Final EIR. Specifically, Page 4.2-29, paragraph 3, is revised to read:

> During temporary construction activities, the analysis incorporates the estimated construction TAC emissions of diesel particulate matter and dispersion modeling using the USEPA AMS/EPA Regulatory Model (AERMOD) dispersion model with meteorological data from the closest and most representative monitoring station to the project site located at Oakland International Airport, which is approximately 2.5 miles to the southeast of the project site. Within the AERMOD model, TAC emission sources were placed on the project site (for off-road equipment and truck idling emissions) and on the portion of roads (i.e., Clement Avenue and Grand Street) that haul trucks could travel on within 1,000 feet of the

project site (for truck traveling emissions). The TAC emission sources were located in areas corresponding to construction associated with Phases 0, 1, 2, and 3. Truck idling sources were assumed to be located on the project site on the north side of Clement Avenue directly across the street from the residential uses to the south of Clement Avenue, which provides for a conservative (i.e., health protective) assessment. Receptor points were placed on the nearby sensitive receptor locations, which captures the maximum TAC concentrations at the maximally exposed sensitive receptor. These same methodologies can also be extended to assess impacts to future residents of the project site that could be in residence during later phases of construction.

This additional information does not alter the conclusions of the Draft EIR, nor does this comment present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-24 Please see the response to comment 8-23, above. While a large number of sensitive receptors may be present in the residential areas south of Clement Avenue, this does not change the fact that those receptors would be exposed to toxic air contaminant emissions that are substantially below BAAQMD thresholds. TAC emissions disburse in the atmosphere and concentrations diminish with distance from the emitting source. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-25 Please see the response to comment 8-19, above. The air quality effects of traffic along Clement Avenue was evaluated at both a project-specific level and a cumulative level. In all instances, and as reported in the Draft EIR, the impacts were found to be well below regulatory significance thresholds. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-26 As stated in the comment, the project is estimated to add about 53 trips to the Webster Street/Atlantic Avenue intersection during the PM peak hour, which corresponds to about 10 percent of the PM peak hour trips generated by the project. As discussed on page 4.12-23 of the Draft EIR and reiterated in Master Response 6 in Section 2.2 of this chapter, the trip assignment is based on the results of the Alameda CTC Model (shown on Figure 4.12-4, Trip Distribution, of the Draft EIR), which accounts for estimated future congestion along all local and regional roadways resulting from traffic generated by current and future developments throughout the region. Also, and as discussed in Master Response 6, the Cumulative (2040) traffic impact analyses presented in the Draft EIR accounts

for traffic generated by planned and proposed developments in Alameda, including the developments in the Northern Waterfront Area. In summary, these comments do not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-27 Unbundling parking, which is included as one of the TDM strategies for the project, may result in increased use of on-street parking in the vicinity of the project. However, parking occupancy is not considered an environmental impact topic under CEQA [Public Resources Code § 21099(b)(3) and 21099(d)(1) and CEQA Guidelines Appendix G, Section XVI]. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-28 The greenhouse gas emissions calculations used in the Draft EIR considered a worst-case scenario for electricity production emissions. Even then, the impact was found to be less than significant. Including a greater use of renewable energy generation into the calculation would lessen emissions even further. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-29 As presented under the analysis for Impacts BIO-1, BIO-2, BIO-3, and BIO-4, the project would be subject to a number of regulations and permitting requirements. Mitigation Measure BIO-3a, for instance, requires that all dredging and in-water construction activities be consistent with the standards and procedures set forth in the Long Term Management Strategy for dredging in the San Francisco Bay waters, which is a program developed by the U.S. Army Corps of Engineers (USACE), the Bay Conservation and Development Commission (BCDC), the Regional Water Quality Control Board (RWQCB), the U.S. Environmental Protection Agency (EPA), and other agencies. The program guides the disposal of dredge materials in an environmentally sound manner. Similar requirements are prescribed for impacts to marine mammals and fish from construction noise, impacts from sediment discharges, as well as other impacts. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-30 Please see the response to comment 8-14, above.

8-31 Beginning on page 4.3-36, the Draft EIR discusses potential impacts to birds, and also prescribes avoidance and minimization mitigations that are consistent with current regulations, including surveys and cessation of construction activities during recognized bird nesting seasons. The project would be required to comply with all applicable regulations concerning migratory birds and other sensitive

biological resources. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-32 Comment noted. Please see the response to comment 8-31, above.

8-33 Comment noted. Please see the response to comment 8-29, above.

8-34 Please refer to Master Response 4 in Section 2.2 of this chapter for a discussion of impacts related to historic resources. A number of the statements provide in this comment are in error, such as the number of contributory buildings designated by the HAB, which is 17, not 25, as asserted by the commenter. In addition, concerning the requirements of the Alameda Municipal Code, the commenter has stated that "the City of Alameda's Municipal Code Section 13-21.7 protects all the buildings from demolition at Alameda Marina because they were built prior to 1942." However, AMC 13-21.7(a) states that any "building that was constructed prior to 1942 shall not be demolished or removed without the approval of a certificate of approval issued by the Historical Advisory Board." The code establishes a process for review and approval prior to demolition, but does not preclude demolition entirely. To assist the commenter, the applicable sections from AMC 13-21.7 is presented below.

13-21.7 Interim Review.

a. Any building that was constructed prior to 1942 shall not be demolished or removed without the approval of a certificate of approval issued by the Historical Advisory Board. The age of the building shall be determined by a review of the City records.

b. No protected structure shall be demolished or removed without the approval of a certificate of approval issued by the Historical Advisory Board. Protected structures shall mean non-building building resources listed on the Historical Building Study List.

8-35 Please refer to Master Response 4 in Section 2.2 of this chapter for a discussion of impacts related to historic resources. The developer is not required to rehabilitate all of the remaining buildings to the Secretary of the Interior's Standards, but may elect to do so if feasible. Since the feasibility or ultimate desirability of rehabilitating all of the remaining buildings to the Secretary's Standards is not currently known, the Draft EIR's analysis conservatively found that the potential impact would be significant and unavoidable.

8-36 Please refer to Master Response 4 in Section 2.2 of this chapter for a discussion of impacts related to historic resources. It should be noted that the mitigation requires more than just filing photographs and other information in a library or repository, as is asserted in the comment. The measure also requires that

interpretive displays be produced and posted at the site. All interpretive materials would be required to be approved by the City of Alameda Historic Advisory Board. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-37 Please refer to Master Response 4 in Section 2.2 of this chapter for a discussion of impacts related to historic resources. In this comment, the commenter is simply restating what has already been disclosed in the Draft EIR. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-38 The results of the Envirostar database search will vary, depending upon the center of the radius search. For purposes of clarification, updated information has been added to Chapter 3 of this Final EIR. Specifically, Page 4.6-3, Table 4.6-1 has been modified to include the remediation site referred to by the commenter. Specific language revisions can be found in Chapter 3 of this Final EIR under the referenced page number above. The site referred to by the commenter is located approximately 800 feet from the eastern boundary of the Alameda Marina property. Based on the site's distance to the project site, it is extremely unlikely that the area of contamination could impact the project site through migration of contaminants. Regardless, the site is planned for remediation by 2019, and the planned remediation would eliminate the likelihood of an effect on the project site. The Draft EIR's conclusion of a less-than-significant impact remains valid, and no additional analysis is required.

8-39 As stated on page 4.6-9 of the Draft EIR, the project site is located outside of a designated airport influence area. As stated on page 4.9-14 of the Draft EIR, the project site is more than two miles distant from the nearest public or private airport or airstrip (Oakland International Airport), and is not within the area of the Airport Land Use Compatibility Plan for the airport. Moreover, the project site is not within the noise contours for the airport, as defined in the plan.

As noted by the commenter, and as discussed on page 4.9-14 of the Draft EIR, there is an existing helipad located on Coast Guard Island located approximately 1,800 feet north of the project site. The operations and frequency of use of this helipad is highly variable. A recent California Supreme Court case found that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents." In *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal. 4th 369, the Supreme Court explained that an agency is only required to analyze the potential impact of such existing environmental conditions on future residents for certain specified projects or if the project would exacerbate

those existing environmental hazards or conditions. CEQA analysis is therefore concerned with a project's impact on the environment, rather than with the environment's impact on a project and its users or residents. Since there are no public airports or private airstrips within two miles of the project and the existing helipad located on Cost Guard Island is considered as a part of the existing environment, aircraft related noise would not be a significant impact under CEQA for land uses to be developed under the proposed project. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-40 Please see the response to comment 8-15, above.

8-41 Please refer to Master Response 5 in Section 2.2 of this chapter for a discussion of impacts related to aesthetics. Please also see the response to comment 8-17, above.

8-42 Please refer to Master Response 1 in Section 2.2 of this chapter for an overview of the project's consistency with the MX and MF Zoning Ordinances, and how the City calculated the allowable residential density for the project site.

8-43 As stated on page 4.8-13 of the Draft EIR, the nearest Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) to the project site that has been approved by the U.S. Fish and Wildlife Service (USFWS) is the East Contra Costa County HCP/NCCP, which is approximately 18 miles from the project site. A review of USFWS records indicates that there are no adopted HCPs or NCCPs for Alameda Point. Regardless, and as stated in the Draft EIR, there is no adopted HCP/NCCP with jurisdiction over the project site. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-44 Please refer to Master Response 1 in Section 2.2 of this chapter for an overview of the project's consistency with the MX and MF Zoning Ordinances, and how the City calculated the allowable residential density for the project site.

8-45 Comment noted. It is worth noting that it would take more than 150 Tier 1 grants (at the maximum value of $200,000 each) to fund the necessary improvements to the Alameda Marina shoreline. As for Tier II grants, they are limited to $8 million distributed *nationally*, which would cover only about a quarter of the amount needed to repair the Alameda Marina shoreline. These types of grants are intended for small and minor improvement projects, and would provide little towards addressing the major shoreline infrastructure work required at the Alameda Marina. This comment does not address a specific environmental impact or effect. Rather, the comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any

environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-46 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of the feasibility of alternatives. This comment does not address a specific environmental impact or effect. Rather, the comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-47 Please see response to comment 8-12, above.

8-48 Page 4.9-20 of the Draft EIR evaluates the effects of roadway traffic on the project, particularly along the southern boundary of the site near Clement Avenue. The discussion describes applicable standards, and prescribes mitigations to address potentially significant impacts. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

With respect to the commenter's concern regarding noise from aircraft, please see response to comment 8-39, above. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-49 Comment noted. The Draft EIRs discussion under Impact C-POP-1 evaluates the project's effects with respect to providing additional housing in a region where housing growth is outpaced by job and population growth, which has resulted in a regional housing shortage. The criteria for determining a significant impact is whether or not the project would induce unplanned growth. The analysis in the Draft EIR found that the proposed project, in accordance with the City's General Plan and regional plans, would accommodate planned growth, rather than induce unplanned growth. Generally, this comment presents the commenter's assertions concerning the future of employment and housing in the City of Alameda. This comment therefore asserts the opinion of the commenter, and does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-50 The project trip generation presented in Table 4.12-8 of the Draft EIR is based on data summarized in the Institute of Transportation Engineers' (ITE) ***Trip Generation Manual*** and is based on data collected at mostly suburban developments where the majority of trips, including trips to and from schools, are by automobile. Thus, the project trip generation accounts for potential trips generated by high-school students.

As described in the response to comment 8-27, parking occupancy is not considered an environmental impact topic under CEQA. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-51 Please see response to comment 8-17, above.

8-52 Please see response to comment 8-17, above. Park and open space facilities planned as a part of the proposed project would increase the amount of recreational facilities in the Northern Waterfront section of Alameda, and the project would be required to comply with existing City requirements with respect to parkland and open space dedications and/or payment of impact fees. As stated on page 4.11-14 of the Draft EIR, the project would be required to "contribute to public park improvements through the construction of park and recreational facilities included as part of the project, payment of fees, or the dedication of land or conservation easements, as permitted by the Quimby Act and required by the City's development impact fees." This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-53 Comment noted. For purposes of clarification, updated information has been added to Chapter 3 of this Final EIR. Specifically, Page 4.11-11, paragraph 1, is revised to read:

> **Impact PSR-4: The proposed project would result in increased use of other governmental facilities, including libraries, but would not require new or physically altered government facilities to maintain acceptable performance objectives. (*Less than Significant*)**
>
> The Alameda Free Library offers library services to the residents of Alameda. The ~~West End library branch~~ Main Library, located ~~1.4 miles~~ 0.6 miles away from the project site at ~~788 Santa Clara Avenue~~ 1550 Oak Street, is the closest library. The Library offers a wide range of services, including answering reference questions, staging story times, providing summer reading programs, hosting class visits, and educational events.
>
> While the proposed project would generate an incremental increase in demand for library services, the additional demand that would be generated by an estimated population of 1,932 persons, only a small portion of whom would be expected to utilize the library in any given month, would be expected to be a small fraction of the existing monthly visitors. This would not require an expansion of library facilities, and the project's impact on library services would be considered less than significant.

Mitigation: None required.

This additional information does not alter the conclusions of the Draft EIR, nor does this comment present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-54 With respect to park facilities that would be included with the project, please see the response to comment 8-52, above. Traffic impacts resulting from shopping trips by future residents and employees were analyzed at pages 4.12-24 to 4.12-27 of the Draft EIR.

8-55 Please see response to comment 8-52, above.

8-56 Please see response to comment 8-52, above. Other cumulative projects planned for the Northern Waterfront area of the City, and all areas of the City for that matter, would be required to "contribute to public park improvements through the construction of park and recreational facilities included as part of the project, payment of fees, or the dedication of land or conservation easements, as permitted by the Quimby Act and required by the City's development impact fees" (Draft EIR, page 4.11-14). These actions would provide mitigation for cumulative impacts to recreational resources. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-57 The comment incorrectly states that the Draft EIR does not report all the delay at the Park Street/ Blanding Avenue and Park Street/Clement Avenue intersections. Please see Master Response 6 in Section 2.2 of this chapter and the response to comment 15-8, below, regarding consistency with forecasts in previously published environmental documents.

Concerning the vehicular flow rates due to downstream constraints, please see the responses to comments 15-1 and 15-7, below.

As described in response to comment 15-34, below, planned improvements would not change the lane configurations at the Park Street/ Blanding Avenue and Park Street/Clement Avenue intersections.

Furthermore, the Draft EIR identifies the project impact at these two intersections as significant and unavoidable. Any potential changes to the analysis would not change the conclusion at these two intersections.

These comments do not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-58 Consistent with the OPR guidelines, the City of Alameda's significance criterion for VMT assessment is based on VMT per capita. Thus, total VMT or VMT in particular areas or on specific streets was not assessed in the Draft EIR because these metrics are not considered an environmental impact topic under CEQA. Please see response to comment 15-6, below, regarding assessment of VMT under cumulative conditions. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-59 The comment indicated that the VMT analysis presented in the Draft EIR is not consistent with SB 743, without raising any specific rationale as to why that might be the case. Page 4.12-19 of the Draft EIR describes the approach to VMT analysis and describes how the methodology, assumptions, and the significance threshold used in the analysis are consistent with SB 743 and related OPR guidelines. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-60 With respect to the consistency of the analysis with previously published environmental documents, please see Master Response 6 in Section 2.2 of this chapter. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-61 As shown on Figure 4.12-4, Trip Distribution, on page 4.12-25 of the Draft EIR, it is estimated that between two to ten percent of the peak hour trips generated by the project would use Bay Farm Island Bridge. As described in Master Response 6 in Section 2.2 of this chapter and the response to comment 8-26, above, the trip distribution is based on the results of the Alameda CTC Model and accounts for estimated future congestion along all local and regional roadways, resulting from traffic generated by current and future developments throughout the region, including Alameda and Oakland. Although the Bay Farm Island Bridge may be less congested than other corridors, it may require a more circuitous route to access the I-880 freeway and result in substantially longer travel times for many motorists depending on their final destination. The percent of project-generated traffic estimated to use the Bay Farm Island Bridge accounts for these factors.

Considering the current congestion along the intersections along the Bay Farm Island Bridge corridor, including Otis Drive/Fernside Boulevard/Doolittle Drive and Island Drive/Doolittle Drive intersections, and the potential project trips assigned to this corridor, the project would not result in additional significant impacts along this corridor.

These comments do not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-62 The comment is correct. For purposes of clarification, updated information has been added to Chapter 3 of this Final EIR. The last sentence on page 4.12-10 is revised to the following:

> The sidewalks across the Park Street and Miller-Sweeney (Fruitvale Avenue) Bridges on the east side of the island, about one mile from the project site, also provide pedestrian access between Oakland and Alameda~~, but these are more than three miles from the project site~~.

This additional information does not alter the conclusions of the Draft EIR, nor does this comment present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-63 The comment is incorrect, and the text on page 4.12-13 of the Draft EIR is accurate. Although Livermore, Pleasanton, and Dublin are in Alameda County, they are not served by AC Transit. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-64 Although household income is one of the variables that affects VMT, other variables such as density of development, availability of transit service, and proximity to walking and biking destinations are more accurate indicators of VMT generation. Furthermore, the price of the market-rate residential units, and the corresponding income level for the project residents, has not been determined. Thus, it is not accurate to state that the project residents would have higher income than the residents in the surrounding areas. In addition, 103 of the residential units would be designated as affordable units, and would be occupied by residents with lower incomes than the market-rate units, and may therefore generate lower VMT. Overall, considering that the proposed project would have a higher development density that the existing developments in the project TAZ, and similar availability of transit service and proximity to walking and biking destinations, the VMT per capita for the project TAZ, as estimated by the MTC Model and presented in the Draft EIR, is an accurate estimate of VMT.

8-65 As stated on page 4.12-27 of the Draft EIR, unbundling the cost of parking from the cost of housing would reduce automobile ownership by project residents and accordingly reduce the VMT generated by the project. Although parking for about 80 percent of the project's households would be unbundled, the Draft EIR assumes that unbundling parking for residents would reduce VMT by about one to two percent, which accounts for availability of on-street parking in the area.

As stated in the comment, the on-street parking near the project may be at or near capacity, which would further discourage project residents from owning a car. In addition, as described in the response to comment 8-27, above, parking occupancy is not considered an environmental impact topic under CEQA. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-66 Although overall project construction may take seven to ten years and as long as 15 years, construction would not be continuous during this period. As described on page 4.12-43 of the Draft EIR, construction for each phase of the project would be temporary and intermittent. Furthermore, the project is required to submit a Traffic Control Plan, to be approved by City staff, for each phase of the project's construction in order to minimize project construction impacts. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-67 As described on page 4.13-4 of the Draft EIR, the issue of wet weather capacity exceedances is being addressed on a region-wide basis through a Stipulated Order that obligates collection agencies to improve management of their wastewater collection systems, to address sanitary sewer overflows, and to reduce inflow and infiltration (I&I) in their collection systems. As stated on page 4.13-13 of the Draft EIR, and consistent with the Stipulated Order and the City of Alameda's Private Lateral Ordinance, the proposed project would construct new wastewater infrastructure to connect to the City of Alameda Sewer System in Clement Avenue which conveys flow to the EBMUD Interceptor. An on-site sewer collection system would be installed throughout the proposed street network within the project site. The new sewer collection system would greatly reduce I&I flows entering the system in wet weather conditions and thereby reduce wet weather flows to the EBMUD system. Such improvements would actually present an improved condition over what is present currently. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-68 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of the feasibility of alternatives. This comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-69 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of the feasibility of alternatives. This comment asserts the opinion of the

commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-70 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of the feasibility of alternatives.

8-71 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of the feasibility of alternatives. This comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-72 Comment noted. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-73 Comment noted. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-74 Comment noted. This comment does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-75 Please refer to Master Response 4 in Section 2.2 of this chapter for a discussion of impacts to historic resources.

8-76 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of the feasibility of alternatives. This comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-77 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of the feasibility of alternatives. This comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-78 This comment is largely presented in the form of a series of questions, many of which are highly speculative and/or fall outside of the scope of the environmental analysis. Regardless, the comment does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-79 Comment noted. The comment does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-80 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of the feasibility of alternatives. This comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-81 As discussed in Master Response 6 in Section 2.2 of this chapter, traffic generated by all the development projects listed in the comment are accounted for in the Cumulative (2040) traffic impact analyses completed for the project. The comment does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-82 As discussed in Master Response 6 in Section 2.2 of this chapter, the Alameda CTC Model used to forecast 2040 traffic volumes for the Draft EIR analysis includes the currently under-construction improvements at the I-880 interchanges at 23rd and 29th Avenues. Thus, the traffic impact analysis accounts for the currently under-construction improvements. The comment does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

The I-880/Broadway/Jackson Interchange Improvement Project (also known as the Oakland-Alameda Access Project) was not accounted for in the Draft EIR analysis because it is still in the design stages and does not have full approvals or funding. However, the project is expected to improve access between Alameda and Oakland, reducing the delay through the Webster and Posey Tubes and at the nearby study intersections. Thus, the analysis and results presented in the Draft EIR, which do not account for this planned improvement, are conservative in that they are based on current configurations, which result in worse conditions. Accounting for the Oakland-Alameda Access Project would not substantially change the results of the Draft EIR or identify new significant impacts. If anything, it would show improved conditions. The comment does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-83 The intent of this comment is not clear. The comment refers to erroneous traffic counts, but no specific errors are mentioned. The comment also states that traffic counts are not provided in the Draft EIR. This assertion is not accurate, and the commenter is referred to Draft EIR Appendices G.B and G.D for the traffic volume counts at the study intersections and corridor travel times, respectively. The comment does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-84 The intent of this comment is not clear, but the commenter appears to be asserting that the Draft EIR made a finding of a Significant and Unavoidable Impact for VMT, which is not the case. The Draft EIR's analysis under Impact TRA-1, beginning on page 4.12-24 finds that the impact to VMT would be less than significant, with implementation of Mitigation Measure TRA-1. The comment also states that traffic counts are not provided in the Draft EIR. This is also not accurate, and the commenter is again referred to Draft EIR Appendices G.B and G.D for the traffic volume counts at the study intersections and corridor travel times, respectively. The traffic analysis contained in the Draft EIR is accurate, and the commenter has presented no supportable evidence to demonstrate that it is not. The comment does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-85 Please refer to Master Response 1 in Section 2.2 of this chapter for an overview of the project's consistency with the General Plan.

8-86 The intent of this comment is unclear, but the City is aware that the proposed project meets the criteria of a project of statewide, regional, or areawide significance as defined in the CEQA Guidelines. Accordingly, the City has fulfilled the various noticing and consultation processes required under the Guidelines, including distribution of all CEQA documents to the State Clearinghouse (SCH No. 2016102064) as well as to area agencies and adjacent jurisdictions. See also the discussion of the proposed project's relation to the City's General Plan and other policies presented on pages 4.8-15 through 4.8-17 of the Draft EIR.

8-87 The Regional Fault Map depicted in Figure 4.5-1 of the Draft EIR was created by Rockridge Geotechnical, as cited on the figure. Rockridge Geotechnical used the 2008 USGS fault map as its base map. While there are various fault maps produced for the Bay Area by a number of agencies (i.e., USGS, the California Geological Survey, and the Association of Bay Area Governments), all of the maps identify these same faults in the same locations, especially at the large scale presented on the map. The locations of the faults shown have been known for many decades, and their locations have not changed. As such, the map does not "minimize the seismic dangers and risks in the project area," as asserted by the commenter. The faults in the area and the probable seismicity associated with those faults are fully disclosed in Section 4.5.2 of the Draft EIR, and the potential impacts are disclosed in Section 4.5.4. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-88 Please refer to Master Response 1 in Section 2.2 of this chapter for an overview of the project's consistency with the General Plan, and how the city calculated the allowable residential density for the proposed project.

8-89 Please refer to Master Response 1 in Section 2.2 of this chapter for an overview of the project's consistency with the General Plan. Please also see the response to comment 8-86, above.

8-90 Please refer to Master Response 1 in Section 2.2 of this chapter for an overview of the project's consistency with the MX and MF Zoning Ordinances.

8-91 Please refer to Master Response 1 in Section 2.2 of this chapter for an overview of the project's consistency with the MX and MF Zoning Ordinances, the General Plan, and the City Charter.

8-92 Please refer to Master Response 1 in Section 2.2 of this chapter for an overview of the project's consistency with the MX and MF Zoning Ordinances, the General Plan, and the City Charter.

8-93 Please refer to Master Response 1 in Section 2.2 of this chapter for an overview of the project's consistency with the MX and MF Zoning Ordinances and the General Plan.

8-94 As discussed through the various responses above, the analysis contained in the Draft EIR provides adequate disclosure as to the project's potential effects, as required by CEQA. The various comments claiming that the Draft EIR contains material omissions or substantive factual inaccuracies are not supported. A requirement for recirculation would result only if "significant new information" were to be presented that would deprive "the public of a meaningful opportunity to comment upon a substantial adverse effect of the project" (CEQA Guidelines Section 15088.5). Significant new information requiring recirculation would include the following:

1) *Identification of a new significant environmental impact.* The Draft EIR identified a number of potentially significant impacts relating to air quality and climate change; biological resources; cultural resources; hazards and hazardous materials; hydrology and water quality; noise; transportation and circulation, and; utilities. For most of the identified potential impacts, feasible mitigation measures were identified that would lessen the impacts of the project to less-than-significant levels. The analysis in the Draft EIR found that two resource areas (cultural resources and traffic and circulation) would sustain impacts that would be significant and unavoidable. As indicated throughout these responses, the commenter has not presented supported evidence to demonstrate that a new significant environmental impact that has not already been disclosed in the Draft EIR, would result from

implementation of the proposed project. Thus, there is no requirement to recirculate the EIR based upon identification of a new significant environmental impact.

2) *Increase in the severity of an environmental impact.* As demonstrated in the responses to the various comments that were received on the Draft EIR, the commenter has not presented supported evidence to demonstrate that the effects of the project would be more severe than that disclosed in the Draft EIR. While the commenter has offered its opinions on the project's potential effects, the commenter has offered no supported evidence to demonstrate that the project's effects would be any more severe than already disclosed in the Draft EIR. Thus, there is no requirement to recirculate the EIR based upon an increase in the severity of an environmental impact.

3) *Identification of a feasible project alternative or mitigation measure that is considerably different from others previously analyzed.* Several commenters have expressed their preference for one of the alternatives that was evaluated in the Draft EIR, and still other commenters have put forth speculative proposals for how the project could or should be developed differently. These include land swaps, restrictions on development to certain portions of the site, preservation or reuse of specific buildings on the site, reductions in densities and unit counts, a larger boatyard component, and changes to the types and quantities of affordable housing on the site. As presented in Master Response Number 3 in Section 2.2 of this chapter, none of these alternatives are feasible. Thus, there is no requirement to recirculate the EIR based upon the identification of a feasible alternative or mitigation measure that is considerably different from those already analyzed.

4) *An EIR that is fundamentally flawed, inadequate, or conclusory in nature.* The commenter has failed to present supportable evidence to demonstrate that the Draft EIR was fundamentally flawed, inadequate, or conclusory in nature. In several instances, minor clarifications and revisions have been made to the EIR (see Chapter 3 of this Final EIR) as provided for in CEQA Guidelines Section 15088.5(b), which states that "Recirculation is not required where the new information added to the EIR merely clarifies or amplifies *or makes insignificant modifications in an adequate EIR*" (emphasis added). As indicated previously, the Draft EIR is an adequate EIR that analyzes and discloses the potential effects of the project in accordance with the CEQA Guidelines and applicable law. The comments do not put forth sufficient evidence to indicate that the Draft EIR is fundamentally inadequate or conclusory in nature.

Based on each of the considerations listed above, there is no basis for recirculating the Draft EIR.

8-95 This comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-96 This comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-97 This comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

8-98 This comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

ANDREW THOMAS

From: Alan Teague
Sent: Monday, February 12, 2018 4:42 PM
To: ANDREW THOMAS
Cc: NANCY McPeak
Subject: Comments on Alameda Marina Draft Environmental Impact Report

Dear Mr Thomas,

Here are some of my comments on the DEIR

4.3.5 Project Site and Vicinity - Marine Resources

First paragraph misses the point that from the 1870's (1873/1874) until 1902, the Alameda/Oakland marsh was being dredged which converted Alameda into an island 9-1

4.3.1B Terrestrial Resource / Marine Resources

The end of the paragraph on Terrestrial resources states "None of these ... are found"
The end of the paragraph on Marine resources states "However, no [sic] to these ... is expected to occur."
This Marine resource paragraph should go on to state that a site inspection will be done as part of another section of the EIR which requires it. I do not have the reference to that section at the moment. 9-2

4.6.3 Type 4.6.1

Cargill Salt and Penrose - Quoted entries indicate that monitoring is on going but does not provide any information on what that data is / has been as of the date of the DEIR. I would expect that for any site which has on going monitoring the latest results would be included in the EIR. 9-3

4.12-3

Buena Vista Avenue paragraph should clarify the number of lanes of travel. It is mostly one travel lane in each direction except for 30th where there are two travel lanes 9-4

Grand Street paragraph states that on street parking is prohibited. This is not the case for the vast majority of Grand Street 9-5

Regards,

Alan H. Teague
Planning Board Member

Letter 9 Alan Teague
Response February 15, 2018

9-1 As stated in the second sentence of the third paragraph on page 4.3-5 of the Draft EIR: "The Oakland-Alameda Estuary was originally a tidal slough, but was dredged in the mid-to late 1800s to create a viable port and shipping channel." This statement generally conveys the same intent as that expressed in the commenter's comment. Nevertheless, and to provide additional clarification, updated information has been added to Chapter 3 of this Final EIR. Specifically, Page 4.3-5, paragraph 3 is revised to read:

> Open water is found in the Oakland-Alameda Estuary to the north of the project site, which is hydrologically connected to San Francisco Bay. The Oakland-Alameda Estuary was originally a tidal slough, but was dredged in the mid- to late 1800s to create a viable port and shipping channel. Continued dredging operations resulted in the complete separation of what is now Alameda Island from the mainland. The estuary is influenced by both freshwater and marine water, receiving regular freshwater inflow from a combination of natural creeks, human-made stormwater drainage facilities, and from direct surface runoff after precipitation events. The estuary is also influenced by the marine waters of the Bay and is subject to tidal currents. Sediment from Oakland's shoreline and creeks is carried by the tidal current to shoals and sandbars, causing siltation of the nearby shipping channels. The open waters adjacent to the study area are typical of San Francisco Bay waters in general and have primarily silty mud and sand substrates that are naturally no more than 25 feet deep, although dredging operations to facilitate shipping operations in the Oakland-Alameda Estuary may increase water depth to more than 50 feet (DVA, 2013).

9-2 The existing conditions discussion in the last two paragraphs of page 4.3-18 of the Draft EIR present information on sensitive terrestrial and marine natural communities that may be present at the project site. For terrestrial communities, the determination of absence is more conclusive because terrestrial resources are easily observed and their presence or absence is easily determined. In the case of Alameda Marina, sensitive terrestrial natural communities simply aren't present, so potential impacts to them can be dismissed and there is no need to discuss them further. Marine resources, on the other hand, are not easily observed, and therefore the discussion in the existing conditions section is not as conclusive as it is for terrestrial resources. Since their presence or absence cannot be determined conclusively without further investigation, the EIR has concluded that there is potential for an impact. Identified impacts to resources and resultant mitigations are typically not discussed in the existing setting section of an EIR.

Rather, impacts and mitigations are typically discussed in the impacts analysis section of an EIR, which for this particular topic (sensitive marine natural communities) is presented beginning on page 4.3-38 of the Draft EIR under Impact Bio-2. In that section, the analysis states that sensitive marine natural communities *could* occur in the project area, though the likelihood of occurrence is somewhat low. Nevertheless, to protect against the possibility of the project impacting these resources, mitigation in the form of surveys is prescribed, followed by additional mitigations with established performance measures to be followed if such resources are, in fact, found in the project area. This presentation of existing conditions, impact analysis, and mitigations follows standard professional practice for the preparation of EIRs. Regardless of presentation, the EIR's analysis of impacts to sensitive marine natural communities is sufficient and provides for effective protection of those resources if they are found to be present at the project site.

9-3 Comment noted. For purposes of clarification, updated information has been added to Chapter 3 of this Final EIR. Specifically, Page 4.6-3, Table 4.6-1 has been modified to include additional information concerning the Pennzoil-Shell Oil site referred to by the commenter. Specific language revisions can be found in Chapter 3 of this Final EIR under the referenced page number above. This additional information does not alter the conclusions of the Draft EIR, nor does this comment present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

9-4 Comment noted. For purposes of clarification, updated information has been added to Chapter 3 of this Final EIR. Specifically, Page 4.12-3, paragraph 3 is revised to read:

> **Buena Vista Avenue** is an east/west Island Collector between Poggi Street in the west and Northwood Drive in the east. The roadway is classified as a Transitional Arterial between Sherman and Grand Streets and as a Local Road east of Broadway and west of Webster Street. Buena Vista Avenue continues in the west as Poggi Street. The roadway <u>generally</u> provides two <u>one</u> travel lanes in each direction<u>, with occasional left-turn lanes and/or right-lane turning pockets at selected intersections</u>. and left-turn lanes between Jay and Hibbard Streets and at the intersection with Broadway. Sidewalks are provided on both sides of the street, and on-street parking is allowed along the entire roadway except between Sherman and Benton Streets.

This additional information does not alter the conclusions of the Draft EIR, nor does this comment present any additional information on environmental issues

that have not been adequately addressed in the Draft EIR. No additional analysis is required.

9-5 Comment noted. For purposes of clarification, updated information has been added to Chapter 3 of this Final EIR. Specifically, Page 4.12-3, paragraph 4 is revised to read:

> **Grand Street** is a north/south Island Arterial between the Alameda Marina in the north and Shore Line Drive in the south. The roadway is classified as a Local Street north of Clement Avenue. Grand Street provides one travel lane in each direction. Sidewalks and Class II bikeways (bike lanes) are provided on both sides of the street, and on-street parking is ~~prohibited~~ allowed along much of the roadway's alignment.

This additional information does not alter the conclusions of the Draft EIR, nor does this comment present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

Letter 10

ANDREW THOMAS

From: Amy Rose <amyrose@sbcglobal.net>
Sent: Monday, February 17, 2016 7:57 PM
To: ANDREW THOMAS
Cc: Nancy Hird; Deanna Freeman ; ARA WEBMASTER
Subject: Comments on Alameda Marina DEIR

I am submitting comments on the Draft EIR for the Alameda Marina Development. I'm a member of SAAW and ACT as well as a sailor and planning area resident (1917 Chestnut St). I am not an expert on EIRs but would like to pass along a few relevant comments but I am unable to tie each comment to a specific area in the DEIR. I heard that the Planning Dept is holding a meeting about this tonight that I cannot attend, but that the comments are due.

A member of our group who is a retired attorney, Paul Freeman, recently told us about how he has found what may be a major miscalculation in the number of housing units allowable at this and other new private-owned developments. He said that proposals are allowed 30 units per acre if they meet the density bonus, but that the city and developers were multiplying that density by the total acreage of the site, not the residential footprint alone, which he feels is the correct interpretation by law, and was waiting for a reply from the city attorney. I heard that the developer of Alameda Marina and the city are both assuming total units of nearly 800, using the entire project acreage. Mr. Freeman said that it should be 30 acres X 11.3 acres of residential acreage, or only about 338 housing units. He explained how nothing in the new state law on fast-tracking housing would contradict this calculation.

10-1

1) I hear that the Draft EIR and traveling plan and maps should be redrawn using this number, 338 housing units.

10-2

2) Keep as many of the old buildings for commercial business and jobs as possible, as many of them are in relatively good condition to be rehabbed. I've heard that Alameda Marina has been one of the biggest employers in Alameda, with 250 good local jobs there until the uncertainty caused by this proposal and lack of long term leases, as well as the merger with Bay Ship, has already reduced the number of jobs remaining to about 175 jobs. Moving the housing to the west and east corners of the project area has this been considered?

10-3

3) Keep and improve infrastructure to attract a new boatyard operator to the center of the site with an adequate size and facilities to help keep and attract recreational boaters and houseboats to Alameda, which is good for our economy just as housing is. The developer and even the city do not know all the details on how to make a good boatyard, but a member of our group named John Platt, a longtime sailor, has talked to several boatyard operators about the types of lifts, environmentally responsible drainage and sanding systems, etc. We may be able to find a boatyard operator who could make it profitable for the developer and city.

10-4

The Bay Area and Estuary already have a shortage of boatyards that is leading to a decline in boating. How can we have about 2,000 boats in the Estuary alone, with perhaps space for less than 50 boats available to maintain them if the Alameda Marina will have only a token number of spaces? Boats needing repair are now waiting weeks for space or they have to be motored or towed to distant boatyards, if their vessel can be moved at all (houseboats for instance, one is currently being repaired at the mainland).

10-5

4) Repair the seawall and provide for future maintenance. With California's budget surplus, there may be funding available for this.

10-6

5) Build as many low-income units as possible within the rules. ACT has long supported low-income housing, as shown in our recent letters to the editor. Alameda is building low-density market-rate houses and not enough below-market and low-income housing. Alameda Marina should not be overdeveloped just in order to pay for the seawall at the expense of the potential for a future Blue Economy hub here, which would fit with our city's ideal to be an environmental leader, balancing housing with jobs, our unique situation as largest island in San Francisco Bay.

10-7

If we ignore the needs of boaters and maritime businesses, as some have said, we might as well take the anchor off the city flag.

Sincerely,
Angela Rose

Letter 10 Amelia Rose
Response February 12, 2018

10-1 Please refer to Master Response 1 in Section 2.2 of this chapter for an overview of the project's consistency with the MX and MF Zoning Ordinances and how the City calculated the allowable residential density for the project.

10-2 Please refer to Master Responses 1 and 3 in Section 2.2 of this chapter for a discussion of the project's consistency with the MX and MF zoning ordinances and the feasibility of alternatives, respectively.

10-3 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of feasibility of alternatives.

10-4 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of feasibility of alternatives.

10-5 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of feasibility of alternatives.

10-6 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of feasibility of alternatives.

10-7 Please refer to Master Responses 1, 2, and 3 in Section 2.2 of this chapter for discussion on the project's consistency with the MX and MF zoning ordinances, affordable housing, and the feasibility of alternatives, respectively.

LUBIN | OLSON
LUBIN OLSON & NIEWIADOMSKI LLP
[redacted]

February 15, 2018

Charles R. Olson
Direct Dial: (415) 955-5020
E-mail: [redacted]

VIA EMAIL
Andrew Thomas, AICP
Assistant Community Development Director
Planning and Building Department
2263 Santa Clara Avenue, Room 190
Alameda, CA 94501
athomas@alamedaca.gov

Re: Alameda Marina Master Plan Draft Environmental Impact Report ("Draft EIR") (SCH #2016102064)

Dear Mr. Thomas:

As you are aware, we represent Pacific Shops, Inc., the owner and lessee of the Alameda Marina property and the project sponsor for the referenced Master Plan, on whose behalf we provide the following comments on the Draft EIR. In general, Pacific Shops believes that the Draft EIR provides a very thorough and comprehensive analysis of the potential environmental impacts of the proposed Master Plan.

However, Pacific Shops is concerned about the legal basis for Mitigation Measure TRA-3. This mitigation measure appears to be an afterthought that was added to the Draft EIR following the December 2017 City Council hearing on the nearby Encinal Terminal project, and it is not supported by any evidence or analysis in the Draft EIR. This is evident from the discussion of Clement Avenue at page 4.12-3 of the Draft EIR. Discussing the extension of Clement Avenue, the Draft EIR states: "A further extension between Entrance Road and Atlantic Avenue is planned for construction as part of the Del Monte Warehouse adaptive reuse project. Once the 250-foot link through the Shell Oil facility to Grand Avenue and the westward extension through to Atlantic Avenue are completed, Clement Avenue will provide an alternative route for trucks and automobiles currently using Buena Vista Avenue, and will also be part of the Cross-Alameda Trail bicycle trail." In addition, the tables in the Transportation and Circulation chapter of the Draft EIR, such as Table 4.12-1 and 4.12-2 do not mention Clement Avenue. As evidenced on page 4.12-8 of the Draft EIR, none of the studied intersections involves analysis of the portion of Clement Avenue at issue in Mitigation Measure TRA-3. Studied traffic intersections in the vicinity that are relevant to the proposed mitigation measure include Atlantic Avenue/Buena Vista Avenue, Grant Street/Buena Vista Avenue, and Grant Street/Clement Avenue. As shown in Tables 4.12-10 a and b, all three intersections operate at an acceptable level of service, C or better, during both the a.m. and p.m. peak hours. Additionally Tables

11-1

4.12–11 a and b indicate that all three intersections will operate at acceptable levels of service, D or better, during the Cumulative (2040) a.m. and p.m. peak hours. As a result, the analysis in the Draft EIR does not support the imposition of a mitigation measure for the Master Plan project, and the analysis and mitigation measure should therefore be revised.

Impact Statement TRA-3 provides "in the event the planned Clement Avenue extension is not completed prior to [the Alameda Marina] project opening, the proposed project could increase traffic volumes at intersections on Buena Vista Avenue such that traffic operations could deteriorate to substandard conditions." The last paragraph of the text prior to the mitigation measure makes similar statements regarding impacts that may occur if the full extension of Clement Avenue does not occur prior to completion of the Alameda Marina project. Yet the mitigation measure itself provides: "if the Del Monte project fails to begin construction of the Clement Avenue extension from Atlantic Avenue to Entrance Road prior to commencement of construction of the Alameda Marina project…"(emphasis added) As the Alameda Marina project will be built in phases over multiple years, this change in language from "completion" of the Alameda Marina project to "commencement of construction" makes a significant difference and almost ensures that Pacific Shops will be required to construct this extension.

11-1 cont.

As the proposed Clement Avenue extension is currently the responsibility of the project sponsor for the Del Monte project and could also be the responsibility of the project sponsor for the Encinal Terminals project, we do not believe that the proposed Mitigation Measure TRA–3 passes constitutional muster. Under the cases of *Nollan v. California Coastal Comm.*, 483 U.S. 825 (1987); and *Dolan v. City of Tigard*, 512 U.S. 374 (1994), any mitigation measure must be based on an essential nexus and must be roughly proportional to the impacts of the proposed development. Here, no such nexus has been established as there is no analysis in the Draft EIR of the Master Plan's traffic impacts on the relevant sections of Clement Avenue and no basis for requiring Pacific Shops to pay for the proposed Clement Avenue extension now and hope for future fair share contributions from other developers in the future. Under the state Mitigation Fee Act, *Government Code §§66000 et seq.*, the City should calculate the fair share contribution of all developers on the Northern Waterfront to this particular Clement Avenue extension at this time and require payments from the various project sponsors into a fund that would then be used to extend Clement Avenue when sufficient funds have been raised. Mitigation Measure TRA-3 should be modified accordingly.

Very truly yours,

Charles R. Olson

cc: Sean Murphy, Pacific Shops, Inc.

CRO

[redacted]

Letter 11 Charles Olson
Response February 15, 2018

11-1 The commenter is correct that the Transportation and Circulation chapter of the Alameda Marina Draft EIR does not analyze the impact of project trips on the segment of Clement Avenue between Atlantic Avenue and Entrance Road or between Grand Street and Entrance Road. As indicated in the discussion beginning on page 4.12-31 of the Draft EIR under Impact TRA-3, the planned Clement Avenue extension would eliminate significant traffic impacts to nearby Buena Vista Avenue, as previously identified in the EIRs for the Del Monte Warehouse and Encinal Terminals projects, and in the Northern Waterfront General Plan Amendment EIR.

For purposes of clarification, updated information has been added to Chapter 3 of this Final EIR. Specifically, Mitigation Measure TRA-3 is modified to read as follows:

> ~~If the Del Monte project fails to begin construction of the Clement Avenue extension from Atlantic Avenue to Entrance Road prior to commencement of construction of the Alameda Marina project, require the Alameda Marina project to construct the extension with a later fair share contribution to be provided by the Del Monte project and other developments in the area.~~ The project shall pay a fair share contribution to the cost of the Clement Avenue extension from Atlantic Avenue to Grand Street. The fair share contribution shall be calculated based upon a traffic study to calculate the fair share contribution of each Northern Waterfront development project including the Del Monte Warehouse Project, the Encinal Terminals Project, the Wind River fifth building project, and Alameda Marina, which will contribute traffic trips to the Clement Avenue Extension. The City shall require all developers to contribute their fair share as determined by the traffic study. The Alameda Marina fair share contribution shall be paid on a pro-rata basis for each residential phase of the Alameda Marina project (number of units in phase divided by total number of units in project multiplied by the fair share contribution). Each portion of the fair share contribution shall be paid prior to issuance of the first building permit for the current residential phase if work on the Clement Avenue extension has been initiated by another developer of a Northern Waterfront development project. If the work has not been initiated by another developer prior to issuance of the first building permit for Alameda Marina, the contribution shall be made prior to issuance of the first residential Certificate of Occupancy on the property.

This modification to Mitigation Measure TRA-3 does not alter the conclusions of the Draft EIR, nor does it raise any additional environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

February 15, 2018

Andrew Thomas, AICP
Assistant Community Development Director
City of Alameda
2263 Santa Clara Avenue, Room 190
Alameda, CA 94501

RE: Alameda Marina DEIR: Submission of Comment and Request for Response
By Electronic Submission

Dear Mr. Thomas,

Thank you for the opportunity to comment on the Draft Environmental Impact Report for the Alameda Marina mixed use project.

The DEIR states the developer intends to incorporate space for 150,000 – 250,000 sq. ft. of commercial space. In the developer's plan, this can only be accomplished by destroying the integrity of Building 19 by inserting 3-4 stories which has been verbally discussed but was not included in the DEIR. Since this action will destroy any chance of state or national recognition as a historic place, this is a significant omission in the DEIR. 12-1

The sub-committee of the Planning Board listed as one of its priorities the inclusion of a boatyard. The postage stamp little flex-space square between buildings 19 and 14 will not accommodate a viable full service boatyard and the attempts by the developer to utilize waterside space does not allow for boat bottom work to be done which is 90% of the business of a boatyard. The flex space allotted is not large enough to have work performed on more than a few boats at a time which is not an economically viable boatyard. 12-2

The 530 slip marina (from which the city earns 10% revenues) with over 300 dry storage spaces is at risk. The developer plans a paltry 60 dry storage slips – only for use by active mariners. Alameda residents started moving their boats out of dry storage spaces early in the planning process because they could not relay on services to launch their boats. Currently, residents who kept their vessels in Alameda's marinas or in dry storage have also have started moving their watercraft off island because maintenance services are no longer available. 12-3

Chapter 5 of the DEIR identifies some Alternatives to the Alameda Marina Project proposed by Bay West. These alternatives include:

1. The Preservation and "environmentally superior" Alternative which retains the 11 structures of the Alameda Historic District along with the Graving Dock
2. The Extensive Adaptive Reuse Alternative which retains only 6 of the 11 Historic District buildings

3. The Reduced Project Alternative which has not been studied for its economic feasibility
4. The “No Project” Alternative which does not provide the revenue required to repair the Tidelands Trust infrastructure

I would propose a Preservation/Adaptive Reuse Plan that:

- Converts Buildings 10, 28, 29 and 31 into live work space and workforce housing
- Buildings 36 and 1 into a retail marketplace
- Leaving buildings 12 and 19 part of an expanded commercial core that would include a full service boatyard capable of servicing 30 boats simultaneously. It is imperative that the elevator remain to service houseboats.
- The space between buildings 28 and 29 and the estuary could hold an expanded number of spaces for dry storage
- Building 14 should remain the yacht club
- Building 13 would be an ideal location for a storefront kayak/paddleboard shop
- The area east of building 31 including buildings 32, 33, and 34 could be used for high value housing units to raise money for the bulkhead and infrastructure expenses.
- An apartment building could be placed where buildings 5-9 currently exist.

12-4

The anchor on Alameda’s flag would lead someone to believe our city values it’s the ideal location for this to take place.

Thank you for your consideration,

Nancy Hird
Save Alameda’s Working Waterfront

Letter 12 Nancy Hird
Response February 15, 2018

12-1 Please refer to Master Response 4 in Section 2.2 of this chapter for a discussion of impacts to historic resources.

12-2 This comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

12-3 This comment asserts the opinion of the commenter as to how the project should be developed, and therefore does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

12-4 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of feasibility of proposed alternatives.

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February 15, 2018

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Via Email

Re: Comments on the Alameda Marina Draft EIR

Dear Mr. Thomas,

On behalf of Alameda Architectural Preservation Society (AAPS) and Save Alameda's Working Waterfront (SAWW), thank you for the opportunity to comment on the Draft EIR prepared for the Alameda Marina Project.

In light of the Project's acknowledged significant direct and cumulative impacts to Cultural and Historic resources due to the demolition of historic resources, the EIR is required to review alternatives to the Project that significantly reduce the Project's impacts. Interpretive displays and photo documentation are not considered adequate mitigation when historic resources are at stake, therefore substantive alternatives that avoid the demolition of historic resources must be considered. (*League for Protection v. City of Oakland* (1997) 52 Cal.App.4th 896; Guidelines, §15126.4(b)(2.); Draft EIR 5-4.)

AAPS and SAWW urge the adoption of the Preservation Alternative that reduces the Project's impacts and meets many of the Project objectives.

The EIR discounted alternatives chiefly due to not meeting the Project's objectives as well as the Project and for economic reasons.

The Project objectives are described as:

Improve and Enhance the Maritime Commercial Marina

- Maintain Alameda Marina as a working waterfront and retain and/or promote Alameda Marina's maritime uses by creating a Maritime Commercial Core that utilizes the maritime footprint more efficiently.
- Encourage the retention and development of waterfront and maritime-related job and business opportunities that relate to the area's waterfront location.
- Upgrade and rehabilitate facilities, unique buildings, as feasible, and provide land for existing maritime businesses, boat berthing and maintenance, boat storage, and waterfront commercial recreation businesses.
- Provide sea level rise protection and other infrastructure upgrades to bring Alameda Marina up to date to make it a safe and accessible place. Activate and Reconnect the Community to the Waterfront

Activate and Reconnect the Community to the Waterfront

- Reconnect the community to the waterfront by extending the existing city grid into the site to allow for additional view corridors and access points through the site to the shoreline edge.
- Create public amenities and opportunities for gathering spaces for existing and future community members by developing new open space areas within and along the shoreline edge with a Bay Trail component.

Create a Dynamic New Neighborhood for Everyone

- Provide housing of various types to fulfill the goals of the City's Housing Element and help meet the City's Regional Housing Need Allocation.
- Provide options for housing that meet the need of a wide demographic that includes universally designed units, affordable, rental, work force market-rate and market-rate units.
- Integrate Alameda Marina's core maritime uses, including those governed by the Tidelands Lease, with renovated and new compatible uses, including various types of housing.
- Develop a mixed-use project that allows for a mix of compatible uses at the site.
- Provide opportunities for the improvement of the existing boat Marina and shoreline infrastructure; maintain and generate new jobs; and create better and new open space and recreational areas.

Provide Financially Sound Development

- Develop an economically sustainable and financially sound new development that can fund the construction of the public facilities and services that are needed to serve the plan area and achieve General Plan objectives, while avoiding any financial impact on the City's ability to provide services to the rest of the City.
- Fulfill the project sponsor's obligations under the Tidelands and Marina Lease.

The EIR describes the Preservation Alternative as:

> Constructing housing within these two available envelopes would allow for a total of approximately 475 housing units. The units would be a mix of multi-family townhomes and multi-family wrap buildings. The existing designated historic structures would not be affected, and the types of commercial and industrial uses currently taking place in those structures would remain unchanged, so it is assumed that the commercial/industrial square-footage on the site would remain roughly the same as is present currently. (DEIR 5-8.)
>
> The Preservation Alternative would retain all of the contributing buildings within the designated Alameda Marina Historic District. Impacts to these structures would therefore be fully avoided. (DEIR 5-13.)
>
> The Preservation Alternative would generate approximately 38 percent fewer trips than the proposed project. As shown in Table 5-2, traffic trips under the Preservation Alternative would be less than for the project (262/316 AM/PM peak hour trips for the alternative compared to 423/509 AM/PM peak hour trips for the project), and the significant and unavoidable impacts of the project would therefore become less severe under this alternative. (DEIR 5-16.)
>
> Since the Preservation Alternative would generate fewer peak hour trips than the proposed project, the significant and unavoidable impacts to area intersections identified for the proposed 5. Alternatives Alameda Marina Master Plan 5-17 ESA / 160044.01 Draft Environmental Impact Report December 2017 project would be less severe under this alternative. (DEIR 5-16 to 5-17.)
>
> … the Preservation Alternative would be the Environmentally Superior Alternative for the purpose of this analysis … (DEIR 5-37.)

The Preservation Alternative would substantially reduce the Project's impacts and is identified in the EIR as the Environmentally Superior Alternative.

With regard to the Preservation Alternative, the EIR incorrectly assesses the feasibility of the alternative, stating:

> By prohibiting development within the central core and the southern periphery of the site, this alternative would limit development opportunities at the heart of the project. Although this alternative would achieve more of the project objectives than the No Project Alternative, it would not achieve the project objectives as well as the proposed project because it would limit private reinvestment and redevelopment, thus it is less likely to attract sufficient private capital to fund the necessary public infrastructure improvements, build the planned open spaces, and rehabilitate the shoreline and marina infrastructure.

For the following reasons, the Preservation Alternative should be considered a feasible alternative.

Because demolition of an historic resource is a significant environmental impact, approval of the demolition violates CEQA unless alternatives to demolition are infeasible. Findings of infeasibility cannot be based on the preference of an agency or project applicant. (*Preservation Action Council v. City of San Jose* (2006) 141 Cal.App.4th 1336 [reduced-size project alternative that reduces impacts to historic resources must be considered]; *Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587.)

In order to be considered feasible, alternatives are required to meet most of the Project's stated objectives. It is not necessary for an alternative to meet all of the stated objectives. Furthermore, Project objectives cannot be so narrowly defined as to preclude the adoption of alternatives. (*In re Bay Delta* (2008) 43 Cal.4th 1143.)

Reasonable alternatives must be considered "even if they substantially impede the project or are more costly." (*San Bernardino Valley Audubon Society v. County of San Bernardino* (1984)155 Cal.App.3d 738, 750; Guidelines, §15126(d)(1).)

13-1

Economic Analysis

Laurel Heights Improvement Association v. Regents of the University of California (*Laurel Heights I*) (1988) 47 Cal.3d 376, held that an agency's reasons for finding an alternative to be infeasible must be explained in the EIR. (*Id*. at 407.) Many EIRs analyze the relative economic feasibility of alternatives since economic factors are emphasized by CEQA as primary factors in determining feasibility and that is especially true here since economic reasons are listed in the Project's objectives. (*Foundation for San Francisco's Architectural Heritage v. City and County of San Francisco* (1980) 106 Cal.App.3d 893; *City of Fremont v. San Francisco Bay Area Rapid Transit Dist*. (1995) 34 Cal.App.4th 1780; *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal. App.3d 692; *Save Round Valley Alliance v. County of Inyo* (2007) 157 Cal.App.4th 1437 [EIR rejected for failure to adequately analyze the economic feasibility of alternatives.]; *Center for Biological Diversity v. County of San Bernardino* (2010) 185 Cal.App.4th 866, [EIR's economic analysis of feasible alternatives to a proposed composting facility was held inadequate.]

13-2

Infeasibility Findings

Citizens of Goleta Valley v. County of Santa Barbara (*Goleta I*) (1988) 197 Cal.App.3d 1167, held that a record including no analysis of the comparative costs, profits, or economic benefits of a scaled-down project alternative was insufficient to support findings of economic infeasibility. *Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, ruled that a project applicant's preference for its project does not render an alternative infeasible. "The willingness of the applicant to accept a feasible alternative ... is no more relevant than the financial ability of the applicant to complete the alternative. To define feasible [otherwise] would render CEQA meaningless. (*Id*. at 602; accord, *Save Round Valley Alliance v. County of Inyo* (2007) 157 Cal.App.4th 1437; *Preservation Action Council v. City of San* Jose (2006) 141 Cal.App.4th 1336.) *Burger v. County of Mendocino* (1975) 45 Cal.App.3d 322, found that absent an estimate of income or expenditures supporting the conclusion that reduction of a motel project or relocation of some units would make the project unprofitable, an infeasibility finding based on economic factors could not be made.

13-2 cont.

Considering the Project Objective's inclusion of an economic feasibility element, the EIR should include a detailed feasibility analysis in its analysis of the Project and the Alternatives prior to asserting economic infeasibility. The EIR's feasibility analysis, or alternatively, the City's findings regarding economics, cannot be supported without such an analysis.

What is the economic analysis, including comparative costs and profits, for the Project and for each Alternative evaluated in the EIR?

Aesthetic Vistas

The Project's removal of the physical barriers (2-3 story buildings) that currently block the public's view will be replaced by large blocks of 4-5 story apartment buildings and will result in the worsening of views of the estuary from the street. The overall "wall" effect blocks views for the people living in the neighborhood on the south side of Clement Avenue and results in the isolation of the Project from the community. Even though the streets will be extended into the Marina, it will not make the area inviting to those who exist outside of the development. The development is a de facto gated community.

13-3

Since the Project walls off aesthetic vistas and insulates the community from the marina, how does the Project satisfy the objective to "reconnect the community to the waterfront by extending the existing city grid into the site to allow for additional view corridors and access points through the site to the shoreline edge"?

13-3 cont.

Additional Alternatives

Due to the Project's direct and cumulative impacts, the following alternatives should be included in the analysis:

1. The City of Alameda could swap properties; "Site A" at Alameda Point, which is owned by the City, for the fee simple portion of the Alameda Marina that is owned by the developer. Allowing the developer to build at Alameda Point will pay for the replacement of the bulkhead/seawall at the Marina, which is the primary goal of the project. (Both entities say this is the given reason for the Project.)
2. Build high value market rate homes around the graving dock on the east end of the property to pay for the infrastructure on the Tidelands Trust property at the Marina.
3. Rehab some of the historic buildings 9, 10, 31 and 36 as examples for live/work spaces in affordable buildings located towards the eastern end, and potentially at the western end, in buildings 28 and 29. Try to meet Regional Housing Needs Assessment numbers assigned but not required since Alameda has already exceeded its number of approved market rate homes.
4. Build two apartment buildings on the eastern end that are tall enough to contain enough units to meet the financial goal to replace the bulkhead.
5. Considering Master Plan #3's provision to expand the "Commercial Core" to include the area currently planned for a 6-story, 225-unit apartment building, move that building easterly to the location of the 3-story, 48-unit building, shifting it east to the land designated for the 148-unit duplex homes, and omit the duplex homes. This would allow retention of the boatyard.

13-4

An EIR should consider alternate sites for both public and private development projects. (*Citizens of Goleta Valley v. Board of Supervisors* (*Goleta I*) (1988) 197 Cal.App.3d 1167, 1179-1180; *Citizens of Goleta Valley v. Board of Supervisors* (*Goleta II*) (1990) 52 Cal.3d 553, 574-575. EIRs "must consider a reasonable range of alternatives to the project, or to the location of the project." (Guidelines, §15126.6(f)(2.).) An alternate site location outside the lead agency's

13-5

jurisdiction is "simply a factor to be taken into account." (*Citizens of Goleta Valley v. Board of Supervisors* (*Goleta II*) (1990) 52 Cal.3d 553, 575, n.7.)

13-5 cont.

Conversion of Alameda Marina Warehouse

At recent Community Advisory Development meetings, the developer has proposed converting the large Alameda Marina warehouse, which is eligible for the National and State Lists of Historic Resources, into a 4-floor commercial complex that will destroy the integrity of the interior of the structure.

This potentially significant impact should be considered in the EIR's analysis as a direct or indirect impact of the Project.

13-6

Calculation of Housing Density

How was the maximum number of housing units determined? Shouldn't the density be calculated by multiplying the acreage specified for residential use in the master plan, rather than the total acreage by the permitted density per acre?

If the density were calculated by the acreage specified for residential use, how would the EIR's analyses change?

Wouldn't this mean that fewer unit alternatives more closely meet the Project's objectives?

13-7

Sincerely,

Rachel Mansfield-Howlett

Letter 13 Rachel Mansfield-Howlett
Response February 15, 2018

13-1 Please refer to Master Responses 3 and 4 in Section 2.2 of this chapter for a discussion of feasibility of proposed alternatives and historic resources, respectively.

13-2 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of feasibility of proposed alternatives.

13-3 Please refer to Master Response 5 in Section 2.2 of this chapter for a discussion of impacts related to aesthetics.

13-4 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of feasibility of proposed alternatives.

13-5 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of feasibility of proposed alternatives. As evaluated in Section 5.2.3 of the Draft EIR, an off-site alternative to the proposed project is not feasible.

13-6 Please refer to Master Response 4 in Section 2.2 of this chapter for a discussion of impacts to historic resources.

13-7 Please refer to Master Response 1 in Section 2.2 of this chapter for an overview of the project's consistency with the MX and MF Zoning Ordinances and how the City calculated the allowable residential density for the project. If the residential density was instead calculated by the acreage specified for the residential use in the Master Plan, it is likely that the environmental impacts of transportation and traffic, air quality, greenhouse gases, and noise, would be reduced to a similar extent as the Reduced Project Alternative. However, such a proposal for reduced residential density would not meet some of the project's basic objectives, including the ability of the project to provide housing of various types to fulfill the goals of the City's Housing Element and to meet the City's Regional Housing Needs Allocation. Please also refer to Master Response 3 in Section 2.2 of this chapter for a discussion of feasibility of proposed alternatives, including the feasibility of reduced residential density.

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Andrew Thomas
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Alameda, CA 94501

Subject: Affordable Housing and Preservation Alternative to Include and Comments to Address in the Environmental Impact Report on the Alameda Marina Master Plan

Dear Mr. Thomas:

As an Alamedan who cherishes our maritime heritage, I concur with the Alameda Marina Master Plan's goals of preserving part of our maritime history while providing more housing. There are alternative plans, though, that would meet these goals with fewer adverse impacts on the environment than those associated with the Preferred Alternative in the Draft EIR (Environmental Impact Report).

This letter provides comments that the City of Alameda must address before certifying the Draft EIR, including the analysis of a revised or new Preservation Alternative. Throughout this comment letter, I identify the most significant of these comments with the label ***Rqrd***.

The City of Alameda must evaluate the potential of a new or revised alternative, the Affordable Housing and Preservation Alternative described in this letter, to lessen the adverse impacts of the Preferred Alternative identified in the Draft EIR on

1) tribal cultural resources,

2) the number and extent of existing maritime businesses, and

3) the availability of housing affordable to the teachers, retail workers and service workers who will support residents of the market rate housing.

While the potential for adverse impacts on tribal cultural resources and the number of and extent of existing maritime businesses was discussed in the Draft EIR, the potential for adverse impacts on housing for low and even middle wage workers was not. An analysis of the potential for hundreds of new market rate units to force workers to pay more for housing, double up, move into substandard housing, to live on streets in vans, campers and cars or live under freeway ramps and other homeless encampments must be included in the Final EIR. I provide a framework for such a discussion below.

As others, notably SAWW (Save Alameda's Working Waterfront), are commenting on the adverse impacts to existing maritime businesses, my comments focus on the adverse impacts on the availability of housing affordable to workers who would support the new residents and businesses they attract. This letter incorporates SAWW's comments by reference.

The City asserts in the Draft EIR that foundations for the townhomes in the Preferred Alternative can be safely constructed for less than foundations for taller structures such as those in the Affordable Housing and Preservation Alternative.

- ***Rqrd 1:*** To allow the public to review and comment on this assertion, the City must provide the preliminary geotechnical and related reports upon which the assertion is based, preferably as appendices to the EIR. 14-1

The public must be offered an opportunity to review and comment on all critical geotechnical and related reports referenced in the Draft EIR before the Final EIR

issues. On Jan. 24th, I submitted a request to the Clerk of the City of Alameda for two such reports. (Exhibit 1) As of February 15th, 2018, the Clerk had yet to acknowledge my request.

Rqrd. 2: **The EIR Must Fully Analyze The Affordable Housing and Preservation Alternative** 14-2

The Affordable Housing and Preservation Alternative reduces the adverse impacts on maritime businesses and tribal cultural resources by using land more efficiently than the Preferred Alternative. The Affordable Housing and Preservation Alternative also provides more affordable housing, both in numbers and in percentage, than the Preferred Alternative.

The Preferred Alternative proposes to build new housing throughout the 22 acre site, including where maritime businesses are currently located and over part of Site CA-ALA-11, a historical resource and a tribal cultural resource. The Affordable Housing and Preservation Alternative would instead

1) locate all of the housing on the Eastern section of the site, where almost no maritime businesses are located

2) exclude all portions of Site CA-ALA-11, the tribal cultural resource possibly including part of a known burial ground, and

3) reduce the number of market rate homes that generate low-paying service jobs from 660 to 528 while increasing the number of affordable housing units from approximately 103 to 528.

The Affordable Housing and Preservation Alternative would construct 1,056 units (528 deed restricted affordable and 528 market rate) in buildings ranging from 4-8 stories tall on the 10 easternmost acres of the 22 acre parcel for which the Preferred Alternative proposes housing. With at least 50% of the housing units affordable for fifty-five years to very-low and low income households, the project would qualify for a sixty (60%) percent increase in maximum density allowing vertical consolidation of the housing on the eastern end of the site.

The Affordable Housing and Preservation Alternative is a higher density alternative with substantially more affordable housing units that is both *feasible* and *desirable*. Accordingly, as it would address two significant adverse impacts identified in the Draft EIR and one unidentified, yet significant impact, that on low-wage workers described below, such an alternative should be fully analyzed in the Final EIR.

Rqrd. 3: **The EIR Must Adequately Analyze Localized Impacts on The Cost of Housing for Low-Wage Workers** 14-3

As the analysis of impacts on low-wage workers is omitted or implicitly relies on flawed assumptions, the Draft EIR fails to identify a significant adverse cumulative impact that the Preferred Alternative and related projects would have on the displacement of these workers. The Alameda Marina project together with proposed developments at the Del Monte Building and Encinal Terminals sites, would add about 1,500 market rate homes to the Buena Vista / Clement Avenue corridor.

These expensive market rate homes would induce hundreds of low wage jobs in Alameda, including for K-12 teachers, retail clerks, landscapers, home electricians, plumbers, handymen and many others. As the geographic context for Cumulative Impact C-POP-1 is "the City of Alameda," to find the adverse impact on housing to be less than significant, the Draft EIR must demonstrate that the ~100 affordable units proposed in the plan would be able to accommodate at least the number of low-wage workers required to provide the residents of the market rate and affordable homes in the development with a variety of services.

There is a reasonable expectation that despite the provision of ~100 affordable units, this market rate housing will have a significant adverse impact on the cost of housing in Alameda for low-wage workers and will force them to seek housing in surrounding cities. The Draft EIR ignores these workers and provides no basis for asserting that the impact on them would be less than significant. The literature on urban displacement indicates that the impacts on the population of low wage workers could be significant in a "strong" housing market like Alameda.

Rqrd. 4: *The City of Alameda Must Explicitly Demonstrate That "Filtering Down" Together with 15% (~100)Affordable Units Will Mitigate Potential Upward Pressure on Housing Prices for Low Income Workers Caused by Market Rate Units.* 14-4

The City of Alameda in the Draft EIR implicitly assumes, without evidence, that when new market rate housing is built, the new market rate units will "filter" down to create vacancies in lower priced housing stock. Such filtering is unlikely to happen in Alameda. Ms. Miriam Zuk and Ms. Karen Chapple, Leaders of the Urban Displacement Project at the University of California at Berkeley (1), state that

> The filtering process, the phenomenon in which older market-rate housing becomes more affordable as new units are added to the market, may fall short of producing affordable housing. (2)

They continue

> We examined the relationship between market-rate housing construction, rents, and housing cost burden (Table 1[omitted]). Initial results indicate a filtering effect for units produced in the 1990s on median rents in 2013. Yet market-rate development in the 2000s is associated with higher rents, which could be expected as areas with higher rents are more lucrative places for developers to build housing. Furthermore, development in both the 1990s and 2000s is positively associated with housing cost burden for low-income households. Thus, while filtering may eventually help lower rents decades later, these units may still not be affordable to low-income households.(2)

To evaluate the impact of market rate housing on low-income housing, many agencies, including the City of Alameda in this Draft EIR, appear to implicitly rely on the California Legislative Analyst's Office's (LAO) assertion that market-rate development is the most effective investment to prevent low-income households from being displaced from their neighborhoods. Ms. Zuk and Ms. Chapple, who provided the data on which the LAO based this dubious conclusion write:

> While numerous critiques of the LAO February 2016 report "Perspectives on Helping Low-Income Californians Afford Housing" have circulated, we believe that the omission of subsidized housing production data from the analysis has the greatest potential to skew results. We have reanalyzed the data on housing production, including

> that of subsidized housing, and show that *the path to reducing displacement is more complex than to simply rely on market-rate development and filtering*. (2)

Rqrd. 5: *Wherever the City of Alameda explicitly or implicitly relied on the LAO conclusion that market rate housing prevents displacement, the City must reexamine the conclusions to account for methodological errors, such as the LAO's failure to include affordable housing in their analysis described above.* 14-5

After Ms. Zuk and Ms. Chapple added subsidized housing data and replicated the LAO's analysis, they wrote that:

> In the February 2016 report "Perspectives on Helping Low-Income Californians Afford Housing" (hereafter "the LAO Report"), the California Legislative Analyst's Office (LAO) used data we posted on our Urban Displacement Project website (www.urbandisplacement.org) to argue that market-rate development would be the most effective investment to prevent low-income households from being displaced from their neighborhoods.
>
> In this research brief we present a more nuanced view to contribute to this debate. We correct for the omission of subsidized housing production from the LAO Report and find that both market-rate and subsidized housing reduce displacement at the regional level, yet subsidized housing has over double the impact of market-rate units. (2)

Ms. Zuk and Ms. Chapple conclude that

> In overheated markets like San Francisco, addressing the displacement crisis will require aggressive preservation strategies in addition to the development of subsidized and market-rate housing, as building alone won't protect specific vulnerable neighborhoods and households. This does not mean that we should not continue and even accelerate building. However, to help stabilize existing communities we need to look beyond housing development alone to strategies that protect tenants and help them stay in their homes.(2)

Rqrd. 6: *The EIR must estimate what proportion of inclusionary housing and what agressive preservation strategies would be required to mitigate adverse impacts of market rate housing on Alameda's low income communities, and describe any adverse impacts on housing that would not be mitigated by the Preferred Alternative.*

14-6

As Alameda's housing market is closely connected to San Francisco's, it too, is overheated and vulnerable communities cannot be protected by production of subsidized (e.g. 15% inclusionary) and market rate housing. Housing officials and experts, such as Alameda's Assistant Development Director Andrew Thomas and East Bay Housing Organization's Jeff Levin, independently informed me that a 15% inclusionary requirement does not mitigate the adverse impacts of market rate housing on vulnerable communities in Alameda. Instead, State Housing Laws limit the inclusionary requirement to what the market will bear rather than what is needed to preserve the low-income communities who provide us with essential services.

The EIR should include mandatory Rent Control in its analysis of the aggressive preservation strategies that could partially mitigate displacement caused by the upward pressure on housing prices exerted by new market rate units. Alameda's Housing Impact Fee for business is another mitigation measure that should be analyzed, as this fee, set using 1989 methodology, may be outdated. Additional residents will induce growth in local, and attract new, businesses.

The City of Alameda's 2015-2023 Housing Element cites a 1989 nexus study as the basis for the housing impact fee charged businesses. I submitted a request for a copy of that nexus study to the Clerk of the City of Alameda on Feb. 9th, (Exhibit 2). As of Feb. 15th, Nancy McPeak of the City of Alameda's Development Department had found a report describing the implementation plan to assess and collect the fees. She was still trying to locate the methodolgy report used to set the fees (Exhibit 3).

References

1. University of California, Berkeley, 2018. Urban Displacement Project - About, http://www.urbandisplacement.org/about.

2. Zuk, Miriam and Chapple, Karen, May 2016. Housing Production, Filtering and Displacement: Untangling the Relationships, IGS (Institute of Government Studies) Research Brief, University of California, Berkeley.

Exhibit 1

Jan 24, 2018

To: clerk, Nancy clerk@alamedaca.gov
From: William Smith <smithwja@gmail.com>

Subject: Request for Four Technical Reports Referenced in the Alameda Marina Project Draft EIR

Ms. Irma Gladden,

The Alameda Marina Project Draft Environmental Impact Report cited four documents that describe the geological formations and soils underlying the Alameda Marina. I would appreciate copies of each, preferably an electronic copy. I could also drop by your office and examine the reports in your office should they only be available on paper.

The documents are

1. Geomatrix Consultants (2007), “Assessment of Liquefaction Hazard, Alameda Marina, Alameda, California”, Consulting report project No. 13155.005, October 5, 2007.

2. Rockridge Geotechnical, 2012, Preliminary Geotechnical Investigation, Proposed Redevelopment, Alameda Marina, Alameda, California. November 28.

3. Telesis Engineers (2007), “Seismic Performance and Risk Analysis for Alameda Marina,Alameda, California,” Job Number TE 1085, October 9, 2007.

4. TRC Lowney (2006), “Geotechnical Investigation, Grand Marina Village, Alameda, California,”Consulting Report No. 247-23B, August 9, 2006.Telesis Engineers, 2007, Geotechnical..

I found the references to these document in section 9 of SOIL, SOIL-GAS, AND GROUNDWATER SITE INVESTIGATION REPORT PROPOSED MIXED USE DEVELOPMENT 1815 CLEMENT STREET ALAMEDA, CALIFORNIA, prepared for: ALAMEDA MARINA DEVELOPMENT, LLC September 2013.

This soil investigation report for Project No. 2013-32 was authored by STELLAR ENVIRONMENTAL SOLUTIONS, INC. 2198 SIXTH STREET BERKELEY, CALIFORNIA 94710 and dated is July 12, 2011. This report is part of Appendix E, Hazardous Materials in the Alameda Marina Project Draft Environmental Impact Report.

Thank you for your assistance.

William J. Smith
Alameda, CA 94501
(510)522-0390

Exhibit 2

Feb 9, 2018 (6 days ago)

To: clerk
From: William Smith <smithwja@gmail.com>

Subject: Request for Nexus Study for 1989 Affordable Housing Unit Fee

City Clerk,

Please provide me with a copy, electronic preferred, of the Nexus Study cited in Municipal Code Section 27-1.4 - Affordable Housing Requirements. The Nexus study was prepared by Economic and Planning Systmes Inc. in November of 1989.

William J. Smith

Alameda, CA 94501

(510)522-0390

27-1.4 - Affordable Housing Requirements.

a.Unit Requirement . An affordable housing unit requirement is hereby established for new, changed or remodeled and expanded nonresidential development in the City. The City Council shall, by resolution, based upon the Nexus Study prepared for the City by Economic and Planing Systems Inc., in November of 1989, set forth the formula for determining the number of units to be provided, the beneficiaries thereof, the relationship between this requirement and the various types of new and expanded developments, and time for the provision of the units. The requirements of this chapter shall be met by each developer prior to the issuance of the building permit or, where a building permit is not required, the use permit for the new, expanded, or changed use.

Exhibit 3

Feb. 15, 2018 8:26 AM (7 hours ago)

To me, LARA, ERIN

From: NANCY McPeak

Good Morning:

I have attached the final report prepared October 30, 1990. I am still trying to locate the methodology report from November 1989. I hope this helps and I will keep digging.

Thanks, Nancy

Nancy McPeak
City of Alameda
Community Development Department
2263 Santa Clara Avenue
Alameda, Ca 94501
510-747-6854

From: LARA WEISIGER

Sent: Monday, February 12, 2018 8:24 AM

To: NANCY McPeak <NMcPeak@alamedaca.gov>; ERIN GARCIA <EGARCIA@alamedaca.gov>

Subject: FW: Request for Nexus Study for 1989 Affordable Housing Unit Fee

Good morning,

Can your department please respond to this request?

Thanks,

Lara

From: William Smith [mailto:smithwja@gmail.com]

Sent: Friday, February 09, 2018 10:41 PM

To: City Clerk <CLERK@alamedaca.gov>

Subject: Request for Nexus Study for 1989 Affordable Housing Unit Fee

City Clerk,

Please provide me with a copy, electronic preferred, of the Nexus Study cited in Municipal Code Section 27-1.4 - Affordable Housing Requirements. The Nexus study was prepared by Economic and Planning Systmes Inc. in November of 1989.

William J. Smith
Alameda, CA 94501
(510)522-0390

27-1.4 - Affordable Housing Requirements.

a.Unit Requirement . An affordable housing unit requirement is hereby established for new, changed or remodeled and expanded nonresidential development in the City. The City Council shall, by resolution, based upon the Nexus Study prepared for the City by Economic and Planing Systems Inc., in November of 1989, set forth the formula for determining the number of units to be provided, the beneficiaries thereof, the relationship between this requirement and the various types of new and expanded developments, and time for the provision of the units. The requirements of this chapter shall be met by each developer prior to the issuance of the building permit or, where a building permit is not required, the use permit for the new, expanded, or changed use.

Letter 14 **William J. Smith**
Response February 15, 2018

14-1 Please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of the feasibility of alternatives. For purposes of providing additional clarification, the principal geotechnical report for the project was prepared by Rockridge Geotechnical in 2012. The report formed the basis for much of the site-specific soils analysis presented in Section 4.5 of the Draft EIR. As discussed on page 4.5-2 of the Draft EIR, portions of the site are underlain by artificial fill and weak Bay muds. These findings are based on knowledge obtained through an understanding of the original shoreline, as verified through core samples taken throughout the site, as well as historic maps and charts. As discussed on pages 4.5-11, 4.5-12, and 4.5-26 of the Draft EIR, the identified soil conditions on the site would place limitations on the types of structures that could be supported on various portions of the site using conventional foundation and construction techniques. Specifically, the investigation found the following constraints that could affect buildability on portions of the site: 1) foundation settlement under static loads due to compression of the underlying undocumented fill of varying thickness that blankets the site; 2) foundation settlement under static loads due to compression of the weak, compressible bay and estuary deposits that underlie the fill in portions of the site; 3) the potential for as much as several inches of liquefaction-induced ground settlement in some areas; 4) the potential for liquefaction-induced lateral spread displacements along the waterfront; 5) the presence of subsurface obstructions, such as pile foundations, bulkhead structures, large timbers, utilities, and other concrete remnants that may interfere with future construction activities and affect the performance of new foundations; 6) relatively shallow groundwater in portions of the site; and 7) potential environmental constraints at the site.

For the Alameda Marina site, and as discussed on page 4.5-26 of the Draft EIR, anticipated differential settlements due to both static load conditions and post-liquefaction reconsolidation would exceed the typical tolerance of conventional spread footing foundation systems. In portions of the site where the fill is thinnest and there are no weak, compressible bay and estuary deposits, such as the edge of the site along Clement Avenue, new buildings may potentially be supported on mat foundations on unimproved ground. In locations where static and seismically induced settlements (combined) exceed approximately 3 inches, ground improvement will likely be required beneath shallow foundations to stiffen the upper weak soils and transfer structural loads to denser soils beneath them. Ground improvement can serve to reduce settlements, improving structural performance, and also to increase the bearing capacity of subgrade soils. Alternatively, buildings may be supported on deep foundations that gain support within the denser soils below. These types of constraints are not uncommon in

the Bay Area, particularly in locations immediately adjacent to the shoreline and in areas that have been built on Bay fill. These conditions are typically addressed through the specialized foundation and construction techniques discussed above, which can be costly when implemented across large areas. These costs usually preclude the construction of taller and heavier buildings in these areas.

Each of these considerations have been fully disclosed in the Draft EIR, and adequately describe the site-specific soils constraints under which the site would be developed. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

14-2 Please refer to Master Responses 2 and 3 in Section 2.2 of this chapter for a discussion of affordable housing and the feasibility of alternatives, respectively.

14-3 Please refer to Master Response 2 in Section 2.2 of this chapter for a discussion of affordable housing and the project's requirements under the law.

14-4 Please refer to Master Response 2 in Section 2.2 of this chapter for a discussion of affordable housing and the project's requirements under the law.

14-5 Please refer to Master Response 2 in Section 2.2 of this chapter for a discussion of affordable housing and the project's requirements under the law.

14-6 Please refer to Master Response 2 in Section 2.2 of this chapter for a discussion of affordable housing and the project's requirements under the law.

Comments to the Draft Environmental Impact Report for the Alameda Marina Project

Dear Mr. Thomas:

Attached are my comments on the Draft Environmental Impact Report (DEIR) for the Alameda Marina Project. In summary, I suggest reassessing the transportation impacts portion of the report and then recirculating the DEIR for the following reasons.

- The travel time and speed surveys, conducted in March 2017 and provided in the appendix, indicate the Park Street corridor is at capacity, with delays throughout the AM peak hour. (see page 5) — 15-1
    - The DEIR intersection delay results are inconsistent with the travel time surveys and, most importantly, the DEIR omits the condition that the Park Street outbound in the morning is at capacity today. — 15-2
- The impact section relies on the existing roadway configuration, ignoring the changes to be built via the funded projects and other projects likely to happen by 2040. — 15-3
- The DEIR also omits the areas on the other side of the Park Street Bridge, grossly lowering the delay values in the impact section of the DEIR.
    - The 23rd, 29th and I-880 interchange modifications, now almost completed, will likely reduce the outbound capacity, as reported by Alameda County and Caltrans. (see page 9)
    - The additional development growth in Oakland will further reduce the Park Street outbound capacity.
    - The interchange operations report shows northbound queueing outbound as far back as Buena Vista. This kind of queue would be slow to dissipate.

    — 15-4
- With proper analysis, the unavoidable impacts where Blanding and Clement Avenue intersect with Park Street during the AM peak hour would likely be significantly more severe than as reported in the DEIR. This is because eastbound approaches on both of these streets would be operating 60 percent and 90 percent above their capacity, as per the DEIR for the no-project cumulative conditions. (see pages 14 and 15)
    - These streets cannot accommodate the traffic due to the other projects within the AM peak hour, nor can they accommodate the additional traffic from the proposed Alameda Marina project during this same timeframe. The over-saturated conditions can only be resolved by shifting traffic to the shoulder and to other crossings at the peak hour (i.e., outside of the peak hour). This DEIR considers neither option.
    - Peak period and corridor-level analysis needs to be conducted to accurately assess the project's traffic impacts with the inclusion of the areas in Oakland.

    — 15-5

1

Comments to the Draft Environmental Impact Report for the Alameda Marina Project

- The vehicle miles traveled (VMT) metric impact analysis does not consider the additional travel on Alameda streets due to increased population; it considers only the VMT per current resident. (see page 10)

    - The San Francisco Metropolitan Transportation Commission projects travel on Alameda streets will increase by 23 percent by year 2040.

    - These projected major increases in travel assume Transportation Demand Management Strategies, the funded projects, and changes such as those being considered in the City's recent Travel Choices Plan.

    - Under Alameda's Sustainable Community Strategy, travel is supposed to decrease, not increase. As it stands, this strategy is not working. As per SB 375, alternative strategies should be considered.

Year 2010 and Forecasted (Yr 2040) Vehicle Miles Traveled (VMT) on Alameda Streets including Estuary tunnels and bridges

	VMT		
2010	434,470		
2040	534,089		
Increase	**99,620**	**22.9%**	

Source: San Francisco Metropolitan Transportation Commissions Traffic Model for the 2013 Regional Transportation Plan

Received from MTC via California Public Record Request August 3rd, 2016

15-6

- The overall traffic growth throughout the weekday for all the estuary crossings and Bay Farm Bridge has not been considered in this DEIR.

I obtained the traffic model results from the Metropolitan Transportation Commission (MTC), in order to understand their forecasts for Alameda. As shown in the table below, the overall growth for all of Alameda's gateways is 40,250 vehicles per day, an amount similar to the daily traffic volumes over the Park Street Bridge.

15-7

MTC One Bay Area Plan Model Results for the Alameda island crossings

Source: Metropolitan Transportation Commission Travel Model Results for the City of Alameda

	Early Am 3 to 6 am		AM peak 6 to 10 am		Midday 10am to 3 pm		PM peak 3 to 7 pm		Evening 7 pm to 3 am		**Daily Total**		Change from 2010	
Year	2010	2040	2010	2040	2010	2040	2010	2040	2010	2040	2010	2040		
Total for off island (all gateways)	2785	3508	26810	31668	32221	38085	30991	36486	16375	19328	109182	129075	**19893**	**18.2%**
Total onto Island (all gateways)	2539	3095	24359	28647	31489	36903	32641	37911	17688	22517	108716	129073	**20357**	**18.7%**
	5324	6603	51169	60315	63710	74988	63632	74397	34063	41845	**217898**	**258148**	**40250**	**18.5%**
		24.0%		17.9%		17.7%		16.9%		22.8%				

- Traffic forecasts in the Alameda Marina DEIR are grossly inconsistent with the traffic forecasts in the Encinal Terminals EIR, which is based on the same cumulative conditions.

  The starting cumulative for this DEIR should be the same as the 2040 with Encinal Terminal project its EIR, and which in the Alameda Marina DEIR would be referred to as the 2040 without Marina Project. But these forecasts are grossly different and these should not be because the land use is the same and the network has not changed since the Encinal Terminal EIR.

15-8

For example for Park Street, this DEIR forecasts are nearly 1,223 vehicles per hour (VPH), or 24 percent lower. Further, at the west end of the project (at the intersection of Constitution and Atlantic), this DEIR forecasts are approximately 800 VPH higher, or 37 percent higher than projected in the Encinal Terminals EIR.

This gross inconsistency must be resolved before proceeding because these forecasts would dramatically change the impact results. Which is correct? 15-8 cont.

- The Alameda Marina Project presumes to reduce jobs, but what happens if Alameda cannot attract the very large job forecasts that have been assumed in this and the other recent EIR's?
    - It is also possible that the increased congestion occurring now due to Housing First policies could dramatically reduce the potential of commercial development with these high job assumptions.
    - There is no evidence that large prospective employers spend much time considering Alameda, once they note (1) the restricted access inherent in an island location, (2) the additional congestion with more residential, and (3) the fact that none of the island accesses are built to current Seismic Lifeline standards.
    - The current trends already suggest a far lower job base; however, the assumptions of land use in this DEIR suggest totally different trends, with a high job base assumption by 2040.

15-9

    - An economic assessment must be provided before proceeding with residential project approvals. The commercial land use assumption should be validated before it is used in this DEIR or as a basis for other planning decisions. 15-10

- Substantial evidence is missing from the DEIR:
    - The redevelopment and new commercial development at the site has not been considered in the project traffic projections, and no evidence is given as to why this is omitted. 15-11
    - There is no explanation of how the forecasts were developed. Traffic modeling report and other plots are not provided. 15-12
    - Evidence indicates assumptions in the county model may not represent current development patterns. 15-13
    - Traffic counts during construction were not checked for diversion. 15-14
    - Evidence for the traffic delay/operations reports is missing; for example, the Synchro output report omits the queueing results. 15-15
    -

3

If the proper evaluations were performed, as suggested in the points above, I strongly suspect the traffic impacts would be found to be far worse than portrayed in the DEIR and would lead to more informed and defensible decisions by Alameda's policy makers.

15-16

The following pages provide detail comments to the DEIR.

I believe moving forward with this project would be foolhardy, considering the facts and the lack of substantial evidence to support the projections in this DEIR.

Respectively,

Eugenie P. Thomson P.E.

Comments to the Draft Environmental Impact Report for the Alameda Marina Project

Introduction:

The following is a brief summary of my review of the DEIR.

The delays reported for the existing conditions section in the DEIR are inconsistent with the data from the travel time studies provided on page 156 of the traffic appendix.

See the table to the below for the delays calculated for northbound Park Street using the speeds provided in the appendix. The bulk of the delays are occurring at the intersection of Park Street and Blanding Avenue and max out at over seven minutes. This indicates outbound Park street during the AM peak hour operates at capacity.

Park Street, Northbound Travel Time, Speed and Delay Summary		
AM Peak Hour		
Source: Graph in the Appendix, page 156, and Tables 4.12-1 and 4.12-2, Alameda Marina DEIR Dec 2017		
	Delay (hr:min:sec)	
	Average	Maximum
AM peak hour	0:02:59	0:07:40

But the intersections delay results and the DEIR do not report that the existing Park Street Bridge corridor outbound is operating at capacity and experiencing significant delays at the key intersections.

Instead, the DEIR concludes that all of the study intersections are operating today with minimal and acceptable delays, with Levels of Service (LOS) C or better during the AM peak hour – several levels of service better than the city's threshold of LOS D.

- The following four key intersections are reported as operating at LOS B, defined as having stable operations and minimal delay, calculated delays between 10 and 20 seconds:
  - Constitution Way and Atlantic Avenue
  - Challenger and Atlantic
  - Sherman/Atlantic/Buena Vista
  - Fernside/Tilden Way/Blanding
- The remaining key study intersections would operate at LOS C, which is defined as stable and acceptable delays, with calculated delays between 20 and 35 seconds per vehicle in the AM peak hour:
  - Webster and Atlantic
  - Blanding and Park
  - Clement and Park
  - High and Fernside
- The city's acceptable threshold has been LOS D. (See table to the right.)

	Existing Intersection Traffic Conditions for the AM Peak Hour (Source: Section 4.12 Transportation and Circulation, DEIR December 201		
Intersections reported to operate with this level of service	**Level of Service**	Levels of Service Description (table 4.12-3)	Average Control Delay Range for signalized intersections (seconds per vehicle)
	A	***Free flow or insignificant delays*** : *Operations with very low delay, when signal progression is extremely favorable and most vehicles arrive during the green light phase. Most vehicles do not need to stop at all.*	*less than or equal to 10 seconds of delay per vehicle*
Atlantic/Constitution, Challenger/Atlantic, Atlantic/Sherman/BV, Grand/Buena Vista, Tilden Way/Fernside/Blanding	**B**	***Stable operation or minimal delays*** : *Generally occurs with good signal progression and/or short cycle lengths. More vehicle stops than with LOS A, causing higher levels of average delay. An occasional phase may be fully utilized.*	*between 10 and 20 seconds per vehicle*
Webster/Atlantic, Park/Blanding, Park/Clement, High/Fernside	**C**	***Stable operation or acceptable delays*** : *Higher delays resulting from fair progression and or longer cycle lengths. Drivers begin to wait through more than one red light. Most drivers feel somewhat restricted.*	*between 20 and 35 seconds per vehicle*
	D	***Approaching unstable or Tolerable Delays*** : *Influence of congestion becomes more noticeable. Longer Delays result from unfavorable progression, longer cycle lengths, or high volume to capacity ratios. Many vehicles stop. Drivers may have to wait throuh more than one red light.* ***Queues may develop, but dissipate rapidly, without excessive delays.***	*over 35 seconds to or equal to 55 seconds*
	E	***Unstable Operations or significant Delays*** : *Considered to be the limit of acceptable delay. High delays indicate poor progression, long cycle lengths and high volume to capacity ratios. Individual cycle failures are frequent occurences. Vehicles may wait through several cycles. Long queues form upstream.*	*Over 55 to below or equal to 80 seconds*

The existing calculated delays in this DEIR are also lower than what has been reported in other EIRs. A comparison is provided below. Side street delays are omitted from the travel time surveys in the DEIR. The above surveyed delay results could also be higher because of the diversion to other crossings due the 23rd/29th/I-880 interchange construction. The city used speed survey data collected in March of 2017.

And the lower-than actual delays in the DEIR could be due to the use of constrained counts rather than the demand volumes to the intersections or due to not validating the discharge rates in the intersection operations software employed for the delay calculations. The discharge rate software default value should be reduced for consideration for downstream overflows. For instance, the queues northbound on Park Street approaching Blanding reduce the discharge rate from Clement Avenue to Park Street.

15-17

The standard of care in the traffic engineering industry is to validate assumptions, and technical reports are typically provided to the city for review and included in the technical appendices of these EIRs. However, no evidence of validation was provided in the DEIR, nor was there a technical report.

Public record requests have been filed with the City of Alameda for the missing facts, but these missing records will not arrive in time for a review of this evidence during the public comment period for this DEIR .

On February 6, I asked for the most recent counts, these I requested because the existing traffic counts for Blanding and Park, as well as for Clement and Park Street, in this DEIR were lower than the existing counts in recent EIRs. This appears to be due to traffic diverting to other crossing because of the construction of the 23rd/29th and I 880 interchange project. As mentioned above, this contributed to lowering the calculated delay values.

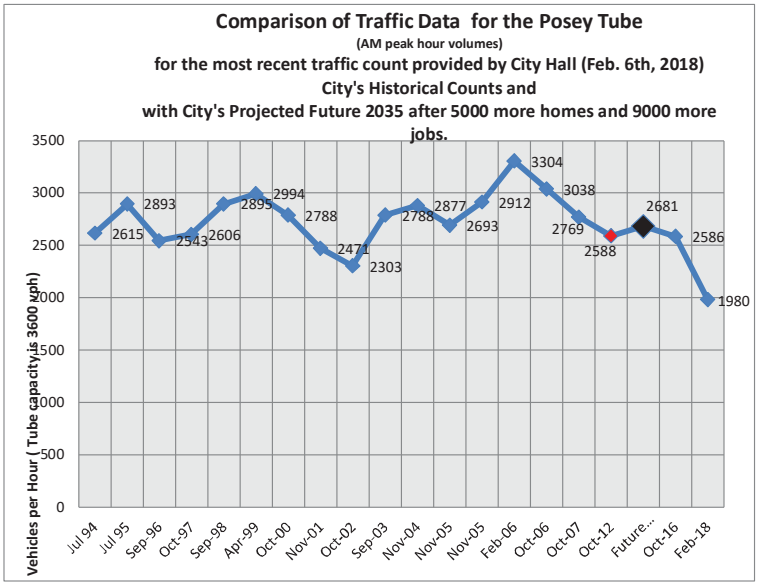
15-18

Counts during major construction are usually avoided, but when they are necessary – as for this large interchange – adjustments are made accordingly. No check for diversions is provided, nor were any adjustments made.

On February 6, 2018, via email, the city clerk provided a summary of all the Alameda crossings. However, this supposed count indicated another problem for the AM peak hour. The Posey Tube outbound traffic has dropped dramatically, to only 1,980 vehicles per AM peak hour, while historic peak hour counts are significantly higher, with an overall tube capacity of 3,600 VPH. The Park Street Bridge count was also taken during the interchange construction. The current count for the Posey Tube is particularly a major concern and can only be the result of very long queues formed because of problems from 7th and Harrison onto northbound I-880 at the I-980 merge. Those queues would not fully dissipate during the peak hours. The travel time studies for Webster Street in the DEIR do not show such low speeds.

15-19

Public works provided me with the tube counts last year, and this still indicated outbound Posey Tube at 2586 VPH during a two-week period in October 2016. (See graph.) This Posey Tube count of only 1980 VPH now used at City Hall is not the peak-hour demand; it could only be the volume that successfully gets through the congestion at the Jackson street on ramp to I 880 in Oakland. Further, I still do not have a handle on diversion from Park Street that may have occurred due to the construction.



Unfortunately, commenting on the DEIR has not worked in the past. See Exhibit A for my key comments to the Alameda Point DEIR, which were ignored without substantial evidence provided by the city in their responses. Today, we have the facts that indicate the Alameda Point EIR, eliminated many traffic impacts that should have been reported. Further, the public still does not know how much longer it will take to leave and enter the island – information the residents requested.

15-20

The major problem with the Alameda Point EIR was the forecasts were extremely low for the west end of the island (less than historical traffic outbound into the Posey Tube (see graph above), and only one net car off-island due to the Alameda Point project in the AM peak hour (now proven incorrect with other traffic models and other city reports). The Alameda Point EIR indicated no traffic impacts at the west end (likely shown as incorrect with the new modeling for the Alameda Marina Project) and only few minor impacts at the east end. In addition, no congestion was reported whatsoever for the existing and in the future at the west end in the Alameda Point EIR (also proven wrong in the Alameda Marina DEIR for the future conditions). All these comments were ignored, and the

multiple requests for public records were not responded to until after the Alameda Planning Board's approval of the Alameda Point EIR. (See Exhibit C for the PRA requests.)

One of the major comments then was, *how is it that the existing conditions do not report any delay?* I used the example of the 6th and Jackson Street intersection with the delay results, as per the DEIR. (See insert to the right.)

The response to this comment was that the 2000 Highway Capacity Manual (HCM) was employed – omitting the fact that the introduction to the HCM states the following intersection methodology is only for conditions with downstream free flow. That is certainly not the case at the 6th and Jackson intersection, where the downstream northbound I-880 operates at capacity, resulting in overflows through the intersection of 6th and Jackson, back to the Harrison Street.

Yet, with the Encinal Terminals project (589 new homes), the city suddenly did an about-face:

> *"LOS has historically proven to be an inadequate measure in Alameda because residents experience delays (at) [sic] certain intersections, yet the LOS analysis indicates that the level of service at the intersection is adequate. The delay that is being experienced is the result of downstream congestion, not a result of the intersection design or the volume of cars moving through the intersection."*
> Source: Encinal Terminals DSEIR (pdf), page 250 or page 4.G-14.

Comment by E. Thomson, 10/21/13 to the Ala Pt DEIR
The existing delays at the intersections stated in the DEIR are significantly lower than what Alamedans have stated to occur.
It is difficult to believe there is only a 30 second delay at Doolittle and Island Drive when leaving Bay Farm Island. The Bay Farm residents have stated many times their congestion is very bad and any more development will be too much.
Similarly the delays at other intersection like at the 6th and Jackson for the southbound right turn movement today in the morning are shown to be only 1.3 seconds (LOS A) in Appendix G (Synchro output for existing no project AM peak)
Is it possible that the intersection operations analyses results were not validated via field surveys ?
The intersection impact analysis omits the operations effects due to roadway downstream constraints. As a result the operations do not
For example, the freeway weave and ramp merge at the 6th Street northbound on ramp to I 880 & I 980, today causes backup all the way to the 7th and Harrison intersection, but the intersection analysis states the southbound right turn movement has only 1.3 seconds of delay (Level of Service A) for the future plus project conditions. (Appendix
Similarly other intersections like Blanding and Park Streets are affected by downstream roadway constraints which result in back up through the intersection.
All intersections should be re-evaluated if downstream constraints affect the intersections' operations. (i.e. without consideration of downstream constraints, the existing intersection analysis is not an engineering analysis, it is only a data processing analysis).

15-20 cont.

With those words, the city admitted the traffic studies for the Encinal Terminals and all previous mega-projects are worthless. How strange is that? I've been raising this point for the past 20 years in a half-dozen or more letters to city hall. So, why did the city finally admit their error? And then, in the Alameda Marina DEIR, continue the delay intersection (LOS, levels of service) analysis like before, while corridor level delay analysis should have been conducted with the effects of downstream bottlenecks?

As a professional trying to understand the transportation issues and impacts, it is almost impossible to figure out what is happening when there are so many underlying missing or incorrect facts and questions.

I am not against development for Alameda; quite the contrary. I, too, want Alameda to be a vibrant city serving businesses and residents.

What is of concern to me is that too much congestion discourages businesses from coming to Alameda and severely reduces the time residents have with their families. The reduction in quality of life with too much traffic intrusion into existing neighborhoods is a concern of many residents – a concern not yet addressed in any of the city's major planning decisions. Researchers have found that, when traffic increases in neighborhoods, the social fabric of the neighborhood breaks down and residents/ children no longer play outside.

15-21

Understanding all these issues starts with understanding the traffic consequences and issues facing the island and Bay Farm.

The following is a critique of the Alameda Marina DEIR's key traffic findings. I hope this review is informative and leads to a new traffic analysis for the Alameda Marina DEIR.

The Key findings for Transportation in the Alameda Marina DEIR

The Draft Environmental Impact Report for the Alameda Marina Project reports only two significant traffic impacts at Blanding and Park Street and at the Clement and Park Street intersections, with only little increase or no delay increases reported. (See DEIR summary below.)

The recommended solution in this DEIR is for the city council to adopt a Statement of Overriding Considerations to accept these two significant traffic impacts because the DEIR states there are no feasible mitigations in compliance with the Transportation Element of the General Plan. Transportation Demand strategies like bus passes would only reduce travel by 5-7 percent.

Average Control Delay for 2040 Cumulative Conditions (AM peak hour)		
Significantly impacted intersections only		
	Without Project	With Project
Blanding Ave. and Park St.	over 120 seconds	over 120 seconds
Clement Ave. and Park St,	108 seconds	over 120 seconds

The Statements of Overriding Considerations were also adopted for the Transportation Element Update EIR/ The Housing Elements Approval on July 3, 2012, was based on this earlier EIR, and the Alameda Point Development EIR, plus possibly others..

Under the California Environmental Quality Act, the city is required to approve this statement, but only after balancing the environmental effects with the economic benefits.

My point is, environmental facts for traffic impacts and the air and noise upon which this traffic input data is based, is grossly understating the traffic conditions. These analyses need to be modified before an honest evaluation of the environmental effects can be done.

It would be foolhardy for the city council to adopt a Statement of Overriding Considerations, as recommended in this DEIR, to accept these very low traffic delay values without further study, and while ignoring the overall traffic issues omitted from this DEIR.

15-22

The Alameda Marina DEIR fails to consider that little-to-no residual capacity exists on Alameda streets to accommodate the additional to-and-from traffic the Alameda Marina project would produce.

Peak-hour traffic has increased to encompass four hours, from 6:00 a.m. to 10:00 a.m., and little residual traffic capacity is available in the AM peak hour or on the shoulders for this project, along with the other approved development projects.

The DEIR ignores that the forecasts volumes are grossly above the capacity of the roadways and, therefore, it also ignores the fact that diversion to other streets or island crossings is likely, or the traffic shifting to a later or earlier hour.

The Alameda Marina traffic leaving in the morning would not go to the Park Street Bridge via Clement Avenue and Blanding Avenue, as assumed in the impact analysis. Both eastbound approaches on these two streets are operating over capacity in the no-build cumulative conditions, with queues extending from Park Street to beyond Oak Street from the eastbound approach of Blanding and Clement Avenues at Park Street.

Further, the existing conditions intersection delay and levels of service analysis does not report Park Street operating at capacity conditions.

As mentioned before, this is due to the use of existing traffic volumes during major construction, constrained volumes rather than demand traffic volumes, and the default software assumptions in the DEIR's intersection delay calculations. The software input and output in the appendices indicate default values are used for each intersection, although each has different discharge rates. Most likely, these uncalibrated assumptions and the lower existing traffic volumes report delays significantly lower than actual. Corridor analysis should have been

15-23

performed and can still be performed with SIMTRAFFIC, as the input data for the intersections have already been set up with Synchro 9, the software employed in this DEIR. Why wasn't a corridor analysis performed?

15-23 cont.

The effects of downstream overflows from Oakland back over the Park Street Bridge have been ignored in the delay calculations and must be considered for accurate delay projections.

Caltrans predicted the almost-finished 23rd/29th and I-880 interchange project would reduce the outbound capacity for Alameda over the Park Street Bridge. This was not considered in the DEIR. This project removes the grade-separated approaches to the northbound on-ramp and replaces it with a left turn across the traffic coming from Oakland. The new northbound I-880 off-ramp to 29th added a new signalized intersection at Ford and 29th, reducing the outbound capacity, because of the added opposing flow movement. The 2008 environmental document for this project reported maximum queues would increase by an additional 1,000 feet along Park Street due to this interchange project and, by 2035, the queues were forecast to extend from the 23rd northbound I-880 on-ramp to Buena Vista in Alameda. It will likely take an hour or more for a maximum queue this long to dissipate. The queue will block side-street traffic from accessing Park Street and the Bridge.

This Alameda Marina DEIR, as well as previous EIRs, should have performed a corridor analysis similar to the environmental document for this interchange project. Not doing so produced significantly lower delay projections, and omitted current and future delays.

15-24

From the 23rd / 29th Avenues I880 interchange project Environmental Document:

Source: Caltrans and Presented at the Jan 6th, 2010 workshop.

Oakland's growth and the increased congestion along the I-880 corridor will further reduce the capacity of Alameda island gateways due to downstream bottlenecks.

The overall traffic growth throughout the weekday for all the estuary crossings and Bay Farm Bridge has not been considered in this DEIR.

I obtained the traffic model results from the Metropolitan Transportation Commission (MTC), in order to understand their forecasts for Alameda. As shown in the table below, the MTC's results indicate the AM peak traffic growth will be spread over the early morning (24 percent increases) and the midday growth (18 percent). This indicates major growth outside the peak hours.

15-25

The overall growth for all of Alameda's gateways is 40,250 vehicles per day, an amount similar to the daily traffic volumes over the Park Street Bridge.

MTC One Bay Area Plan Model Results for the Alameda island crossings

Source: Metropolitan Transportation Commission Travel Model Results for the City of Alameda

	Early Am		AM peak		Midday		PM peak		Evening					
	3 to 6 am		6 to 10 am		10am to 3 pm		3 to 7 pm		7 pm to 3 am		**Daily Total**		Change from 2010	
Year	2010	2040	2010	2040	2010	2040	2010	2040	2010	2040	2010	2040		
Total for off island (all gateways)	2785	3508	26810	31668	32221	38085	30991	36486	16375	19328	109182	129075	**19893**	**18.2%**
Total onto Island (all gateways)	2539	3095	24359	28647	31489	36903	32641	37911	17688	22517	108716	129073	**20357**	**18.7%**
	5324	6603	51169	60315	63710	74988	63632	74397	34063	41845	**217898**	**258148**	**40250**	**18.5%**
		24.0%		17.9%		17.7%		16.9%		22.8%				

The Alameda Marina DEIR ignores the regular queue backups outbound on Park Street because of the downstream congestion in Oakland. It also ignores the likely shift of traffic into other peak periods of the day.

The DEIR reports that, for the cumulative condition, the Marina project's traffic can travel to the Park Street Bridge via a left turn from Clement or Blanding during the AM peak hours. This is highly unlikely, when the queues on Blanding and Clement extend to Oak Street and beyond throughout the peak hour.

15-25 cont.

It is also unlikely the only traffic impacts would be at two intersections – Park at Clement Avenue and Park at Blanding – with only marginal increases in delay. Other intersections would be impacted by this project.

Vehicles Miles Traveled assessment in the DEIR should be based not only on a per capita analysis, but also on the additional travel on Alameda's streets associated with the project's increase in population.

The DEIR provides an alternative traffic impact assessment using what is stated as the new traffic metric, as developed by the California Office of Planning and Research in their proposed guidelines per SB 375.

The DEIR reports no significant traffic impact using the vehicle- per-mile-per capita metric. That is because the new residents at the Alameda Marina will drive slightly less than existing Alameda residents due to the project's inclusion of transportation demand strategies, such as less parking supply and bus passes. This could reduce the travel by 5-7 percent.

15-26

Only the travel (VMT) per capita is considered; what is missing is the additional travel that would occur due to increased population associated with this project, such as the increase of vehicles miles traveled on Clement Avenue and other Alameda streets.

The California Air Resources Board has stated that VMT needs to decrease, if the state is to improve greenhouse gases; cleaner vehicles are not enough. The region is supposed to reduce VMTs.

Page 4,12-4 of the Alameda Marina DEIR states:

"Increase vehicles miles traveled leads to a number of direct and indirect impacts to the environment and human health. Among other effects, increasing VMT on the roadway network leads to increased emissions and air pollutants, including greenhouse gases, as well as increased consumption of energy. Transportation is

associated with more greenhouse gases than any other sector. Reducing VMT by Alameda residents is the single most effective means to reduce Alameda's greenhouse gases. "

I researched the VMT on Alameda streets data and found two reports – (1) the DEIR for the new Transportation Element and (2) the MTC model results for Alameda streets.

In 2008, the city updated its Transportation Element of the General Plan. This plan includes all the recent changes for other modes and Transportation Demand Management strategies. The draft environmental document reported the changes in vehicles miles traveled as a result of the implementation of this new Transportation Element. At that time, the DEIR results showed no significant change in VMT between the scenario without and with the Transportation Element. The estimate identified only a 0.32 percent decrease due to new Transportation Element. This city report indicated no significant reduction in travel with the new bicycle plan in the Transportation Element and all the other policies for transit.

None of the EIRs have considered the major increases in travel on Alameda streets. As indicated below, trips to and from Alameda were estimated to increase from 2.3 million miles in 2007 to 3.3 million miles by 2030. This increase will result in major travel changes within the city, as well as major costs increases for roadway maintenance and other infrastructure services. (See extract from this DEIR.)

15-26 cont.

The Metropolitan Transportation Commission also evaluated the VMT on Alameda streets and concluded a large increase in vehicles miles traveled on Alameda streets. The MTC traffic model is based on the Priority Development Areas, as proposed by Alameda for funded new transportation projects. The proposed land-use assumptions in the MTC model are the same as the city land-use assumptions of the Alameda Marina DEIR. This increase in VMT is also significant.

Year 2010 and Forecasted (Yr 2040) Vehicle Miles Traveled (VMT) on Alameda Streets including Estuary tunnels and bridges

	VMT			
2010	434,470			
2040	534,089			
Increase	**99,620**	**22.9%**		

Source: San Francisco Metropolitan Transportation Commissions Traffic Model for the 2013 Regional Transportation Plan

Received from MTC via California Public Record Request August 3rd, 2016

The MTC forecasts for total travel will be considerably less than those forecasts by the city's traffic model. This is because the entire Alameda roadway network was not coded in the MTC traffic model, many internal trips were not taken into account, and the trips to and from Alameda were not considered. Further, in 2008, the city's traffic model included the overly aggressive job assumption of 20,000 more jobs, which increased the travel estimates. Nevertheless, the MTC forecasts are more reliable to show the sharp increases in travel.

Secondly, due to the constraints of the island gateway near the developing site, a large portion of the vehicle travel on Alameda streets could be redirected or induced to other crossings. That presents a significant problem associated with the Alameda Marina site. The Park Street Bridge is at capacity today, and travel to other gateways will increase due to this project.

Another indication of induced travel was found in the City traffic model developed for the Alameda Point EIR. This EIR indicated large increases in traffic over the Bay Farm Bridge by year 2035. (See graphic below.)

Existing and Forecast traffic data for Bay Farm					
AM peak hour (vehicles per hour)					
		Existing	Year 2035	Increase	% increase
Bay Farm bridge	Outbound	1738	3168	1430	82.3%
Source: Alameda Point DEIR, Sept 2013, Traffic Technical Appendix					

15-26 cont.

The increase in VMTs, as indicated by MTC and the city reports, is evidence Alameda's Sustainable Community Strategies (the two priority development areas of Alameda Point and Northern Waterfront) would increase vehicles miles traveled.

The VMT metric should not be evaluated only for per capita, as the Alameda Marina DEIR and the recent Encinal Terminals EIR have done. The vehicles miles traveled on the roadways must also be considered. There needs to be additional analysis of induced (i.e., diverted) traffic to other crossings.

Forecasting comment: The DEIR assumes 1,000 residential units at Crab Cove.

Land-use assumptions and their locations were not provided. What was provided were the changes made to the county traffic model that was used for this DEIR. The previous EIRs had used the city traffic model.

The update below, provided in the appendix, shows 1,000 more residential units assumed at Crab Cove in the traffic model. However, the only land available at Crab Cove is the remaining federal parcel the Point Collaborative will occupy. There is no land available for a 1,000-unit residential development at Crab Cove. (See the land-use assumption table from the Alameda Marina DEIR's traffic appendix below.)

15-27

2040 ACTC MODEL HOUSING UNIT ADJUSTMENTS BY TRAFFIC ANALYSIS ZONE

TAZ	Name	Number of Housing Units (2040) Model	Change from Default 2040 [1]
461-475	Alameda Point	1,500	-946
478	Crab Cove	1,045	-100
482	BayPort	342	-743
494	Encinal Terminals	600	+433
495	Del Monte	400	+400
497	Shipways	300	+171
528	Alameda Marina	870	+590

1 Adjustments were made to the default 2040 Alameda County Transportation Commission travel demand model to reflect more current information on land use plans for Alameda Island. This includes projects such as Encinal Terminals, Alameda Landing, Alameda Point, Marina Shores, Boatworks, and others.

SOURCE: City of Alameda, Fehr & Peers, 2017.

Forecasting comment: The job assumption in the traffic model has been grossly wrong in the other EIRs, and its assumption is not provided in this DEIR

The job and land-use assumptions employed in the development of the cumulative traffic forecasts were not provided.

15-28

These assumptions have been impossibly optimistic in the county model since 2000. The assumption of 20,000 more jobs in both the county and city traffic models has been used since the Transportation Element update in 2008. There is no evidence that large prospective employers spend more than a few seconds looking at Alameda, once they note the restricted access inherent with an island location and that none of that access is built to current Lifeline Design Standards.

This was not corrected for the Encinal Terminals EIR, the Del Monte environmental reports, or the Alameda Point project EIR.

Comments to the Draft Environmental Impact Report for the Alameda Marina Project

Comparison of forecasts and operations results of this DEIR to previous EIRs indicate major differences.

15-29

I obtained forecast data from four recent EIRs, including Alameda Marina, to compare traffic forecasts at the Posey Tube and five key intersections.

The questions raised below indicate there are inconsistencies, and the documented trends – such as very little traffic to the Posey Tube in the AM peak hour associated with the new development and, now, significant decreases along Park Street – needs to be fully explained.

This comparison indicates the following:

1. **Outbound Posey Tube**: The estimated project traffic from Alameda Point, Del Monte, and the Encinal Terminals, as per their environmental reports, would add 132 VPH outbound in the AM peak hour total, above the existing traffic of 2,588 VPH. (The Alameda Marina DEIR excluded Posey Tube assessment).

   The final AM peak hour forecast for the Posey Tube was 2,681 VPH, as reported in the Alameda Point EIR, with only slight differences in the Del Monte environmental document and the Encinal Terminals EIR. These forecast estimates are unusually close to existing traffic counts and significantly lower than historical counts since the base closure. This is likely due to errors in forecasting data calculations in the DEIR, as well as the use of constrained volumes, rather than demand volumes, in recent EIRs. The traffic model estimated traffic over 3,257 VPH, a forecast value 21.5 percent higher.

2.

15-30

Comparison of City Traffic Model to City Traffic Data Base at Posey and Webster Street tubes

(the City Traffic data used in the Environmental Documents for Alameda Point, Del Monte, Encinal Terminals and possibly other developments)

red = increase due to project

Existing		City Traffic Model Forecast		DEIR Forecast Data		Traffic Model difference to that used in the DEIR	
Existing AM		without Ala	with Ala Pt.	without Ala	with Ala Pt.	Vph	%
2588	Posey Tube	3249	**3257**	2673	**2681**	576	21.5%
1905	Webster Tube	3230	3379	2922	3073	306	10.0%

Source: City hall public records received after approval of the Alameda Point EIR, Feb 2014

Source: Page 4.C-22 of Sept 2013 DEIR, Alameda Point.

The Alameda Marina DEIR did not include the Posey Tube in its area of influence. The impacts to the tubes from the cumulative developments is still missing. It is suggested that the cumulative forecasts for the Posey Tube be included in this DEIR.

3. **Atlantic/Ralph Appezzato Way and Webster**: Only 42 VPH are assumed to travel to this intersection to and from the Marina Project, thus, no impacts were reported.

   With respect to the project trip generation, the commercial should be included in the total project trips. It was excluded, as stated on page 4.12-23. The 250,000 square feet of commercial development could add a significant number of new trips, due to the change uses on the site. No factual evidence was provided to justify omitting the traffic associated with the commercial component of the proposed project. Table 4.G-6 from the Encinal Terminals Project EIR (February 2017) estimated a total of 370 VPH for 200,000 gross square feet (GSF) of commercial (50,000gsf retail plus 150,000 GSF of office space).

15-31

   Question #1: How are the dramatic increases from existing to cumulative in the recent Encinal Terminals EIR possible? The Encinal Terminals EIR reported an increase of almost 1,500 vehicles at this intersection due to the cumulative development for the final, with-project cumulative condition. The Alameda Marina DEIR reports the cumulative condition without the marina project to be less – a 1,200-vehicle increase from existing during the AM peak hour. These two conditions are the same and should report comparable

13

results; that is, the cumulative conditions should be consistent amongst the EIRs. All the no-build conditions for cumulative should be checked with the latest Encinal Terminals EIR, and an explanation should be provided for any major changes like this.

Question #2: What generates the remaining additional traffic when the Alameda Point, Del Monte, and Encinal Terminals EIRs all reported only a total of 600 vehicle increase due to their projects. Where are the remaining 1,200 vehicles per hour coming from, as reported in the Alameda Marina DEIR?

This comment is also for all the other study intersections. The increases should be fully explained, accounted for, and consistent among the EIRs for the cumulative conditions.

15-31 cont.

4. **Constitution and Atlantic Avenue**: The 2040 forecast increases in the Alameda Marina DEIR are almost 50 percent above those documented in the Encinal Terminals EIR, Del Monte environmental document, and the Alameda Point EIR.

   In the Encinal Terminals EIR, the total traffic volume into the intersection for the cumulative with-project is forecast at 2,176 VPH during the AM peak hour. The same scenario or cumulative no-build in the Alameda Marina DEIR increases dramatically to 2,970 VPH, although no land-use changes have occurred since the Encinal Terminals EIR was drafted. The forecasts should be similar.

   Which forecast is correct?

15-32

5. The Alameda Marina Project contributes 74 vehicles to this intersection, but because the delay is less than LOS E, this project does not have a significant impact at this intersection for the cumulative condition.

   I have three questions with respect to the operations analysis:

   First, the analyst used the existing eastbound configuration of two through lanes (see appendix), rather than the new configuration approved by city council last year, which reduced the eastbound configuration to one lane eastbound for through traffic, introduced a bicycle lane on the south side, and included special bicycle signal phasing. This must be considered.

15-33

   Second, on page 4.12-29, second paragraph, the DEIR states that existing lane configuration was assumed in the intersection delay calculations for all the study intersections, with the exception of Clement through the Pennzoil site. The analysis omits the currently funded projects, such as the bicycle lane for Clement, and its extension and connection at Tilden Way. These and other projects likely to occur will significantly change the existing configurations and operations for the cumulative 2040 conditions. They should be listed and included in the impact assessments.

15-34

   Third, with a volume of only 2,176 VPH, how is the delay result in the Encinal Terminals EIR almost the same as that in the Alameda Marina DEIR, but with a much larger volume of 4400 VPH? I recommend recalculating the delay at this intersection and double-checking the correct funded roadway changes and the input values.

15-35

6. **Blanding Avenue and Park Street:** The existing delay is 32.8 seconds per vehicle, based on existing traffic volumes almost 10 percent lower than previous EIRs. The lower and constrained volumes and other assumptions produced lower than what has been reported in the travel times studies. In 2008, for the environmental document for the 23rd/29th and I-880 project, the Alameda Congestion Management Agency and Caltrans concluded a LOS F at this intersection, with more than 80 seconds of delay, even though the volumes were similar in the analysis and little changed at this intersection. The short turn pocket was striped a few years ago (beforehand, there was a wide lane), but this would not account for the dramatic difference in levels of service. (See exhibit D for the comparison.)

   This intersection's forecasts for the AM peak hour for the cumulative without-project condition is 3,870 VPH in the Alameda Marina DEIR. However, in the Encinal Terminals EIR, for the same cumulative condition (year 2040 with ET project), the total forecast is 5,093 VPH. This dramatic reduction of 1,223 VPH or 24 percent lower is not explained. Which forecast is correct?

15-36 cont.

Most of the project trips are assigned to this intersection. One hundred eighty (180) vehicles are added to the eastbound left-turn movement, 30 VPH to northbound, four vehicles westbound, and 16 vehicles to the southbound leg of the intersection in the AM peak hour for the cumulative with-project condition. As a result of the high volumes at these intersections, the levels of service is f, both without and with the project.

Average Control Delay for 2040 Cumulative Conditions (AM peak hour)		
Significantly impacted intersections only		
	Without Project	With Project
Blanding Ave. and Park St.	over 120 seconds	over 120 seconds
Clement Ave. and Park St,	108 seconds	over 120 seconds

However, the problem is the 180 vehicles from the marina will not be able to go to the eastbound leg, as assumed. That is because, as shown in the operations calculation, the eastbound leg of the intersection would be so overloaded that the queues, without the project, would extend to Oak and beyond. The volume to capacity ratio for the eastbound leg was estimated at 1.6, meaning, 60 percent above capacity for the no-build condition. The trips from the Marina simply cannot leave via Blanding during the AM peak hour during the cumulative condition, nor can the traffic from the projects assumed for the background cumulative traffic. This oversaturated condition would result in trips diverting to other crossings or switching to shoulders during the peak hour.

A peak period analysis is necessary to determine where the project impacts would occur. Some trips may be diverted to Fruitvale or to the Bay Farm.

In addition, this intersection analysis and all the others should be converted into a corridor-level delay analysis in order consider the capacity constraints in Oakland and the growth happening on the other side of the bridge. Not doing so omits the impacts due to this and grossly reduces the delay results.

15-36 cont.

7. Clement Avenue and Park Street intersection: Comments made above regarding Blanding and Park Street delay calculations also generally apply to Clement and Park. Downstream conditions must be considered. Further, it is likely the traffic from the Alameda Marina Project will not be able to access the eastbound approach during the AM peak hour for the 2040 cumulative no-project condition. The eastbound approach was calculated with a volume to capacity ratio of 1.92. The peak-hour volume is almost twice the capacity. With this type of oversaturated conditions, extensive queuing is likely, and diversion to other streets would also occur, shifting the travel to other times.

The DEIR concludes an unavoidable significant impact at this intersection, with 105 vehicles added to the cumulative 2040 condition for the AM peak hour. (See table above.)

No mitigations are considered because only turn lanes are allowable, as per the 2008 Transportation Element. Why was an additional turn lane not considered? Also, as mentioned earlier, the existing lane configuration was considered, ignoring the changes to occur with the funded bicycle lane project and other projects along Park Street.

15-37

8. Tilden Way, Blanding Avenue and Fernside Boulevard intersection: This count survey for the existing conditions shows much higher existing counts than in the recent Encinal Terminals EIR. The increases could be due to diversion as a result of the construction at the interchange during the count. This should be further evaluated and considered with changes to the existing volumes along Park Street.

There are no traffic impacts due to the Alameda Marina Project at this intersection, but the future operations indicate major increases in delay from levels of service C today to LOS F. This was calculated using existing geometry and ignoring downstream constraints in Oakland. For example, Oakland has received a large grant for bicycle lanes on both side of Fruitvale, from the bridge to the BART station, and Alameda is likely planning to close the gap. Also, a new intersection is planned at Tilden Way to connect Clement. This intersection is so close to the Fernside/Tilden, Broadway/Tilden, and Broadway/Clement intersections that all four of them will operate as one large (confusing?) intersection. This should be considered for the cumulative condition.

15-38

Eugenie Thomson P.E.

Attachment A

October 21, 2013

Mr. Andrew Thomas
Alameda City Hall
2263 Santa Clara Avenue
Alameda, CA 94501

Subject: Comments to the Alameda Point Draft Environmental Impact Report

Dear Mr. Thomas:

I am dismayed that my request in my comments to the Notice to the Preparation (NOP), were largely ignored. My request was that the traffic impact analysis include an evaluation of much longer it will take residents to leave the island and secondly to provide the increase in daily traffic volumes in front of the residents' homes. These two main traffic concerns have been raised by many residents and could have been addressed in the DEIR.

In addition, I had pointed out that the earlier traffic analysis in the 2009 General Plan Amendment EIR and then the Traffic Election Report for the SunCal Measure B in September of 2009, both had incorrectly ignored the congestion at the west end of Alameda. And the Traffic Election Report had also stated that the SunCal plan with 5000 more homes would only result in minuscule increases in traffic volumes outbound in the AM peak hour at the Posey Tube. These same points were repeated in my letter to the City dated June 24th, 2013 regarding the Scoping for the Neptune Point Project for its cumulative analysis and in my scoping comments for this project NOP.

Rather than correcting the obvious errors illustrated before with the City traffic model and methodology, instead we receive another – an unintelligible very large techno-speak document - containing numerous critical flaws and omissions. The Draft Environmental Impact Report for the Alameda Point Project states the "unimaginable" traffic conclusion.

According to the DEIR the Alameda Point Project with 1425 new homes and approximately 9000 more jobs, will **increase** traffic into the Posey Tube by only **ONE car per hour** for the existing plus project condition and increase by **eight cars per hour** for the cumulative plus project condition, for the AM peak hour. That and NO traffic congestion in the west end of Alameda, are unrealistic conclusions in the DEIR.

(See the excel summary tables provided at the end of this letter and see Appendix G summary from this DEIR in https://www.dropbox.com/sh/l9tfzo5v68reev2/ESlq_1H-RA.)

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Telephone (510) 928-6980 email ethomson@islandalameda.com

October 21, 2013

The Alameda Point Project will dramatically affect traffic flow and quality of life on Alameda Island and Bay Farm and we deserve to judge this very large project based on clear, concise, accurate traffic information.

Because of my background and professional credentials, members of the Alameda community again have asked me to review and interpret the report. In doing so, I found it to be a long, complex, techno-speak document that took a significant amount of time to understand, despite my 35 years' training and experience in civil and transportation engineering including the Alameda tubes and immediate areas and having lived in Alameda since 1980. There simply is no way a layperson could fully comprehend the data and projections contained it, or judge their veracity. The lack of a summary and the techno speak document have mislead the public.

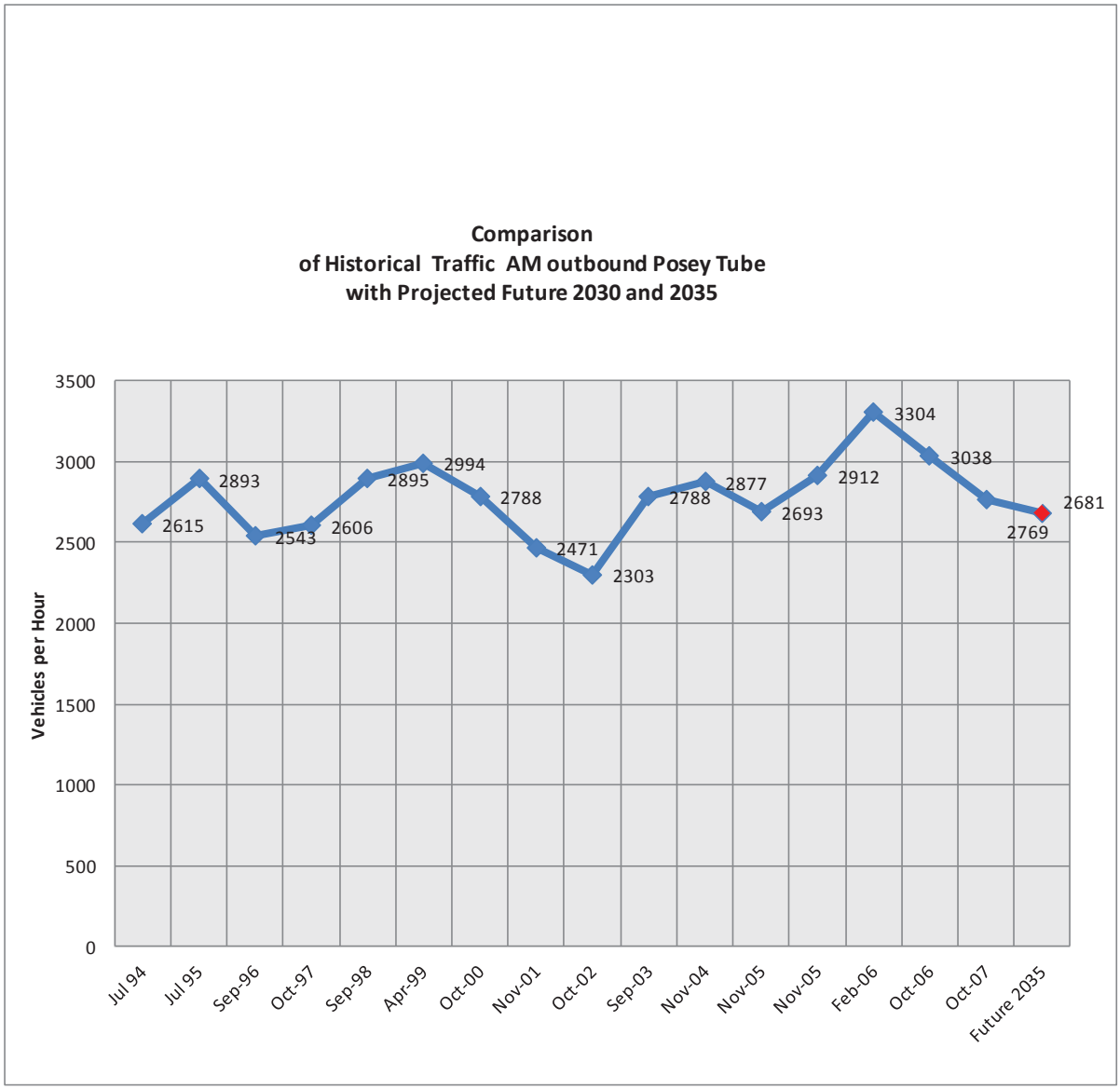
Specifically, the Traffic Impact Analysis in the DEIR concludes the project increase would only be 1(one) additional vehicle per hour for outbound traffic into the Posey Tube during the AM peak hour if project were built today (see existing plus project as per Appendix G of the DEIR). And a mere 1 (one) vehicle per hour, due to the project at the all estuary crossings, for the cumulative plus project (year 2035) condition and traffic volumes dropping with the project at some of the island crossings. See below.

Traffic Volume Summary at Island Gateways for Existing and Cumulative Peak Hour Conditions without and with Project

		Vehicles Per Hour					
		AM Peak Hour (vph)					
Island Gateway	Direction	Exist No Project	Exist with Project	Project Volume	2035 No Project	2035 with Project/Ala Point	Project Volume
Posey Tube	Outbound	2588	2589	**1**	2673	2681	**8**
Park St Bridge	Outbound	1937	2004	**67**	2150	2147	**-3**
Miller Sweeney Bridge	Outbound	814	878	**64**	1573	1561	**-12**
High St Bridge	Outbound	783	802	**19**	1212	1210	**-2**
Bay Farm bridge	Outbound	1738	1725	**-13**	3158	3168	**10**
Total of all Island Gateways	Outbound	7860	7998	**138**	10766	10767	**1**
Source: Alameda Point Draft Environmental Impact Report, Appendix G		Figures G-2B & G-2C	Figures G-4B& G-4C		Figures G-6B& G-6C	Figures G-8B& G-8C	

October 21, 2013

Another example of a flaw is the outbound traffic into the Posey tube will be 2681 vehicles per hour in the AM Peak hour after the Alameda Point Project in the year 2035 which would be lower than existing recorded traffic counts at the Posey tube since the Base closure. That too is illogical and not explained in the DEIR.



Source: Historical volumes as per Capacity Management Memo to City Council, by Matt Naclerio, past Public Works Director, October 1st, 2008. Caltrans counts show similar historical counts. The 2035 Forecast was provided in the Appendix G of the Alameda Point DEIR for Cumulative (2035) plus project condition. (see the northbound approach at the 7th and Harrison Intersection, intersection number 38 Figure G- 8C in Appendix G of the DEIR.)

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It is possible the future forecasts are low because it is based upon existing count data base which could have been diminished due to an unusual number of vacancies the South Shore Shopping Center and other commercial properties as a result of the recession. But the DEIR does not include what existing count data was used, nor is the traffic model technical documentation included in the DEIR. Certainly, a drop in existing traffic in the future, with the Alameda Point Project, is highly unlikely, considering the already entitled and approved development plus project is included in this future 2035 forecast for the Posey Tube.

Approving or disapproving this Project is a decision that is critically important to the future of our city. If approved, this project will have a direct personal effect on every citizen, impacting the traffic they must navigate daily, that wind through our neighborhoods.

And I cannot stress it enough we Alamedans want to know how much more time it will take to leave or enter the island, and how many more cars will be passing by in front of our homes. Those questions have not been addressed; instead, we have been provided a techno-speak document that is overwhelming, complex and misleading, and our attempts to simplify and clarify the document are being quashed. It is difficult to understand why this is happening, in light of the fact that most of the work had already been performed and the data is so readily available.

It could have been presented very simply in the form of (a) a table showing increases in commute travel times, from today to after the Alameda Point plan, from different residential locations to the freeway; and (b) a figure showing the current daily traffic volumes and the increases generated by the Alameda Point plan. That is what the voters have asked for in every public workshop.

Traffic does not impact our roadways; it impacts our quality of life. It is well known that high traffic volumes on neighborhood streets break down the social fabric of a neighborhood, and our island is comprised primarily of neighborhood streets. The traffic impacts generated by the plan will increase the time it takes to leave and return to the island, leaving less time to spend with our families. These issues are vitally important to Alamedans. We deserve to know the answers to our questions. Why are the questions not being answered for the citizens of our community? Shouldn't traffic neighborhoods impacts be addressed? And corridor delay (like the travel time delay leaving the island) is an acceptable practise for traffic impact assessment and is appropriate because Alameda is an island.

I sincerely hope that, on reflection, you will consider a summary memorandum and correction of the key traffic facts. The attached comments present the key ommisions and further explain why I believe this Traffic Impact Section of the DEIR is misleading and needs correction. At a minimum the DEIR should be recirculated as the changes will results in major modifications to the impact analyses.

October 21, 2013

Sincerely,

Eugenie P. Thomson, P.E.
Professional Civil and Traffic Engineer

ept/ept
cc: Mayor Gilmore and Councilmembers

October 21, 2013

Detailed Comments

The DEIR does NOT address the concerns of the majority of Alameda voters.

The DEIR's scope of the impact assessment omitted the impacts of the plan on Bay Farm Island residents leaving the island. For example, how much extra time would it take to leave the island in the morning? The two basic traffic questions asked by the public repeatedly at public hearings have not been addressed.

The DEIR does not include the impacts to the island neighborhoods.

If the Project is built:
a) How much more travel time will be involved when leaving or entering Alameda Island?
b) How many more cars will travel through our neighborhoods? (a criteria used to evaluate neighborhood impacts)

Suggestion:
a) Develop a table showing the travel times during the commute periods, today and in the future, with the Sun Cal plan and other background already entitled by City Council or approved. These data should encompass travel times to and from several residential areas, such as the West End, middle of the island, East End and Bay Farm. (This should be fairly easy to accomplish by updating and expanding the effort done for the Traffic Election Report prepared for the Sun Cal measure.)

b) Put together a map showing daily volumes on major streets for today and for the future. [1]

c) Include the above results in a two- or three-page summary memorandum.

Sources of Major Assumptions and other technical procedures were not provided.

The tables and assumptions in the report provided could not be checked or tracked. For example, no documentation was provided to substantiate the vehicle trip rate and to be able to compare this to the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). It appears lower trip rates than the Average ITE trip rates were employed in the analysis and which were further reduced for the project forecast volumes included in the cumulative analysis.

What is the source of this major assumption? The technical backup was not provided and should be explained. Clearly, these assumptions should be validated based on facts, yet the DEIR lacks accountability. One should be able to track how the final traffic forecasts were developed from the existing counts.

The documentation should be provided to make adequate and complete comments to the DEIR.

[1] This data exists, the model plots from Kittelson Associates (previously Dowling Associates who did the City Traffic Model and recent reports) should be available for the No Project alternative and would take less than a day to rerun, only a few input factors need to be updated for the Alameda Point project.

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The traffic forecasts associated with the project are small considering its size.

The project traffic was summarized for all the island gateways because no summary was provided in the DEIR. Had this been provided the public would have an understanding of the overall island traffic impacts. The four tables at the end of this section, are the AM and PM peak hour traffic forecasts used for the basis of the traffic impacts and conclude the following:

- In the AM peak hour, the Project adds only one car per hour to the Posey Tube in existing plus project condition and only 8 vph in the cumulative plus project condition. This minuscule project volume increases were not reflected to be diverted to the other crossings.
- The Incoming project traffic drops dramatically to a small amount of 144 vph in the cumulative condition into the Webster Tube and that results in grossly under estimating the inbound traffic impacts with the project.
- In the PM peak hour for the cumulative plus project conditions, the project volumes are 102 vph for the Posey Tube and 104 vph for the Webster Tube. These small project volumes in the PM peak hour analysis grossly reduces the actual traffic impacts at the west end of Alameda and Oakland.

No explanation *of* the above results nor a summary was not provided in the DEIR and this should be fully explained.

Table 2-2 the traffic impact summary table indicates NO traffic congestion at the west end of Alameda

The lack of congestion at the approaches to the Posey Tube is inconsistent with the diversion to the other crossings. Diversion will only occur if there is a significant travel time advantage. It is difficult to believe theh DEIR's finding of no congestion today and none whatsoever in the future upon the roadways approaching the Posey tube.

As pointed out in my letter to the City June 24, 2013, I explained that the City Traffic Model in the Traffic Election Report for the SunCAl plan had indicated major gridlock in the west end but it was hidden in the report. The Alameda Point project DEIR once again omits what the Traffic Model has concluded. See my discussion below from my June 24th , 2013 letter to the City.

"In January of 2013 , in rereading the September 14, 2009 Traffic Election report for the SunCal Measure, I focused on its discussion of travel time. I discovered this report quietly documented that major delays in the morning peak, would be expected using the Posey Tube in the future with the Land Use assumed in the 09GPA EIR. (Note: this report used the 09GPA EIR as the base condition upon which the SunCAl plan was evaluated). And this very significant characteristic of future traffic patterns that was ***never*** *even touched on in the 2009 GPA EIR. (This EIR only discussed delays at individual intersections, all but one of which (8th and Central) are on the east end of the island would experience significant congestion after all the growth is built at the west.) Specifically, Table 20 (Travel Times – AM Peak Hour of the Traffic Election Report, see Exhibit G for copy) indicated the travel time from Alameda Point to I-880 would increase from 6.5 minutes (existing year) to 16.0 minutes in 2035 with the existing GPA (i.e., the housing and jobs assumptions in the 2009 GPA EIR).*[2]

[2] Existing General Plan 2035, Table 20, Travel Model Performance Travel Times AM Peak Hour, page 25. Copy of report included in Exhibit G in my June 24th letter to the City. .

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This 9.5 minute-per-vehicle delay translates into increased queue lengths from 7th and Harrison back through the tube, and significantly lengthened queues on each of the roadways approaching the mouth of the tube (Webster, Constitution, Stargell and Mariner Square Drive). This situation can only be described as ***gridlock, and it would affect many more trips than just the ones going into the Posey Tube.***

Furthermore, the 2009 GPA EIR concluded no impacts for the roads approaching the Alameda Tubes, even though primarily all future development would occur on the West End. I believe this surprisingly unrealistic conclusion was reached because:

- *In the 2030 model runs, the analyst and city staff used a capacity for the Posey Tube of 2,900 vph (vehicles per hour)[3], which is significantly lower than the capacity for a two-lane expressway.*

- *The analyst and city staff only used the 2030 model runs to identify differences in volumes, compared to calibrating runs of the model for existing conditions.*

- *The analyst and city staff ignored the information in the 2030 model run that indicated significant future delays to traffic using the Posey Tube in the AM*

- *Because they had trouble calibrating the model for Alameda local streets, the analyst and city staff decided to simply add the difference in model volumes (2007 and 2030 model volume difference) to the existing counts. Because the 2030 model calculations assumed significant congestion at the tubes, significant amounts of incremental traffic were routed away from the tubes to the bridges. (As a result, only small incremental volumes were added to already relatively low existing volumes at the tubes, yielding unrealistically low 2030 volumes to be used for analysis.)*

- *The analyst and city staff performed only intersection impact analysis. There was no documentation in the 2009 GPA EIR of how the tubes themselves were expected to operate, even though a major underlying hidden assumption was that there would be significant delays at the tubes.*

This likely west-end traffic gridlock has never been clearly characterized as a problem in any city document of which I am aware.

To the contrary, the 2009 GPA EIR incorrectly comes to the opposite conclusion of no congestion on the roads outbound approaching the Posey Tube in the AM Peak.

And this happens once again with the Alameda Point DEIR.
At a minimum the City should review the traffic model used in the DEIR and fully explain why the delay at the west end concluded in the Traffic Model has been eliminated in this DEIR and other previous reports.

The following graphic included in my June 24th, 2013 letter, illustrate the no impacts from the 09 GPA DEIR

[3] Technical Studies for the EIR, 2007 citywide Traffic Model by Dowling Associates; Figure 22 Year 2030 City Network (See Exhibit C-6) which shows the codes defined in Figure 6, which includes a table: Model Roadway Network Facility Type Capacities and Speeds.

repeated again this DEIR for Alameda Point, i.e. no impacts at the west end of Alameda.

The above highlighted intersections were identified with major congestion with levels of service E or F for the Year 2030 during either the AM or PM peak hours in the DSGPA EIR: 8th/Central, Otis/Broadway, Otis/Fernside, Otis/Island, Fernside/High, Fernside/Tilden Way, Tilden Way/Broadway, Clement/Park and Blanding/Park. Source: Table 4.2-8 DSGPA DEIR.

The city adopted a Statement of Economic Overriding Considerations on Jan 20th, 2009 because there were no improvements to mitigate these major impacts at the east end of the island. What was not considered was how much additional time for example it would take to leave the island and Bay Farm.

The lack of congestion analysis ignores data that the traffic analysts had in their files regarding expected major increases in delay expected at the approaches to the tubes (as evidenced by the subsequent Traffic Deletion Report). This west end delay should be the predominant traffic impact in the future, as to be expected before more significant problems develop in the east end.

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The existing delays at the intersections stated in the DEIR are significantly lower than what Alamedans have stated to occur.

It is difficult to believe there is only a 30 second delay at Doolittle and Island Drive when leaving Bay Farm Island. The Bay Farm residents have stated many times their congestion is very bad and any more development will be too much.

Similarly the delays at other intersection like at the 6th and Jackson for the southbound right turn movement today in the morning are shown to be only 1.3 seconds (LOS A) in Appendix G (Synchro output for existing no project AM peak)

Is it possible that the intersection operations analyses results were not validated via field surveys ?

The intersection impact analysis omits the operations effects due to roadway downstream constraints. As a result the operations do not accurately reflect the delay.

For example, the freeway weave and ramp merge at the 6th Street northbound on ramp to I 880 & I 980, today causes backup all the way to the 7th and Harrison intersection, but the intersection analysis states the southbound right turn movement has only 1.3 seconds of delay (Level of Service A) for the future plus project conditions. (Appendix G, Sychro Analysis, 2035 AM with Project,). This is illogical considering the problems at the I880 ramp and weave, today. This constraint currently overwhelms the current roadway system and will only become rapidly more significant with any growth in traffic.

Similarly other intersections like Blanding and Park Streets are affected by downstream roadway constraints which result in back up through the intersection.

All intersections should be re-evaluated if downstream constraints affect the intersections' operations. (i.e. without consideration of downstream constraints, the existing intersection analysis is not an engineering analysis, it is only a data processing analysis).

The Broadway Jackson Interchange or other major mitigation was not included in the DEIR.

The Broadway Jackson Interchange or other freeway type of mitigation was not included likely due to the lack of funding at this time. And this interchange project or other form of Chinatown mitigation introduces major changes in travel patterns in Chinatown and to/ from the Alameda Point Project in and around Chinatown. It is reasonably foreseeable that the new County Transportation Sales Tax Measure will pass in the next year because this Measure in the last election failed with such a small percentage. And reasonable foreseeable events should be considered in an EIR, therefore an assessment of the traffic impacts with and without Broadway Jackson Interchange or other mitigations acceptable to Chinatown should be done.

Seismic Analysis is suggested

Seismic Analysis for the Posey and Webster Tube was not included in the DEIR. According to Caltrans letters dated from Caltrans to the City of Alameda in 2002, the tubes have a seismic rating of minimum performance level. A professional engineering report " Retrofit Strategy Report" for the Alameda Tubes dated September 30, 1996

prepared by Parsons Brinckerhoff Quade and Douglas Inc. and approved and adopted by Caltrans states that minimum performance levels after an earthquake in Table 10-2 would result in:

> ***"Delays to motorists due to tube closure requiring long term (more than a year) diversion of traffic to the bridge crossings between Oakland and Alameda"***

As major seismic events are no different (even less controversial) than the Rising Sea Levels, the earthquake event is reasonably foreseeable and should be evaluated in this DEIR. With almost 70,000 vehicles per day using the tubes, traffic impacts and mitigations need to be assessed for the without and with project conditions.
-
Furthermore this Seismic Strategy Report mentioned the steel re -enforcement was corroded and the field test indicated this condition to be a problem. The report is unclear if this was planned to be fixed.

Per the report the primary damage to the tubes (retrofitted to minimum performance levels) is expected to be cracks and significant leakage; the tubes may be flooded within a day but that no loss of life would be expected. The report also indicates that repairs may not be possible, thus requiring replacement of the tube(s).

At a minimum wouldn't it be appropriate to construct protective traffic devices similar to railroad crossings so vehicles do not continue to enter the tubes immediately after an earthquake? This measure and other measures should be considered for safety of the public and be evaluated for both without and with project conditions.

Induced Growth Analysis was not included.

The seismic and inaccessibility uncertainties are likely to be major impediments for any major employers at Alameda Point but not for individual home buyers. Therefore the DEIR should also evaluate the scenario where only a small fraction of the projected employment growth occurs. The project would then become overwhelmingly residential and result in future changes for a project with more houses. This growth inducement concern should be addressed in the DEIR.

The report preparers are listed as licensed Professional Engineers while they do not have licenses.

Mr. Jack Hutchinson of ESA is not licensed as a Professional Engineer in California stated in Chapter 7. Neither is Robert Haun, Acting Public Works Director a licensed Professional Engineer. Please make these corrections.

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Traffic Volume Summary at Island Gateways for Existing and Cumulative Peak Hour Conditions without and with Project

Vehicles Per Hour

AM Peak Hour (vph)

Island Gateway	Direction	Exist No Project	Exist with Project	Project Volume	2035 No Project	2035 with Project/Ala Point	Project Volume
Posey Tube	Outbound	2588	2589	**1**	2673	2681	**8**
Park St Bridge	Outbound	1937	2004	**67**	2150	2147	**-3**
Miller Sweeney Bridge	Outbound	814	878	**64**	1573	1561	**-12**
High St Bridge	Outbound	783	802	**19**	1212	1210	**-2**
Bay Farm bridge	Outbound	1738	1725	**-13**	3158	3168	**10**
Total of all Island Gateways	Outbound	7860	7998	**138**	10766	10767	**1**
Source: Alameda Point Draft Environmental Impact Report, Appendix G		Figures G-2B & G-2C	Figures G-4B& G-4C		Figures G-6B& G-6C	Figures G-8B& G-8C	

AM Peak Hour

Island Gateway	Direction	Exist No Project	Exist with Project	Project Volume	2035 No Project	2035 with Project/Ala Point	Project Volume
Webster Tube	Inbound	1905	2561	**656**	2929	3073	**144**
Park St Bridge	Inbound	864	1058	**194**	1896	2177	**281**
Miller Sweeney Bridge	Inbound	777	1075	**298**	1395	1479	**84**
High St Bridge	Inbound	656	759	**103**	942	1074	**132**
Bay Farm bridge	Inbound	2292	2442	**150**	2436	2637	**201**
Total of all Island Gateways	Inbound	6494	7895	**1401**	9598	10440	**842**
Source: Alameda Point Draft Environmental Impact Report, Appendix G		Figures G-2B & G-2C	Figures G-4B& G-4C		Figures G-6B& G-6C	Figures G-8B& G-8C	

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Traffic Volume Summary at Island Gateways for Existing and Cumulative Peak Hour Conditions without and with Project

PM Peak Hour							
Island Gateway	Direction	Exist No Project	Exist with Project	Project Volume	2035 No Project	2035 with Project/Ala Point	Project Volume
Posey Tube	Outbound	2125	2737	**612**	3331	3433	**102**
Park St Bridge	Outbound	1437	1487	**50**	2228	2307	**79**
Miller Sweeney Bridge	Outbound	641	930	**289**	1375	1487	**112**
High St Bridge	Outbound	550	686	**136**	919	1030	**111**
Bay Farm bridge	Outbound	1987	2128	**141**	1899	1976	**77**
Total of all Island Gateways	Outbound	6740	7968	**1228**	9752	10233	**481**
Environmental Impact Report, Appendix G		Figures G-3B & G-3C	Figures G-5B & G-5C		Figures G-7B& G-7C	Figures G-9B& G-9C	

PM Peak Hour							
Island Gateway	Direction	Exist No Project	Exist with Project	Project Volume	2035 No Project	2035 with Project/Ala Point	Project Volume
Webster Tube	Inbound	3392	3488	**96**	3882	3986	**104**
Park St Bridge	Inbound	1451	1566	**115**	2027	2167	**140**
Miller Sweeney Bridge	Inbound	1103	1228	**125**	1559	1639	**80**
High St Bridge	Inbound	715	847	**132**	883	1103	**220**
Bay Farm bridge	Inbound	1783	1887	**104**	2849	2819	**-30**
Total of all Island Gateways	Inbound	8444	9016	**572**	11200	11714	**514**
Source: Alameda Point Draft Environmental Impact Report, Appendix G		Figures G-3B & G-3C	Figures G-5B & G-5C		Figures G-7B& G-7C	Figures G-9B& G-9C	

Attachment B

Comparison of Traffic Data at the intersection of Blanding Avenue and Park Street from major EIR documents

I 880 and 23rd/29th Environmental Document 2010 by Alameda Congestion Management Agency

	Existing AM (2008)				Yr 2035 Cumulative No Build AM				Yr 2035 Cumulative with Project AM				Change from Existing	
	LT	Thru	RT	Total	LT	Thru	RT	Total	LT	Thru	RT	Total	vph	%
EB	295	20	3	318	460	25	47	532	460	25	47	532	214	
WB	9	56	432	497	14	62	450	526	14	62	450	526	29	
NB	0	1266	10	1276	0	1664	15	1679	0	1664	15	1679	403	
SB	1	738	167	906	1	1228	357	1586	1	1268	357	1626	720	
	Total into Intersection			2997	Total into Intersection			4323	Total into Intersection			4363		
	Average Int. Delay			Over 80 sec	Average Int. Delay			Over 80 sec	Average Int. Delay			Over 80 sec		
	Level of service			F	Level of service			F	Level of service			F		

Alameda Point EIR

	Existing AM				Yr 2035 Cumulative No Build AM				Yr 2035 Cumulative with Project AM				Change from Existing		Alameda Point Project's Contribution (-Cum. Proj.- Cum. No Build)	
	LT	Thru	RT	Total	LT	Thru	RT	Total	LT	Thru	RT	Total	vph	%	vph	%
EB	196	15	4	215	198	40	4	242	202	34	4	240	25	11.6%	-2	-0.8%
WB	12	64	375	451	187	138	187	512	190	147	190	527	76	16.9%	15	2.9%
NB	0	1366	11	1377	0	1766	127	1893	0	1755	124	1879	502	36.5%	-14	-0.7%
SB		662	202	864	0	1614	282	1896	0	1705	472	2177	1313	152.0%	281	14.8%
	Total into Intersection			**2907**	Total into Intersection			**4543**	Total into Intersection			**4823**	1916	65.9%	280	6.2%
1937	Average Int. Delay			65.5	Average Int. Delay			Above 120	Average Int. Delay			Above 120				
	Level of service			E	Level of service			F	Level of service			F				

Alameda Point Project

exist	**2907**	Project contribution
no build inc from	1636	to increase from
proj contri	280	14.6%
Subtotal (incr from e	**1916**	vph
total	**4823**	

Del Monte Negative Declaration

	Existing AM				Yr 2035 Cumulative No Build AM				Yr 2035 Cumulative with Project AM				Change from Existing		Del Monte proj Contribution (=Cum. Proj. - Cum. No Build)	
	LT	Thru	RT	Total	LT	Thru	RT	Total	LT	Thru	RT	Total	vph	%	vph	%
EB	198	15	4	217	202	34	4	240	202	34	4	240	23	9.6%	0	0.0%
WB	12	84	375	471	125	147	190	462	125	147	190	462	-9	-1.9%	0	0.0%
NB	2	1366	11	1379	33	1742	124	1899	33	1755	124	1912	533	27.9%	13	0.7%
SB	0	662	202	864	23	1701	472	2196	23	1705	472	2200	1336	60.7%	4	0.2%
	Total into Intersection			**2931**	Total into Intersection			**4797**	Total into Intersection			**4814**	1883	39.1%	17	0.4%
	Average Control Delay			24.6	Average Control Delay			Above 80	Average Control Delay			Above 80				
	Level of service			C	Level of service			F	Level of service			F				

Del Monte Project

exist	2931	
no build inc from	1866	
proj contri	**17**	0.9%
Subtotal (incr from e	1883	
total	4814	

Encinal Terminals EIR (February 2017)

	Existing AM				Yr 2040 Cumulative No Build AM				Yr 2040 Cumulative with Project AM				Change from Existing		Encinal Terminal	
	LT	Thru	RT	Total	LT	Thru	RT	Total	LT	Thru	RT	Total	vph	%		%
EB	310	14	2	326	316	34	4	354	316	34	4	354	28	8.6%	0	0.0%
WB	9	57	439	505	125	147	254	526	125	147	254	526	21	4.2%	0	0.0%
NB	0	1484	3	1487	33	1870	124	2027	33	1860	124	2017	530	35.6%	-10	-0.5%
SB	0	589	188	777	23	1701	472	2196	23	1701	472	2196	1419	182.6%	0	0.0%
	Total into Intersection			**3095**	Total into Intersection			**5103**	Total into Intersection			**5093**	1998	64.6%	-10	-0.2%
	Average Control Delay			56.7	Average Control Delay			349.2	Average Control Delay			above 80	349.1 seconds of delay in appendix			
	Level of service			E	Level of service			F	Level of service			F				

Encinal Terminal

exist	3095	
no build inc from	2008	
proj contri	**-10**	-0.5%
Subtotal (incr from existing)	1998	
total	5093	

1223 0.240134

Alameda Marina EIR

	Existing AM				Yr 2040 Cumulative No Build AM				Yr 2040 Cumulative with Project AM				Change from Existing		Contribution (Cum. Proj.- Cum. No Build)	
	LT	Thru	RT	Total	LT	Thru	RT	Total	LT	Thru	RT	Total	vph	%	vph	%
EB	253	11	4	268	540	30	10	580	660	90	10	760	492	183.6%	180	31.0%
WB	14	50	365	429	20	50	370	440	20	54	370	444	15	3.5%	4	0.9%
NB	0	1340	8	1348	0	1670	10	1680	0	1700	10	1710	362	26.9%	30	1.8%
SB	0	586	196	782	0	900	270	1170	0	911	275	1186	404	51.7%	16	1.4%
	Total into Intersection			**2827**	Total into Intersection			**3870**	Total into Intersection			4100	1273	45.0%	230	5.9%
	Average Int. Control Delay			32.8	Average Int. Control Delay			122.6	Average Int. Control Delay			157.1	the forecasts are much lower than other DEIR's, even though same land use assumptions, this could be due inconsistent forecast methodology.			
	Level of service			C	Level of service			F	Level of service			F				

Approved by Citywide Land Use Forecasts:

Alameda Marina

exist	2827	
no build inc from	1043	
proj contribution	**230**	18.1%
Subtotal (incr from existing)	1273	
total	4100	

Letter 15 **Eugenie P. Thompson**
Response February 15, 2018

15-1 The comment is incorrect. Page 4.12-5 of the Draft EIR specifically acknowledges that motorists along the Park Street corridor during the morning commute are currently delayed due to the downstream congestion on I-880 and not at the study intersections along the corridor in Alameda. Furthermore, page 4.12-8 of the Draft EIR explains that the reported intersection delays are only based on the delay at the intersection due to the intersection configuration and control, not downstream delays, which is the reason that the Draft EIR also evaluated the impacts of the project on travel time along the major corridors.

Overall, the travel time surveys and the intersection delay estimates measure different metrics. The travel times measure the travel time along the entire length of the corridor, including the delay experienced at intersections along the corridor, and accounts for potential downstream bottlenecks, such as congestion on I-880 during the morning peak hour. In contrast, the reported intersection delay is the average delay experienced by all motorists driving through all approaches of the intersection solely due to the conditions at the intersection.

This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-2 Please see the response to comment 15-1, above. In addition, the Draft EIR identifies significant and unavoidable impacts at the two intersections along Park Street at Blanding and Clement Avenues. Modifying these assumptions would not change the conclusions of the Draft EIR and the impact would remain significant and unavoidable. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-3 See Master Response 6 in Section 2.2 of this chapter regarding the roadway modifications assumed for the 2040 traffic forecasts and analyses. See responses to comments 15-4, 15-33, 15-34, and 15-38, below, regarding potential roadway modifications that may be implemented by 2040. For purposes of clarification, updated information has been added to Chapter 3 of this Final EIR to describe the planned roadway modifications included in the cumulative (2040) conditions analysis. Specifically, Page 4.12-29, paragraph 2, is revised to read:

> **Figures 5 and 6** in **Appendix G.A** show the AM and PM peak hour intersection volumes under Cumulative (2040) No Project and Cumulative (2040) Plus Project Conditions, respectively. <u>The 2040 analyses assume the completion of the following:</u>

- The I-880 Operational and Safety Improvements at 29th Avenue and 23rd Avenue Overcrossings, which are currently under construction and would reconstruct the overcrossing structures at 23rd and 29th Avenues, reconfigure several on and off-ramps, extend the northbound auxiliary lane along I-880, and include various changes to the local roadway network around the ramps.

- The Clement Avenue extension between Entrance Road and Atlantic Avenue and through the Shell Oil property.

- The Cross Alameda Trail project, which includes a Class IV separated bikeway on the south side of Atlantic Avenue between Webster Street and Constitution Way. The project would modify the Constitution Way/Atlantic Avenue (#4) intersection by eliminating one through lane on the eastbound Atlantic Avenue approach and the exclusive right-turn lane on the northbound Constitution Way approach. The Cross Alameda Trail project would also modify the signal timings at the intersection.

The Cumulative (2040) No Project Conditions assumes the same intersection configuration as Existing Conditions at all other study intersections. ~~The analysis assumes the completion of the Clement Avenue extension between Entrance Road and Atlantic Avenue and through the Shell Oil property.~~ This analysis assumes that signal timing parameters that do not require upgrades to the signal equipment, such as amount of green time assigned to each intersection approach, would be optimized at the signalized study intersections under 2040 conditions, because signal timing changes are included in the ongoing maintenance of the traffic signal system.

This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-4 The comment is incorrect. As noted in Master Response 6 in Section 2.2 of this chapter and previous response, the Alameda CTC Model used to forecast cumulative 2040 traffic volumes for the Draft EIR analysis includes the currently under-construction improvements at the I-880 interchanges at 23rd and 29th Avenues.

As described on page 4.12-27 of the Draft EIR, the land use database in the Alameda CTC Model is based on ABAG's *Projections 2013* and accounts for future developments in the Bay Area region, including the City of Oakland.

The Draft EIR does not directly address queuing because the City of Alameda does not have any significance criteria for queuing. However, both the intersection LOS and the corridor travel time analyses account for the increased volumes and queues between Existing and Cumulative conditions.

This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-5 As described above and in Master Response 6 in Section 2.2 of this chapter, the Alameda CTC Model used to forecast 2040 traffic volumes accounts for both future development and planned roadway modifications in Alameda, Oakland and beyond. The Model assigns the peak hour project generated traffic to the roadway network based on the relative travel time on each corridor. Thus, the analysis accounts for peak hour traffic diverting to non-congested corridors as long as it does not result in overall increased travel time. In other words, the Model may assign traffic to already congested corridors because although other corridors may have less delay, they would result in circuitous routes and may have longer overall travel times.

The comment suggests that the Draft EIR analysis should account for traffic either diverting to other time periods or diverting to other corridors due to congestion on the major corridors during the peak hours. Since the City's significance criteria and the analysis completed for the Draft EIR are based on peak hour conditions, reducing the peak hour traffic volumes would reduce the magnitude of the estimated intersection delay and potential project impacts. Thus, the analysis completed for the Draft EIR is based on worst-case peak hour conditions, and no additional analysis is required. In addition, diverting the peak hour demand to other corridors would disperse the project trips throughout the transportation network. Considering that the intersections along the major corridors crossing the Estuary operate at LOS E or LOS F, and that the City's significance criterion for intersections operating at LOS E or LOS F is that the project must increase traffic volumes by three percent or more, dispersing the project trips to all other corridors would not result in the project increasing traffic volumes at intersections by three percent or more. Thus, assigning the peak hour demand volumes to the congested corridors, as assumed in the Draft EIR, would result in the most conservative analysis.

This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-6 As stated by the commenter and discussed in Master Response 6 in Section 2.2 of this chapter, the Draft EIR assesses the project impact using VMT per capita, and not total VMT, because the significance criterion for VMT assessment is based

on VMT per capita, consistent with OPR guidelines and SB 743 requirements. Total VMT is not used in the Draft EIR because it is not considered an environmental impact topic under CEQA.

Although as stated in the comment, total VMT in Alameda would increase by 2040, it is expected that VMT per capita would be less than current conditions as shown in the table below. The 2040 VMT per capita data presented in the table are based on the MTC Model results which account for both residential and job growth throughout the Bay Area, including the City of Alameda. The MTC Model also includes the major approved and funded changes to the transportation network. Thus, the model accounts for the expected increase in congestion on the roadway network and potential diversion to less congested corridors. Overall, although the total VMT would increase, the total population would also increase, resulting in a decrease in VMT per capita for the project area, the City of Alameda, and the overall region, as shown in the table below.

AVERAGE DAILY VMT PER CAPITA – 2020 AND 2040

Analysis Zone	Metric	Year 2020 Average VMT	Year 2040 Average VMT
Project TAZ 948	Per Capita	13.1	12.3
City of Alameda	Per Capita	14.5	13.2
	(minus 15%)	12.0	11.2
Region	Per Capita	15.0	13.8
	(minus 15%)	12.8	11.7

SOURCE: MTC Travel One Model (http://analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerCapita), accessed in March 2018.

This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-7 As described in Master Response 6 in Section 2.2 of this chapter, the Draft EIR analysis is based on the results of the Alameda CTC Model, which accounts for future development and congestion along the street network serving Alameda. As described in response to comment 8-61, Bay Farm Bridge and intersections along this corridor were not evaluated in the Draft EIR because it is expected that minimal project-generated traffic would use this corridor.

This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-8 As discussed in Master Response 6 in Section 2.2 of this chapter, the 2040 traffic volume forecasts presented in the Alameda Marina Master Plan Draft EIR are different from the forecasts used in the Encinal Terminal Draft SFEIR and other environmental documents because they are based on different cumulative conditions. As described starting on page 4.12-27 of the Draft EIR, the 2040 forecasts developed for the Alameda Marina Master Plan Draft EIR are based on the latest version of the Alameda CTC Model, released in June 2015 with the land use database consistent with ABAG *Projections 2013* for the year 2040, which were modified to correctly account for future developments in the City of Alameda.

In comparison, the forecasts used in the Encinal Terminals Draft SFEIR were based on a version of Alameda CTC Model modified in 2012, and using ABAG *Projections 2009* to forecast 2035 traffic volumes. Thus, the Encinal Terminals forecasts may not accurately account for future land use and transportation networks, especially outside the City of Alameda.

Overall, the forecasted traffic volumes used in the Alameda Marina Master Plan represent the latest available forecasts and account for the most recent land use projections, future transportation network changes, and commute patterns in the Bay Area. Therefore, the volume forecasts used in the Draft EIR analysis are the most appropriate forecasts to use, and no additional analysis is needed.

15-9 As explained in Master Response 6 in Section 2.2 of this chapter, the Alameda CTC Model used to develop the cumulative (2040) traffic forecasts assumes a net increase of about 10,000 jobs within the City of Alameda between 2010 and 2040. Assuming a lower level of job growth would generally reduce the traffic volumes at the study intersections and reduce the magnitude of the estimated intersection delays and potential project impacts. Thus, the analysis completed for the Draft EIR is based on a worst-case condition, and no additional analysis is required.

15-10 See response to comment 15-9, above. Concerning the requested economic analysis, please see Appendix B of this Final EIR, and also Master Response 3 in Section 2.2 of this chapter for a discussion of feasibility of proposed alternatives. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-11 As described on page 4.12-23 of the Draft EIR, the project automobile trip generation is solely based on the residential components of the project. The Draft EIR assumes that the existing 250,000 square feet of non-residential buildings and uses would remain. Since the project would only include about 160,000 square feet of non-residential space in the first two phases of maritime and

commercial development, this is a conservative assumption. No additional analysis is required.

15-12 Page 4.12-27 of the Draft EIR describes the process used to develop the cumulative (2040) traffic volume forecasts. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-13 See the responses to comments 15-27 and 15-28, below, regarding the land use assumptions used to develop the cumulative (2040) volume forecasts. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-14 Page 4.12-10 of the Draft EIR acknowledges that the existing conditions data may be affected by the ongoing construction of the I-880 interchanges at 23rd and 29th Avenues. However, the cumulative (2040) traffic volume forecasts developed for the Draft EIR account for the completion of the project. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-15 Appendix G of the Draft EIR presents the detailed LOS calculations for intersection traffic operations, pedestrians, and bicyclists. As described in the response to comment 15-4, above, the Draft EIR does not include queues because the significance criteria used by City of Alameda are not based on queues. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-16 Comment noted. See responses above and below for specific responses. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-17 See the responses to comments 15-1 and 15-2, above, regarding the differences between the travel time surveys and intersection delays estimates at intersections along Park Street. Furthermore, reducing the discharge rates at the Park Street/Blanding Avenue and Park Street/Clement Avenue intersections, as suggested by the comment, would result in increased delays reported for these two intersections. Since the Draft EIR already identifies these two intersections as significant and unavoidable impacts, the proposed change would not modify the conclusions of the Draft EIR. Thus, no additional analysis is required.

15-18 Appendix G of the Draft EIR provides various transportation background data and is cited throughout Section 4.12, *Transportation and Circulation*, of the Draft EIR. Appendix G includes the collected traffic counts at the study intersections, summary of the collected travel times and speed data, LOS output sheets for automobiles, pedestrian, and bicyclists, changes to the model land use database, and the CMP analysis data. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-19 The Posey Tube peak hour volume observations provided in the comment show a fluctuating range of peak hour volumes through the Posey Tube. These are consistent with the travel time surveys presented in Table 4.12-1 of the Draft EIR, which show a peak hour travel time between 5:00 and 9:10 minutes through the corridor during the AM peak hour. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-20 See Master Response 6 in Section 2.2 of this chapter and the response to comment 15-8, above, regarding consistency with forecasts in previously published environmental documents. See the response to comment 15-1, above, regarding the effect of downstream constraints on intersection operations. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-21 The comment expresses the opinions of the commenter, and does not present any environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-22 Comment noted. See responses above and below for specific responses.

15-23 See response to comment 8-61, above, regarding the project trip distribution. See the response to comment 15-1, above, regarding how the intersection operations were evaluated and the effect of downstream constraints on intersection operations. See the response to comment 15-5, above, regarding assigning traffic to the congested corridors during the peak hours. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-24 As described Master Response 6 in Section 2.2 of this chapter, above, the cumulative (2040) analysis accounts for the currently under construction improvements at the I-880 interchanges at 23rd and 29th Avenues and traffic generated by expected developments in Oakland and beyond. The Draft EIR identifies significant and unavoidable impacts at the two intersections along Park

Street at Blanding and Clement Avenues. Assuming additional delays at these intersections would not change this conclusion.

As described in response to comments 8-24 and 8-61, above, the cumulative (2040) forecasts and the project trip assignment and distribution account for the congestion and delay at the corridors providing access to and from Alameda.

The Draft EIR already presents a corridor travel time analysis. Conducting additional corridor level analysis as suggested in the comment would not change the conclusions of the Draft EIR. Therefore, no additional analysis is required.

15-25 See the response to comment 15-5, above. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-26 See the response to comment 15-6, above, regarding the VMT assessment. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-27 The comment incorrectly interpreted the Model land use modifications presented in Appendix G.F of the Draft EIR. The 2040 land use database was not adjusted to add 1,000 additional units to Crab Cove. The land use database was adjusted so that the total residential units in TAZ 478 (Crab Cove) would be 1,045 housing units, similar to the current number of units in the TAZ. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-28 The Model assumes a net increase of about 10,000 jobs within the City of Alameda between 2010 and 2040, consistent with ABAG's *Projections 2013.* This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-29 See Master Response 6 in Section 2.2 of this chapter and the response to comment 15-8 regarding consistency with previously published environmental documents. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-30 The comment incorrectly states that the Draft EIR did not evaluate the impacts of the project on the Webster and Posey Tubes. The Travel Time analysis, starting on page 4.12-33 of the Draft EIR, presents the impacts of the project on travel times. The CMP analysis, starting on page 4.12-40 and included in Appendix G.I

of the Draft EIR, also presents the segment-level analysis required for the CMP analysis. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-31 See the response to comment 15-11, above, regarding the trip generation for the commercial component of the project. See Master Response 6 in Section 2.2 of this chapter regarding consistency with previously published environmental documents. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-32 See Master Response 6 in Section 2.2 of this chapter and the responses to comments 15-8 and 15-20, above, regarding consistency with previously published environmental documents. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

15-33 The Draft EIR did not account for the Cross Alameda Trail project, which would implement a Class IV separated bikeway on the south side of Atlantic Avenue between Webster Street and Constitution Way. As stated in the comment, the project would modify the Constitution Way/Atlantic Avenue intersection by eliminating one through lane on the eastbound Atlantic Avenue approach and the exclusive right-turn lane on the northbound Constitution Way approach. The project would also modify the signal timings at the intersection.

For purposes of clarification, updated information has been added to Chapter 3 of this Final EIR. Specifically, Tables 4.12-11A and 4.12-11B from page 4.12-30 of the Draft EIR have been modified to show this planned improvement and presents the updated traffic operations at the Constitution Way/Atlantic Avenue intersection under Cumulative (2040) conditions. The intersection would operate at LOS C during the AM peak hour and LOS E during the PM peak hour under Cumulative (2040) conditions, regardless of the proposed project. Although the intersection would operate at LOS E during the PM peak hour, the project would increase traffic volumes at the intersection by less than three percent. Thus, the project would not cause a significant impact at this intersection.

15-34 The Clement Avenue Complete Street Project, which is fully funded, would implement Class II bicycle lanes along Clement Avenue between Grand Street and Broadway. This segment of Clement Avenue would continue to provide one automobile travel lane in each direction, and the funded project would not modify the lane configurations at the study intersections along this segment of Clement Avenue. Therefore, the analysis and results presented in the Draft EIR remain valid. This comment does not present any additional information on

environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

See response to comment 15-28, above, regarding the Clement Avenue extension to Tilden Way.

15-35 See Master Response 6 in Section 2.2 of this chapter and the response to comment 15-8, above, regarding consistency with previously published environmental documents.

15-36 See Master Response 6 in Section 2.2 of this chapter and the response to comment 15-8, above, regarding consistency with previously published environmental documents. See the response to comment 15-5 regarding assigning peak hour demand volumes to the congested corridors.

15-37 See response to comment 15-36, above, as similar conditions at the Park Street/Blanding Avenue intersection would apply to the Park Street/Clement Avenue intersection. As described in response to comment 15-34, above, the Clement Avenue Complete Street Project would not modify the lane configuration at the Park Street/Clement Avenue intersection. As described on page 4.12-31 of the Draft EIR, providing turn lanes on Clement Avenue at Park Street would conflict with General Plan Transportation Element. Providing turn lanes on Clement Avenue would also conflict with the Clement Avenue Complete Street Project.

15-38 The planned bikeway project along Fruitvale Boulevard in the City of Oakland would not change the roadway and intersection configurations along Fruitvale Boulevard between the Miller-Sweeney Bridge and I-880, and would not affect traffic flow on Miller-Sweeney Bridge or the Tilden Way-Fruitvale Avenue/Blanding Avenue-Fernside Boulevard intersection.

The Draft EIR did not account for the planned Clement Avenue extension to Tilden Way because the project design, including the proposed Clement Avenue/ Tilden Way intersection, and the existing Tilden Way-Fruitvale Avenue/ Blanding Avenue-Fernside Boulevard intersection, which would be modified by the planned Clement Avenue extension, have not been finalized and therefore, cannot be evaluated. It is expected that the Clement Avenue extension would provide a more direct connection between the project and the Miller-Sweeney Bridge. As shown in Table 4.12-15, it is estimated that the Fruitvale Avenue corridor would have similar travel speeds to the Park Street corridor during the peak hours. Thus, it is expected that the Clement Avenue extension would not divert large number of trips from the Park Street corridor to the Fruitvale Avenue corridor and not cause significant impacts beyond the ones identified in the Draft EIR.

Letter 16 **Planning Board Public Hearing – Summary of Comments**
Response February 12, 2018

The City's Planning Board took public comments on the project at a regularly scheduled Board meeting on February 12, 2018. A number of speakers provided comments on the project, and those comments are summarized below in bulleted form, followed by an appropriate response.

List of Speakers (compiled from submitted speaker slips and video transcript):

1. Alan Pryor
2. Elizabeth Tuckwell
3. Chris Nicholas (Island Yacht Club)
4. Joanne Martin
5. Eric Gantos
6. William Smith
7. Nancy Hird
8. Joseph Woodard
9. Dorothy Freeman
10. Sandy Sullivan (Planning Board Member)
11. Jeffery Cavanaugh (Planning Board Member)
12. David Mitchell (Planning Board Member

Comments:

1. **Preferences for a different alternative, or for a project that supported uses that are different from the proposed project.** Most of the comments provided during the meeting concerned a desire by commenters for a project that contained different uses than that being proposed, such as an expanded boatyard, more commercial uses, more affordable housing units, or greater preservation of the existing structures on the site. These comments generally expressed the opinions of the commenters as to how the project should be developed, and did not present any new information on environmental issues that have not been adequately addressed in the Draft EIR. Commenters desiring information on the various project alternatives and the feasibility thereof should please refer to Master Response 3 in Section 2.2 of this chapter for a discussion of the feasibility of proposed alternatives. No additional analysis is required.

2. **Support for the project.** Several commenters expressed support for the project. These comments generally expressed the opinions of the commenters as to how the project should be developed, and did not present any new information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

3. **Removal of trees.** One commenter expressed concern about the removal of trees on the site. As articulated previously in response to comment 8-14, page 4.3-48 of the Draft EIR assesses the project's impacts with respect to trees, as well as requirements associated with applicable City ordinances for tree preservation, which include specific requirements for street trees. As long as tree removal is consistent with all permitting conditions, such removal would not conflict with local ordinances or policies. As a general rule, however, healthy trees on the site or along the Clement Avenue frontage would be retained so long as they did not directly interfere with development activities. While the number of healthy and mature trees on the site is limited, those trees are viewed as assets and would not be removed unless necessary. This comment does not present any additional information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

4. **Homelessness.** One commenter asserted that the Draft EIR did not address the issue of homelessness in Alameda. Since the purpose of an EIR is to assess the environmental impacts of a project, there is no requirement that an EIR assess issues like homelessness, since homelessness is an economic and social issue, not an environmental issue subject to review under the California Environmental Quality Act. It is not clear what types of environmental impacts would be created by the project vis-à-vis homelessness, and the commenter did not present any information to suggest that it would. As such, this comment did not present any new information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

5. **Parks.** One commenter asserted that the parks and recreation areas identified for the proposed project were inadequate. This commenter is referred to response to comment 8-52 in this document. The comment does not present any new information on environmental issues that have not been adequately addressed in the Draft EIR. No additional analysis is required.

6. **Traffic impacts.** Several commenters expressed concerns with the adequacy of the Transportation Demand Management (TDM), construction traffic, and the scope of the traffic study. In response, commenters concerned with transportation and traffic issues in general are referred to the responses to Comments 8-57 through 8-66, and Comments 15-1 through 15-38. These response address all of the traffic-related comments that were conveyed during the Planning Board hearing, as well as additional concerns raised by other commenters.

7. **Emergency evacuation.** One commenter asserted that the Draft EIR had not evaluated evacuation of Alameda Island in the event of an emergency. The CEQA Guidelines require that EIR's evaluate whether or not the project would result in inadequate emergency access. This was evaluated in the Draft EIR on page 4.12-42, and the impact was found to be less than significant. Emergency evacuations and emergency services in general are a Citywide concern, and individual projects are not expected to provide for evacuations for the Island's residents. These responsibilities fall to the City's emergency

service providers and their cooperators. The City maintains an Emergency Management and Operations Plan to provide contingency plans for evacuations and response to emergencies. This comment did not present any new information on environmental issues that have not been adequately addressed in the Draft EIR.

8. **Cumulative impacts.** Several commenters indicated concern about the effects of the project alongside the effects of other projects that are currently planned or under construction in the City, particularly with respect to traffic. The cumulative effects of the project were evaluated in each of the topical sections of the Draft EIR, with resultant impacts identified. The comments were general in nature, and did not present new information that would alter the analysis already completed in the Draft EIR. No additional analysis is required.

   Others commenters expressed concern that the cumulative traffic analysis did not include all of the projects that are currently planned or under development in the City. In response, commenters concerned with transportation and traffic issues in general are referred to Master Response 6, the responses to Comments 8-57 through 8-66, and Comments 15-1 through 15-38. These response address all of the traffic-related comments that were conveyed during the Planning Board hearing, as well as additional concerns raised by other commenters.

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CHAPTER 3
Revisions to the Draft EIR

3.1 Introduction

This section summarizes text changes made to the Draft EIR either in response to a comment letter or initiated by City staff or in response to a modification to the proposed project.

3.2 Text Changes to the Draft EIR

New text is indicated in underline and text to be deleted is reflected by a ~~strike through~~. Text changes are presented in the page order in which they appear in the Draft EIR. The text revisions provide clarification, amplification, and corrections that have been identified since publication of the Draft EIR. The text changes do not result in a change in the analysis or conclusions of the Draft EIR.

Chapter 2, Summary

Page 2-31, Table 2-1, Mitigation Measure TRA-3 is revised to read:

> ~~If the Del Monte project fails to begin construction of the Clement Avenue extension from Atlantic Avenue to Entrance Road prior to commencement of construction of the Alameda Marina project, require the Alameda Marina project to construct the extension with a later fair share contribution to be provided by the Del Monte project and other developments in the area.~~ The project shall pay a fair share contribution to the cost of the Clement Avenue extension from Atlantic Avenue to Grand Street. The fair share contribution shall be calculated based upon a traffic study to calculate the fair share contribution of each Northern Waterfront development project including the Del Monte Warehouse Project, the Encinal Terminals Project, the Wind River fifth building project, and Alameda Marina, which will contribute traffic trips to the Clement Avenue Extension. The City shall require all developers to contribute their fair share as determined by the traffic study. The Alameda Marina fair share contribution shall be paid on a pro-rata basis for each residential phase of the Alameda Marina project (number of units in phase divided by total number of units in project multiplied by the fair share contribution). Each portion of the fair share contribution shall be paid prior to issuance of the first building permit for the current residential phase if work on the Clement Avenue extension has been initiated by another developer of a Northern Waterfront development project. If the work has not been initiated by another developer prior to issuance of the

first building permit for Alameda Marina, the contribution shall be made prior to issuance of the first residential Certificate of Occupancy on the property.

Page 2-31, Table 2-1:

In Table 2-1 of the Draft EIR, a redundant numbering of Impact TRA-3 caused an error in the subsequent Transportation and Circulation impact numbers. Accordingly, the second Impact TRA-3 as it appears in Table 2-1 of the Draft EIR, is hereby renumbered Impact TRA-4. Subsequent Transportation and Circulation impact numbers are also renumbered in the table (i.e., TRA-4 becomes TRA-5; TRA-5 becomes TRA-6, and so on through to TRA-10, which becomes TRA-11). This renumbering brings the summary table numbering into alignment with the impact discussions as they appear in Section 4.12, *Transportation and Circulation*, of the Draft EIR.

Section 4.2, Air Quality and Climate Change

Page 4.2-29, paragraph 3, is revised to read:

During temporary construction activities, the analysis incorporates the estimated construction TAC emissions of diesel particulate matter and dispersion modeling using the USEPA AMS/EPA Regulatory Model (AERMOD) dispersion model with meteorological data from the closest and most representative monitoring station to the project site located at Oakland International Airport, which is approximately 2.5 miles to the southeast of the project site. Within the AERMOD model, TAC emission sources were placed on the project site (for off-road equipment and truck idling emissions) and on the portion of roads (i.e., Clement Avenue and Grand Street) that haul trucks could travel on within 1,000 feet of the project site (for truck traveling emissions). The TAC emission sources were located in areas corresponding to construction associated with Phases 0, 1, 2, and 3. Truck idling sources were assumed to be located on the project site on the north side of Clement Avenue directly across the street from the residential uses to the south of Clement Avenue, which provides for a conservative (i.e., health protective) assessment. Receptor points were placed on the nearby sensitive receptor locations, which captures the maximum TAC concentrations at the maximally exposed sensitive receptor. These same methodologies can also be extended to assess impacts to future residents of the project site that could be in residence during later phases of construction.

Page 4.2-46, Table 4.2-11 and following two paragraphs are revised to read (note that this revision only renumbers Mitigation Measure AQ/CC-4 to AQ/CC-3):

TABLE 4.2-11
MASTER PLAN CONSISTENCY WITH APPLICABLE CONTROL MEASURES OF THE 2017 CLEAN AIR PLAN

Control Measure	Existing or Proposed Implementation Mechanism	Consistency of Proposed Project with Measure
TR1 – Clean Air Teleworking Initiative	Future residents within the project area could be expected to take advantage of teleworking opportunities, but the extent to which teleworking would occur cannot be accurately predicted at this time.	Yes
TR2 – Trip Reduction Programs	The project would address this Measure through implementation of its Transportation Demand Management (TDM) program.	Yes, with implementation of project TDM program
TR3 – Local and Regional Bus Service	Transit services within study the area include the Alameda–Contra Costa Transit District (AC Transit), the Bay Area Rapid Transit District (BART), Water Emergency Transit Agency (WETA), and Amtrak	Yes
TR4 – Local and Regional Rail Service	Amtrak and Bay Area Rapid Transit District (BART) stations are within 2.5 miles of project site.	Yes
TR5 – Transit Efficiency and Use	AC Transit Line 21 to BART Fruitvale Station is located 0.5 miles from the project site.	Yes
TR7 – Safe Routes to Schools and Safe Routes to Transit	Henry Haight Elementary School is a four block walk from the project site. Wood Middle School is located at 420 Grand Street, about 1.2 miles south of the site. Alameda High School is a seven block walk from the project site.	Yes
TR8 - Ridesharing	TDM Program includes subsidized dedicated on-site carpool parking and On-Site Car-Share parking.	Yes, with implementation of project TDM program
TR9 – Bicycle and Pedestrian Access and Facilities	The project would include bicycle lanes on Clement Avenue in accordance with the Alameda Bicycle Master Plan. The proposed internal street network and Bay Trail segment within the project site would allow for pedestrians and bicyclists to access the site's commercial core, residential neighborhoods, waterfront, and open spaces. Bike racks would be provided at strategic locations within public open space areas for convenience and to promote bicycling through and around the site	Yes
TR10 – Land Use Strategies	The project would include higher density construction and other land use strategies that would result in trip reductions.	Yes
TR13 - Parking Policies	The master plan specifies that the TDM program may also include unbundled parking programs as part of the overall TDM strategy.	Yes, with implementation of project TDM program
TR14 – Cars and Light Trucks	Not part of the project. New **Mitigation Measure AQ/CC-4**3 added to address by identifying, as a TDM neighborhood electric vehicle programs to reduce the need to have a car or second car as one potential element of a TDM program.	Mitigation Measure Identified
EN2 – Decrease Electricity Demand	While the LAPCP identifies energy Initiative 4 to amend the Alameda Municipal Code to include sustainable design and green building standards for all new, substantially expanded and remodeled buildings, to date this has only been done for City building projects and Capital Improvement projects through Section 13-19 of the Municipal Code. New **Mitigation Measure AQ/CC-4**3 added to address by identifying Leadership in Energy and Environmental Design (LEED) rating of silver or equivalent.	Mitigation Measure Identified
BL1 – Green Buildings	See above discussion for EN-2	Yes

TABLE 4.2-11 (CONTINUED)
MASTER PLAN CONSISTENCY WITH APPLICABLE CONTROL MEASURES OF THE 2017 CLEAN AIR PLAN

Control Measure	Existing or Proposed Implementation Mechanism	Consistency of Proposed Project with Measure
BL2 – Decarbonize Buildings	Implemented through The City's Alameda Green program to allow residents and businesses the ability to choose 100 percent renewable energy.	Yes
BL4 – Urban Heat Island	New **Mitigation Measure AQ/CC-43** added to address by identifying Leadership in Energy and Environmental Design (LEED) rating of silver or equivalent. One option for LEED certification is green roofs which serve to reduce a building albedo and associated heat island affects.	Mitigation Measure Identified
NW2 – Urban Tree Planting	While a landscaping plan has not been developed, the project would be required to provide sufficient tree and landscaping elements per the City's development code.	Yes
WA3 – Green Waste Diversion; and WA4 – Recycling and Waste Reduction	The City of Alameda achieves a 75 percent waste diversion rate and businesses and multifamily properties of 5 units or more must have adequate recycling and composting service.	Yes
WR2 – Support Water Conservation	New **Mitigation Measure AQ/CC-43** added to address by identifying Leadership in Energy and Environmental Design (LEED) rating of silver or equivalent. Indoor and outdoor water conservations are major elements of the LEED certification program.	Mitigation Measure Identified

SOURCE: BAAQMD, Clean Air Plan, Spare the Air, Cool the Climate, 2017d

With elements identified as part of the proposed project and implementation of mitigation measures identified in this EIR, the proposed project would be consistent with applicable control measures from the 2017 Clean Air Plan.

With elements identified as part of the proposed project, along with implementation of mitigation measures identified in this EIR including **Mitigation Measure AQ/CC-43**, the proposed project would not adversely affect implementation of any 2017 Clean Air Plan control measure.

Page 4.2-52, Impact C-AQ/CC-3 is revised to read (note that this revision only renumbers Mitigation Measure AQ/CC-4 to AQ/CC-3):

Impact C-AQ/CC-3: The proposed project would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. (*Less than Significant*)

The proposed project would be compliant with the GHG reduction initiatives included in the City's 2008 LAPCP. Additionally, as described in Impact 4.2-5, above, with implementation of Mitigation Measure AQ/CC-43, the proposed project would be consistent with BAAQMD's *2017 Clean Air Plan* measures discussed in Table 4.2-11

above. In addition, as indicated in Table 4.2-8, GHG emissions generated by construction and operation of the project would be less than the BAAQMD's 2020 "efficiency threshold" of 4.6 metric tons of CO_2e per service population per year and, with mitigation, would not exceed the analogous 2030 "efficiency threshold" of 2.8 metric tons of CO_2e per service population per year. GHG efficiency metrics were developed for the emissions rates at the State level for the land use sector that would accommodate projected growth (as indicated by population and employment growth) under trend forecast conditions, and the emission rates needed to accommodate growth while allowing for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020) and SB 32 (BAAQMD, 2009). The project would not impair attainment of GHG reduction goals established pursuant to AB 32 in the *Climate Change Scoping Plan*, because these goals were used in the development of BAAQMD thresholds. The project would have a less-than-significant impact with regard to GHG reduction-planning efforts, because emissions per service population would be below the thresholds developed based on attainment of AB 32 goals.

Significance after Mitigation: Less than Significant.

Section 4.3, Biological Resources

Page 4.3-5, paragraph 3 is revised to read:

Open water is found in the Oakland-Alameda Estuary to the north of the project site, which is hydrologically connected to San Francisco Bay. The Oakland-Alameda Estuary was originally a tidal slough, but was dredged in the mid- to late 1800s to create a viable port and shipping channel. Continued dredging operations resulted in the complete separation of what is now Alameda Island from the mainland. The estuary is influenced by both freshwater and marine water, receiving regular freshwater inflow from a combination of natural creeks, human-made stormwater drainage facilities, and from direct surface runoff after precipitation events. The estuary is also influenced by the marine waters of the Bay and is subject to tidal currents. Sediment from Oakland's shoreline and creeks is carried by the tidal current to shoals and sandbars, causing siltation of the nearby shipping channels. The open waters adjacent to the study area are typical of San Francisco Bay waters in general and have primarily silty mud and sand substrates that are naturally no more than 25 feet deep, although dredging operations to facilitate shipping operations in the Oakland-Alameda Estuary may increase water depth to more than 50 feet (DVA, 2013).

Section 4.4, Cultural Resources

Page 4.4-16, Impact CUL-1, is revised to read:

Impact CUL-1: Project implementation would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines, Section 15064.5. (*Significant and Unavoidable, with Mitigation*)

CEQA Guidelines Section 15064.5 requires the lead agency to consider the effects of a project on historical resources. A historical resource is defined as any building, structure, site, or object listed in or determined to be eligible for listing in the California Register, or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California based upon substantial evidence.

Though the property as a whole appears ineligible for listing in the California Register due to loss of integrity, there are three buildings that appear individually eligible for the California Register under Criteria 1 and 3, including Buildings 16, 19, and 27. These three buildings are recommended as historical resources under Section 15064.5(a) of CEQA (Verplanck, 2017). Also, Buildings 1, 4, 6, 12, 15, 16, 17, 19, 21, 22, 27, 28, 29, 31, 32, 33, 34, and the graving dock are included as contributing buildings/structures to the locally designated Alameda Marina Historic District.

The project includes the demolition of 26 of the 37 buildings in the project area. Of the 17 buildings and one structure in the Alameda Marina Historic District, 11 would be demolished (Buildings 1, 4, 6, 12, 22, 28, 29, 31, 32, 33, and 34). Buildings 13, 14, 16, 17, 18, 19, 21, 25, 26, and 27 would remain. All three individually eligible buildings (16, 19, and 27) would be retained and rehabilitated, as needed, as part of the adaptive reuse of the structures. The demolition of many of the District's contributing buildings, which have been determined to be historical resources, and the construction of new residential and/or commercial buildings within the District boundaries is considered a significant impact under CEQA. This impact cannot be reduced to a less-than-significant level; however, implementation of the following mitigation measures would reduce impacts, to the extent feasible, to historical resources by documenting the resource and preserving the history of the site and buildings. Overall, the proposed project would cause a substantial adverse change in the significance of a historical resource, and this impact would be *significant and unavoidable with mitigation.*

> **Mitigation Measure CUL-1a: Treatment of Historic Properties (Buildings 16 19 and 27).** Alterations, to the exteriors of Buildings 16, 19 and 27, shall conform to the Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, if feasible (NPS, 1995) and PRC 5024.5.
>
> **Mitigation Measure CUL-1b: Documentation.** The project proponent shall prepare a treatment plan including but not limited to photo documentation and public interpretation of the Alameda Marina Historic District (Buildings 1, 4, 6, 12, 15, 16, 17, 19, 21, 22, 27, 28, 29, 31, 32, 33, 34, and the graving dock). Photo documentation will be overseen by a Secretary of the Interior–qualified architectural historian, documenting the affected historical resource. in accordance with the National Park Service's Historic American Buildings Survey (HABS) and/or Historic American Engineering Record (HAER) standards. Such

standards typically include large-format photography using (4x5) negatives, written data, and copies of original plans if available. The HABS/HAER documentation packages will be archived at local libraries and historical repositories, as well as the Northwest Information Center of the California Historical Resources Information System.

Mitigation Measure CUL-1c: Interpretive Display. Public interpretation of historical resources shall be provided and could include a plaque, kiosk, or other method of describing the Alameda Marina Historic District's historic or architectural importance to the general public. The design and placement of the display(s) shall be reviewed and approved by the City of Alameda Historic Advisory Board.

Rehabilitation of the exteriors of Buildings 16, 19 and 27 consistent with the Secretary~~'s~~ of Interior's Standards would mitigate the impacts to these historic resources to a less-than-significant level. The recordation of a building or structure to HABS/HAER standards and public interpretation efforts would reduce impacts on significant historic buildings and ~~structures~~ the District, but such efforts typically do not reduce those impacts to a less-than-significant level (CEQA Section 15126.4(b)(2)). Impacts to significant historic buildings ~~or structures~~ and the District under these circumstances would remain significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Section 4.6, Hazards and Hazardous Materials

Page 4.6-3, Table 4.6-1, is revised to read:

TABLE 4.6-1
REGULATORY SITES LISTED IN THE PROJECT SITE AND VICINITY

Site Name/ Address	Regulatory List	Site Summary
Regulatory Sites Listed within the Project Site		
Pacific Shops, Inc., 1815 Clement Street	LUST Cleanup Site	Cleanup completed as of March 5, 2010. Addressed leaks from two former Bunker oil USTs and a diesel UST that were removed in March 2007.
Pacific Shops, Inc., 1829 Clement Street	SLIC Program Site	Cleanup completed as of December 14, 2010. Involves the subfloor area beneath the building. Spills and discharges of liquids containing heavy metals as well as acids and bases to the subfloor and sewer were documented in 1990. The potential contaminants of concern included arsenic, chromium, copper, and cyanide, affecting the soil, soil vapor, structure, indoor air, and groundwater.
Pacific Shops, Inc., 1851 Clement Street	LUST Cleanup Site	Cleanup completed as of September 22, 1999. Addressed leaks from former gasoline and diesel fuel USTs that were removed in July 1999.

TABLE 4.6-1 (CONTINUED)
REGULATORY SITES LISTED IN THE PROJECT SITE AND VICINITY

Site Name/ Address	Regulatory List	Site Summary
Regulatory Sites Listed within the Vicinity of the Project Site		
2100 Clement Avenue	Voluntary Cleanup Site	No further action as of November 7, 2016. Past uses that caused concern includes manufacturing including residential area, shipyard with ship building and repair, warehousing, and other uses. The potential contaminants of concern included PCEs and TCEs, affecting the soil and soil vapor. The site's commercial buildings have been demolished and the site has been graded in preparation for redevelopment into residential use. Remedial excavations have been completed in areas where the presence of volatile organic compounds in sub-slab and/or soil vapor could have posed a vapor intrusion risk to future residential receptors. Post-remediation soil and soil gas sampling confirm that the potential risk has been mitigated.
Alameda Naval Operational Support Center – West Vault, 2144 Clement Avenue	Military UST Site	Cleanup completed as of April 15, 2013.
Alameda Naval Operational Support Center – Naval and Marine Corps Reserve Center, 2144 Clement Avenue	Military Cleanup Site	Cleanup completed as of May 13, 2013. Past uses that caused concern include dry docks and fueling including vehicle storage and refueling and port use. The potential contaminants of concern include lead, TPH from diesel, and TPH from gasoline, affecting the soil and groundwater.
Alameda Naval Operational Support Center – North UST, 2144 Clement Avenue	Military UST Site	Cleanup completed as of August 15, 2013.
Cargill Salt, 2016 Clement Avenue	SLIC Program Site	Undergoing remediation as of June 15, 2005. PCE has been detected in soil vapor and groundwater at the site. A phytoremediation project was implemented to cleanup PCE in groundwater in June 2005. Groundwater monitoring has continued to assess the effectiveness of the phytormeediation project.
Pennzoil-Quaker State Alameda Specialty Plant	SLIC Program Site	Undergoing verification monitoring as of September 1, 2009. Lubricating oils were discovered in the tank farm area in 1985 and additional oil was spilled in the area in 1990. Contaminated soil was removed in 2002, however some contaminated soil was left under aboveground storage tanks to maintain their structural integrity. Permit violations were discovered in 2006 and 2008 resulting in the issuance of a Notice of Violation in 2009. Contamination at this facility is also attributed to former USTs adjacent to the shipping area and USTs located east of the aboveground tank containment area, under the warehouse. Groundwater monitoring was conducted quarterly starting in 1995 and semiannually beginning in 2009. <u>The latest monitoring report from December 30, 2016 continues to show elevated levels of petroleum products in the monitoring wells on the site.</u>
<u>Former J.H. Baxter Facility</u>	<u>State Response or NPL</u>	<u>In 2003, a dark, tarry substance was observed emanating from beneath the driveway in the north-eastern section of the site. Surface soil samples collected from the area revealed the presence of various hazardous substances at levels above regulatory screening levels. Remediation is expected to be completed in 2019.</u>

TABLE 4.6-1 (CONTINUED)
REGULATORY SITES LISTED IN THE PROJECT SITE AND VICINITY

Site Name/ Address	Regulatory List	Site Summary
Westline Industries, 1925 Lafayette	LUST Cleanup Site	Cleanup completed as of May 5, 1995.
Encinal Marina Ltd, 2099 Grand Street	LUST Cleanup Site	Cleanup completed as of June 10, 2010.
Grand Marina Village, 2051 Grand Street	SLIC Program Site	Cleanup completed as of July 16, 2010. Past site use as a lumber yard, ship repair yard, auto repair, carpentry shop, blacksmith, animal shelter, and bulk oil storage facility. The potential contaminants of concern included arsenic, diesel, and heating and fuel oil, affecting the soil, groundwater, and surface water. Planned redevelopment as residential.
Grand Street Tank Farm, 2047 Grand Street	SLIC Program Site	Open, but inactive as of June 4, 2009. The potential contaminants of concern include benzene, diesel, gasoline, and TPH, affecting the soil.
Penzoil Gas Station, 2015 Grand Street	LUST Cleanup Site	Cleanup completed as of November 3, 1995.
Whitmore's Auto Service	LUST Cleanup Site	Awaiting assessment as of August 29, 2002. In August 2002, four USTs were removed and significantly elevated levels of hydrocarbon contamination was detected in soil. SPH was detected during tank removal and no free product removal has been completed. The site is not characterized and the extent of contamination is unknown.

SOURCE: DTSC, 2017; SWRCB, ~~2017~~2018

Section 4.11, Public Services and Recreation

Page 4.11-11, paragraph 1, is revised to read:

Impact PSR-4: The proposed project would result in increased use of other governmental facilities, including libraries, but would not require new or physically altered government facilities to maintain acceptable performance objectives. (*Less than Significant*)

The Alameda Free Library offers library services to the residents of Alameda. The ~~West End library branch~~ Main Library, located ~~1.4 miles~~ 0.6 miles away from the project site at ~~788 Santa Clara Avenue~~ 1550 Oak Street, is the closest library. The Library offers a wide range of services, including answering reference questions, staging story times, providing summer reading programs, hosting class visits, and educational events.

While the proposed project would generate an incremental increase in demand for library services, the additional demand that would be generated by an estimated population of 1,932 persons, only a small portion of whom would be expected to utilize the library in any given month, would be expected to be a small fraction of the existing monthly visitors. This would not require an expansion of library facilities, and the project's impact on library services would be considered less than significant.

Mitigation: None required.

Section 4.12, Transportation and Circulation

Page 4.12-3, paragraphs 3 and 4, are revised to read:

Buena Vista Avenue is an east/west Island Collector between Poggi Street in the west and Northwood Drive in the east. The roadway is classified as a Transitional Arterial between Sherman and Grand Streets and as a Local Road east of Broadway and west of Webster Street. Buena Vista Avenue continues in the west as Poggi Street. The roadway generally provides ~~two~~ one travel lane~~s~~ in each direction, with occasional left-turn lanes and/or right-lane turning pockets at selected intersections. ~~and left-turn lanes between Jay and Hibbard Streets and at the intersection with Broadway.~~ Sidewalks are provided on both sides of the street, and on-street parking is allowed along the entire roadway except between Sherman and Benton Streets.

Grand Street is a north/south Island Arterial between the Alameda Marina in the north and Shore Line Drive in the south. The roadway is classified as a Local Street north of Clement Avenue. Grand Street provides one travel lane in each direction. Sidewalks and Class II bikeways (bike lanes) are provided on both sides of the street, and on-street parking is ~~prohibited~~ allowed along much of the roadway's alignment.

Page 4.12-10, last paragraph, last sentence, is revised to read:

Pedestrian access between Downtown Oakland and the west side of the island is provided by a narrow, raised walkway in the Posey Tube that is shared with bicycle traffic. Pedestrians can also take AC Transit buses across the estuary via the Webster or Posey Tubes. The sidewalks across the Park Street and Miller-Sweeney (Fruitvale Avenue) Bridges on the east side of the island, about one mile from the project site, also provide pedestrian access between Oakland and Alameda~~, but these are more than three miles from the project site~~.

Page 4.12-29, paragraph 2, is revised to read:

Figures 5 and 6 in **Appendix G.A** show the AM and PM peak hour intersection volumes under Cumulative (2040) No Project and Cumulative (2040) Plus Project Conditions, respectively. The 2040 analyses assume the completion of the following:

- The I-880 Operational and Safety Improvements at 29th Avenue and 23rd Avenue Overcrossings, which are currently under construction and would reconstruct the overcrossing structures at 23rd and 29th Avenues, reconfigure several on and off-ramps, extend the northbound auxiliary lane along I-880, and include various changes to the local roadway network around the ramps.

- The Clement Avenue extension between Entrance Road and Atlantic Avenue and through the Shell Oil property.

- The Cross Alameda Trail project, which includes a Class IV separated bikeway on the south side of Atlantic Avenue between Webster Street and Constitution Way. The project would modify the Constitution Way/Atlantic Avenue (#4) intersection by eliminating one through lane on the eastbound Atlantic Avenue approach and the exclusive right-turn lane on the northbound Constitution Way approach. The Cross Alameda Trail project would also modify the signal timings at the intersection.

The Cumulative (2040) No Project Conditions assumes the same intersection configuration as Existing Conditions at all other study intersections. ~~The analysis assumes the completion of the Clement Avenue extension between Entrance Road and Atlantic Avenue and through the Shell Oil property.~~ This analysis assumes that signal timing parameters that do not require upgrades to the signal equipment, such as amount of green time assigned to each intersection approach, would be optimized at the signalized study intersections under 2040 conditions, because signal timing changes are included in the ongoing maintenance of the traffic signal system.

Page 4.12-30, Tables 4.12-11a and 4.12-11b are revised to read:

TABLE 4.12-11A
CUMULATIVE (2040) AM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Study Intersection		Control	2040 No Project		2040 + Project	
			Delay[1]	LOS	Delay[1]	LOS
1	Webster Street/Atlantic Avenue	Signal	**82**	**F**	**86**	**F**
2	Constitution Way/Atlantic Avenue	Signal	~~27~~28	C	~~29~~31	C
3	Challenger Drive/Atlantic Avenue	Signal	**103**	**F**	**114**	**F**
4	Atlantic Avenue/Buena Vista Avenue	Signal	15	B	15	B
5	Grand Street/Buena Vista Avenue	Signal	23	C	31	C
6	Grand Street/Clement Avenue	Signal	28	C	39	D
7	Park Street/Blanding Avenue[2]	Signal	**>120**	**F**	**>120**	**F**
8	Park Street/Clement Avenue	Signal	**108**	**F**	**>120**	**F**
9	Park Street/Tilden Way-Lincoln Avenue	Signal	18	B	21	C
10	Tilden Way-Fruitvale Avenue/Blanding Avenue-Fernside Boulevard	Signal	21	C	31	C
11	High Street-Gibbons Drive/Fernside Bouelvard[2]	Signal	**63**	**E**	**63**	**E**

NOTES:
1 For signalized intersections, the Delay/LOS represents the overall intersection.
2 Based on HCM 2000, since HCM 2010 does not calculate LOS for this intersection.

Bold indicates locations with unacceptable LOS; **Shaded Bold** indicates significant impacts.

SOURCE: Fehr & Peers, 2017.

TABLE 4.12-11B
CUMULATIVE (2040) PM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Study Intersection		Control	2040 No Project		2040 + Project	
			Delay[1]	LOS	Delay[1]	LOS
1	Webster Street/Atlantic Avenue	Signal	**96**	**F**	**107**	**F**
2	Constitution Way/Atlantic Avenue	Signal	~~31~~**65**	~~C~~**E**	~~33~~**71**	C**E**
3	Challenger Drive/Atlantic Avenue	Signal	44	D	48	D
4	Atlantic Avenue/Buena Vista Avenue	Signal	27	C	28	C
5	Grand Street/Buena Vista Avenue	Signal	19	B	22	C
6	Grand Street/Clement Avenue	Signal	15	B	34	C
7	Park Street/Blanding Avenue[2]	Signal	51	D	**83**	**F**
8	Park Street/Clement Avenue	Signal	**>120**	**F**	**>120**	**F**
9	Park Street/Tilden Way-Lincoln Avenue	Signal	**86**	**F**	**85**	**F**
10	Tilden Way-Fruitvale Avenue/Blanding Avenue-Fernside Boulevard	Signal	**>120**	**F**	**>120**	**F**
11	High Street-Gibbons Drive/Fernside Bouelvard[2]	Signal	**58**	**E**	**58**	**E**

NOTES:
1 For signalized intersections, the LOS/Delay represents the overall intersection.
2 Based on HCM 2000, since HCM 2010 does not calculate LOS for this intersection.

Bold indicates locations with unacceptable LOS; **Shaded Bold** indicates significant impacts.

SOURCE: Fehr & Peers, 2017.

Page 4.12-32, Mitigation Measure TRA-3, is revised to read:

~~If the Del Monte project fails to begin construction of the Clement Avenue extension from Atlantic Avenue to Entrance Road prior to commencement of construction of the Alameda Marina project, require the Alameda Marina project to construct the extension with a later fair share contribution to be provided by the Del Monte project and other developments in the area.~~ The project shall pay a fair share contribution to the cost of the Clement Avenue extension from Atlantic Avenue to Grand Street. The fair share contribution shall be calculated based upon a traffic study to calculate the fair share contribution of each Northern Waterfront development project including the Del Monte Warehouse Project, the Encinal Terminals Project, the Wind River fifth building project, and Alameda Marina, which will contribute traffic trips to the Clement Avenue Extension. The City shall require all developers to contribute their fair share as determined by the traffic study. The Alameda Marina fair share contribution shall be paid on a pro-rata basis for each residential phase of the Alameda Marina project (number of units in phase divided by total number of units in project multiplied by the fair share contribution). Each portion of the fair share contribution shall be paid prior to issuance of the first building permit for the current residential phase if work on the Clement Avenue extension has been initiated by another developer of a Northern Waterfront development project. If the work has not been initiated by another developer prior to issuance of the first building permit for Alameda Marina, the contribution shall be made prior to issuance of the first residential Certificate of Occupancy on the property.

Page 4.12-41, paragraph 1, is revised to read:

> The CMP and MTS segments were assessed using a V/C ratio methodology. For freeway segments, a per-lane capacity of 2,000 vehicles per hour (vph) was used~~. F~~, and for surface streets, a per-lane capacity of 800 vph was used, based on the general hourly capacities in the Alameda CTC Model. Roadway segments with a V/C ratio greater than 1.00 signify LOS F.

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CHAPTER 4
Mitigation Monitoring and Reporting Program

4.1 Introduction

Section 15097 of the California Environmental Quality Act (CEQA) Guidelines requires public agencies to establish monitoring or reporting programs for projects approved by a public agency whenever approval involves the adoption of either a "mitigated negative declaration" or specified environmental findings related to environmental impact reports.

The following is the Mitigation Monitoring and Reporting Program (MMRP) for the Alameda Marina Master Plan project. The intent of the MMRP is to prescribe and enforce a means for properly and successfully implementing the mitigation measures identified within the Draft Environmental Impact Report (Draft EIR) for this project.

4.2 Mitigation Measures

The table below lists all mitigation measures for the project. The MMRP describes the actions that must take place to implement each mitigation measure, the timing of those actions, and the entities responsible for implementing and monitoring the actions.

4.3 MMRP Components

The components of the attached table, which contains applicable mitigation measures, are addressed briefly, below.

Impact: This column summarizes the impact stated in the Draft EIR.

Mitigation Measure: All mitigation measures that were identified in the Draft EIR are presented, and numbered accordingly.

Action: For every mitigation measure, one or more actions are described. The actions delineate the means by which the mitigation measures will be implemented, and, in some instances, the criteria for determining whether a measure has been successfully implemented. Where mitigation measures are particularly detailed, the action may refer back to the measure.

Implementing Party: This item identifies the entity that will undertake the required action, typically the project applicant or its designee.

Timing: Implementation of the action must occur prior to or during some part of project approval, project design or construction or on an ongoing basis. The timing for each measure is identified.

Monitoring Party: The City of Alameda is primarily responsible for ensuring that mitigation measures are successfully implemented. Within the City, a number of departments and divisions would have responsibility for monitoring some aspect of the overall project.

TABLE 4-1
ALAMEDA MARINA MASTER PLAN MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Monitoring Party
Air Quality and Climate Change					
Impact AQ/CC-1: The proposed project would not result in localized construction dust-related air quality impacts; generate construction emissions that would result in a substantial increase of criteria pollutants and precursors for which the air basin is in nonattainment under an applicable federal or state ambient air quality standard; or expose sensitive receptors to substantial concentrations of toxic air contaminants or respirable particulate matter (PM2.5).	**Mitigation Measure AQ/CC-1:** ***Implementation of Dust Abatement Programs.*** The project applicant shall be required to demonstrate compliance with all applicable City regulations and operating procedures prior to issuance of building or grading permits, including standard dust control measures. The effective implementation of dust abatement programs, incorporating all of the following dust control measures, would reduce the temporary air quality impact associated with construction dust. • All active construction areas shall be watered two times daily using equipment and staff provided by the project applicant or prime contractor, as needed, to avoid visible dust plumes. Appropriate non-toxic dust palliative or suppressant, added to water before application, may be used. • All trucks hauling soil, sand and other loose materials shall be covered. • All unpaved access roads, parking areas and construction staging areas shall be either paved, watered as necessary to avoid visible dust plumes, or subject to the application of (non-toxic) soil stabilizers. • All paved access roads, parking areas and staging areas at the construction site shall be swept daily with water sweepers. The use of dry power sweeping is prohibited. • If visible soil material is carried onto adjacent public streets, these streets shall be swept daily with water sweepers. The use of dry power sweeping is prohibited. • All stockpiles of debris, soil, sand or other materials that can be blown by the wind shall either be covered or watered as necessary to avoid visible dust plumes. • An off-pavement speed limit of 15 miles per hour for all construction vehicles shall be incorporated into the construction contract and enforced by the prime contractor. • All inactive portions of the project site (those areas which have been previously graded, but inactive for a period of ten days or more) shall be watered with an appropriate dust suppressant, covered or seeded. • All earth-moving or other dust-producing activities shall be suspended when the above dust control measures prove ineffective in avoiding visible dust plumes during periods of high winds. The wind speed at which this suspension of activity will be required may vary, depending on the moisture conditions at the project site, but suspension of such activities shall be required in any case when the wind speed exceeds 25 miles per hour. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. • Post a publicly visible sign with the telephone number and person to contact at the City of Alameda regarding dust complaints. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.	Provide Dust Abatement Plan that meets the requirements of the mitigation measure to the City Building Division for review and approval.	Project applicant or designee	Prior to issuance of demolition and/or building permits.	City of Alameda
	Mitigation Measure AQ/CC-2: The project applicant shall ensure that construction contract specifications include a requirement that all off-road diesel-powered construction equipment used for project improvements shall be equipped with a Level 3 Verified Diesel Emissions Control (VDEC), which would reduce diesel particulate emissions by at least 85 percent.	Provide construction specifications to City Building Division for review and approval.	Project applicant or designee	Prior to issuance of construction contracts and/or construction bid materials.	City of Alameda

TABLE 4-1 (CONTINUED)
ALAMEDA MARINA MASTER PLAN MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Monitoring Party
Impact AQ/CC-5: The proposed project would not conflict with or obstruct the implementation of the applicable air quality plan.	**Mitigation Measure AQ/CC-3:** The City shall require that the following measures be implemented, either by the City or the project applicant, or both in combination, to encourage the use of low- and zero-emission vehicles in travel to and from the project site and construction meeting LEED Silver or equivalent sustainable design standards: • Promote use of clean fuel-efficient vehicles through preferential parking and/or installation of charging stations. • Require LEED Silver certification or equivalent for all new residential structures. • Promote zero-emission vehicles by providing a neighborhood electric vehicle program to reduce the need to have a car or second car as an element of the TDM program.	Provide design and construction specifications to City Building Division for review and approval.	Project applicant or designee	Prior to issuance of construction contracts and/or construction bid materials.	City of Alameda
Biological Resources					
Impact BIO-1: The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the United States Fish and Wildlife Service.	**Mitigation Measure BIO-1a:** Prior to the start of in-water construction and maintenance that would require pile driving, the project applicant shall prepare a NMFS-approved sound attenuation monitoring plan to protect fish and marine mammals, if impact pile driving is required for project implementation. This plan shall provide detail on the sound attenuation system, detail methods used to monitor and verify sound levels during pile driving activities, and describe management practices to be taken to reduce impact hammer pile-driving sound in the marine environment to an intensity level of less than 183 dB. The sound monitoring results shall be made available to the NMFS. The plan shall incorporate one or more of the following best management practices (BMPs) to meet the 183 dB performance standard): • To the extent feasible, all pilings shall be installed and removed with vibratory pile drivers only. If feasible, vibratory pile driving shall be conducted following the Corps' "Proposed Procedures for Permitting Projects that will Not Adversely Affect Selected Listed Species in California". USFWS and NOAA completed Section 7 consultation on this document, which establishes general procedures for minimizing impacts to natural resources associated with projects in or adjacent to jurisdictional waters. • An impact pile driver may only be used where necessary to complete installation of larger steel pilings in accordance with seismic safety or other engineering criteria • If necessary, the hammer shall be cushioned using a 12-inch thick wood cushion block during all impact hammer pile driving operations. • All piling installation using impact hammers shall be conducted between June 1 and November 30, when the likelihood of sensitive fish species being present in the work area is minimal. • If pile installation using impact hammers must occur at times other than the approved work window, the project applicant shall obtain incidental take authorization from NMFS and CDFW, as necessary, to address potential impacts on steelhead trout, chinook salmon, and Pacific herring and implement all requested actions to avoid impacts. • The project applicant shall monitor and verify sound levels during pile driving activities. The sound monitoring results will be made available to NMFS and the City. • In the event that exceedance of noise thresholds established and approved by NMFS occurs, a contingency plan involving the use of bubble curtains or air barrier shall be implemented to attenuate sound levels to below threshold levels.	**Pre-construction:** Provide NMFS-approved sound attenuation and monitoring plan to the City Planning Division. **During construction:** Provide monitoring reports as specified in agreement with NMFS.	Project applicant or designee	**Pre-construction:** Prior to issuance of demolition/building permits in affected areas. **During construction:** Ongoing per terms of agreement with NMFS.	City of Alameda
	Mitigation Measure BIO-1b: During the project permitting phase, any activities requiring in-water work will either proceed under one of the programmatic consultations for federally listed species described above or a project-level BO would be required. Alternatively, the project will obtain Incidental Harassment Authorization (IHA) for marine mammals for dredging or pile driving activities. The project applicant shall also consult with CDFW regarding project impacts on State listed special-status fish species and the potential need for an incidental take permit (ITP). The project applicant shall submit to the City copies of any IHA and/or ITP received or, alternatively, copies of correspondence confirming that an IHA and/or ITP is not required for the project in question.	Provide evidence of regulatory compliance to the City Building Division and/or the City Planning Division as specified in the measure.	Project applicant or designee	Prior to issuance of demolition/building permits in affected areas.	City of Alameda
	Mitigation Measure BIO-1c: As part of the NMFS-approved sound attenuation monitoring plan required for pile driving in	**Pre-construction:** Provide NMFS-approved sound attenuation and monitoring plan to the City Planning Division. **During construction:** Provide	Project applicant or designee	Prior to issuance of demolition/building permits in affected areas.	City of Alameda

TABLE 4-1 (CONTINUED)
ALAMEDA MARINA MASTER PLAN MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Monitoring Party
	Mitigation Measure BIO-1a, the City shall ensure that the project applicant implements these additional actions to reduce the effect of underwater noise transmission on marine mammals. These actions shall include at a minimum: • Establishment of a 1,600-foot (500-meter) safety zone that shall be maintained around the sound source, for the protection of marine mammals in the event that sound levels are unknown or cannot be adequately predicted. • Work activities shall be halted when a marine mammal enters the 1,600-feet (500-meter) safety zone and resume only after the animal has been gone from the area for a minimum of 15 minutes. • A "soft start" technique shall be employed in all pile driving to give marine mammals an opportunity to vacate the area. • Maintain in-air sound levels at the noise source below 90 dBA when pinnipeds (seals and sea lions) are present. • A NMFS-approved biological monitor will conduct daily surveys before and during impact hammer pile driving to inspect the work zone and adjacent Bay waters for marine mammals. The monitor will be present as specified by NMFS during the impact pile-driving phases of construction.	monitoring reports as specified in agreement with NMFS.			
	Mitigation Measure BIO-1d: Through the Design Review application process, the City shall ensure that the project applicant installs dock lighting on all floating docks and adjacent areas that minimizes artificial lighting of Bay waters by using shielded, low-mounted, and low light-intensity fixtures and bulbs.	**Pre-construction:** Provide lighting plans to City Building Division for review and approval showing compliance with measure. **Post-construction:** Demonstrate compliance with measure to satisfaction of the City Building Division.	Project applicant or designee	**Pre-construction:** Prior to issuance of building permits for affected water-side areas. **Post-construction:** Prior to issuance of occupancy permits.	City of Alameda
	Mitigation Measure BIO-1e: To the extent practicable, construction activities including building renovation, demolition, vegetation and tree removal, and new site construction shall be performed between September 1 and January 31 in order to avoid breeding and nesting season for birds. If these activities cannot be performed during this period, a preconstruction survey for nesting birds shall be conducted by a qualified biologist. In coordination with the City, surveys shall be performed during breeding bird season (February 1 – August 31) no more than 14 days prior to construction activities listed above in order to locate any active passerine nests within 250 feet of the project site and any active raptor nests within 500 feet of the project site. Building renovation, demolition, tree and vegetation removal, and new construction activities performed between September 1 and January 31 avoid the general nesting period for birds and therefore would not require pre-construction surveys. If active nests are found on either the proposed construction site or within the 500-foot survey buffer surrounding the proposed construction site, no-work buffer zones shall be established around the nests in coordination with CDFW. No renovation, demolition, vegetation removal, or ground-disturbing activities shall occur within a buffer zone until young have fledged or the nest is otherwise abandoned as determined by the qualified biologist. If work during the nesting season stops for 14 days or more and then resumes, then nesting bird surveys shall be repeated, to ensure that no new birds have begun nesting in the area.	Conduct pre-construction surveys for nesting birds if construction is proposed during specified times; provide results of surveys to City Building Division and/or City Planning Division; conduct construction activities according to the protocol described in the mitigation measure.	Project applicant or designee	Prior to issuance of demolition/building permits.	City of Alameda
Impact BIO-2: Development facilitated by the proposed project would not have a substantial adverse effect on riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	**Mitigation Measure BIO-2a:** Prior to in-water work, the City shall ensure that the project applicant conducts a pre-construction survey to determine if native oysters, mussels, and eelgrass are present in the Oakland-Alameda Estuary to be affected by the project. • The eelgrass survey shall be conducted according to the methods contained in the California Eelgrass Mitigation Policy and Implementing Guidelines (NMFS, 2014), with the exception that the survey shall be conducted within 120 days (rather than 60 days, as recommended in the CDEMP) prior to the desired construction start date, to allow sufficient time for modification of project plans (if feasible) and agency consultation. • If eelgrass beds or native oysters are found within or immediately adjacent to the construction footprint, the project applicant shall first determine whether avoidance of the beds is feasible. If feasible, impacts to the oyster or eelgrass bed shall be avoided. If complete avoidance is not feasible, the applicant shall request guidance from the National Marine Fisheries Service (or other applicable agency) as to the need and/or feasibility to move affected beds. Any translocation of eelgrass beds shall be conducted consistent with the methods described in the	Conduct preconstruction surveys for native oysters, mussels, and eelgrass as specified in the mitigation measure; provide results of surveys to City Building Division and/or City Planning Division; follow avoidance and monitoring protocols as directed by NMFS and as specified in the mitigation measure; provide compensatory mitigation if required.	Project applicant or designee	Prior to issuance of building permits for the affected in-water areas.	City of Alameda

TABLE 4-1 (CONTINUED)
ALAMEDA MARINA MASTER PLAN MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Monitoring Party
	CDEMP and/or those described in Eelgrass Conservation in San Francisco Bay: Opportunities and Constraints (Boyer and Wyllie-Echeverria, 2010). Translocation of oyster beds shall be consistent with methods and recommendations presented in Shellfish Conservation and Restoration in San Francisco Bay: Opportunities and Constraints (Zabin et al., 2010). • If it is not possible to translocate oyster or eelgrass beds, then the City shall ensure that the project applicant provides compensatory mitigation consistent with the CDEMP for eelgrass (a ratio of 3.01:1 [transplant area to impact area]) and a minimum 1:1 ratio for oyster beds. • The relocation or compensatory mitigation site for eelgrass or oyster beds shall be within San Francisco Bay.				
	Mitigation Measure BIO-2b: The Marina operators shall prepare educational information regarding sensitive biological resources in the project vicinity and within Bay waters. This information shall be disseminated to all boaters using the marina and shall include, but not be limited to, information educating boat owner/operators about sensitive habitats and species in the Bay and actions they are required to implement to avoid impacts to marine resources. The educational information will be disseminated to visiting boaters through multiple methods including, but not limited to, brochures or pamphlets; marina and/or City websites; boating, cruising, and newspaper periodicals; and social media. The information shall be prepared soliciting input from, and in cooperation with, the National Marine Fisheries Service (NMFS), U.S. Coast Guard (USCG), California State Lands Commission, National Park Service (NPS), California Department of Parks and Recreation (CDPR), Bay Conservation and Development Commission (BCDC), and local organizations active in protecting Bay marine resources, as appropriate.	Prepare educational materials as specified in the mitigation measure; present materials to the City and cooperating agencies for review and approval.	Project applicant or designee	Prior to issuance of occupancy permits.	City of Alameda
	Mitigation Measure BIO-2c: The City shall require that the project applicant develop and implement a Marine Invasive Species Control Plan prior to commencement of any in-water work including, but not limited to, construction of wharves and seawalls, dredging, pile driving, and construction of new stormwater outfalls. The plan shall be prepared in consultation with the United States Coast Guard (USCG), RWQCB, and other relevant state agencies. Provisions of the plan shall include but not be limited to the following: • Environmental training of construction personnel involved in in-water work. • Actions to be taken to prevent the release and spread of marine invasive species, especially algal species such as Undaria and Sargasso. • Procedures for the safe removal and disposal of any invasive taxa observed on the removed structures prior to disposal or reuse of pilings, docks, wave attenuators, and other features. • The onsite presence of a qualified marine biologist to assist the contractor in the identification and proper handling of any invasive species on removed equipment or materials. • A post-construction report identifying which, if any, invasive species were discovered attached to equipment and materials following removal from the water, and describing the treatment/handling of identified invasive species. Reports shall be submitted to the City, as well as the USCG and the RWQCB if requested by the agencies.	Prepare Marine Invasive Species Control Plan with cooperation and oversight from relevant agencies as specified in the mitigation measure; implement the plan as specified in the mitigation measure; conduct technical assistance activities as specified in the mitigation measure; prepare and submit a post-construction report to the City of Alameda and applicable agencies.	Project applicant or designee	**Pre-construction:** Prior to issuance of demolition/building permits within the affected in-water areas. **Post-construction:** Prior to final inspection of completed in-water structures within the affected area(s).	City of Alameda
Impact BIO-3: Development facilitated by the proposed project would not have a substantial adverse effect on federally protected wetlands, 'other waters', and navigable waters as defined by Sections 404 and 10 of the Clean Water Act and waters of the State through direct removal, filling, hydrological interruption, or other means.	**Mitigation Measure BIO-3a:** All dredging and in-water construction activities shall be consistent with the standards and procedures set forth in the Long Term Management Strategy for dredging in the San Francisco Bay waters, a program developed by the U.S. Army Corps of Engineers (USACE), the Bay Conservation and Development Commission (BCDC), the Regional Water Quality Control Board (RWQCB), the U.S. Environmental Protection Agency, (EPA), and other agencies, to guide the disposal of dredge materials in an environmentally sound manner.	Submit to the City an approved plan and/or required regulatory permits showing compliance with applicable requirements as specified in the mitigation measure.	Project applicant or designee	Prior to issuance of dredging and construction permits within the affected in-water areas.	City of Alameda
	Mitigation Measure BIO-3b: During project construction, best management practices (BMPs) would be applied to prevent potential pollutants from entering the storm drain system directly, reducing sediment or potentially hazardous runoff from entering receiving waters. Examples of these measures include covering trash receptacles and car wash areas, regular sweeping of paved surfaces, stenciling of storm drain inlets, and installation of full trash capture devices.	Provide construction specifications to City Building Division for review and approval.	Project applicant or designee	Prior to issuance of construction contracts and/or construction bid materials.	City of Alameda

TABLE 4-1 (CONTINUED)
ALAMEDA MARINA MASTER PLAN MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Monitoring Party
Impact BIO-4: Development facilitated by the proposed project would not interfere with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	**Mitigation Measure BIO-4:** The City shall require that the project applicant retain a qualified biologist experienced with bird strike issues to review and approve the design of the building to ensure that it sufficiently minimizes the potential for bird strikes. The City may also consult with resource agencies such as the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or others, as it determines to be appropriate during this review. The project applicant shall provide to the City a written description of the measures and features of the building design that are intended to address potential impacts on birds. The design shall include some of the following measures or measures that are equivalent to, but not necessarily identical to, those listed below, as new, more effective technology for addressing bird strikes may become available in the future: • Employ design techniques that create "visual noise" via cladding or other design features that make it easy for birds to identify buildings as such and not mistake buildings for open sky or trees; • Decrease continuity of reflective surfaces using "visual marker" design techniques, which techniques may include: – Patterned or fritted glass, with patterns at most 28 centimeters apart, – One-way films installed on glass, with any picture or pattern or arrangement that can be seen from the outside by birds but appear transparent from the inside, – Geometric fenestration patterns that effectively divide a window into smaller panes of at most 28 centimeters, and/or – Decals with patterned or abstract designs, with the maximum clear spaces at most 28 centimeters square. • Up to 60 feet high on building facades facing the shoreline, decrease reflectivity of glass, using design techniques such as plastic or metal screens, light-colored blinds or curtains, frosting of glass, angling glass towards the ground, UV-A glass, or awnings and overhangs; • Eliminate the use of clear glass on opposing or immediately adjacent faces of the building without intervening interior obstacles such that a bird could perceive its flight path through the glass to be unobstructed; • Mute reflections in glass using strategies such as angled glass, shades, internal screens, and overhangs; and • Place new vegetation sufficiently away from glazed building facades so that no reflection occurs. Alternatively, if planting of landscapes near a glazed building façade is desirable, situate trees and shrubs immediately adjacent to the exterior glass walls, at a distance of less than three feet from the glass. Such close proximity will obscure habitat reflections and will minimize fatal collisions by reducing birds' flight momentum. ***Lighting.*** The project applicant shall ensure that the design and specifications for buildings implement design elements to reduce lighting usage, change light direction, and contain light. These include, but are not limited to, the following general considerations that should be applied wherever feasible throughout the proposed project to reduce night lighting impacts on avian species: • Avoid installation of lighting in areas where not required for public safety • Examine and adopt alternatives to bright, all-night, floor-wide lighting when interior lights would be visible from the exterior or exterior lights must be left on at night, including: – Installing motion-sensitive lighting – Installing task lighting – Installing programmable timers – Installing fixtures that use lower-wattage, sodium, and yellow-red spectrum lighting. • Install strobe or flashing lights in place of continuously burning lights for any obstruction lighting. • Where exterior lights are to be left on at night, install fully shielded lights to contain and direct light away from the sky.	Submittal of building, lighting, and structural plans to the City Building Division that meet the requirements of the bird-strike avoidance specifications as specified in the mitigation measure; preparation of education materials for future building occupants; peer review and approval of all of the above by a qualified biologist with appropriate expertise, with oversight by City staff; documentation of all of the above as specified in the mitigation measure.	Project applicant or designee	**Pre-construction:** Prior to issuance of building permits for each project phase. **Post-construction documentation:** Prior to issuance of building permits for each project phase.	City of Alameda

TABLE 4-1 (CONTINUED)
ALAMEDA MARINA MASTER PLAN MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Monitoring Party
	Antennae, Monopole Structures, and Rooftop Elements. The City shall ensure, as a condition of approval for every building permit, that buildings minimize the number of and co-locate rooftop-antennas and other rooftop equipment, and that monopole structures or antennas on buildings, in open areas, and at sports and playing fields and facilities do not include guy wires. ***Educating Residents and Occupants.*** The City shall ensure, as a condition of approval for every building permit, that the project applicant agrees to provide educational materials to building tenants, occupants, and residents encouraging them to minimize light transmission from windows, especially during peak spring and fall migratory periods, by turning off unnecessary lighting and/or closing window coverings at night. The City shall review and approve the educational materials prior to building occupancy. ***Documentation.*** The project applicant and/or City shall document undertaking the activities described in this mitigation measure and maintain records that include, among others, the written descriptions provided by the building developer of the measures and features of the design for each building that are intended to address potential impacts on birds, and the recommendations and memoranda prepared by the qualified biologist experienced with bird strikes who reviews and approves the design of any proposed projects to ensure that they sufficiently minimize the potential for bird strikes.				
Cultural Resources					
Impact CUL-1: Project implementation would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.	**Mitigation Measure CUL-1a:** ***Treatment of Historic Properties (Buildings 16 19 and 27).*** Alterations, to the exteriors of Buildings 16, 19 and 27, shall conform to the Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, if feasible (NPS, 1995) and PRC 5024.5.	Placement of specified mitigation requirements within the project plans for each phase of project development; provide construction specifications to City Building Division for review prior to construction bid solicitation and/or contract finalization.	Project applicant or designee	Prior to issuance of construction contracts and/or construction bid solicitation.	City of Alameda
	Mitigation Measure CUL-1b: ***Documentation.*** The project proponent shall prepare a treatment plan including but not limited to photo documentation and public interpretation of the Alameda Marina Historic District (Buildings 1, 4, 6, 12, 15, 16, 17, 19, 21, 22, 27, 28, 29, 31, 32, 33, 34, and the graving dock). Photo documentation will be overseen by a Secretary of the Interior–qualified architectural historian, documenting the affected historical resource. in accordance with the National Park Service's Historic American Buildings Survey (HABS) and/or Historic American Engineering Record (HAER) standards. Such standards typically include large-format photography using (4x5) negatives, written data, and copies of original plans if available. The HABS/HAER documentation packages will be archived at local libraries and historical repositories, as well as the Northwest Information Center of the California Historical Resources Information System.	Submit to the City a treatment plan for approval that meets the requirements of the mitigation; carry out the requirements of the approved plan; provide evidence of completion.	Project applicant or designee	Prior to issuance of demolition permits for affected areas.	City of Alameda
	Mitigation Measure CUL-1c: ***Interpretive Display.*** Public interpretation of historical resources shall be provided and could include a plaque, kiosk, or other method of describing the Alameda Marina Historic District's historic or architectural importance to the general public. The design and placement of the display(s) shall be reviewed and approved by the City of Alameda Historic Advisory Board.	Submit to the City for approval an interpretive plan that meets the requirements of the mitigation; submit designs for interpretive displays for approval; provide evidence of completion.	Project applicant or designee	**Pre-construction:** Prior to issuance of building permits for each project phase. **Post-construction documentation:** Prior to issuance of building permits for each project phase.	City of Alameda

TABLE 4-1 (CONTINUED)
ALAMEDA MARINA MASTER PLAN MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Monitoring Party
Impact CUL-2: Project construction could cause a substantial adverse change in the significance of an archaeological resource, including those determined to be a historical resource defined in Section 15064.5 or a unique archaeological resource defined in PRC 21083.2.	**Mitigation Measure CUL-2a:** ***Archaeological Resources Management Plan.*** During the preliminary design for development within the project area, and prior to submittal of a building permit or grading application to the City of Alameda, the project applicant shall undertake the following: • ***Preservation in Place.*** A qualified archaeologist, in consultation with the City of Alameda, the project applicant, and the appropriate Native American representative(s) shall determine whether preservation in place of site CA-ALA-11 is feasible. Consistent with CEQA Guidelines Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If it is determined that preservation in place is not feasible for the resource and another type of mitigation would better serve the interests protected by CEQA, mitigation shall include testing and data recovery through archaeological investigations and the project applicant shall undertake the following: • ***Archaeological Resources Management Plan.*** Because a significant archaeological resource (CA-ALA-11) has been previously identified in the project area, the project proponent shall retain a Secretary of the Interior-qualified archaeologist, in consultation with a Native American representative(s), to prepare and implement an Archaeological Resources Management Plan (ARMP). The ARMP shall include a preliminary testing program to identify the types of expected archaeological materials, the testing methods to be used to define site boundaries and constituents, and the locations recommended for testing. The purpose of the testing program will be to determine to the extent possible the presence or absence of archaeological materials in the proposed areas of disturbance for the project and to determine whether those materials contribute to the significance of site CA-ALA-11. If a significant contributing element to the site is in the project area, the project proponent shall conduct a data recovery program as outlined in the ARMP. The ARMP will include how the data recovery program would preserve the significant information the archaeological resource is expected to contain. Treatment would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim of targeting the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the project. The ARMP shall include provisions for analysis of data in a regional context; reporting of results within a timely manner and subject to review and comments by the appropriate Native American representative, before being finalized; curation of artifacts and data at a local facility acceptable to the City and appropriate Native American representative; and dissemination of final confidential reports to the appropriate Native American representative, the Northwest Information Center of the California Historical Resources Information System and the City.	Submit plan for approval that meets the requirements of the mitigation measure.	Project applicant or designee	Prior to issuance of construction contracts and/or construction bid solicitation.	City of Alameda
	Mitigation Measure CUL-2b: ***Inadvertent Discovery of Archaeological Resources***. During construction outside of known archaeological site boundaries, if prehistoric or historic-era cultural materials are encountered, all construction activities within 100 feet shall halt and the City shall be notified. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; artifact filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. The project applicant shall ensure that a Secretary of the Interior-qualified archaeologist inspect the find within 24 hours of discovery. If the find is determined to be potentially significant, the archaeologist, shall follow the guidelines provided in Mitigation Measure CUL-2a above.	Submit for approval a plan for inadvertent discovery; incorporate requirements into the design and construction specifications; demonstrate retainment of qualified archaeologist to be available in the event of an inadvertent discovery; comply with terms of Mitigation Measure CUL-2a if a discovery is found to be potentially significant.	Project applicant or designee	Prior to issuance of construction contracts and/or construction bid materials.	City of Alameda

TABLE 4-1 (CONTINUED)
ALAMEDA MARINA MASTER PLAN MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Monitoring Party
Impact CUL-3: Project construction could disturb human remains, including those interred outside of formal cemeteries.	**Mitigation Measure CUL-3:** ***Inadvertent Discovery of Human Remains.*** Pursuant to Section 7050.5 of the Health and Safety Code, and Section 5097.94 of the Public Resources Code of the State of California, the project applicant shall ensure the following: • Project construction personnel shall be informed of the potential of encountering human remains during construction, and the proper procedures to follow in the event of the discovery of human remains during construction. • In the event of the discovery of human remains during construction, work shall stop in that area and within 100 feet of the find. The Alameda County Coroner shall be notified and shall make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to their authority, they shall notify the Native American Heritage Commission who shall identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this State law, then the project applicant shall re-inter the human remains and items associated with Native American burials on the property in a location not subject to further ground disturbance.	Incorporate requirements into the design and construction specifications; comply with mitigation if remains are found.	Project applicant or designee	Prior to issuance of construction contracts and/or construction bid materials.	City of Alameda
Impact CUL-4: Project construction could cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074.	**Mitigation Measure CUL-4:** ***Tribal Cultural Resources Interpretive Program.*** In consultation with the affiliated Native American tribal representatives, the proposed project shall be redesigned so as to avoid any adverse effect on the significant tribal cultural resource, if feasible. If preservation in place of the tribal cultural resource is not a sufficient or feasible option, the project applicant shall implement an interpretive program of the tribal cultural resource in consultation with affiliated tribal representatives. The plan shall identify, as appropriate, proposed locations for installations or displays, the proposed content and materials of those displays or installation, the producers or artists of the displays or installation, and a long term maintenance program. The interpretive program may include artist installations, preferably by local Native American artists, oral histories with local Native Americans, artifacts displays and interpretation, and educational panels or other informational displays.	Submit to the City for approval an interpretive plan that meets the requirements of the mitigation; submit designs for interpretive displays for approval; provide evidence of completion.	Project applicant or designee	**Pre-construction:** Prior to issuance of building permits for each project phase. **Post-construction documentation:** Prior to issuance of building permits for each project phase.	City of Alameda
Hazards and Hazardous Materials					
Impact HAZ-1: Demolition of the existing structures on the project site which likely contain hazardous building materials—such as lead-based paint, asbestos, and PCBs—could potentially expose workers, the public, or the environment to hazardous materials from the transport, use, or disposal of these hazardous materials and waste.	**Mitigation Measure HAZ-1a:** Prior to issuance of any demolition permit, the project applicant shall submit to the Alameda County Department of Environmental Health a hazardous building material assessment prepared by qualified licensed contractors for any structure intended for demolition indicating whether ACMs, LBP or lead-based coatings, and/or PCB-containing equipment, are present.	Submit appropriate assessment, disposal plans and/or permits to the City Building Division.	Project applicant or designee	Prior to issuance of demolition permits.	City of Alameda
	Mitigation Measure HAZ-1b: If the assessment required by Mitigation Measure HAZ-1a indicates the presence of ACMs, LBP, and/or PCBs, the project applicant shall create and implement a health and safety plan in accordance with local, state, and federal requirements to protect demolition and construction workers and the public from risks associated with such hazardous materials during demolition or renovation of affected structures.	Submit health and safety plan meeting the requirements of the mitigation measure for review and approval by the City Building Division.	Project applicant or designee	Prior to issuance of building permits.	City of Alameda
	Mitigation Measure HAZ-1c: If the assessment required by Mitigation Measure HAZ-1a finds asbestos, the project applicant shall prepare an asbestos abatement plan and shall ensure that asbestos abatement is conducted by a licensed contractor prior to building demolition. Abatement of known or suspected ACMs shall occur prior to demolition or construction activities that would disturb those materials. Pursuant to an asbestos abatement plan developed by a state-certified asbestos consultant and approved by the City, all ACMs shall be removed and appropriately disposed of by a state certified asbestos contractor.	Submit appropriate disposal plans and/or permits to the satisfaction of the City Building Division. Submit remediation verification to the satisfaction of the City Building Division, in compliance with applicable laws and regulations.	Project applicant or designee	**Pre-demolition:** Prior to issuance of demolition permits. **Post-demolition:** Prior to issuance of building permits.	City of Alameda

TABLE 4-1 (CONTINUED)
ALAMEDA MARINA MASTER PLAN MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Monitoring Party
	Mitigation Measure HAZ-1d: If the assessment required by Mitigation Measure HAZ-1a finds presence of LBP, the project applicant shall develop and implement a LBP removal plan. The plan shall specify, but not be limited to, the following elements for implementation: 1. Develop a removal specification approved by a Certified Lead Project Designer. 2. Ensure that all removal workers are properly trained. 3. Contain all work areas to prohibit off-site migration of paint chip debris. 4. Remove all peeling and stratified LBP on building and non-building surfaces to the degree necessary to safely and properly complete demolition activities according to recommendations of the survey. The demolition contractor shall be responsible for the proper containment and/or disposal of intact LBP on all materials to be cut and/or removed during the demolition. 5. Provide on-site personnel and area air monitoring during all removal activities to ensure that workers and the environment are adequately protected by the control measures used. 6. Clean up and/or vacuum paint chips with a high efficiency particulate air (HEPA) filter. 7. Collect, segregate, and profile waste for disposal determination. 8. Properly dispose of all waste.	Submit appropriate disposal plans and/or permits to the satisfaction of the City Building Division. Submit remediation verification to the satisfaction of the City Building Division, in compliance with applicable laws and regulations.	Project applicant or designee	**Pre-demolition:** Prior to issuance of demolition permits. **Post-demolition:** Prior to issuance of building permits.	City of Alameda
	Mitigation Measure HAZ-1e: If the assessment required by Mitigation Measure HAZ-1a finds presence of PCBs, the project applicant shall ensure that PCB abatement in compliance with applicable regulations is conducted prior to building demolition or renovation. PCBs shall be removed by a qualified contractor and transported in accordance with Caltrans requirements.	Submit appropriate disposal plans and/or permits to the satisfaction of the City Building Division. Submit remediation verification to the satisfaction of the City Building Division, in compliance with applicable laws and regulations.	Project applicant or designee	**Pre-demolition:** Prior to issuance of demolition permits. **Post-demolition:** Prior to issuance of building permits.	City of Alameda
Impact HAZ-2: Construction at the project site could potentially disturb soil and groundwater impacted by historical hazardous material use, which could expose construction workers, the public, or the environment to adverse conditions related to the transport, use, or disposal of hazardous materials and waste.	**Mitigation Measure HAZ-2a:** Prior to issuance of any demolition permit, the project applicant shall submit to the City a Site-Specific Environmental Health and Safety Plan (HASP). The HASP shall be consistent with State and federal OSHA standards for hazardous waste operations (California Code of Regulations, Title 8, Section 5192 and 29 Code of Federal Regulations 1910.120, respectively) and any other applicable health and safety standards. The HASP shall include descriptions of health and safety training requirements for onsite personnel and levels of personal protective equipment to be used, and any other applicable precautions to be undertaken to minimize direct contact with soil and to a lesser degree, groundwater if is encountered. The HASP shall be adhered to during construction and excavation activities. All workers onsite should read and understand the HASP and copies shall be maintained onsite during construction and excavation at all times.	Submit health and safety plan meeting the requirements of the mitigation measure for review and approval by the City Building Division.	Project applicant or designee	Prior to issuance of demolition permits.	City of Alameda

TABLE 4-1 (CONTINUED)
ALAMEDA MARINA MASTER PLAN MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Monitoring Party
	Mitigation Measure HAZ-2b: Prior to issuance of a building or grading permit for any ground breaking activities within the project site, the project applicant shall prepare a Site Management Plan (SMP) consistent with US EPA, DTSC, and Water Board standards for incorporation into construction specifications. The SMP shall be present on site at all times and readily available to site workers. The SMP shall specify protocols and requirements for excavation, stockpiling, and transport of soil and for disturbance of groundwater. At a minimum the SMP shall include the following components: 1. ***Dust control measures:*** Dust generation shall be minimized by any or all appropriate measures. These measures may include: a. Misting or spraying water while performing excavation activities and loading transportation vehicles; b. Limiting vehicle speeds onsite to 5 miles per hour; c. Controlling excavation activities to minimize the generation of dust; d. Minimizing drop heights while loading transportation vehicles; and e. Covering any soil stockpiles generated as a result of excavating soil potentially impacted by contaminants of concern with plastic sheeting or tarps. 2. ***Decontamination measures:*** Decontamination methods shall include scraping, brushing, and/or vacuuming to remove dirt on vehicle exteriors and wheels. In the event that these dry decontamination methods are not adequate, methods such as steam cleaning, high-pressure washing, and cleaning solutions shall be used, as necessary, to thoroughly remove accumulated dirt and other materials. Wash water resulting from decontamination activities shall be collected and managed in accordance with all applicable laws and regulations. 3. ***Stormwater pollution control measures:*** Should rainfall occur during construction on exposed soils at the site stormwater pollution controls shall be implemented to minimize stormwater runoff from exposed soil containing contaminants of concern at the site and to prevent sediment from leaving the site, in accordance with all laws and regulations. Stormwater pollution controls shall be based on BMPs to comply with State and local regulations. Sediment and erosion protection controls may include but are not limited to: a. Constructing berms or erecting silt fences at entrances to the project site; b. Placing straw bale barriers around catch basins and other entrances to the storm drains; c. During significant rainfall events, covering with plastic sheeting or tarps any soil stockpiles generated as a result of excavating soil potentially impacted by contaminants of concern. 4. ***Field screening of potential contaminated soil and suspect contamination discovery:*** Potentially contaminated soil shall be either direct loaded using the profile data associated with Stellar Environmental Solutions' October 2015 report or stockpiled for additional sampling and analyses to define the contamination fate after the excavation stage. If more the one year elapses between the soil profiling and the excavation stage stockpiling, sampling may be required by a regulated landfill. Trained (with 40-hour hazwopper and associated updates) environmental personnel shall be onsite to do the stockpile sampling and be on-call to deal with any suspect contamination discovery. Personnel will monitor for potentially contaminated soils by visual screening, noting any contaminant odors, and utilizing a photoionization detector (PID) to field measure any VOCs during the excavation activity. Monitoring parameters shall be recorded at intervals of approximately 1 hour or less.	Submit appropriate plans to the satisfaction of the City Building Division. Submit remediation verification to the satisfaction of the City Building Division, in compliance with applicable laws and regulations.	Project applicant or designee	**Pre-demolition:** Prior to issuance of demolition permits. **Post-demolition:** Prior to issuance of building permits.	City of Alameda
Impact HAZ-5: Development of the project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and could result in a safety hazard to the public or environment through exposure to previous contamination of soil or groundwater.	**Mitigation Measure HAZ-3:** Prior to issuance of a building or grading permit for any ground breaking activities within the project site, the project applicant shall prepare a Remedial Risk Management Plan (RRMP). The RRMP shall be developed and followed by current and future owners, tenants, and operators. The RRMP shall include the implementation of any needed corrective action remedies and engineering design.	Submit appropriate plans to the satisfaction of the City Building Division. Submit remediation verification to the satisfaction of the City Building Division, in compliance with applicable laws and regulations.	Project applicant or designee	**Pre-demolition:** Prior to issuance of demolition permits. **Post-demolition:** Prior to issuance of building permits.	City of Alameda
Hydrology and Water Quality					
Impact HYD-4: Development of the proposed project would not substantially contribute to runoff	**Mitigation Measure HYD-1:**	Submit appropriate plan meeting the requirements of the mitigation measure for review and approval	Project applicant or designee	Prior to issuance of building	City of Alameda

TABLE 4-1 (CONTINUED)
ALAMEDA MARINA MASTER PLAN MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Monitoring Party
water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	The City shall ensure that future project applicants implement Integrated Pest Management measures to reduce fertilizer and pesticide contamination of receiving waters, as follows: • Prepare and Implement an Integrated Pest Management Plan (IPM) for all common landscaped areas. The IPM shall be prepared by a qualified professional and shall recommend methods of pest prevention and turf grass management that use pesticides as a last resort in pest control. Types and rates of fertilizer and pesticide application shall be specified. • The IPM shall specify methods of avoiding runoff of pesticides and nitrates into receiving storm drains and surface waters or leaching into the shallow groundwater table. Pesticides shall be used only in response to a persistent pest problem that cannot be resolved by non-pesticide measures. Preventative chemical use shall not be employed. • The IPM shall fully integrate considerations for cultural and biological resources into the IPM with an emphasis toward reducing pesticide application.	by the City Building Division.		permits.	
Noise					
Impact NOI-1: Construction of proposed project elements could expose persons to or generate noise levels in excess of the City noise standards or result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	**Mitigation Measure NOISE-1a:** The applicant shall create and implement development-specific noise and vibration reduction plans, which shall be enforced via contract specifications. Contractors may elect any combination of legal, non-polluting methods to maintain or reduce noise and vibration to threshold levels or lower, as long as those methods do not result in other significant environmental impacts or create a substantial public nuisance. In addition, the applicant shall require contractors to limit construction activities to daytime hours between 7:00 am and 7:00 pm Monday through Friday and 8:00 am to 5:00 pm on Saturdays. The plan for attenuating construction-related noises shall be implemented prior to the initiation of any work that triggers the need for such a plan.	Submit construction noise and vibration management plan meeting the requirements of the mitigation measure to the City Building Division for review and approval; incorporate requirements thereof into the project plans, to the satisfaction of the City Building Division.	Project applicant or designee	Prior to issuance of construction contracts and/or construction bid solicitation materials.	City of Alameda
	Mitigation Measure NOISE-1b: To reduce pile driving noise, “vibratory” pile driving or drilled and cast-in-place piles shall be used wherever feasible. The vibratory pile driving technique, despite its name, does not generate vibration levels higher than the standard pile driving technique. It does, however, generate lower, less-intrusive noise levels.	Indicate specified requirements on project plans and requests for bids of preference for vibratory pile driving techniques, subject to review and approval by the City Building Division.	Project applicant or designee	Prior to issuance of construction contracts and/or construction bid solicitation materials.	City of Alameda
Impact NOI-3: Traffic and equipment operations associated with the proposed project could result in a substantial permanent increase in ambient noise levels in the vicinity or above levels existing without the project.	**Mitigation Measure NOISE-2a:** Acoustical studies, describing how the exterior and interior noise standards will be met, shall be required for all new residential or noise sensitive developments exposed to environmental noise greater than CNEL 60 dBA, or one-family dwellings not constructed as part of a subdivision requiring a final map exposed to environmental noise greater than CNEL 65 dBA. The studies should also satisfy the requirements set forth in Title 24, Section 1207, of the California Building Code, Noise Insulation Standards, for multiple-family uses, regulated by Title 24.	Submit indicated acoustical studies to City Building Division for review and approval, and demonstrated compliance with recommendations therein required to meet the specifications of the mitigation measure.	Project applicant or designee	Prior to issuance of building permits.	City of Alameda
	Mitigation Measure NOISE-2b: The applicant shall demonstrate through its acoustical studies that the proposed project will comply with maximum noise levels outlined in the City’s Noise Ordinance and the average sound level goals outlined in the City’s General Plan.	Submittal of acoustical studies to City Building Division for review and approval, wherein compliance with City’s General Plan can be verified.	Project applicant or designee	Prior to issuance of building permits.	City of Alameda
Transportation and Traffic					
Impact TRA-1: The proposed project would not exceed the regional VMT per capita minus 15 percent.	**Mitigation Measure TRA-1:** To reduce the amount of VMT generated by the project, as well as the number of automobile trips generated by the project and to reduce automobile LOS impacts, the project shall prepare a Transportation Demand Management (TDM) Plan and funding program for Planning Board review and approval. The TDM plan shall include the following measures to reduce VMT and vehicle trips, particularly single-occupant vehicle trips, by project residents, workers, and visitors.: • All residents and employers at Alameda Marina will pay annual fees to support supplemental transit services and trip reduction services for the residents and employees. • All residents and employees will be provided with AC Transit Easy Passes, which will provide access to all of AC Transit’s services including the San Francisco express commuter buses. The cost of the passes will be included in the mandatory assessments on each unit, which dis-incentives future residents who prefer to drive alone and do not want to use transit. • Residents of the non-townhome units, who wish to have cars, will be required to lease	Submit Transportation Demand Management (TDM) Plan for review and approval by the City of Alameda; submit annual TDM monitoring plan for review and approval by the City of Alameda.	Project applicant or designee	**Initial submittal of TDM(s):** Prior to issuance of building permits for each project phase. **Submittal of TDM monitoring reports:** On an annual basis.	City of Alameda

TABLE 4-1 (CONTINUED)
ALAMEDA MARINA MASTER PLAN MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Monitoring Party
	parking spaces on a monthly basis in a shared parking lot or structure. The cost of the parking will be "unbundled" from the cost of the residential unit, which provides a financial incentive for residents to reduce car ownership and take advantage of the AC Transit passes, which are "bundled" into the cost of their residential units. (The 162 townhomes will have private parking.) • The project residents will be members of the Alameda Transportation Management Agency, which will provide transportation information services to all of the residents through a TMA website and through annual surveys of resident transportation needs. • The project will provide access to car share and guaranteed ride home services to make it easier for residents and employees to reduce their dependence on a private automobile and increase use of project-provided transit services. • Resident annual assessments in the Northern Waterfront area currently fund supplemental commute hour service on the AC Transit Line 19, which provides direct service to Fruitvale and 12th Street BART stations. Future assessments received from project residents and employers will allow for additional transit services and future water shuttle services designed to serve the waterfront developments along the Estuary in Alameda and Oakland and connect the project sites to the regional ferry services provided from Jack London Square in Oakland and the Main Street Terminal in Alameda.				
Impact TRA-3: In the event that the planned Clement Avenue extension is not completed prior to project opening, the proposed project could increase traffic volumes at intersections on Buena Vista Avenue such that traffic operations could deteriorate to substandard conditions.	**Mitigation Measure TRA-3:** The project shall pay a fair share contribution to the cost of the Clement Avenue extension from Atlantic Avenue to Grand Street. The fair share contribution shall be calculated based upon a traffic study to calculate the fair share contribution of each Northern Waterfront development project including the Del Monte Warehouse Project, the Encinal Terminals Project, the Wind River fifth building project, and Alameda Marina, which will contribute traffic trips to the Clement Avenue Extension. The City shall require all developers to contribute their fair share as determined by the traffic study. The Alameda Marina fair share contribution shall be paid on a pro-rata basis for each residential phase of the Alameda Marina project (number of units in phase divided by total number of units in project multiplied by the fair share contribution). Each portion of the fair share contribution shall be paid prior to issuance of the first building permit for the current residential phase if work on the Clement Avenue extension has been initiated by another developer of a Northern Waterfront development project. If the work has not been initiated by another developer prior to issuance of the first building permit for Alameda Marina, the contribution shall be made prior to issuance of the first residential Certificate of Occupancy on the property.	Pay fees per the requirements of the mitigation.	**Traffic study:** City's traffic consultant. **Payment of fees:** Project applicant or designee	Per the terms of the mitigation.	City of Alameda
Impact TRA-10: Development facilitated by the proposed project could potentially be inconsistent with adopted polices, plans, and programs supporting alternative transportation.	**Mitigation Measure TRA-4:** The project shall, consistent with the City of Alameda Bicycle Master Plan, provide a Class I bicycle path along the northern waterfront of the project site and ensure that the path would connect to adjacent future bicycle facilities.	Submit design and construction specifications for pathway; incorporate pathway into the project plans, to the satisfaction of the City Building Division.	Project applicant or designee	Prior to issuance of construction contracts and/or construction bid solicitation materials.	City of Alameda
Utilities and Service Systems					
Impact UTL-2: The proposed project would not have wastewater service demands that would result in a determination by the service provider that it does not have adequate capacity to serve projected demand, necessitating the construction of new or expanded wastewater treatment facilities.	**Mitigation Measure UTL-2:** ***Sewer Design.*** The project sponsors shall: 1) Replace or rehabilitate any existing sanitary sewer collection systems, including sewer lateral lines, to ensure that such systems and lines are free from defects or, alternatively, disconnected from the sanitary sewer system; and 2) Ensure any new wastewater collection systems, including new lateral lines, for the project are constructed to prevent infiltration and inflow (I&I) to the maximum extent feasible while meeting all requirements contained in the Regional Private Sewer Lateral Ordinance and applicable municipal codes or City ordinances.	Comply with terms of the mitigation measure to the satisfaction of the City Department of Public Works and applicable utility providers.	Project applicant or designee	Prior to issuance of first occupancy permit.	City of Alameda

ALAMEDA MARINA MASTER PLAN

Draft Environmental Impact Report
SCH # 2016102064

Prepared for
Alameda Marina, LLC

December 2017

ESA

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CHAPTER 1
Introduction

1.1 Overview

This Environmental Impact Report (EIR) is an informational document intended to disclose to the public and decision-makers the environmental effects of the Alameda Marina Master Plan (the project or proposed project). This document assesses the direct, indirect, and cumulative environmental impacts that could result from implementation of the project. The analyses in this document are based upon information submitted by Alameda Marina, LLC (the applicant) in an application to the City of Alameda for approval of a Master Plan and subsequent implementing approvals, including but not limited to Planned Development Plan approvals, subdivision maps, and building specific design review approvals. This EIR is intended as an informational document that, in itself, does not determine whether the project should be approved, but informs the public and local officials in the planning and decision-making process.

1.1.1 Background

Alameda Marina is a private/public-owned site comprised of three parcels. The southern portion of the Alameda Marina property is owned in fee by Pacific Shops, Inc. (PSI). Most of the northern portion of the Alameda Marina property is comprised of two parcels owned by the City of Alameda in trust for the State of California and leased to PSI.

This EIR evaluates the proposed Master Plan, as currently proposed, and a detailed project description, the project objectives, and further information about the project site can be found in Chapter 3, *Project Description*.

1.2 Environmental Review under the California Environmental Quality Act

The proposed Alameda Marina Master Plan approvals constitute a "project" as defined by, and are subject to the requirements of, the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.) and the "CEQA *Guidelines*" (California Code of Regulations, Title 14, Section 15000 et seq.). For purposes of CEQA, the term "project" refers to the whole of an action which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA *Guidelines* Section 15378). As the principal public agency responsible for approving the project, the City of

Alameda is the "lead agency" overseeing and administering the CEQA environmental review process.

As set forth in the provisions of CEQA *Guidelines* Section 15126.4, before deciding whether to approve a project, public agencies must consider the significant environmental impacts of the project and must identify feasible measures to minimize those impacts. Pursuant to CEQA *Guidelines* Section 15064, if any aspect of the proposed project, either individually or cumulatively, may cause a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial, an Environmental Impact Report (EIR) must be prepared. The City of Alameda has determined that the size, scale, and potential impacts resulting from the proposed project require the preparation of an EIR.

This EIR is a factual informational document, prepared in conformance with CEQA, and written for the purpose of making the public and decision-makers aware of the environmental consequences of the proposed project. For any consequence, or project impact, that is considered "significant," the EIR identifies mitigation measures, where feasible, to reduce or avoid the significant impact. The EIR also considers the objectives of the project and identifies whether there might be alternative ways of accomplishing those objectives while avoiding or substantially reducing the project's impacts.

Before any action may be taken to approve the project, the City of Alameda must certify that it has reviewed and considered the information in the EIR and that the EIR has been completed in conformity with the requirements of CEQA. Certification of the EIR does not approve or deny the proposed project.

1.2.1 Notice of Preparation

Per the requirements of CEQA for the initiation of environmental review, on October 27, 2016, the City sent a Notice of Preparation (NOP) to the State Clearinghouse [SCH No. 2016102064], responsible and trustee government agencies, organizations, and individuals potentially interested in the project. The NOP requested that agencies with regulatory authority over any aspect of the project describe that authority and identify relevant environmental issues that should be addressed in the EIR. Interested members of the public were also invited to comment. A scoping meeting was held on November 14, 2016.

Based on input from the public, and following consultation with the City, a revised Master Plan was submitted in May, 2017, and a revised NOP was released on July 13, 2017. The NOPs and the comments received on the NOPs are included in **Appendix A** of this EIR. As discussed in the NOPs and per the provisions of CEQA, the City did not prepare a CEQA Initial Study prior to preparation of the EIR, because the City determined that it was clear at the time of the issuance of the NOP that an EIR was required (CEQA *Guidelines* Section 15060[d]).

1.2.2 Draft EIR

This document and all attachments hereto constitute the Draft EIR. The Draft EIR contains a description of the project, including the project objectives, description of the environmental

setting, identification of project impacts, identification of recommended mitigation measures to avoid or reduce impacts found to be potentially significant, identification of impacts after the implementation of recommended mitigation measures, identification of alternative ways of accomplishing the project's objectives while avoiding or reducing the project's impacts, and a comparative analysis of those alternatives (see Section 1.3, below). The City has filed a Notice of Completion (NOC) for the Draft EIR with the Governor's Office of Planning and Research to begin the public review period (Public Resources Code, Section 21161).

Public Notice and Public Review

This Draft EIR is available for public review for a 45-calendar-day period, during which time written comments on the Draft EIR may be submitted to the City of Alameda. A public hearing will also be held on the Draft EIR, during which public comments may also be submitted. The date of the public hearing will be posted on the City's website for the Alameda Marina Master Plan project (https://alamedaca.gov/alameda-marina-project). Responses to all comments received on environmental issues regarding the Draft EIR and submitted within the specified review period will be prepared and included in the Final EIR.

All comments or questions regarding the Draft EIR should be addressed to:

Andrew Thomas, AICP
Assistant Community Development Director
Planning and Building Department
2263 Santa Clara Avenue, Room 190
Alameda, CA 94501
athomas@alamedaca.gov

1.2.3 Final EIR and Certification

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to written comments received during the public review period and to oral comments made at the public hearing.

Certification of the EIR and Project Consideration

The City will review and consider the Final EIR. If the City finds that the Final EIR is adequate and complete, the City will certify the Final EIR. Upon review and consideration of the Final EIR, the Alameda City Council may take action to approve, conditionally approve, revise, or reject the proposed project. A decision to approve the project would be accompanied by written findings in accordance with CEQA *Guidelines* Section 15091, and Section 15093, as applicable. A Mitigation Monitoring and Reporting Program, as described below, would also be adopted for project design features and mitigation measures that have been incorporated into the proposed project or adopted as conditions of approval to reduce or avoid significant effects on the environment.

Mitigation Monitoring and Reporting Program

Throughout the EIR, mitigation measures have been clearly identified and presented in language that will facilitate establishment of a mitigation monitoring and reporting program. CEQA *Guidelines* Section 21081.6(a) requires lead agencies to adopt a mitigation monitoring and reporting program to describe measures that have been adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment. The Mitigation Monitoring and Reporting Program will be presented to the City Council for adoption at the time of project approval. This Mitigation Monitoring and Reporting Program will be designed to ensure that these measures are carried out during project implementation.

1.3 Range of Alternatives

CEQA requires that an EIR discuss a range of reasonable alternatives to the proposed project (see Chapter 5). This EIR describes and analyzes a range of reasonable alternatives, including a "No Project" alternative as required under CEQA (CEQA *Guidelines* Section 15126.6[e]); compares the environmental effects of each alternative with the effects of the proposed project; and addresses the relationship of each alternative to the project objectives. The determinations of the Lead Agency concerning the feasibility, acceptance, or rejection of each and all alternatives considered in this EIR will be addressed and resolved in the findings, when the City of Alameda considers approval of the project, as required by CEQA.

1.4 Organization of the Draft EIR

The ***Summary*** (Chapter 2) includes a brief project description and an overview table of the environmental impacts identified by this EIR. The summary table lists the environmental impacts, proposed mitigation measures (including standard conditions), and the level of significance after mitigation. Detailed analysis of these impacts and mitigations is provided in Chapter 4 (*Environmental Setting, Impacts and Mitigation Measures*).

The ***Project Description*** (Chapter 3) describes the project location and boundaries; lists the project objectives; and provides a general description of the characteristics of the proposed project. This chapter also includes a list of the City's required approvals and other agencies that may be responsible for approving aspects of the project.

Environmental Setting, Impacts and Mitigation Measures (Chapter 4) contains a description of the environmental setting (existing physical environmental conditions), the regulatory framework, and the environmental impacts (including cumulative impacts, where relevant) that could result from the proposed project. It includes the thresholds of significance used to determine the significance of adverse environmental effects. The chapter also identifies the mitigation measures and/or standard conditions of approval that would reduce or eliminate the adverse impacts that have been determined to be significant. The impact discussions disclose the significance of the impact both with and without implementation of mitigation measures and/or standard conditions.

Alternatives (Chapter 5) evaluates a range of reasonable alternatives to the proposed project and identifies an environmentally superior alternative, consistent with the requirements of CEQA. The alternatives analyzed are the Reduced Project Alternative (Alternative 1), the Preservation Alternative (Alternative 2), and the No Project/No Development Alternative (Alternative 3).

Other Statutory Sections (Chapter 6) presents growth-inducing effects, significant irreversible changes, a summary of cumulative impacts, significant and unavoidable environmental impacts, and effects found to be less than significant.

Report Preparation (Chapter 7) identifies the authors of the EIR. Persons and documents consulted during preparation of the EIR are listed at the end of each analysis section (Sections 4.1 through 4.14).

Appendices. The NOP, comment letters received on the NOP, and comments from the scoping hearing, as well as supporting documents and technical information for the impact analyses are presented in **Appendices A** through **G**.

1.5 Intended Uses of the EIR

This EIR provides the CEQA compliance documentation upon which the City of Alameda's consideration of, and action on, all applicable land use permits and other approvals (collectively, "approvals") for the proposed project or an alternate may be based. These include all approvals listed in this EIR, as well as any additional approvals that may be necessary to implement the proposed project or alternative, including activities such as planning, construction, operation and maintenance (e.g., use permits, grading permits, building permits, certificates of occupancy and other development-related approvals).

This EIR also provides the CEQA compliance or the basis for NEPA compliance which would be relied upon by Responsible Agencies and Trustee Agencies in considering and acting upon other project approvals.

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CHAPTER 2
Summary

2.1 Introduction

As provided by Section 15123 of the California Environmental Quality Act (CEQA) Guidelines (CEQA *Guidelines*), this chapter provides a brief summary of the proposed Alameda Marina Master Plan project and its consequences. This chapter is intended to summarize in a stand-alone section the proposed project described in Chapter 3 (Project Description), the impacts and mitigation measures discussed in Chapter 4 (Environmental Setting, Impacts, and Mitigation Measures), and the alternatives analysis presented in Chapter 5 (Alternatives to the Proposed Project).

This Environmental Impact Report (Draft EIR) has been prepared to evaluate the anticipated environmental effects of the project in conformance with the provisions of CEQA and the CEQA *Guidelines*. The lead agency, the City of Alameda (City), is the public agency that has the principal responsibility for implementing the project, which includes approving the proposed master plan and other approvals (referred to collectively hereafter as the project or proposed project).

2.2 Regional Location and Project Area

2.2.1 Regional Setting

The project site is located in the City of Alameda in Alameda County, California. The City of Alameda occupies approximately 10.6 square miles of land area immediately south of the City of Oakland and the Oakland-Alameda Estuary (the "Estuary"), east of San Francisco, and north and east of the San Francisco Bay (the "Bay"). Alameda Island makes up approximately 80 percent of the City's land area, with the remainder on Bay Farm Island across the San Leandro Channel. The project site location and regional context are presented in **Figure 3-1**. Regional access to the City of Alameda is provided by a variety of transportation modes. Interstate 880 (I-880) through Oakland—the nearest freeway to the project site—provides regional access for automobiles and transit. Regional traffic accesses the project site via State Route 61 (SR 61) through the Webster-Posey Tubes, the Park Street Bridge, the Miller Sweeney Bridge and the High Street Bridge connecting the island of Alameda and the City of Oakland.

2.2.2 Project Site

The project site, the Alameda Marina, is located at 1815 Clement Avenue, in the City of Alameda, California. The project site is bounded on the west by Alameda Marina Drive, on the north by the Oakland-Alameda Estuary, to the east by a northern extension of Willow Street, and

to the south by Clement Avenue (see **Figure 3-2: Local Vicinity)**. To the west of the site across Alameda Marina Drive lies the Alameda Power Service Center and also an extension of the Fortmann Marina. North of the site across the estuary is Coast Guard Island, and also Union Point Park located along Embarcadero in Oakland. To the east of the site lies the Navy Operational Support Center/Alameda Naval and Marine Corps Reserve Center, and to the south across Clement Avenue is a mixture of light industrial, retail and residential uses. The Park Street business district is approximately 0.7 miles to the southeast and the Webster Street business core is approximately 1.5 miles to the west. Public transportation connections such as the Fruitvale Bay Area Rapid Transit (BART) Station and AC Transit lines are within 2 miles of the site.

The project site is approximately 44 acres, which consists of public tidelands and privately owned land areas. It includes an existing boat marina that covers approximately 17.10 acres with more than a dozen piers and approximately 530 boat slips. The land side of the site contains approximately 250,000 square feet of maritime, commercial and retail, and warehouse, and dry storage uses. Today there are approximately 37 buildings on the site, which cover about 16 percent of the total land area. Most of the buildings were built before 1943 and have been renovated extensively over the decades. More than 80 percent of the land portion of the site is currently paved in asphalt or concrete for circulation and outside boat and vehicle storage, which takes up most of the west and east portions of the site.

2.3 Project Description

The project would include the following components, which would be constructed on the approximately 44-acre Alameda Marina project site:

1. Approximately 160,000 square feet of non-residential commercial space.
2. Approximately 760 residential units comprised of multifamily units and attached townhomes. For the purposes of this EIR, a maximum of 779 units was also analyzed for environmental impacts.
3. A Transportation Demand Management Program that includes transit passes for all residents and employees, annual surveys of resident and employee travel habits, and annual assessments to fund transportation services.
4. Improvements to existing roads on the site and provision of public access at Alameda Marina Drive, Schiller Street, Lafayette Street, Stanford Street, and Willow Street, with Emergency Vehicle Access (EVA) provided between Chestnut Street and Stanford Street.
5. Park areas, paths, trails, and shoreline improvements, including new waterfront and Bay Trail Open Space which would provide a new segment of the San Francisco Bay Trail, providing bicycle and pedestrian access throughout the site, with access to public open space on the site, a maritime boardwalk promenade, parks/maritime amenity areas, and open space areas on both sides of the existing graving dock.
6. A Maritime Commercial Core design, to maintain a working waterfront environment, with limited public waterfront access in this portion of the site.

7. Other components, such as the replacement of existing onsite infrastructure with new systems including:

    - Repair or replacement of approximately 4,000 linear feet of seawalls and bulkheads, including the existing graving dock, which would be retained;
    - Flood and sea level rise protection measures with elevated shorelines and/or floodwalls for sea level rise of a minimum height of 36 inches;
    - Stormwater management system updates that incorporate current stormwater treatment measures for water quality standards, with new inlets and pipelines within project site ROWs and with new outfall structures to the Oakland Estuary;
    - New onsite wastewater collection system to include new pipelines within the project site ROWs with connections to existing buildings to be preserved, new buildings and the Marina uses, connecting to the City of Alameda Sewer System which conveys flow to the EBMUD Interceptor trunk main at Clement Avenue;
    - New potable water distribution throughout the project site to provide domestic and fire water supply;
    - Dry utility updates including electric, natural gas, and telecommunications;
    - Marina (water side) infrastructure updates, including plans for ongoing dredging, dock maintenance, potentially some reconfiguration of Pier 1, and maintenance of the existing graving dock.

The project would be developed in up to four phases, with shoreline and land side infrastructure improvements occurring in each phase as necessary. All private and public improvements within the Master Plan area would be consistent with the requirements of the final Master Plan, and with the Alameda Municipal Code.

2.4 Project Objectives

The Alameda Marina Master Plan builds upon the City's vision for the Northern Waterfront to create a mixed-use development that maintains a maritime focus and offers the chance to integrate existing uses with new opportunities to provide employment, residences, and recreation for current and future residents of the city. The objectives of the Alameda Marina Master Plan are listed below.

CEQA *Guidelines* Section 15124(b) requires the description of the project in an EIR to state the objectives sought by the project.

"A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project."

This section states the project objectives for the CEQA review of the project. Clarifying information is provided for each objective. The project objectives are:

Improve and Enhance the Maritime Commercial Marina

- Maintain Alameda Marina as a working waterfront and retain and/or promote Alameda Marina's maritime uses by creating a Maritime Commercial Core that utilizes the maritime footprint more efficiently.
- Encourage the retention and development of waterfront and maritime-related job and business opportunities that relate to the area's waterfront location.
- Upgrade and rehabilitate facilities, unique buildings, as feasible, and provide land for existing maritime businesses, boat berthing and maintenance, boat storage, and waterfront commercial recreation businesses.
- Provide sea level rise protection and other infrastructure upgrades to bring Alameda Marina up to date to make it a safe and accessible place.

Activate and Reconnect the Community to the Waterfront

- Reconnect the community to the waterfront by extending the existing city grid into the site to allow for additional view corridors and access points through the site to the shoreline edge.
- Create public amenities and opportunities for gathering spaces for existing and future community members by developing new open space areas within and along the shoreline edge with a Bay Trail component.

Create a Dynamic New Neighborhood for Everyone

- Provide housing of various types to fulfill the goals of the City's Housing Element and help meet the City's Regional Housing Need Allocation.
- Provide options for housing that meet the need of a wide demographic that includes universally designed units, affordable, rental, work force market-rate and market-rate units.
- Integrate Alameda Marina's core maritime uses, including those governed by the Tidelands Lease, with renovated and new compatible uses, including various types of housing.
- Develop a mixed-use project that allows for a mix of compatible uses at the site.
- Provide opportunities for the improvement of the existing boat Marina and shoreline infrastructure; maintain and generate new jobs; and create better and new open space and recreational areas.

Provide Financially Sound Development

- Develop an economically sustainable and financially sound new development that can fund the construction of the public facilities and services that are needed to serve the plan area and achieve General Plan objectives, while avoiding any financial impact on the City's ability to provide services to the rest of the City.
- Fulfill the project sponsor's obligations under the Tidelands and Marina Lease.

2.5 Proposed Project Impacts

As provided by the CEQA *Guidelines* Section 15123(b)(1), an EIR must provide a summary of the impacts, mitigation measures and significant impacts after mitigation for a proposed project. This information is presented in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, of this EIR, and summarized in **Table 2-1** at the end of this chapter. The proposed project would result in the following significant and unavoidable impacts:

Impact CUL-1: Project implementation would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.

Impact CUL-4: Project construction could cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074.

Impact C-CUL-1: The project, in combination with past, present, and probable future projects, would substantially contribute to cumulative adverse historic architectural resources impacts.

Impact C-CUL-3: The project, in combination with past, present, and probable future projects, could result in cumulative adverse impacts on tribal cultural resources.

Impact TRA-2: The proposed project would increase traffic volumes such that traffic conditions at the Park Street/Blanding Avenue and Park Street/Clement Avenue intersections would either deteriorate from LOS D to LOS F or the proposed project would increase traffic volumes by three percent or more.

Impact TRA-3: In the event that the planned Clement Avenue extension is not completed prior to project opening, the proposed project could increase traffic volumes at intersections on Buena Vista Avenue such that traffic operations could deteriorate to substandard conditions.

All other impacts from the project on aesthetics; air quality and climate change; biological resources; geology, soils, and paleontological resources; hazards and hazardous materials; hydrology and water quality; land use and planning; noise; population and housing; public services and recreation; and utilities and service systems would be mitigated (when appropriate) to less-than-significant levels.

2.6 Alternatives to the Proposed Project

Chapter 5, Alternatives, analyzes a range of reasonable alternatives to the proposed project, including the Preservation Alternative (Alternative 1), the Extensive Adaptive Reuse Alternative (Alternative 2), the Reduced Project Alternative (Alternative 3), and the No Project/No Development Alternative (Alternative 4).

The analysis of the alternatives is summarized and compared in **Chapter 5**, which provides a summary of impact levels within all environmental topic areas. Overall, the analysis shows that the Preservation Alternative would reduce most of the project's significant impacts, but the alternative would not meet the objectives of the proposed project. The No Project/No Development alternative would also not have the ability to meet the objectives of the proposed project.

Based on the evaluation described in **Chapter 5**, the No Project/No Development alternative and the Preservation Alternative would both be environmentally superior to the proposed project. The No Project/No Development alternative would be the most environmentally superior alternative with the fewest environmental impacts. However, the No Project/No Development alternative does not meet any of the basic objectives of the project.

CEQA requires that that a second alternative be identified when the "No Project" alternative is the environmentally superior alternative (CEQA *Guidelines*, Section 15126.6(e)). Therefore, the **Preservation Alternative** would be the Environmentally Superior Alternative for the purpose of this analysis.

2.7 Comments on Notice of Preparation

Per the requirements of CEQA for the initiation of environmental review, on October 27, 2016 the City sent a Notice of Preparation (NOP) to the State Clearinghouse [SCH No. 2016102064], responsible and trustee government agencies, organizations, and individuals potentially interested in the project. The NOP requested that agencies with regulatory authority over any aspect of the project describe that authority and identify relevant environmental issues that should be addressed in the EIR. Interested members of the public were also invited to comment. A scoping meeting was held on November 14, 2016.

Based on input from the public, and following consultation with the City, a revised Master Plan was submitted in May 2017, and a revised NOP was released on July 13, 2017. The NOPs and the comments received on the NOPs are included in **Appendix A** of this EIR.

2.8 Areas of Controversy

Section 15123(b)(2) of the CEQA *Guidelines* requires that an EIR summary identify areas of controversy known to the lead agency, including those issues raised by other agencies and the public. Issues raised by the public have included concerns regarding land use, population and housing, cultural resources, and transportation and circulation. As a result, these issues are potential areas of controversy.

2.9 Issues to be Resolved

Section 15123(b)(3) of the CEQA *Guidelines* requires that an EIR present the issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects. The major issues to be resolved for the proposed project include decisions by the City of Alameda, as the Lead Agency, as to whether:

- This EIR adequately describes the environmental impacts of the proposed project;
- Recommended mitigation measures should be adopted or modified;
- Additional mitigation measures need to be applied to the proposed project;

- Feasible alternatives exist that would achieve the objectives of the project and reduce significant environmental impacts;
- Significant and unavoidable impacts would occur if the project is implemented; and
- The proposed project should or should not be approved.

TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.1. Aesthetics		
Impact AES-1: The project would not have a substantial adverse effect on a scenic vista nor substantially damage scenic resources.	None required	No impact
Impact AES-2: The project would not substantially degrade the existing visual character or quality of the site and its surroundings.	None required	Less than significant
Impact AES-3: The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	None required	Less than significant
CUMULATIVE IMPACT: **Impact C-AES-1:** The proposed project would not result in a cumulative aesthetics impact when considering the combined effect of the project, and past, present, approved, pending, and reasonably foreseeable future projects.	None required	Less than significant
4.2. Air Quality and Climate Change		
Impact AQ/CC-1: The proposed project would not result in localized construction dust-related air quality impacts; generate construction emissions that would result in a substantial increase of criteria pollutants and precursors for which the air basin is in nonattainment under an applicable federal or state ambient air quality standard; or expose sensitive receptors to substantial concentrations of toxic air contaminants or respirable particulate matter (PM2.5).	**Mitigation Measure AQ/CC-1:** Implementation of Dust Abatement Programs. The project applicant shall be required to demonstrate compliance with all applicable City regulations and operating procedures prior to issuance of building or grading permits, including standard dust control measures. The effective implementation of dust abatement programs, incorporating all of the following dust control measures, would reduce the temporary air quality impact associated with construction dust. • All active construction areas shall be watered two times daily using equipment and staff provided by the project applicant or prime contractor, as needed, to avoid visible dust plumes. Appropriate non-toxic dust palliative or suppressant, added to water before application, may be used. • All trucks hauling soil, sand and other loose materials shall be covered. • All unpaved access roads, parking areas and construction staging areas shall be either paved, watered as necessary to avoid visible dust plumes, or subject to the application of (non-toxic) soil stabilizers. • All paved access roads, parking areas and staging areas at the construction site shall be swept daily with water sweepers. The use of dry power sweeping is prohibited. • If visible soil material is carried onto adjacent public streets, these streets shall be swept daily with water sweepers. The use of dry power sweeping is prohibited.	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.2. Air Quality and Climate Change (cont.)		
Impact AQ/CC-1 (cont.)	• All stockpiles of debris, soil, sand or other materials that can be blown by the wind shall either be covered or watered as necessary to avoid visible dust plumes. • An off-pavement speed limit of 15 miles per hour for all construction vehicles shall be incorporated into the construction contract and enforced by the prime contractor. • All inactive portions of the project site (those areas which have been previously graded, but inactive for a period of ten days or more) shall be watered with an appropriate dust suppressant, covered or seeded. • All earth-moving or other dust-producing activities shall be suspended when the above dust control measures prove ineffective in avoiding visible dust plumes during periods of high winds. The wind speed at which this suspension of activity will be required may vary, depending on the moisture conditions at the project site, but suspension of such activities shall be required in any case when the wind speed exceeds 25 miles per hour. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. • Post a publicly visible sign with the telephone number and person to contact at the City of Alameda regarding dust complaints. The Air District's phone number shall also be visible to ensure compliance with applicable regulations. **Mitigation Measure AQ/CC-2:** The project applicant shall ensure that construction contract specifications include a requirement that all off-road diesel-powered construction equipment used for project improvements shall be equipped with a Level 3 Verified Diesel Emissions Control (VDEC), which would reduce diesel particulate emissions by at least 85 percent.	
Impact AQ/CC-2: The proposed project would not generate operational emissions that would result in a considerable net increase of criteria pollutants or precursors for which the air basin is in nonattainment under an applicable federal or state ambient air quality standard or expose sensitive receptors to substantial concentrations of toxic air contaminants or respirable particulate matter (PM2.5).	None required	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.2. Air Quality and Climate Change (cont.)		
Impact AQ/CC-3: The proposed project would not expose sensitive receptors to substantial pollutant concentrations	None required	Less than significant
Impact AQ/CC-4: The proposed project would not create objectionable odors affecting a substantial number of people.	None required	Less than significant
Impact AQ/CC-5: The proposed project would not conflict with or obstruct the implementation of the applicable air quality plan.	**Mitigation Measure AQ/CC-3:** The City shall require that the following measures be implemented, either by the City or the project applicant, or both in combination, to encourage the use of low- and zero-emission vehicles in travel to and from the project site and construction meeting LEED Silver or equivalent sustainable design standards: • Promote use of clean fuel-efficient vehicles through preferential parking and/or installation of charging stations. • Require LEED Silver certification or equivalent for all new residential structures. • Promote zero-emission vehicles by providing a neighborhood electric vehicle program to reduce the need to have a car or second car as an element of the TDM program.	Less than significant
CUMULATIVE IMPACTS: **Impact C-AQ/CC-1:** The proposed project, when combined with past, present and other reasonably foreseeable development in the vicinity, would not result in cumulative air quality impacts.	None required	Less than significant
Impact C-AQ/CC-2: The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that would have a significant impact on the environment. (Less than Significant for Year 2020 GHG reduction goals, but would be Significant and Unavoidable for Year 2030 GHG reduction goals)	None required	Less than significant
Impact C-AQ/CC-3: The proposed project would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.	None required	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.3 Biological Resources		
Impact BIO-1: The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the United States Fish and Wildlife Service.	**Mitigation Measure BIO-1a:** Prior to the start of in-water construction and maintenance that would require pile driving, the project applicant shall prepare a NMFS-approved sound attenuation monitoring plan to protect fish and marine mammals, if impact pile driving is required for project implementation. This plan shall provide detail on the sound attenuation system, detail methods used to monitor and verify sound levels during pile driving activities, and describe management practices to be taken to reduce impact hammer pile-driving sound in the marine environment to an intensity level of less than 183 dB. The sound monitoring results shall be made available to the NMFS. The plan shall incorporate one or more of the following best management practices (BMPs) to meet the 183 dB performance standard): • To the extent feasible, all pilings shall be installed and removed with vibratory pile drivers only. If feasible, vibratory pile driving shall be conducted following the Corps' "Proposed Procedures for Permitting Projects that will Not Adversely Affect Selected Listed Species in California". USFWS and NOAA completed Section 7 consultation on this document, which establishes general procedures for minimizing impacts to natural resources associated with projects in or adjacent to jurisdictional waters. • An impact pile driver may only be used where necessary to complete installation of larger steel pilings in accordance with seismic safety or other engineering criteria • The hammer shall be cushioned using a 12-inch thick wood cushion block during all impact hammer pile driving operations. • All piling installation using impact hammers shall be conducted between June 1 and November 30, when the likelihood of sensitive fish species being present in the work area is minimal. • If pile installation using impact hammers must occur at times other than the approved work window, the project applicant shall obtain incidental take authorization from NMFS and CDFW, as necessary, to address potential impacts on steelhead trout, chinook salmon, and Pacific herring and implement all requested actions to avoid impacts. • The project applicant shall monitor and verify sound levels during pile driving activities. The sound monitoring results will be made available to NMFS and the City. • In the event that exceedance of noise thresholds established and approved by NMFS occurs, a contingency plan involving the use of bubble curtains or air barrier shall be implemented to attenuate sound levels to below threshold levels.	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.3 Biological Resources (cont.)		
Impact BIO-1 (cont.)	**Mitigation Measure BIO-1b:** During the project permitting phase, any activities requiring in-water work will either proceed under one of the programmatic consultations for federally listed species described above or a project-level BO would be required. Alternatively, the project will obtain Incidental Harassment Authorization (IHA) for marine mammals for dredging or pile driving activities. The project applicant shall also consult with CDFW regarding project impacts on State listed special-status fish species and the potential need for an incidental take permit (ITP). The project applicant shall submit to the City copies of any IHA and/or ITP received or, alternatively, copies of correspondence confirming that an IHA and/or ITP is not required for the project in question. **Mitigation Measure BIO-1c:** As part of the NMFS-approved sound attenuation monitoring plan required for pile driving in Mitigation Measure BIO-1a, the City shall ensure that the project applicant implements these additional actions to reduce the effect of underwater noise transmission on marine mammals. These actions shall include at a minimum: • Establishment of a 1,600-foot (500-meter) safety zone that shall be maintained around the sound source, for the protection of marine mammals in the event that sound levels are unknown or cannot be adequately predicted. • Work activities shall be halted when a marine mammal enters the 1,600-feet (500-meter) safety zone and resume only after the animal has been gone from the area for a minimum of 15 minutes. • A "soft start" technique shall be employed in all pile driving to give marine mammals an opportunity to vacate the area. • Maintain sound levels below 90 dBA when pinnipeds (seals and sea lions) are present. • A NMFS-approved biological monitor will conduct daily surveys before and during impact hammer pile driving to inspect the work zone and adjacent Bay waters for marine mammals. The monitor will be present as specified by NMFS during the impact pile-driving phases of construction. **Mitigation Measure BIO-1d:** Through the Design Review application process, the City shall ensure that the project applicant installs dock lighting on all floating docks and adjacent areas that minimizes artificial lighting of Bay waters by using shielded, low-mounted, and low light-intensity fixtures and bulbs. **Mitigation Measure BIO-1e:** To the extent practicable, construction activities including building renovation, demolition, vegetation and tree removal, and new site construction shall be performed between September 1 and January 31 in order to avoid breeding and nesting season for birds. If these activities cannot be performed during this period, a preconstruction survey for nesting birds shall be conducted by a qualified biologist.	

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.3 Biological Resources (cont.)		
Impact BIO-1 (cont.)	In coordination with the City, surveys shall be performed during breeding bird season (February 1 – August 31) no more than 14 days prior to construction activities listed above in order to locate any active passerine nests within 250 feet of the project site and any active raptor nests within 500 feet of the project site. Building renovation, demolition, tree and vegetation removal, and new construction activities performed between September 1 and January 31 avoid the general nesting period for birds and therefore would not require pre-construction surveys. If active nests are found on either the proposed construction site or within the 500-foot survey buffer surrounding the proposed construction site, no-work buffer zones shall be established around the nests in coordination with CDFW. No renovation, demolition, vegetation removal, or ground-disturbing activities shall occur within a buffer zone until young have fledged or the nest is otherwise abandoned as determined by the qualified biologist. If work during the nesting season stops for 14 days or more and then resumes, then nesting bird surveys shall be repeated, to ensure that no new birds have begun nesting in the area.	
Impact BIO-2: Development facilitated by the proposed project would not have a substantial adverse effect on riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	**Mitigation Measure BIO-2a:** Prior to in-water work, the City shall ensure that the project applicant conducts a pre-construction survey to determine if native oysters, mussels, and eelgrass are present in the Oakland-Alameda Estuary to be affected by the project. • The eelgrass survey shall be conducted according to the methods contained in the California Eelgrass Mitigation Policy and Implementing Guidelines (NMFS, 2014), with the exception that the survey shall be conducted within 120 days (rather than 60 days, as recommended in the CDEMP) prior to the desired construction start date, to allow sufficient time for modification of project plans (if feasible) and agency consultation. • If eelgrass beds or native oysters are found within or immediately adjacent to the construction footprint, the project applicant shall first determine whether avoidance of the beds is feasible. If feasible, impacts to the oyster or eelgrass bed shall be avoided. If complete avoidance is not feasible, the applicant shall request guidance from the National Marine Fisheries Service (or other applicable agency) as to the need and/or feasibility to move affected beds. Any translocation of eelgrass beds shall be conducted consistent with the methods described in the CDEMP and/or those described in Eelgrass Conservation in San Francisco Bay: Opportunities and Constraints (Boyer and Wyllie-Echeverria, 2010). Translocation of oyster beds shall be consistent with methods and recommendations presented in Shellfish Conservation and Restoration in San Francisco Bay: Opportunities and Constraints (Zabin et al., 2010). • If it is not possible to translocate oyster or eelgrass beds, then the City shall ensure that the project applicant provides compensatory mitigation consistent with the CDEMP for eelgrass (a ratio of 3.01:1 [transplant area to impact area]) and a minimum 1:1 ratio for oyster beds.	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.3 Biological Resources (cont.)		
Impact BIO-2 (cont.)	• The relocation or compensatory mitigation site for eelgrass or oyster beds shall be within San Francisco Bay. **Mitigation Measure BIO-2b:** The Marina operators shall prepare educational information regarding sensitive biological resources in the project vicinity and within Bay waters. This information shall be disseminated to all boaters using the marina and shall include, but not be limited to, information educating boat owner/operators about sensitive habitats and species in the Bay and actions they are required to implement to avoid impacts to marine resources. The educational information will be disseminated to visiting boaters through multiple methods including, but not limited to, brochures or pamphlets; marina and/or City websites; boating, cruising, and newspaper periodicals; and social media. The information shall be prepared soliciting input from, and in cooperation with, the National Marine Fisheries Service (NMFS), U.S. Coast Guard (USCG), California State Lands Commission, National Park Service (NPS), California Department of Parks and Recreation (CDPR), Bay Conservation and Development Commission (BCDC), and local organizations active in protecting Bay marine resources, as appropriate. **Mitigation Measure BIO-2c:** The City shall require that the project applicant develop and implement a Marine Invasive Species Control Plan prior to commencement of any in-water work including, but not limited to, construction of wharves and seawalls, dredging, pile driving, and construction of new stormwater outfalls. The plan shall be prepared in consultation with the United States Coast Guard (USCG), RWQCB, and other relevant state agencies. Provisions of the plan shall include but not be limited to the following: • Environmental training of construction personnel involved in in-water work. • Actions to be taken to prevent the release and spread of marine invasive species, especially algal species such as Undaria and Sargasso. • Procedures for the safe removal and disposal of any invasive taxa observed on the removed structures prior to disposal or reuse of pilings, docks, wave attenuators, and other features. • The onsite presence of a qualified marine biologist to assist the contractor in the identification and proper handling of any invasive species on removed equipment or materials. • A post-construction report identifying which, if any, invasive species were discovered attached to equipment and materials following removal from the water, and describing the treatment/handling of identified invasive species. Reports shall be submitted to the City, as well as the USCG and the RWQCB if requested by the agencies.	

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.3 Biological Resources (cont.)		
Impact BIO-3: Development facilitated by the proposed project would not have a substantial adverse effect on federally protected wetlands, 'other waters', and navigable waters as defined by Sections 404 and 10 of the Clean Water Act and waters of the State through direct removal, filling, hydrological interruption, or other means.	**Mitigation Measure BIO-3a:** All dredging and in-water construction activities shall be consistent with the standards and procedures set forth in the Long Term Management Strategy for dredging in the San Francisco Bay waters, a program developed by the U.S. Army Corps of Engineers (USACE), the Bay Conservation and Development Commission (BCDC), the Regional Water Quality Control Board (RWQCB), the U.S. Environmental Protection Agency, (EPA), and other agencies, to guide the disposal of dredge materials in an environmentally sound manner. **Mitigation Measure BIO-3b:** During project construction, best management practices (BMPs) would be applied to prevent potential pollutants from entering the storm drain system directly, reducing sediment or potentially hazardous runoff from entering receiving waters. Examples of these measures include covering trash receptacles and car wash areas, regular sweeping of paved surfaces, stenciling of storm drain inlets, and installation of full trash capture devices.	Less than significant
Impact BIO-4: Development facilitated by the proposed project would not interfere with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	**Mitigation Measure BIO-4:** The City shall require that the project applicant retain a qualified biologist experienced with bird strike issues to review and approve the design of the building to ensure that it sufficiently minimizes the potential for bird strikes. The City may also consult with resource agencies such as the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or others, as it determines to be appropriate during this review. The project applicant shall provide to the City a written description of the measures and features of the building design that are intended to address potential impacts on birds. The design shall include some of the following measures or measures that are equivalent to, but not necessarily identical to, those listed below, as new, more effective technology for addressing bird strikes may become available in the future: • Employ design techniques that create "visual noise" via cladding or other design features that make it easy for birds to identify buildings as such and not mistake buildings for open sky or trees; • Decrease continuity of reflective surfaces using "visual marker" design techniques, which techniques may include: • Patterned or fritted glass, with patterns at most 28 centimeters apart, • One-way films installed on glass, with any picture or pattern or arrangement that can be seen from the outside by birds but appear transparent from the inside, • Geometric fenestration patterns that effectively divide a window into smaller panes of at most 28 centimeters, and/or	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.3 Biological Resources (cont.)		
Impact BIO-4 (cont.)	• Decals with patterned or abstract designs, with the maximum clear spaces at most 28 centimeters square. • Up to 60 feet high on building facades facing the shoreline, decrease reflectivity of glass, using design techniques such as plastic or metal screens, light-colored blinds or curtains, frosting of glass, angling glass towards the ground, UV-A glass, or awnings and overhangs; • Eliminate the use of clear glass on opposing or immediately adjacent faces of the building without intervening interior obstacles such that a bird could perceive its flight path through the glass to be unobstructed; • Mute reflections in glass using strategies such as angled glass, shades, internal screens, and overhangs; and • Place new vegetation sufficiently away from glazed building facades so that no reflection occurs. Alternatively, if planting of landscapes near a glazed building façade is desirable, situate trees and shrubs immediately adjacent to the exterior glass walls, at a distance of less than three feet from the glass. Such close proximity will obscure habitat reflections and will minimize fatal collisions by reducing birds' flight momentum. **Lighting.** The project applicant shall ensure that the design and specifications for buildings implement design elements to reduce lighting usage, change light direction, and contain light. These include, but are not limited to, the following general considerations that should be applied wherever feasible throughout the proposed project to reduce night lighting impacts on avian species: • Avoid installation of lighting in areas where not required for public safety • Examine and adopt alternatives to bright, all-night, floor-wide lighting when interior lights would be visible from the exterior or exterior lights must be left on at night, including: • Installing motion-sensitive lighting • Installing task lighting • Installing programmable timers • Installing fixtures that use lower-wattage, sodium, and yellow-red spectrum lighting. • Install strobe or flashing lights in place of continuously burning lights for any obstruction lighting. • Where exterior lights are to be left on at night, install fully shielded lights to contain and direct light away from the sky.	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.3 Biological Resources (cont.)		
Impact BIO-4 (cont.)	**Antennae, Monopole Structures, and Rooftop Elements.** The City shall ensure, as a condition of approval for every building permit, that buildings minimize the number of and co-locate rooftop-antennas and other rooftop equipment, and that monopole structures or antennas on buildings, in open areas, and at sports and playing fields and facilities do not include guy wires. **Educating Residents and Occupants.** The City shall ensure, as a condition of approval for every building permit, that the project applicant agrees to provide educational materials to building tenants, occupants, and residents encouraging them to minimize light transmission from windows, especially during peak spring and fall migratory periods, by turning off unnecessary lighting and/or closing window coverings at night. The City shall review and approve the educational materials prior to building occupancy. ***Documentation.*** The project applicant and/or City shall document undertaking the activities described in this mitigation measure and maintain records that include, among others, the written descriptions provided by the building developer of the measures and features of the design for each building that are intended to address potential impacts on birds, and the recommendations and memoranda prepared by the qualified biologist experienced with bird strikes who reviews and approves the design of any proposed projects to ensure that they sufficiently minimize the potential for bird strikes.	
Impact BIO-5: Development facilitated by the proposed project would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	**Mitigation Measures BIO-1a through BIO-1e** **Mitigation Measures BIO-2a through BIO-2c** **Mitigation Measure BIO-3** **Mitigation Measure BIO-4**	Less Than Significant
Impact BIO-6: Development facilitated by the proposed project would not conflict with an adopted local, regional, or State Habitat Conservation Plan.	**Mitigation Measures BIO-1a through BIO-1e** **Mitigation Measures BIO-2a through BIO-2c** **Mitigation Measure BIO-3**	Less Than Significant
CUMULATIVE IMPACT: **Impact C-BIO-1:** The proposed project, in conjunction with other past, current, or foreseeable development in Alameda, could result in cumulative impacts on biological resources.	**Mitigation Measures BIO-1a through BIO-1e** **Mitigation Measures BIO-2a through BIO-2c** **Mitigation Measure BIO-3**	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.4 Cultural Resources		
Impact CUL-1: Project implementation would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.	**Mitigation Measure CUL-1a:** Treatment of Historic Properties (Buildings 16 19 and 27). Alterations, to the exteriors of Buildings 16, 19 and 27, shall conform to the Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, if feasible (NPS, 1995) and PRC 5024.5. **Mitigation Measure CUL-1b:** Documentation. The project proponent shall prepare a treatment plan including but not limited to photo documentation and public interpretation of the Alameda Marina Historic District (Buildings 1, 4, 6, 12, 15, 16, 17, 19, 21, 22, 27, 28, 29, 31, 32, 33, 34, and the graving dock). Photo documentation will be overseen by a Secretary of the Interior–qualified architectural historian, documenting the affected historical resource. in accordance with the National Park Service's Historic American Buildings Survey (HABS) and/or Historic American Engineering Record (HAER) standards. Such standards typically include large-format photography using (4x5) negatives, written data, and copies of original plans if available. The HABS/HAER documentation packages will be archived at local libraries and historical repositories, as well as the Northwest Information Center of the California Historical Resources Information System. **Mitigation Measure CUL-1c: Interpretive Display.** Public interpretation of historical resources shall be provided and could include a plaque, kiosk, or other method of describing the Alameda Marina Historic District's historic or architectural importance to the general public. The design and placement of the display(s) shall be reviewed and approved by the City of Alameda Historic Advisory Board.	Significant and unavoidable
Impact CUL-2: Project construction could cause a substantial adverse change in the significance of an archaeological resource, including those determined to be a historical resource defined in Section 15064.5 or a unique archaeological resource defined in PRC 21083.2.	**Mitigation Measure CUL-2a:** Archaeological Resources Management Plan. During the preliminary design for development within the project area, and prior to submittal of a building permit or grading application to the City of Alameda, the project applicant shall undertake the following: • ***Preservation in Place.*** A qualified archaeologist, in consultation with the City of Alameda, the project applicant, and the appropriate Native American representative(s) shall determine whether preservation in place of site CA-ALA-11 is feasible. Consistent with CEQA Guidelines Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If it is determined that preservation in place is not feasible for the resource and another type of mitigation would better serve the interests protected by CEQA, mitigation shall include testing and data recovery through archaeological investigations and the project applicant shall undertake the following:	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.4 Cultural Resources (cont.)		
Impact CUL-2 (cont.)	• ***Archaeological Resources Management Plan.*** Because a significant archaeological resource (CA-ALA-11) has been previously identified in the project area, the project proponent shall retain a Secretary of the Interior-qualified archaeologist, in consultation with a Native American representative(s), to prepare and implement an Archaeological Resources Management Plan (ARMP). The ARMP shall include a preliminary testing program to identify the types of expected archaeological materials, the testing methods to be used to define site boundaries and constituents, and the locations recommended for testing. The purpose of the testing program will be to determine to the extent possible the presence or absence of archaeological materials in the proposed areas of disturbance for the project and to determine whether those materials contribute to the significance of site CA-ALA-11. If a significant contributing element to the site is in the project area, the project proponent shall conduct a data recovery program as outlined in the ARMP. The ARMP will include how the data recovery program would preserve the significant information the archaeological resource is expected to contain. Treatment would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim of targeting the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the project. The ARMP shall include provisions for analysis of data in a regional context; reporting of results within a timely manner and subject to review and comments by the appropriate Native American representative, before being finalized; curation of artifacts and data at a local facility acceptable to the City and appropriate Native American representative; and dissemination of final confidential reports to the appropriate Native American representative, the Northwest Information Center of the California Historical Resources Information System and the City. **Mitigation Measure CUL-2b: Inadvertent Discovery of Archaeological Resources.** During construction outside of known archaeological site boundaries, if prehistoric or historic-era cultural materials are encountered, all construction activities within 100 feet shall halt and the City shall be notified. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; artifact filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. The project applicant shall ensure that a Secretary of the Interior-qualified archaeologist inspect the find within 24 hours of discovery. If the find is determined to be potentially significant, the archaeologist, shall follow the guidelines provided in Mitigation Measure CUL-2a above.	

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.4 Cultural Resources (cont.)		
Impact CUL-3: Project construction could disturb human remains, including those interred outside of formal cemeteries.	**Mitigation Measure CUL-3:** Inadvertent Discovery of Human Remains. Pursuant to Section 7050.5 of the Health and Safety Code, and Section 5097.94 of the Public Resources Code of the State of California, the project applicant shall ensure the following: • Project construction personnel shall be informed of the potential of encountering human remains during construction, and the proper procedures to follow in the event of the discovery of human remains during construction. • In the event of the discovery of human remains during construction, work shall stop in that area and within 100 feet of the find. The Alameda County Coroner shall be notified and shall make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to their authority, they shall notify the Native American Heritage Commission who shall identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this State law, then the project applicant shall re-inter the human remains and items associated with Native American burials on the property in a location not subject to further ground disturbance.	Less than significant
Impact CUL-4: Project construction could cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074.	**Mitigation Measure CUL-4:** Tribal Cultural Resources Interpretive Program. In consultation with the affiliated Native American tribal representatives, the proposed project shall be redesigned so as to avoid any adverse effect on the significant tribal cultural resource, if feasible. If preservation in place of the tribal cultural resource is not a sufficient or feasible option, the project applicant shall implement an interpretive program of the tribal cultural resource in consultation with affiliated tribal representatives. The plan shall identify, as appropriate, proposed locations for installations or displays, the proposed content and materials of those displays or installation, the producers or artists of the displays or installation, and a long term maintenance program. The interpretive program may include artist installations, preferably by local Native American artists, oral histories with local Native Americans, artifacts displays and interpretation, and educational panels or other informational displays.	Significant and unavoidable
CUMULATIVE IMPACTS: **Impact C-CUL-1:** The project, in combination with past, present, and probable future projects, would substantially contribute to cumulative adverse historic architectural resources impacts.	**Mitigation Measures CUL-1a, CUL-1b, and CUL-1c.**	Significant and unavoidable
Impact C-CUL-2: The project, in combination with past, present, and probable future projects, could result in cumulative adverse impacts on archaeological resources and human remains.	**Mitigation Measures CUL-2a, CUL-2b, and CUL-3**	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.4 Cultural Resources (cont.)		
Impact C-CUL-3: The project, in combination with past, present, and probable future projects, could result in cumulative adverse impacts on tribal cultural resources.	**Mitigation Measure CUL-4**	Significant and unavoidable
4.5 Geology, Soils, and Paleontological Resources		
Impact GEO-1: Project development could be damaged by fault rupture and thereby expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death.	None required	Less than significant
Impact GEO-2: Project development could be damaged by seismically induced ground shaking and thereby expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death.	None required	Less than significant
Impact GEO-3: Project development could be damaged by seismically related ground failure including liquefaction and thereby expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death.	None required	Less than significant
Impact GEO-4: The project could result in soil erosion during excavation, grading, and construction activities.	None required	Less than significant
Impact GEO-5: The project could result in on- or off-site lateral spreading, subsidence, liquefaction, or collapse from placement of improvements on unstable geologic units or soils.	None required	Less than significant
Impact GEO-6: Project implementation could occur on expansive soils, creating risks to life and property.	None required	Less than significant
CUMULATIVE IMPACT: **Impact C-GEO-1:** The project, in conjunction with past, present and reasonably foreseeable future projects, would not result in significant cumulative impacts with respect to geology, soils, seismicity, or paleontological resources.	None required	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.6 Hazards and Hazardous Materials		
Impact HAZ-1: Demolition of the existing structures on the project site which likely contain hazardous building materials—such as lead-based paint, asbestos, and PCBs—could potentially expose workers, the public, or the environment to hazardous materials from the transport, use, or disposal of these hazardous materials and waste.	**Mitigation Measure HAZ-1a:** Prior to issuance of any demolition permit, the project applicant shall submit to the Alameda County Department of Environmental Health a hazardous building material assessment prepared by qualified licensed contractors for any structure intended for demolition indicating whether ACMs, LBP or lead-based coatings, and/or PCB-containing equipment, are present. **Mitigation Measure HAZ-1b:** If the assessment required by Mitigation Measure HAZ-1a indicates the presence of ACMs, LBP, and/or PCBs, the project applicant shall create and implement a health and safety plan in accordance with local, state, and federal requirements to protect demolition and construction workers and the public from risks associated with such hazardous materials during demolition or renovation of affected structures. **Mitigation Measure HAZ-1c:** If the assessment required by Mitigation Measure HAZ-1a finds asbestos, the project applicant shall prepare an asbestos abatement plan and shall ensure that asbestos abatement is conducted by a licensed contractor prior to building demolition. Abatement of known or suspected ACMs shall occur prior to demolition or construction activities that would disturb those materials. Pursuant to an asbestos abatement plan developed by a state-certified asbestos consultant and approved by the City, all ACMs shall be removed and appropriately disposed of by a state certified asbestos contractor. **Mitigation Measure HAZ-1d:** If the assessment required by Mitigation Measure HAZ-1a finds presence of LBP, the project applicant shall develop and implement a LBP removal plan. The plan shall specify, but not be limited to, the following elements for implementation: 1. Develop a removal specification approved by a Certified Lead Project Designer. 2. Ensure that all removal workers are properly trained. 3. Contain all work areas to prohibit off-site migration of paint chip debris. 4. Remove all peeling and stratified LBP on building and non-building surfaces to the degree necessary to safely and properly complete demolition activities according to recommendations of the survey. The demolition contractor shall be responsible for the proper containment and/or disposal of intact LBP on all materials to be cut and/or removed during the demolition. 5. Provide on-site personnel and area air monitoring during all removal activities to ensure that workers and the environment are adequately protected by the control measures used. 6. Clean up and/or vacuum paint chips with a high efficiency particulate air (HEPA) filter.	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.6 Hazards and Hazardous Materials (cont.)		
Impact HAZ-1 (cont.)	7. Collect, segregate, and profile waste for disposal determination. 8. Properly dispose of all waste. **Mitigation Measure HAZ-1e:** If the assessment required by Mitigation Measure HAZ-1a finds presence of PCBs, the project applicant shall ensure that PCB abatement in compliance with applicable regulations is conducted prior to building demolition or renovation. PCBs shall be removed by a qualified contractor and transported in accordance with Caltrans requirements.	
Impact HAZ-2: Construction at the project site could potentially disturb soil and groundwater impacted by historical hazardous material use, which could expose construction workers, the public, or the environment to adverse conditions related to the transport, use, or disposal of hazardous materials and waste.	**Mitigation Measure HAZ-2a:** Prior to issuance of any demolition permit, the project applicant shall submit to the City a Site-Specific Environmental Health and Safety Plan (HASP). The HASP shall be consistent with State and federal OSHA standards for hazardous waste operations (California Code of Regulations, Title 8, Section 5192 and 29 Code of Federal Regulations 1910.120, respectively) and any other applicable health and safety standards. The HASP shall include descriptions of health and safety training requirements for onsite personnel and levels of personal protective equipment to be used, and any other applicable precautions to be undertaken to minimize direct contact with soil and to a lesser degree, groundwater if is encountered. The HASP shall be adhered to during construction and excavation activities. All workers onsite should read and understand the HASP and copies shall be maintained onsite during construction and excavation at all times. **Mitigation Measure HAZ-2b:** Prior to issuance of a building or grading permit for any ground breaking activities within the project site, the project applicant shall prepare a Site Management Plan (SMP) consistent with US EPA, DTSC, and Water Board standards for incorporation into construction specifications. The SMP shall be present on site at all times and readily available to site workers. The SMP shall specify protocols and requirements for excavation, stockpiling, and transport of soil and for disturbance of groundwater. At a minimum the SMP shall include the following components: 1. *Dust control measures*: Dust generation shall be minimized by any or all appropriate measures. These measures may include: a. Misting or spraying water while performing excavation activities and loading transportation vehicles; b. Limiting vehicle speeds onsite to 5 miles per hour; c. Controlling excavation activities to minimize the generation of dust; d. Minimizing drop heights while loading transportation vehicles; and e. Covering any soil stockpiles generated as a result of excavating soil potentially impacted by contaminants of concern with plastic sheeting or tarps.	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.6 Hazards and Hazardous Materials (cont.)		
Impact HAZ-2 (cont.)	2. *Decontamination measures:* Decontamination methods shall include scraping, brushing, and/or vacuuming to remove dirt on vehicle exteriors and wheels. In the event that these dry decontamination methods are not adequate, methods such as steam cleaning, high-pressure washing, and cleaning solutions shall be used, as necessary, to thoroughly remove accumulated dirt and other materials. Wash water resulting from decontamination activities shall be collected and managed in accordance with all applicable laws and regulations. 3. *Stormwater pollution control measures*: Should rainfall occur during construction on exposed soils at the site stormwater pollution controls shall be implemented to minimize stormwater runoff from exposed soil containing contaminants of concern at the site and to prevent sediment from leaving the site, in accordance with all laws and regulations. Stormwater pollution controls shall be based on BMPs to comply with State and local regulations. Sediment and erosion protection controls may include but are not limited to: a. Constructing berms or erecting silt fences at entrances to the project site; b. Placing straw bale barriers around catch basins and other entrances to the storm drains; c. During significant rainfall events, covering with plastic sheeting or tarps any soil stockpiles generated as a result of excavating soil potentially impacted by contaminants of concern. 4. *Field screening of potential contaminated soil and suspect contamination discovery*: Potentially contaminated soil shall be either direct loaded using the profile data associated with Stellar Environmental Solutions' October 2015 report or stockpiled for additional sampling and analyses to define the contamination fate after the excavation stage. If more the one year elapses between the soil profiling and the excavation stage stockpiling, sampling may be required by a regulated landfill. Trained (with 40-hour hazwopper and associated updates) environmental personnel shall be onsite to do the stockpile sampling and be on-call to deal with any suspect contamination discovery. Personnel will monitor for potentially contaminated soils by visual screening, noting any contaminant odors, and utilizing a photoionization detector (PID) to field measure any VOCs during the excavation activity. Monitoring parameters shall be recorded at intervals of approximately 1 hour or less.	
Impact HAZ-3: Hazardous materials used onsite during construction activities (e.g., oils, solvents, etc.) at the project site could potentially be spilled through improper handling or storage, potentially increasing public health and/or safety risks to future residents, maintenance workers, visitors, and the surrounding area.	None required	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.6 Hazards and Hazardous Materials (cont.)		
Impact HAZ-4: Development facilitated by the proposed project could potentially involve the transportation, use, and storage of hazardous materials, which could present public health and/or safety risks to residents, visitors, and the surrounding area.	None required	Less than significant
Impact HAZ-5: Development of the project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and could result in a safety hazard to the public or environment through exposure to previous contamination of soil or groundwater.	**Mitigation Measure HAZ-3:** Prior to issuance of a building or grading permit for any ground breaking activities within the project site, the project applicant shall prepare a Remedial Risk Management Plan (RRMP). The RRMP shall be developed and followed by current and future owners, tenants, and operators. The RRMP shall include the implementation of any needed corrective action remedies and engineering design.	Less than significant
Impact HAZ-6: The project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	None required	Less than significant
CUMULATIVE IMPACT: **Impact C-HAZ-1:** Hazards at the project site, in combination with past, present, and future projects could potentially contribute to cumulative hazards in the vicinity of the project site.	None required	Less than significant
4.7 Hydrology and Water Quality		
Impact HYD-1: Project construction facilitated by the proposed project, on-land and in-water, would potentially involve activities that could violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality.	None required	Less than significant
Impact HYD-2: Development of the proposed project could potentially involve dewatering and shoring activities that could potentially result in a discharge, which if contaminated could adversely affect the receiving water quality.	None required	Less than significant
Impact HYD-3: Development of the proposed project would not result in an increase of runoff that would result in erosion, siltation, or flooding on- or off-site.	None required	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.7 Hydrology and Water Quality (cont.)		
Impact HYD-4: Development of the proposed project would not substantially contribute to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	**Mitigation Measure HYD-1:** The City shall ensure that future project applicants implement Integrated Pest Management measures to reduce fertilizer and pesticide contamination of receiving waters, as follows: • Prepare and Implement an Integrated Pest Management Plan (IPM) for all common landscaped areas. The IPM shall be prepared by a qualified professional and shall recommend methods of pest prevention and turf grass management that use pesticides as a last resort in pest control. Types and rates of fertilizer and pesticide application shall be specified. • The IPM shall specify methods of avoiding runoff of pesticides and nitrates into receiving storm drains and surface waters or leaching into the shallow groundwater table. Pesticides shall be used only in response to a persistent pest problem that cannot be resolved by non-pesticide measures. Preventative chemical use shall not be employed. • The IPM shall fully integrate considerations for cultural and biological resources into the IPM with an emphasis toward reducing pesticide application.	Less than significant
Impact HYD-5: The project would not place housing or structures within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map; or place within a 100-year flood hazard area structures which would impede or redirect flood flows.	None required	Less than significant
Impact HYD-6: The proposed project could expose people or structures to risk of loss, injury, or death from inundation by a tsunami.	None required	Less than significant
Impact HYD-7: The project could expose people or structures to a significant risk of loss, injury or death involving flooding related to sea level rise.	None required	Less than significant
CUMULATIVE IMPACT: **Impact C-HYD-1:** Increased construction activity and new development facilitated by the proposed project, in conjunction with past, present, reasonably foreseeable future development in Alameda, could potentially impact hydrologic resources including water quality.	None required	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.8 Land Use and Planning		
Impact LU-1: The proposed project would not physically divide an established community.	None required	Less than significant
Impact LU-2: The proposed project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the General Plan and zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	None required	Less than significant
CUMULATIVE IMPACT: **Impact C-LU-1:** The proposed project, combined with cumulative development in the defined geographic area, including past, present, reasonably foreseeable future development, would not have significant adverse cumulative land use impacts.	None required.	Less than significant
4.9 Noise		
Impact NOI-1: Construction of proposed project elements could expose persons to or generate noise levels in excess of the City noise standards or result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	**Mitigation Measure NOISE-1a:** The applicant shall create and implement development-specific noise and vibration reduction plans, which shall be enforced via contract specifications. Contractors may elect any combination of legal, non-polluting methods to maintain or reduce noise and vibration to threshold levels or lower, as long as those methods do not result in other significant environmental impacts or create a substantial public nuisance. In addition, the applicant shall require contractors to limit construction activities to daytime hours between 7:00 am and 7:00 pm Monday through Friday and 8:00 am to 5:00 pm on Saturdays. The plan for attenuating construction-related noises shall be implemented prior to the initiation of any work that triggers the need for such a plan. **Mitigation Measure NOISE-1b:** To reduce pile driving noise, "vibratory" pile driving or drilled and cast-in-place piles shall be used wherever feasible. The vibratory pile driving technique, despite its name, does not generate vibration levels higher than the standard pile driving technique. It does, however, generate lower, less-intrusive noise levels.	Less than significant
Impact NOI-2: Construction facilitated by the proposed project could potentially result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.	None required	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.9 Noise (cont.)		
Impact NOI-3: Traffic and equipment operations associated with the proposed project could result in a substantial permanent increase in ambient noise levels in the vicinity or above levels existing without the project.	**Mitigation Measure NOISE-2a:** Acoustical studies, describing how the exterior and interior noise standards will be met, shall be required for all new residential or noise sensitive developments exposed to environmental noise greater than CNEL 60 dBA, or one-family dwellings not constructed as part of a subdivision requiring a final map exposed to environmental noise greater than CNEL 65 dBA. The studies should also satisfy the requirements set forth in Title 24, Section 1207, of the California Building Code, Noise Insulation Standards, for multiple-family uses, regulated by Title 24. **Mitigation Measure NOISE-2b:** The applicant shall demonstrate through its acoustical studies that the proposed project will comply with maximum noise levels outlined in the City's Noise Ordinance and the average sound level goals outlined in the City's General Plan.	Less than significant
CUMULATIVE IMPACTS: **Impact C-NOI-1**: The proposed project would result in exposure of people to cumulative increases in construction noise levels.	None required	Less than significant
Impact C-NOI-2: The proposed project would contribute to cumulative construction that could expose buildings and persons within the project vicinity to significant vibration impacts.	None required	Less than significant
Impact C-NOI-3: Increases in traffic from development associated with the proposed project in combination with other development would not result in cumulatively considerable noise increases.	None required	Less than significant
4.10 Population and Housing		
Impact POP-1: The proposed project would not induce substantial population or housing growth directly or indirectly.	None required	Less than significant
Impact POP-2: The proposed project would not displace substantial numbers of people or housing units, necessitating the construction of replacement housing elsewhere.	None required	Less than significant
CUMULATIVE IMPACTS: **Impact C-POP-1:** Development facilitated by the proposed project, in conjunction with potential past, present, and future development in the surrounding region, would not result in unanticipated population, housing, or employment growth, or the displacement of existing residents or housing units on a regional level.	None required	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.11 Public Services and Recreation		
Impact PSR-1: The proposed project would result in an increase in calls for fire protection and emergency medical response services, but would not require new or physically altered fire protection facilities in order to maintain acceptable performance objectives.	None required	Less than significant
Impact PSR-2: The proposed project would result in an increase in calls for police services, but would not require new or physically altered police facilities in order to maintain acceptable performance objectives.	None required	Less than significant
Impact PSR-3: The proposed project would result in new students for local schools, but would not require new or physically altered school facilities to maintain acceptable performance objectives.	None required	Less than significant
Impact PSR-4: The proposed project would result in increased use of other governmental facilities, including libraries, but would not require new or physically altered government facilities to maintain acceptable performance objectives.	None required.	Less than significant
Impact PSR-5: The proposed project would increase the use of existing neighborhood and regional parks and recreation centers, but not to the extent that substantial physical deterioration of the facilities would occur or be accelerated, nor would it cause the necessity for new or expanded facilities.	None required	Less than significant
Impact PSR-6: The proposed project includes recreational facilities and the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	None required	Less than significant
CUMULATIVE IMPACTS: **Impact C-PSR-1:** The project, in conjunction with other past, current, or foreseeable development in Alameda, could result in impacts related to public services and recreation.	None required	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.12 Transportation and Circulation		
Impact TRA-1: The proposed project would not exceed the regional VMT per capita minus 15 percent.	**Mitigation Measure TRA-1:** To reduce the amount of VMT generated by the project, as well as the number of automobile trips generated by the project and to reduce automobile LOS impacts, the project shall prepare a Transportation Demand Management (TDM) Plan and funding program for Planning Board review and approval. The TDM plan shall include the following measures to reduce VMT and vehicle trips, particularly single-occupant vehicle trips, by project residents, workers, and visitors.: • All residents and employers at Alameda Marina will pay annual fees to support supplemental transit services and trip reduction services for the residents and employees. • All residents and employees will be provided with AC Transit Easy Passes, which will provide access to all of AC Transit's services including the San Francisco express commuter buses. The cost of the passes will be included in the mandatory assessments on each unit, which dis-incentives future residents who prefer to drive alone and do not want to use transit. • Residents of the non-townhome units, who wish to have cars, will be required to lease parking spaces on a monthly basis in a shared parking lot or structure. The cost of the parking will be "unbundled" from the cost of the residential unit, which provides a financial incentive for residents to reduce car ownership and take advantage of the AC Transit passes, which are "bundled" into the cost of their residential units. (The 162 townhomes will have private parking.) • The project residents will be members of the Alameda Transportation Management Agency, which will provide transportation information services to all of the residents through a TMA website and through annual surveys of resident transportation needs. • The project will provide access to car share and guaranteed ride home services to make it easier for residents and employees to reduce their dependence on a private automobile and increase use of project-provided transit services. • Resident annual assessments in the Northern Waterfront area currently fund supplemental commute hour service on the AC Transit Line 19, which provides direct service to Fruitvale and 12th Street BART stations. Future assessments received from project residents and employers will allow for additional transit services and future water shuttle services designed to serve the waterfront developments along the Estuary in Alameda and Oakland and connect the project sites to the regional ferry services provided from Jack London Square in Oakland and the Main Street Terminal in Alameda.	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.12 Transportation and Circulation (cont.)		
Impact TRA-2: The proposed project would increase traffic volumes such that traffic conditions at the Park Street/Blanding Avenue and Park Street/Clement Avenue intersections would either deteriorate from LOS D to LOS F or the proposed project would increase traffic volumes by three percent or more.	**Mitigation Measure TRA-2:** Implement Mitigation Measure TRA-1, which would consist of implementing a TDM program at the project site.	Significant and unavoidable
Impact TRA-3: In the event that the planned Clement Avenue extension is not completed prior to project opening, the proposed project could increase traffic volumes at intersections on Buena Vista Avenue such that traffic operations could deteriorate to substandard conditions.	**Mitigation Measure TRA-3:** If the Del Monte project fails to begin construction of the Clement Avenue extension from Atlantic Avenue to Entrance Road prior to commencement of construction of the Alameda Marina project, require the Alameda Marina project to construct the extension with a later fair share contribution to be provided by the Del Monte project and other developments in the area.	Significant and unavoidable
Impact TRA-3: Implementation of the proposed project would not cause travel speeds to decrease by 10 percent or more along a corridor that currently serves as a transit route or is planned to serve as a transit route.	None required	Less than significant
Impact TRA-4: Implementation of the proposed project would not cause pedestrian LOS to degrade to worse than LOS B, or cause the average delay for pedestrians to increase by 10 percent or more where the service level is already LOS C or worse, and would not create a safety hazard for pedestrians.	None required	Less than significant
Impact TRA-5: Implementation of the proposed project would not cause the bicycle segment LOS to degrade to worse than LOS B, increase LOS score by 10 percent or more if the bicycle segment LOS is already LOS C or worse, or create a safety hazard for bicyclists.	None required	Less than significant
Impact TRA-6: The proposed project would not cause congestion of regional significance on a roadway segment on the Congestion Management Program (CMP) and/or the Metropolitan Transportation System (MTS) evaluated per the requirements of the Land Use Analysis Program of the CMP.	None required	Less than significant
Impact TRA-7: The proposed project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	None required	Less than significant
Impact TRA-8: The proposed project would not result in inadequate emergency access.	None required	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.12 Transportation and Circulation (cont.)		
Impact TRA-9: Development facilitated by the proposed project could potentially be inconsistent with adopted polices, plans, and programs supporting alternative transportation.	**Mitigation Measure TRA-3:** The project shall, consistent with the City of Alameda Bicycle Master Plan, provide a Class I bicycle path along the northern waterfront of the project site and ensure that the path would connect to adjacent future bicycle facilities.	Less than significant
Impact TRA-10: The proposed project would generate temporary increases in traffic volumes on area roadways during construction.	None required	Less than significant
4.13 Utilities and Service Systems		
Impact UTL-1: The proposed project would not result in an exceedance of wastewater treatment requirements of the applicable Regional Water Quality Control Board.	None required	Less than significant
Impact UTL-2: The proposed project would not have wastewater service demands that would result in a determination by the service provider that it does not have adequate capacity to serve projected demand, necessitating the construction of new or expanded wastewater treatment facilities.	**Mitigation Measure UTL-2: Sewer Design.** The project sponsors shall: 1) Replace or rehabilitate any existing sanitary sewer collection systems, including sewer lateral lines, to ensure that such systems and lines are free from defects or, alternatively, disconnected from the sanitary sewer system; and 2) Ensure any new wastewater collection systems, including new lateral lines, for the project are constructed to prevent infiltration and inflow (I&I) to the maximum extent feasible while meeting all requirements contained in the Regional Private Sewer Lateral Ordinance and applicable municipal codes or City ordinances.	Less than significant
Impact UTL-3: The project would result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which would not cause significant environmental effects.	None required	Less than significant
Impact UTL-4: The proposed project would have sufficient water supplies available to serve the development from existing entitlements and would not require the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	None required	Less than significant
Impact UTL-5: The proposed project would be served by a landfill with sufficient permitted capacity to accommodate solid waste generated by the project, and would comply with federal, state, and local statutes and regulations related to solid waste.	None required	Less than significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ALAMEDA MARINA MASTER PLAN PROJECT

Impacts	Project Design Features and Mitigation Measures	Significance Including after Project Design Features and Mitigation
4.13 Utilities and Service Systems (cont.)		
CUMULATIVE IMPACTS: **Impact C-UTL-1:** The proposed project, in combination with other past, present, existing, approved, pending, and reasonably foreseeable future projects, would not result in cumulatively considerable impacts to utilities and service systems.	None required	Less than significant

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CHAPTER 3
Project Description

3.1 Introduction

This EIR chapter describes the Alameda Marina Master Plan project evaluated in this EIR. This chapter specifically describes the following characteristics of the project: location, general existing characteristics of the project site, project objectives, the proposed project site development plan, and various development characteristics. Also described are the jurisdictional approvals anticipated to be required to implement the project.

3.2 Project Overview and Objectives

3.2.1 Project Overview

The project would include the following components, which would be constructed on the approximately 44-acre Alameda Marina project site:

1. Approximately 160,000 square feet of non-residential commercial space.
2. Approximately 760 residential units comprised of multifamily units and attached townhomes. For the purposes of this EIR, a maximum of 779 units was also analyzed for environmental impacts.
3. A Transportation Demand Management Program that includes transit passes for all residents and employees, annual surveys of resident and employee travel habits, and annual assessments to fund transportation services.
4. Improvements to existing roads on the site and provision of public access at Alameda Marina Drive, Schiller Street, Lafayette Street, Stanford Street, and Willow Street, with Emergency Vehicle Access (EVA) provided between Chestnut Street and Stanford Street.
5. Park areas, paths, trails, and shoreline improvements, including new waterfront and Bay Trail Open Space which would provide a new segment of the San Francisco Bay Trail, providing bicycle and pedestrian access throughout the site, with access to public open space on the site, a maritime boardwalk promenade, parks/maritime amenity areas, and open space areas on both sides of the existing graving dock.
6. A Maritime Commercial Core design, to maintain a working waterfront environment, with limited public waterfront access in this portion of the site.
7. Other components, such as the replacement of existing onsite infrastructure with new systems including:

- Repair or replacement of approximately 4,000 linear feet of seawalls and bulkheads, including the existing graving dock, which would be retained;
- Flood and sea level rise protection measures with elevated shorelines and/or floodwalls for sea level rise of a minimum height of 36 inches;
- Stormwater management system updates that incorporate current stormwater treatment measures for water quality standards, with new inlets and pipelines within project site ROWs and with new outfall structures to the Oakland Estuary;
- New onsite wastewater collection system to include new pipelines within the project site ROWs with connections to existing buildings to be preserved, new buildings and the Marina uses, connecting to the City of Alameda Sewer System which conveys flow to the EBMUD Interceptor trunk main at Clement Avenue;
- New potable water distribution throughout the project site to provide domestic and fire water supply;
- Dry utility updates including electric, natural gas, and telecommunications;
- Marina (water side) infrastructure updates, including plans for ongoing dredging, dock maintenance, potentially some reconfiguration of Pier 1, and maintenance of the existing graving dock.

The project would be developed in up to four phases, with shoreline and land side infrastructure improvements occurring in each phase as necessary. All private and public improvements within the Master Plan area would be consistent with the requirements of the final Master Plan, and with the Alameda Municipal Code.

3.2.2 Project Objectives

The Alameda Marina Master Plan builds upon the City's vision for the Northern Waterfront to create a mixed-use development that maintains a maritime focus and offers the chance to integrate existing uses with new opportunities to provide employment, residences, and recreation for current and future residents of the city. The objectives of the Alameda Master Plan are listed below.

CEQA *Guidelines* Section 15124(b) requires the description of the project in an EIR to state the objectives sought by the project.

> "A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project."

This section states the project objectives for the CEQA review of the project. Clarifying information is provided for each objective. The project objectives are:

Improve and Enhance the Maritime Commercial Marina

- Maintain Alameda Marina as a working waterfront and retain and/or promote Alameda Marina's maritime uses by creating a Maritime Commercial Core that utilizes the maritime footprint more efficiently.

- Encourage the retention and development of waterfront and maritime-related job and business opportunities that relate to the area's waterfront location.
- Upgrade and rehabilitate facilities, unique buildings, as feasible, and provide land for existing maritime businesses, boat berthing and maintenance, boat storage, and waterfront commercial recreation businesses.
- Provide sea level rise protection and other infrastructure upgrades to bring Alameda Marina up to date to make it a safe and accessible place.

Activate and Reconnect the Community to the Waterfront

- Reconnect the community to the waterfront by extending the existing city grid into the site to allow for additional view corridors and access points through the site to the shoreline edge.
- Create public amenities and opportunities for gathering spaces for existing and future community members by developing new open space areas within and along the shoreline edge with a Bay Trail component.

Create a Dynamic New Neighborhood for Everyone

- Provide housing of various types to fulfill the goals of the City's Housing Element and help meet the City's Regional Housing Need Allocation.
- Provide options for housing that meet the need of a wide demographic that includes universally designed units, affordable, rental, work force market-rate and market-rate units.
- Integrate Alameda Marina's core maritime uses, including those governed by the Tidelands Lease, with renovated and new compatible uses, including various types of housing.
- Develop a mixed-use project that allows for a mix of compatible uses at the site.
- Provide opportunities for the improvement of the existing boat Marina and shoreline infrastructure; maintain and generate new jobs; and create better and new open space and recreational areas.

Provide Financially Sound Development

- Develop an economically sustainable and financially sound new development that can fund the construction of the public facilities and services that are needed to serve the plan area and achieve General Plan objectives, while avoiding any financial impact on the City's ability to provide services to the rest of the City.
- Fulfill the project sponsor's obligations under the Tidelands and Marina Lease.

3.3 Project Location and Context

3.3.1 Regional and Local Setting

The project site is located in the City of Alameda in Alameda County, California. The City of Alameda occupies approximately 10.6 square miles of land area immediately south of the City of Oakland and the Oakland-Alameda Estuary (the "Estuary"), east of San Francisco, and north and east of the San Francisco Bay (the "Bay"). Alameda Island makes up approximately 80 percent of the City's land area, with the remainder on Bay Farm Island across the San Leandro Channel. The

project site location and regional context are presented in **Figure 3-1**. Regional access to the City of Alameda is provided by a variety of transportation modes. Interstate 880 (I-880) through Oakland—the nearest freeway to the project site—provides regional access for automobiles and transit. Regional traffic accesses the project site via State Route 61 (SR 61) through the Webster-Posey Tubes, the Park Street Bridge, the Miller Sweeney Bridge and the High Street Bridge connecting the island of Alameda and the City of Oakland.

3.3.2 Project Site

The project site, the Alameda Marina, is located at 1815 Clement Avenue, in the City of Alameda, California. The project site is bounded on the west by Alameda Marina Drive, on the north by the Oakland-Alameda Estuary, to the east by a northern extension of Willow Street, and to the south by Clement Avenue (see **Figure 3-2: Local Vicinity**). To the west of the site across Alameda Marina Drive lies the Alameda Power Service Center and also an extension of the Fortmann Marina. North of the site across the estuary is Coast Guard Island, and also Union Point Park located along Embarcadero in Oakland. To the east of the site lies the Navy Operational Support Center/Alameda Naval and Marine Corps Reserve Center, and to the south across Clement Avenue is a mixture of light industrial, retail and residential uses. The Park Street business district is approximately 0.7 miles to the southeast and the Webster Street business core is approximately 1.5 miles to the west. Public transportation connections such as the Fruitvale Bay Area Rapid Transit (BART) Station and AC Transit lines are within 2 miles of the site.

The project site is approximately 44 acres, which consists of public tidelands and privately owned land and submerged land areas. It includes an existing boat marina that covers approximately 17.10 acres with more than a dozen piers and approximately 530 boat slips. The land side of the site contains approximately 250,000 square feet of maritime, commercial and retail, warehouse, and dry storage uses. Today there are approximately 37 buildings on the site, which cover about 16 percent of the total land area. Most of the buildings were built before 1943 and have been renovated extensively over the decades. More than 80 percent of the land portion of the site is currently paved in asphalt or concrete for circulation and outside boat and vehicle storage, which takes up most of the west and east portions of the site.

Former and Existing Land Uses

A portion of the property was developed in 1914 as the Barnes & Tibbetts shipyard. In 1922, General Engineering & Dry Dock Co. of San Francisco bought and expanded the yard, adding new piers and marine railways. In 1940, with financial assistance from the U.S. Maritime Commission, General Engineering re-built the yard, adding a dry dock and approximately 30 new buildings, many of which still exist today. After World War II, the shipyard remained in operation until it closed for good in the mid-1960s. Pacific Shops, Inc. acquired the property in 1962 and removed most of the shipbuilding infrastructure to construct the Alameda Marina.

Beginning in 2000, the City of Alameda developed a series of aligned planning initiatives to redevelop the Northern Waterfront and to transform it from industrial uses into a mixed-use district comprised of compatible and complementary uses. In 2000, the City created the Northern

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SOURCE: ESRI Data; ESA

Alameda Marina Master Plan EIR

Figure 3-1
Regional Location Map

ESA

U:\PROJECTS\SFO\16xxxx\D160044.01 - Alameda Marina EIR\05 Graphics-GIS-Modeling\Illustrator\Fig 3-2 Local Vicinity Aerial.ai

SOURCE: Google Earth; ESA

Alameda Marina Master Plan EIR

Figure 3-2
Local Vicinity Aerial Photo

ESA

Waterfront Advisory Committee (NWAC), a 15-person advisory panel representing a range of community members, area property owners, and local business interests. In 2002, NWAC recommended that the Northern Waterfront be redeveloped so as "to promote and facilitate redevelopment of the area with a mix of uses…[where] existing non-conforming land uses and the inherent land use incompatibilities between industrial and residential uses [will] gradually be replaced with a more cohesive land use pattern." After review by the public, the Planning Board, the City Council, and several City Commissions, the City Council amended and incorporated the NWAC's recommendations into the Northern Waterfront General Plan Amendment (NWGPA) for the western portion of the Northern Waterfront. The Alameda Marina lies just outside the boundaries of the NWGPA.

In 2012, the City applied a MX –Mixed Use and "MF- Multifamily Combining District" designation to Alameda Marina and other sites to bring the City's General Plan and Alameda Municipal Code into conformance with State Law. Around the same time the City also put forward two priority development areas for housing in the 2013 Plan Bay Area, one of which includes Alameda Marina as part of the Northern Waterfront. Plan Bay Area is a regional growth plan from the Association of Bay Area Governments (ABAG). In its updated Housing Element (2015- 2023), the City allocated a number of residential units to Alameda Marina in order to meets its Regional Housing Need Allocation (RHNA).

Existing Zoning Designations

The project site falls into two different zoning districts (see **Figure 3-3: Existing Land Use and Zoning Designations**). The City of Alameda General Plan land use and zoning designations for the project site are:

1. Approximately 17.06 acres of the project site lies within the City's M-2 General Industrial (Manufacturing) zoning district. The 17.06 acres is comprised of 4.89 acres of uplands and 12.17 acres of adjacent submerged lands. The 17.06 acres are owned by the City and leased to the applicant.

2. Approximately 21.62 acres of adjacent uplands lies within the City's MX Mixed-Use Planned Development and MF Multi-Family Residential Combining zoning designations. The 21.62 acres is owned by PSI. In addition, PSI owns 5.46 acres of adjacent submerged land, which is zoned M-2.

The M-2 zone allows for general industrial uses, and the MX zone allows for a mix of compatible uses that may include "residential, retail, offices, recreational, entertainment, research-oriented light industrial, water oriented or other related uses" (Alameda Municipal Code 30-4.20a). The MF overlay allows for a residential density maximum of 30 dwelling units per acre on the site.

Existing Access and Circulation

Primary regional access to the project site is provided by Interstate 880 (I-880) connected via Interstate 80 (I-80), and Interstate 980 (I-980) to the Posey Tube, Park Street, and Tilden Way, to Clement Avenue. There are currently four main access points to the project site, all of which are from Clement Avenue and aligned with the following City streets. From west to east these are:

SOURCE: City of Alameda

Alameda Marina Master Plan EIR

Figure 3-3
Existing Land Use Designations and Zoning

ESA

Alameda Marina Drive, Schiller Street, Chestnut Street, and Stanford Street (see Figure 3-2: Local Vicinity). The Schiller Street entrance is the main entrance and is gated to the public after Marina operating hours (6 a.m. to 9 p.m.). Marina users, guests, and business deliveries use three of the four access points a majority of the time; the Alameda Marina Drive access point often remains gated. There is also access to the project site from the north from the Oakland Estuary by boat. A portion of the Bay Trail extends northwest of the site from Grand Street along the estuary. The Bay Trail does not currently extend along the shoreline at the location of the project site.

Existing Utilities

Existing water and wastewater infrastructure information presented below is based on information from the City of Alameda and the East Bay Municipal Utilities District (EBMUD). Further detail is presented in Section 4.14, *Utilities and Service Systems*.

Potable Water

Existing 8-inch water mains are present in Clement Avenue. Existing private water pipelines extend from connections to the existing EBMUD pipeline and extend throughout the project site providing domestic and fire water to the various buildings and uses.

Existing Sanitary Sewer

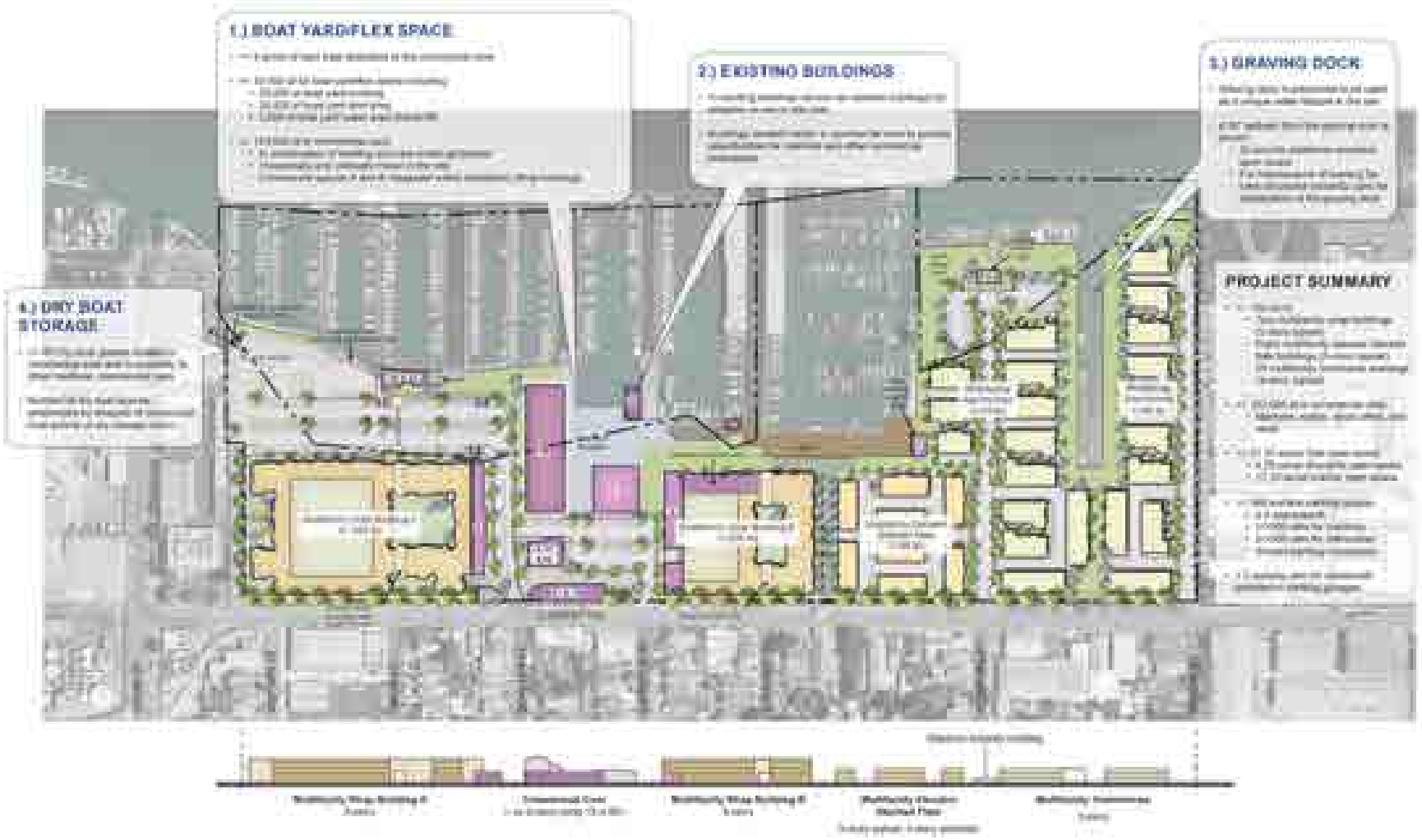
Wastewater generated from Alameda Marina is currently collected by an existing network of private pipelines and pumps within the project site. The existing private system conveys the project site wastewater and connects to the EBMUD Interceptor 48-inch diameter trunk main located in Clement Avenue at multiple locations along the project frontage.

Storm Water and Storm Water Quality Management

Stormwater runoff from Alameda Marina currently discharges to the Oakland Estuary via a variety of outfalls along the project shoreline. The existing stormwater collection system includes a network of inlets and pipelines throughout the project site. The portion of the existing on-site system near the intersection of Clement Avenue and Chestnut Street also conveys runoff from Clement Avenue and surrounding offsite areas to the south of the project site and into the City's local storm drain system.

3.4 Project Components

The proposed project consists of a mix of uses that includes maritime commercial, marina, office commercial, and retail, residential and open space. The project would also include new and improved access and circulation to and within the site, as well as infrastructure and shoreline improvements. These characteristics are described in detail further below and are illustrated on **Figure 3-4: Conceptual Site Plan**.



SOURCE: KTGY Architecture = Planning

Alameda Marina Master Plan EIR

Figure 3-4

Conceptual Site Plan

ESA

3.4.1 Land Uses

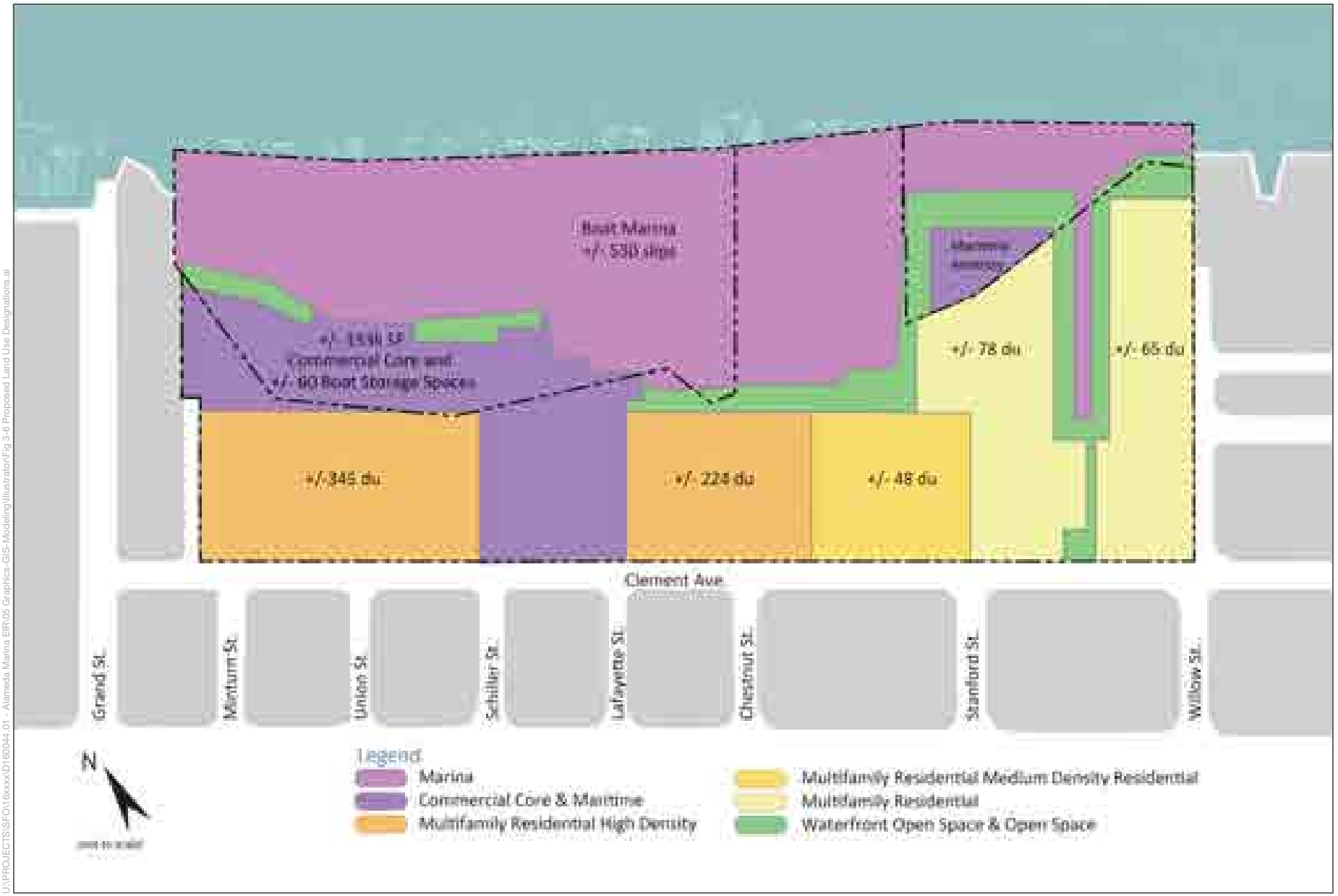
Figure 3-5: Proposed Land Uses shows the conceptual layout of the commercial, marina, residential, and open space uses on the site. **Table 3-1** summarizes the key components of the Alameda Marina Land Uses.

TABLE 3-1
PROPOSED PROJECT LAND USE PROGRAM

Commercial				
	Approximate Square Feet			**Percent of Total**
Maritime (includes boat yard/flex space)	53,985			35
Maker	20,800			14
Small Office	66,200			43
Retail	12,187			8
TOTAL	**153,172**			**100**
Marina				
	Number of Units			
Boat Berths	530			
Residential				
	Number of Units	**Approx. % of Total Units**	**Number of Buildings**	**Building Heights**
Multifamily Wrap (with potential for work/live units)	569	75%	2 buildings	5-story
Multifamily Elevator Stacked Flats	48	6%	Approx. 8 buildings	3-story typical; 4-story potential
Multifamily Townhomes	143	19%	Approx. 26 buildings	3-story
TOTAL	**760**	**100%**	**26 buildings**	
Public Common Open Space				
	Approximate Acres			
Shoreline Open Space	4.25 acres			
Marina Open Space	17.10 acres			
TOTAL	**21.35 acres**			

Commercial Uses

Approximately 7.98 acres of the landside portion of the site would be dedicated to commercial uses. The proposed project would include approximately 153,172 square feet of commercial space, with 53,985 sf dedicated to maritime uses, 20,800 sf to light industrial uses and the other 78,387 sf for office and retail uses. Commercial space would be located in individual buildings centered around a Maritime Commercial Core and would include the preservation and repurposing, if feasible, of several of the existing buildings on the site (one of them being the Alameda Marina building, Building 19) for existing and future new maritime businesses. The locations of these existing buildings that would be retained is shown in **Figure 3-6: Existing Buildings Demolition or Adaptive Reuse**. The maritime commercial, office, and retail uses would be based around a central hub, with the intent of reducing potential conflicts between these uses and other uses on the site as they relate to noise, light, dust, odors and traffic.



U:\PROJECTS\SFO\16xxxx\D160044.01 - Alameda Marina EIR\05 Graphics-GIS-Modeling\Illustrator\Fig 3-6 Proposed Land Use Designations.ai

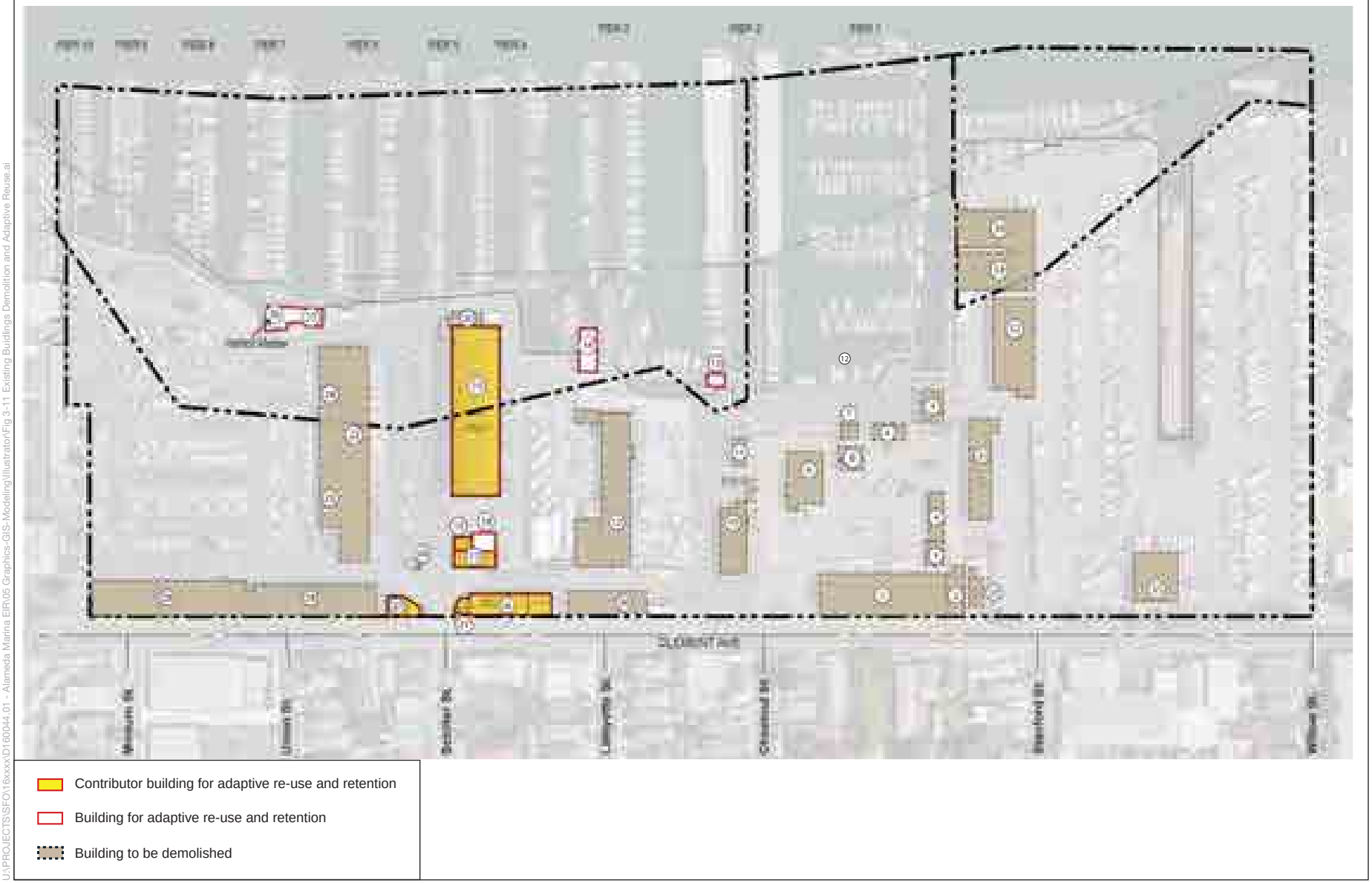
SOURCE: KTGY Architecture = Planning

Alameda Marina Master Plan EIR

Figure 3-5

Proposed Land Use Designations

ESA



U:\PROJECTS\SFO\16xxxx\D160044.01 - Alameda Marina EIR\05 Graphics-GIS-Modeling\Illustrator\Fig 3-11 Existing Buildings Demolition and Adaptive Reuse.ai

SOURCE: KTGY Architecture = Planning

Alameda Marina Master Plan EIR

Figure 3-6
Existing Buildings Demolition or Adaptive Reuse

ESA

Marina Uses

About 17.10 acres of the site would be dedicated to continuing marina operations. Marina uses would remain relatively unchanged from that which is currently provided, with approximately 530 boat slips in the water, although the more easterly portion of the marina could be reconfigured. Approximately 60 dry boat storage spaces would be provided on the northwest end of the site.

Residential Uses

Up to 779 residential units could be constructed on the site pursuant to the State Law Density Bonus; the project sponsor is proposing to develop 760 units, comprised of approximately 569 multifamily wrap units, 48 multifamily elevator stacked flats, and 143 multifamily townhouse units, with approximately 103 of these dwelling units offered as affordable housing units distributed throughout the site. However, in order to provide a conservative analysis, this Draft EIR analyzes the higher (779) number of residential uses. All residential buildings would be no taller than 65 feet, ranging from three to five stories.

Open Space

Approximately 4.25 acres on the landside portion of the project site would be dedicated to public open space, and 17.10 acres would be dedicated to marina open space

3.4.2 Potential Tidelands Lease Adjustment

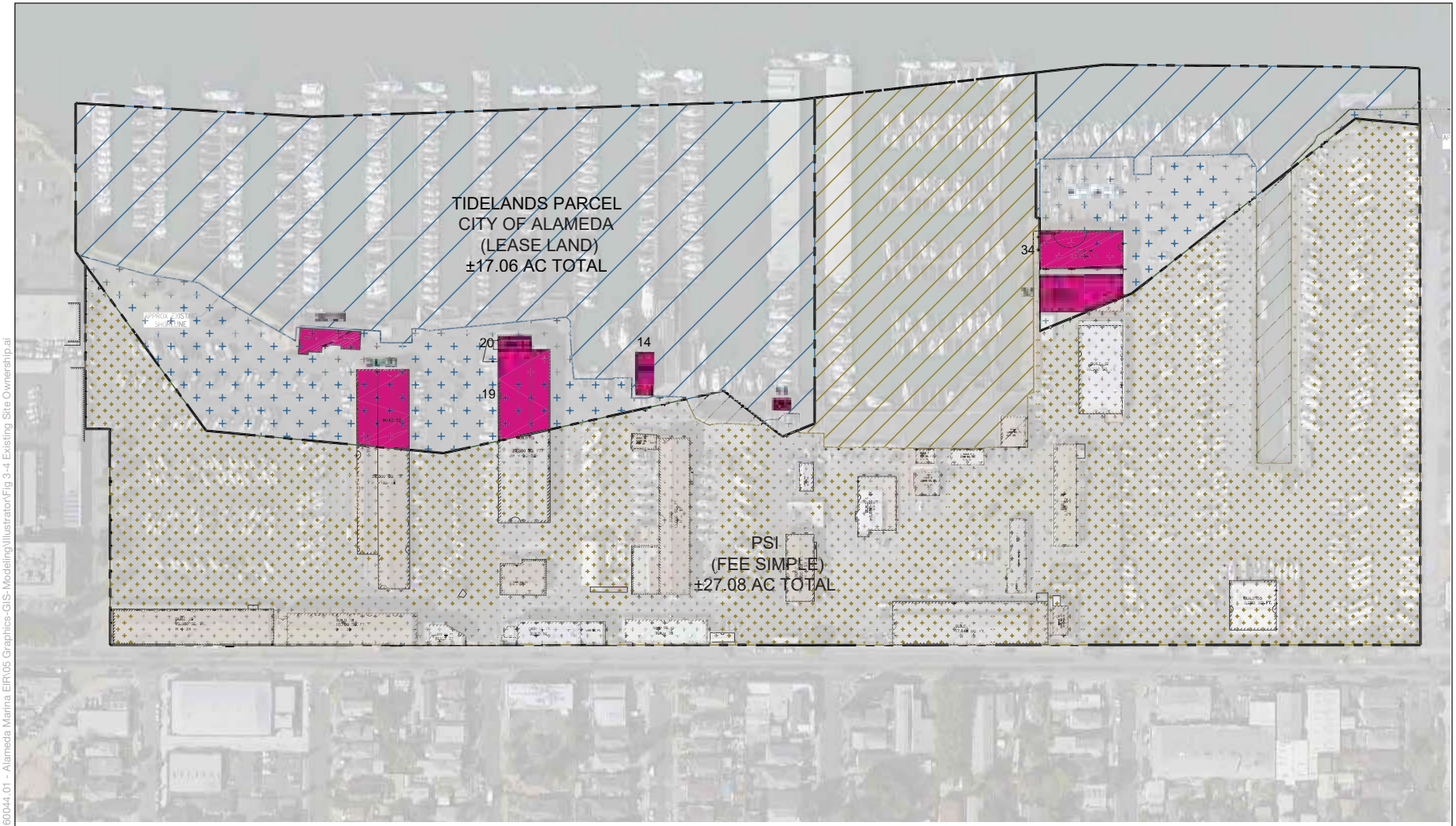
The proposed project shown in the Master Plan conforms with the existing tidelands lease and site ownership boundaries as shown in **Figure 3-7: Site Ownership**. These existing ownership and lease boundaries could be adjusted to accommodate changes in land use from those shown in the Master Plan, if the project sponsor pursues adjusted tidelands boundaries and if such adjustment is approved by the State Lands Commission and the City.

3.4.3 Proposed Vehicle Access, Circulation, and Parking

In general, the proposed project has been designed to provide inviting and intuitive pedestrian, bicycle and vehicle circulation connecting the City streets to and through the project to the Bay Trail and the waterfront. Access points and routes would correspond to the existing City street grid as close as possible to utilize views of the Marina, Estuary, Coast Guard Island, and the Oakland hills to the north.

Vehicular Access and Circulation

Five vehicle access points would be provided, four of which would occur in the same location as existing entrances: Alameda Marina Drive, Schiller Street, Stanford Street and Willow Street (see **Figure 3-8: Conceptual Vehicular Circulation Diagram**). A new public access point would be provided at Lafayette Street, and an emergency vehicle access point would also be added between Chestnut Street and Stanford Street. New local streets would have a typical 60-foot right-of-way (ROW).



U:\PROJECTS\SFO\16xxxx\D160044.01 - Alameda Marina EIR\05 Graphics-GIS-Modeling\Illustrator\Fig 3-4 Existing Site Ownership.ai

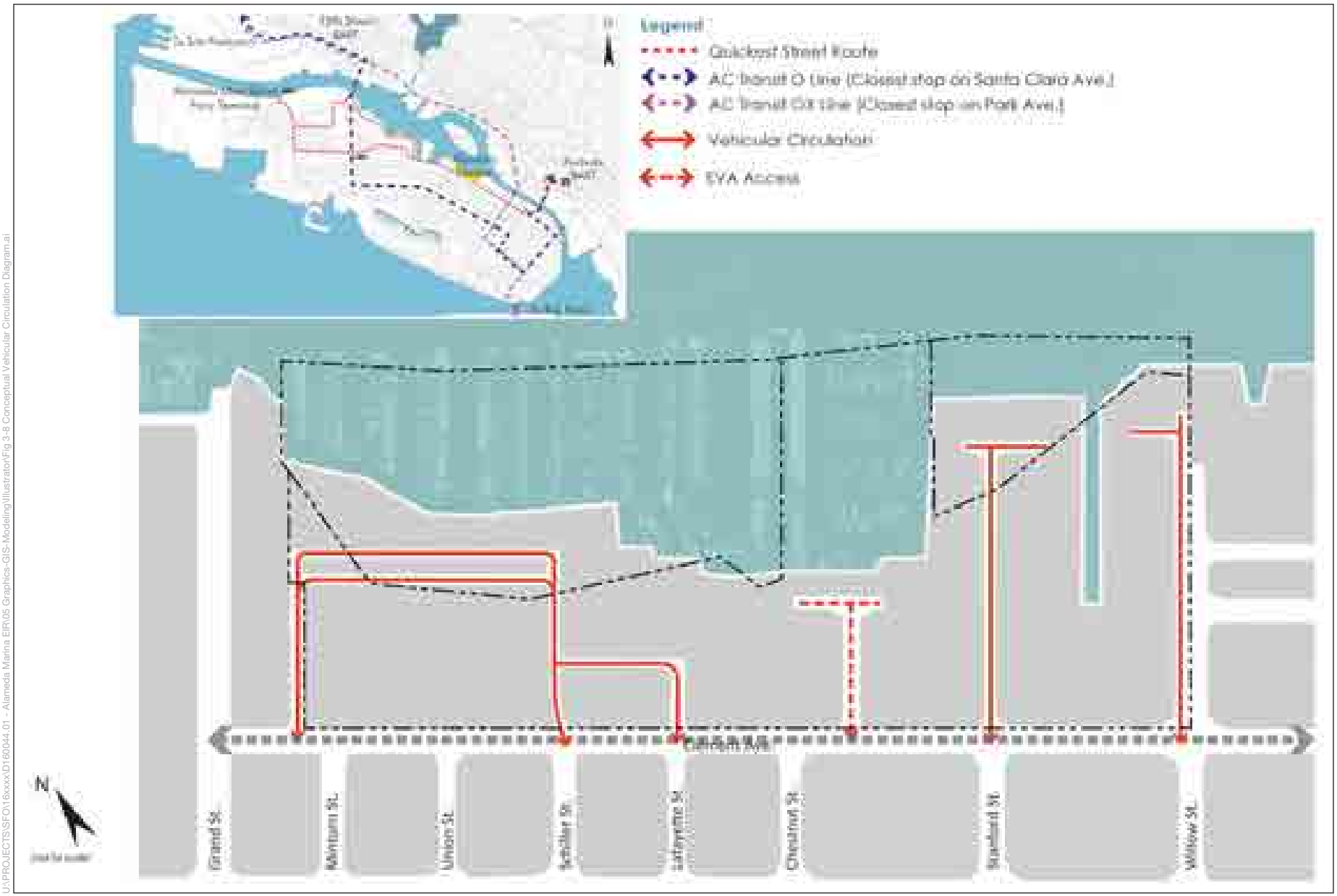
SOURCE: KTGY Architecture = Planning

Alameda Marina Master Plan EIR

Figure 3-7

Existing Site Ownership

ESA



U:\PROJECTS\SFO\16xxxx\D160044.01 - Alameda Marina EIR\05 Graphics-GIS-Modeling\Illustrator\Fig 3-8 Conceptual Vehicular Circulation Diagram.ai

SOURCE: KTGY Architecture = Planning

Alameda Marina Master Plan EIR

Figure 3-8
Conceptual Vehicular Circulation Diagram

ESA

Pedestrian and Bicycle Access

New commercial and residential streets are proposed to have minimum five-foot wide sidewalks on both sides with pedestrian crosswalks at all intersections. Proposed paseos and promenades would be designed to the human scale and to promote walkability. Pedestrian circulation routes would be well-lit and include wayfinding and safety signage.

Bicycle lanes are proposed on Clement Avenue in accordance with the Alameda Bicycle Master Plan. The proposed internal street network and Bay Trail segment within the project site would allow for bicyclists to access the site's commercial core, residential neighborhoods, waterfront, and open spaces. Bike racks would be provided at strategic locations within public open space areas for convenience and to promote bicycling through and around the site.

Transportation Demand Management

A Transportation Demand Management (TDM) plan would be created to help reduce overall vehicle trips, particularly single-occupant vehicle trips, generated from the new development. The TDM plan would include measures that are consistent with TDM plans of surrounding developments and could include fees to be applied to transit services, on-site car-share services, and bicycle facilities. The TDM measures could be combined with other developments to more effectively manage the program. In addition, the project sponsor would help form and participate in a larger Transportation Management Association for the Northern Waterfront, including possible provision of water taxi services between the project vicinity and other areas in the City of Alameda and the City of Oakland. At minimum, the program would include transit passes for all residents and employees, annual surveys of resident and employee travel habits, and annual assessments to fund transportation services.

3.4.4 Open Space

Open space in the project site is proposed at approximately 4.25 acres for public access along the waterfront/shoreline and along the graving dock alignment southwards to Clement Avenue. See **Figure 3-9: Conceptual Open Space Plan**. The Open Space element of the project is designed to provide for the following:

1. A Maritime Commercial Core design, to maintain a working waterfront environment, with limited public waterfront access in that area;
2. New Waterfront and Bay Trail Open Space which would provide a new segment of the San Francisco Bay Trail, providing bicycle and pedestrian access throughout the site; and
3. New Residential Block Open Spaces, to provide residential amenities for open space.

The proposed open space would include a new segment of the San Francisco Bay Trail, barbeque picnic areas, a boardwalk, interpretive walks, play areas, seating areas, pedestrian plazas and public art, and drought tolerant and native landscaping and plantings compatible with the overall open space and architecture. The public access open space would overlap with useable open space for the residential parcels. Useable open space would be comprised of common space and

U:\PROJECTS\SFO\16xxxx\D160044.01 - Alameda Marina EIR\05 Graphics-GIS-Modeling\Illustrator\Fig 3-9 Conceptual Open Space Plan.ai

SOURCE: KTGY Architecture = Planning

Alameda Marina Master Plan EIR

Figure 3-9
Conceptual Open Space Plan

ESA

private open space. The proposed common space area would be approximately 200 sf/du minimum and private open space area would be approximately 60 sf/du minimum.

3.4.5 Shoreline and Marina Improvements

The Marina (water side) infrastructure would be replaced over time as part of the ongoing maintenance and upkeep of the marina slips. The approach for the Marina infrastructure is discussed further below. Specific improvements and activities envisioned along the shoreline or within the marina include the following, and are subject to change based on final design:

Demolition

- All existing "stub" nearshore pier structures are assumed to be demolished, which would include approximately 3,000 square feet of pier stubs and 4,700 square feet of existing nearshore docks.
- Demolition of the boat yard "elevator."
- Off-haul of 4,000 cubic yards of contaminated soil from behind revetment.
- No excavation or demolition of existing seawalls would occur. New seawalls and revetments would be placed on the outside face of existing walls, as the existing walls would be needed to contain grade during the work.

Slope Protection

- Revetment between Piers 3/4 through Pier 6 to support the failing seawall.
- Graded slope only between Piers 8 and 10.
- Submerged sheetpile "cut-off" wall fronting the new hoist location between Piers 7 and 8.
- No slope protection between Piers 1 thru Piers 3/4, although it is suspected that the seawalls and/or slopes in this location may be substandard, but because the adjacent landside would be open space under the proposed plan, no additional support is envisioned. Some maintenance and/or replacements may be needed in the future.
- Revetments or seawall along the eastern end of the site.
- New seawall at Building 25 (adjoining current Harbor Master office).

Existing Pile-Supported Structures

- Building 14: It is assumed that existing piles supporting this building would be reinforced, as well as miscellaneous support framing, bracing and connectors. It is not anticipated that the superstructure would need to be removed, a new wharf built, and the building reinstalled onto a new wharf. This decision is subject to a structural assessment and confirmation from the local building authority.
- Building 13 would remain on the supporting wharf, with approximately 30 percent of the deck boards replaced on the wharf fronting Piers 1 and 2. No replacement of the rear seawall behind the wharf is currently contemplated, but ground improvement behind the wharf could occur.

Graving Dock

- It is currently assumed that the existing tie rods and deadmen, as well as the soldier piles, are in satisfactory condition. General stabilization work would include re-establishment of concrete "in-fill" panels that have either failed or have been displaced over time. These in-fill panels are currently either original concrete panels, or bare steel plate that may have been installed to replace failed concrete panels in past years. The steel plates show evidence of advanced corrosion and must be replaced.
- A long-dock would be installed within the graving dock, to provide new recreational access to the site for kayak launching, stand-up-paddle board use, and other recreational uses. A new, upgraded boat hoist system would also be installed at the site.

Relocated Boat Hoist

- The relocated hoist would include a pile-supported platform, mechanical hoist, and submerged "cut-off" wall to allow an extension of dredging to allow sufficient depth of water for boat launching/retrieval operations.

Marina

- Inter-connecting floating headwalks would be installed to facilitate efficient access and operations on the docks.
- No additional slips would be added to the marina, and in some cases, it is assumed that a small number of would be removed to accommodate the new headwalk and slope protection.
- Pier 1 and its associated slips may be reconfigured to accommodate larger vessels. New headwalks, slips and piles would be associated with this pier reconstruction.
- The geometry of the existing floating docks would remain largely unchanged, other than nearshore incorporation of the continuous headwalk.
- The existing east-end docks would need to be shifted channelward if revetments are planned for this area, but could remain in their existing locations if a seawall is installed.
- New gangways, gangway foundations, and/or connections to wharves or seawalls would be incorporated into the improvements, as would gate entrance features. Security gates would be added to provide increased security. Upgraded features would comply with Americans with Disabilities Act (ADA) requirements. A new dock system would be constructed at the west end of the marina to accommodate the dry-storage launching area and a public access launching area, which would include a hoist. The new system would include transient staging area for kayaks, small boats, and other uses. Dilapidated floats and pilings would likely need to be replaced in various areas throughout the marina.

Dredging

Redevelopment of the marina would require upgrades to existing docks, gangways, and pilings, as well as potential maintenance dredging. The marina may be dredged to accommodate current and projected use of the slips, likely to a depth of negative 10 feet Mean Lower Low Water (MLLW).

3.4.6 Utility Improvements

The project would replace the existing onsite utility infrastructure with new systems. Proposed utility systems would include flood and sea level rise protection measures, storm water quality, wastewater, potable water, electrical, natural gas and telecommunications. The proposed systems would connect to the existing systems within Clement Avenue.

Potable Water

EBMUD supplies potable water service to the project site via their existing eight-inch-diameter pipeline located within Clement Avenue. Existing private water pipelines extend from connections to the existing EBMUD pipeline and extend throughout the project site providing domestic and fire water to the various buildings and uses. The project would construct a new potable water distribution system with a network of 8-inch-diameter pipelines located within the proposed project street network. This system would connect to the existing EBMUD pipeline within Clement Avenue and would provide domestic and fire water supply to the various buildings and uses within the project site.

Wastewater

A new wastewater collection system would be constructed within the proposed street network within the project site. The new collection system would include pipelines, likely ranging in size from six to eight inches in diameter and would provide new connections to existing buildings to be preserved, proposed new buildings and the Marina uses. The proposed system would connect to the EBMUD Interceptor trunk main in Clement Avenue at the locations of existing manholes.

Stormwater

To bring the stormwater management system up-to-date, a new system would be constructed within the proposed network of streets on the project site. The system would include new inlets and pipelines of appropriate size to convey the site runoff and any additional runoff from offsite areas, including new outfall structures to the Oakland Estuary. Additionally, the new stormwater management system would also include water quality treatment measures to improve the quality of stormwater runoff from the site prior to discharge to the surrounding waters, such as bio-filtration planters, bio-filtration basins, infiltration areas, permeable paving, localized rainwater harvesting, where feasible, and other treatment measures as approved by the City.

Electric

Electrical service is provided to the project site by Alameda Municipal Power (AMP). AMP owns existing transmission and distribution electrical facilities located in Clement Avenue along the project frontage, which would provide electrical supply to the redeveloped project site. The existing overhead electrical transmission facilities (115 kV) along the project frontage would be preserved. Additionally, AMP owns and maintains the electrical supply lines that transmit power to Coast Guard Island across the Oakland-Alameda Estuary. These lines roughly bisect the project site and would likely need to be relocated within the project site and positioned within the proposed street network.

As part of the infrastructure improvements, a new joint trench system would be constructed that would connect to the existing electrical supply in Clement Avenue and extend electrical facilities throughout the project site. The joint trench would include new facilities for all dry utility systems.

Natural Gas

The project site's natural gas is supplied by Pacific Gas & Electric (PG&E). PG&E owns and maintains existing gas distribution facilities within Clement Avenue. A new joint trench system would be constructed to connect to the existing natural gas supply in Clement Avenue and extend throughout the project site.

Telecommunications

Telecommunications service is provided to the project site by AT&T and Comcast. A new joint trench system would be constructed throughout the project site to connect to the existing telecommunications facilities in Clement Avenue.

Flood and Sea Level Rise Protection

The shoreline would be reconstructed to achieve an elevation that provides built-in sea level rise protection for the waterfront and the project site. Most of the shoreline would be reconstructed as a revetment, sloped with rip-rap. Certain shoreline areas adjacent to existing buildings to be preserved or where other site constraints are present would require installation of a new seawall/bulkhead.

Proposed elevations of the public access areas and proposed building foundations would be established to provide built-in protection against a minimum of 36 inches of sea level rise. Shoreline design would also accommodate future adaptive measures for potential future sea level rise in excess of 36 inches. This built-in protection would be estimated to provide protection for 75 to 100 years.

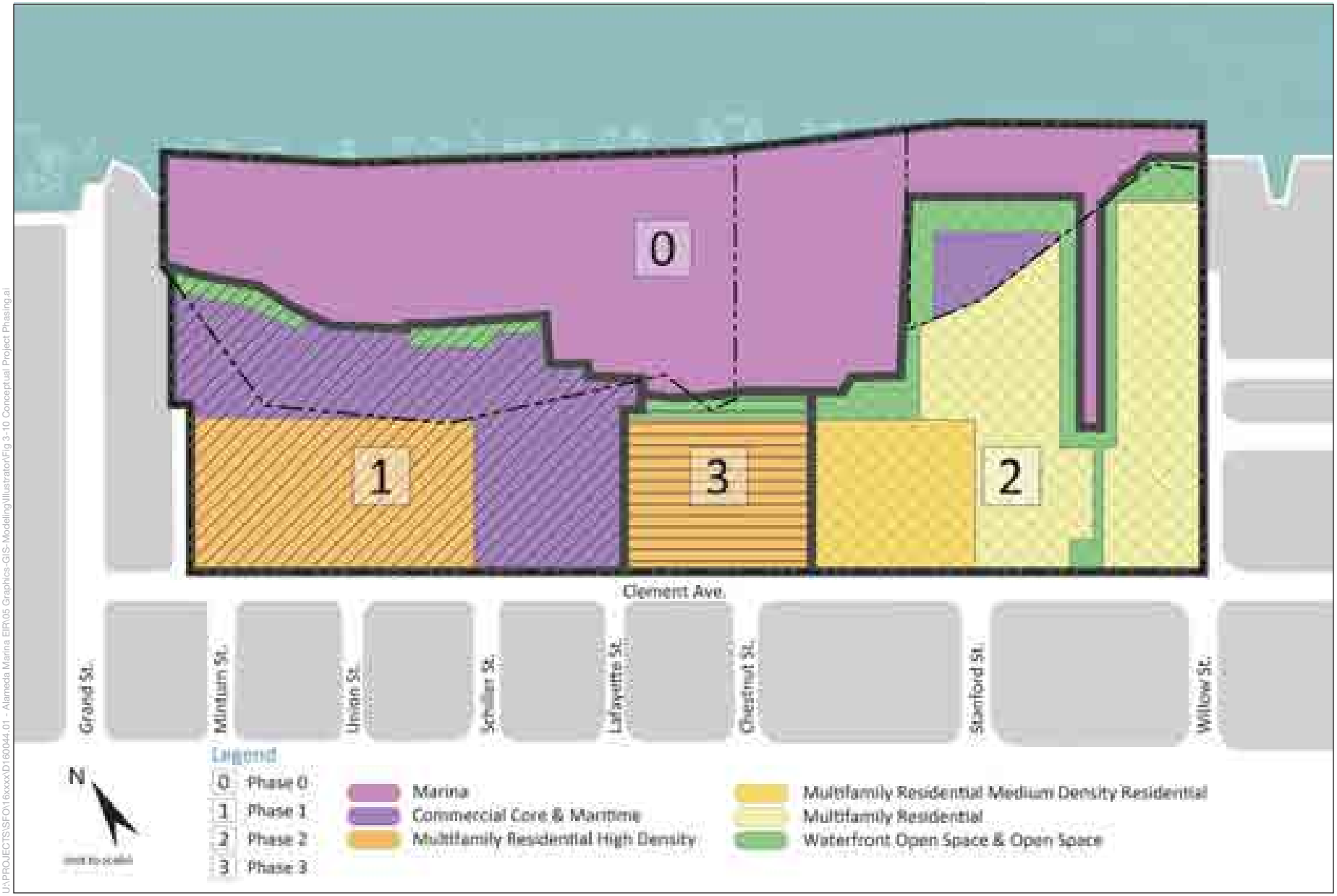
3.4.7 Project Construction

Conceptual Project Phasing

As shown in **Figure 3-10**, the project is anticipated to be developed in up to four phases, with the completion of the marina and shoreline improvements phase running parallel to the other phases. Construction is anticipated to begin in 2019 and complete by 2024.

Building Demolition and/or Adaptive Reuse

Thirty-seven buildings are currently present on the site, and most of these would be removed as part of project development. A number of buildings, however, would be retained and would continue in their existing use or would be adapted for new uses, if feasible. As noted previously, Figure 3-6 shows the existing buildings on the site and which of those would be demolished and which could be retained.



U:\PROJECTS\SFO\16xxxx\D160044.01 - Alameda Marina EIR\05 Graphics-GIS-Modeling\Illustrator\Fig 3-10 Conceptual Project Phasing.ai

SOURCE: KTGY Architecture = Planning

Alameda Marina Master Plan EIR

Figure 3-10
Conceptual Project Phasing

ESA

Grading and Site Preparation

Preparation of the site for construction of the proposed project would include the removal of remnant hardscape elements, as well as extensive site grading. Building demolition and site clearance is estimated to generate approximately 40,000 cubic yards (cy) of concrete, asphalt, and other waste materials, at least half of which would be reprocessed and reused on site as roadbase and fill. Approximately 40 existing trees would be removed from the site, as would about 3,300 linear feet of inactive and abandoned railroad spurs.

The preliminary conceptual grading plan for the project has been designed to balance cut (excavation) and fill (soil placement) on the site, by relocating soil from areas of excavation to areas where it would be re-used. The applicant estimates a total volume of approximately 25,000 cubic yards (cy) of cut, and approximately 25,000 cy of fill, for a total volume of cut and fill of approximately 50,000 cubic yards. The preliminary grading plan shows that the volume of fill could exceed the volume of cut by approximately 5,000 cy, although this discrepancy would be refined in the final grading plan. Also, the shoreline improvements could require the import of approximately 15,000 cy of fill to construct raised revetments providing long term protection from sea-level rise.

3.5 Proposed Plans

The following plans would be developed as part of the proposed project and implemented during construction and/or operations:

- Construction Safety and Emergency Response Plan (construction and operation);
- Hazardous Materials Management Plan (construction and operation);
- Health and Safety Plan (construction);
- LBP removal Plan (construction);
- Remedial Action Plan (construction);
- Soil Risk Management Plan (construction);
- Storm Water Pollution Prevention Plan (construction and operation);
- Noise Control Plan (construction);
- Traffic Control Plan (construction)
- Archaeological Research Design and Treatment Plan (ARDTP) (construction);
- Erosion Control Plan (construction);
- Materials Management and Disposal Plan (construction);
- Adaptive Flood Risk Management Plan (operation);
- Transit Access Plan (operation);
- Construction Waste Management Plan (construction).

3.6 Required Jurisdictional Approvals

3.6.1 City of Alameda

Project implementation would require a series of interrelated planning and regulatory approvals by the City of Alameda, as Lead Agency. Specifically, the City is considering taking the following approval actions:

- Certification of the Alameda Marina Project EIR pursuant to CEQA;
- Approval of Master Plan and Planned Development Plan;
- Subdivision Map Approval
- Potential approval of a Development Agreement
- Approval of Design Review Permits for the design of structures, common areas, and Marina spaces
- Other local approvals that may be required, such as:
  - Construction Waste Management Plan (for construction waste),
  - Grading permits,
  - Demolition permits,
  - Encroachment permits,
  - Building permits,
  - Other City approvals as necessary to develop the project, and
  - Lot line adjustments if the Tidelands boundaries are adjusted.

The project would require review and recommendation by the Planning Commission to the City Council, followed by consideration and action by the City Council. This EIR is intended to provide the CEQA-required environmental documentation for use in considering these and any other City approvals required to implement the project.

3.6.2 Other Governmental Agency Approvals

As the Lead Agency and as appropriate under CEQA, the City also intends this EIR to serve as the CEQA-required environmental documentation for consideration of this project by other Responsible Agencies and Trustee Agencies which may have limited discretionary authority over development proposals associated with the project. Under the CEQA *Guidelines*, the term "Responsible Agency" includes all public agencies, other than the Lead Agency, which have discretionary approval power over aspects of the project for which the Lead Agency has prepared an EIR (Section 15381); and the term "Trustee Agency" means a state agency having jurisdiction by law over natural resources affected by the project which are held in trust by the people of California (Section 15386).

Responsible Agencies and Trustee Agency approvals for the project may include, but are not limited to, the following:

Local Agencies

- Alameda County Congestion Management Agency (CCCMA) review of the traffic analysis is required because the project is expected to result in an increase in peak hour traffic of more than 100 trips (see Section 4.13, Transportation and Traffic).
- Alameda County Environmental Health Department (CCEHD) review and permits may be required, if wells or soil borings are required (for environmental cleanup, for example), or if abandoned wells or septic tanks, if any, are proposed to be destroyed during construction.

Regional and State Agencies

- East Bay Municipal Utility District (EBMUD) approvals will be required for water hookups and water lines as well as for sewer hookups and any upgrades to the backbone sewer system. EBMUD review of the project's water needs assessment will also be required.
- San Francisco Bay Conservation and Development Commission (BCDC) approvals will be required for Bay fill and shoreline development within 100 feet of the mean high tide line,
- San Francisco Bay Regional Water Quality Control Board (RWQCB) required approvals will include:
  - National Pollution Discharge Elimination System (NPDES) General Permit for storm water discharges associated with construction activity,
  - Clean Water Act Section 401 Water Quality Certification and Notice of Intent for construction activities,
  - Storm Water Pollution Prevention Plan (SWPPP) for on-site storm water management and pollution prevention, and
  - Lead agency review and oversight over remaining remediation of contaminated soils or groundwater impacting the project site, including approvals related to Remedial Action Plans, Remedial Action Completion Certifications, and No Further Action Letters.
- California State Lands Commission (SLC) for approval of uses within the tidelands leasehold for consistency with the Public Trust and approval of tidelands exchange, if pursued;
- Bay Area Air Quality Management District (BAAQMD) review of project plans may be required.
- California Department of Fish and Wildlife (CDFW): CDFW would review and comment on specific sensitive species aspects of the project if potential effects are found.

Federal Agencies

- U.S. Army Corps of Engineers (USACE) approval of Section 404 Permit under the Federal Clean Water Act for project impacts to jurisdictional waters of the United States resulting from fill in waters of the U.S. and Section 10 of the Rivers and Harbors Act for work in the waters of the United States; for construction of storm drain outfalls or alterations to

the shoreline revetment; and as lead for federal Endangered Species Act (ESA) and Essential Fish Habitat (EFH) and EFH consultations;

- Dredged Material Management Office (DMMO) – Review of dredging; would include dredged material characterization requirements and a separate permit for dredging (separate from USACE);
- USFWS approval involving a Section 7 Consultation/Biological Opinion may be required under the Federal Endangered Species Act for project impacts to federally-listed special status species or their habitat.
- NOAA Fisheries approval involving a Section 7 Consultation/Biological Opinion may be required under the Federal Endangered Species Act for project impacts to federally-listed special status marine species or their marine habitat.
- U.S. Coast Guard (USCG) approvals may be required under Section 10 of the Federal Rivers and Harbor Act.

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CHAPTER 4
Environmental Setting, Impacts, and Mitigation Measures

4.0 Introduction to the Environmental Analysis

Organized by the environmental resource area, this chapter provides an integrated discussion of the environmental setting (including the regional, local and/or project setting and regulatory setting) and environmental consequences (including environmental impacts and mitigation measures for potentially significant impacts) associated with the demolition of some existing facilities and construction, operation, and maintenance of the project.

4.0.1 CEQA Requirements

The California Environmental Quality Act (CEQA) and the CEQA *Guidelines* require that the environmental analysis for an Environmental Impact Report (EIR) must evaluate impacts associated with a project and identify mitigation measures for any potentially significant impacts. All phases of a project are evaluated in the analysis. The CEQA *Guidelines* state:

- An EIR shall identify and focus on the significant environmental effects of the project. In assessing the impact of a project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the Notice of Preparation (NOP) is published, or where no NOP is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. (CEQA *Guidelines* Section 15126.2[a]).

- An EIR must discuss any inconsistencies between the project and applicable general plans and regional plans, including, without limitation, the applicable air quality attainment or maintenance plan or State Implementation Plan, area-wide waste treatment and water quality control plans, regional transportation plans, regional housing allocation plans, habitat conservation plans, natural community conservation plans and regional land use plans (CEQA *Guidelines* Section 15125[d]).

- An EIR must describe feasible measures that could minimize significant adverse impacts; such measures must be fully enforceable through permit conditions, agreements, or other

legally-binding instruments. Mitigation measures are not required for effects that are found to be less than significant (CEQA *Guidelines* Section 15126.4[a]).

4.0.2 Project Baseline

The environmental baseline identifies the existing physical conditions on, around, and affecting the project site. The baseline is established to provide a point of comparison between pre-project conditions (the baseline) and post-project conditions to determine whether the change to the existing environment caused by the project is significant under CEQA. While stable regarding its point in time, the baseline condition is tailored to each environmental topic area and is established by the significance criteria (discussed below). For most topics or resource areas (such as hazards and hazardous materials; utilities and service systems; noise environment; and other aspects of the physical environment), the baseline is the same as the "environmental setting," *i.e.*, the physical environmental conditions in the vicinity of the project as they existed in the summer of 2017[1] when the City published the revised NOP for the project (CEQA *Guidelines* Sections 15125(a), 15126.2(a)). For traffic, potential project impacts are evaluated in the context of scenarios referred to as "Existing Conditions" (existing conditions with volumes obtained from recent traffic counts and the existing roadway system), as well as future "Cumulative (2040) No Project Conditions" (future conditions with planned population and employment growth, and planned transportation system improvements, for the year 2040. Traffic volume forecasts were developed using the Alameda Countywide Travel Demand Model).

4.0.3 Environmental Impacts

This EIR addresses impacts of the project on the existing environment pursuant to CEQA. Potential effects of the environment on a project may not be legally required to be analyzed or mitigated under CEQA, although the CEQA *Guidelines* include certain significance criteria that pertain to the effect of the environment on a project. A growing number of court cases have supported the position that CEQA is solely, or largely, concerned with the effects of a project on the environment and not the effects of the environment on a project; that latter may include thresholds related to air quality (e.g., locating a new residential project near an existing source of air pollution), geology (e.g., locating a new structure in a seismic hazard zone), and noise (e.g., locating a new residential project on a loud street).

Most recently, the California Supreme Court's *CBIA v. BAAQMD* decision[2] indicated that the impact of existing environmental conditions on a project's future users or residents are generally

[1] The City issued an NOP for the project on October 30, 2016, and a revised NOP on July 10, 2017.

[2] *California Building Industry Association v. Bay Area Air Quality Management District*, S213478. (A135335, A136212; 218 Cal.App.4th 1171; Alameda County Superior Court; RG10548693. Filed December 17, 2015.) In the decision, the Court held that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. But when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project's impact on the environment – and not the environment's impact on the project – that compels an evaluation of how future residents or users could be affected by exacerbated conditions."

not required to be considered in a CEQA evaluation, except for certain statutory issues or when the project may exacerbate existing hazards or existing conditions.

4.0.4 Mitigation Measures

Project-specific mitigation measures are identified throughout this EIR where feasible and necessary to avoid, minimize, rectify, reduce, or compensate for potential significant, adverse impacts of the project in accordance with CEQA *Guidelines* Section 15126.4. All mitigation measures will be 1) included as part of the design, construction, and operation of the proposed project; 2) adopted as conditions of approval for the proposed project; and 3) subject to monitoring and reporting requirements of CEQA and the terms of the discretionary approvals for the project.

4.0.5 Section Contents and Definition of Terms

Chapter Organization

Chapter 4 is organized into the following environmental resource or issue areas (also sometimes referred to as environmental topics):

4.1 Aesthetics
4.2 Air Quality, Climate Change, Greenhouse Gasses, and Energy
4.3 Biological Resources
4.4 Cultural Resources
4.5 Geology, Soils, and Paleontological Resources
4.6 Hazards and Hazardous Materials
4.7 Hydrology and Water Quality
4.8 Land Use and Planning
4.9 Noise and Vibration
4.10 Population and Housing
4.11 Public Services and Recreation
4.12 Transportation and Traffic
4.13 Utilities and Service Systems
4.14 Issues Not Evaluated [Agricultural and Forestry Resources, Mineral Resources]

Section Contents

Sections 4.1 through 4.13 follow this format:

- **Environmental, Regional, Local, and/or Project Site Setting:** Provides an overview of the physical environmental conditions in the area at the time of, or prior to, the publication of the NOP, that could be affected by implementation of the project in accordance with State CEQA *Guidelines* Section 15125.

- **Regulatory Setting:** Identifies the laws, regulations, ordinances, plans, and policies that are relevant to each resource area.

- **Significance Criteria:** Provides the criteria used in this document to define the level at which an impact would be considered significant in accordance with CEQA. Significance criteria are based on CEQA *Guidelines* Section 15064.5, Appendix F, and the checklist presented in Appendix G; factual or scientific information and data; and regulatory standards of the City of Alameda and federal, State, and local agencies. This section also discusses, where applicable, the *Approach to Analysis*, and, where applicable, a summary of *Topics with No Impact or Otherwise Not Addressed in this EIR*.

- **Impacts:** Each section lists impacts numerically and sequentially. An impact statement (always in bold text) precedes the discussion of each impact analysis and summarizes the potential for the project to have an impact. Impact statements use an alphanumeric designation that corresponds to the environmental topic (e.g., "AES-1" for aesthetic impacts). A number follows the alpha designation to indicate the order in which that impact is identified within that particular analysis. For example, "Impact CUL-3" is the third cultural resources impact identified in the cultural resources analysis. The impact statement culminates with the level of impact that exists prior to the consideration of mitigation measures, if any are required. The impact determination after the incorporation of mitigation measures is stated at the close of the impact analysis discussion. An impact is categorized as one of the following:

  - ***No Impact (NI)*:** The project would not cause a noticeable effect on the environment as measured by the applicable significance criterion and threshold; therefore, no mitigation would be required.

  - ***Less than Significant (LTS)*:** The impact of the project, either before or after implementation of feasible mitigation measures, does not reach or exceed the defined threshold of significance. The impact would not cause a substantial adverse change in the environment as measured by the applicable significance criterion and threshold; therefore, no mitigation would be required.

  - ***Less than Significant with Mitigation (LTSM)*:** The project would cause a substantial adverse change in the physical conditions of the environment; one or more feasible mitigation measures would reduce the environmental effects to a less-than-significant level.

  - ***Significant and Unavoidable (SU)*:** The impact of the project reaches or exceeds the defined threshold of significance. The project would cause a substantial adverse change in the physical conditions of the environment; there is either no feasible mitigation available or, even with implementation of feasible mitigation measures, the project would cause a significant adverse effect on the environment.

- **Mitigation Measures:** Mitigation measures are designated in the same manner described above for impact statements. Where multiple mitigation measures are identified for a particular impact, each is numbered sequentially. Generally, all mitigation measures are indented, and titles are in bold text.

4.0.6 Cumulative Analysis

Approach

CEQA defines cumulative as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impact." Section 15130 of the CEQA *Guidelines* requires that an EIR evaluate potential environmental impacts when the project's incremental effect is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past, present, existing, approved, pending and reasonably foreseeable future projects. These impacts can result from a combination of a proposed project together with other projects causing related impacts.

Cumulative Context

Information used to determine cumulative land use assumptions includes the Association of Bay Area Government's (ABAG's) projections for year 2040, information from the City's General Plan, and information regarding projects in the vicinity of the proposed project site that are under construction, approved, and pending based on the City's list of development projects under review as of the summer of 2017. Information on cumulative projects was also obtained from the California Office of Planning and Research (CEQANet Database). For the analyses of traffic, air, GHGs, and noise impacts, cumulative scenario projections were developed using the Alameda County Transportation Authority (CCTA) Countywide Travel Demand Model.

Cumulative projects considered in the analysis are presented in **Table 4.0-1**. The table does not include all projects that would contribute to cumulative impacts along with the proposed project; rather, it includes a number of concurrent projects in the area to demonstrate the scope and nature of development in the cumulative vicinity. Cumulative impacts are discussed throughout Chapter 4 as necessary, and discussed further and summarized in Chapter 6.

TABLE 4.0-1
ALAMEDA MARINA MASTER PLAN EIR CUMULATIVE PROJECTS

Project Name	Description of Project	Location Within Alameda
Alameda Point	Rehabilitation and construction of 1,425 residential units and rehabilitation, reuse, and new construction of approximately 5.5 million square feet of commercial and workplace facilities	Former Alameda Naval Air Station on west end of Alameda Island
Alameda Landing	Construction of approximately 342 residential units and 360,000 square feet of maritime commercial adaptive reuse.	Approximately 1.5 miles west of Alameda Marina
Del Monte	Adaptive reuse of former warehouse and surrounding land into approximately 380 housing units and 30,000 square feet of commercial/retail space	On Buena Vista Avenue approximately one-half mile from Alameda Marina
Encinal Terminals	A proposal to construct approximately 589 housing units and up to 50,000 square feet of commercial uses and waterfront public parks	On waterfront approximately one-half mile from Alameda Marina
Shipways	Proposal to construct approximately 300 housing units and an approximately 2.5 acre public park along the waterfront	1100 Marina Village Parkway, approximately 1.5 miles northwest of Alameda Marina

SOURCE: City of Alameda, Fehr & Peers, 2017

4.1 Aesthetics

4.1.1 Introduction

This section evaluates the potential for the project to result in significant adverse impacts to aesthetics. The evaluation considers existing visual conditions (generally as of summer, 2017) and assesses the effects of the project on scenic vistas and scenic resources, visual quality and visual character, as well as its potential to have adverse light and glare effects.

4.1.2 Environmental Setting

Existing Visual Conditions

The design and visual resources of the Alameda Marina area comprise a combination of design and function. Views in the area include images of heavy industry and shipping, a variety of maritime operations, and a mix of old and new residential development. There are a variety of uses, building materials and architectural styles evident within the area. The photographs on the following pages depict the overall aesthetic setting of the project area with a brief overview provided below.

Regional and Citywide

The City of Alameda occupies approximately 10.6 square miles of land area immediately south of the City of Oakland and the Oakland-Alameda Estuary (the "Estuary"), east of San Francisco, and north and east of the San Francisco Bay (the "Bay"). Alameda is approximately 3.5 miles east across San Francisco Bay from San Francisco (10 driving miles), and less than .25 miles southwest along the Oakland Inner Harbor and Brooklyn Basin (less than .5 miles driving miles) from Oakland. Alameda Island makes up approximately 80 percent of the City's land area, with the remainder on Bay Farm Island across the San Leandro Channel.

The City is relatively flat and low lying, with gradual elevation increases occurring towards the Central Avenue at Park Street. Alameda has a largely built-out environment with the majority of its natural open space areas limited to the northwestern-most tip of Alameda Island at the former Naval Air Station Alameda, and the Crab Cove area on the southern side of the island. Various neighborhood parks are also scattered across the City. Alameda's proximity to the San Francisco Bay, Oakland Inner Harbor, Brooklyn Basin, and various other waterways, coupled with the minor elevation changes results in limited public views of aesthetic resources beyond those provided adjacent to or nearby to existing open spaces.

Project Site

The Alameda Marina project site, located at 1815 Clement Avenue, is within the Central Neighborhood of Alameda, a unique neighborhood in the City, characterized by the Queen Anne-style cottages and California craftsman bungalows and coastal maritime related industries.

The relatively flat project site, ranging from approximately 7 to 13 feet above sea level, is bounded on the west by Alameda Marina Drive, on the north by the Oakland-Alameda Estuary, to the east by a northern extension of Willow Street, and to the south by Clement Avenue (see **Figure 3-2**, **Local Vicinity**, in the Project Description). To the west of the site across Alameda Marina Drive lies the Alameda Power Service Center and also an extension of the Fortmann Marina, beyond which is the Northern Waterfront General Plan Area, slated for future mixed-use and residential facilities. North of the site across the estuary is Coast Guard Island, and also Union Point Park located along Embarcadero in Oakland. To the east of the site lies the Navy Operational Support Center/Alameda Naval and Marine Corps Reserve Center, and to the south across Clement Avenue is a mixture of light industrial, retail and primarily low-density residential uses. The Park Street business district is approximately 0.7 miles further southeast and the Webster Street business core is approximately 1.5 miles to the west.

The visual character of the project site vicinity is largely established by marine industrial, commercial, and office uses, as well as by residential neighborhoods. The approximately 44-acre project site consists of public tidelands and privately owned land areas. Development within the site is characterized by an existing boat marina that covers approximately 16.2 acres with more than a dozen piers and approximately 530 boat slips. The land side of the site contains approximately 250,000 square feet of maritime, commercial and retail, warehouse and dry storage uses, including 37 buildings, which cover about 16 percent of the total land area. Most of the buildings are industrial style two story structures, built before 1943 that have been renovated extensively over the decades. Other parts of the project site are characterized by shoreline, an aging graving dock inlet, and marine docks.

There is minimal vegetation throughout the project site as more than 80 percent is paved in asphalt or concrete for circulation and outside boat and vehicle storage, which takes up most of the west and east portions of the site. There are fringe and coastal areas, including the graving dock, which includes ruderal vegetation, including fennel, ice plant and non-native grasses (see Section 4.2, *Biological Resources*, for additional detail).

Existing nighttime lighting within the project site is primarily security lighting associated with industrial, office uses, as well as the parking lot and berths. Nighttime lighting adjacent to the site includes street and residential lighting along Clement Avenue and to the south, as well as security lighting of the adjacent Navy/Marine Corps facility, Grand Street Launching Facility, Alameda Municipal Power to the east and west, and ambient lighting related to Coast Guard Island and the City of Oakland to the north.

Existing Scenic Vistas and Resources

Views along the waterfront of the project site are of the Oakland-Alameda Estuary, Coast Guard Island, Union Point Park and Marina, and the East Bay hills beyond.

Public views of Alameda Marina from the immediate vicinity within Alameda are limited or obscured by fencing and existing buildings on and off the project site. Limited views of the western portions of the project site are available from the Grand Street Launching Facility off of Grand Street. The eastern portions of the site would be visible from the adjacent boat ramp and

parking lot, however this is a part of the Navy Operational Support Center/Alameda Naval and Marine Corps Reserve Center and so are not considered public views. The northern portions of the project site are most visible from the Oakland Estuary and Union Point Park and Marina across the Estuary. The southern portion of the project site, abutting Clement Avenue, is largely obscured by existing buildings, walls, and fences.

Figure 4.1-1 presents a location key to several photographs of the existing visual conditions of the project site and its surroundings. These existing visual conditions are further displayed in **Figure 4.1-2**, which presents a birds-eye view of the site as viewed from across Estuary from the vicinity of Union Point Park in the City of Oakland. **Figures 4.1-3** through **4.1-9** show various photos taken in and around the project site, with the photo locations keyed to the locations shown in Figure 4.1-1.

4.1.3 Regulatory Setting

State

San Francisco Bay Conservation and Development Commission (BCDC) and Bay Plan

The BCDC regulates development that falls within the open water, marshes and mudflats of greater San Francisco Bay, and its nine-county shoreline. The BCDC uses the McAteer-Petris Act, the San Francisco Bay Plan, its own regulations, and other plans specific to other areas of the Bay to inform its decisions. The BCDC's Bay Plan and Public Access Design Guidelines apply to portions of the project site along the shoreline.

The Bay Plan

The Bay Plan contains findings and policies concerning appearance, design, and scenic views of development around the Bay (SFBCDC, 1968). In accordance with these policies, views of the Bay from vista points and public roads should be protected. Per the Bay Plan, important Bay overlook points, and historic areas and structures that may be located in water-related industrial and port areas, should be preserved and incorporated into site design for new projects, if feasible.

The Bay Plan directs that shoreline developments be built in clusters, leaving open area around them to permit more frequent views of the Bay. Similarly, the Bay Plan recommends structures near or over the Bay to be designed as landmarks that suggest the location of the waterfront when it is not visible, especially in flat areas, but low enough to assure the continued visual presence of the hills around the Bay. All bayfront development should be designed to enhance the pleasure of the user or viewer of the Bay. Maximum efforts should be made to provide, enhance, or preserve views of the Bay and shoreline, especially from public areas, from the Bay itself, and from the opposite shore. Bay Plan policies and goals particularly applicable to the project site and that pertain to aesthetics include:

- To enhance the visual quality of development around the Bay and to take maximum advantage of the attractive setting it provides, the shores of the Bay should be developed in accordance with the Public Access Design Guidelines.

U:\PROJECTS\SFO\16xxxx\D160044.01 - Alameda Marina EIR\05 Graphics-GIS-Modeling\Illustrator\Fig 4.1-1 Photo Locations.ai

SOURCE: Google Earth; ESA

Alameda Marina Master Plan EIR

Figure 4.1-1
Plan Area Photo Locations

ESA

U:\PROJECTS\SFO\16xxxx\D160044.01 - Alameda Marina EIR\05 Graphics-GIS-Modeling\Illustrator\Fig 4.1-2 Birdseye View.ai

SOURCE: Google Earth; ESA

Alameda Marina Master Plan EIR

Figure 4.1-2
Project Vicinity Birdseye View

ESA

Photo 1a: View of existing Alameda Marina facility looking northeast from intersection of Clement Avenue and Stanford Street.

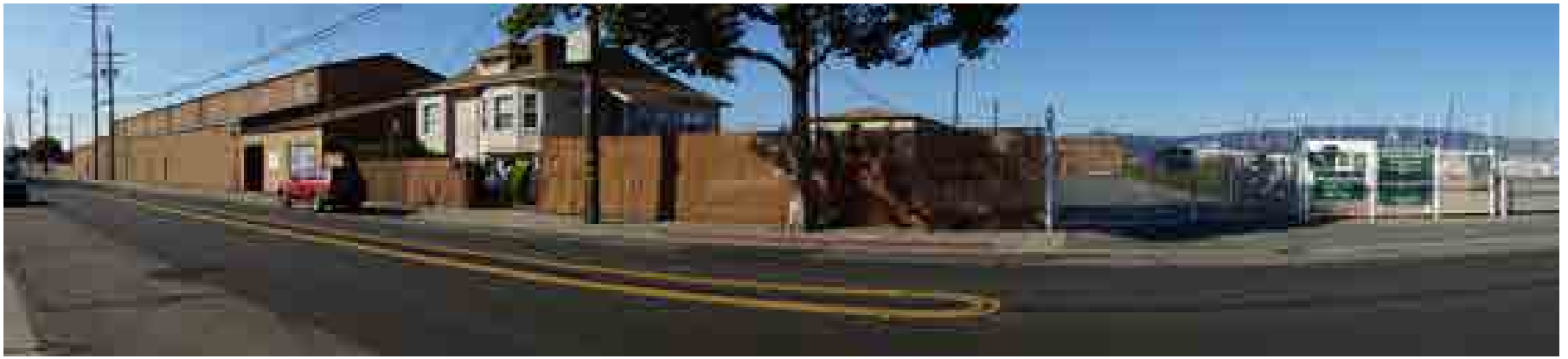

Photo 1b: View of existing Alameda Marina facility and Clement Avenue streetscape looking north from intersection of Clement Avenue and Standford Street.

SOURCE: ESA

Alameda Marina Master Plan EIR

Figure 4.1-3
Plan Area Photos

ESA

Photo 2a: View looking northeast of existing Alameda Marina facility and Clement Avenue streetscape from intersection of Clement Avenue and Chestnut Street.

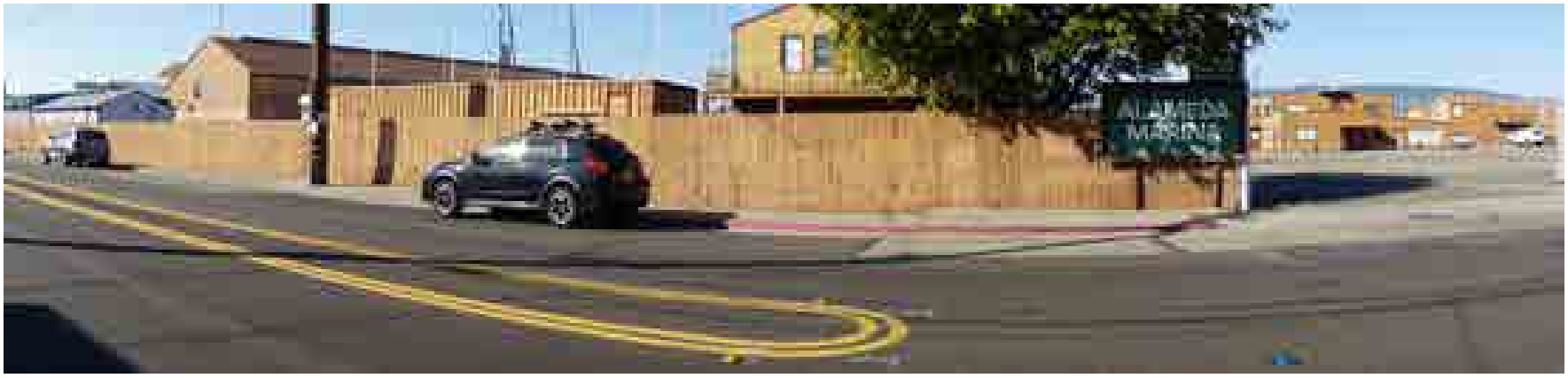

Photo 2b: View looking north of existing Alameda Marina facility and Clement Avenue streetscape from intersection of Clement Avenue and Chestnut Street.

SOURCE: ESA

Alameda Marina Master Plan EIR

Figure 4.1-4
Plan Area Photos

ESA

Photo 3a: View looking northeast of existing Alameda Marina facility from south of Clement Street on Union Street.

Photo 3b: View looking northeast of existing Alameda Marina facility and Clement Avenue streetscape from intersection Clement Avenue and Union Street.

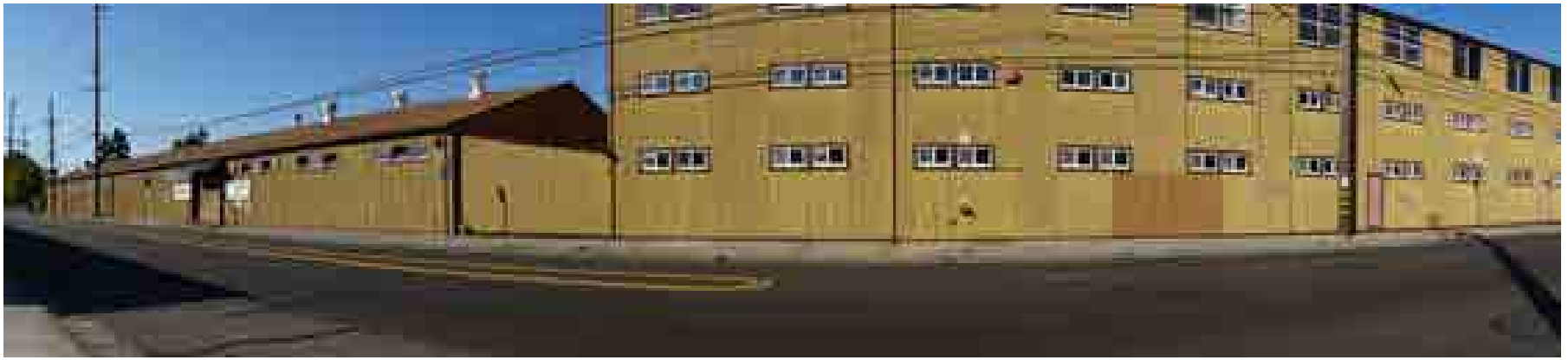

Photo 3c: View looking north of existing Alameda Marina facility and Clement Avenue streetscape from intersection Clement Avenue and Union Street.

SOURCE: ESA

Alameda Marina Master Plan EIR

Figure 4.1-5
Plan Area Photos

ESA

Photo 4a: View looking northeast along the western boundary of Alameda Marina.

Photo 4b: View looking southeast along shoreline of existing Alameda Marina facility.

SOURCE: ESA

Alameda Marina Master Plan EIR

Figure 4.1-6
Plan Area Photos

ESA

Photo 5a: View looking northwest of existing wharf facilities within Alameda Marina.

Photo 5b: View looking northwest of existing wharf and dock facilities within Alameda Marina.

SOURCE: ESA

Alameda Marina Master Plan EIR

Figure 4.1-7
Plan Area Photos

ESA

Photo 6: View looking south of existing graving dock.

Photo 7: View looking north of existing graving dock facility.

SOURCE: ESA

Alameda Marina Master Plan EIR

Figure 4.1-8
Plan Area Photos

ESA

Photo 8: View looking northwest from mouth of graving dock towards marina facilities.

Photo 9: View from northeastern corner of project site looking north across Estuary towards Coast Guard Island bridge.

SOURCE: ESA

Alameda Marina Master Plan EIR

Figure 4.1-9
Plan Area Photos

ESA

- All bayfront development should be designed to enhance the pleasure of the user or viewer of the Bay. Maximum efforts should be made to provide, enhance, or preserve views of the Bay and shoreline, especially from public areas, from the Bay itself, and from the opposite shore.

- Shoreline developments should be built in clusters, leaving areas open around them to permit more frequent views of the Bay. Developments along the shores of tributary waterways should be Bay-related and should be designed to preserve and enhance views along the waterway, so as to provide maximum visual contact with the Bay.

- Views of the Bay from vista points and from roads should be maintained by appropriate arrangements and heights of all developments and landscaping between the view areas and the water. In this regard, particular attention should be given to all waterfront locations, areas below vista points, and areas along roads that provide good views of the Bay for travelers, particularly areas below roads coming over ridges and providing a "first view" of the Bay.

- Vista points should be provided in the general locations indicated in the Plan maps. Access to vista points should be provided by walkways, trails, or other appropriate means and connect to the nearest public thoroughfare where parking or public transportation is available. In some cases, exhibits, museums, or markers would be desirable at vista points to explain the value or importance of the areas being viewed.

Shoreline Space Public Access Design Guidelines

The BCDC is charged with maintaining public access, including visual public access (views to the Bay from other public spaces) within its jurisdiction. The BCDC developed public access objectives in the *Shoreline Space Public Access Design Guidelines* to provide, maintain and enhance visual access and visual quality to the Bay and shoreline by locating buildings, structures, parking lots and landscaping of new shoreline projects such that they enhance and dramatize views of the Bay and the shoreline from public thoroughfares and other public spaces, organizing shoreline development to allow Bay views and access between buildings (SFBCDC, 2005).

Per these guidelines, the design character of public access areas should relate to the scale and intensity of the proposed development. Objectives related to visual access and visual quality may be accomplished by providing visual interest and architectural variety in massing and height in new buildings along the shoreline and/or using forms, materials, colors and textures that are compatible with the Bay and adjacent development.

Title 24 Outdoor Lighting Zones

The California Energy Commission (CEC) establishes Building Energy Efficient Standards within Title 24 that address outdoor lighting for public and private uses. The standards specify outdoor lighting requirements for residential and non-residential development, and their intent is to improve the quality of outdoor lighting and help reduce the impacts of light pollution, light trespass, and glare. The standards regulate lighting characteristics, such as maximum power and brightness, shielding, and sensor controls to turn lighting on and off. Different lighting standards are set by classifying areas by lighting zone. The classification is based on population figures in the 2010 U.S. Census and the areas can be designated as LZ1 (dark), LZ2 (low), LZ3 (medium), or LZ4 (high). Lighting requirements for dark and rural areas are stricter in order to protect the areas from new sources of light pollution and light trespass. According to the U.S. Census

Bureau, the project site is defined as an urban area and is therefore designated as LZ3 per the CEC classification standards.

Local

City of Alameda General Plan

The City of Alameda General Plan includes a number of policies designed to minimize impacts on visual resources. Relevant policies from the current City of Alameda General Plan include Guiding and Implementing Policies under Section 3, City Design Element, Subsection 3.2, Edges, Vistas, Focal Points, and Section 6, Parks and Recreation, Shoreline Access, Schools and Cultural Facilities Element, Subsection 6.2, Shoreline Access and Development:

Guiding Policies

Policy 3.2.a Maximize views of water and access to shorelines.

Implementing Policies

Policy 3.2.d Maintain views and access to the water along streets and other public rights-of-way that extend to the bulkhead line. Construct benches, ramps, rails and seating appropriate for viewing and access, and provide walls or other screening where needed to protect adjoining property.

Policy 3.2.i Ensure that sections of the Estuary waterfront remain visually unobstructed.

Guiding Policies

Policy 6.2.a Maximize visual and physical access to the shoreline and to open water.

Policy 6.2.d Through design review of shoreline property, give consideration to views from the water.

Implementing Policies

Policy 6.2.e Remove impediments to enjoyment of shoreline access where legal access exists.

Policy 6.2.f Cooperate with property owners adjoining shoreline access points to ensure that public use does not cause unnecessary loss of privacy or unwarranted nuisance.

Policy 6.2.h Require shoreline access where appropriate as a condition of development approval regardless of whether development occurs within the area of BCDC regulation.

City of Alameda Design Review

The City's Design Review procedure, as established in the Municipal Code (Section 30-37), requires all improvements including new buildings and most alterations be subject to Design Review approval. Pursuant to Municipal Code Section 30-37, actions to approve a design review application must include the following three findings: 1) The proposed design is consistent with the General Plan, Zoning Ordinance, and the Citywide Design Review Manual; 2) the proposed

design is appropriate for the site, is compatible with adjacent or neighboring buildings or surroundings, and promotes harmonious transitions in scale and character in areas between different designated land uses; and 3) the proposed design of the structure(s) and exterior materials and landscaping are visually compatible with the surrounding development, and design elements have been incorporated to ensure the compatibility of the structure with the character and uses of adjacent development.

4.1.4 Impacts and Mitigation Measures

Significance Criteria

Based on California Environmental Quality Act (CEQA) *Guidelines* Appendix G and the City's General Plan goals and policies, the project would cause significant adverse impacts to aesthetic resources if it were to:

- Have a substantial adverse effect on a scenic vista;
- **S**ubstantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Approach to Analysis

Overall Approach

The methodology of the aesthetics analysis presented below considers several factors that affect the proposed project's physical appearance compared to existing visual conditions as observed from public locations. Existing visual conditions relevant to the project and the site and surroundings are conveyed in the *Environmental Setting* and the analysis below through site photography taken in 2017.

Nature and Scope of Visual Assessment

This analysis recognizes that aspects of physical appearance are subjective and dependent on individual preferences. Therefore, the analysis represents the City's determinations based on its assessment of the likely project effects and appearance, informed by actual observations of the site and surrounding context.

Generally, while a project's interference with scenic views from public vantage points would be considered an adverse aesthetic effect on the environment, the obstruction of individual landowners' views from private property is not considered a significant environmental impact under CEQA. The purpose of CEQA is to evaluate the impacts of a project on the environment in general, not the impacts of a project on particular individuals. As a result, this EIR does not consider or evaluate the project's impact on views from private residences or other private vantage points.

Approach to Determining Impacts to Scenic Vistas and Scenic Resources

Definitions

"Scenic vistas" (also referred to as *viewsheds*) are view corridors that capture the total field of vision from a specific viewpoint; they generally encompass a large geographic area for which the field of view can be quite wide and extend into the distance. Scenic vistas are formed by built and natural physical elements that guide lines of sight and control view directions available to pedestrians and motorists. The expanse of a scenic vista or viewshed can be limited by the framing of a photograph or illustration. As discussed in *Environmental Setting* (Existing Scenic Vistas and Resources), views from the shoreline of the Estuary and beyond constitute a scenic vista.

"Scenic resources" (also referred to as *features*) are elements of high scenic value or visual prominence that appear within a scenic vista or scenic corridor. This analysis does not limit the definition of "scenic resources" to those located within a state scenic highway. As identified under the preceding discussion of Alameda General Plan policies, views of the water and shoreline are considered scenic resources.

A significance determination for criteria above considers if the project would prominently obstruct, or block the majority of the expanse, of a scenic vista or scenic resource, as seen by most viewers from public locations, taking into account the view as a whole, and the land use policies adopted by the City of Alameda. This analysis considers the sensitivity of the affected resource based on the prominence of its visibility and/or the viewpoint location, as well as the characteristics of the view, such as whether it is widely unobstructed; fleeting or intermittent; or transitory, as when viewed by viewers traveling along roadways. Moreover, the significance is measured in light of the context in which the effect occurs. The CEQA *Guidelines* state "the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area" (CEQA *Guidelines* Section 15064(b)).

Approach to Determining Impacts to Visual Character and Visual Quality

The analysis of impacts on visual character and quality focuses on whether the project would substantially degrade the existing visual character and quality (collectively, "visual conditions") of the project site and vicinity. The significance determination considers whether the extent of change in the appearance of the project site would be substantially adverse, damaging, or degrading when compared to existing conditions. Considerations include the project's visual contrast with existing conditions, and/or the compatibility of the project's physical appearance with existing conditions, based on all aspects of the project. These aspects include (but are not limited to) overall design and architectural quality, building massing, facade articulation, relative building heights, project scale, and site plan layout, as presented in the Master Plan Design Framework.

Impact Analysis

Impact AES-1: The project would not have a substantial adverse effect on a scenic vista nor substantially damage scenic resources. (*No Impact*)

The only scenic vista or scenic resource in the vicinity of the project area is the Oakland-Alameda Estuary, as defined in the land use policies of the City of Alameda. Implementation of the proposed project would result in the development of a mixed-use development within a previously developed urban area that currently contains a concentration of industrial, commercial, and marina uses. As shown in Figures 4.1-3 through 4.1-5, existing views from outside the southern project boundary through the project site to the Estuary are largely blocked by buildings, fences and walls. Views from within the marina property towards the Estuary are more expansive, especially as one moves towards the shoreline, but the existing facility layout and the arrangement of ingress and egress points to and from the site do not easily facilitate such views, particularly if one does not have a specific need to enter the marina for business or personal reasons. As such, views of the Estuary are essentially unavailable to casual passersby moving around the landside periphery of the property. Broadly speaking, the existing marina facility and associated buildings, fences, and walls effectively block public views of the Estuary.

The proposed project, on the other hand, would remove many of the physical barriers that currently block public views through the site to the Estuary. As shown in **Figure 3-5**, Conceptual Site Plan, a number of view corridors would be established that would allow public viewers from Clement Avenue to see through the site towards the Estuary. For instance, the existing graving dock would be retained and would be surrounded on three sides by shoreline open space. A person standing adjacent to Clement Avenue looking towards the Estuary would enjoy on unobstructed view to the water. Similarly, the various access roadways into the site would extend directly through the site to the shoreline, and would not be blocked by buildings as is currently the case. Finally, and as shown in **Figure 3-9**, Conceptual Open Space Plan, the proposed public open space areas within the site, along with the potential for extension of the San Francisco Bay Trail through the project site, would constitute a more inviting arrangement whereby members of the public could better access and enjoy views of the Estuary. Based on each of these considerations, the proposed project would substantially improve existing public views of the Estuary, and would meet the relevant goals and policies of the BCDC and the City of Alameda. Therefore, implementation of the proposed project would improve the visual quality of the area, and there would be **no impact** with respect to conflicts with existing policies concerning a scenic vista or scenic resources.

Significance: No Impact.

Mitigation: None required.

Impact AES-2: The project would not substantially degrade the existing visual character or quality of the site and its surroundings. (*Less than Significant, No Mitigation Required*)

The project would change the visual character and visual quality (collectively, "visual conditions") of the project site and its surroundings. The project proposes to develop up to 779 residential units, as well as a commercial core alongside the existing marina uses. The project would also include a number of public open space components, including a series of waterside park facilities, and an extension of the San Francisco Bay Trail through the site.

As previously discussed, the City's Design Review procedure, as established in the Municipal Code (Section 30-37), requires all improvements including new buildings and most alterations be subject to Design Review approval. Pursuant to Municipal Code Section 30-37, actions to approve a design review application must include the following three findings: 1) The proposed design is consistent with the General Plan, Zoning Ordinance, and the Citywide Design Review Manual; 2) the proposed design is appropriate for the site, is compatible with adjacent or neighboring buildings or surroundings, and promotes harmonious transitions in scale and character in areas between different designated land uses; and 3) the proposed design of the structure(s) and exterior materials and landscaping are visually compatible with the surrounding development, and design elements have been incorporated to ensure the compatibility of the structure with the character and uses of adjacent development.

A number of the existing and historic industrial-style buildings on the site would be retained, which would serve to preserve substantial portions of the site's existing appearance. For instance, Building 19, which is the largest and most visually prominent and distinctive structure on the site, would be retained. These existing structures would be augmented by new residential and commercial structures, which would be designed in such a manner as to complement the existing structures in and around the site. Design of these new structures would follow the requirements of the City's Design Review process, as described above. The review process requires consideration of project design elements and the imposition of conditions as needed to address and reduce aesthetic project impacts and ensure adverse impacts regarding height, massing, scale, and overall aesthetic appearance would be less than significant.

In summary, the project would alter the visual conditions of the project site. However, this change in itself is not considered significant unless visual character or quality is substantially degraded. Since the project would be required to comply with the City's Design Review procedures, substantial degradation would not occur. Therefore, the impact would be **less than significant**.

Significance: Less than Significant.

Mitigation: None required.

Impact AES-3: The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. *(Less than Significant, No Mitigation Required)*

The project site is situated in an area typified by residential, marine and light industrial activities. As indicated in the *Environmental Setting* discussion, existing nighttime lighting in the area consists primarily of security lighting on the project site, security and road lighting of the adjacent uses, and ambient city lights of surrounding neighborhoods in Alameda and Oakland to the north. Development under the project would result in additional nighttime lighting in Alameda Marina, as the mix of land uses that includes residential and public recreational areas develops over time. New sources of light would be installed as part of new developments such as new or improved streets, pedestrian and bicycle paths, building entries and parking areas, and sidewalks and open spaces for safety, security, and architectural purposes. Broadly speaking, these new lighting features would be consistent with existing sources of lighting that are already present in and around the project site.

The new residential buildings would generally be taller than the existing buildings, would have more windows, and would generate more nighttime lighting than the existing buildings. Compliance with Title 24 lighting power allowances is expected to adequately control unnecessary brightness of lighting, debilitating glare, and sky glow. Accordingly, new lighting, reflective surfaces or any other sources of illumination would be utilized in a manner that produces no glare on public streets or on any other parcel, and lights would be shielded at lot lines so as not to be directly visible from an adjoining residential district. New lighting would also be subject to the City's design review procedure, during which proposed lighting would be evaluated for adverse effects.

Significance: Less than Significant.

Mitigation: None Required.

Cumulative Impacts

Impact C-AES-1: The proposed project would not result in a cumulative aesthetics impact when considering the combined effect of the project, and past, present, approved, pending, and reasonably foreseeable future projects. *(Less than Significant, No Mitigation Required)*

The analysis area for evaluation of cumulative impacts on aesthetics is primarily the City of Alameda. Conceivably, a view from shoreline locations across the Estuary in the City of Oakland could include the proposed project; however, these views would appear distant and disconnected. Views of the Estuary from public viewpoints in the City of Oakland would therefore be unaffected.

The proposed project, in conjunction with other cumulative past, present or reasonably foreseeable future development in the area, could result in changes to visual conditions (visual

character and quality), and light and glare. However, the combined effect that would occur relative to existing conditions would not be significant primarily because the effects related to aesthetics would be localized and would not combine with other sources to contribute to view obstructions, light or glare. The project, combined with other cumulative development in the area, would not result in cumulative adverse changes that would substantially degrade the existing aesthetic conditions of the project site or its surroundings. The impact would be **less than significant**.

Significance: Less than Significant.

Mitigation: None required.

4.1.5 References – Aesthetics

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San Francisco Bay Conservation and Development Commission (SFBCDC), 2005. Shoreline Space, Public Access Design Guidelines for the San Francisco Bay. April 2005.

California Department of Transportation, 2016. Scenic Highways Program. Available at: www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/scenic_hwy.htm. Accessed January 15, 2016.

San Francisco Bay Conservation and Development Commission (SFBCDC), 1968. *San Francisco Bay Plan*. Adopted 1968, Selections Amended in 1979, Republished in 2008.

4.2 Air Quality and Climate Change

4.2.1 Introduction

This section addresses the impacts of the proposed project on ambient air quality and the exposure of people, especially sensitive individuals, to unhealthful pollutant concentrations, including the type and quantity of emissions that would be generated by construction and operation of the project. This section focuses on whether the proposed project would cause an exceedance of a State or national ambient air quality standard, a health based standard for exposure to toxic air contaminants, or a CEQA threshold recommended by the Bay Area Air Quality Management District (BAAQMD), and whether it would conflict with regulatory goals associated with greenhouse gas emissions that contribute to climate change.

4.2.2 Environmental Setting

Air Quality Environmental Setting

Physical Setting

Climate and Meteorology

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions, including wind speed, wind direction, and air temperature, in combination with local surface topography (i.e., geographic features such as mountains, valleys, and San Francisco Bay), determine the effect of air pollutant emissions on local air quality.

The project site is located in the City of Alameda and is within the boundaries of the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB encompasses the nine-county region, which is all of Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin and Napa counties, and the southern portions of Solano and Sonoma counties. The climate of the SFBAAB is determined largely by a high-pressure system that is almost always present over the eastern Pacific Ocean off the West Coast of North America. During winter, the Pacific high-pressure system shifts southward, allowing more storms to pass through the region. During summer and early fall, when few storms pass through the region, emissions generated within the Bay Area can combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are conducive to the formation of photochemical pollutants, such as ozone, and secondary particulates, such as nitrates and sulfates.

The project site is within the Northern Alameda/Western Contra Costa County climatological subregion of the SFBAAB, with specific topographic and climatological conditions described in the BAAQMD *California Environmental Quality Act Air Quality Guidelines* (BAAQMD, 2017a). This climatological subregion stretches from Richmond to San Leandro. Its western boundary is defined by the San Francisco Bay and its eastern boundary is defined by the Oakland-Berkeley Hills. The Oakland-Berkeley Hills have a ridge line height of approximately 1,500 feet above sea level, which represents a significant barrier to air flow. In this area, marine air traveling

through the Golden Gate, as well as across San Francisco and through the San Bruno Gap, is a dominant weather factor. The Oakland-Berkeley Hills cause the westerly flow of air to split to the north and south of Oakland, which causes diminished wind speeds. The air pollution potential is lowest for the parts of the subregion that are closest to the San Francisco Bay, due largely to good ventilation and less influx of pollutants from upwind sources. The occurrence of light winds in the evenings and early mornings occasionally causes elevated pollutant levels.

Wind measurements taken at the northern end of Alameda Island indicate that the predominant wind flow is from the west and northwest. The prevailing wind direction is westerly with a 57 percent frequency for wind within the northwest-southwest sector. The average speed for this sector is 9 miles per hour (mph) and ranges from 7 to 10 mph. Winds less than 5 mph occur 30 percent of the time. Maximum temperatures in summer average in the upper 60^{o} Fahrenheit (F) range, with minimum in the mid-50^{o} F range. Winter highs are in the mid-50^{o} F range and winter lows in the mid-40^{o} F range. Sunshine is somewhat scarcer than at stations located inland. Daily and seasonal oscillations of temperature are small because of the moderating effects of the nearby ocean. In contrast to the steady temperature regime, rainfall is highly variable and confined almost exclusively to the "rainy" period from early November to mid-April. Alameda/Oakland averages 20 inches of precipitation annually, but because much of the area's rainfall is derived from the fringes of mid-latitude storms, a shift in the annual storm track of a few hundred miles can mean the difference between a very wet year and near drought conditions.

Existing Air Quality

Criteria Air Pollutants

As required by the federal Clean Air Act (CAA) passed in 1970, the U.S. EPA has identified six criteria air pollutants that are pervasive in urban environments and for which state and national health-based ambient air quality standards have been established. The U.S. EPA calls these pollutants "criteria air pollutants" because the agency has regulated them by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. Ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead are the six criteria air pollutants.

BAAQMD and the California Air Resources Board (CARB) operate a regional air quality monitoring network that measures the ambient concentrations of the six criteria air pollutants. Data from these stations record existing air pollutant levels. Probable future levels of air quality in the project area can generally be inferred from ambient air quality measurements conducted at the nearest monitoring stations by examining trends over time. The closest monitoring station is in Oakland on 21st Street and International Boulevard. The nearest station that monitors PM_{10} is the San Pablo and 1865 Rumrill Boulevard monitoring station. **Table 4.2-1** shows a three-year (2014 through 2016) summary of monitoring data for CO, ozone, PM_{10}, $PM_{2.5}$, NO_2 and SO_2 recorded at the nearest stations.

TABLE 4.2-1
SUMMARY OF AIR QUALITY MONITORING DATA (2014–2016)

Pollutant	Applicable Standard	Number of Days Standards Were Exceeded and Maximum Concentrations Measured[a]		
		2014	2015	2016
Carbon Monoxide (CO) at Oakland - 1100 21st Street				
Maximum 1-hr Concentration (ppm)		3.0	4.7	2.5
Days State Standard Exceeded	>20 ppm[b]	0	0	0
Days Federal Standard Exceeded	>35 ppm[c]	0	0	0
Maximum 8-hr Concentration (ppm)		2.6	2.6	2.2
Days State Standard Exceeded	>9 ppm[b]	0	0	0
Days Federal Standard Exceeded	>9 ppm[c]	0	0	0
Ozone (O_3) at Oakland - 1100 21st Street				
Maximum 1-hr Concentration (ppm)		0.072	0.091	0.065
Days State Standard Exceeded	>0.09 ppm[b]	0	0	0
Maximum 8-hr Concentration (ppm)		0.059	0.064	0.052
Days State Standard Exceeded	>0.07 ppm[b]	0	0	0
Days Federal Standard Exceeded	>0.07 ppm[c]	0	0	0
Course Particulates (PM_{10}) at San Pablo – 1865 Rumrill Boulevard				
Maximum 24-hr Concentration (µg/m^3)		46	43.0	34
Days State Standard Exceeded	>50 µg/m [b]	0	0	0
Days Federal Standard Exceeded	>150 µg/m [c]	0	0	0
Annual arithmetic average concentration (µg/m^3)		16.4	18.6	15.2
State Standard Exceeded for the Year	>20 µg/m^3 [b]	No	No	No
Federal Standard Exceeded for the year	>50 µg/m^3 [c]	No	No	No
Fine Particulates ($PM_{2.5}$) at Oakland – 1100 21st Street				
Maximum 24-hr Concentration (µg/m^3)		38.8	38.7	23.9
Days Federal Standard Exceeded	>35 µg/m [c]	1	3	0
Annual arithmetic average concentration (µg/m^3)		9.5	10.2	8.7
State Standard Exceeded for the Year	>12 µg/m^3 [b]	No	No	No
Federal Standard Exceeded for the year	>12 µg/m^3 [c]	No	No	No
Nitrogen Dioxide (NO_2) at Oakland - 1100 21st Street				
Maximum 1-hr Concentration (ppm)		0.056	0.057	0.049
Days State Standard Exceeded	>0.25 ppm[b]	0	0	0
Annual arithmetic average concentration (ppm)		.014	0.014	0.012
Federal Standard Exceeded for the year	>0.053 ppm [c]	No	No	No
Sulfur Dioxide (SO_2) at Oakland - 1100 21st Street				
Maximum 1-hr Concentration (ppm)		0.017	0.022	0.026
Days State Standard Exceeded	>0.25 ppm[b]	0	0	0
Maximum 24-hr Concentration (ppm)		0.003	0.004	0.003
Days State Standard Exceeded	>0.04 ppm[b]	0	0	0
Days Federal Standard Exceeded	>0.14 ppm[c]	0	0	0

NOTES:

Bold values are in excess of applicable standard. "NA" indicates that data is not available.
conc. = concentration; ppm = parts per million; ppb=parts per billion;
µg/m3 = micrograms per cubic meter
ND = No data or insufficient data.

[a] Number of days exceeded is for all days in a given year, except for particulate matter. PM10 and PM2.5 are monitored every six days.
[b] State standard, not to be exceeded.
[c] Federal standard, not to be exceeded. Federal Standard was reduced from 0.075 to 0.070 ppm in October 2015

SOURCE: BAAQMD, 2017b.

While the data gathered at these monitoring stations may not necessarily reflect the unique meteorological environment of the project site nor the proximity of site-specific stationary and street sources, they do present the nearest available benchmark and provide the reader with a reference point to what the pollutants of greatest concern are in the region and the degree to which the area is out of attainment with specific air quality standards.

Carbon Monoxide

CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles; the highest emissions occur during low travel speeds, stop-and-go driving, cold starts, and hard acceleration. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal. As shown in Table 4.2-1, the state and federal 1-hour and 8-hour CO standards were not exceeded between 2014 and 2016.

Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG, also sometimes referred to as volatile organic compounds or VOC by some regulating agencies) and nitrogen oxides (NOx). The main sources of ROG and NOx, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Table 4.2-1 shows that, according to published data, neither the 1-hour state ozone standard of 0.09 ppm nor the state and federal 8-hour ozone standard of 0.07 ppm were exceeded between 2014 and 2016.

Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from manmade and natural sources. Particulate matter is measured in two size ranges: PM_{10} for particles less than 10 microns in diameter, and $PM_{2.5}$ for particles less than 2.5 microns in diameter. In the Bay Area, motor vehicles generate about one-half of the air basin's particulates, through tailpipe emissions as well as brake pad and tire wear. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of such fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. Among the criteria pollutants that are regulated, particulates represent a serious ongoing health hazard. As long ago as 1999, BAAQMD was reporting, in its CEQA Guidelines, that studies had shown that elevated particulate levels contribute to the death of approximately 200 to 500 people per year in the Bay Area. Compelling evidence suggests that $PM_{2.5}$ is by far the most harmful air pollutant in the Bay Area Air in terms of the associated impact on public health. A large body of scientific evidence indicates that both long-term and short-term exposure to $PM_{2.5}$ can cause a wide range of health

effects (e.g., aggravating asthma and bronchitis, causing visits to the hospital for respiratory and cardiovascular symptoms, and contributing to heart attacks and deaths) (BAAQMD, 2017a).

Table 4.2-1 shows that neither the state nor federal annual standards for PM_{10} were exceeded between 2014 and 2016. However, the federal 24-hour $PM_{2.5}$ standard was exceeded once in 2014 and three times in 2015.

Nitrogen Dioxide (NO_2)

NO_2 is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. As shown in Table 4.2-1, neither the state nor federal NO_2 standards were exceeded between 2013 and 2015.

Sulfur Dioxide (SO_2)

SO_2 is a colorless acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO_2 has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease (BAAQMD, 2017a). As shown in Table 4.2-1, neither the state nor federal SO_2 standards were exceeded between 2014 and 2016.

Lead

Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses, cars), smelters (metal refineries), and manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has a range of adverse neurotoxic health effects, which puts children at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated. Ambient lead concentrations are only monitored on an as-warranted, site-specific basis in California.

Attainment Status

The CARB is required to designate areas of the state as attainment, nonattainment or unclassified for all state and federal standards. An “attainment” designation for an area signifies that the pollutant concentrations did not violate the standard for a pollutant in that area. A “nonattainment” designation indicates that a pollutant concentration violated the standard, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An “unclassified” designation signifies that data does not support either an attainment or nonattainment status. The California Clean Air Act divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The EPA designates areas for ozone, CO, and NO_2 as either “does not meet the primary standards,” or “cannot be classified,” or “better than national standards.” For SO_2, areas are designated as “does not meet the primary standards,” “does not meet the secondary standards,”

"cannot be classified" or "better than national standards." **Table 4.2-2** provides a summary of the attainment status for the San Francisco Bay Area Air Basin with respect to federal and state ambient air quality standards.

TABLE 4.2-2
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS

Pollutant	Averaging Time	State SAAQS[a]		Federal NAAQS[b]	
		Standard	Attainment Status	Standard	Attainment Status
Ozone	1 hour	0.09 ppm	N	NA	NA[c]
	8 hour	0.07 ppm	N[d]	0.070 ppm	N
Carbon Monoxide (CO)	1 hour	20 ppm	A	35 ppm	A
	8 hour	9 ppm	A	9 ppm	A
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	A	0.100 ppm	U
	Annual	0.030 ppm	NA	0.053 ppm	A
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	A	0.075	A
	24 hour	0.04 ppm	A	0.14	A
	Annual	NA	NA	0.03 ppm	A
Particulate Matter (PM_{10})	24 hour	50 µg/m3	N	150 µg/m3	U
	Annual	20 µg/m3	N[f]	NA	NA
Fine Particulate Matter ($PM_{2.5}$)	24 hour	NA	NA	35 µg/m3	N[g]
	Annual	12 µg/m3	N[f]	12 µg/m3	A
Sulfates	24 hour	25 µg/m3	A	NA	NA
Lead	30 day	1.5 µg/m3	A	NA	NA
	Cal. Quarter	NA	NA	1.5 µg/m3	A
Hydrogen Sulfide	1 hour	0.03 ppm	U	NA	NA
Visibility-Reducing Particles	8 hour	See Note h	U	NA	NA

NOTES:

A = Attainment; N = Nonattainment; U = Unclassified; NA = Not Applicable, no applicable standard; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

[a] SAAQs = state ambient air quality standards (California). SAAQS for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All other state standards shown are values not to be equaled or exceeded.

[b] NAAQs = national ambient air quality standards. NAAQS, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 8-hour ozone standard is attained when the three-year average of the fourth highest daily concentration is 0.08 ppm or less. The 24-hour PM10 standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour PM2.5 standard is attained when the three-year average of the 98th percentile is less than the standard.

[c] The U.S. EPA revoked the national 1-hour ozone standard on June 15, 2005.

[d] This state 8-hour ozone standard was approved in April 2005 and became effective in May 2006.

[e] State standard = annual geometric mean; national standard = annual arithmetic mean.

[f] In June 2002, The California Air Resources Board (CARB) established new annual standards for PM2.5 and PM10.

[g] U.S EPA lowered the 24-hour PM2.5 standard from 65 µg/m3 to 35 µg/m3 in 2006. EPA designated the Bay Area as nonattainment of the PM2.5 standard on October 8, 2009. The effective date of the designation was December 14, 2009 and the Air District had three years to develop a plan, called a State Implementation Plan (SIP), that demonstrates the Bay Area will achieve the revised standard by December 14, 2014. The SIP for the new PM2.5 standard must be submitted to the US EPA by December 14, 2012.

[h] Statewide visibility reducing particle standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

SOURCE: BAAQMD, 2017c.

Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

TACs do not have ambient air quality standards, but are regulated by the BAAQMD using a risk-based approach. This approach uses a health risk assessment to determine what sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated and considered together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks.[1]

In addition to monitoring criteria pollutants, both BAAQMD and the CARB operate TAC monitoring networks in the San Francisco Bay Area. Regionally, ambient concentrations of TACs are similar throughout the urbanized areas of the Bay Area Air Basin. The BAAQMD provides two public source inventories of TAC emissions sources within its jurisdiction. The first is its TAC Annual Report, the latest of which was published in 2015 and details mass annual emissions by facility. BAAQMD's May 2012 Google Earth-based inventory of stationary source details fence-line risks and hazards for each permitted stationary source. This latter source indicates six permitted TAC sources within 1,000 feet of the project site boundary. These sources and their BAAQMD-identified cancer risks are presented in **Table 4.2-3**. BAAQMD was contacted with regard to health risks from operation of the Marina Fuel dispensing facility and the City of Alameda fuel dispensing facility who confirmed that no quantitative risk data was currently available for either of these operators.

Diesel Particulate Matter

The CARB identified diesel particulate matter (DPM) as a toxic air contaminant in 1998, primarily based on evidence demonstrating cancer effects in humans. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Mobile sources such as trucks and buses are among the primary sources of diesel emissions, and concentrations of DPM are higher near heavily traveled highways and rail lines with diesel locomotive operations. The estimated lifetime cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other toxic air pollutant routinely measured in the region. The risk from diesel particulate matter as determined by the CARB declined from 750 in one million in 1990 to 570 in one million in 1995; by 2000, the CARB estimated the average statewide cancer risk from DPM at 540 in one million (CARB, 2009). This calculated cancer risk value from ambient air exposure in the Bay Area can be compared against

[1] In general, a health risk assessment is required if BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk, then the applicant is subject to a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, calculating the increased risk of cancer as a result of exposure to one or more TACs.

TABLE 4.2-3
STATIONARY SOURCES OF TACS WITHIN 1,000 FEET OF THE PROJECT SITE

	Name of Source	Address/ Distance from Project	Adjusted Cancer Risk (in one million)	Chronic Health Index[a] (Unit less ratio value)	PM2.5 Concentration (micrograms/ cubic meter)
1	Alameda Marina Fuel Dispensary	1815 Clement Avenue / Project site	NA	NA	NA
2	Svendsen's Boat Works	1851 Clement Avenue/ Project site	0	0	0
3	City of Alameda Public Works Generator	1616 Fortmann Way/ 500 feet away	2.71	0.008	<0.001
4	City of Alameda Public Works Fuel Dispensary	1616 Fortmann Way/ 500 feet away	NA	NA	NA
5	Alameda Classics Auto Body	2050 Clement Avenue/80 feet	0	0	0
6	J D Harpe Furniture Finishers	1910 Clement Avenue/80 feet	0	0.001	0

NOTES:

[a] Chronic non-cancer risk is determined by dividing the estimated annual average concentration of a pollutant by the Reference exposure level assigned to that pollutant by the California Office of Environmental Health Hazard Assessment. For one pollutant this ratio is referred to as the Hazard Quotient (HQ). HQs for pollutants targeting the same organ system are added to determine the total Hazard Index (HI).

[b] NA = Not Available.

SOURCE: BAAQMD, 2012; Kirk, 2017.

the lifetime probability of being diagnosed with cancer in the United States, from all causes, which is more than 40 percent (based on a sampling of 17 regions nationwide), or greater than 400,000 in one million, according to the National Cancer Institute (National Cancer Institute, 2012).

Asbestos

Asbestos is also a TAC of concern due to the demolition of buildings and structures as part of the project. Asbestos is a fibrous mineral, which is both naturally occurring in ultramafic rock (a rock type commonly found in California) and used as a processed component of building materials. Because asbestos has been proven to cause serious adverse health effects, including asbestosis and lung cancer, it is strictly regulated based on its natural widespread occurrence and its use as a building material. Potential impacts related to asbestos are addressed in Section 4.6, *Hazards and Hazardous Materials*.

Sensitive Receptors

Air quality does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Population subgroups sensitive to the health effects of air pollutants include the elderly and the young, those with higher rates of respiratory disease such as asthma and chronic obstructive pulmonary disease, and with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases. Land uses such as schools, children's day care centers, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have

increased susceptibility to respiratory distress. Parks and playgrounds are considered moderately sensitive to poor air quality because persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality; however, exposure times are generally far shorter in parks and playgrounds than in residential locations and schools, which typically reduces overall exposure to pollutants. Residential areas are considered more sensitive to air quality conditions compared to commercial and industrial areas because people generally spend longer periods of time at their residences, with associated greater exposure to ambient air quality conditions.[2]

BAAQMD defines sensitive receptors as children, adults, and seniors occupying or residing in residential dwellings, schools, colleges and universities, daycares, hospitals, and senior-care facilities. Workers are not considered sensitive receptors because all employers must follow regulations set forth by the Occupation Safety and Health Administration (OSHA) to ensure the health and well-being of their employees (BAAQMD, 2017a).

The closest existing residences are immediately across Clement Avenue at several locations along the southern project boundary, with dense single-family housing abundant further south. There is also a relatively new residential neighborhood approximately 300 feet north west of the project site north of Fortmann Way. Although not technically a "sensitive receptor" for air quality, there are likely vessels used as live-aboard's within the marina. Other existing receptors include Henry Haight School which is located at 2025 Santa Clara Avenue, approximately 0.6 mile southeast of the site.

Odor Emissions

As described by the BAAQMD in its revised *CEQA Air Quality Guidelines* (BAAQMD, 2017a), odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. Known as odor fatigue, a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors. Odor impacts should be considered for any proposed new odor sources located near existing receptors. Generally, increasing the distance between the receptor and the odor source will mitigate odor impacts.

[2] The factors responsible for variation in exposure are also often similar to factors associated with greater susceptibility to air quality health effects. For example, poorer residents may be more likely to live in crowded substandard housing and be more likely to live near industrial or roadway sources of air pollution.

Climate Change Environmental Setting

Overview

"Global warming" and "global climate change" are the terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered to be unequivocal (IPCC, 2007), with global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. Continued warming is projected to increase global average temperature between 2 and 11°F over the next 100 years.

Natural processes and human actions have been identified as the causes of this warming. The International Panel on Climate Change (IPCC) concludes that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. After 1950, however, increasing greenhouse gas (GHG) concentrations resulting from human activity such as fossil fuel burning and deforestation have been responsible for most of the observed temperature increase. These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries. Since 2007, no scientific body of national or international standing has maintained a dissenting opinion.

Increases in GHG concentrations in the earth's atmosphere are thought to be the main cause of human-induced climate change. GHGs naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. Some GHGs occur naturally and are necessary for keeping the earth's surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.

Carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are the principal GHGs. When concentrations of these gases exceed natural concentrations in the atmosphere, the greenhouse effect may be enhanced. CO_2, CH_4, and N_2O occur naturally, and are also generated through human activity. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing[3] associated with agricultural practices and landfills. Other human-generated GHGs, which have much higher heat-absorption potential than CO_2, include fluorinated gases such as hydrofluorocarbons (HFCs), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6), which are byproducts of certain industrial processes.

CO_2 is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas is predicted to contribute to global warming relative to how much warming

[3] Off-gassing is defined as the release of chemicals under normal conditions of temperature and pressure.

would be predicted to be caused by the same mass of CO_2. CH_4 and N_2O are substantially more potent GHGs than CO_2, with GWPs of 21 and 310 times that of CO_2, respectively.

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons of CO_2 equivalents (CO_2e). CO_2e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO_2e, both from residential developments and human activity in general.

Potential Effects of Human Activity on GHG Emissions

Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO_2 emissions (and thus substantial increases in atmospheric concentrations). In 1994, atmospheric CO_2 concentrations were found to have increased by nearly 30 percent above pre-industrial (c. 1860) concentrations.

There is international scientific consensus that human-caused increases in GHGs have contributed and will continue to contribute to global warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, larger and more frequent forest fires, and more drought years. Secondary effects are likely to include the displacement of thousands of coastal businesses and residences, impacts on agriculture, changes in disease vectors, and changes in habitat and biodiversity. As the CARB *Climate Change Scoping Plan* noted, the legislature in enacting Assembly Bill (AB) 32 found that global warming would cause detrimental effects to some of the state's largest industries, including agriculture, winemaking, tourism, skiing, commercial and recreational fishing, forestry, and the adequacy of electrical power generation. The *Climate Change Scoping Plan* states as follows (CARB, 2008): "The impacts of global warming are already being felt in California. The Sierra snowpack, an important source of water supply for the state, has shrunk 10 percent in the last 100 years. It is expected to continue to decrease by as much as 25 percent by 2050. World-wide changes are causing sea levels to rise – about 8 inches of increase has been recorded at the Golden Gate Bridge over the past 100 years – threatening low coastal areas with inundation and serious damage from storms."

Impacts of Climate Change

Ecosystem and Biodiversity Impacts

Climate change is expected to have effects on diverse types of ecosystems, from alpine to deep-sea habitat (U.S. EPA, 2008a). As temperatures and precipitation change, seasonal shifts in vegetation would occur; this could affect the distribution of associated flora and fauna species. As the range of species shifts, habitat fragmentation could occur, with acute impacts on the distribution of certain sensitive species. The IPCC states that "20 percent to 30 percent of species assessed may be at risk of extinction from climate change impacts within this century if global mean temperatures exceed 2 to 3°C (3.6 to 5.4°F) relative to pre-industrial levels" (IPCC, 2007). Shifts in existing biomes could also make ecosystems vulnerable to encroachment by invasive species. Wildfires, which are an important control mechanism in many ecosystems, may become more severe and more frequent, making it difficult for native plant species to repeatedly

re-germinate. In general terms, climate change is expected to put a number of stressors on ecosystems, with potentially catastrophic effects on biodiversity.

Human Health Impacts

Climate change may increase the risk of vector-borne infectious diseases, particularly those found in tropical areas and spread by insects such as malaria, dengue fever, yellow fever, and encephalitis (U.S. EPA, 2008b). Cholera, which is associated with algal blooms, could also increase. While these health impacts would largely affect tropical areas in other parts of the world, effects would also be felt in California. Warming of the atmosphere would be expected to increase smog and particulate pollution, which could adversely affect individuals with heart and respiratory problems, such as asthma. Extreme heat events would also be expected to occur with more frequency and could adversely affect the elderly, children, and the homeless. Finally, the water supply impacts and seasonal temperature variations expected as a result of climate change could affect the viability of existing agricultural operations, making the food supply more vulnerable.

Greenhouse Gas Emissions Estimates

Global Emissions

Worldwide emissions of GHGs in 2011 were 45 billion tons of CO_2e per year (CAIT, 2014). This estimate includes ongoing emissions from industrial and agricultural sources, but excludes emissions from land use changes.

U.S. Emissions

In 2014, the United States emitted about 6.87 billion tons of CO_2e per year or about 21.5 tons/ person/ year. Of the five major sectors nationwide — residential and commercial, industrial, agriculture, transportation, and electricity— electricity accounts for the highest fraction of GHG emissions (approximately 30 percent), closely followed by transportation (approximately 26 percent); these emissions from energy are primarily generated from the combustion of fossil fuels (approximately 82 percent), and emissions from transportation are entirely generated from direct fossil fuel combustion (USEPA, 2016a).

State of California Emissions

In 2014, California emitted approximately 441.5 million tons of CO_2e. This represents about 6.4 percent of total U.S. emissions. This large number is due primarily to the sheer size of California compared to other states. By contrast, at 11.4 tons/person/year California has one of the lowest per capita GHG emission rates in the country (CARB, 2016a). This is in part due to the success of the State's energy efficiency and renewable energy programs and commitments that have lowered the GHG emissions rate of growth by more than half of what it would have been otherwise. Another factor that has reduced California's fuel use and GHG emissions is its mild climate compared to that of many other states.

The latest California Air Resources Board (CARB) inventory also reports that the composition of gross climate change pollutant emissions in California in 2016 (expressed as CO_2e) were as follows:

- CO_2 accounted for 84.3 percent;
- CH_4 accounted for 9 percent;
- NO_2 accounted for 2.8 percent; and
- High GWP gasses (HFCs, PFC, and SF_6) accounted for 3.9 percent.

Of these gases, CARB found that transportation is the source of approximately 37 percent of the state's GHG emissions, followed by industrial sources at 24 percent and electricity generation (both in-state and out-of-state) at 20 percent. Agriculture is the source of approximately 8 percent, and residential activity is the source of about 6 percent, followed by commercial activities at 5 percent (CARB, 2016a).

Bay Area Emissions

In the San Francisco Bay Area, the last inventory prepared by the Bay Area Air Quality Management District (BAAQMD; dated 2011, and updated in 2015) indicates that the transportation sector and industrial/commercial sector represent the largest sources of GHG emissions, accounting for 39.7 percent and 35.7 percent, respectively, of the Bay Area's 86.6 million tons of CO_2e in 2011. Electricity/co-generation sources account for about 14 percent of the Bay Area's GHG emissions, followed by residential fuel usage at about 7.7 percent. Off-road equipment sources currently account for approximately 1.5 percent of total Bay Area GHG emissions (BAAQMD, 2015a).

City of Alameda GHG Emissions and Local Action Plan for Climate Protection

On February 5, 2008, the City of Alameda's City Council adopted the City of Alameda's Local Action Plan for Climate Protection (LAPCP) (City of Alameda, 2008). Important findings of the Plan include the following:

- The City of Alameda's greenhouse gas emissions baseline inventory reveals that Alameda generated approximately 303,097 tons of CO_2e in 2005;
- The City of Alameda is expected to increase its annual GHG emissions to 329,867 tons of CO_2e by 2020 based on a 0.65 percent annual population growth rate;
- Transportation based GHG emissions account for 54 percent of the City's GHG emissions, while 29 percent is from energy and heating demands of residential uses and 17 percent from commercial uses.
- Although the City sent approximately 59,024 tons of solid waste to landfills in 2005, because of the aggressive recycling efforts and efficient methane recovery capture of landfills which serve the City, the net GHG emissions from solid waste disposal are less than zero, and are therefore not considered as a contributor to the GHG emission baseline and are zeroed out for inventory purposes.

4.2.3 Regulatory Framework

Development within the project site boundaries must comply with federal, state, regional, and local regulations. This section discusses these requirements to the extent that they could affect the way development occurs with the proposed project.

Federal

Federal Air Quality Regulations

Criteria Pollutants

The 1970 CAA (last amended in 1990) required that regional planning and air pollution control agencies prepare a regional air quality plan to outline the measures by which both stationary and mobile sources of pollutants will be controlled in order to achieve all standards by the deadlines specified in the CAA. These ambient air quality standards are intended to protect the public health and welfare, and they specify the concentration of pollutants (with an adequate margin of safety) to which the public can be exposed without adverse health effects. They are designed to protect those segments of the public most susceptible to respiratory distress, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above ambient air quality standards before adverse health effects are observed.

The current attainment status for the SFBAAB, with respect to federal standards, is summarized in Table 4.2-2. In general, the SFBAAB experiences low concentrations of most pollutants when compared to federal standards, except for ozone and particulate matter, for which standards are exceeded periodically.

Toxic Air Contaminants

TACs are regulated under both state and federal laws. Federal laws use the term "Hazardous Air Pollutants" (HAPs) to refer to the same types of compounds that are referred to as TACs under State law. Both terms encompass essentially the same compounds. The 1977 Clean Air Act Amendments (CAAA) required the U.S. EPA to identify National Emission Standards for Hazardous Air Pollutants (NESHAPs) to protect public health and welfare. These substances include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 CAAA, 189 substances are regulated as HAPs.

Federal Climate Change Regulations

U.S. Environmental Protection Agency "Endangerment" and "Cause or Contribute" Findings

The U.S. Supreme Court held that the United States Environmental Protection Agency (U.S. EPA) must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency* et al., 12 states and cities, including California, together with several environmental organizations, sued to require the U.S. EPA to regulate GHGs as pollutants

under the CAA (127 S. Ct. 1438 (2007)). The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant and the U.S. EPA had the authority to regulate GHGs.

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- ***Endangerment Finding:*** The current and projected concentrations of the six key well-mixed GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations.
- ***Cause or Contribute Finding:*** The combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, the U.S. EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule is a response to the fiscal year (FY) 2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110-161), that required the U.S. EPA to develop "…mandatory reporting of GHGs above appropriate thresholds in all sectors of the economy…." The Reporting Rule applies to most entities that emit 25,000 metric tons of CO_2e or more per year. Starting in 2010, facility owners are required to submit an annual GHG emissions report with detailed calculations of facility GHG emissions. The Reporting Rule also mandates recordkeeping and administrative requirements in order for the U.S. EPA to verify annual GHG emissions reports.

State

State Air Quality Regulations

Criteria Pollutants

Although the CAA established national ambient air quality standards, individual states retained the option to adopt more stringent standards and to include other pollution sources. California had already established its own air quality standards when federal standards were established, and because of the unique meteorology in California, there is considerable diversity between the state and national ambient air quality standards, as shown in Table 4.2-2. California ambient standards tend to be at least as protective as national ambient standards and are often more stringent.

In 1988, California passed the California Clean Air Act (CCAA) (California Health and Safety Code Sections 39600 et seq.), which, like its federal counterpart, called for the designation of areas as attainment or nonattainment, but based on state ambient air quality standards rather than the federal standards. As indicated in Table 4.2-2, the SFBAAB is designated as "nonattainment" for state ozone, PM10, and PM2.5 standards. The Bay Area Air Basin is designated as "attainment" or "unclassified" for all other pollutants listed in the table.

The CCAA requires each air district in which state air quality standards are exceeded to prepare a plan that documents reasonable progress towards attainment. A 3-year update is required. In the Bay Area, this planning process is incorporated into the BAAQMD's 2017 Clean Air Plan.

Toxic Air Contaminants

The Health and Safety Code defines TACs as air pollutants which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health. The State Air Toxics Program was established in 1983 under Assembly Bill (AB) 1807 (Tanner). A total of 243 substances have been designated TACs under California law; they include the 189 (federal) HAPs adopted in accordance with AB 2728. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources; however, AB 2588 does not regulate air toxics emissions. Toxic air contaminant emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment and, if specific thresholds are violated, are required to communicate the results to the public in the form of notices and public meetings.

In 2000, the CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. The regulation is anticipated to result in an 80 percent decrease in statewide diesel health risk in 2020 as compared with the diesel risk in 2000. Additional regulations apply to new trucks and to diesel fuel. Subsequent regulation of diesel emission by the CARB include the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Offroad Diesel Vehicle Regulation and the New Offroad Compression Ignition Diesel Engines and Equipment Program. All of these regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel powered equipment.

Despite these reduction efforts, the CARB recommends that proximity to sources of DPM emissions be considered in the siting of new sensitive land uses. In April 2005, the CARB published *Air Quality and Land Use Handbook: a Community Health Perspective*. This handbook is intended to give guidance to local governments in the siting of sensitive land uses near sources of air pollution. Recent studies have shown that public exposure to air pollution can be substantially elevated near freeways and certain other facilities such as ports, rail yards and distribution centers. Specifically, the document focuses on risks from emissions of DPM, a known carcinogen, and establishes recommended siting distances of sensitive receptors. With respect to Port facilities, the recommendations of the report are: "Avoid siting new sensitive land uses immediately downwind of ports in the most heavily impacted zones." With respect to freeways, the recommendations of the report are: "Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with more than 100,000 vehicles per day or rural roads with 50,000 vehicles/day". The CARB notes that these recommendations are advisory and should not be interpreted as defined "buffer zones," and that local agencies must balance other considerations, including transportation needs, the benefits of urban infill, community economic development priorities, and other quality of life issues. With careful evaluation of exposure, health risks, and affirmative steps to reduce risk where necessary the CARB's position is that infill development, mixed use, higher density, transit-oriented development, and other concepts

that benefit regional air quality can be compatible with protecting the health of individuals at the neighborhood level (CARB, 2005).

State Climate Change Regulations

The legal framework for GHG emission reduction has come about through Executive Orders, legislation, and regulation. The major components of California's climate change initiative are reviewed below.

California Environmental Quality Act and Senate Bill 97

CEQA requires lead agencies to consider the reasonably foreseeable adverse environmental effects of projects they are considering for approval. GHG emissions have the potential to adversely affect the environment because they contribute to global climate change. In turn, global climate change has the potential to raise sea levels, affect rainfall and snowfall, and affect habitat.

Senate Bill 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is a prominent environmental issue requiring analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, no later than July 1, 2009. The California Natural Resources Agency was required to certify or adopt those guidelines by January 1, 2010. On December 30, 2009, the Natural Resources Agency adopted the state CEQA Guidelines amendments, as required by SB 97. These state CEQA Guidelines amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The amendments became effective March 18, 2010.

CEQA Guidelines

CEQA *Guidelines,* Section 15064.4 specifically addresses the significance of GHG emissions. Section 15064.4 calls for a lead agency to make a "good-faith effort" to "describe, calculate or estimate" GHG emissions in CEQA environmental documents. Section 15064.4 further states that the analysis of GHG impacts should include consideration of (1) the extent to which the project may increase or reduce GHG emissions, (2) whether the project emissions would exceed a locally applicable threshold of significance, and (3) the extent to which the project would comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions." The revisions also state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project would comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of greenhouse gas emissions) that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (CEQA Guidelines Section 15064(h)(3).) The CEQA *Guidelines* revisions do not, however, set a numerical threshold of significance for GHG emissions.

The revisions also include the following guidance on measures to mitigate GHG emissions, when such emissions are found to be significant:

> Consistent with Section 15126.4(a), lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of greenhouse gas emissions. Measures to mitigate the significant effects of greenhouse gas emissions may include, among others:
>
> (1) Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision;
>
> (2) Reductions in emissions resulting from a project through implementation of project features, project design, or other measures;
>
> (3) Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions;
>
> (4) Measures that sequester greenhouse gases; and
>
> (5) In the case of the adoption of a plan, such as a general plan, long range development plan, or plans for the reduction of greenhouse gas emissions, mitigation may include the identification of specific measures that may be implemented on a project-by-project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions.
>
> (CEQA Guidelines Section 15126.4(a).)

Assembly Bill 1493

In 2002, then-Governor Gray Davis signed Assembly Bill (AB) 1493, which required CARB to develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the state."

To meet the requirements of AB 1493, CARB approved amendments to the California Code of Regulations (CCR) in 2004, adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 (13 CCR 1900, 1961), and adoption of Section 1961.1 (13 CCR 1961.1), require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes (i.e., any medium-duty vehicle with a gross vehicle weight (GVW) rating of less than 10,000 pounds and that is designed primarily for the transportation of persons), beginning with model year 2009. For passenger cars and light-duty trucks with a loaded vehicle weight (LVW) of 3,750 pounds or less, the GHG emission limits for model year 2016 are approximately 37 percent lower than the limits for the first year of the regulations, model year 2009. For light-duty trucks with an LVW of 3,751 pounds to a GVW of 8,500 pounds, as well as for medium-duty passenger vehicles, GHG emissions will be reduced approximately 24 percent between 2009 and 2016.

Because the Pavley standards (named for the bill's author, state Senator Fran Pavley) would impose stricter standards than those under the CAA, California applied to the U.S. EPA for a

waiver under the CAA; this waiver was initially denied in 2008. In 2009, however, the U.S. EPA granted the waiver.

Executive Order S-3-05

In 2005, in recognition of California's vulnerability to the effects of climate change, then-Governor Arnold Schwarzenegger established Executive Order S-3-05, which sets forth the following target dates by which statewide GHG emissions would be progressively reduced: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill 32 and the California Climate Change Scoping Plan

AB 32

In 2006, the California legislature passed Assembly Bill 32 (California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions).

AB 32 anticipates that the GHG reduction goals will be met, in part, through local government actions. CARB has identified a GHG reduction target of 15 percent from current levels for local governments themselves and notes that successful implementation of the plan relies on local governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions.

Scoping Plan

Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008 (re-approved by CARB on August 24, 2011 [CARB, 2008]) outlining measures to meet the 2020 GHG reduction goals. In order to meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business-as-usual emissions levels or about 15 percent from today's levels. The Scoping Plan recommends measures for further study and possible State implementation, such as new fuel regulations. It estimates that a reduction of 174 million metric tons of CO_2e (about 191 million U.S. tons) from the transportation, energy, agriculture, forestry, and other sources could be achieved should the State implement all of the measures in the Scoping Plan. The Scoping Plan relies on the requirements of Senate Bill (SB) 375 (discussed below) to implement the carbon emission reductions anticipated from land use decisions.

Scoping Plan 2014 Update

An update to the initial Scoping Plan was developed by CARB in collaboration with the California Climate Action Team (CCAT) to address the requirement by AB 32 that the Scoping Plan be updated at least every five years. The Update builds upon the initial Scoping Plan with new strategies and expanded measures, and identifies opportunities to leverage existing and new funds to drive GHG emission reductions through strategic planning and targeted program investments. The first update to the AB 32 Scoping Plan was approved on May 22, 2014 by CARB.

The Update describes the state's progress towards AB 32 goals. It found that, "California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32." In addition, the update stated, "if California realizes the expected benefits of existing policy goals (such as 12,000 MW of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050."

In addition, as part of the update to the Scoping Plan, the emissions reductions required to meet the 2020 statewide GHG emissions limit were adjusted. The primary reason for adjusting the 2020 statewide emissions limit was based on the fact that the original Scoping Plan relied on the IPCC's 1996 Second Assessment Report (SAR) to assign the GWPs of greenhouse gases. Recently, in accordance the United Nations Framework Convention on Climate Change (UNFCCC), international climate agencies have agreed to begin using the scientifically updated GWP values in the IPCC's Fourth Assessment Report (AR4) that was released in 2007. Because CARB has begun to transition to the use of the AR4 100-year GWPs in its climate change programs, CARB recalculated the Scoping Plan's 1990 GHG emissions level with the AR4 GWPs (CARB, 2014). Consequently, all GHG inventories going forward apply the AR4 GWPs to be consistent with statewide GHG reduction planning efforts and goals.

Cap-and-Trade Program

The Scoping Plan identifies cap-and-trade as a key strategy for helping California reduce its GHG emissions (CARB, 2008). A cap-and-trade program sets the total amount of greenhouse gas emissions allowable for facilities under the cap and allows covered sources, including producers and consumers of energy, to determine the least expensive strategies to comply. AB 32 required CARB to complete major rulemakings for reducing GHGs including market mechanisms by January 1, 2011. AB 32 also required the program itself was to begin in 2012. The first auction of "carbon offset credits" was held in November 2012.

Carbon offset credits are created through the development of projects, such as renewable energy generation or carbon sequestration projects, that achieve a reduction of emissions or an increase in the removal of carbon from the atmosphere from activities not otherwise regulated, covered under an emissions cap, or resulting from government incentives. Offsets are verified reductions of emissions whose ownership can be transferred to others. As required by AB 32, any reduction of GHG emissions used for compliance purposes must be real, permanent, quantifiable, verifiable, enforceable, and additional. Offsets used to meet regulatory requirements must be quantified according to CARB-adopted methodologies, and CARB must adopt a regulation to verify and enforce the reductions. The criteria developed will ensure that the reductions are quantified accurately and are not double-counted within the system (CARB, 2008).

The Cap-and-Trade Regulation provides a firm cap, ensuring that the 2020 statewide emission limit will not be exceeded. An inherent feature of the Cap-and-Trade Program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are only guaranteed on an accumulative basis. The recently approved

(July 2017) Assembly Bill 398 will ensure that California's Cap-and-Trade system will continue through 2030.

Executive Order S-1-07

Executive Order S-1-07, signed by then-Governor Arnold Schwarzenegger in 2007, proclaimed that the transportation sector is the main source of GHG emissions in California, at over 40 percent of statewide emissions. The order established a goal of reducing the carbon intensity of transportation fuels sold in California by a minimum of 10 percent by 2020. It also directed the CARB to determine whether this Low Carbon Fuel Standard could be adopted as a discrete, early-action measure after meeting the mandates in AB 32. The CARB adopted the Low Carbon Fuel Standard on April 23, 2009.

Senate Bills 1078 and 107 and Executive Orders S-14-08 and S-21-09

SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

In November 2008, then-Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Portfolio Standard to 33 percent renewable power by 2020. In September 2009, then-Governor Schwarzenegger continued California's commitment to the Renewable Portfolio Standard by signing Executive Order S-21-09, which directs the CARB under its AB 32 authority to enact regulations to help the state meet its Renewable Portfolio Standard goal of 33 percent renewable energy by 2020.

The 33-percent-by-2020 goal was codified in April 2011 with Senate Bill X1-2, which was signed by Governor Edmund G. Brown, Jr. This new Renewable Portfolio Standard preempts the CARB 33 percent Renewable Electricity Standard and applies to all electricity retailers in the state, including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must adopt the new Renewable Portfolio Standard goals of 20 percent of retail sales from renewables by the end of 2013 and 25 percent by the end of 2016, with the 33 percent requirement being met by the end of 2020.

Senate Bill 1368

SB 1368 is the companion bill of AB 32 and was signed by then-Governor Schwarzenegger in September 2006. SB 1368 requires the California Public Utilities Commission (CPUC) to establish a GHG emission performance standard for baseload generation from investor-owned utilities by February 1, 2007. The California Energy Commission (CEC) was also required to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and CEC.

Senate Bill 375

In addition to policy directly guided by AB 32, the legislature in 2008 passed SB 375, which provides for regional coordination in land use and transportation planning and funding to help meet the AB 32 GHG reduction goals. SB 375 aligns regional transportation planning efforts, regional GHG emissions reduction targets, and land use and housing allocations. SB 375 requires Regional Transportation Plans (RTPs) developed by the state's 18 metropolitan planning organizations (MPOs) to incorporate a "sustainable communities strategy" (SCS) that will achieve GHG emission reduction targets set by the CARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects, such as transit-oriented development. SB 375 has been implemented over the past several years. Plan Bay Area, the San Francisco Bay Area's SCS, was adopted in July 2013 and updated in 2017.

Regional

Regional Air Quality Regulations

Bay Area Air Quality Management District

BAAQMD is the regional agency responsible for air quality regulation within the San Francisco Bay Area Air Basin. BAAQMD regulates air quality through its planning and review activities. BAAQMD has permit authority over most types of stationary emission sources and can require stationary sources to obtain permits, and can impose emission limits, set fuel or material specifications, or establish operational limits to reduce air emissions. BAAQMD regulates new or expanding stationary sources of toxic air contaminants.

For state air quality planning purposes, the Bay Area is classified as a serious non-attainment area for ozone. The "serious" classification triggers various plan submittal requirements and transportation performance standards. One such requirement is that the BAAQMD adopt a Clean Air Plan, which is a comprehensive plan to improve Bay Area air quality and protect public health. The BAAQMD must also update the Clean Air Plan every three years to reflect progress in meeting the air quality standards and to incorporate new information regarding the feasibility of control measures and new emission inventory data. The Bay Area's record of progress in implementing previous measures must also be reviewed.

Clean Air Plan

In April 2017, the BAAQMD adopted the *2017 Clean Air Plan* (BAAQMD, 2017d). The plan's primary goals are to protect public health and protect the climate. The plan includes a wide range of proposed control measures, which consist of actions to reduce combustion-related activities, decrease fossil fuel combustion, improve energy efficiency, and decrease emissions of potent GHGs. The *2017 Clean Air Plan* updates the *Bay Area 2010 Clean Air Plan* and complies with state air quality planning requirements as codified in the California Health and Safety Code. The Air Basin is designated non-attainment for both the 1- and 8-hour state ozone standards. In addition, emissions of ozone precursors in the SFBAAB contribute to air quality problems in neighboring air basins. Under these circumstances, state law requires the Clean Air Plan to include all feasible measures to reduce emissions of ozone precursors and to reduce the transport of ozone precursors to neighboring air basins.

The 2017 Clean Air Plan contains 85 measures to address reduction of several pollutants: ozone precursors, particulate matter, air toxics, and/or GHGs. Other measures focus on a single type of pollutant, potent GHGs such as methane and black carbon, or harmful fine particles that affect public health. These control strategies that can be grouped into the following categories:

- Stationary source measures;
- Transportation control measures;
- Energy Control Measures;
- Building Control Measures;
- Agricultural Control Measures;
- Natural and Working Lands Control Measures;
- Waste Management Control Measures;
- Water Control Measures; and
- Super GHG Control Measures

BAAQMD CEQA Air Quality Guidelines

The BAAQMD *CEQA Air Quality Guidelines* (Guidelines) advise lead agencies on how to evaluate potential air quality impacts, including establishing quantitative and qualitative thresholds of significance. In June 2010, the BAAQMD adopted updated Guidelines, including new thresholds of significance, and revised them in May 2011 (BAAQMD, 2011). The thresholds BAAQMD adopted were called into question by a minute order issued January 9, 2012 in *California Building Industry Association v. BAAQMD,* Alameda Superior Court Case No. RGI0548693. The minute order stated that "The Court finds [the BAAQMD's adoption of thresholds] is a CEQA project, the court makes no further findings or rulings."

The claims made in the case concerned the CEQA impacts of adopting the thresholds, and in particular, how the thresholds would affect land use development patterns. Petitioners argued that the thresholds for Health Risk Assessments encompassed issues not addressed by CEQA. As a result, the BAAQMD resolutions adopting and revising the significance thresholds in 2011 were set aside by a judicial writ of mandate on March 5, 2012. In May 2012, the BAAQMD updated its Guidelines to continue to provide direction on recommended analysis methodologies, but without recommended quantitative significance thresholds. On August 13, 2013, the First District Court of Appeal ordered the trial court to reverse the judgment and upheld the BAAQMD's CEQA thresholds (*California Building Industry Association v. Bay Area Air Quality Management District,* Case No. A135335 & A136212 [Court of Appeal, First District, August 13, 2013]).

The California Supreme Court granted review of the appeal, but only to address whether or not CEQA requires an analysis of how existing environmental conditions would impact future residents or users of a proposed project and did not review or address the adequacy of specific thresholds adopted by the BAAQMD in 2011. On December 17, 2015, the Supreme Court concluded that agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents, reversing the Court of Appeal's judgment on that issue. However, the court did acknowledge that when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users.

The case was the remanded back to the Court of Appeal on August 12, 2016. The Court of Appeal concluded that "the challenged thresholds are not invalid on their face, but may not be used for the

primary purpose envisioned by District, namely, to routinely assess the effect of existing environmental conditions on future users or occupants of a project" (CBIA v. BAAQMD [2016] 1 Cal.App.5th 715).

In May of 2017 the BAAQMD released its 2017 update to the Guidelines which once again contain the thresholds of significance formally presented in the 2011 Guidelines for the consideration of lead agencies in assessing air quality impacts. The 2017 Guidelines specify that under CEQA the receptor thresholds (the analysis of exposing new receptors to existing sources of toxic air pollution and odors) should not be applied to "routinely assess the effect of existing environmental conditions on future users or occupants of a project."

Regional Climate Change Regulations

There are no applicable regional climate change regulations.

Local

Local Air Quality Plans and Policies

City of Alameda General Plan

The City of Alameda General Plan (City of Alameda, 1991) is the principal policy document for guiding future conservation and development within the City. It represents the framework on which the City must base decisions regarding growth, public services and facilities, and protection and enhancement of the community).

The General Plan establishes comprehensive, long-term land use policies for the City. Consistent with state law, the General Plan includes the Land Use Element; City Design Element; Transportation Element; Open Space and Conservation Element; Parks and Recreation, Shoreline Access, Schools and Cultural Facilities Element; Airport Environs Element (relates to Metropolitan Oakland International Airport); Health and Safety Element; and Housing Element; along with specific elements pertaining to the Northern Waterfront.

The applicable policies relating to air quality and climate change are listed below.

Guiding Policies: Open Space and Conservation Element

- Strive to meet all Federal and State standards for ambient air quality. *(Policy 5.5.a)*
- Support continued monitoring efforts by the Bay Area Air Quality Management District. *(Policy 5.5.b)*

Implementing Policies: Open Space and Conservation Element

- Encourage use of public transit for all types of trips. *(Policy 5.5.c)*
- Encourage development and implementation of Transportation System Management (TSM) programs. *(Policy 5.5.d)*
- Minimize commuting by balancing jobs and nearby housing opportunities. *(Policy 5.5.e)*

Local Climate Change Plans and Policies

Local Action Plan for Climate Protection

The LAPCP (City of Alameda, 2008) contains multiple initiatives to help Alameda achieve its overall goal of reducing community-wide emissions by 25 percent below 2005 levels by 2020. The Plan identifies the following initiatives that may apply to the proposed project:

Transportation Initiative 1: Require that all new major developments' short and long-term transportation emissions are reduced by 10 percent. Examples of strategies to achieve this reduction include transportation demand management strategies and implementation of a Bike Plan, or bicycle facilities.

Energy Initiative 4: Amend the Alameda Municipal Code to include sustainable design and green building standards for all new, substantially expanded and remodeled buildings. Although this Initiative directs the City to adopt green building standards, it provides examples of recent projects of varying sizes which have achieved a Leadership in Energy and Environmental Design (LEED) rating of silver or higher.

Energy Initiative 6: Develop a wood-burning prohibition ordinance to reduce air pollution for new residential construction. Again, while this Initiative directs the City to adopt an ordinance, its intent is to discourage new development from installing wood-burning fireplaces.

Waste and Recycling Initiative 1: Adopt "Zero Waste Strategy" Programs and Ordinances. This Initiative identifies increased sorting and recycling of construction and demolition materials as an element of GHG reduction.

4.2.4 Impacts and Mitigation Measures

This analysis evaluates the proposed project's impacts related to air quality and climate change. The evaluation considered project plans, current Appendix G significance conditions at the project site, and applicable regulations and guidelines.

Significance Criteria

In accordance with Appendix G of the state CEQA Guidelines, the impact of the proposed project on air quality would be considered significant if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively significant net increase of any nonattainment pollutant;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

The BAAQMD has further defined these criteria of significance in its *2017 CEQA Air Quality Guidelines* to indicate the project would result in a significant air quality impact if it would:

- Violate the Bay Area Air Quality Management District's air quality standards or contribute substantially to an existing or projected air quality violation by:
  - Generating average daily criteria air pollutant emissions of ROG, NOx or $PM_{2.5}$ exhaust emissions in excess of 54 pounds per day or PM_{10} exhaust emissions of 82 pounds per day during project construction;
  - For project operations, generating average daily criteria air pollutant emissions of ROG, NOx, or $PM_{2.5}$ in excess of 54 pounds per day, or maximum annual emissions of 10 tons per year. For emissions of PM_{10}, generating average daily emissions of 82 pounds per day or maximum annual emissions of 15 tons per year; or
  - Contributing to CO concentrations exceeding the State ambient air quality standards of 9 ppm averaged over 8 hours and 20 ppm for 1-hour for project operations.
- Expose sensitive receptors (including residential areas) or the general public to toxic air contaminants in excess of the following thresholds:
  - An excess cancer risk level of more than 10 in one million, or non-cancer (i.e., chronic or acute) risk greater than 1.0 hazard index from a single source;
  - An incremental increase of greater than 0.3 µg /m^3 annual average $PM_{2.5}$ from a single source;
  - An excess cancer risk level of more than 100 in one million, or non-cancer risk greater than 100 in one million from all sources; or
  - An incremental increase of greater than 0.8 µg /m^3 annual average $PM_{2.5}$ from all sources.

BAAQMD's recommended approach to addressing localized construction dust-related air quality impacts (fugitive PM10 dust emissions) is a Best Management Practices (BMP) approach. This approach is identified both in the BAAQMD CEQA Guidelines, as well as in the 2009 Justification Report. If BAAQMD-recommended BMPs, which are tiered based on the size of the construction site (less than or greater than four acres), are incorporated into the project, then localized fugitive dust would be deemed less-than-significant during construction.

Project-related construction emissions would be considered to result in a cumulatively considerable net increase of a criteria pollutant and have a significant air quality impact if average daily construction-related emissions would exceed 54 pounds of ROG, NOx, or $PM_{2.5}$ (non-inclusive of fugitive dust[4]) or exceed 82 pounds of PM_{10} (exclusive of fugitive dust[5]). The thresholds for PM_{10} and $PM_{2.5}$ are inclusive only of construction exhaust emissions. BAAQMD guidance regarding

4 Fugitive dust consists of very small liquid and solid particulate matter that is suspended in the air by the wind and human activities. Fugitive dust originates primarily from the soil.

5 Fugitive dust is PM suspended in the air by the wind and human activities. It originates primarily from the soil and is not emitted from exhaust pipes, vents, or stacks.

construction-related emission of fugitive dust identifies implementation of BMPs as its threshold of significance (as discussed above).

The BAAQMD thresholds state that a project would have a significant air quality impact if construction activities would result in an incremental increase in localized annual average concentrations of $PM_{2.5}$ exceeding 0.3 $\mu g/m^3$ within a 1,000-foot radius from the property line of the construction area or a receptor. A project would also have a significant air quality impact if it would expose persons to substantial levels of TACs (including DPM), such that the probability of contracting cancer for the MEI exceeds 10 in one million or if it would expose persons to TACs such that a non-cancer Hazard Index of 1.0 would be exceeded. A Hazard Index is a summation of the non-cancer hazard quotients for all chemicals to which an individual is exposed.

For project-level impact operational analyses, the BAAQMD 2017 CEQA Guidelines identify various thresholds and tests of significance. For ROG, NOx and $PM_{2.5}$, a net increase equal to or greater than 10 tons per year (maximum annual) or 54 pounds average daily emissions is considered significant, while for PM10 a net increase equal to or greater than 15 tons per year (maximum annual) or 82 pounds average daily emissions is considered significant.

In regards to CO, a project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

1. Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
2. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Under the thresholds identified in the 2017 BAAQMD CEQA Guidelines, a project would have a significant air quality impact if it would result in an incremental increase in localized annual average concentrations of $PM_{2.5}$ exceeding 0.3 micrograms per cubic meter from project operations. A project would also have a significant air quality impact if project operations would expose persons to substantial levels of TACs, such that the probability of contracting cancer for the MEI exceeds 10 in one million or if it would expose persons to TACs such that exposure levels exceed a non-cancer Hazard Index of 1.0.

The emission thresholds were established based on the attainment status of the air basin in regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety, these emission thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

The State CEQA Guidelines indicate that a project would have a significant adverse greenhouse gas emission impact if the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The BAAQMD has further defined these criteria of significance to indicate the project would result in a less-than-significant air quality impact if it would:

- Result in operational-related greenhouse gas emissions of less than 1,100 metric tons of CO2e a year; or
- Result in operational-related greenhouse gas emissions of less than 4.6 metric tons of CO2e per service population (residents plus employees).

BAAQMD developed the "service population" threshold for land use development projects of 4.6 metric tons per year of CO_2e as sufficient to achieve a GHG reductions to 1990 levels by year 2020. However, a new interim goal of a further 40 percent reduction below 1990 levels by year 2030 has been adopted by CARB. Applying these further needed reductions to the service population threshold results in an operational-related greenhouse gas emissions threshold of 2.8 metric tons of CO2e per service population as sufficient to achieve the goals for year 2030 (Vintze, 2016).

Approach to Analysis

Criteria Pollutants

Project-related air quality impacts fall into two categories: short-term impacts due to construction, and long-term impacts due to project operation. First, during project construction (short-term), the project would affect local particulate concentrations primarily due to fugitive dust sources and diesel exhaust. Under operations (long-term), the project would result in an increase in emissions primarily due to motor vehicle trips and on-site stationary sources such as boilers for natural gas combustion for space and water heating. Other sources include minor area sources such as landscaping and use of consumer products.

Construction emissions were estimated using the current version of the California Emissions Estimator Model (CalEEMod). This model was also used to calculate the effectiveness of proposed mitigation measures. Operational phase emissions were also estimated using CalEEMod and incorporate the trip generation figures developed by Fehr & Peers for the proposed project.

With respect to impacts related to CO emissions, the BAAQMD has demonstrated, based on modeling, that to exceed the California ambient air quality standard of 9.0 ppm (8-hour average) or 20.0 ppm (1-hour average) for CO, project traffic in addition to existing traffic would need to exceed 44,000 vehicles per hour at affected intersections (or 24,000 vehicles per hour where vertical

and/or horizontal mixing is limited). Consequently, intersection volumes in the project vicinity are used relative to these screening criteria to assess the potential for significant CO concentrations.

Toxic Air Contaminants

The Office of Environmental Health Hazard Assessment (OEHHA) is responsible for developing and revising guidelines for performing health risk assessments under the State's the Air Toxics Hot Spots Program Risk Assessment (AB 2588) regulation. In March 2015, OEHHA adopted revised guidelines, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* ("OEHHA Guidance"), which updates the previous guidance by incorporating advances in risk assessment with consideration of infants and children using Age Sensitivity Factors (ASF) (OEHHA 2015). These changes also take into account the sensitivity of children to TAC emissions, different breathing rates, and time spent at home.

During temporary construction activities, the analysis incorporates the estimated construction TAC emissions of diesel particulate matter and dispersion modeling using the USEPA AMS/EPA Regulatory Model (AERMOD) dispersion model with meteorological data from the closest and most representative monitoring station to the project site located at Oakland International Airport, which is approximately 2.5 miles to the southeast of the project site. Within the AERMOD model, TAC emission sources were placed on the project site (for off-road equipment and truck idling emissions) and on the portion of roads (i.e., Clement Avenue and Grand Street) that haul trucks could travel on within 1,000 feet of the project site (for truck traveling emissions). The TAC emission sources were located in areas corresponding to construction associated with Phases 0, 1, 2, and 3. Truck idling sources were assumed to be located on the project site on the north side of Clement Avenue directly across the street from the residential uses to the south of Clement Avenue, which provides for a conservative (i.e., health protective) assessment. Receptor points were placed on the nearby sensitive receptor locations, which captures the maximum TAC concentrations at the maximally exposed sensitive receptor.

During long-term operations, TACs could be emitted from periodic truck trips to and from the project site. Similar to the construction health risk assessment, the operational health risk assessment is evaluated using dispersion modeling using the USEPA AERMOD model with meteorological data from the Oakland International Airport Monitoring Station located approximately 2.5 miles to the southeast of the project site. Within the AERMOD model, TAC emission sources were placed on the project site (for truck idling emissions) and on the portion of Clement Avenue and Grand Street that trucks could travel on within 1,000 feet of the project site (for truck traveling emissions). Truck idling sources were assumed to be located on the project site on the north side of Clement Avenue directly across the street from the residential uses to the south of Clement Avenue, which provides for a conservative (i.e., health protective) assessment. Receptor points were placed on the nearby sensitive receptor locations.

In order to assess combined TAC impacts from the project's emissions and nearby off-site sources of TACs within 1,000 feet of the project site, data from the BAAQMD was used to identity off-site sources of TACs. The BAAQMD's Stationary Source Screening Analysis Tool (BAAQMD 2012c) was used to identify stationary sources within 1,000 feet of the project site

(refer to Table 4.2-3). The Roadway Screening Analysis Calculator (BAAQMD 2015) was used to estimate risks and hazards from vehicles traveling on Clement Avenue.

The cancer risk values for diesel particulate matter considers exposure via the inhalation pathway. The potential exposure through other pathways (e.g., ingestion) requires substance and site-specific data, and the specific parameters for diesel particulate matter are not known for these pathways (CARB 1998). The OEHHA Guidance recommends the incorporation of several factors to quantify the carcinogenic compound dose via the inhalation pathway. Once determined, the dose is multiplied by the compound-specific inhalation cancer potency factor to derive the cancer risk estimate. The dose takes into account the concentration at a sensitive receptor. The cancer potency factor is compound-specific. Under a deterministic approach (i.e., point estimate methodology), the cancer risk probability is determined by multiplying the chemical's annual concentration by its Cancer Potency Factor (CPF). The CPF for diesel particulate matter is 1.1 per milligram/kilogram (body weight [bw]) per day (mg/kg(bw)-day). This approach for calculating cancer risk is intended to result in conservative (i.e., health protective) estimates of health impacts and is used for assessing risks to sensitive receptors. The estimation of cancer risk uses the following algorithms:

$$\text{Risk} = \text{Dose inhalation} \times \text{Inhalation CPF} \times \text{ASF} \qquad \text{(Equation 1)}$$

Where:

$$\text{Dose inhalation} = C_{AIR} \times \text{DBR} \times \text{A} \times \text{EF} \times \text{ED} \times \text{FAH} / \text{AT} \qquad \text{(Equation 2)}$$

Inhalation CPF = inhalation cancer potency factor

ASF = age sensitivity factor

Where:

C_{AIR} = concentration of compound in air in micrograms per cubic meter ($\mu g/m^3$)

DBR = breathing rate in liter per kilogram of body weight per day (L/kg-body weight/day)

A = inhalation absorption factor (1 for diesel particulate matter)

EF = exposure frequency in days per year (day/year)

ED = exposure duration in years (year)

FAH = fraction of time at home

AT = averaging time period over which exposure is averaged in days (day)

The OEHHA recommended values for the parameters listed above were used in the health risk assessments. The daily breathing rate (DBR) used in the analyses are based on OEHHA 95th percentile recommendations which vary depending on age which are shown in **Table 4.2-4**. The recommended exposure frequency (EF) is 350 days per year which is equivalent to 0.96 (350 days/365 days a year). The inhalation absorption factor (A) is assumed to be 1 for inhalation based risk assessment.

TABLE 4.2-4
OEHHA RECOMMENDED RESIDENTIAL DAILY BREATHING RATES FOR POINT ESTIMATE DOSE CALCULATIONS (L / KG BODY WEIGHT)

	3rd Trimester	0 < 2 Years	2 < 9 Years	2 < 16 Years	16 < 30 Years
Average	225	658	535	452	210
95th Percentile	361	1,090	861	745	335

SOURCE: Office of Environmental Health Hazard Assessment, 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, (2015).

As indicated in Equation 1 above, each age group has different exposure parameters which require cancer risk to be calculated separately for each age group. Values for fraction of time at home (FAH) are presented in **Table 4.2-5**. For the purposes of evaluating health impacts from project construction, the FAH was adjusted to 1.0 for the 3rd trimester age group rather than the default value. This provides for a conservative health protective analysis since this assumes the 3rd trimester age group would be exposed to the full duration of project construction TAC emissions.

TABLE 4.2-5
OEHHA RECOMMENDATIONS FOR FRACTION OF TIME AT HOME (FAH) FOR EVALUATING RESIDENTIAL CANCER RISK

	3rd Trimester and 0 < 2 Years	2 < 16 Years	16 < 70 Years
Fraction of Time at Residence	0.85	0.72	0.73

SOURCE: Office of Environmental Health Hazard Assessment, 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, (2015).

Once dose is calculated, cancer risk is calculated by accounting for cancer potency of the specific pollutant, and the age sensitivity factor (ASF). Residential receptors were evaluated based on the full range of ASFs, beginning with exposure during the third trimester of pregnancy. There are no schools or hospitals within 1,000 feet of the project site; therefore, this health risk assessment is not required to considered impacts at these specific sensitive receptor types.

Non-cancer chronic impacts were assessed based on the Hazard Index. The evaluation of chronic impacts is based on the maximum annual TAC emissions over a 12-month period of construction activity. For project operations, the evaluation of chronic impacts is based on the estimated annual operational TAC emissions. The chronic Hazard Index is calculated by dividing the maximum modeled annual average concentration at the maximum impacted sensitive receptor by the Reference Exposure Level (REL). The REL is the concentration at or below which no adverse health effects are anticipated. For example, OEHHA has recommended an ambient concentration of 5 $\mu g/m^3$ as the chronic inhalation REL for diesel particulate matter exhaust. Therefore, a sensitive receptor exposed to an annual average diesel particulate matter concentration of 5 $\mu g/m^3$ or less would not result in a chronic impact. Non-cancer chronic impacts affect specific target organ systems (also called toxicological endpoints), such as the eye, nervous system, reproductive

system, and respiratory system. The chronic health impact with the maximum Hazard Index for the same target organ system is used for impact determination.

The maximum annual PM2.5 concentrations for the project were determined based on the emissions calculations discussed above and dispersion modeling conducted for the health risk assessment. The emissions calculations used respirable particulate matter (PM10) as a surrogate for diesel particulate matter exhaust emissions. Diesel particulate matter consists of almost entirely fine particles 2.5 microns in diameter or smaller (i.e., PM2.5). Since PM2.5 is a subset of PM10 emissions, the analysis is based on the use of health-protective and conservative emission factors. The annual PM2.5 concentrations from cumulative sources were obtained from the BAAQMD BAAQMD's Roadway Screening Analysis Calculator (BAAQMD 2015) and the BAAQMD's Stationary Source Screening Analysis Tool (BAAQMD 2012c). The BAAQMD does not include fugitive dust-related PM2.5 emissions in the analysis since fugitive dust emissions are controlled via implementation of BAAQMD best management practices for fugitive dust as specified in the BAAQMD CEQA Air Quality Guidelines.

Greenhouse Gases

Separate thresholds of significance are established for operational emissions from stationary sources (such as generators, furnaces, and boilers) and non-stationary sources (such as on-road vehicles). The threshold for stationary sources is 10,000 metric tons of CO_2e per year (i.e., emissions above this level may be considered significant). For non-stationary sources, three separate thresholds have been established:

- Compliance with a Qualified Greenhouse Gas Reduction Strategy (i.e., if a project is found to be out of compliance with a Qualified Greenhouse Gas Reduction Strategy, its GHG emissions may be considered significant); or
- 1,100 metric tons of CO_2e per year (i.e., emissions above this level may be considered significant); or
- 4.6 metric tons of CO_2e per service population per year in 2020 (i.e., emissions above this level may be considered significant). (Service population is the sum of residents plus employees expected for a development project.)
- 2.8 metric tons of CO_2e per service population per year in 2030 (i.e., emissions above this level may be considered significant).

For quantifying a project's GHG emissions, BAAQMD recommends that all GHG emissions from a project be estimated, including a project's direct and indirect GHG emissions from operations. Direct emissions refer to emissions produced from onsite combustion of energy, such as natural gas used in furnaces and boilers, emissions from industrial processes, and fuel combustion from mobile sources. Indirect emissions are emissions produced offsite from energy production and water conveyance due to a project's energy use and water consumption. BAAQMD has provided guidance on detailed methods for modeling GHG emissions from proposed projects.

This analysis uses both a quantitative and a qualitative approach. The quantitative approach is used to address the first significance criterion, to determine whether the project would generate GHG

emissions, either directly or indirectly, that may have a significant impact on the environment. This analysis considers that, because the quantifiable thresholds developed by BAAQMD in its 2009 Justification Report were formulated based on AB 32 and California Climate Change Scoping Plan reduction targets for which its set of strategies were developed to reduce GHG emissions statewide, a project cannot exceed the numeric BAAQMD efficiency threshold of 4.6 metric tons of CO_2e per service population annually without also conflicting with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs (such as the state Climate Change Scoping Plan). Therefore, if a project exceeds the numeric threshold and thereby results in a significant cumulative impact, it would also result in a significant cumulative impact with respect to plan, policy, or regulation consistency, even though the project may incorporate measures and have features that would reduce its contribution to cumulative GHG emissions.

GHG emissions resulting from the project were estimated using CalEEMod version 2016.3.1, with model data and assumptions included in Appendix D. Construction emissions were estimated for equipment and truck exhaust and construction worker vehicles. In regards to operations, vehicle trips assumed default trip lengths for urban land uses, which are embedded in CalEEMod. The model makes adjustments for implementation of Pavley vehicle standards. Area and indirect sources associated with project operations would primarily result from electrical usage, water and wastewater transport (the energy used to pump water and wastewater to and from the project) and solid waste generation. GHG emissions from electrical usage are generated when energy consumed on the site is generated by fuel combustion. GHG emissions from water and wastewater transport are also indirect emissions resulting from the energy required to transport water from its source, and the energy required to treat wastewater and transport it to its treated discharge point. Solid waste emissions are generated when the increased waste generated by the project are taken to a landfill to decompose.

Cumulative Impacts (Criteria Pollutants, TACs, and GHGs)

The BAAQMD Justification Report states that if the individual emissions of a project results in an increase in ROG, NOx, $PM_{2.5}$, or PM_{10} exceeding the project-level significance criteria, then it would also be considered to contribute considerably to a significant cumulative effect.

With regard to cumulative impacts from PM2.5, a significant cumulative air quality impact would be considered to occur if localized annual average concentrations of PM2.5 would exceed 0.8 micrograms per cubic meter at any receptor from project operations in addition to existing emission sources and cumulative emissions sources within a 1,000-foot radius of the property line of the source or receptor.

With regard to cumulative impacts from TACs, a project's construction or operational impacts would be considered to result in a considerable contribution to an identified cumulative health risk impact if the project's construction or operation activities would exceed the project-level health risk significance thresholds identified above.

With regard to impacts from GHGs, both BAAQMD and the California Air Pollution Control Officers Association (CAPCOA) consider GHG impacts to be exclusively cumulative impacts (BAAQMD, 2017a; CAPCOA, 2008); as such, assessment of significance is based on a

determination of whether the GHG emissions from a project represent a cumulatively considerable contribution to the global atmosphere. The quantitative efficiency threshold proposed by BAAQMD in its 2009 Justification Report is 4.6 metric tons of CO_2e per service population annually. If the project construction and operational GHG emissions would exceed this threshold then, consistent with BAAQMD Guidelines, it would be considered to have a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact on climate change.

Impact Analysis

Impact AQ/CC-1: The proposed project would not result in localized construction dust-related air quality impacts; generate construction emissions that would result in a substantial increase of criteria pollutants and precursors for which the air basin is in nonattainment under an applicable federal or state ambient air quality standard; or expose sensitive receptors to substantial concentrations of toxic air contaminants or respirable particulate matter (PM2.5). (*Less than Significant with Mitigation*)

As described in Chapter 3, *Project Description*, the proposed project includes demolition of existing structures as part of the redevelopment of the project site and the construction of the new structures. Project related demolition, grading and other construction activities at the project site may cause wind-blown dust that could emit particulate matter into the atmosphere. Fugitive dust includes not only PM_{10} and $PM_{2.5}$ but also larger particles as well that can represent a nuisance impact. Dust can be an irritant and cause watering eyes or irritation to the lungs, nose and throat. Demolition, excavation and other construction activities can cause wind-blown dust to add to particulate matter in the local atmosphere. Although there are federal standards for air pollutants and state and regional air quality control plans, air pollutants continue to have impacts on human health. California EPA has found that particulate matter exposure can cause health effects at levels lower than national standards. The current health burden of particulate matter demands that, where possible, public agencies take feasible actions to reduce sources of particulate matter exposure.

During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by excavation, grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would include CO, NOx, ROG, directly-emitted particulate matter ($PM_{2.5}$ and PM_{10}), and TACs such as diesel exhaust particulate matter. Site preparation and project construction would involve grading, paving and building activities. Construction-related effects from fugitive dust from the proposed project would be greatest during the site preparation and grading phases due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction sites. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

For mitigation of fugitive dust emissions, the BAAQMD recommends implementing best management practices (BMPs), as a pragmatic and effective approach to controlling fugitive dust emissions (BAAQMD, 2017a). BAAQMD notes that individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to more than 90 percent. Therefore, implementation of these BMPs would ensure the project's fugitive dust emissions remained below a level of significance. These BMPs are included as **Mitigation Measure AQ/CC-1**, which would ensure the project's impact would be less than significant with mitigation.

In addition to dust-related PM10 emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate NOx, ROG and some exhaust particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Land-side development would occur in three distinct phases with concurrent in-water construction of the shoreline and marina improvements. Precise details of construction activities are unknown at this time; therefore, default assumptions (e.g., construction fleet activities and duration) from CalEEMod were assumed for land-side development phases. For the in-water construction activities, an equipment list inclusive of tugs, which was adapted from a ferry landing improvement project, was used as a conservative estimate of source and duration assumptions. For purposes of this analysis the construction schedule for all improvements was assumed to be approximately 5 years 4 months (or approximately 1,279 construction days). Construction emissions were estimated for the project using CalEEMod, consistent with BAAQMD recommendations. Construction-related emissions are presented in **Table 4.2-6** and additional information is provided in Appendix D. CalEEMod output sheets are also included in Appendix D.

TABLE 4.2-6
AVERAGE ANNUAL DAILY CONSTRUCTION-RELATED POLLUTANT EMISSIONS (POUNDS/DAY)[a]

Scenario	ROG	NOx	Exhaust PM2.5[b]	Exhaust PM10[b]
Average Daily Emissions	16.7	38.3	1.8	1.9
BAAQMD Threshold	54.0	54.0	54.0	82.0
Significant Impact?	No	No	No	No

NA: Not Applicable, the BAAQMD does not have thresholds.
BMP: Best Management Practices.

[a] Emissions include results modeled with CalEEMod. Additional data and assumptions are described in Appendix D.
[b] BAAQMD's construction-related significance thresholds for PM10 and PM2.5 apply to exhaust emissions only and not to fugitive dust.

SOURCE: ESA Associates, 2017.

As shown in Table 4.2-6, construction emissions associated with the project would be less than significant for ROG, NO_x and $PM_{2.5}$ and PM_{10} exhaust emissions. The BAAQMD requires implementation of Best Management Practices to reduce construction dust impacts to a less than-significant level. Implementation of **Mitigation Measure AQ/CC-1**, would reduce impacts to **less than significant** levels.

Mitigation Measure AQ/CC-1: Implementation of Dust Abatement Programs. The project applicant shall be required to demonstrate compliance with all applicable City regulations and operating procedures prior to issuance of building or grading permits, including standard dust control measures. The effective implementation of dust abatement programs, incorporating all of the following dust control measures, would reduce the temporary air quality impact associated with construction dust.

- All active construction areas shall be watered two times daily using equipment and staff provided by the project applicant or prime contractor, as needed, to avoid visible dust plumes. Appropriate non-toxic dust palliative or suppressant, added to water before application, may be used.
- All trucks hauling soil, sand and other loose materials shall be covered.
- All unpaved access roads, parking areas and construction staging areas shall be either paved, watered as necessary to avoid visible dust plumes, or subject to the application of (non-toxic) soil stabilizers.
- All paved access roads, parking areas and staging areas at the construction site shall be swept daily with water sweepers. The use of dry power sweeping is prohibited.
- If visible soil material is carried onto adjacent public streets, these streets shall be swept daily with water sweepers. The use of dry power sweeping is prohibited.
- All stockpiles of debris, soil, sand or other materials that can be blown by the wind shall either be covered or watered as necessary to avoid visible dust plumes.
- An off-pavement speed limit of 15 miles per hour for all construction vehicles shall be incorporated into the construction contract and enforced by the prime contractor.
- All inactive portions of the project site (those areas which have been previously graded, but inactive for a period of ten days or more) shall be watered with an appropriate dust suppressant, covered or seeded.
- All earth-moving or other dust-producing activities shall be suspended when the above dust control measures prove ineffective in avoiding visible dust plumes during periods of high winds. The wind speed at which this suspension of activity will be required may vary, depending on the moisture conditions at the project site, but suspension of such activities shall be required in any case when the wind speed exceeds 25 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

- Post a publicly visible sign with the telephone number and person to contact at the City of Alameda regarding dust complaints. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Construction Health Risk Impacts

During construction, various diesel-powered vehicles and equipment would be in use. In 1998, CARB identified particulate matter from diesel-fueled engines as a TAC. CARB has completed a risk management process that identifies potential cancer risks for a range of activities using diesel-fueled engines (CARB, 2000). High volume freeways, stationary diesel engines and facilities attracting heavy and constant diesel vehicle traffic (e.g., distribution centers and truck stops) were identified as having the highest associated risk.

Health risks from TACs are a function of both concentration and duration of exposure. Unlike the above types of sources, construction diesel emissions are temporary, affecting an area for a period of days or perhaps weeks. Additionally, construction-related sources are mobile and transient in nature, and the emissions occur within the project site.

Construction health risk impacts were assessed at off-site sensitive receptors (i.e., residential uses). Health risk impacts are based on the amount of TAC emissions generated from a source, the distance between an emissions source and sensitive receptors, and meteorological conditions, in particular wind direction and speed, that disperses and transports emissions downwind from an emissions source. The dispersion modeling analysis using AERMOD considers each of these factors. Construction-related exposure would be temporary because construction emissions would only occur during active construction of Phases 0, 1, 2, and 3.

Based on an analysis of construction of Phases 0, 1, 2, and 3 (assuming each phase immediately follows the preceding phase and Phase 0 occurs concurrently), the maximum project-level impact would occur during construction of the last few months of Phase 2 and construction of all of Phase 3. The maximum impact occurs during this period because of the project construction schedule, geographic distribution of the emissions on the project site relative to the locations of sensitive receptors, wind patterns, and the following set of conservative assumptions: (1) the Phase 3 project site is located relatively close to the sensitive residential receptors to the south of Clement Avenue; therefore the associated sources of construction emissions during Phase 3 are also located close to these sensitive receptors and thus generate the highest concentrations of diesel particulate matter at sensitive receptors according to the AEMOD dispersion modeling analysis; (2) in order to identify maximum health risk impacts, it was assumed the Phase 3 exposure at the sensitive receptor with the highest diesel particulate matter concentration would occur during the age 0 < 2 age cohort, which has the overwhelmingly highest age sensitivity and breathing rate exposure factors compared to all other age groups.

Table 4.2-7 summarizes the carcinogenic risk, chronic Hazard Index, and PM2.5 concentration for the maximally impacted sensitive receptor. As shown, the maximum cancer risk health impact from construction of the project is estimated to result in impacts to sensitive receptors that would exceed the project-level threshold of significance. The maximum project-level impacts would occur at the sensitive residential uses to the south of the project site on the south side of Clement

Avenue. The maximum chronic health impact from construction of the project would also occur at residential uses to the south of the project site on the south side of Clement Avenue, but would not exceed the project-level threshold of significance.

TABLE 4.2-7
MAXIMUM UNMITIGATED CONSTRUCTION HEALTH RISK IMPACTS FOR OFF-SITE SENSITIVE RECEPTORS

Maximum Impacts	Maximum Impacted Sensitive Receptor		
	Cancer Risk (# in one million)	Chronic Hazard Index	Max Annual PM2.5 (µg/m^3)
Construction Project Impacts			
Project Construction	11.52	0.014	0.068
BAAQMD Significance Threshold	10	1	0.3
Exceeds Threshold?	Yes	No	No
Construction Cumulative Impacts			
Project Construction	11.52	0.014	0.068
Cumulative Sources within 1,000 Feet of Project Site	17.14	0.047	0.230
Cumulative Total	**28.66**	**0.061**	**0.298**
BAAQMD Significance Threshold	100	10	0.8
Exceeds Threshold?	No	No	No

SOURCES: BAAQMD 2017; ESA 2017. Totals may not add up exactly due to rounding in the modeling calculations.

The combined-level impacts are also summarized in Table 4.2-7. The combined-level impacts include health impacts associated with vehicles traveling on Clement Avenue based on BAAQMD's Roadway Screening Analysis Calculator (BAAQMD 2015), and health impacts associated with stationary sources within 1,000 feet of the project site based on BAAQMD's Stationary Source Screening Analysis Tool (BAAQMD 2012c). The totaled combined-level cancer risks, hazard indices and PM2.5 concentrations would not exceed the BAAQMD thresholds for multiple sources The maximum combined-level impacts would occur at the sensitive residential uses to the south of the project site on the south side of Clement Avenue.

As discussed previously, the lifetime exposure under the OEHHA Guidance takes into account early life (infant and children) exposure. It should be noted that the calculated cancer risk and chronic health impacts conservatively assume that exposure of sensitive receptors (residential uses) would not have any mitigation, such as mechanical air filtration. The impacts would be considered significant at the project level, exceeding the cancer health risk threshold of 10 in a million from construction sources, but would be less than significant at the combined level.

Based on the relatively close off-site residential uses, **Mitigation Measure AQ/CC-2** has been included below to ensure that DPM emissions would be reduced to the extent feasible and that potential health risk would be less than significant. Implementation of **Mitigation Measure AQ/CC-1**, which includes measures such as minimizing the idling time of diesel powered construction equipment and requiring that all construction equipment is maintained and properly tuned, would also reduce potential DPM emissions.

Mitigation Measure AQ/CC-2: The project applicant shall ensure that construction contract specifications include a requirement that all off-road diesel-powered construction equipment used for project improvements shall be equipped with a Level 3 Verified Diesel Emissions Control (VDEC), which would reduce diesel particulate emissions by at least 85 percent.

Implementation of **Mitigation Measure AQ/CC-2** would reduce construction health risk impacts and ensure that impacts would be less than significant. The mitigated analysis includes the use of Level 3 CARB certified diesel particulate filters on construction equipment, which reduces diesel particulate matter emissions by approximately 85 percent (CARB 2016b). **Table 4.2-8** summarizes the mitigated carcinogenic risk, chronic Hazard Index, and PM2.5 concentrations for the maximally impacted sensitive receptor. As shows, the mitigated impacts would be reduced to **less than significant**.

TABLE 4.2-8
MAXIMUM MITIGATED CONSTRUCTION HEALTH RISK IMPACTS FOR OFF-SITE SENSITIVE RECEPTORS

Maximum Impacts	Maximum Impacted Sensitive Receptor		
	Cancer Risk (# in one million)	Chronic Hazard Index	Max Annual PM2.5 (µg/m^3)
Construction Project Impacts			
Project Construction	2.50	0.003	0.014
BAAQMD Significance Threshold	10	1	0.3
Exceeds Threshold?	No	No	No
Construction Cumulative Impacts			
Project Construction	2.50	0.003	0.014
Cumulative Sources within 1,000 Feet of Project Site	17.14	0.047	0.230
Cumulative Total	**19.64**	**0.050**	**0.245**
BAAQMD Significance Threshold	100	10	0.8
Exceeds Threshold?	No	No	No

SOURCES: BAAQMD 2017; ESA 2017. Totals may not add up exactly due to rounding in the modeling calculations.

Significance after Mitigation: Less than Significant.

Impact AQ/CC-2: The proposed project would not generate operational emissions that would result in a considerable net increase of criteria pollutants or precursors for which the air basin is in nonattainment under an applicable federal or state ambient air quality standard or expose sensitive receptors to substantial concentrations of toxic air contaminants or respirable particulate matter (PM2.5). (*Less than Significant*)

Long-term air emission impacts are those associated with the operation of area sources and mobile sources related to the proposed project after it is constructed. In addition to the short-term construction emissions, the project would also generate long-term air emissions, such as those

associated with changes in permanent use of the project site. These long-term emissions are primarily mobile source emissions that would result from vehicle trips associated with the proposed project. Area sources, such as natural gas heaters, landscape equipment, and use of consumer products, would also result in pollutant emissions. PM_{10} emissions result from vehicle exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles. Since much of the project traffic fleet would be made up of light-duty gasoline-powered vehicles, a majority of the PM_{10} emissions would result from entrainment of roadway dust from vehicle travel.

Energy source emissions result from activities in buildings for which electricity and natural gas are used (non-hearth). The quantity of emissions is the product of usage intensity (i.e., the amount of electricity or natural gas) and the emission factor of the fuel source. Major sources of energy demand include building mechanical systems, such as heating and air conditioning, lighting, and plug-in electronics, such as refrigerators or cooking equipment. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources.

Area source emissions associated with the project would include emissions from fireplaces, water heating and the use of landscaping equipment. Emission estimates for the project were calculated using CalEEMod. Because existing commercial and marine uses would just be repurposed, new operational emissions would only be the result of proposed residential units. All residential units were assumed to be a mix of townhomes, midrise apartment and high rise (greater than three story) apartments units. Emissions associated with new residential units are shown in **Table 4.2-9** below, which shows the project's estimated unmitigated operational emissions. Trip generation rates were based on the project's traffic impact analysis, which is presented in Chapter 4.12, *Transportation and Circulation*. The project emission estimates include the Bay Area specific model default fireplace percentages but all fireplaces were assumed to be gas fired, as new wood burning fireplaces are prohibited in new construction.

The daily emissions associated with project operational trip generation, energy and area sources are identified in Table 4.2-9 for ROG, NOx, PM_{10}, and $PM_{2.5}$. The primary emissions associated with the project are regional in nature, meaning that air pollutants are rapidly dispersed on release or, in the case of vehicle emissions associated with the project; emissions are released in other areas of the air basin. Because the resulting emissions are dispersed rapidly and contribute only a small fraction of the region's air pollution, air quality in the immediate vicinity of the project site would not substantially change compared to existing conditions or the air quality monitoring data reported in Table 4.2-1.

The results shown in Table 4.2-9 indicate the project would not exceed the BAAQMD operational thresholds for ROG, NOx, PM10 or PM2.5.and, thus, would have a **less than significant** effect on regional air quality.

TABLE 4.2-9
UNMITIGATED OPERATIONAL-RELATED POLLUTANT EMISSIONS[a]

Scenario	ROG	NOx	PM10	PM2.5
Emissions in pounds/day				
Area Source Emissions	20.94	0.51	0.19	0.19
Energy Source Emissions	0.26	2.25	0.18	0.18
Mobile Source Emissions	3.68	38.89	14.18	4.15
Total Emissions	**24.88**	**41.65**	**14.55**	**4.52**
BAAQMD Operational Threshold	54.0	54.0	82.0	54.0
Significant Impact?	No	No	No	No
Emissions in tons/year				
Area Source Emissions	3.82	0.09	0.03	0.03
Energy Source Emissions	0.05	0.41	0.03	0.03
Mobile Source Emissions	0.67	7.10	2.59	0.76
Total Emissions	**4.54**	**7.60**	**2.66**	**0.83**
BAAQMD Operational Threshold	10.0	10.0	15.0	10.0
Significant Impact?	No	No	No	No

[a] Emissions include results modeled with CalEEMod for project operations. Additional data and assumptions are in Appendix D.

SOURCE: ESA Associates, Inc., 2017.

Mitigation: None required.

Impact AQ/CC-3: The proposed project would not expose sensitive receptors to substantial pollutant concentrations (*Less than Significant*)

BAAQMD defines sensitive receptors as children, adults, and seniors occupying or residing in residential dwellings, schools, colleges and universities, daycares, hospitals, and senior-care facilities. There are existing residential receptors immediately across Clement Avenue at several locations along the southern project boundary, about 50 feet from the proposed project site boundary with dense single-family housing abundant further south. There is also a relatively new residential neighborhood approximately 300 feet north west of the project site north of Fortmann Way. There are also sensitive residential receptors (residents of up to 779 dwelling units) proposed to be developed under the proposed project. Pollutant exposure associated with proposed project operations, as well as land use compatibility of locating new residences at the project site are discussed below.

The proposed project would result in on-road mobile traffic that could result in localized carbon monoxide (CO) exposure. The proposed project would not result in any new sources of TAC emissions.

The BAAQMD has established a screening methodology that provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the BAAQMD's CEQA Guidelines, a proposed project would result in a less-than significant impact due to localized CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.
- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, or below-grade roadway).

The proposed project would not conflict with the Alameda County Transportation Commission's (ACTC) program for designated roads or highways, a regional transportation plan, or other agency plans. In addition, traffic volumes at affected intersections in the vicinity of the project site are less than 44,000 vehicles per hour. The transportation analysis indicates that the highest volume intersection in the project area is Webster Street and Atlantic Avenue with an existing volume of 3,036 and a with-project volume of 3,089 vehicles per hour. The proposed project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour and would not result in localized CO concentrations that exceed State or federal standards.

Based on the BAAQMD's criteria, project-related traffic would not lead to violations of the CO standards; therefore, no further analysis was conducted for CO impacts of the project at project-impacted intersections. This impact would be considered **less than significant** on a project-level and cumulative basis.

Operational Health Risk Impacts of the Project

Operational health risk impacts were assessed at off-site sensitive receptors (i.e., residential uses). Operational TAC emissions from diesel-fueled trucks entering and leaving the project site as well as from incidental idling were assumed to occur every day for the operational exposure duration (e.g., 30 years for residential receptors). **Table 4.2-10** summarizes the carcinogenic risk, chronic Hazard Index, and PM2.5 concentrations for the maximally impacted sensitive receptor. As shown, the maximum cancer risk and chronic health impacts from operation of the project is estimated to result in impacts to sensitive receptors less than the thresholds of significance. The maximum project-level impact would occur at the sensitive residential uses to the south of the project site.

The combined-level impacts are also summarized in Table 4.2-10. The combined-level impacts include health impacts associated with vehicles traveling on Clement Avenue, based on the BAAQMD's Roadway Screening Analysis Calculator (BAAQMD 2015) and health impacts associated with stationary sources within 1,000 feet of the project site based on BAAQMD's Stationary Source Screening Analysis Tool (BAAQMD 2012c). The maximum combined-level impacts would occur at the sensitive residential uses to the west of the project site.

TABLE 4.2-10
MAXIMUM UNMITIGATED OPERATIONAL HEALTH RISK IMPACTS FOR OFF-SITE SENSITIVE RECEPTORS

Maximum Impacts	Sensitive Receptor		
	Cancer Risk (# in one million)	Chronic Hazard Index	Max Annual PM2.5 (µg/m^3)
Operational Project Impacts			
Project Operations (Phase 1 and Phase 2)	<0.01	<0.001	<0.001
BAAQMD Significance Threshold	10	1	0.3
Exceeds Threshold?	No	No	No
Operational Cumulative Impacts			
Project Operations (Phase 1 and Phase 2)	<0.01	<0.001	<0.001
Cumulative Sources within 1,000 Feet of Project Site	17.14	0.047	0.230
Cumulative Total	**17.14**	**0.047**	**0.230**
BAAQMD Significance Threshold	100	10	0.8
Exceeds Threshold?	No	No	No

SOURCES: BAAQMD 2017; ESA 2017.

As discussed previously, the lifetime exposure under the OEHHA Guidance takes into account early life (infant and children) exposure. It should be noted that the calculated cancer risk and chronic health impacts conservatively assumes that exposure of sensitive receptors (residential uses) would not have any mitigation, such as mechanical air filtration. As the maximum impact would be less than the health risk thresholds, impacts would be considered **less than significant**.

Operational Health Risk Impacts of the Environment on the Project (non-CEQA)

The California Supreme Court ruled unanimously that CEQA review is focused on a project's impact on the environment "and not the environment's impact on the project." (*California Building Industry Association v. Bay Area Air Quality Management District* (December 17, 2015, Case No. S213478)). The Supreme Court confirmed that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future residents or users." The Court also held that when a project has "potentially significant exacerbating effects on existing environmental hazards" those impacts are properly within the scope of CEQA because they can be viewed as impacts of the project on "existing conditions" rather than impacts of the environment on the project. Based on this decision, the analysis below of potential impacts of the environment on project occupants is provided for informational purposes only.

There are no high volume roadways (greater than 10,000 vehicles per day) within 1,000 feet of the project site. As presented in Table 4.2-3, there are six stationary sources of TACs within 1,000 feet of the proposed residential uses. The four sources for which data are available have risk values substantially below BAAQMD's recommended cumulative exposure vales of 100 in one million increased cancer risk, a hazard index of 10 or a PM2.5 concentration of 0.8 micrograms per cubic meter. The two remaining sources are the of the Marina Fuel dispensing facility and the City of

Alameda fuel dispensing facility for which BAAQMD confirmed that no quantitative risk data is currently available for either of these operators (Kirk, 2017). The City's dispensing facility is located over 500 feet from the project site which, based on risks from other similar operators in the Bay Area, is likely a sufficient distance to reduce potential TAC impacts to a less than significant level.

The potential impact of the Marina fuel operations on proposed residential receptors would depend primarily on the distance of proposed receptors from the facility and the annual throughput of the facility. While quantitative risk data on the operations of the Marina fueling facility are not available, similar operations are conducted at the Gashouse Cove Marina in San Francisco, where the fence-line cancer risk I estimated at 9.5 in one million. Using this risk level as an estimate for the fence line risk of the Alameda Marinas fuel operations results in a cumulative health risk well below the 100 in one million BAAQMD threshold. Consequently, non-CEQA TAC exposures of the existing environment on the proposed project would be **less than significant**.

Mitigation: None required.

Impact AQ/CC-4: The proposed project would not create objectionable odors affecting a substantial number of people. (*Less than Significant*)

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the concentration in the air. When an odor sample is progressively diluted, the odor concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odor reaches a level that is no longer detectable.

BAAQMD has identified typical sources of odor in the BAAQMD 2017 *CEQA Air Quality Guidelines*, a few examples of which include manufacturing plants, rendering plants, coffee roasters, wastewater treatment plants, sanitary landfills, and solid waste transfer stations. The project would not include any of the above potential sources of objectionable odors. The impact would therefore be **less than significant**.

Mitigation: None required.

Impact AQ/CC-5: The proposed project would not conflict with or obstruct the implementation of the applicable air quality plan. (*Less than Significant with mitigation*)

The applicable air quality plan for the area is the BAAQMD's *2017 Clean Air Plan.* Under BAAQMD's updated 2017 methodology, a determination of consistency with the most recently

adopted Clean Air Plan, currently the *2017 Clean Air Plan*, must demonstrate that a plan or project supports the primary goals of the Clean Air Plan, includes applicable control measures of the Clean Air Plan, and would not disrupt or hinder implementation of any control measures of the Clean Air Plan.]

Criterion 1: Project Support of the Primary Goals of the *2017 Clean Air Plan*

The primary goals of the 2017 Bay Area Clean Air Plan are to:

- Attain all state and national air quality standards;
- Eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants; and
- Reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050.

Any project (i.e., project or plan) that would not support these goals would not be considered consistent with the 2017 Clean Air Plan. If approval of a project would not result in significant and unavoidable air quality impacts, after the application of all feasible mitigation, the project may be considered consistent with the 2017 Clean Air Plan.

As indicated under Impact AQ/CC-1 and Impact AQ/CC-2, the proposed project would not exceed the BAAQMD's significance criteria for criteria air pollutant emissions. With respect to the second goal (reduction of population exposure to hazardous emissions), the project would result in a less-than-significant impact with respect to exposure to TACs. Likewise, as discussed under Impact AQ/CC-6, the project would have **less than significant** impacts with respect to greenhouse gas emissions.

Thus, the proposed project would not hinder the region from attainment of the goals outlined in the *2017 Clean Air Plan*.

Criterion 2: Plan Consistency with Control Measures Contained in the Clean Air Plan

The second question recommended in the 2017 BAAQMD CEQA Guidelines for evaluating consistency with the 2017 Clean Air Plan is whether the project includes applicable control measures from the air quality plan. The 2017 Clean Air Plan includes 85 control measures to reduce emissions of PM, ozone precursors, and other air pollutants from a wide variety of emission sources. Forty of these measures address stationary sources and primarily direct the BAAQMD to adopt or revise rules and regulations and other air quality programs and are therefore not directly applicable to implementation of a mixed use development project.

The 2017 Clean Air Plan contains transportation control measures and measures related to energy, green building, waste management, water control and control of short-lived GHGs. The measures applicable to criteria air pollutants, TACs, or greenhouse gases generated under the proposed Master Plan are identified in **Table 4.2-11**. The table identifies the control measure and existing or proposed mechanisms that the project or surrounding local jurisdictions and transit agencies would have in place to implement these measures. Existing mechanisms or those

included in the proposed Master Plan would be consistent with most, but not all, of the relevant control measures of the 2017 Clean Air Plan. Because there are some control measures with which the project as proposed may not be consistent, this impact is considered potentially significant. Where an implementation mechanism does not currently exist or is not identified in the proposed Master Plan, mitigation measures are identified in this EIR to ensure consistency of the proposed Master Plan with the 2017 Clean Air Plan.

TABLE 4.2-11
MASTER PLAN CONSISTENCY WITH APPLICABLE CONTROL MEASURES OF THE 2017 CLEAN AIR PLAN

Control Measure	Existing or Proposed Implementation Mechanism	Consistency of Proposed Project with Measure
TR1 – Clean Air Teleworking Initiative	Future residents within the project area could be expected to take advantage of teleworking opportunities, but the extent to which teleworking would occur cannot be accurately predicted at this time.	Yes
TR2 – Trip Reduction Programs	The project would address this Measure through implementation of its Transportation Demand Management (TDM) program.	Yes, with implementation of project TDM program
TR3 – Local and Regional Bus Service	Transit services within study the area include the Alameda–Contra Costa Transit District (AC Transit), the Bay Area Rapid Transit District (BART), Water Emergency Transit Agency (WETA), and Amtrak	Yes
TR4 – Local and Regional Rail Service	Amtrak and Bay Area Rapid Transit District (BART) stations are within 2.5 miles of project site.	Yes
TR5 – Transit Efficiency and Use	AC Transit Line 21 to BART Fruitvale Station is located 0.5 miles from the project site.	Yes
TR7 – Safe Routes to Schools and Safe Routes to Transit	Henry Haight Elementary School is a four block walk from the project site. Wood Middle School is located at 420 Grand Street, about 1.2 miles south of the site. Alameda High School is a seven block walk from the project site.	Yes
TR8 - Ridesharing	TDM Program includes subsidized dedicated on-site carpool parking and On-Site Car-Share parking.	Yes, with implementation of project TDM program
TR9 – Bicycle and Pedestrian Access and Facilities	The project would include bicycle lanes on Clement Avenue in accordance with the Alameda Bicycle Master Plan. The proposed internal street network and Bay Trail segment within the project site would allow for pedestrians and bicyclists to access the site's commercial core, residential neighborhoods, waterfront, and open spaces. Bike racks would be provided at strategic locations within public open space areas for convenience and to promote bicycling through and around the site	Yes
TR10 – Land Use Strategies	The project would include higher density construction and other land use strategies that would result in trip reductions.	Yes
TR13 - Parking Policies	The master plan specifies that the TDM program may also include unbundled parking programs as part of the overall TDM strategy.	Yes, with implementation of project TDM program

TABLE 4.2-11 (CONTINUED)
MASTER PLAN CONSISTENCY WITH APPLICABLE CONTROL MEASURES OF THE 2017 CLEAN AIR PLAN

Control Measure	Existing or Proposed Implementation Mechanism	Consistency of Proposed Project with Measure
TR14 – Cars and Light Trucks	Not part of the project. New **Mitigation Measure AQ/CC-4** added to address by identifying, as a TDM neighborhood electric vehicle programs to reduce the need to have a car or second car as one potential element of a TDM program.	Mitigation Measure Identified
EN2 – Decrease Electricity Demand	While the LAPCP identifies energy Initiative 4 to amend the Alameda Municipal Code to include sustainable design and green building standards for all new, substantially expanded and remodeled buildings, to date this has only been done for City building projects and Capital Improvement projects through Section 13-19 of the Municipal Code. New **Mitigation Measure AQ/CC-4** added to address by identifying Leadership in Energy and Environmental Design (LEED) rating of silver or equivalent.	Mitigation Measure Identified
BL1 – Green Buildings	See above discussion for EN-2	Yes
BL2 – Decarbonize Buildings	Implemented through The City's Alameda Green program to allow residents and businesses the ability to choose 100 percent renewable energy.	Yes
BL4 – Urban Heat Island	New **Mitigation Measure AQ/CC-4** added to address by identifying Leadership in Energy and Environmental Design (LEED) rating of silver or equivalent. One option for LEED certification is green roofs which serve to reduce a building albedo and associated heat island affects.	Mitigation Measure Identified
NW2 – Urban Tree Planting	While a landscaping plan has not been developed, the project would be required to provide sufficient tree and landscaping elements per the City's development code.	Yes
WA3 – Green Waste Diversion; and WA4 – Recycling and Waste Reduction	The City of Alameda achieves a 75 percent waste diversion rate and businesses and multifamily properties of 5 units or more must have adequate recycling and composting service.	Yes
WR2 – Support Water Conservation	New **Mitigation Measure AQ/CC-4** added to address by identifying Leadership in Energy and Environmental Design (LEED) rating of silver or equivalent. Indoor and outdoor water conservations are major elements of the LEED certification program.	Mitigation Measure Identified

SOURCE: BAAQMD, Clean Air Plan, Spare the Air, Cool the Climate, 2017d

With elements identified as part of the proposed project and implementation of mitigation measures identified in this EIR, the proposed project would be consistent with applicable control measures from the 2017 Clean Air Plan.

With elements identified as part of the proposed project, along with implementation of mitigation measures identified in this EIR including **Mitigation Measure AQ/CC-4**, the proposed project would not adversely affect implementation of any 2017 Clean Air Plan control measure.

Criterion 3: Disruption or Hindrance of Applicable Control Measures

The project would develop residential uses in an area that is currently underutilized. The proposed project would not hinder or disrupt implementation of any control measures from the *2017 Clean Air Plan*.

BAAQMD has identified examples of how a plan may cause the disruption or delay of control measures, such as a project that may preclude an extension of a transit line or bike path or proposes excessive parking beyond parking requirements. The project TDM program would include accommodation of improved bus and transit service. Development of the project site would also include improved pedestrian and bicycle facilities. These elements of project development demonstrate that control measure disruption or delay would not occur.

With elements identified as part of the proposed project, along with implementation of mitigation measures identified in this EIR, the proposed project would not adversely affect implementation of any 2017 Clean Air Plan control measure.

> **Mitigation Measure AQ/CC-3:** The City shall require that the following measures be implemented, either by the City or the project applicant, or both in combination, to encourage the use of low- and zero-emission vehicles in travel to and from the project site and construction meeting LEED Silver or equivalent sustainable design standards:
>
> - Promote use of clean fuel-efficient vehicles through preferential parking and/or installation of charging stations.
> - Require LEED Silver certification or equivalent for all new residential structures.
> - Promote zero-emission vehicles by providing a neighborhood electric vehicle program to reduce the need to have a car or second car as an element of the TDM program.

The proposed project would support the primary goals of the *2017 Clean Air Plan* and it would not disrupt or hinder implementation of any *2017 Clean Air Plan* control measures.

Significance after Mitigation: Less than Significant.

Cumulative Impacts

Impact C-AQ/CC-1: The proposed project, when combined with past, present and other reasonably foreseeable development in the vicinity, would not result in cumulative air quality impacts (*Less than Significant*)

CEQA defines a cumulative impact as two or more individual effects, which when considered together, are considerable or which compound or increase other environmental impacts. According to the BAAQMD, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. Therefore, if daily average or annual emissions of operational-related criteria air

pollutants exceed any applicable threshold established by the BAAQMD, the proposed project would result in a cumulatively significant impact.

As shown in Table 4.2-9, above, implementation of the proposed project would generate less than significant regional emissions. As shown in the project-specific air quality impacts discussion above, the proposed project would not result in individually significant impacts and therefore would also not make a cumulatively considerable contribution to regional air quality impacts.

With regard to regional criteria air pollutants, according to the BAAQMD, no single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. There are many projects throughout the San Francisco Bay area that have been identified as having significant and unavoidable operational and construction-related regional pollutant impacts. Consequently, for assessment of cumulative regional pollutant impacts, BAAQMD has developed a methodology of assessing whether a project would have a cumulatively considerable contribution. According to the BAAQMD *Justification Report*, if a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions (BAAQMD, 2009).

As described in Impact AQ/CC-2, project operational emissions would not exceed the significance thresholds. Impacts would therefore be **less than significant**. As such, the project's emissions would not be considered cumulatively considerable.

Mitigation: None Required.

Impact C-AQ/CC-2: The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that would have a significant impact on the environment. (*Less than Significant, with Mitigation*)

GHG impacts are considered to be exclusively cumulative impacts (CAPCOA, 2008). GHG emissions associated with proposed project construction and operations were modeled with CalEEMod (version 2016.3.1) and are described below.

Construction Activities

Construction activities would produce combustion emissions from various sources. During construction of the project, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO2, CH4, and N2O. In addition, CH4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

The BAAQMD does not have an adopted Threshold of Significance for construction-related GHG emissions. However, lead agencies are encouraged to quantify and disclose GHG emissions that would occur during construction. Using CalEEMod data outputs, the total project construction emissions are estimated to be 2,689 metric tons of CO_2e per year. Implementation of the construction emission control measures in **Mitigation Measure AQ/CC-1** would further reduce GHG emissions during project construction.

Operational GHG Emissions

Long-term operation of the proposed project would generate GHG emissions from area and mobile sources, and indirect emissions from sources associated with energy consumption. Mobile-source emissions of GHGs would include project-generated vehicle trips. Area-source emissions would be associated with activities such as landscaping and maintenance of proposed land uses, and other sources.

Operational emissions estimates for the proposed project are discussed below and were calculated using a method that is consistent with the methodology recommended in the BAAQMD's CEQA Air Quality Guidelines, as described below.

Methodology

The methodology and/or qualitative description of the sources of GHG emissions related to transportation, electricity, water use, and solid waste disposal are described below.

Transportation. Transportation associated with the project would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips. Transportation is the largest source of GHG emissions in California and represents approximately 37 percent of annual CO2 emissions generated in the State. For land use development projects, vehicle miles traveled (VMT) and vehicle trips are the most direct indicators of GHG emissions associated with the project. The proposed project is forecast to generate 5,450 trips per day.

Electricity and Natural Gas. Buildings represent 39 percent of United States primary energy use and 70 percent of electricity consumption (USDoE,2003). Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel. The project is anticipated to increase the use of electricity and natural gas; however, as part of the project's compliance with the latest California building code standards, the project is expected to be relatively energy efficient.

Water Use. Water and wastewater related GHG emissions are based on water supply and conveyance, water treatment, water distribution, and wastewater treatment. Each element of the water use cycle has unique energy intensities (kilowatt hours [kWh]/million gallons). Recognizing that the actual energy intensity in each component of the water use cycle will vary by utility, the California Energy Commission (CEC) assumes that approximately 3,950 kWh per million gallons are consumed for water that is supplied, treated, consumed, treated again, and disposed of in northern California.

Solid Waste Disposal. Solid waste generated by the project could contribute to GHG emissions in a variety of ways. Average waste generation rates from a variety of sources are available from the California Department of Resources, Recycling and Recovery (Cal Recycle, 2012). Land filling and other methods of disposal use energy for transporting and managing the waste, and these activities produce additional GHGs to varying degrees. Land filling, the most common waste management practice, results in the release of CH4 from the anaerobic decomposition of organic materials. CH4 is 25 times more potent a GHG than CO_2. However, landfill CH4 can also be a source of energy. In addition, many materials in landfills do not decompose fully, and the carbon that remains is sequestered in the landfill and not released into the atmosphere.

Project Emissions

When calculating project GHG emissions to compare to the thresholds of significance, BAAQMD recommends that the lead agency consider project design features, attributes, and local development requirements as part of the project as proposed and not as mitigation measures. Consistent with BAAQMD guidance, GHG emissions were estimated using CalEEMod. **Table 4.2-12** shows the calculated GHG emissions for the proposed project. Mobile source emissions are the largest source of GHG emissions at approximately 77 percent of the total. Energy use is next largest category at approximately 17 percent of CO_2e emissions. Area source emissions are less than one percent of the total emissions, and waste and water source emissions are approximately three percent and one percent, respectively. Additional calculation details are provided in Appendix D.

TABLE 4.2-12
PROJECT OPERATIONAL GREENHOUSE GAS EMISSIONS (METRIC TONS/YEAR)

Emissions Source	CO_2	CH_4	N_2O	CO_2e	Percent of Total
Area Source Emissions	40.6	0.0	0.0	41.03	<1
Energy Source Emissions	992.2	0.1	0.0	999.5	17
Mobile Source Emissions	4,476.3	0.2	0.0	4,480.3	77
Waste Source Emissions	72.7	4.3	0.0	180.2	3
Water Source Emissions	68.8	0.1	0.0	82.4	1
Total Annual Emissions	5,650.6	4.6	0.1	5,783.4	100

SOURCE: ESA Associates, Inc., 2017.

Based on the analysis results, the proposed project would generate 5,783 metric tons of CO_2e per year which would be above the BAAQMD's screening threshold of 1,100 metric tons CO_2e per year.

The project would develop up to 779 residential units which would accommodate a service population of 1,932 people. Therefore, the project's GHG emissions would result in a GHG efficiency of 2.9 metric tons per service population per year which is below the BAAQMD's threshold of 4.6 metric tons per service population per year for year 2020. According to the BAAQMD, a project would have less-than-significant GHG emissions if it would meet one or

more of the criteria. Therefore, because the project result in emissions below the 4.6 metric tons CO_2e per service, the project would not have a significant effect on the environment related to greenhouse gas emissions with respect to the GHG reduction goals for year 2020.

For year 2030, a new interim goal of a further 40 percent reduction below 1990 levels has been adopted by CARB pursuant to Senate Bill 32. Applying these further needed reductions to the service population threshold results in an operational-related greenhouse gas emissions threshold of 2.8 metric tons of CO2e per service population as sufficient to achieve the goals for year 2030 (Vintze, 2016). As currently proposed, the project would just exceed this year 2030 threshold by 0.1 metric ton of CO_2e per year. However, implementation of **Mitigation Measure AQ/CC-3** identified above for consistency with the 2017 Clean Air Plan would require the applicant to obtain LEED silver certification or its equivalent for proposed residential structures as well as other measures that would reduce project-related GHG emissions. LEED certification results in approximately 25 percent reduction in building energy demand (USGBC, 2016) or a reduction of approximately 250 metric tons per year of CO2e for the proposed project. Trip reductions realized through implementation of the project TDM program would then need to achieve a further reduction of 124 metric tons per year of CO2e to reduce this impact in year 2030 to less than significant. A TDM trip reduction efficacy of 2.8 percent would achieve this further needed reduction. CAPCOA identifies a trip reduction range of 1 to 6.2 percent for implementation of trip reduction programs in its compendium of GHG reduction measures (CAPCOA, 2010). As stated in Section 4.12, *Transportation and Circulation*, of this EIR, the TDM program for the project, as prescribed in **Mitigation Measure TRA-1**, is estimated to reduce the VMT and trips generated by the project by between five to seven percent. Therefore, the VMT reductions would meet or exceed the required reductions. In concert with the required LEED Silver Certification prescribed by **Mitigation Measure AQ/CC-3**, the project would achieve the level of reduction required to mitigate this potential impact. Therefore, this impact is considered less than significant, with mitigation.

Significance after Mitigation: Less than significant.

Impact C-AQ/CC-3: The proposed project would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. (*Less than Significant*)

The proposed project would be compliant with the GHG reduction initiatives included in the City's 2008 LAPCP. Additionally, as described in Impact 4.2-5, above, with implementation of Mitigation Measure AQ/CC-4, the proposed project would be consistent with BAAQMD's *2017 Clean Air Plan* measures discussed in Table 4.2-11 above. In addition, as indicated in Table 4.2-8, GHG emissions generated by construction and operation of the project would be less than the BAAQMD's 2020 "efficiency threshold" of 4.6 metric tons of CO_2e per service population per year and, with mitigation, would not exceed the analogous 2030 "efficiency threshold" of 2.8 metric tons of CO_2e per service population per year. GHG efficiency metrics were developed for the emissions rates at the State level for the land use sector that would accommodate projected

growth (as indicated by population and employment growth) under trend forecast conditions, and the emission rates needed to accommodate growth while allowing for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020) and SB 32 (BAAQMD, 2009). The project would not impair attainment of GHG reduction goals established pursuant to AB 32 in the *Climate Change Scoping Plan*, because these goals were used in the development of BAAQMD thresholds. The project would have a less-than-significant impact with regard to GHG reduction-planning efforts, because emissions per service population would be below the thresholds developed based on attainment of AB 32 goals.

Significance after Mitigation: Less than Significant.

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4.3 Biological Resources

4.3.1 Introduction

This section assesses the potential for the proposed project to result in significant adverse environmental impacts to both terrestrial and marine biological resources. The Environmental Setting discussion describes existing conditions in two separate subsections, terrestrial and marine resources, while the regulatory setting, significance criteria, approach to analysis, and impact evaluation integrate the discussion for both terrestrial and marine resources.

For the purposes of this EIR, terrestrial resources include terrestrial habitats and species as well as waterfowl and seabirds, which require terrestrial habitat for reproduction, while marine resources consist of marine habitats, marine mammals, fish, and other marine species. Habitat quality and species distribution are considered in evaluating the likelihood of special-status species occurrence in the project site.

This section identifies the project components that may generate significant impacts on these biological resources, and when necessary identifies specific regulations, guidelines, and mitigation measures to avoid, minimize, or mitigate impacts. The following discussion describes biological resources within the project site and immediate vicinity (generally, within 500 feet of the project site) which could potentially be exposed to adverse effects from the project. The 44-acre "project site" is defined in terms of both terrestrial (land-side) areas, totaling approximately 27.8 acres, and marine (water-side) areas, totaling approximately 16.2 acres.

4.3.2 Environmental Setting

Existing project site characteristics, such as habitat types and plant and animal species present or potentially present, are described based on site-specific information, relevant published information, technical articles, and agency reports as indicated in source citations. In addition, Environmental Science Associates (ESA) conducted a biological reconnaissance survey of the project site on October 6 and 18, 2016; the results of this survey are incorporated into the discussion below.

Setting – Terrestrial Biological Resources

The primary sources of information referenced in this section regarding terrestrial biological resources are:

- California Department of Fish and Wildlife (CDFW) July 2017 "Special Animals" list;
- CDFW California Natural Diversity Database (CNDDB) for 7.5-minute topographic quadrangles *Oakland West, Oakland East*, Commercial Version, July 2017;
- United States Fish and Wildlife Service (USFWS), Federally Endangered and Threatened Species List for the 7.5-minute topographic quadrangles *Oakland West, Oakland East*, July 2017; and

- California Native Plant Society (CNPS), Rare Plant Program. Inventory of Rare and Endangered Plants for the 7.5-minute topographic quadrangles *Oakland West, Oakland East,* July 2017.

Regional Setting – Terrestrial Biological Resources

The project site is located in the Bay Area-Delta Bioregion, as defined by the State's Natural Communities Conservation Program.[1] This bioregion consists of a variety of natural communities, including shoreline areas that range from the open waters of San Francisco Bay and Delta to salt and brackish marshes, as well as upland habitats that include grassland, chaparral, and oak woodlands. The area has a Mediterranean climate with dry, hot summers and cool, wet winters. The high diversity of vegetation and wildlife found in the region is a result of soil, topographic, and microclimate variations that combine to promote relatively high levels of endemism.[2] This, in combination with a long history of uses that have altered the natural environment and the increasingly rapid pace of development, has resulted in some flora and fauna becoming threatened or endangered.

The project area is located on the north-central shoreline of Alameda Island, and includes waters of the Oakland-Alameda Estuary, which is part of the larger San Francisco Bay estuary. The estuary is designated as a Western Hemisphere Shorebird Reserve Network of international importance, with more than one million shorebirds using regional wetlands each winter. Between 300,000 and 900,000 shorebirds pass through San Francisco Bay during spring and fall migration periods, more than 50 percent of the diving ducks in the Pacific Flyway winter in the shallow wetlands of the Bay, and several species breed in regional wetlands during the summer (Goals Project, 1999).

Alameda Island – Terrestrial Biological Resources

The area encompassed by modern-day Alameda Island was historically a combination of shallow bay waters, tidal marshes, and upland habitats (SFEI, 2001). The first documented filling of marshes and bay waters began during the 1890s. By the 1920s and 1930s, the portion of the island that became the Alameda Marina site had been filled, chiefly with dredge materials from U.S. Army Corps of Engineers (Corps) projects associated with the Oakland Harbor and other harbors throughout the East Bay. After World War II, filling of San Francisco Bay waters and marshes over time increased the dry land acreage to current levels.

Project Site and Vicinity – Terrestrial Biological Resources

The project site is approximately 44 acres, which consists of 4,000 linear feet of frontage on the Oakland-Alameda Estuary. It includes an existing boat marina that covers approximately

[1] A bioregion is an area defined by a combination of ecological, geographic, and social criteria and consists of a system of related interconnected ecosystems. The Bay-Delta bioregion is considered the immediate watershed of the Bay Area and the Delta, not including the major rivers that flow into the Delta. It is bounded on the north by the northern edge of Sonoma and Napa Counties and the Delta and extends east to the edge of the valley floor; on the south, it is bounded by the southern edge of San Joaquin County, the eastern edge of the Diablo Range, and the southern edge of Santa Clara and San Mateo Counties.

[2] *Endemism* refers to the degree to which organisms or taxa are restricted to a geographical region or locality and thus are individually characterized as endemic to that area.

16.2 acres with 11 piers and approximately 530 boat slips. The land side of the site contains approximately 250,000 square feet of maritime, commercial and retail, warehouse and dry storage uses. Today there are 37 buildings on the site, which cover about 16 percent of the total land area. Most of the buildings were built before 1943 and have been renovated extensively over the decades. The majority are occupied by tenants. The few buildings that are wholly unoccupied are in good condition and would not be considered potential wildlife habitat. More than 80 percent of the land portion of the site is currently paved in asphalt or concrete for vehicle circulation and outside storage, which takes up most of the west and east portions of the site. The northeast portion of the project site is lined with revetment, including rip rap, vertical bulkhead, pier pilings, and boat docks. A few small areas of mudflats are exposed at very low tides.

The project site is bounded on the west by Alameda Marina Drive, on the north by the Oakland-Alameda Estuary, to the east by a northern extension of Willow Street, and to the south by Clement Avenue (see **Figure 3-2**, **Local Vicinity**). To the west of the site across Alameda Marina Drive lies the Alameda Power Service Center and also an extension of the Fortmann Marina. North of the site across the estuary is Coast Guard Island, and also Union Point Park located along Embarcadero in Oakland. To the east of the site lies the Navy Operational Support Center/Alameda Naval and Marine Corps Reserve Center, and to the south across Clement Avenue is a mixture of light industrial, retail and residential uses. All on-site and adjacent land-side uses are fully urbanized.

Vegetation Communities and Habitat Types

Natural communities are assemblages of plant and wildlife species that occur together in the same area. These communities are defined by species composition and relative abundance. Vegetation communities and habitat types identified during the October 6 and 18, 2016 reconnaissance site visit and occurring in the project vicinity are described below.

Ruderal and Non-Native Grassland

Ruderal vegetation occurs in areas that are subject to repeated or otherwise substantial disturbance, and are characterized by opportunistic plant species that can easily colonize in such conditions. Ruderal vegetation may include some native species, but is typically dominated by non-native and often highly invasive species. The project site includes very limited ruderal vegetation, including fennel (*Foeniculum vulgare*), ice plant (*Carpobrotus edulis*), and non-native grasses that may include foxtail brome (*Bromus madritensis*), rattail sixweeks grass (*Festuca myuros*), or wild oat (*Avena* spp.), but could not be identified due to recent mowing.

Ruderal areas provide limited foraging or nesting habitat for a few birds and small mammals. Birds commonly found in such areas are seed-eating and include non-native species such as English sparrow (*Passer domesticus*) and European starling (*Sturnus vulgaris*), as well as birds native to the area, such as black phoebe (*Sayornis nigricans*), house finch (*Haemorhous mexicanus*), yellow-rumped warbler (*Setophaga coronata*), white-crowned sparrow (*Zonotrichia leucophrys*), lesser goldfinch (*Spinus psaltria*), Brewer's blackbird (*Euphagus cyanocephalus*), and rock pigeon (*Columba livia*). Other common wildlife that might forage or inhabit the ruderal vegetation at the project site would be urban in nature and tolerant to human activity and

disturbance, including species such as striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), Botta's pocket gopher (*Thomomys bottae*) and other small rodents. Within the project vicinity, wildlife utilizing nearby higher quality habitats may forage and occasionally nest within ruderal areas.

Developed

A developed community includes areas occupied by buildings, roads, parking lots, paved areas, and other developed facilities, as well as adjacent landscaped or heavily disturbed areas. Vegetation in these areas consists mostly of non-native species as described in ruderal and non-native grassland type, above, as well as landscape plants. Urban and developed areas tend to be landscaped with non-native plant species, displacing native plants which may have previously occurred. The majority of the project site is developed, and no native species were observed. Landscape hedges and trees, which could support nesting birds tolerant of human activity, such as house sparrows, are present across the project site. Landscape trees, including London plane tree (*Platinus* x *hispanica*) and sweetgum (*Liquidamber styraciflua*) were observed along the perimeter of the project site, and individual *Eucalyptus*, peruvian pepper trees (*Schinus molle*) and pines (*Pinus* sp.) were scattered throughout the project site. Other developed communities around the project site include the United States Navy/Marine Corps Reserve Training Center and the Navy Operation Support Center to the east, and Alameda Municipal Power facilities to the west.

Wildlife species in urban areas must be able to tolerate the presence of humans and their activities and are typically generalists, capable of utilizing the limited food sources available, such as garbage and horticultural plants and their fruit. Urban wildlife species observed in developed areas of the Alameda Marina include rock pigeon, American crow (*Corvus brachyrhynchos*), western scrub jay (*Aphelocoma californica*), and a feral cat. Raccoons are frequently seen in the evenings along the shoreline, especially in eroded areas under the East Pier and the pier near the harbormaster's office. Feral cats are also common to the project site (Houtz, personal communication, 2016).

Open Water Avian Habitat

The project site is situated within and adjacent to open water habitat of the Central Bay. The San Francisco Bay-Delta is an important wintering and stop-over site for the Pacific Flyway. More than 300,000 wintering waterfowl use the region and associated ponds. Bird types that use the open waters of the Central Bay include diving birds, which feed in deeper water on benthic invertebrates; dabblers, which feed in the upper water column of shallow subtidal areas; piscivores, which feed on fish; and opportunistic predators (NOAA, 2007).

While Alameda Island is largely urbanized, the waters surrounding the island support a variety of marine waterfowl. Birds common to the Oakland-Alameda Estuary on the northern side of Alameda island include Canada goose (*Branta canadensis*), American coot (*Fulica americana*), northern shoveler (*Anas clypeata*), common goldeneye (*Bucephala clangula*), American wigeon (*Anas americana*), mallard (*Anas platyrhynchos*), bufflehead (*Bucephala albeola*), double-crested cormorant *(Phalacrocorax auritus),* California brown pelican *(Pelecanus occidentalis),* podiceps grebes, great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), black-crowned night heron (*Nycticorax nycticorax*), and a variety of gulls (*Larus* spp.).

An ESA-biologist confirmed the presence of the following bird species during an October 18, 2016 site visit: mallard (*Anas platyrhynchos*), multiple gull species (*Larus* spp.), American coot (*Fulica americana*), and double-crested cormorant (*Phalacrocorax auritis*).

Setting – Marine Resources

The primary information sources used to prepare this section on the marine biological resources setting include federal, State, and local reports and published scientific studies pertaining to marine resources in San Francisco Bay, as well as data collected in support of similar Alameda shoreline projects recently analyzed. These primary sources were augmented by information recorded during the October 6, 2016 biological reconnaissance survey of the project site and vicinity.

Regional Setting – Marine Resources

The San Francisco Bay-Delta is the second largest estuary in the United States and supports numerous aquatic habitats and biological communities. The estuary's fish and wildlife populations have changed noticeably in the past 150 years, with losses due to over-harvest, habitat loss and degradation, introduced species, pollutants, and the modification of freshwater flows. The estuary encompasses 479 square miles, including shallow mudflats. San Francisco Bay is divided into four main basins: South Bay, Central Bay, San Pablo or North Bay, and Suisun Bay. The project site analysis is focused on the proximate waterfront and surrounding open water habitat of the Oakland-Alameda Estuary, which is part of the Central Bay.

Project Site and Vicinity – Marine Resources

Open Water, Aquatic, and Subtidal Habitat

Open water is found in the Oakland-Alameda Estuary to the north of the project site, which is hydrologically connected to San Francisco Bay. The Oakland-Alameda Estuary was originally a tidal slough, but was dredged in the mid- to late 1800s to create a viable port and shipping channel. The estuary is influenced by both freshwater and marine water, receiving regular freshwater inflow from a combination of natural creeks, human-made stormwater drainage facilities, and from direct surface runoff after precipitation events. The estuary is also influenced by the marine waters of the Bay and is subject to tidal currents. Sediment from Oakland's shoreline and creeks is carried by the tidal current to shoals and sandbars, causing siltation of the nearby shipping channels. The open waters adjacent to the study area are typical of San Francisco Bay waters in general and have primarily silty mud and sand substrates that are naturally no more than 25 feet deep, although dredging operations to facilitate shipping operations in the Oakland-Alameda Estuary may increase water depth to more than 50 feet (DVA, 2013).

Subtidal plants and submerged aquatic vegetation occur throughout Bay waters on both soft and hard substrate. Aquatic vegetation in the project area may include green algae (*Ulva/Enteromorpha* spp.), red algae (*Gracillaria verrucosa*), and plants such as widgeon grass (*Ruppia maritima*) and fennel-leaved pondweed (*Potamogeton pectinatus*), which are common in subtidal habitats. Eelgrass beds are found in the Oakland-Alameda Estuary approximately two miles northwest of the project area, adjacent to the northern edge of Alameda Point, and in small patches on the south side

of Alameda Island near the southeastern terminus of the breakwater (Subtidal Goals Project 2010; Merkel 2014). Benthic, or bottom-dwelling, fauna in the open waters of San Francisco Bay and the Oakland-Alameda Estuary, include a large variety of invertebrates, such as polychaetes (i.e., marine worms), crustaceans (e.g., crabs, amphipods, and isopods), mollusks such as clams and mussels, echinoderms, and fishes such as halibut and sole. Pelagic organisms also are widely observed and include planktonic organisms (e.g., phytoplankton, copepods, and larval animals), crustaceans (e.g., shrimps and mysiids), and many bony fish and shark species. These lower taxa provide a prey base for the higher taxa, such as marine mammals and birds, which also are commonly present in this environment (DVA, 2013).

San Francisco Bay and the Oakland-Alameda Estuary support a wide variety of fishes, including special-status species such as Central California Coast (CCC) steelhead Distinct Population Segment (DPS) (*Oncorhynchus mykiss)*, Central Valley fall/late-fall run Chinook salmon Evolutionarily Significant Unit (ESU) (*Oncorhynchus tshawytscha*), and the southern DPS of North American green sturgeon (*Acipenser medirostris*). Three species of pelagic fish account for 99 percent of the total abundance of fish regularly sampled in both the deep water and shallow areas of the Central Bay. Northern anchovy (*Engraulis mordax*) is the overwhelming dominant species, accounting for up to 94 percent of those fish inhabiting the water column. Pacific herring (*Clupea pallasii*) and jacksmelt (*Atherinopsis californiensis*) are the second and third most common fish taxa in Central Bay waters, together accounting for an additional five percent of the fish sampled on an annual basis. The remaining 30 species collectively account for less than one percent of the fish species present annually. Although it is not federally or State protected species, the San Francisco Bay Pacific herring fishery is one of the last remaining such fishery in the San Francisco Bay, and is currently suffering significant declines. Because of its commercial importance, the fishery is regulated by the California Department of Fish and Wildlife (CDFW), and the Pacific herring population and spawning success within the San Francisco Bay are closely monitored. Marine vegetation, such as eelgrass and algae, are the preferred substrate for herring spawning. However, pier pilings, riprap, and other rigid, smooth structures within Bay waters also serve as spawning substrate (Goals Project, 2000).

Unvegetated open waters within the project area provide refuge and foraging habitat for a variety of resident and migratory birds, as outlined previously in the discussion of open water avian habitat.

In general, the presence of marine mammals in San Francisco Bay and adjoining waters is related to distribution and presence of prey species and foraging habitat. Additionally, harbor seals (*Phoca vitulina*) and California sea lions (*Zalophus californianus*) use various intertidal substrates that are exposed at low to medium tide levels for resting and breeding.

Special-Status Species

A number of species known to occur on the project site or in the project vicinity are protected pursuant to federal and State endangered species laws, or have been designated species of special concern by the CDFW. In addition, Section 15380(b) of the CEQA *Guidelines* provides a definition of rare, endangered, or threatened species that are not included in any listing, but whose "survival and reproduction in the wild are in immediate jeopardy" (endangered) or which are "in such small

numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens" or "is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act."[3] Species recognized under these terms are collectively referred to as "special-status species." For the purpose of this evaluation, special-status species include:

1. Species listed or proposed or are candidate species for listing as threatened or endangered by the USFWS under the federal Endangered Species Act (50 CFR 17.12 [listed plants], 17.11 [listed animals], and various notices in the Federal Register [FR] [proposed species]);

2. Species that are candidates for possible future listing as threatened or endangered under the federal Endangered Species Act (61 FR 40, February 28, 1996);

3. Species listed or proposed for listing as rare, threatened, or endangered by the CDFW under the California Endangered Species Act (14 Cal. Code Regs. 670.5);

4. Species formerly designated by the USFWS as species of concern or species designated by the CDFW as species of special concern;[4]

5. Species designated by the State as "special animals;"[5]

6. Species designated by the State as "fully protected" (there are about 35 species designated by the State as fully protected, most of which are also listed as either endangered or threatened);[6]

7. Raptors (birds of prey), which are specifically protected by California Fish and Game Code Section 3503.5, thus prohibiting the take, possession, or killing of raptors and owls, their nests, and their eggs;

8. Non-listed fish species included in federally-identified Essential Fish Habitat (EFH, defined below) and of regional importance for harvest;

9. Species managed and regulated under the federal Magnuson-Stevens Fisheries Act (Magnuson-Stevens Act or MSA);

10. Species protected under the federal Marine Mammal Protection Act (MMPA);

11. Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.);

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3 For example, the CDFW interprets Ranks 1A, 1B, 2A, and 2B of the California Native Plant Society's *Inventory of Rare and Endangered Vascular Plants of California* to consist of plants that, in a majority of cases, would qualify for listing as rare, threatened, or endangered. However, the determination as to whether an impact is significant is made by the lead agency, absent the protection of other laws.

4 A California species of special concern is one that: has been extirpated from the state; meets the state definition of threatened or endangered but has not been formally listed; is undergoing or has experienced serious population declines or range restrictions that put it at risk of becoming threatened or endangered; and/or has naturally small populations susceptible to high risk from any factor that could lead to declines that would qualify it for threatened or endangered status.

5 Species listed on the current CDFW "special animals" list (CDFW, 2015c)

6 The "fully protected" designation can be found in the California Fish and Game Code Sections 3511, 4700, 5050 and 5515.

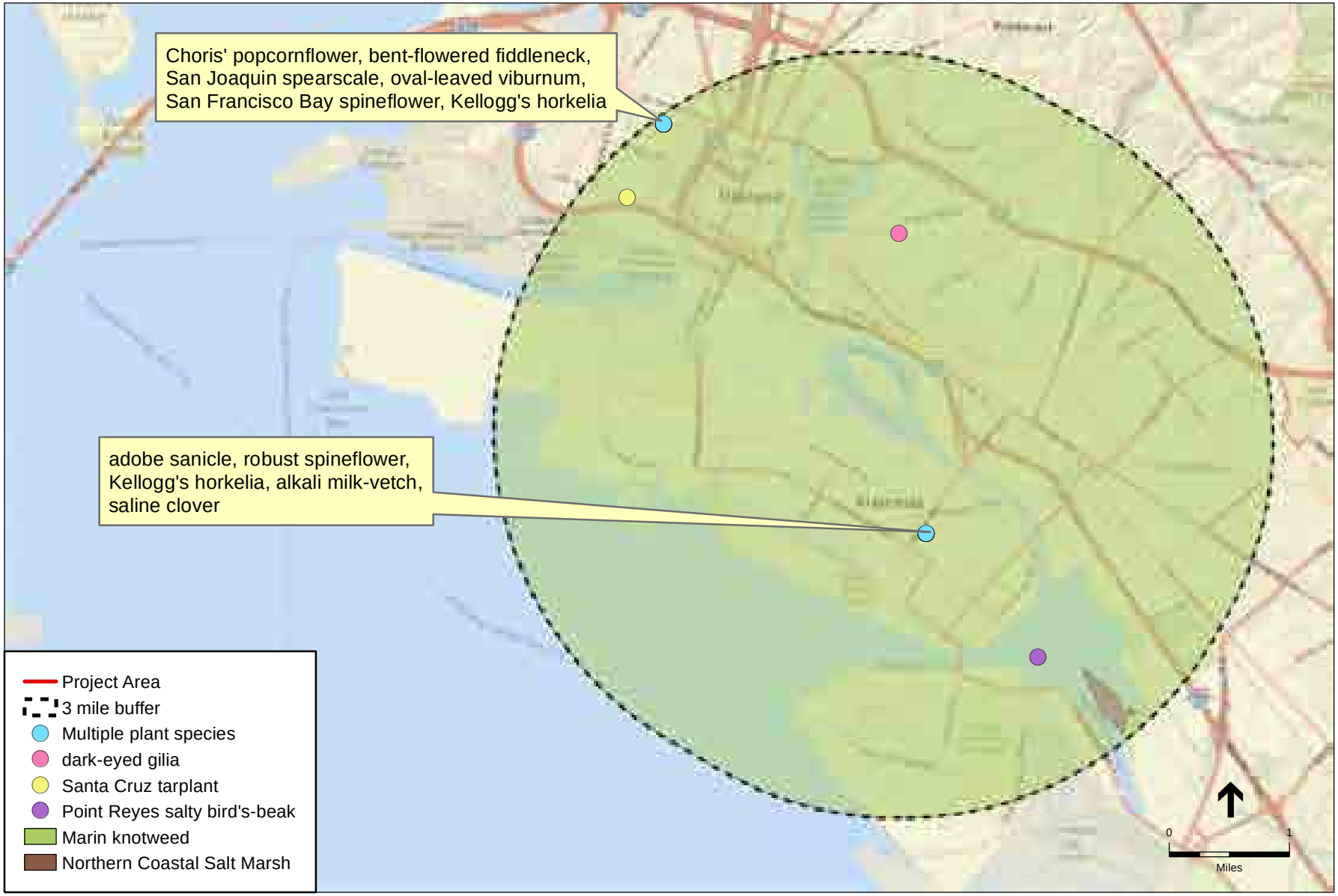
12. Species that meet the definitions of rare and endangered under CEQA. CEQA *Guidelines* Section 15380 provides that a plant or animal species may be treated as rare, threatened, or endangered even if not on one of the official lists (CEQA *Guidelines*, Section 15380); and,

13. Plants considered by the CNPS to be "rare, threatened or endangered in California" under the California Rare Plant Ranking system (CNPR) which include Rank 1A, 1B, 2A, and 2B as well as Rank 3 and 4 plant species.[7]

The list of special-status plant and animal species that have the potential to occur within the project site and vicinity were compiled based on data contained in the California Natural Diversity Database (CNDDB) (CDFW, 2017a); the USFWS list of Federal Endangered and Threatened Species that occur within the project site or may be affected by the proposed project (USFWS, 2017); the CNPS Inventory of Rare and Endangered Plants (CNPS, 2017) for the *Oakland East* or *Oakland West* U.S. Geological Survey 7.5 minute topographical quadrangles; the Baylands Ecosystem Habitat Goals Report (Goals Report, 1999); and biological literature of the region. Table 1 in **Appendix C** presents and describes special-status species, their status and habitat requirements, and plant blooming periods, and considers the potential for each species to occur within the project site and vicinity. The habitat preferences for each special-status species were reviewed and considered with regards to their potential to occur in the context of the project site and vicinity; therefore, Table 1 in **Appendix C** represents a list of species observed in the *Oakland East* and *Oakland West* CNDDB 7.5-minute topographic quadrangles. Species having potential for occurrence are expected to occur based on the known elevation or distribution range of the species and presence of suitable habitat. **Figure 4.3-1** and **Figure 4.3-2** identify the locations of regional special-status species occurrences as reported in the CNDDB.

Based on a review of the biological literature of the region, information presented in previously prepared environmental documentation, and an evaluation of the habitat conditions of the project site and vicinity, a species was designated as "not expected" if: (1) the species' specific habitat requirements (e.g., serpentine grasslands, as opposed to grasslands occurring on other soils) are not present, or (2) the species is presumed, based on the best scientific information available, to be extirpated from the project site or region. A species was designated as having a "low potential" for occurrence if: (1) its known current distribution or range is outside of the project site and vicinity or (2) only limited or marginally suitable habitat is present within the project site and vicinity. A species was designated as having a "moderate potential" for occurrence if: (1) there is low to moderate quality habitat present within the project site or immediately adjacent areas or (2) the project site is within the known range of the species, even though the species was not observed during biological surveys. A species was designated as having a "high potential" for occurrence if: (1) moderate to high quality habitat is present within the project site, and (2) the project site is within the known range of the species.

[7] Rank 3 plants may be analyzed under CEQA *Guidelines* Section 15380 if sufficient information is available to assess potential impacts to such plants. Factors such as regional rarity vs. statewide rarity should be considered in determining whether cumulative impacts to a Rank 4 plant are significant even if individual project impacts are not. CRPR Rank 3 and 4 plants may be considered regionally significant if, e.g., the occurrence is located at the periphery of the species' range, or exhibits unusual morphology, or occurs in an unusual habitat/substrate. For these reasons, CRPR Rank 3 and 4 plants should be included in the special-status species analysis. Rank 3 and 4 plants are also included in the CNDDB Special Vascular Plants, Bryophytes, and Lichens List (CDFW, 2015b).

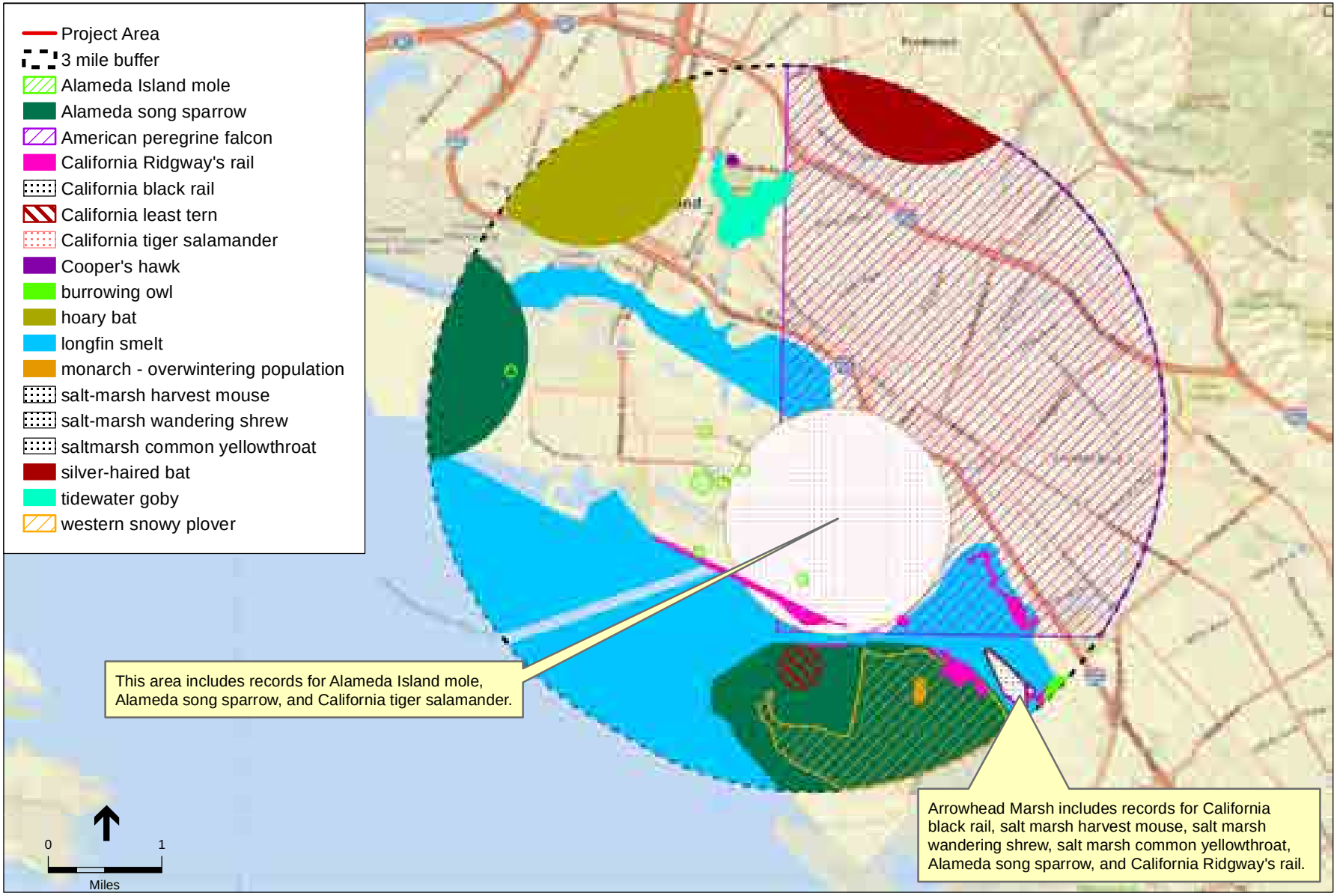


SOURCE: ESRI, 2017; CDFW, 2017

Alameda Marina EIR . 160044.01

Figure 4.3-1

Special-Status Plant Species within 3 miles of the Project Area



SOURCE: ESRI, 2017; CDFW, 2017

Alameda Marina EIR . 160044.01

Figure 4.3-2

Special-Status Wildlife Records within 3 Miles of the Project Area

Special-Status Plants

Most of the special-status plant species listed in Table 1 of **Appendix C** are not expected or have a low potential to occur on the project site or in the vicinity due to the absence of suitable habitat or the site being out of the species' known range, and therefore were not evaluated further. The project site is primarily developed, with limited patches of ruderal landscape; no natural communities are present. Historical records exist for one federal listed (endangered) plant, (*Chorizanthe robusta* var. *robusta*), and five special-status plants (*Polygonum marinense, Sanicula maritima, Astragalus tener* var. *tener, Horkelia cuneata* var. *sericea, Trifolium hydrophilum*) in the project site; all of these records are from 1936 or earlier and the habitat requirements that support these plants are no longer present. No special-status plant species were observed during the biological resources reconnaissance survey, although the survey did not constitute a detailed botanical inventory of the project site.

Special Status Terrestrial Species

Of the special-status animals listed in Table 1 of **Appendix C**, only species known to be present within the project site or classified as having a moderate or high potential for occurrence in the project site or vicinity were considered in the impact analysis and described in further detail, below. Mammal and bird species typically associated with estuarine habitats, such as Ridgway's rail (*Rallus longirostris obsoletus)*, California black rail (*Laterallus jamaicensis coturniculus)*, salt marsh harvest mouse (*Reithrodontomys raviventris*), and salt marsh wandering shrew (*Sorex vagrans halicoets*) are restricted to salt marsh habitat, which is absent from the project site and vicinity; therefore, no special status terrestrial bird or mammal species associated with salt marsh habitat are likely to occur on the project site or vicinity. The endemic Alameda Island mole (*Scapanus latimanus parvus*) requires friable soils and grasslands, which are also absent from the project site and vicinity. No further impact analysis for these special status birds and mammals is warranted.

The special-status species list presented in Table 1 of **Appendix C** includes marine animal species taxa for which potential habitat (i.e., general habitat types for breeding or foraging) occurs in the general vicinity of the project or can reasonably be expected to be affected by project activities. Species for which generally suitable habitat occurs but that were nonetheless determined to have low potential to occur within the project site and vicinity are also listed in Table 1 of **Appendix C**. This appendix also provides the rationale for each "potential-to-occur" determination. The only special-status animal species observed during the biological resources reconnaissance survey for terrestrial species was the double-crested cormorant (*Phalacrocorax auritus*), whose nesting colonies are on the CDFW Watch List (CDFW, 2017b). Species with a moderate to high potential to occur within the project site and vicinity are discussed in further detail below.

Birds

California least tern (*Sterna antillarum browni*). The California least tern is a federally- and state-endangered, and state fully protected, species. It is a small tern, about nine inches long, with a 20-inch wingspan. This migratory bird winters in Latin America, but its winter range and

habitats are unknown. The species nests along the Pacific coast from southern Baja California to San Francisco Bay. Least terns usually arrive in California in April and depart in August. They nest colonially on bare or sparsely vegetated flat substrates near the coast. Typical nesting sites are on isolated or specially protected sand beaches or on natural or artificial open areas in remnant coastal wetlands. The species feeds in nearby shallow, estuarine waters where small fish are abundant. Breeding colonies are located in Southern California along marine and estuarine shores, and in San Francisco Bay in abandoned salt ponds and at Alameda Point (the former Alameda Naval Air Station), which is one of the largest and most successful breeding colonies in the state. There are no documented occurrences of this species nesting at the project site. Terns may use the Oakland-Alameda Estuary for foraging between April and August.

Cooper's hawk (*Accipiter cooperii***).** The Cooper's hawk is protected under Section 3503.5 of the California Fish and Game Code. Cooper's hawks are a mid-sized woodland raptor that breeds throughout much of the United States, often nesting in riparian areas and oak woodlands, where it hunts songbirds at the woodland edge. Cooper's hawks have also been documented nesting in residential neighborhoods in the East San Francisco Bay Area since the early 2000s (Pericoli, 2004), a sign of their tolerance for human disturbance and habitat fragmentation. A nesting pair has been documented in Lakeside Park, north of Lake Merritt, approximately two miles from the project site (CDFW, 2017a). In addition, five nests were documented on Alameda Island within three miles of the project site during the 2016 nesting season (Wilson, 2016), and four nests were documented during the 2017 nesting season, all of which were within one mile of the project site (Wilson, 2017). Marginally suitable nesting habitat is present in a few landscape trees on the margins of the project site.

American peregrine falcon (*Falco peregrinus anatum***).** Listed as Fully Protected[8] under the California Fish and Game Code, the peregrine falcon is known throughout California and is a year-around resident along the Pacific coast. The peregrine is a specialist, preying primarily on mid-sized birds, such as ducks, pigeons and doves, in flight. Occasionally these birds will take bats, fish and insects. Although typical nesting sites for the species are tall cliffs, preferably over or near water, peregrines are also known to use urban sites, including the San Francisco-Oakland Bay Bridge, and tall buildings in San Francisco and San Jose, and throughout the Bay Area.[9] In 2016 and 2017, peregrine falcons nested on the Fruitvale Bridge in the City of Alameda, which is approximately 0.5 miles from the project site, and, in 2016, also nested on a crane in Jack London Square, which is approximately 1.5 miles from the project site (Wilson, 2016; Wilson 2017). Peregrines may prey on ducks and pigeons at the Alameda Marina.

Osprey (*Pandion haliaetus***).** The osprey is a former California Species of Special Concern and nesting osprey are currently on the CDFW Watchlist. Osprey are also protected under Section 3503.5 of the California Fish and Game Code. These large fish-eating raptors can be found around nearly any water body, including salt marshes, rivers, ponds, reservoirs, estuaries,

8 A California fully protected species cannot be taken at any time, except, under certain circumstances, in association with a species recovery plan.

9 Peeters, H. and J. Peeters, Raptors of California, University of California Press, Berkeley, CA, 2005, [California Natural History Guides: 82].

and oceans. Historically, ospreys nested throughout much of California but by the 1960s much of the osprey population declined in central and southern California area. This decline was attributed to human persecution, habitat alteration, and DDT use. The osprey prefers to nest within sight of permanent water and readily builds its nest on manmade structures, such as telephone poles, channel markers, duck blinds, and nest platforms designed especially for it. Ospreys successfully nested in 2016 and 2017 at Alameda Point (Wilson, 2016; Wilson, 207), about three miles from the project site, and likely forage in the Oakland-Alameda Estuary; however, suitable nesting habitat is not present on the project site.

Double-crested cormorant (*Phalacrocorax auritus*). Double-crested cormorant is a former state species of special concern and its nesting colonies are still considered a resource of conservation concern by the CDFW. A yearlong resident along the entire coast of California, the species is fairly common to locally very common along the coast and in estuaries and salt ponds. The species forages mainly on fish, crustaceans, and amphibians, and sometimes feeds cooperatively in flocks of up to 600, often with pelicans, and nests in colonies of a few to hundreds of pairs (Zeiner et al., 1990). The species is commonly found in the San Francisco Bay nesting in large structures high above ground, such as bridges (e.g., San Francisco-Oakland Bay Bridge, San Mateo Bridge), and tall trees. Breeding colonies are also present on Yerba Buena Island and Alcatraz Island. Suitable nesting and roosting habitat is not present in the project site; however, this species is likely to forage in the Oakland-Alameda Estuary and was observed perched on a dock near the East Pier during the biological resources reconnaissance survey.

Special Status Aquatic Species

Southern DPS of North American green sturgeon (*Acipenser medirostris*). The southern DPS of green sturgeon is federally listed as threatened and is a California Species of Special Concern. This anadromous fish is the most widely distributed member of the sturgeon family and the most marine-oriented of the sturgeon species. Green sturgeons range in the nearshore waters from Mexico to the Bering Sea and are common occupants of bays and estuaries along the western coast of the United States (Moyle 2002). Adults in the San Joaquin Delta are reported to feed on benthic invertebrates including shrimp, amphipods and occasionally small fish (Moyle 2002) while juveniles have been reported to feed on opossum shrimp and amphipods. Adult green sturgeons migrate into freshwater beginning in late February with spawning occurring in March through July, with peak activity in April and June. After spawning, juveniles remain in fresh and estuarine waters for 1-4 years and then begin to migrate out to the sea (Moyle 2002). The upper Sacramento River has been identified as the only known spawning habitat for green sturgeon in the southern DPS. However, the entire San Francisco Bay has been designated as critical habitat for the species and there is some potential for green sturgeon to occur in project area waters.

Central Valley (CV) and Central California Coast (CCC) steelhead DPS (*Oncorhynchus mykiss*). Steelhead populations in the Central California Coast (CCC) DPS and Central Valley (CV) DPS are listed as threatened under the federal Endangered Species Act (FESA). Steelhead are distinguished from other Pacific salmonids by possessing the ability to spawn repeatedly, maintaining the mechanisms to return to the Pacific Ocean after spawning in freshwater. Juvenile steelhead may spend up to four years residing in fresh water prior to migrating to the ocean as

smolts. Although variation occurs, in coastal California, steelhead usually live in freshwater for one to two years, then spend an additional two or three years in the ocean before returning to their natal stream to spawn. CV steelhead migrate through Central Bay waters between freshwater spawning and rearing areas in the Central Valley and the Pacific Ocean, and may occur seasonally in the waters of the project area during migration. The project site is outside of critical habitat for Central Valley steelhead, which includes all waters of San Francisco Bay north of the Bay Bridge.

CCC steelhead have small spawning runs in multiple Bay tributaries including Alameda and San Leandro Creeks to the south of the Project Site (Goals Project 2000). Fish migrating to and from these spawning grounds may also occur in project area waters. Juvenile steelhead travel episodically from natal streams during fall, winter, and spring high flows, with peak migration occurring in April and May (Fukushima and Lesh, 1998). Emigrating CCC steelhead use tributaries of San Francisco Bay and portions of the San Francisco Bay for rearing and as a migration corridor to the ocean. Although data regarding the emigration timing of steelhead smolts from nearby watersheds is lacking, steelhead smolts in other streams within the DPS including those draining to San Francisco Bay, typically emigrate from March through June (Fukushima and Lesh, 1998). Critical habitat for Central California coastal steelhead includes all river reaches and estuarine areas accessible to steelhead in coastal river basins, from the Russian River to Aptos Creek (inclusive), and the drainages of San Francisco and San Pablo Bays. Also included are adjacent riparian zones, all waters of San Pablo Bay west of the Carquinez Bridge, and all waters of San Francisco Bay to the Golden Gate. Therefore, critical habitat for this DPS includes the waters adjacent to the project area.

Sacramento River winter-run, Central Valley spring-run, and Central Valley fall-run Chinook Salmon (*Oncorhynchus tshawytscha*). The population of Chinook salmon in San Francisco Bay is comprised of three distinct races: winter-run, spring-run, and fall/late fall-run. These races are distinguished by the seasonal differences in adult upstream migration, spawning, and juvenile downstream migration. Chinook salmon are anadromous fish, spending three to five years at sea before returning to fresh water to spawn. These fish pass through San Francisco Bay waters to reach their upstream spawning grounds in the upper reaches of the Sacramento and San Joaquin River watersheds. In addition, juvenile salmon migrate through the Bay en route to the Pacific Ocean.

Sacramento River winter-run Chinook salmon, listed as both state and federally endangered, migrate through San Francisco Bay from December through July with a peak in March (Moyle, 2002). Spawning is confined to the mainstem Sacramento River and occurs from mid-April through August (Moyle, 2002). Juveniles emerge between July and October, and are resident in their natal stream 5-10 months followed by an indeterminate residency period in estuarine habitats (Yoshiyama et al. 1998, Moyle, 2002). Adult winter-run Chinook salmon are most likely to occur within San Francisco Bay beginning November through December, and may utilize the waters adjacent to the Project site as foraging habitat.

The state and federally-listed threatened Central Valley spring-run Chinook salmon migrate to the Sacramento River from March to September with a peak spawning period between late August and October (Moyle, 2002). Juvenile salmon emerge between November and March, and are resident in

streams for a period of 3 to 15 months before migrating to downstream habitats (Yoshiyama et al. 1998, Moyle, 2002). Adults are found in San Francisco Bay during the migratory period in the spring, and juveniles have the potential to inhabit the Bay in the fall, winter, and spring. Spring-run chinook may occur in the water adjacent to the Project site during the outmigration period.

The Central Valley fall/late fall-run Chinook salmon is listed as a California Species of Special Concern. These salmon enter the Sacramento and San Joaquin Rivers from June through December and spawn primarily from late-September through December, with a peak spawning usually occurring in November. As with winter- and spring-run Chinook salmon there is the potential for fall/late fall-run Chinook to occur in the waters adjacent to the Project site during the outmigration period.

While adult and juvenile (smolts) winter-run, spring-run, and fall-run Chinook salmon may occasionally occur in waters adjacent to the project area during migration, telemetry studies tracking the movement of juvenile salmonids suggest that the primary migration corridor is through the northern reaches of Central San Francisco Bay (Racoon Straight and north of Yerba Buena Island) (Kimley et al. 2009, Jahn, 2011). Additionally, evaluation of 30-years of Interagency Ecological Program (IEP) monthly mid-water fish trawl data and three-years of acoustic tag data of hatchery-raised salmonids suggest that out-migrating salmonids (steelhead and salmon) penetrate very little into the southern portions of San Francisco Bay (Jahn, 2011).

Pacific herring (*Clupea pallasii*) is neither a protected species under the FESA or CESA, nor a managed fish species under the Magnuson-Stevens Act. Pacific herring does, however, represent a special management concern for San Francisco Bay since it is an important member of the San Francisco Bay marine ecosystem; provides an important food source for marine mammals, sea birds, and fish; and constitutes a state fishery that is entirely conducted within an urban estuary, making it particularly susceptible to anthropogenic impacts. As a state fishery it is regulated under Sections 8550-8559 of the California Fish and Game Code.

The species is both a popular sport fish and a commercially important species. The Pacific herring is a small schooling marine fish that enters estuaries and bays to spawn. This species is known to spawn along the Oakland and San Francisco waterfronts and attach its egg masses to eelgrass, seaweed, and hard substrates such as pilings, breakwater rubble, and other hard surfaces. An individual can spawn only once during the season, and the spent female returns to the ocean immediately after spawning. Spawning usually takes place between October and March with a peak between December and February. After hatching, juvenile herring typically congregate in San Francisco Bay during the summer and move into deeper waters in the fall. Pacific herring may be present in project area waters and may spawn there in some years.

Longfin Smelt (*Spirinchus thaleichthys*) Longfin smelt is a CESA listed endangered species and a candidate being considered for listing under FESA. The longfin smelt is a pelagic (open water) schooling fish known to inhabit the San Francisco Bay-Delta, including all of the waters of the Central Bay including the waters in the vicinity of the project site (IEP, 2014). Although observed in Central San Francisco Bay waters throughout the year, longfin smelt migrate to the fresher water of the Delta to spawn in the winter, returning to Bay waters in late spring.

Harbor seal (*Phoca vitulina richardii*). The harbor seal is a year-round resident in San Francisco Bay and is routinely seen in Bay waters. Harbor seals are protected under the Marine Mammal Protection Act (described below in the **Regulatory Framework**). They have been observed as far upstream in the Delta and Sacramento River as the City of Sacramento, though their use of the habitat north of Suisun Bay is irregular (Goals Project, 2000).

Harbor seals feed in the deepest waters of the bay, with the region from the Golden Gate to Treasure Island and south to the San Mateo Bridge being the principal feeding site (Kopec and Harvey 1995). Harbor seals feed on a variety of fish, such as perch, gobies, herring, and sculpin. Within the vicinity of the project site, harbor seals are known to use Breakwater Island at Alameda Point as a haul-out. Breakwater Island is located on the southern side of Alameda Island, approximately three miles from the project site.

California sea lion (*Zalophus californianus*). Like the harbor seal, the California sea lion is a permanent resident in the San Francisco Bay-Delta and protected by the Marine Mammal Protection Act. A common, abundant marine mammal, they are found throughout the West Coast, generally within 10 miles of shore. They breed in southern California and the Channel Islands, after which they migrate up the Pacific coast to the bay. They haul out on offshore rocks, sandy beaches, and onto floating docks, wharfs, vessels, and other man-made structures in the bay and coastal waters of the state. California sea lions feed on a wide variety of seafood, mainly squid and fish and sometimes clams. California sea lions may occasionally forage in the waters of the project area in the adjacent Oakland Estuary.

Other Breeding and Migratory Birds

The project area is located on the north-central shoreline of Alameda Island, and includes waters of the Oakland-Alameda Estuary, which is part of the larger San Francisco Bay estuary. The estuary is designated as a Western Hemisphere Shorebird Reserve Network of international importance, with more than one million shorebirds using regional wetlands each winter. Between 300,000 and 900,000 shorebirds pass through San Francisco Bay during spring and fall migration periods, more than 50 percent of the diving ducks in the Pacific Flyway winter in the shallow wetlands of the Bay, and several species breed in regional wetlands during the summer (Goals Project, 1999). Few trees in the vicinity of the project site appear suitable for nesting raptors. As discussed below (Regulatory Setting), most migratory birds are protected from harm by the federal Migratory Bird Treaty Act (MBTA), and most breeding birds in California are protected under the California Fish and Game Code (Section 3503).

Critical Habitat – Terrestrial Resources

Critical habitats are areas considered essential for the conservation of a species listed as endangered or threatened under the federal Endangered Species Act. Critical habitats are specific geographic areas that contain features essential for conservation of listed species and may require special management and protection. Critical habitat may include an area not currently used by an endangered or threatened species, but that will be needed for species recovery. Projects involving a federal agency or federal funding are required to consult with the USFWS to ensure that project

actions will not destroy or adversely modify critical habitat. No critical habitat for terrestrial species is present on the project site or immediate vicinity.

Critical Habitat and Essential Fish Habitat – Marine Resources

The USFWS and NMFS designate critical habitat for species that they have listed as threatened or endangered. "Critical habitat" is defined in Section 3(5)(A) of the federal Endangered Species Act as those lands (or waters) within a listed species' current range that contain the physical or biological features that are considered essential to the species' conservation, as well as areas outside the species' current range that are determined to be essential to its conservation. The aquatic portion of the project site includes areas designated as critical habitat for green sturgeon and CCC steelhead, and is adjacent to portions of the bay designated as critical habitat for Sacramento River winter-run and Central Valley spring-run Chinook salmon as well as CCV steelhead.

Under the Magnuson-Stevens Act (see Regulatory Setting for description), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), NMFS, Fishery Management Councils, and federal agencies are required to cooperatively protect Essential Fish Habitat (EFH) for commercially important fish species such as Pacific coast groundfish, three species of salmon, and five species of coastal pelagic fish and squid. As defined by Congress, EFH includes "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity."

The waters adjacent to the Project site fall within EFH for at least 20 species of commercially important fish managed under three federal fisheries management plans (FMPs):

- the Pacific Groundfish FMP
- the Coastal Pelagic FMP
- the Pacific Coast Salmon FMP

Coastal Pelagic EFH. The Coastal Pelagic FMP is designed to protect habitat for a variety of fish species that are associated with open coastal waters. Fish managed under this plan primarily include planktivores and their predators. Those common to central San Francisco Bay include northern anchovy (*Engraulis mordax*), Pacific sardine (*Sardinops sagax*), and jack mackerel (*Trachurus symmetricus*) (IEP, 2014).

Pacific Groundfish EFH. The Pacific Groundfish FMP is designed to protect habitat for more than 90 species of fish including rockfish, flatfish, some sharks and skates, and other species common to the benthic environment. At least 15 species are reported present in central San Francisco Bay including English sole (*Parophrys vetulus*), sand sole (*Psettichthys melanostictus*), curlfin sole (*Pleuronichthys decurrens*), Pacific sanddab (*Citharichthys sordidus*), starry flounder (*Platichthys stellatus*), lingcod (*Ophiodon elongatus*), brown rockfish (*Sebastes auriculatus*), Pacific whiting (*Merluccius productus*), kelp greenling (*Hexagrammos decagrammus*), leopard shark (*Triakis semifasciata*), spiny dogfish (*Squalus acanthias*), soupfin shark (*Galeorhinus galeus*), bocaccio (*Sebastes paucispinis*), and cabezon (*Scorpaenichthys marmoratus*).

Pacific Salmon EFH. The Pacific Salmon FMP is designed to protect habitat for commercially important salmonid species. Three runs of Chinook salmon may be seasonally present in the waters adjacent to the Project site.

Habitat Areas of Particular Concern

Within the San Francisco Bay-Delta region, NMFS has designated two habitat areas of particular concern (HAPC). HAPC are a subset of EFH; these areas are rare, particularly susceptible to human-induced degradation, especially ecologically important, and/or located in an environmentally stressed area. They include:

- Eelgrass beds (*Zostera marina*)
- Olympia oyster beds (*Ostrea lurida*)

Sensitive Natural Communities

A sensitive natural community is a biological community that is regionally rare, provides important habitat for wildlife, is structurally or ecologically complex, or is in other ways of special concern to local, state, or federal agencies. Most sensitive natural communities are given special consideration because they perform important ecological functions, such as maintaining water quality and providing essential habitat for plants and wildlife. Some plant communities support a unique or diverse assemblage of plant species and therefore are considered sensitive from a botanical standpoint. The most current version of the CDFW's *List of California Terrestrial Natural Communities* (CDFW, 2010), available through the CNDDB, indicates which natural communities are of special status given the current state of the California classification.

Terrestrial Resources

The CNDDB reports three sensitive terrestrial natural community occurrences within the two-quadrangle search area: serpentine bunchgrass, northern coastal salt marsh and northern maritime chaparral (CDFW, 2017a). None of these natural communities are found on the project site.

Marine Resources

Within San Francisco Bay, there are many marine communities and habitats that can be considered particularly sensitive to disturbance or possess unique or special ecological value (California State Coastal Conservancy et al., 2010). Additionally, certain waters of the U.S. may be recognized "special aquatic sites," including sanctuaries and refuges, mudflats, wetlands, vegetated shallows, eelgrass and oyster beds, and coral reefs due to their unique ecological values. Within San Francisco Bay, the two sensitive natural communities that are routinely afforded special attention are eelgrass and native oyster beds. Eelgrass beds are found in the Oakland-Alameda Estuary approximately two miles northwest of the project area, adjacent to the northern edge of Alameda Point, and in small patches on the south side of Alameda Island near the southeastern terminus of the breakwater (Subtidal Goals Project 2010; Merkel 2014). Additionally, a long term monitoring site for native oysters is located on the southern shore of Alameda Island at the Encinal Boat ramp. However, neither of these natural communities is expected to occur within the boundaries of the project site.

Wetlands and Other Waters of the United States

The northeast site perimeter is within the San Francisco Bay, which is considered a navigable Water of the U.S. and is therefore a jurisdictional water under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act (see Federal Regulation of Wetlands and Other Waters, below) and regulated by the U. S. Army Corps of Engineers (USACE). San Francisco Bay waters are also regulated by the San Francisco Bay Regional Water Quality Control Board as Waters of the State and by the San Francisco Bay Conservation and Development Commission (BCDC), which has jurisdiction over all areas of the Bay that are subject to tidal action, as well as a shoreline band that extends inland 100 feet from the high tide line.

Wetlands are ecologically complex habitats that support a variety of both plant and animal life. Section 404 of the Clean Water Act defines wetlands for purposes of federal jurisdiction as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b] and 40 CFR 230.3). Under normal circumstances, the federal definition of wetlands requires three wetland identification parameters be present: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater marsh, seasonal wetlands, and vernal pool complexes that have a hydrologic link to other waters of the U.S (see definition below for "other waters of the U.S."). The USACE is the responsible agency for regulating wetlands under Section 404 of the Clean Water Act, while the U.S. Environmental Protection Agency (USEPA) has overall responsibility for the Act. CDFW does not normally have direct jurisdiction over wetlands unless they are subject to jurisdiction under Streambed Alteration Agreements or they support state-listed endangered species; however, CDFW has trust responsibility for wildlife and habitats pursuant to California law.

"Other waters of the U.S." refers to those hydric features that are regulated by the Clean Water Act but are not wetlands (33 CFR 328.4). Other waters are "those waters that are subject to the ebb and flow of the tide and or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce" (33 CFR 329). This includes the navigable waters of San Francisco Bay and the Alameda Estuary.

Wildlife Movement Corridors

Wildlife movement corridors are considered an important ecological resource by CDFW and USFWS and under CEQA. Movement corridors may provide favorable locations for wildlife to travel between different habitat areas such as foraging sites, breeding sites, cover areas, and preferred summer and winter range locations. They may also function as dispersal corridors allowing animals to move between various locations within their range. Topography and other natural factors, in combination with urbanization, can fragment or separate large open-space areas. Areas of human disturbance or urban development can fragment wildlife habitats and impede wildlife movement between areas of suitable habitat. This fragmentation creates isolated "islands" of vegetation that may not provide sufficient area to accommodate sustainable populations, and can adversely affect genetic and species diversity. Movement corridors mitigate the effects of this fragmentation by allowing animals to move between remaining habitats, which

in turn allows depleted populations to be replenished and promotes genetic exchange between separate populations.

While the project site itself would not constitute a wildlife corridor, it is situated within a larger corridor of Central San Francisco Bay. Nearby environmentally sensitive fragments, including Martin Luther King Jr. Regional Shoreline and the Don Edwards San Francisco Bay National Wildlife Refuge to the south, Crown State Beach on Alameda Island, and Brooks Island to the north provide high-quality habitat which could support fish and bird species that may travel around or through the project site and vicinity when moving between these habitat islands.

4.3.3 Regulatory Setting

Federal

Federal Endangered Species Act

Pursuant to the requirements of the Federal Endangered Species Act (FESA), a federal agency reviewing a proposed project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present within the project site and determine whether the proposed project may affect or "take"[10] such species. In addition, the agency is required to consult with the USFWS and/or NMFS to determine whether the project is likely to jeopardize the continued existence of any species listed under FESA or result in the destruction or adverse modification of critical habitat (see below) designated for such species (16 USC 1536(3)). Consultation with either the USFWS or NMFS would be required for the project since the USACE will need to issue a permit for the project. During consultation, the potential for take would be determined and, if take is expected to occur, the necessary conditions to allow the issuance of an incidental take permit would be imposed.

Areas of habitat considered essential to the conservation of a listed endangered or threatened species may be designated as Critical Habitat (referred to above), which is protected under the FESA.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA; United States Code, Title 16, Section 703, Supplement I, 1989) prohibits taking, killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. The ESA defines take as "…harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species." Harm may include significant habitat modification where it actually kills or injures a listed species through impairment of essential behavior (e.g., nesting or reproduction). This would include the protection

[10] The definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, trap, capture, or collect, or to attempt to engage in any such conduct. The USFWS has also interpreted "harm" to include significant habitat modification that could result in take.

of nests for all species that are on the List of Migratory Birds, most recently updated in the Federal Register (50 CFR 10.13) in 2013.

Marine Mammal Protection Act

The Marine Mammal Protection Act of 1972 (MMPA), as amended in 1981, 1982, 1984, and 1995, establishes a federal responsibility for the protection and conservation of marine mammal species by prohibiting the "take" of any marine mammal. The MMPA defines "take" as the act of hunting, killing, capture, and/or harassment of any marine mammal, or the attempt at such. The act also imposes a moratorium on the import, export, or sale of any marine mammals, parts or products within the United States. These prohibitions apply to any person in U.S. waters and to any U.S. citizen in international waters.

The primary authority for implementing the act belongs to the USFWS and NMFS. The USFWS is responsible for ensuring the protection of sea otters and marine otters, walruses, polar bears, three species of manatees, and dugongs. NMFS is responsible for protecting pinnipeds (seals and sea lions) and cetaceans (whales and dolphins).

The Marine Mammal Protection Act, as amended, provides for the "incidental take" of marine mammals during marine activities, as long as NMFS finds the "take" would be of small numbers of individuals and have no more than a negligible impact on those marine mammal species not listed (i.e., listed under FESA as depleted under the MMPA, and not having an unmitigable adverse impact on subsistence harvests of these species).

Federal Regulation of Wetlands and Other Waters

Pursuant to Section 10 of the Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. 403), the USACE regulates the construction of structures in, over, or under, excavation of material from, or deposition of material into "navigable waters." Navigable waters under the act are those "subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce" (33 C.F.R. Section 3294). In tidal areas, the limit of navigable water is the mean high tide line; in nontidal waters it is the ordinary high water mark (OHWM). Larger streams, rivers, lakes, bays, and oceans are examples of navigable waters regulated under Section 10 of the Rivers and Harbors Act. Typical activities requiring Section 10 permits are construction of piers, wharves, bulkheads, marinas, ramps, floats, intake structures, cable or pipeline crossings, and dredging and excavation.

Section 404 of the federal Clean Water Act (CWA) (33 U.S.C. 1251–1376) prohibits the discharge of dredged or fill material into waters of the U.S., including wetlands, without a permit from the USACE. Section 401 of the CWA requires that USACE permit applicants also obtain state certification that the activity associated with the permit will comply with applicable state effluent limitations and water quality standards.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act or MSA) (16 U.S.C. Sections 1801–1884) of 1976 as amended in 1996 and reauthorized in 2007

applies to fisheries resources and fishing activities in federal waters that extend to 200 miles offshore. Conservation and management of U.S. fisheries, development of domestic fisheries, and phasing out of foreign fishing activities are the main objectives of the legislation.

As discussed above, the Central Bay region of the San Francisco Bay-Delta, including the waters encompassing the project site, is designated as EFH for fish managed under Fishery Management Plans and as a Habitat Area of Particular Concern under Fishery Management Plans.

Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) enacted by Congress in 1972 is administered by NOAA's Office of Ocean and Coastal Resource Management. The overall program objectives of the CZMA are to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone."

Under Section 307 of the CZMA (16 USC § 1456), activities that may affect coastal uses or resources that are undertaken by federal agencies, require a federal license or permit, or receive federal funding must be consistent with a state's federally approved coastal management program. California's federally approved coastal management program consists of the California Coastal Act, the McAteer-Petris Act, and the Suisun Marsh Protection Act. The California Coastal Commission implements the California Coastal Act and the federal consistency provisions of the CZMA for activities affecting coastal resources outside of San Francisco Bay. BCDC implements the McAteer-Petris Act and the Suisun Marsh Preservation Act and performs federal consistency reviews for activities affecting the San Francisco Bay and Delta and the Bay shoreline.

Long Term Management Strategy Management Plan for Dredging in San Francisco Bay

The Long Term Management Strategy Management Plan (LTMS) for maintenance dredging of navigation channels in San Francisco Bay, as established in 2001, provides for a cooperative approach to sediment management in the San Francisco Bay-Delta, among the U.S. EPA, USACE, RWQCB, BCDC, and regional stakeholders, including NMFS, CDFW, area environmental organizations, and water-related industries. The LTMS facilitates the economical and environmentally responsible maintenance of critical and needed navigation channels in the Bay-Delta and the environmentally responsible disposal of dredged material. It maximizes the use of dredged material as a beneficial resource, and establishes a cooperative permitting framework for dredging, dredged material disposal, and development of beneficial reuse site for dredge material. A key component of the LTMS is the establishment of construction work windows that include time periods when construction activities that have the potential to affect aquatic and terrestrial wildlife habitat and migration activity are allowed, restricted, or prohibited. Different restrictions and requirements are enforced depending on the affected species and time of year. If a project proponent wishes to construct during restricted periods, they must formally submit for consultation with the appropriate resource agencies (NMFS, USFWS, and CDFW). Through formal consultation, specific measures must be implemented to avoid or reduce potential impacts.

Table 4.3-1 presents LTMS-established dredging work windows for the San Francisco Bay-Delta.

TABLE 4.3-1
ENVIRONMENTAL WORK WINDOWS FOR MAINTENANCE DREDGING ACTIVITIES ESTABLISHED IN THE LONG TERM MANAGEMENT STRATEGY FOR SAN FRANCISCO BAY

Species	Applicable Bay Region/Location	Authorized Work Windows
Steelhead	Central San Francisco Bay, Bay Bridge to Sherman Island	June 1 to November 30
Chinook Salmon, juveniles	Bay Bridge to Sherman Island	June 1 to November 30
Pacific Herring	Central San Francisco Bay, Richardson Bay, North and South Bay	March 1 to November 30
Dungeness Crab	North Bay, San Pablo Bay, and shallow berthing areas	July 1 to May 30

SOURCE: LTMS Environmental Work Windows, Informal Consultation Preparation Packet, prepared by the LTMS Environmental Windows Work Group, April 2004.

Federal Essential Fish Habitat Sustainable Fisheries Act

The Sustainable Fisheries Act of 1996 (Public Law 104-297), amended the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) to establish new requirements for EFH descriptions in federal Fisheries Management Plans (FMPs) and to require federal agencies to consult with NMFS on activities that may adversely affect EFH. The Magnuson-Stevens Act requires all fishery management councils to amend their FMPs to describe and identify EFH for each managed fishery. The act also requires consultation for all federal agency actions that may adversely affect EFH (i.e., direct versus indirect effects); it does not distinguish between actions in EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside of EFH, such as upstream and upslope activities that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by federal agencies undertaking, permitting, or funding activities that may adversely affect EFH, regardless of the activity's location. Under section 305(b)(4) of the Magnuson-Stevens Act, NMFS is required to provide EFH conservation and enhancement recommendations to federal and state agencies for actions that adversely affect EFH. However, state agencies and private parties are not required to consult with NMFS unless state or private actions require a federal permit or receive federal funding. Although the concept of EFH is similar to that of critical habitat under the FESA, measures recommended to protect EFH by NMFS are advisory, not proscriptive.

State

California Endangered Species Act

Under the California Endangered Species Act (CESA), CDFW maintains a list of threatened species and endangered species (California Fish and Game Code Section 2070). CDFW also maintains a list of "candidate species," which are species that CDFW has formally recognized as

being under review for addition to either the list of endangered species or the list of threatened species; in addition to a list of "Species of Special Concern." Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present within the project site and determine whether the proposed project will have a potentially significant impact on such species. In addition, CDFW encourages informal consultation on any proposed project that may affect a candidate species.

California Fish and Game Code

Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.3 of the California Fish and Game Code prohibits take, possession, or destruction of any raptor (birds of prey) in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs. Any loss of fertile eggs or nesting raptors, or any activities resulting in nest abandonment, would constitute a significant impact.

CDFW Fully Protected Species may not be taken or possessed at any time without a permit from CDFW (Section 3511 Birds, Section 4150 Nongame Mammals, Section 4700 Mammals, Section 5050 Reptiles and Amphibians, and Section 5515 Fish).

Under Sections 1600–1616 of the California Fish and Game Code, CDFW regulates activities that would substantially divert, obstruct the natural flow of, or substantially change rivers, streams, and lakes. The jurisdictional limits of the CDFW are defined in Section 1602 of the Fish and Game Code as the "bed, channel, or bank of any river, stream, or lake." Activities that would "deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake" are prohibited by the CDFW unless a Streambed Alteration Agreement is issued.

State Regulation of Wetlands and Other Waters

The state's authority in regulating activities in wetlands and waters in the project site resides primarily with the State Water Resources Control Board (SWRCB), pursuant to the Porter-Cologne Water Quality Control Act. The SWRCB, acting through the San Francisco Regional Water Quality Control Board (RWQCB), must certify that a USACE permit action meets state water quality objectives (CWA Section 401). Any condition of water quality certification is then incorporated into the USACE Section 404 permit authorized for the project. The RWQCB ensures no net loss of wetlands and typically requires mitigation for all impacts to wetlands before the agency issues a water quality certification. Activities such as dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the State, and prospective dischargers are required to submit a report of waste discharge to the RWQCB.

San Francisco Bay Plan

The BCDC is authorized by the McAteer-Petris Act to analyze, plan, and regulate San Francisco Bay and its shoreline. BCDC jurisdiction includes the waters of the Bay as well as a shoreline

band that extends inland 100 feet from the high tide line. Any fill, excavation of material, or substantial change in use within BCDC jurisdiction requires a permit from BCDC. BCDC implements the *San Francisco Bay Plan* (Bay Plan) which specifies goals, objectives, and policies for existing and proposed waterfront land use and other areas. The Bay Plan policies that are most relevant to the proposed project with respect to biological resources are as follows:

Fish, Other Aquatic Organisms, and Wildlife

Policy 4(a) The Commission should consult with the California Department of Fish and Game and the U.S. Fish and Wildlife Service or the National Marine Fisheries Service whenever a proposed project may adversely affect an endangered or threatened plant, fish, other aquatic organism or wildlife species;

Policy 4(b) The Commission should not authorize projects that would result in the "taking" of any plant, fish, other aquatic organism or wildlife species listed as endangered or threatened pursuant to the state or federal endangered species acts, or the federal Marine Mammal Protection Act, or species that are candidates for listing under the California Endangered Species Act, unless the project applicant has obtained the appropriate "take" authorization from the U.S. Fish and Wildlife Service, National Marine Fisheries Service or the California Department of Fish and Game; and

Policy 4(c) The Commission should give appropriate consideration to the recommendations of the California Department of Fish and Game, the National Marine Fisheries Service or the United States Fish and Wildlife Service in order to avoid possible adverse effects of a proposed project on fish, other aquatic organisms and wildlife habitat.

Local

Alameda General Plan Policies on Biological Resources

The Open Space and Conservation Element of the Alameda General Plan 2030 (City of Alameda, 2012) contains the following objectives and policies related to biological resources protection that are relevant to the proposed project.

5.1 Open Space for the Preservation of Natural Resources

Guiding Policies: Open Space for the Preservation of Natural Resources

5.1.a Preserve and enhance all wetlands and water-related habitat. Water-related habitat includes open water, Bay bottom, mudflats, uplands, sandy areas, lagoons, and sloughs. Since the various Bay wetlands are linked ecologically, preservation of nearby Arrowhead, Fan, and Damon marshes would aid in the preservation and enhancement of Alameda's wetlands, including those at the Elsie D. Roemer Bird Sanctuary and Bayview Shoreline Preserve.

5.1.b Protect Open Space-Habitat areas, including sensitive submerged tidelands areas (mudflats) and eelgrass beds, from intrusions by motorized recreational craft, including jet skis and hovercraft.

5.1.c Continue to prohibit filling of water-related habitat except in those limited cases in which a strong public need clearly outweighs the habitat preservation need, and where approval is granted by the appropriate agencies.

5.1.g Conduct all dredging in compliance with the Long Term Management Strategy, Management Plan, prepared by the USACE, USEPA, BCDC, and SFRWQCB. (GPA 01-01)

5.1.j Use the City of Alameda Street Tree Management Plan as the guiding reference when considering action which would affect the trees contained in the urban forest. After presenting a thorough inventory of the location, composition, condition, and maintenance needs of City-maintained trees, the Street Tree Management Plan presents recommendations for planting and tree maintenance.

Implementing Policies: Open Space for the Preservation of Natural Resources

5.1.n Inventory existing wetlands and water-related and other habitats to create a comprehensive map of sensitive biological and botanical resources, to better protect these resources. Figure 5-1, Environmental Resources, is based on a compilation of available sources on wetland and water-related habitat. Public and private organizations are encouraged to conduct field surveys to contribute detail on the extent and importance of these and other potentially unidentified habitat areas.

5.1.o Complete the Bayview Shoreline Preserve Improvement Plan.

5.1.r Continue to participate in the Alameda County Non-Point Source Task Force. The Task Force is made up of public works directors or representatives from each city within Alameda County, and is engaged in organizing the implementation of the Non-Point Source Control Program, to ensure continued improvement of Bay water quality. Non-point sources of pollution include polluted urban runoff, construction site erosion, Chapter 5 5-13 Open Space and Conservation Element pollutants in fresh water inflow, pollutants from toxic waste sites and dumps, direct spills of pollutants to the Bay, dredging, and vessel waste discharges.

5.1.s Participate in the Non-Point Source Control Program (NPSC). Although not fully designed, the NPSC Program is anticipated to include measures for prevention of contamination and source control of pollutants. Treatment of urban runoff, while potentially effective, is costly, and prevention and source control are the preferred methods of abatement. The main objective of the NPSC Program is to ensure that only storm water enters the storm drains, which will involve eliminating illegal connections and strict surveillance and enforcement of "no dumping" mandates. Educational as well as regulatory strategies are under consideration. [As a part of the NPSC Program, by mid-1991 the City will prepare a report for submittal to the RWQCB, characterizing local pollutant types and amounts, and a plan for implementing a control program.]

5.1.t Consider adopting City standards in addition to those adopted by the County, to deal with non-point source water pollution problems such as sheet flow storm runoff and sedimentation affecting sensitive water habitats.

5.1.w Require new marinas and encourage existing marinas to provide easily accessible waste disposal facilities for sewage and bilge and engine oil residues.

5.1.x Prevent migration of runoff off-site or into wetlands areas and water related habitat by requiring that proposed projects include design features ensuring detention of sediment and contaminants.

5.1.bb Require a biological assessment of any proposed project site where species or the habitat of species defined as sensitive or special status by the California Department of Fish and Game or the U.S. Fish and Wildlife Service might be present.

Listings of sensitive and special status species change from year to year, but might include birds, animals, and plants such as the California Least Tern, California Clapper Rail, Burrowing Owl, Alameda Island Mole, Salt Marsh Wandering Shrew, Adobe Sanicle, Pt. Reyes Bird's Beak, and Monterey Spineflower.

5.2 Open Space for the Managed Production of Resources

Guiding Policies: Open Space for the Managed Production of Resources

5.2.a Protect and preserve Bay waters and vegetation as nurseries and spawning grounds for fish and other aquatic species, both as a part of habitat preservation and to encourage continued use of the Bay for commercial fishing production. Implementing policies ensuring protection and preservation of Bay waters and vegetation may be found in Section 5.1.

City of Alameda Tree Preservation Policies

The City of Alameda protects trees according to species, size and location of tree.

1. All coast live oaks (*Quercus agrifolia*) in Alameda with a ten inch (10”) or greater diameter measured four and a half feet (4.5’) above ground.

2. All Mexican fan palms (Washingtonia robusta) and California fan palms (Washingtonia filifera) in the public rights of way on both sides of Burbank Street, Portola Avenue, and Eighth Street between Central and Portola Avenues.

3. All trees in the three median islands on Thompson Avenue between High Street and Fernside Boulevard, known as Christmas Tree Lane. First island: Atlas Cedar (Cedrus atlantica); Coast Redwood (Sequoia sempervirens). Second island: Atlas Cedar; Coast Redwood; Monterey Pine (Pinus radiate). Third island: Atlas Cedar; Coast Redwood; Jellicote Pine (Pinus patula); Bradford Pear (Pyrus calleryana).

4. All sycamore (London plane trees) (Platanus acerifolia) in the public rights of way on both sides of Central Avenue between Fernside Boulevard and 5th Street.

The removal of Protected Trees requires a permit, referred to as a Certificate of Approval from the City, and the removal of trees that were planted as part of a City-approved landscape plan requires an approval called a Zoning Compliance Determination (City of Alameda, 2015).

In addition, no building shall be moved within the City unless provision be made for the protection of and prevention of injury to any tree, shrub or plant located in any street, park or other public place in the City (Municipal Code 13-17.14; Ord. No. 865 N.S.).

Baylands Ecosystem Habitat Goals Project

The Baylands Ecosystem Habitat Goals Project (Goals Project) established a long-term vision for a healthy and sustainable baylands ecosystem. The final report, published in 1999 (Goals Project, 1999) enumerated a series of recommendations for habitat protection and restoration. Recommendations specific to Alameda Island include:

- Enhance and expand tidal and diked habitats at all potential areas throughout the segment, for example, on Alameda Island, on Bay Farm Island, and in the vicinity of the Oakland Airport.

- Protect and enhance the eelgrass bed near Bay Farm Island.
- Enhance and protect suitable habitat (e.g., barren or sparsely vegetated areas protected from predators) for snowy plover and least tern at Alameda Naval Air Station, Oakland Airport, Bay Farm Island, and other locations.
- Restore beach dune and marsh in the sanctuary on the southern end of Alameda Island.
- Increase habitat in and around San Leandro Bay for harbor seals and develop extensive and connected segments of tidal marsh for small mammals.
- Restore pockets of low-lying sand beaches in sheltered sites to support reintroduced colonies of California seablite.

The Bayland Goals Science Update was published in 2015 to incorporate new scientific information and address challenges, such as climate change, in planning for a resilient bayland ecosystem (Goals Project, 2015). Recommended actions identified for Baylands Segment K that are most relevant to the Alameda Marina project include:

- Preserve, enhance, and create diverse pocket habitats that are linked in a subregional habitat corridor that encompasses sand beaches, eelgrass, oyster beds, macroalgal beds, mudflats, rocky intertidal areas, and tidal marsh.
- Protect and restore eelgrass and oyster beds in suitable locations.
- Enhance and expand tidal and diked habitats at all potential areas throughout the segment, for example, Alameda Island, Bay Farm Island, Martin Luther King Jr. Regional Shoreline Park, and the vicinity of the Oakland Airport.
- Increase habitat in and around San Leandro Bay for harbor seals.

Report recommendations are not binding; however, the Goals Project was recommended by the Governor's "California Wetlands Conservation Policy" and by the Comprehensive Conservation and Management Plan (CCMP) of the U.S. Environmental Protection Agency's San Francisco Estuary Project. It is also supported by most of the agencies and non-governmental groups with major planning, operational, or regulatory interests in Bay Area wetlands.

San Francisco Bay Subtidal Habitat Goals Project

Building on the Goals Project described above, in 2010 BCDC, the California Ocean Protection Council/California State Coastal Conservancy, NOAA, and the San Francisco Estuary Partnership, in collaboration with each other and the broader scientific community, managers, restoration practitioners, and stakeholders, published a report containing restoration planning goals and guidelines for the subtidal areas and habitats of the San Francisco Bay-Delta (California State Coastal Conservancy et al., 2010). The San Francisco Bay Subtidal Habitat Goals Project takes a Baywide approach in setting science-based goals for maintaining a healthy, productive, and resilient ecosystem. Where possible, these subtidal goals are designed to connect with intertidal habitats and with goals developed by other projects, including goals for Baylands and uplands habitats. The goals and recommendations contained within the Subtidal Habitat Goals Project are not binding by regulation but rather are intended to serve as guidance to local, state,

and federal agencies when evaluating projects and their potential ecological effects, and when issuing permits. Though currently neither a policy nor regulatory document, this report offers guidance on opportunities or subtidal restoration and protection. Implementation will occur through a number of avenues such as local governments may incorporate these recommendations into their planning processes and documents and regulatory agencies may use this report to evaluate, revise, or implement their policies.

The principal habitat conservation goals included in the Subtidal Habitat Goals Report that apply to the proposed project include:

Soft Substrate

- Promote no net increase to disturbance to San Francisco Bay soft bottom habitat.
- Promote no net loss to San Francisco Bay subtidal and intertidal sand habitats.

Rock Habitats

- Promote no net loss of natural intertidal and subtidal rock habitats in San Francisco Bay.

Artificial Structures

- Enhance and protect habitat function and the historical value of artificial structures in San Francisco Bay.
- Improve San Francisco Bay subtidal habitats by minimizing placement of artificial structures that are detrimental to subtidal habitat function.

Submerged Aquatic Vegetation

- Protect existing eelgrass habitat in San Francisco Bay through no net loss to existing beds.

4.3.4 Impacts and Mitigation Measures

Significance Criteria

Consistent with Appendix G of the State CEQA Guidelines, a project would cause significant adverse impacts to biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, the National Marine Fisheries Service, or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance; or

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

Approach to Analysis

Project components were evaluated using the above significance criteria. For purposes of this EIR, three principal components were considered:

- Magnitude of the impact (e.g., substantial/not substantial),
- Uniqueness of the affected resource (rarity), and
- Susceptibility of the affected resource to perturbation (sensitivity).

The evaluation of significance considers the interrelationship of these three components. For example, a relatively small magnitude impact to a state or federally listed species could be considered significant because the species is very rare and is believed to be very susceptible to disturbance. Conversely, a plant community such as California annual grassland is not necessarily rare or sensitive to disturbance. Therefore, a much larger magnitude of impact would be required to result in a significant impact. Impacts are generally considered less than significant if the habitats and species affected are common and widespread in the region and the state. Impacts are considered beneficial if the action causes no detrimental impacts and results in an increase of habitat quantity and quality.

Impacts Analysis

Impact BIO-1: The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the United States Fish and Wildlife Service. (*Less than Significant with Mitigation*)

Sensitive aquatic communities, special-status fish, and marine mammals that occur in the Oakland-Alameda Estuary could be adversely impacted by project activities requiring in-water work associated with rehabilitation of pilings and docks in the marina. In addition, special-status and migratory bird species have the potential to occur at or in the vicinity of the project site and can be adversely impacted by construction activities associated with the demolition of existing buildings which could disrupt occupied avian nests.

Special Status Fish and Marine Mammals

The San Francisco Bay waters surrounding Alameda Island are identified as critical habitat for CCC steelhead and green sturgeon. The State threatened longfin smelt can also be found in these waters, most commonly in the winter months (Robinson and Greenfield 2011). While other listed salmonids utilize San Francisco Bay as a migration corridor between the Pacific Ocean and spawning habitat in the upper reaches of the Sacramento River watershed, they are unlikely to occur within the project site during migration. The primary migration corridor for salmonids is through the northern reaches of Central San Francisco Bay (Raccoon Straight and north of Yerba Buena Island) (Jahn, 2011). These areas are also listed as essential fish habitat for multiple species and likely contain spawning and foraging habitat for Pacific herring. Additionally, Pacific harbor seals and California sea lions may occasionally occur in project area year-round. The proposed project would require in-water work to rehabilitate, replace or possibly remove some portions of existing pier structure, pilings, and seawall, and for marina maintenance.

Impacts to Water and Sediment Quality

Project construction activities such as grading, excavation, pile removal/installation, dredging and other in-water activities related to dock maintenance and seawall rehabilitation have the potential to result in short-term, temporary disturbance and resuspension of benthic sediments. Sediment resuspension has the potential to increase the exposure of potential harmful chemicals, in particular methylmercury, sequestered in the sediment to aquatic receptors in the immediate area, and result in adverse water quality and biological effects (Tetra Tech & Wetlands and Water Resources, 2013).

Debris or portions of degraded creosote piles may be encountered during pile replacement or dock maintenance. Damaged piles will either be pulled, or, if removal is infeasible, piles will be cut two feet below the mudline. Creosote is an effective wood preservative in a marine environment but also contains organic compounds toxic to marine organisms. Although the removal of creosote pilings may release some organic substances, the permanent removal of degraded creosote pilings would improve the localized water and sediment quality.

Typically, removal of piles can cause only temporary resuspension of sediments. Suspended sediments in the water column can lower levels of dissolved oxygen, increase salinity, increase concentrations of suspended solids, and possibly release chemicals present in the sediments into the water column. The potential effects of suspended sediment within the water column on fish include gill lacerations, increased “coughing” behavior, decreased feeding success, and avoidance behaviors (Wilbur and Clarke, 2001). However, increased turbidity levels would be of relatively short duration and generally confined to within a few hundred feet of the activity. After initially high turbidity levels, sediments would disperse and redeposit, and background levels would be expected to be restored within hours of disturbance.

Underwater Noise Impacts

Concrete, wood, and steel piles that are driven within the water column can produce high-intensity noise resulting in damage to soft tissues, such as gas bladders or eyes (barotraumas) and/or result in harassment of fish and marine mammals such that they alter swimming, sleeping,

or foraging behavior or temporarily abandon forage habitat. Protected and managed fish species, including salmon, steelhead, longfin smelt, Pacific herring, anchovies, mackerel, sardine, soles, sanddab, green sturgeon, and other bottom fish as well as harbor seal and California sea lion use the waters adjacent to the project site.

The striking of a pile by a pile-driving hammer creates a pulse of sound that propagates through the pile, radiating out through the water column, seafloor, and air. Sound pressure pulses, as a function of time are referred to as a waveform. Peak waveform pressure underwater is typically expressed in decibels (dB) referenced to 1 microPascal (µPa). Sound levels are generally reported as peak levels (peak), root-mean-square pressure (RMS), and sound exposure levels (SEL). In addition to the pressure pulse of the waveform, the frequency of the sound, expressed in Hertz (Hz) is also important to evaluating the potential for sound impacts. Low frequency sounds are typically capable of traveling over greater distances with less reduction in the pressure waveform than high frequency sounds.

Vibratory pile drivers work on a different principal than pile-driving hammers and therein produce a different sound profile. A vibratory driver works by inducting particle motion to the substrate immediately below and around the pile causing liquefaction of the immediately adjacent sediment, allowing the pile to sink downward or to be removed. Vibratory pile driving is only suitable where soft substrate is present. Sound levels are typically 10-20 dB lower in intensity relative to the higher, pulse-type noise produced by an impact hammer (CalTrans, 2009). [Please clarify that vibratory pile drivers are not considered harmful to fish, but are to marine mammals.]

Scientific investigations on the potential effect of noise on fish indicate that sound levels below 183 dB SEL do not appear to result in any acute physical damage or mortality to fish (barotraumas) of any size. **Table 4.3-2** provides a summary of known acute and sub-lethal effects of noise on fish. It should be noted that the acoustic thresholds shown in Table 4.3-2 regard sound levels generated for impact pile driving. No criteria for vibratory pile driving impacts on fish exist at this time, though the National Marine Fisheries Service (NMFS) is currently in the process of developing such standards. Noise levels that result in startle responses in steelhead trout and salmon have been documented to occur at sound levels as low as 150 dB RMS (Halvorsen et al., 2012). Any disturbance to ESA listed fish species that results in altered swimming, foraging, movement along a migration corridor, or any other altered normal behavior is considered harassment.

TABLE 4.3-2
NMFS ADOPTED IMPACT PILE DRIVING CRITERIA FOR FISH

Interim Criteria for Injury	
Peak	206 dB for all size fish
Cumulative SEL	187 dB for fish ≥ 2 grams
	183 dB for fish < 2 grams

NOTE: Behavioral effects threshold for all sizes of fish is 150 dB RMS

SOURCE: CalTrans 2015

Updated NMFS guidance for hydroacoustic impacts on marine mammals includes thresholds for both Level A and Level B harassment.[11] The underwater sound pressure threshold for slight injury (Level A harassment) is a dual metric criterion for impulse noise (e.g., impact pile-driving), including both a peak pressure and cumulative SEL threshold, which is specific to the species hearing group (i.e., high-frequency cetaceans [i.e., harbor porpoise], mid-frequency cetaceans [i.e., bottlenose dolphin], low-frequency cetacean [i.e., gray whale], phocids [i.e., Pacific harbor seal and northern elephant seal], and otariids [i.e., California sea lion and northern fur seal]). For continuous noise (e.g., vibratory pile extraction or driving), the injury threshold is based on cumulative SEL for each species hearing group. **Table 4.3-3** presents estimated noise levels for Level A harassment.

TABLE 4.3-3
NMFS ADOPTED PILE DRIVING CRITERIA FOR MARINE MAMMALS

Species	Level B Harassment		Level A Harassment		
	Vibratory Pile Driving Disturbance Threshold	Impact Pile Driving Disturbance Threshold	Marine Mammal Hearing Group	Cumulative SEL (dB)	
				Impact	Vibratory
Cetaceans	120 dB RMS	160 dB RMS	Low-Frequency	183	199
			Mid-Frequency	185	198
			High-Frequency	155	173
Pinnipeds	120 dB RMS	160 dB RMS	Phocid	185	201
			Otariid	203	219

SOURCE: NMFS 2016

Level B behavioral harassment is considered to have occurred when marine mammals are exposed to noise of 160 dB RMS or greater for impulse noise and 120 dB RMS for continuous noise. In some instances, ambient noise levels may be used in place of the 120-dB RMS threshold for continuous noise. Level B behavioral harassment thresholds for underwater noise are also shown in Table 4.3-3.

Mitigation Measure BIO-1a outlines protocols for reducing noise impacts to sensitive fish and marine mammal species. By limiting impact hammer pile driving to time periods when most sensitive fish species are not present and by employing BMPs demonstrated to reduce noise levels to safe levels for fish, Mitigation Measure 4-1a would ensure effects of the proposed project would be less than significant. The Oakland-Alameda Estuary could be used by harbor seals and sea lions for foraging and thus, there is a potential for noise from proposed pile driving activities to significantly affect these marine mammals. **Mitigation Measure BIO-1a**, **BIO-1b**, and **BIO-1c** outline protocols for reducing noise impacts to sensitive marine mammals. Implementation of noise reduction measures to protect fish and marine mammals in **Mitigation Measures BIO-1a,**

[11] Level A harassment is defined as any act of pursuit, torment, or annoyance with has the potential to injure a marine mammal or marine mammal stock in the wild. Level B harassment is defined as any act of pursuit, torment, or annoyance with has the potential to disturb a marine mammals or marine mammal stock in the wild.

BIO-1b, and **BIO-1c**, which are consistent with NMFS current programmatic review for pile driving activities in San Francisco Bay (NMFS 2007a and b), would reduce the impacts to a less than significant level.

Mitigation Measure BIO-1a: Prior to the start of in-water construction and maintenance that would require pile driving, the project applicant shall prepare a NMFS-approved sound attenuation monitoring plan to protect fish and marine mammals, if impact pile driving is required for project implementation. This plan shall provide detail on the sound attenuation system, detail methods used to monitor and verify sound levels during pile driving activities, and describe management practices to be taken to reduce impact hammer pile-driving sound in the marine environment to an intensity level of less than 183 dB. The sound monitoring results shall be made available to the NMFS. The plan shall incorporate one or more of the following best management practices (BMPs) to meet the 183 dB performance standard):

- To the extent feasible, all pilings shall be installed and removed with vibratory pile drivers only. If feasible, vibratory pile driving shall be conducted following the Corps' "*Proposed Procedures for Permitting Projects that will Not Adversely Affect Selected Listed Species in California*". USFWS and NOAA completed Section 7 consultation on this document, which establishes general procedures for minimizing impacts to natural resources associated with projects in or adjacent to jurisdictional waters.
- An impact pile driver may only be used where necessary to complete installation of larger steel pilings in accordance with seismic safety or other engineering criteria
- If necessary, the hammer shall be cushioned using a 12-inch thick wood cushion block during all impact hammer pile driving operations.
- All piling installation using impact hammers shall be conducted between June 1 and November 30, when the likelihood of sensitive fish species being present in the work area is minimal.
- If pile installation using impact hammers must occur at times other than the approved work window, the project applicant shall obtain incidental take authorization from NMFS and CDFW, as necessary, to address potential impacts on steelhead trout, chinook salmon, and Pacific herring and implement all requested actions to avoid impacts.
- The project applicant shall monitor and verify sound levels during pile driving activities. The sound monitoring results will be made available to NMFS and the City.
- In the event that exceedance of noise thresholds established and approved by NMFS occurs, a contingency plan involving the use of bubble curtains or air barrier shall be implemented to attenuate sound levels to below threshold levels.

Mitigation Measure BIO-1b: During the project permitting phase, any activities requiring in-water work will either proceed under one of the programmatic consultations for federally listed species described above or a project-level BO would be required. Alternatively, the project will obtain Incidental Harassment Authorization (IHA) for marine mammals for dredging or pile driving activities. The project applicant shall also consult with CDFW regarding project impacts on State listed special-status fish species and the potential need for an incidental take permit (ITP). The project applicant shall submit to

the City copies of any IHA and/or ITP received or, alternatively, copies of correspondence confirming that an IHA and/or ITP is not required for the project in question.

Mitigation Measure BIO-1c: As part of the NMFS-approved sound attenuation monitoring plan required for pile driving in Mitigation Measure BIO-1a, the City shall ensure that the project applicant implements these additional actions to reduce the effect of underwater noise transmission on marine mammals. These actions shall include at a minimum:

- Establishment of a 1,600-foot (500-meter) safety zone that shall be maintained around the sound source, for the protection of marine mammals in the event that sound levels are unknown or cannot be adequately predicted.
- Work activities shall be halted when a marine mammal enters the 1,600-feet (500-meter) safety zone and resume only after the animal has been gone from the area for a minimum of 15 minutes.
- A "soft start" technique shall be employed in all pile driving to give marine mammals an opportunity to vacate the area.
- Maintain in-air sound levels at the noise source below 90 dBA when pinnipeds (seals and sea lions) are present.
- A NMFS-approved biological monitor will conduct daily surveys before and during impact hammer pile driving to inspect the work zone and adjacent Bay waters for marine mammals. The monitor will be present as specified by NMFS during the impact pile-driving phases of construction.

Operational Impacts

The installation of new or altered marina components could increase or alter the existing shading characteristics of subtidal habitat in the project area. Overwater structures can alter the physical ecological conditions present under them by reducing the penetration of ambient light into Bay waters (TRAC 2001). Decreased light penetration into Bay waters can have an effect on phytoplankton production and the presence and growth of marine algae, including eelgrass. Shade cast from docks, piers, and pilings has been shown to reduce the amount of ambient light within the marine environment, affect invertebrate and vertebrate community composition, and create behavioral barriers that can deflect or delay fish migration, reduce fish prey forage, and alter predator-prey relationships over normal open-water conditions (*ibid.*). However, as discussed above, Bay waters are typically relatively turbid, which naturally limits ambient light penetration and phytoplankton production. In addition, although it is known that birds forage in the Oakland-Alameda Estuary, the composition of the marine community there and its productivity and importance to foraging birds are unknown. With the abundance of similar or better habitat available in adjacent waters, the potential effects of shading associated with the proposed marina and water shuttle facility on sensitive species are expected to be less than significant.

Increased artificial illumination of Bay waters at night can alter normal swimming and foraging behavior of fish, marine mammals, and seabirds. Many pelagic schooling fish, such as sardines and herring, are attracted to illumination cast by boats and offshore structures and are frequently

subject to increased predation from other fish species as well as marine birds and occasional marine mammals (*ibid*.). Measures that are often used to minimize impacts of artificial night lighting on birds, fish, and marine mammals include installation of dock lighting that is low to the dock surface; uses low-voltage, sodium, or non-yellow-red spectrum lights; and is well shielded to restrict the transmittance of artificial light over the water. The potential for impacts on special-status species from artificial night lighting on marina and future water shuttle facilities would be potentially significant. **Mitigation Measure BIO-1d**, outlines protocols for minimizing direct artificial lighting of Bay waters. By using shielded, low-mounted, and low light-intensity fixtures and bulbs, implementation of **Mitigation Measure BIO-1d** would reduce impacts to a less than significant level.

> **Mitigation Measure BIO-1d:** Through the Design Review application process, the City shall ensure that the project applicant installs dock lighting on all floating docks and adjacent areas that minimizes artificial lighting of Bay waters by using shielded, low-mounted, and low light-intensity fixtures and bulbs.

Nesting Birds

Migratory birds, including native raptor and passerine bird species, are known or would be expected to forage and/or nest nearby in the landscape trees, mudflats and estuary surrounding the project site. Birds such as the western scrub jay, California towhee (*Melozone crissalis*), and house finch (*Carpodacus mexicanus*) nest in landscape vegetation such as that found at the project site, and are protected by the MBTA. As discussed above, Cooper's hawk could potentially nest in trees on the project site. American peregrine falcon, least tern, osprey and double-crested cormorant are likely to forage in the Oakland-Alameda Estuary; however, there is no suitable nesting habitat for these species on site.

Construction disturbance from building demolition or vegetation and tree removal during breeding bird season in support of the proposed project could result in incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment of active nests within project structures or in trees of buildings in the vicinity of the proposed project site. Equipment staging and construction activities may result in indirect impacts to protected breeding birds resulting from construction noise and activity, even when the physical nest is unaffected. Noise pollution can be detrimental to wildlife, and bird populations can be particularly susceptible because they rely on acoustic signals for mating, predator evasion, and communication between adults and offspring, among other behaviors. Birds within and in the vicinity of the project site are accustomed to varying levels of ambient noise emanating from existing human activities from the existing Alameda Marina, and maritime activity in the Oakland-Alameda Estuary. Nevertheless, a single stimulus event that may alter the ambient noise environment from activities such as ground disturbance, could have an effect on bird behavior.

Mitigation Measure BIO-1e outlines protocols for pre-construction nesting bird surveys. With implementation of **Mitigation Measure BIO-1e** the effects of the proposed project would be less than significant.

The general raptor and passerine bird nesting period cited by CDFW is often cautiously interpreted as the period between February 1 and August 31. Breeding birds are protected under Section 3503 of the California Fish and Game Code (Code), and raptors are protected under Section 3503.5. In addition, both Section 3513 of the Code and the Federal Migratory Bird Treaty Act (16 USC, Sec. 703 Supp. I, 1989) prohibit the killing, possession, or trading of migratory birds. Finally, Section 3800 of the Code prohibits the taking of non-game birds, which are defined as birds occurring naturally in California that are neither game birds nor fully protected species.

In general, CDFW recommends a 250-foot construction exclusion zone around the nests of active passerine songbirds during the breeding season, and a 500-foot buffer for nesting raptors. These buffer distances are considered initial starting distances once a nest has been identified, and are sometimes revised downward to 100 feet and 250 feet, respectively, based on site conditions and the nature of the work being performed. These buffer distances may also be modified if obstacles such as buildings or trees obscure the construction area from active bird nests, or existing disturbances create an ambient background disturbance similar to the proposed disturbance.

> **Mitigation Measure BIO-1e:** To the extent practicable, construction activities including building renovation, demolition, vegetation and tree removal, and new site construction shall be performed between September 1 and January 31 in order to avoid breeding and nesting season for birds. If these activities cannot be performed during this period, a preconstruction survey for nesting birds shall be conducted by a qualified biologist.
>
> In coordination with the City, surveys shall be performed during breeding bird season (February 1 – August 31) no more than 14 days prior to construction activities listed above in order to locate any active passerine nests within 250 feet of the project site and any active raptor nests within 500 feet of the project site. Building renovation, demolition, tree and vegetation removal, and new construction activities performed between September 1 and January 31 avoid the general nesting period for birds and therefore would not require pre-construction surveys.
>
> If active nests are found on either the proposed construction site or within the 500-foot survey buffer surrounding the proposed construction site, no-work buffer zones shall be established around the nests in coordination with CDFW. No renovation, demolition, vegetation removal, or ground-disturbing activities shall occur within a buffer zone until young have fledged or the nest is otherwise abandoned as determined by the qualified biologist. If work during the nesting season stops for 14 days or more and then resumes, then nesting bird surveys shall be repeated, to ensure that no new birds have begun nesting in the area.

Fish-Eating Birds

California least tern, California brown pelican, osprey, three species of cormorant, several gull species, grebes, and multiple duck species forage in the Oakland-Alameda Estuary. Dredging operations can directly impact birds during foraging in several ways. Noise caused by dredging can cause partial or complete avoidance of usual foraging locations, requiring birds to expend more energy finding new foraging locations. Dredging noise can also interfere with vocalizations between individuals during group foraging, including between parents and fledglings that cannot yet forage on their own and must remain in contact with their parents during foraging expeditions.

Lastly, dredging operations can increase normally occurring anthropogenic and natural levels of turbidity in the Bay. Increased turbidity may decrease foraging success by decreasing prey abundance or making it more difficult for piscivorous birds to detect prey. However, study results on the relationship between water clarity and foraging success are mixed, and may affect plunge divers, such as pelicans and terns differently than underwater pursuit divers, such as cormorants and grebes (HT Harvey, 2012). According to the 2001 *Long-Term Management* (LTMS) *Strategy for the Placement of Dredged Material in the San Francisco Bay Region Management Plan*, foraging birds like the California least tern may be affected by turbidity from dredging in coastal waters and sloughs within one mile of the coastline from Berkeley Marina south through San Lorenzo Creek (USACE, 2001). As shown in **Table 4.3-1**, the LTMS specifies that dredging activities within this potential impact area should not occur during the period in which (and just prior to which) least terns might be nesting in the San Francisco Bay area (March 16–July 31). Because the proposed project and associated in-water components are located within this area where potential foraging effects may occur, the project applicant would be required by Section 10 and/or Section 404 permitting conditions to limit dredging to occur outside of this sensitive period.

With respect to pile driving activities associated with in-water work, **Mitigation Measures BIO-1a, BIO-1b, BIO-1c and BIO-1d** would minimize potential impacts on fish and, consequently, the foraging birds that depend on them. The waters of the Oakland-Alameda Estuary are not a primary foraging area for least tern, therefore temporary loss of these waters due to in-air noise and increased activity associated with pile driving would be less-than-significant.

Significance after Mitigation: Less than Significant.

Impact BIO-2: Development facilitated by the proposed project would not have a substantial adverse effect on riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. (*Less than Significant with Mitigation*)

There is no riparian habitat located within the Alameda Marina project area; however, sensitive natural communities are present in the vicinity of the proposed project that could be adversely impacted by project development. Critical habitat for green sturgeon and CCC steelhead is designated in San Francisco Bay and the Oakland-Alameda Estuary and includes the waters adjacent to the project area. Additionally, essential fish habitat (EFH) is present within study area waters as covered under the Pacific Groundfish, Coastal pelagics, and Pacific Coast Salmon Fisheries Management Plans. Additionally, sensitive natural communities including eelgrass and native oyster beds are not known to exist within the project area but are present along portions of Alameda Island. Both are considered habitat areas of particular concern (HAPC). An HAPC is a subset of EFH; these areas are rare, particularly susceptible to human-induced degradation, especially ecologically important, and/or located in an environmentally stressed area.

The waters off Alameda Island support multiple submerged aquatic vegetation beds including eelgrass beds as well as green, red, and brown marine algae attached to pier and wharf pilings,

intertidal and shallow subtidal natural and artificial hard substrates (rock and concrete), and mud shoals. These marine aquatic vegetation beds provide essential fish habitat for Pacific herring and other fish species and act as important habitat and nursery areas for invertebrates such as shrimp and crabs (Merkel 2014). In addition, the native Olympia oyster can be found in the rocky intertidal and shallow subtidal zones of the Bay shorelines, as well as attached to pilings and other hard substrates. This species is making a significant recovery in the San Francisco Bay-Delta after being considered extinct following over-harvesting in the 1800s, predation by the non-native oyster drill, and pollution (Couch and Hassler, 1989).

Dredging and pile removal associated with rehabilitation or replacement of deteriorated wharf pilings could potentially affect submerged aquatic vegetation on the Bay floor or attached to wharf pilings, as well as affect native oysters or mussels. Potential effects from dredging and pile removal could range from short-term to permanent, depending on the extent and degree of disturbance, and would be expected to result in possible mortality, physical injury, or physiological stress resulting from reduction in habitat suitability, and physical disturbance/removal. Dredging and pile removal could result in direct mortality of native oysters. While eelgrass beds are not known to occur within the project area, their presence in the Oakland-Alameda Estuary, approximately two miles northwest of the project, may subject them to indirect disturbance from such in-water work. Any such impacts resulting in significant damage to eelgrass beds or native oyster beds would be potentially significant because eelgrass beds are considered to be of critical importance to Bay marine life and native oysters are still generally quite rare throughout the Bay.

Rehabilitation or removal of existing wharf pilings and other in-water structures may remove some artificial habitat used to support submerged aquatic vegetation and native oysters, however their replacement by new pilings and structures, which could be recolonized, would render this potential impact less than significant.

The greatest potential threat to the sensitive aquatic communities off Alameda could be from boaters unfamiliar with San Francisco Bay's sensitive habitats, their locations, and the importance of protecting these habitats. In addition, in-water work and increases in recreational boaters could result in the introduction and/or spread of invasive marine species.

These potentially significant impacts on eelgrass and oyster beds resulting from in-water work and recreational boaters would be reduced to less-than-significant levels through implementation of **Mitigation Measures BIO-2a, BIO-2b, and BIO-2c**.

> **Mitigation Measure BIO-2a:** Prior to in-water work, the City shall ensure that the project applicant conducts a pre-construction survey to determine if native oysters, mussels, and eelgrass are present in the Oakland-Alameda Estuary to be affected by the project.
>
> - The eelgrass survey shall be conducted according to the methods contained in the California Eelgrass Mitigation Policy and Implementing Guidelines (NMFS, 2014), with the exception that the survey shall be conducted within 120 days (rather than 60 days, as recommended in the CDEMP) prior to the desired construction start date,

to allow sufficient time for modification of project plans (if feasible) and agency consultation.

- If eelgrass beds or native oysters are found within or immediately adjacent to the construction footprint, the project applicant shall first determine whether avoidance of the beds is feasible. If feasible, impacts to the oyster or eelgrass bed shall be avoided. If complete avoidance is not feasible, the applicant shall request guidance from the National Marine Fisheries Service (or other applicable agency) as to the need and/or feasibility to move affected beds. Any translocation of eelgrass beds shall be conducted consistent with the methods described in the CDEMP and/or those described in Eelgrass Conservation in San Francisco Bay: Opportunities and Constraints (Boyer and Wyllie-Echeverria, 2010). Translocation of oyster beds shall be consistent with methods and recommendations presented in Shellfish Conservation and Restoration in San Francisco Bay: Opportunities and Constraints (Zabin et al., 2010).

- If it is not possible to translocate oyster or eelgrass beds, then the City shall ensure that the project applicant provides compensatory mitigation consistent with the CDEMP for eelgrass (a ratio of 3.01:1 [transplant area to impact area]) and a minimum 1:1 ratio for oyster beds.

- The relocation or compensatory mitigation site for eelgrass or oyster beds shall be within San Francisco Bay.

Mitigation Measure BIO-2b: The Marina operators shall prepare educational information regarding sensitive biological resources in the project vicinity and within Bay waters. This information shall be disseminated to all boaters using the marina and shall include, but not be limited to, information educating boat owner/operators about sensitive habitats and species in the Bay and actions they are required to implement to avoid impacts to marine resources.

The educational information will be disseminated to visiting boaters through multiple methods including, but not limited to, brochures or pamphlets; marina and/or City websites; boating, cruising, and newspaper periodicals; and social media. The information shall be prepared soliciting input from, and in cooperation with, the National Marine Fisheries Service (NMFS), U.S. Coast Guard (USCG), California State Lands Commission, National Park Service (NPS), California Department of Parks and Recreation (CDPR), Bay Conservation and Development Commission (BCDC), and local organizations active in protecting Bay marine resources, as appropriate.

Mitigation Measure BIO-2c: The City shall require that the project applicant develop and implement a Marine Invasive Species Control Plan prior to commencement of any in-water work including, but not limited to, construction of wharves and seawalls, dredging, pile driving, and construction of new stormwater outfalls. The plan shall be prepared in consultation with the United States Coast Guard (USCG), RWQCB, and other relevant state agencies. Provisions of the plan shall include but not be limited to the following:

- Environmental training of construction personnel involved in in-water work.

- Actions to be taken to prevent the release and spread of marine invasive species, especially algal species such as Undaria and Sargasso.

- Procedures for the safe removal and disposal of any invasive taxa observed on the removed structures prior to disposal or reuse of pilings, docks, wave attenuators, and other features.
- The onsite presence of a qualified marine biologist to assist the contractor in the identification and proper handling of any invasive species on removed equipment or materials.
- A post-construction report identifying which, if any, invasive species were discovered attached to equipment and materials following removal from the water, and describing the treatment/handling of identified invasive species. Reports shall be submitted to the City, as well as the USCG and the RWQCB if requested by the agencies.

Significance after Mitigation: Less than Significant.

Impact BIO-3: Development facilitated by the proposed project would not have a substantial adverse effect on federally protected wetlands, 'other waters', and navigable waters as defined by Sections 404 and 10 of the Clean Water Act and waters of the State through direct removal, filling, hydrological interruption, or other means. (*Less than Significant with Mitigation*)

The Oakland-Alameda Estuary and San Francisco Bay are considered navigable waters of the United States; therefore, they are "jurisdictional" waters regulated by the Army Corps of Engineers (Corps) under Section 10 of the Rivers and Harbors Act up to mean high water and Section 404 of the Clean Water Act (CWA) up to the high tide line. These waters are also regulated by the San Francisco Bay Regional Water Quality Control Board (RWQCB) as Waters of the State and by the San Francisco Bay Conservation and Development Commission (BCDC), which has jurisdiction over all areas of San Francisco Bay that are subject to tidal action, as well as a shoreline band that extends inland 100 feet from the high tide line. No wetlands are present within the Alameda Marina project area.

Improvements to the dock structures included in the proposed project would result in in-water work, which would be subject to the Rivers and Harbors Act, and the Clean Water Act (Sections 404 and 401). The project is also subject to BCDC's McAteer Petris Act of 1965, which regulates dredging and filling of the Bay, and The Long Term Management Strategy (LTMS) Management Plan for maintenance dredging of navigation channels in San Francisco Bay. Established in 2001, the LTMS Management Plan provides for a collaborative approach to sediment management in the San Francisco Bay-Delta. It represents a cooperative program among the U.S. EPA, Army Corps, RWQCB, BCDC, and regional stakeholders, including NMFS, CDFW, area environmental organizations, and water-related industries. A key component of the LTMS is the establishment of construction work windows that include time periods when construction activities that have the potential to affect aquatic and terrestrial wildlife habitat and migration activity are allowed, restricted, or prohibited (see **Table 4.3-1** in *Regulatory Framework*). If a project proponent wishes to construct during restricted periods, they must formally submit for

consultation with the appropriate resource agencies (NMFS, USFWS, and CDFW). Through formal consultation, specific measures must be implemented to avoid or reduce potential impacts.

Implementation of the proposed project on the "water-side" includes park areas and paths providing waterfront access; repair of seawalls and bulkheads, including the graving dock; and, marina infrastructure upgrades, including ongoing dredging, dock maintenance (including possible pile replacement), and maintenance of the graving dock. Mammals and birds that feed on fish, including the California least tern, could be affected by dredging and repairs to the docks, both directly through contact with equipment and indirectly through disturbance and dispersal of contaminated materials into the water during the period of active dredging and shortly thereafter. Sediments in the estuary could be contaminated with heavy metals, PCBs, organic compounds, chlorinated compounds, or other industrial effluent.

Dredging and in-water construction activities would also increase turbidity of the water, reducing visibility for mammal and avian species hunting in these areas. Increased turbidity could also discourage prey fish from entering the Oakland-Alameda Estuary from San Francisco Bay, thereby decreasing the supply of available fish during dredging and construction activities. Increased turbidity from dredging and in-water construction activities would be localized however, and limited in duration. The magnitude of the turbidity would depend in part on the number and type of dredges working at a given time, their locations, and measures implemented to reduce turbidity.

Implementation of the proposed project on the "terrestrial-side" includes project construction activities such as grading and excavation that would generate loose, erodible soils, which could result in erosion or siltation into Bay waters, resulting in indirect impacts to Waters of the U.S. and the state. In the case of soil erosion or an accidental release of deleterious materials during construction, development could indirectly impact water quality, which would be considered a significant impact. After project construction is completed, site runoff could transport heavy metals, pesticides, fertilizers, trash, pet waste, automotive fluids, and other toxic chemicals into Bay waters.

Operational stormwater discharges from new development at the project site would be regulated by the City's regional municipal stormwater permits, under the National Pollutant Discharge Elimination System (NPDES) permit. Development projects in the City of Alameda must comply with the NPDES Permit No. CAS612008, which is issued to the Clean Water Program Alameda County (CWPAC) (formerly the Alameda Countywide Clean Water Program) and other Bay Area jurisdictions by the RWQCB (NPDES Order No. R2-2009-0074). The Municipal Regional Stormwater Permit (MRP) was issued on October 14, 2009, and revised November 28, 2011, and again on November 19, 2015, replacing the previous permit originally issued in February 2003 with additional requirements for development and redevelopment projects.

In particular, Provision C.3 in the NPDES Permit governs storm drain systems and regulates post-construction stormwater runoff. The provision requires new development and redevelopment projects to incorporate treatment measures and other appropriate source control and site design features to reduce the pollutant load in stormwater discharges and to manage runoff flows. "Redevelopment" is defined as a project on a previously developed site that results in the addition

or replacement of impervious surface. A redevelopment project that adds or replaces at least 10,000 square feet of impervious surface is required to adhere to the C.3 provisions by including low-impact development (LID) measures. The proposed project would replace more than 10,000 square feet of impervious surface; therefore, the project would be required to incorporate treatment measures and appropriate source control and site design measures under the NPDES permit.

Currently, the majority of the storm run-off from the project site is collected by onsite inlets and conveyed to various private on-site outfalls that discharge directly to the Oakland Estuary. To bring the stormwater management system up-to-date, a new system would be constructed within the proposed network of streets on the project site. The system would include new inlets and pipelines of appropriate size to convey the site runoff and any additional runoff from offsite areas, including new outfall structures to the Oakland Estuary. Additionally, the new stormwater management system would also include water quality treatment measures to improve the quality of stormwater runoff from the site prior to discharge to the surrounding waters, such as bio-filtration planters, bio-filtration basins, infiltration areas, permeable paving, localized rainwater harvesting, where feasible, and other treatment measures as approved by the City.

Implementation of **Mitigation Measure BIO-3a** and **Mitigation Measure BIO-3b** would reduce impacts to a less-than-significant level:

> **Mitigation Measure BIO-3a:** All dredging and in-water construction activities shall be consistent with the standards and procedures set forth in the Long Term Management Strategy for dredging in the San Francisco Bay waters, a program developed by the U.S. Army Corps of Engineers (USACE), the Bay Conservation and Development Commission (BCDC), the Regional Water Quality Control Board (RWQCB), the U.S. Environmental Protection Agency, (EPA), and other agencies, to guide the disposal of dredge materials in an environmentally sound manner.
>
> **Mitigation Measure BIO-3b:** During project construction, best management practices (BMPs) would be applied to prevent potential pollutants from entering the storm drain system directly, reducing sediment or potentially hazardous runoff from entering receiving waters. Examples of these measures include covering trash receptacles and car wash areas, regular sweeping of paved surfaces, stenciling of storm drain inlets, and installation of full trash capture devices.

Significance after Mitigation: Less than Significant.

Impact BIO-4: Development facilitated by the proposed project would not interfere with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (*Less than Significant with Mitigation*)

The proposed project has the potential to interfere substantially with the movement of native resident or migratory avian species. In addition, the proposed project could adversely impact the

movement of fish and marine mammals within project area waters. Implementation of Mitigation Measure BIO-1e, described under criterion "a", above, in addition to **Mitigation Measure BIO-4** would reduce these potential project-related impacts to a less-than-significant level.

In-water rehabilitation of dock pilings and the seawall/bulkhead have the potential to interfere with the movement or migratory corridors of, or impede the use of nursery sites by, the following species: harbor seals, CV fall/late-fall Chinook salmon, CCC steelhead, green sturgeon, Pacific herring, and a number of Fishery Management Plan-managed fish species.

Broadly speaking, the Central Bay is the thoroughfare for all migrating fish and other marine species transiting through the Bay to and from spawning habitat, nursery areas, or other forage areas within the Bay-Delta and out through the Golden Gate and open ocean. Due to the proposed project's location in close proximity to the Central Bay, project activities would potentially expose special-status and sensitive fish and marine mammals moving through the Golden Gate to and from the Central Bay and South Bay to the following types of impacts:

- Increased noise from in-water pile driving, and increased vessel traffic.
- Increased resuspension of sediments from dredging, pile removal, anchor placement and removal.
- Increased potential for collisions and harassment of marine mammals through increased vessel traffic locally.

Construction Noise and Other Harassment

Potential noise impacts from in-water construction, particularly from pile-driving operations on fish and marine mammals moving through the project area are potentially significant, but would be reduced to be less than significant for acute and chronic effects on fish and marine mammals by the implementation of **Mitigation Measures BIO-1a**, **BIO-1b, and BIO-1c**, which require consultation with NMFS regarding potential project effects and measures to reduce the effects of pile driving on fish and marine mammals.

In addition, the project applicant will enter into formal consultation with NMFS under the Marine Mammal Protection Act, the Magnuson-Stevens Act, and the federal Endangered Species Act regarding potential project effects on marine mammals, essential fish habitat and federally listed threatened and endangered species respectively, as well as with CDFW regarding state-listed species. These consultations, which would support the subsequent regulatory actions of various federal and state approvals required for in-water work, would identify measures to reduce potentially significant impacts on marine mammals and federal and state protected fish species. Therefore, with the implementation of **Mitigation Measures BIO-1a, BIO-1b,** and **BIO-1c**, and compliance with the requirements of the NMFS and CDFW consultations, the potential impacts of in-water work on movement or migration of marine mammals and special-status fish species would be less than significant.

Avian Collisions with Buildings and Night Lighting

The project site is located within the Pacific Flyway along the eastern shoreline of San Francisco Bay. While exact migratory corridors through the area are unknown and vary by species, birds typically follow coastlines, rivers, and mountain ranges in their migratory passages from wintering to breeding grounds and back again. Alameda Island, including the project area, provides foraging and roosting habitat for numerous migratory species.

The waters of the Bay, including the Oakland-Alameda Estuary, provide valuable stopover habitat for migratory birds. Development of the proposed project may increase the risk of bird collisions over that posed by existing structures. This would be a significant impact because migratory birds are protected under the MBTA and native resident nongame birds are protected from take under the California Fish and Game Code.

Many collisions are induced by artificial night lighting, particularly from large buildings, which can be especially problematic for migrating songbirds since many are nocturnal migrants (Ogden, 1996). The tendency of birds to move towards lights at night when migrating, and their reluctance to leave the sphere of light influence for hours or days once encountered (Graber 1968), has been well documented (Ogden 1996). It has been suggested that structures located at key points along migratory routes may present a greater hazard than those at other locations (Ogden 2002). Other research suggests that fatal bird collisions increase as light emissions increase, that weather often plays an important part in increasing the risk of collisions (Verheijen 1981), and that nights with heavy cloud cover and/or precipitation present the conditions most likely to result in high numbers of collisions (Ogden, 2002). The type of light used may affect its influence on the birds: for example, studies have indicated that blinking lights or strobe lights affect birds significantly less than non-blinking lights (Gauthreaux and Belser 2006, Evans et al. 2007).

Collisions with lighted buildings and other structures are not the only danger that nighttime lighting has for migratory birds. Even if collisions are avoided, birds are still at risk of death or injury. Birds can become “trapped” by a light source and, disoriented, continue to fly around the source until they become exhausted and drop to the ground, where they may be killed by predators (Ogden, 1996) or die from stress or exhaustion (Reed et al., 1985). Light attraction in birds is positively related to light intensity, and studies have shown that reduction in lighting intensity and changing fixed lighting to a flashing or intermittent light system can dramatically reduce avian mortality at lighted structures (Jones and Francis 2003). At least one controlled experiment has shown avian mortality can be dramatically reduced through shielding upward radiance of lighting fixtures. In an experiment with fledgling seabirds in Hawaii, shielding the upward radiation of lights resulted in a 40 percent reduction in attraction to lights as the fledglings made their way from their nesting colonies to the sea (Reed et al. 1985). Furthermore, during the study the sides of large buildings and the grounds remained fully lit by the shielded lights, suggesting that birds are not attracted to lighted areas per se but, rather to point-sources of light, which may be related to the use of stars and the moon as navigational aids (*ibid*.). Although the project site is located within the Pacific Flyway and in close proximity to the East Bay shoreline, specific migratory corridors in the vicinity of the project site are unknown. It can be assumed, however, that numerous birds pass overhead or in the project vicinity during spring and fall migrations.

Direct effects on migratory as well as resident birds moving through an area include death or injury as the birds collide with lighted structures and other birds that are attracted to the light, as well as collisions with glass during the daytime, while indirect effects for migratory birds include delayed arrival at breeding or wintering grounds, and reduced energy stores necessary for migration, winter survival, or subsequent reproduction (Gauthreaux and Belser, 2006).

The project site is located in a generally urban setting and surrounded by other light sources that thereby raise ambient light levels. Development facilitated under the proposed project is expected to increase the amount of light and glare generated at the project site associated with the potential use of reflective building materials, street light fixtures, nighttime lighting of commercial identification signs and logos, and increased vehicle and transit use. Due to the proposed project's location in proximity to San Francisco Bay, a migratory stopover site, the proposed project has the potential to result in a significant new source of light that may act as an attractant for nocturnal migrating birds, resulting in collisions and avian mortality. For these reasons, this is considered a potentially significant impact with respect to nocturnal migratory birds. Measures to reduce the risk of avian collisions should be incorporated in the construction and operations of new buildings, particularly when they are to be located in areas where the risk of collision may be heightened due to a number of risk factors, including location along a known migratory route, proximity to migratory stopover locations, proximity to open space and areas of natural habitat, and areas where low cloud ceilings are frequent (Brown et al., 2007).

Mitigation Measure BIO-4 outlines protocols for minimizing avian collisions. Implementation of **Mitigation Measure BIO-4** would avoid and minimize these potential impacts by requiring design features such as patterned or fritted glass and decreasing reflectivity of surfaces to make buildings appear less transparent. The measure also calls for limiting night lighting, which would reduce the potential for disorientation. With implementation of **Mitigation Measure BIO-4**, the impact would be less than significant.

> **Mitigation Measure BIO-4:** The City shall require that the project applicant retain a qualified biologist experienced with bird strike issues to review and approve the design of the building to ensure that it sufficiently minimizes the potential for bird strikes. The City may also consult with resource agencies such as the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or others, as it determines to be appropriate during this review.
>
> The project applicant shall provide to the City a written description of the measures and features of the building design that are intended to address potential impacts on birds. The design shall include some of the following measures or measures that are equivalent to, but not necessarily identical to, those listed below, as new, more effective technology for addressing bird strikes may become available in the future:
>
> - Employ design techniques that create "visual noise" via cladding or other design features that make it easy for birds to identify buildings as such and not mistake buildings for open sky or trees;
> - Decrease continuity of reflective surfaces using "visual marker" design techniques, which techniques may include:

  - Patterned or fritted glass, with patterns at most 28 centimeters apart,
  - One-way films installed on glass, with any picture or pattern or arrangement that can be seen from the outside by birds but appear transparent from the inside,
  - Geometric fenestration patterns that effectively divide a window into smaller panes of at most 28 centimeters, and/or
  - Decals with patterned or abstract designs, with the maximum clear spaces at most 28 centimeters square.

- Up to 60 feet high on building facades facing the shoreline, decrease reflectivity of glass, using design techniques such as plastic or metal screens, light-colored blinds or curtains, frosting of glass, angling glass towards the ground, UV-A glass, or awnings and overhangs;
- Eliminate the use of clear glass on opposing or immediately adjacent faces of the building without intervening interior obstacles such that a bird could perceive its flight path through the glass to be unobstructed;
- Mute reflections in glass using strategies such as angled glass, shades, internal screens, and overhangs; and
- Place new vegetation sufficiently away from glazed building facades so that no reflection occurs. Alternatively, if planting of landscapes near a glazed building façade is desirable, situate trees and shrubs immediately adjacent to the exterior glass walls, at a distance of less than three feet from the glass. Such close proximity will obscure habitat reflections and will minimize fatal collisions by reducing birds' flight momentum.

Lighting. The project applicant shall ensure that the design and specifications for buildings implement design elements to reduce lighting usage, change light direction, and contain light. These include, but are not limited to, the following general considerations that should be applied wherever feasible throughout the proposed project to reduce night lighting impacts on avian species:

- Avoid installation of lighting in areas where not required for public safety
- Examine and adopt alternatives to bright, all-night, floor-wide lighting when interior lights would be visible from the exterior or exterior lights must be left on at night, including:
  - Installing motion-sensitive lighting
  - Installing task lighting
  - Installing programmable timers
  - Installing fixtures that use lower-wattage, sodium, and yellow-red spectrum lighting.
- Install strobe or flashing lights in place of continuously burning lights for any obstruction lighting.
- Where exterior lights are to be left on at night, install fully shielded lights to contain and direct light away from the sky.

Antennae, Monopole Structures, and Rooftop Elements. The City shall ensure, as a condition of approval for every building permit, that buildings minimize the number of and co-locate rooftop-antennas and other rooftop equipment, and that monopole structures or antennas on buildings, in open areas, and at sports and playing fields and facilities do not include guy wires.

Educating Residents and Occupants. The City shall ensure, as a condition of approval for every building permit, that the project applicant agrees to provide educational materials to building tenants, occupants, and residents encouraging them to minimize light transmission from windows, especially during peak spring and fall migratory periods, by turning off unnecessary lighting and/or closing window coverings at night. The City shall review and approve the educational materials prior to building occupancy.

Documentation. The project applicant and/or City shall document undertaking the activities described in this mitigation measure and maintain records that include, among others, the written descriptions provided by the building developer of the measures and features of the design for each building that are intended to address potential impacts on birds, and the recommendations and memoranda prepared by the qualified biologist experienced with bird strikes who reviews and approves the design of any proposed projects to ensure that they sufficiently minimize the potential for bird strikes.

Significance after Mitigation: Less than Significant.

Impact BIO-5: Development facilitated by the proposed project would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (*Less than Significant with Mitigation*)

As discussed in the Local Regulations and Policies section above, the County and City of Alameda have adopted protections for street trees throughout the City. While it is likely that some trees may be removed as a result of the proposed project, none of the trees on site are specifically protected by these policies. Chapter 12.11 of Title 12 of the County's General Ordinance Code requires that the Director of Alameda County Public Works Agency permit any planting, removal, trimming, pruning, or cutting of street trees. As long as tree removal is consistent with all permitting conditions, such removal would not conflict with local ordinances or policies.

The BCDC's San Francisco Bay Plan contains findings and policies related to fish and wildlife, water quality, fill, recreation, public access, and the appearance and design of shorelines, as well as procedures for BCDC control of filling, dredging, and shoreline development. The proposed project would incorporate public open space and facilitate in-water rehabilitation of a marina and 4,000 linear feet of seawall/bulkhead, which would both provide public access to water-related uses consistent with the Bay Plan. The potential impacts discussed above would be mitigated to less than significant levels through implementation of the mitigation measures proposed in this EIR. In addition, BCDC permitting for project elements within Bay waters or within the 100-foot shoreline band would require measures to ensure that development facilitated by the project would be protective of the Bay's biological resources. Thus, the proposed project would generally be consistent with the Bay Plan.

The San Francisco Baylands Habitat Goals and Subtidal Habitat Goals Reports, as discussed in the Regulatory Framework, provide a scientific foundation and approach for the conservation and enhancement of the baylands and submerged areas of San Francisco Bay. These reports contain recommended conservation goals for Bay habitats potentially affected by project activities that can be used by permitting agencies when evaluating proposed projects within their jurisdiction. They are supported by most of the agencies and non-governmental groups with major planning, operational, or regulatory interests in Bay Area wetlands. Although the Goals Project has no regulatory authority, any adverse effects on wetlands, shorelines, and subtidal habitats would also have potential negative effects on special-status species, critical habitat for federal listed species, managed fish species Essential Fish Habitat, or habitat for protected marine mammals.

In addition, development facilitated by the proposed project would not result in potentially significant impacts on biological resources due, in part, to the implementation of mitigation measures that avoid conflict with applicable local policies or ordinances protecting biological resources, as summarized in Section 4.3.3. For example, Mitigation Measure BIO-3a is consistent with City of Alameda General Plan Policies on Biological Resources 5.1g, and Mitigation Measure BIO-3b is consistent with 5.1x of the same Plan. Development facilitated by the proposed project would be implemented in a manner intended to:

- Maintain and improve the quality of the bay, ocean, and shoreline areas;
- Promote the use and development of shoreline areas consistent with the City of Alameda General Plan and the San Francisco Bay Plan;
- Cooperate with and otherwise support regulatory programs of existing regional, state, and federal agencies concerned with San Francisco Bay Area biological resources; and
- Protect rare and endangered species as well as the habitats of known plant and animal species that require a relatively natural environment.

Therefore, with implementation of the measures described above, the potential for the project to conflict with applicable local policies or ordinances protecting biological resources in the project area is low and would represent a less-than-significant impact.

Significance after Mitigation: Less than Significant.

Impact BIO-6: Development facilitated by the proposed project would not conflict with an adopted local, regional, or State Habitat Conservation Plan. (*Less than Significant with Mitigation*)

The San Francisco Estuary Project (SFEP) is a federal-state-local partnership established under the Clean Water Act's National Estuary Program. It is a cooperative effort working to promote effective management of the Bay-Delta Estuary, and to restore and maintain its water quality and natural resources while maintaining the region's economic vitality. The SFEP oversees and tracks implementation of its Comprehensive Conservation and Management Plan (CCMP) goals, objectives and actions to protect and restore the Estuary. The CCMP serves as a roadmap for

restoring the Estuary's chemical, physical, and biological health and was adopted in 1993, with an updated CCMP adopted in 2007.

The San Francisco Baylands Habitat Goals and Subtidal Habitat Goals Reports, provide a scientific foundation and approach for the conservation and enhancement of the baylands and submerged areas of San Francisco Bay. The Baylands Habitat Goals establish a long-term vision for a healthy and sustainable baylands ecosystem. The Goals Project was recommended by the Governor's "California Wetlands Conservation Policy" and by the Comprehensive Conservation and Management Plan (CCMP) of the U.S. Environmental Protection Agency's San Francisco Estuary Project. The Subtidal Habitat Goals were prepared in collaboration among BCDC, California Ocean Protection Council/California State Coastal Conservancy, NOAA, and the San Francisco Estuary Partnership (Goals Project, 2010). These reports contain recommended conservation goals for Bay habitats potentially affected by project activities that can be used by permitting agencies when evaluating proposed projects within their jurisdiction. Although the Comprehensive Conservation Plan and Goals Project are not regulatory documents they are supported by most of the agencies and non-governmental groups with major planning, operational, or regulatory interests in Bay Area wetlands and, as the analysis above shows, any adverse effects on wetlands, shorelines, and subtidal habitats would also have potential negative effects on special-status species, critical habitat for federal listed species, managed fish species Essential Fish Habitat, or habitat for protected marine mammals.

Implementation of the proposed project could result in potentially significant impacts on biological resources, which could conflict with applicable policies of the CCMP and the Goals Project. However, implementation of **Mitigation Measures BIO-1a through BIO-1e, BIO-2a through BIO-2c, and BIO-3**, described above, would reduce potentially significant impacts on biological resources to ensure that the project does not conflict with habitat conservation plans or natural community conservation plans, resulting in a less than significant impact. **Significance after Mitigation:** Less than Significant.

Cumulative Impacts

This analysis evaluates whether the impacts of the proposed project, including development facilitated by the project, together with the impacts of cumulative development, would result in a cumulatively significant impact on special-status species, wetlands and other waters of the U.S., or other biological resources protected by federal, state, or local regulations or policies (based on the significance criteria and thresholds presented earlier). This analysis then considers whether the incremental contribution of the proposed project to this cumulative impact would be considerable. Both conditions must apply in order for a project's cumulative effects to rise to the level of significance.

Impact BIO-7: The proposed project, in conjunction with other past, current, or foreseeable development in Alameda, could result in cumulative impacts on biological resources. (*Less than Significant with Mitigation*)

The geographic scope of potential cumulative impacts on biological resources encompasses the project site as well as biologically linked areas sharing the Oakland-Alameda Estuary and greater San Francisco Bay. Past projects within this context, including the development of civic facilities, residences, commercial and industrial areas, and infrastructure, have already caused substantial adverse cumulative changes to biological resources in the project area. For example, parts of the City of Alameda sit on fill of what were once tidal mudflats and marshes, with a nearly complete loss of the original habitat types and many of the species that once occurred there. For this reason, natural communities on Alameda Island are rare—even where open space persists. Areas on the island that were landscaped or have revegetated naturally over time provide a "new normal" in terms of habitat that is often simplified in terms of diversity, and supporting a different suite of species than once existed there. Overall, this is true of many areas surrounding the Bay. Therefore, due to past projects, there has already been an adverse significant cumulative effect on biological resources. With the addition of current and other proposed projects, there is an existing significant cumulative impact *without* the project.

Although the project would develop the area with commercial, residential, recreational, and maritime uses that could disturb sensitive species or habitat, the project would implement mitigation measures that would ensure these impacts are less than significant. While there is no sensitive habitat located on land within the project site, the project could disturb aquatic habitat in the Oakland-Alameda Estuary. Other projects are located along Alameda's waterfront, and some will involve in-water work, such as Encinal Terminals and Shipways at Marina Village. These areas have limited habitat value for wildlife as they are already primarily or fully developed. However, the proximity of some projects to the waters of San Francisco Bay and the Oakland-Alameda Estuary could lead to potential cumulatively significant impacts on waterbirds and marine life and demolition of existing buildings or removal of existing vegetation could lead to significant cumulative impacts on nesting birds. These projects would include many of the same activities as would occur under the proposed project (e.g., dredging, pile driving, wharf improvements, increased boat traffic) and can be assumed to have similar effects on marine biological resources, resulting in a potentially significant cumulative impact.

Beyond the project area, there could be cumulative impacts on sensitive biological resources located throughout the Bay. For example, the proposed project might affect birds that use foraging and nesting habitats in the project area but also other habitats quite distant from the project area; these birds could therefore be affected by other projects. Cumulative impact assessment at this scale is speculative, and offsetting these impacts are large-scale habitat improvement projects such as the tidal marsh restoration efforts at the San Leandro Shoreline Marshlands and Hayward Regional Shoreline and the South Bay Salt Pond Restoration Projects, which are intended to provide a net benefit to biological resources.

Environmentally protective laws and regulations have been applied with increasing rigor since the early 1970s. These include the California Endangered Species Act, federal Endangered Species Act, and the Clean Water Act, as described in the biological resources Regulatory Framework,

above. The project and other likely future projects within the vicinity of the project area are required to comply with local, State, and federal laws and policies, and all applicable permitting requirements of the regulatory and oversight agencies intended to address potential impacts on biological resources. Additionally, future projects would be required to demonstrate that they would not have significant effects on these biological resources, although it is possible that some projects may be approved even though they would have significant, unavoidable impacts on biological resources. These regulatory requirements should serve, in many cases, to reduce future contributions to cumulative impacts on biological resources in the project area.

As discussed previously, the project would implement several mitigation measures to ensure impacts to biological resources from the proposed project are reduced to a less-than-significant level. These measures include pre-construction surveys, requirements for biological monitoring, and best management practices for minimizing effects to sensitive species and habitat that could be affected by the project during construction, as well as minimize effects during operation of the project. With implementation of these measures, there would be no significant impact to: special-status species, sensitive natural communities, federally and state protected waters and wetlands, native movement wildlife corridors, or native wildlife nursery sites, and the project would not conflict with applicable local policies or ordinances or the provisions of an adopted habitat conservation plan.

With implementation of **Mitigation Measures BIO-1a through BIO-1e** (avoid and minimize impacts on special-status wildlife), **Mitigation Measures BIO-2a through BIO-2c** (avoid and minimize impacts to sensitive natural communities), and **Mitigation Measure BIO-3** (avoid and minimize impacts to migratory and breeding wildlife) the project, would result in less-than-significant impacts on biological resources within and in the vicinity of the project site. When considered within the existing condition of biological resources in the project area and the greater Bay Area in the context of past, present and reasonably foreseeable similar projects, the project would add only a minor, incremental contribution to habitat loss, degradation, and direct and indirect impacts to special-status species. The project's contribution would not be considered cumulatively considerable; therefore, in combination with past, present, and reasonably foreseeable future projects, the proposed project's cumulative effects on biological resources would be less than significant.

Significance after Mitigation: Less than Significant.

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4.4 Cultural Resources

4.4.1 Introduction

This section includes a discussion of the potential cultural resources on the Alameda Marina project site. Also discussed are the physical and regulatory setting, the significance criteria used for determining environmental impacts, and potential impacts associated with construction, operation, and maintenance of the proposed project. Cultural resources include architectural resources, historic and prehistoric archaeological resources, human remains, and tribal cultural resources.

4.4.2 Environmental Setting

The northern part of the San Francisco Bay is within the Bay Area-Delta bioregion. This bioregion consists of a variety of natural communities that range from the open waters of the Bay and Delta to salt and brackish marshes to chaparral and oak woodlands. The island of Alameda was originally a peninsula connected to the mainland. A tidal channel was excavated in 1902, extending and deepening the natural estuary. The spoils were used to fill in low-lying sections of nearby marsh land.

Prehistoric Background

The natural marshland communities along the edges of bays and channels were the principal source for subsistence and other activities during the prehistory of the San Francisco Bay region. Between 1906 and 1908, University of California, Berkeley archaeologist N. C. Nelson conducted surveys of archaeological sites in the Bay region. His early surveys documented nearly 425 “earth mounds and shell heaps” along the littoral zone of the bay (Nelson, 1909). Archaeologists later excavated some of the most notable of these sites in the Bay Area, such as the Stege Mound Archaeological District (CA-CCO-297), the Ellis Landing Site (CA-CCO-295), the Emeryville shellmound (CA-ALA-309), and the Fernandez Site (CA-CCO-259) in Rodeo Valley (Moratto, 1984). These dense midden[1] sites have been carbon 14 dated to be 2,310 ± 220 years old, but other evidence from around the bay suggests that human occupation in the region is of greater antiquity, perhaps as early as 8000 B.C. (Davis & Treganza, 1959, as cited in Moratto, 1984).

Categorizing the prehistoric period into cultural stages allows researchers to describe a broad range of archaeological resources with similar cultural patterns and components during a given timeframe, thereby creating a regional chronology. Milliken et al. (2007) provide a framework for the interpretation of the San Francisco Bay Area and have divided human history of the region into four broad periods: the *Paleoindian Period* (11,500 to 8000 B.C.), the *Early Period* (8000 to 500 B.C.), the *Middle Period* (500 B.C. to A.D. 1050), and the *Late Period* (A.D. 1050 to 1550).

[1] Any large refuse heap, mound, or concentration of cultural debris associated with human occupation. The term includes such materials as discarded artifacts, food remains, shells, bones, charcoal and ashes, -- and may include the material in which the debris is encapsulated and modifications of this matrix. Midden debris usually contains decayed organic material, bonescrap, artifacts (broken and whole), and miscellaneous detritus. Midden deposits also sometimes contain human burial remains.

Economic patterns, stylistic aspects, and regional phases further subdivide cultural patterns into shorter phases. This scheme uses economic and technological types, socio-politics, trade networks, population density, and variations of artifact types to differentiate between cultural periods.

The *Paleoindian Period* (11,500 to 8000 B.C.) was characterized by big-game hunters occupying broad geographic areas. Evidence of human habitation during *Paleoindian Period* has not yet been discovered in the San Francisco Bay Area. During the *Early Period* (*Lower Archaic*; 8000 to 3500 B.C.), geographic mobility continued from the *Paleoindian Period* and is characterized by the millingslab and handstone as well as large wide-stemmed and leaf-shaped projectile points. The first cut shell beads and the mortar and pestle are documented in burials during the *Early Period* (3500 to 500 B.C.), indicating the beginning of a shift to sedentism. During the *Middle Period*, which includes the *Lower Middle Period* (500 B.C. to A.D. 430), and *Upper Middle Period* (A.D. 430 to 1050), geographic mobility may have continued, although groups began to establish longer-term base camps in localities from which a more diverse range of resources could be exploited. The first rich midden sites are recorded from this period. The addition of milling tools, obsidian and chert concave-base projectile points, and the occurrence of sites in a wider range of environments suggest that the economic base was more diverse. By the *Upper Middle Period*, highly mobile hunter-gatherers were increasingly settling down into numerous small villages. Around A.D. 430 a dramatic cultural disruption occurred evidenced by the sudden collapse of the *Olivella* saucer bead trade network. During the *Initial Late Period* (A.D. 1050 to 1550), social complexity developed toward lifeways of large, central villages with resident political leaders and specialized activity sites. Artifacts associated with the period include the bow and arrow, small corner-notched projectile points, and a diversity of beads and ornaments.

Ethnographic Context

Based on a compilation of ethnographic, historic, and archaeological data, Milliken (1995) describes a group known as the Ohlone, who once occupied the general vicinity of the project area. While traditional anthropological literature portrayed the Ohlone peoples as having a static culture, today it is better understood that many variations of culture and ideology existed within and between villages. While these descriptions of separations between native cultures of California make it an easier task for ethnographers to describe past behaviors, the descriptions can mask Native adaptability and self-identity. Current understanding of California's Native cultures suggests that California's Native Americans never saw themselves as members of larger cultural groups, as described by anthropologists. Instead, they saw themselves as members of specific villages, perhaps related to others by marriage or kinship ties, but viewing the village as the primary identifier of their origins.

Levy (1978) describes the language group spoken by the Ohlone, known as "Costanoan." This term is originally derived from a Spanish word designating the coastal peoples of Central California. Today Costanoan is used as a linguistic term that refers to a larger language family spoken by distinct sociopolitical groups that spoke at least eight languages (as different as Spanish is from French) of the same Penutian language group. The Ohlone once occupied a large

territory from San Francisco Bay in the north to the Big Sur and Salinas Rivers in the south. Alameda is within the San Antonio cultural area of the *Chochenyo* tribelet (Milliken et al., 2009).

Economically, Ohlone engaged in hunting and gathering. Their territory encompassed both coastal and open valley environments that contained a wide variety of resources, including grass seeds, acorns, bulbs and tubers, bear, deer, elk, antelope, a variety of bird species, and rabbit and other small mammals. The Ohlone acknowledged private ownership of goods and songs, and village ownership of rights to land and/or natural resources; they appear to have aggressively protected their village territories, requiring monetary payment for access rights in the form of clamshell beads, and even shooting trespassers if caught. After European contact, Ohlone society was severely disrupted by missionization, disease, and displacement. Today, the Ohlone still have a strong presence in the San Francisco Bay Area, and are highly interested in their historic and prehistoric past.

Historic Context

The following historic context is adapted from the Historic Resource Evaluation: Alameda Marina 1815 Clement Avenue prepared by VerPlanck Historic Preservation Consulting (March, 2017), and the peer review by Michael Corbett (Corbett, 2017), both of which are included with this EIR as **Appendix D**.

The first Europeans to visit the eastern part of the San Francisco Bay area were the Spanish explorers Pedro Fages and Reverend Juan Crespi, who passed through in 1772. After Mexico won independence from Spain in 1821, large tracts of land in California were granted to military heroes and loyalists. The Alameda peninsula was part of the vast 44,880-acre Rancho San Antonio granted to Luis Peralta in 1820 by Governor Pablo Vicente de Solá, the last Spanish governor of California. Following the annexation of California, the 1851 California Land Claims Act required Mexican landowners to prove the validity of their claim on land held under Mexican titles. Lands under rejected claims were deemed public and available for arriving settlers (Hoover et al., 2002).

Luis Peralta received approximately 35 square miles including portions of El Cerrito, Berkeley, Albany, Oakland, Piedmont, and Alameda as a land grant in 1820 that was later divided between his four surviving sons with Antonio Maria Peralta receiving all of Alameda and much of Oakland (Alameda History Museum, 2016).

The discovery of gold in the Sierra Nevada in 1848 produced a major population increase in northern California as immigrants poured into the territory seeking gold or associated opportunities. With the discovery of gold, the sudden influx of thousands of newcomers to the Bay Area created a population and building boom.

According to the 1897 Sanborn Maps, what is now the Alameda Marina consisted of several dozen undeveloped house lots superimposed on top of undeveloped tidal marshland. The 1910 Sanborn Maps show similar conditions, though there is a hand-written note indicating that Barnes & Tibbetts Ship Building Co. owned the property. The earliest known occupation of the project area by Barnes & Tibbetts occurred in 1914, when it was listed in Alameda County directories at

Clement Avenue and Chestnut Street. Barnes & Tibbetts, which had been previously located at Alameda Point, developed its Clement Avenue site to take advantage of a growing number of wartime contracts with the U.S. Navy. By the end of World War I, the original 18-acre facility consisted of three marine railways, an office building, and an open-air yard employing approximately 400 workers. None of the buildings or structures from this earliest period of the property's history survives (VerPlanck, 2017).

In 1922, General Engineering bought Barnes & Tibbitts' Alameda yard. The new owners expanded it to 26 acres to build ferries and other small and medium-sized vessels. By 1925, the shipyard consisted of a plate shop, four outfitting piers, and two marine railways. Three of the oldest buildings in the project area (Buildings 22, 23, and 24) date from this period of expansion. During the latter half of the 1920s, as the American economy began to boom and the demand for ferries and ship repair surged in the Bay Area, General Engineering continued to improve its Alameda shipyard, adding a black-smith shop, a pipe shop, a boiler shop, and a carpenter shop. None of these buildings survive (VerPlanck, 2017).

In 1940, General Engineering completed the first major expansion of its Alameda yard since the 1920s. The project included enlarging the existing plate and machine shops, resurfacing the entire yard in asphalt, adding marine railways, rebuilding bulkheads and wharves, renovating an existing warehouse, and constructing several new buildings. As ship repair declined across the Bay Area in the mid-1960s, several non-maritime businesses leased space on the property. Alameda Marina moved to the site ca. 1966 and opened a small marina on the western part of the subject property demolishing the four shipways on the westernmost part of the site and filling the sloping ground to street grade, and demolished the finger piers that had protruded from the seawall. Many World War II-era shipyards in the Bay Area were demolished in the 1950s or 1960s; however, Pacific Shops, Inc. retained most of the former General Engineering & Dry Dock Co. buildings. The piers, wharves, marine rails, and dry dock were demolished and it kept the former warehouses, shops, office buildings, and sheds; renting them to a variety of businesses.

Archaeological Findings

Prehistoric Archaeological Resources

ESA completed a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) on October 12, 2016 (File No. 16-0558). The CHRIS consists of the California Office of Historic Preservation (OHP), nine Information Centers, and the State Historical Resources Commission. The CHRIS Inventory includes the State Historic Resources Inventory as well as cultural resource records and research reports managed under contract by the nine Information Centers including the NWIC. The purpose of the records search was to (1) determine whether known cultural resources have been recorded within or adjacent to the project area; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites; and (3) develop a context for the identification and preliminary evaluation of cultural resources.

The results of the records search indicate that a large prehistoric occupation and burial site (designated as CA-ALA-11) is recorded within a portion of and adjacent to the Alameda Marina

project area. The site consists of an extensive shell midden with lithic and groundstone artifacts, shell beads and pendants, and faunal remains, as well as numerous human burials. The site was first identified as Mound #440 by N.C. Nelson in 1908–1909 as part of his archaeological survey of the San Francisco Bay Area (Nelson, 1909). Human remains were uncovered in 1945 during excavation for a pipeline and a tank within the Alameda Marina (Weymouth, 1945). Seven burials, each with a bowl mortar over the head, were removed in the 1950s during construction of a basement for a house adjacent to the project area (Chattan and Evans, 2001). Additional burials were uncovered in 1960 (*Oakland Tribune*, 1960) and 2001 (Chattan and Evans, 2001) including one burial with over 500 shell beads and ornaments in the backyard of the above mentioned house. The site may have been a higher mound formation but was partially leveled and scattered for modern development. Early historic maps show the location of CA-ALA-11 adjacent to the original shoreline and marshland on the northern side of the Alameda peninsula.

Site CA-ALA-11 is recommended eligible for listing in the California Register of Historical Resources (California Register) as a significant prehistoric archaeological site. The site is eligible under California Register Criterion 1 (for its association and representation as a tribal cultural resource and burial site to the Ohlone Native Americans) and California Register Criterion 4 (for its ability to yield information important to prehistory); see California Register of Historical Resources in the *Regulatory Setting* section below. For the purposes of CEQA and this document, site CA-ALA-11 is considered both a historical resource and a tribal cultural resource.

Historic-Era Archaeological Resources

Subsurface conditions described in the geotechnical report completed for the Alameda Marina indicates that:

> historically, decommissioned facilities were often buried by fill and that some areas of the site [project area] are still underlain by remnants of old timber structures, foundation elements, abandoned utilities, riprap, and concrete rubble. Numerous driven timber piles that supported former piers, cranes, and bulkheads were reportedly broken off at the mud line and still remain in place. Large timber cribbing and driven timber piles were reportedly left in place prior to filling of the former graving (dry) docks in the central portion of the site [Rockridge Geotechnical, 2012].

While historic-era remains associated with the earliest ship building operations in the project area as described in the Historic Context above such a piers, foundations, riprap, and rubble may be buried in the project area, these types of resources would not likely meet the criteria for eligibility to the California Register nor retain the integrity necessary to convey historical significance.

A review of the California State Lands Commission Historic Shipwreck Database indicates that one shipwreck has occurred in the project area vicinity. The steamship *Ranger* built in 1853 sunk just off the Alameda Marina location on January 8, 1854. The following day this article from San Francisco described the disaster:

> **Explosion of the Steamer Ranger – Three persons killed and several wounded**
> A report was spread about the city, last evening, about 6 o'clock, that the steamer *Ranger* had burst her boiler just after leaving the dock at Alameda, yesterday afternoon. The report was

> brought by two Frenchmen who were on board, and one of whom was considerably scalded. These men walked from Alameda to Oakland and came over in the Oakland boat. They reported that when the boat was about three hundred yards from the wharf, the boiler exploded, and that when they left, three dead bodies had been found, and that a number were wounded. It is probable more were killed, as they left before they had obtained any accurate information, not even knowing the names of the persons killed. A gentleman who came over from Oakland informed us that he had seen the wreck of the Ranger from the Oakland boat and that he had heard that the boiler was completely out of the boat [*Alta California*, January 9, 1854].

There are no known remains of the steamship *Ranger* in the project area or in the vicinity. The explosion occurred a considerable distance from the shoreline and no physical remains of this event would be present in the project area.

Architectural Findings

As stated above, ESA completed a records search at the NWIC on October 12, 2016 (File No. 16-0558). Research did not reveal any previously identified buildings or structures in the project area that were identified as listed or eligible for the National or California registers or for local listing. However, a previous evaluation of the property was discovered; a Historic Resources Inventory Form titled *General Engineering and Dry Dock Co.* prepared by Michael Corbett and Mary Hardy in 1988 as part of an Architectural/Historical Survey of Industrial Alameda.

Not including the piers, wharves, and other shore-side infrastructure, there are 37 buildings and one structure (graving dock) on the subject property. While the majority of the buildings were constructed between 1940–1942 and are associated with General Engineering & Dry Dock Company's expansion efforts in response to the increased number of military contracts during World War II, the construction dates range from ca. 1907 (Building No. 37) to 1985 (Building 36). These buildings and structures are primarily industrial in nature, utilitarian in design, made with mass-produced materials, and devoid of ornamentation. In contrast, Buildings 6, 16, 21, and 27 are all office buildings that are stuccoed and embellished with a minimal amount of Streamline Moderne detailing characteristic of their 1940s-era construction (VerPlanck, 2017).

The 2017 Historic Resource Evaluation for the proposed project by VerPlanck concluded that:

> The former General Engineering & Dry Dock Co. shipyard operated on what is now the Alameda Marina property from 1922 until 1948. Located on Alameda's northern waterfront, the property has served as a de facto industrial park and marina since the early 1960s, when Pacific Shops, Inc. purchased the property from the U.S. government. The property includes 37 buildings, including 33 buildings from the World War II period and earlier. During World War II, General Engineering & Dry Dock Co. constructed dozens of cutters, minesweepers, and net tenders for the Coast Guard and Navy, as well as repairing thousands of battle-damaged vessels. The construction of the Alameda Marina in 1966-67 destroyed nearly all of the World War II-era shipbuilding infrastructure, including the slipways, marine rails, and finger piers. In contrast, nearly all of the World War II-era buildings were retained and eventually repurposed as office buildings or light industrial facilities. In the 1980s, when the lightly-built corrugated metal shop buildings had begun to deteriorate and the demand for office space increased, Pacific Shops, Inc. began remodeling them–replacing their corrugated

metal siding with plywood, their corrugated metal roofs with plywood sheathing and asphalt shingles, and the metal and wood windows with aluminum and vinyl counterparts. The result is that the majority of the World War II-era buildings have lost integrity because they no longer look like they did during the period of significance (1940–1945). Nevertheless, there is a compact California Register-eligible historic district encompassing nine contributing buildings, including Buildings 1, 4, 6, 12, 16, 19, 27, 28, and 29. In addition, three of these buildings appear individually eligible for the California Register, including Buildings 16, 19, and 27.

A subsequent peer review conducted by Michael Corbett (Corbett, 2017) of the 2017 Historic Resource Evaluation added the following buildings to the above list of contributing buildings: 3, 7, 10, 14, 15, 17, 21, 22, 31, 32. 33, and 34. Other features, including the paved open space of the yard, the remnants of the rail spurs, and the graving dock were also recommended as contributing features, all within the context of a delineated cultural landscape. Based on those recommendations, on July 6, 2017, the Historical Advisory Board of the City of Alameda added by resolution the Alameda Marina Historic District to the City's local historic resource inventory, known as the Historical Building Study List (City of Alameda, 2017, included with this EIR in **Appendix D**). As a result, the District is considered a historical resource for the purposes of CEQA.

Building Descriptions

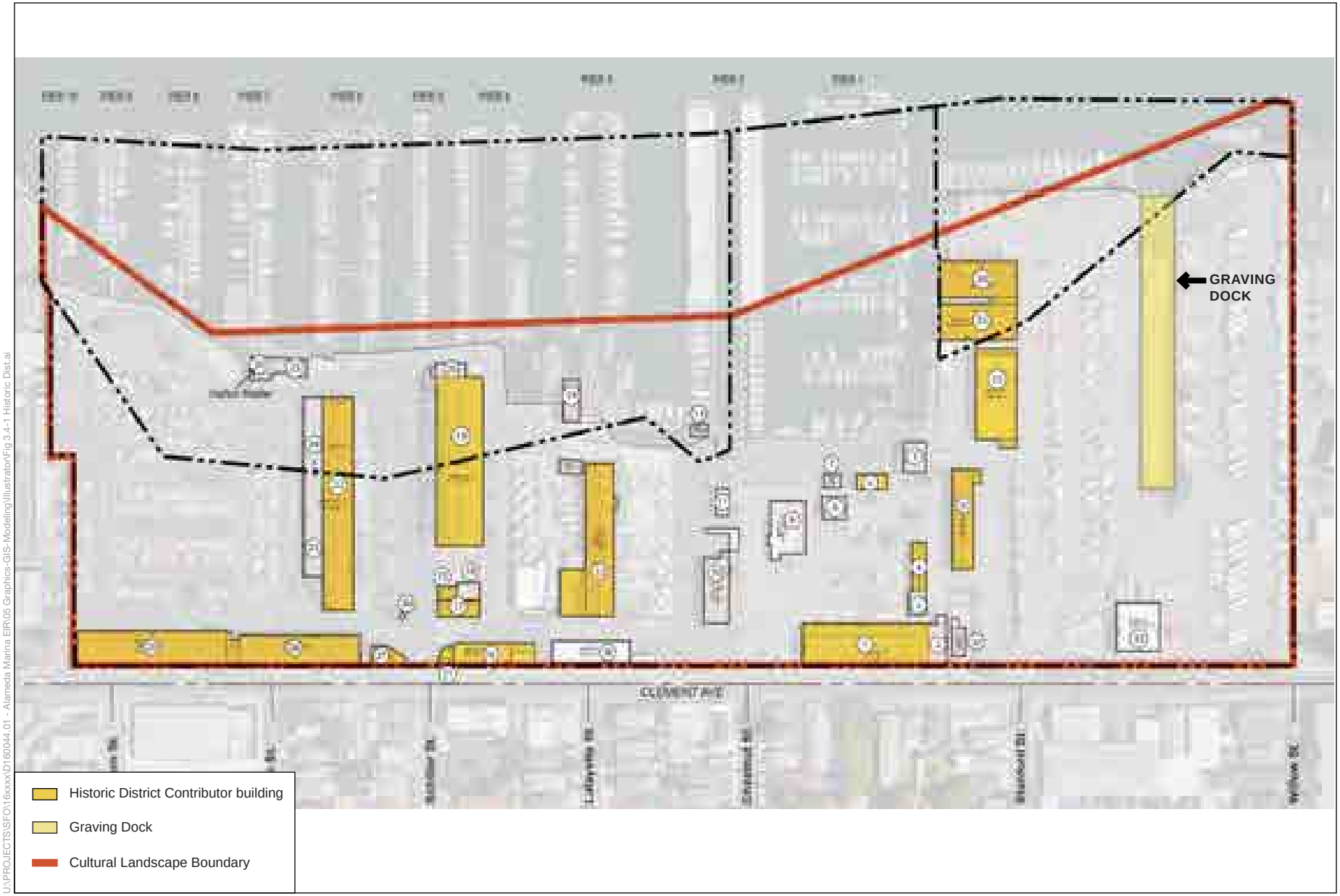
The following building descriptions are from the Historic Resource Evaluation: Alameda Marina 1815 Clement Avenue prepared by VerPlanck Historic Preservation Consulting (March, 2017) (see **Appendix D** of this EIR). Only Building 16, 19, and 27 are discussed individually as they have been found individually eligible. The buildings that constitute the larger Historic District are discussed as a group.

Alameda Marina Historic District

The Alameda Marina Historic District (District), as designated by the City's Historical Advisory Board, is comprised of 17 buildings and one structure (graving dock). See **Figure 4.4-1** for an overview of the District. Passed on July 6, 2017 by resolution of the Historical Advisory Board of the City of Alameda, the District was added to the City of Alameda's local historic resource inventory known as the Historical Building Study List. The District includes Buildings 1, 4, 6, 12, 15, 16, 17, 19, 21, 22, 27, 28, 29, 31, 33, 34 and the graving dock. The majority are one or two story, wood framed buildings clad in corrugated iron. One is steel framed (Building 19), a few are clad in stucco or plywood, one has replacement aluminum siding (Building 31), and three are over two stories in height (Buildings 19, 28, and 32). The City-designated cultural landscape is also shown in Figure 4.4-1, and generally includes the bulk of the Alameda Marina property, with the shoreline boundary approximately following the outline of the former shipyard.

Building 16, 1829 Clement Avenue, 1940

Building 16, which was built in 1940 as General Engineering & Dry Dock's administration building and drafting house, is a two-story, wood-frame, stucco-clad office building with a concrete slab foundation and a flat roof. Building 16 is fenestrated with double-hung vinyl replacement windows. It retains its original main entrance, which contains a pair of single-panel,



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SOURCE: Adapted from VerPlanck 2017

Alameda Marina Master Plan EIR

Figure 4.4-1
Alameda Marina Historic District

ESA

glazed wood doors with brass hardware and sidelights. The exterior of the building, which is very intact, is the most elaborately designed of any building on the Alameda Marina property. Similar to its neighbor, Building 27, it is designed in the Streamline Moderne style. The exterior features horizontal stucco bands marking the fenestration on each floor level, an entrance pavilion featuring a canopy embellished with speed lines, and a "reeded" spandrel and parapet above the entrance on the second floor level. The interior retains much of its original floorplan and finish materials as well. Building 16, which appears to be in good condition, is an office building leased to various businesses. Aside from the windows, which were replaced in 2009-10, and bathroom upgrades and ADA ramps built at the same time, Building 16 has undergone few alterations. Building 16 is one of the few buildings on the Alameda Marina property that retains a very high degree of integrity from the World War II period.

Building 19, 1827 Clement Avenue, 1941–1942

Building 19, which was built in 1941–1942 as a machine shop and riggers' loft, is a three-story, steel-frame, corrugated iron-clad industrial building with a concrete slab foundation and a gable roof. It has a shed-roofed wing (originally the riggers' loft) to the east that looks like an addition, but was part of the original design. It has an addition on the north façade (Building 20), which was constructed in 1941 as a machine shop. Building 19 is fenestrated with multi-lite steel industrial windows arranged in nearly continuous bands. The building has several steel, hollow-core man doors and several metal roll-up freight doors along its first floor level. Building 19, which is very intact, is the largest and most visually striking of any of the industrial buildings on the project site surviving from the World War II period. Designed in a utilitarian, industrial vocabulary that betrays influences of the International Style, the exterior of Building 19 features ribbon windows and a precise geometrical massing that catches the eye. The interior retains much of its original floorplan, exposed industrial materials, and a large gantry crane that runs on tracks above the floor in the main volume. Building 19, which appears to be in good condition, was formerly leased to a company that makes submersible vessels. Aside from the roof, which was replaced in the 1990s, and several new interior partitions, Building 19 has undergone few alterations. Building 19 is one of the few buildings on the Alameda Marina property that retains a very high degree of integrity from the World War II period.

Building 27, 1801 Clement Avenue, 1940

Building 27, which was built in 1940 as the shipyard's hospital and clinic, is a two-story, wood-frame, stucco-clad office building with a concrete slab foundation and a flat roof. Building 27, which has a wedge-shaped plan, is fenestrated with a mixture of double-hung vinyl replacement windows and some original wood windows. It retains its original entrance, which contains a single-panel, glazed wood door with brass hardware and sidelights. The exterior of the building, which is very intact, is closely related to its neighbor, the former administration building (Building 16), next-door. Designed in the Streamline Moderne style, the exterior of Building 27 features horizontal stucco bands marking the fenestration on both floor levels. The interior retains much its original floorplan and many of its original finish materials as well. Building 27, which appears to be in good condition, is an office building leased to various businesses. Aside from some of the windows, which were replaced in 2009-10, and bathroom upgrades and ADA ramps built at the same time, Building 27 has undergone few alterations. Building 27 is one of the few

buildings on the Alameda Marina property that retains a very high degree of integrity from the World War II period.

4.4.3 Regulatory Setting

Federal

Cultural resources are considered through the National Historic Preservation Act (NHPA) of 1966, as amended (54 U.S.C. 306108), and it's implementing regulations. Prior to implementing an "undertaking" (e.g., federal funding or issuing a federal permit), Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties (i.e., properties listed in or eligible for listing in the National Register of Historic Places [National Register]) and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register. Under the NHPA, a property is considered significant if it meets the National Register listing criteria at 36 CFR 60.4, as stated below:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and that:

a) Are associated with events that have made a significant contribution to the broad patterns of our history, or

b) Are associated with the lives of persons significant in our past, or

c) Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or

d) Have yielded, or may be likely to yield, information important in prehistory or history.

Federal review of projects is normally referred to as the Section 106 process. This process is the responsibility of the federal lead agency. The Section 106 review normally involves a four-step procedure, which is described in detail in the implementing regulations (36 CFR Part 800):

- Identify historic properties in consultation with the SHPO and interested parties;
- Assess the effects of the undertaking on historic properties;
- Consult with the SHPO, other agencies, and interested parties to develop an agreement that addresses the treatment of historic properties and notify the Advisory Council on Historic Preservation; and finally,
- Proceed with the project according to the conditions of the agreement.

State

The State of California consults on implementation the NHPA of 1966, as amended, and also oversees statewide comprehensive cultural resource surveys and preservation programs. The

California Office of Historic Preservation, as an office of the California Department of Parks and Recreation (DPR), implements the policies of the NHPA on a statewide level. The Office of Historic Preservation also maintains the California Historical Resources Inventory. The State Historic Preservation Officer is an appointed official who implements historic preservation programs within the state's jurisdictions.

California Environmental Quality Act

CEQA, as codified in Public Resources Code (PRC) Section 21000 et seq., is the principal statute governing the environmental review of projects in the state. CEQA requires lead agencies to determine if a proposed project would have a significant effect on historical resources, including archaeological resources. The CEQA Guidelines define a historical resource as: (1) a resource in the California Register; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

CEQA requires lead agencies to determine if a proposed project would have a significant effect on important archeological resources, either historical resources or unique archeological resources. If a lead agency determines that an archeological site is a historical resource, the provisions of Public Resources Code Section 21084.1 would apply and CEQA Guidelines Sections 15064.5(c) and 15126.4 and the limits in Public Resources Code Section 21083.2 would not apply. If an archaeological site does not meet the CEQA Guidelines criteria for a historical resource, then the site may meet the threshold of PRC Section 21083.2 regarding unique archaeological resources. A unique archaeological resource is "an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria.

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person" (PRC Section 21083.2 [g]).

The CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of the project on that resource shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064[c][4]).

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state

and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for eligibility are based on National Register criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for or listed in the National Register.

To be eligible for the California Register, an historical resource must be significant at the local, state, and/or federal level under one or more of the following criteria.

1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

2) Is associated with the lives of persons important in our past.

3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

4) Has yielded, or may be likely to yield, information important in prehistory or history (PRC Section 5024.1[c]).

For a resource to be eligible for the California Register, it must also retain enough integrity to be recognizable as a historical resource and to convey its significance. A resource that does not retain sufficient integrity to meet the National Register criteria may still be eligible for listing in the California Register.

California Public Resources Code and Health and Safety Code

Several sections of the PRC protect cultural resources. Under Section 5097.5, no person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site (including fossilized footprints), inscriptions made by human agency, rock art, or any other archaeological, paleontological, or historical feature situated on public lands, except with the express permission of the public agency that has jurisdiction over the lands. Violation of this section is a misdemeanor. Section 5097.98 states that if Native American remains are identified within a project area, the lead agency must work with the appropriate Native Americans as identified by the Native American Heritage Commission and develop a plan for the treatment or disposition of, with appropriate dignity, the human remains and any items associated with Native American burials. These procedures are also addressed in Section 15064.5 of the CEQA Guidelines. California Health and Safety Code Section 7050.5 prohibits disinterring, disturbing, or removing human remains from a location other than a dedicated cemetery. Section 30244 of the PRC requires reasonable mitigation for impacts on paleontological and archaeological resources that occur as a result of development on public lands.

Title 14, Section 4307 of the California Code of Regulations (CCR) also prohibits any person from removing, inuring, defacing, or destroying any object of paleontological, archaeological, or historical interest or value.

Assembly Bill 52

In September of 2014, the California Legislature passed Assembly Bill (AB) 52, which added provisions to the PRC regarding the evaluation of impacts on tribal cultural resources under CEQA, and consultation requirements with California Native American tribes. In particular, AB 52 now requires lead agencies to analyze project impacts on "tribal cultural resources" separately from archaeological resources (PRC Section 21074; 21083.09). The Bill defines "tribal cultural resources" in a new section of the PRC, Section 21074. AB 52 also requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC Section 21080.3.1, 21080.3.2, 21082.3).

Specifically, PRC Section 21084.3 states:

a) Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.

b) If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process provided in Section 21080.3.2, the following are examples of mitigation measures that, if feasible, may be considered to avoid or minimize the significant adverse impacts:

    1) Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

    2) Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

        (A) Protecting the cultural character and integrity of the resource.

        (B) Protecting the traditional use of the resource.

        (C) Protecting the confidentiality of the resource.

    3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

    4) Protecting the resource.

Finally, AB 52 requires the Office of Planning and Research to update Appendix G of the CEQA Guidelines by July 1, 2016 to provide sample questions regarding impacts to tribal cultural resources (PRC Section 21083.09). AB 52 applies to those projects for which a lead agency has issued a Notice of Preparation (NOP) of an environmental impact report or notice of intent to adopt a negative declaration on or after July 1, 2015.

Local

City of Alameda General Plan

The City of Alameda General Plan provides the following guiding and implementing policies regarding cultural resources that apply to the proposed project:

Implementing Policies: Architectural Resources

3.3.a Continue to identify quality architecture of all periods in Alameda's history and participate in programs to increase owners' and buyers' awareness of the importance of preservation.

3.3.b Consider formation of Historic Districts within which alterations to existing structures would be regulated to maintain neighborhood scale and historic character.

3.3.c Maintain strong demolition control for historic properties.

3.3.d New construction, redevelopment and alterations should be compatible with historic resources in the immediate area.

3.3.e Develop detailed design guidelines to ensure protection of Alameda's historic, neighborhood, and small-town character. Encourage preservation of all buildings, structures, areas and other physical environment elements having architectural, historic or aesthetic merit, including restoration of such elements where they have been insensitively altered. Include special guidelines for older buildings of existing or potential architectural, historical or aesthetic merit which encourage retention of original architectural elements and restoration of any missing elements. The design guidelines include detailed design standards for commercial districts.

3.3.j Encourage owners of poorly remodeled but potentially attractive older buildings to restore the exterior of these buildings to their original appearance. Provide lists of altered buildings which present special design opportunities and make the lists widely available. Develop financial and design assistance programs to promote such restoration.

3.3.k Require that any exterior changes to existing buildings receiving City rehabilitation assistance or related to Use Permits, Variances or Design Review, or other discretionary City approvals be consistent with the building's existing or original architectural design unless the City determines either (a) that the building has insufficient existing or original design merit of historical interest to justify application of this policy or (b) that application of this policy would cause undue economic or operational hardship to the applicant, owner or tenant.

Guiding Policy: Historic and Archaeologic Resources

5.6.a Protect historic sites and archaeologic resources for their aesthetic, scientific, educational, and cultural values. Historic preservation programs, such as the measures proposed within the 1980 Historic Preservation Element, have been successful in preserving the small-town character of many California communities.

Implementing Policies: Historic and Archaeologic Resources

5.6.b Working in conjunction with the California Archaeological Inventory, review proposed development projects to determine whether the site contains known prehistoric or historic cultural resources and/or to determine the potential for discovery of additional cultural resources.

5.6.c Require that areas found to contain significant historic or prehistoric archaeological artifacts be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation. The California Environmental Quality Act (CEQA) requires evaluation of any archaeological resource on the site of a development project. Unique resources, as defined by State law, should be protected, either by physical measures or by locating development away from the site. A preferred preservation method involves

covering a site with earth fill for potential future, leisurely excavation; immediate excavation by qualified archaeologists should be undertaken only if such protection is infeasible.

City of Alameda Historic Resources Inventory

From the City's website:

> In April 1978, staff of the City Planning Department began a comprehensive survey of Alameda's architectural and historical heritage. The goal of the survey was two-fold: identify Alameda's heritage, and compile an initial list of buildings and other resources from which the Historical Building Study List could be compiled. One full--time staff person, several consultants, and more than 100 volunteers began a systematic investigation of both the history and the architecture of Alameda. The survey was supplemented by archival research, primarily of building permit records. Based on this architectural and historical information, the survey staff, an architectural historian, and a graduate student of architecture evaluated the City's architecture.

The local Historic Resources Inventory consists of the Historic Monument, Historic Buildings Study and the Historic Signs lists. Each property on the Historic Buildings Study List is preceded by an uppercase letter in parentheses which indicates the type of historic resource located on the property.

> **N** – A historic resource of the highest quality, eligible for listing in the National Register of Historic Places, usually because of its architectural significance. These are of the highest priority for inclusion on the list of Alameda Historical Monuments.
>
> **S** – A historic resource distinguished by its architectural, historical, or environmental significance, eligible for inclusion in the State Historic Resources Inventory, and of secondary priority for inclusion on the list of Alameda Historical Monuments. Many of these are also eligible for listing in the National Register of Historic Places. Others would be eligible if design integrity were restored.
>
> **B** – A resource which, due to its scale, massing, materials, style, and other features, is similar to a nearby "N" or "S" resource and serves as Background support for it. These resources are eligible for inclusion in a group or district nomination to the National Register of Historic Places.
>
> **E** – A resource which, by itself, might be insignificant, but which, together with its neighbors, forms an Environment which is distinguished by its continuity, its setting, its urban design features, and its integrity. This resource derives its significance from its association with neighboring resources.
>
> **H** – A resource which may have Historical importance because of its apparent age or location, or may have architectural importance because of its similarity to other buildings done by important architects and/or builders. Historic research should precede further evaluation of this resource.

Some of the buildings and resources have been further studied by the City or private individuals. The form or report may be on file with the City Planning Department, and is indicated by a lowercase letter following the address.

n – Included on the National Register of Historic Places.

np – Nomination form for National Register of Historic Places designation has been prepared.

s – A State Historic Resources Inventory form has been prepared.

sg – A group State Historic Resources Inventory form has been prepared.

ap – An Alameda Historical Monument report has been prepared.

4.4.4 Impacts and Mitigation Measures

Significance Criteria

Consistent with Appendix G of the CEQA *Guidelines*, a project would cause adverse impacts to cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5;
- Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines Section 15064.5;
- Disturb any human remains, including those interred outside of formal cemeteries; or
- Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074.

According to the CEQA Guidelines Section 15064.5(a)(3), in general, a resource shall be considered "historically significant" if the resource meets the criteria for listing on the California Register (PRC Section 5024.1). This section also provides standards for determining what constitutes a "substantial adverse change" that must be considered a significant impact on historical resources.

In addition, a resource included on a local register of historical resources, as defined by PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g), shall be presumed to be historically or culturally significant.

Impact Analysis

Impact CUL-1: Project implementation would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines, Section 15064.5. (*Significant and Unavoidable, with Mitigation*)

CEQA Guidelines Section 15064.5 requires the lead agency to consider the effects of a project on historical resources. A historical resource is defined as any building, structure, site, or object listed in or determined to be eligible for listing in the California Register, or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California based upon substantial evidence.

Though the property as a whole appears ineligible for listing in the California Register due to loss of integrity, there are three buildings that appear individually eligible for the California Register under Criteria 1 and 3, including Buildings 16, 19, and 27. These three buildings are recommended as historical resources under Section 15064.5(a) of CEQA (Verplanck, 2017). Also, Buildings 1, 4, 6, 12, 15, 16, 17, 19, 21, 22, 27, 28, 29, 31, 32, 33, 34, and the graving dock are included as contributing buildings/structures to the locally designated Alameda Marina Historic District.

The project includes the demolition of 26 of the 37 buildings in the project area. Of the 17 buildings and one structure in the Alameda Marina Historic District, 11 would be demolished (Buildings 1, 4, 6, 12, 22, 28, 29, 31, 32, 33, and 34). Buildings 13, 14, 16, 17, 18, 19, 21, 25, 26, and 27 would remain. All three individually eligible buildings (16, 19, and 27) would be retained. The demolition of many of the District's contributing buildings, which have been determined to be historical resources, is considered a significant impact under CEQA. This impact cannot be reduced to a less-than-significant level; however, implementation of the following mitigation measures would reduce impacts, to the extent feasible, to historical resources by documenting the resource and preserving the history of the site and buildings. Overall, the proposed project would cause a substantial adverse change in the significance of a historical resource, and this impact would be *significant and unavoidable with mitigation.*

> **Mitigation Measure CUL-1a: Treatment of Historic Properties (Buildings 16 19 and 27).** Alterations, to the exteriors of Buildings 16, 19 and 27, shall conform to the Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, if feasible (NPS, 1995) and PRC 5024.5.
>
> **Mitigation Measure CUL-1b: Documentation.** The project proponent shall prepare a treatment plan including but not limited to photo documentation and public interpretation of the Alameda Marina Historic District (Buildings 1, 4, 6, 12, 15, 16, 17, 19, 21, 22, 27, 28, 29, 31, 32, 33, 34, and the graving dock). Photo documentation will be overseen by a Secretary of the Interior–qualified architectural historian, documenting the affected historical resource. in accordance with the National Park Service's Historic American Buildings Survey (HABS) and/or Historic American Engineering Record (HAER) standards. Such standards typically include large-format photography using (4x5) negatives, written data, and copies of original plans if available. The HABS/HAER documentation packages will be archived at local libraries and historical repositories, as well as the Northwest Information Center of the California Historical Resources Information System.
>
> **Mitigation Measure CUL-1c: Interpretive Display.** Public interpretation of historical resources shall be provided and could include a plaque, kiosk, or other method of describing the Alameda Marina Historic District's historic or architectural importance to the general public. The design and placement of the display(s) shall be reviewed and approved by the City of Alameda Historic Advisory Board.

Rehabilitation of Buildings 16, 19 and 27 consistent with the Secretary's Standards would mitigate the impacts to these historic resources to a less-than-significant level. The recordation of a building or structure to HABS/HAER standards and public interpretation efforts would reduce

impacts on significant historic buildings and structures, but such efforts typically do not reduce those impacts to a less-than-significant level (CEQA Section 15126.4(b)(2)). Impacts to significant historic buildings or structures under these circumstances would remain significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Impact CUL-2: Project construction could cause a substantial adverse change in the significance of an archaeological resource, including those determined to be a historical resource defined in Section 15064.5 or a unique archaeological resource defined in PRC 21083.2. (*Less than Significant with Mitigation*)

This section discusses archaeological resources, both as historical resources according to Section 15064.5 as well as unique archaeological resources as defined in Section 21083.2(g). A significant impact would occur if the project would cause a substantial adverse change to a significant archaeological resource through physical demolition, destruction, relocation, or alteration of the resource.

Records at the NWIC indicate that an extensive archaeological site with human burials (CA-ALA-11) is located in a portion of the project area. The site is recommended eligible for listing in the California Register. The disturbance of this resource would be a potentially significant impact. The significant impact could be an adverse effect to the scientific significance of the resource and/or an adverse effect to its significance to associated Native American tribal groups (see Impact CUL-4, below). Implementation of **Mitigation Measure CUL-2a (Archaeological Resources Management Plan)** would reduce potential impacts to the scientific significance of the resource to a less-than-significant level by requiring an archaeological testing and data recovery program (as well as archaeological monitoring, if warranted) consistent with a professionally developed Archaeological Resources Management Plan.

In addition, during ground disturbance outside of the known site boundaries within the project area, there is the potential to uncover previously unidentified archaeological resources. The disturbance of unknown archaeological resources would be a potentially significant impact. Implementation of **Mitigation Measure CUL-2b (Inadvertent Discovery of Archaeological Resources)** would reduce potential impacts to a less-than-significant level by ensuring that work would halt in the vicinity of an unanticipated find so that a qualified archaeologist and Native American representative can make additional recommendations, if required.

> **Mitigation Measure CUL-2a: Archaeological Resources Management Plan.** During the preliminary design for development within the project area, and prior to submittal of a building permit or grading application to the City of Alameda, the project applicant shall undertake the following:
>
> - ***Preservation in Place*.** A qualified archaeologist, in consultation with the City of Alameda, the project applicant, and the appropriate Native American representative(s) shall determine whether preservation in place of site CA-ALA-11 is

feasible. Consistent with CEQA Guidelines Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement.

If it is determined that preservation in place is not feasible for the resource and another type of mitigation would better serve the interests protected by CEQA, mitigation shall include testing and data recovery through archaeological investigations and the project applicant shall undertake the following:

- ***Archaeological Resources Management Plan*.** Because a significant archaeological resource (CA-ALA-11) has been previously identified in the project area, the project proponent shall retain a Secretary of the Interior-qualified archaeologist, in consultation with a Native American representative(s), to prepare and implement an Archaeological Resources Management Plan (ARMP). The ARMP shall include a preliminary testing program to identify the types of expected archaeological materials, the testing methods to be used to define site boundaries and constituents, and the locations recommended for testing. The purpose of the testing program will be to determine to the extent possible the presence or absence of archaeological materials in the proposed areas of disturbance for the project and to determine whether those materials contribute to the significance of site CA-ALA-11. If a significant contributing element to the site is in the project area, the project proponent shall conduct a data recovery program as outlined in the ARMP. The ARMP will include how the data recovery program would preserve the significant information the archaeological resource is expected to contain. Treatment would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim of targeting the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the project. The ARMP shall include provisions for analysis of data in a regional context; reporting of results within a timely manner and subject to review and comments by the appropriate Native American representative, before being finalized; curation of artifacts and data at a local facility acceptable to the City and appropriate Native American representative; and dissemination of final confidential reports to the appropriate Native American representative, the Northwest Information Center of the California Historical Resources Information System and the City.

Mitigation Measure CUL-2b: Inadvertent Discovery of Archaeological Resources. During construction outside of known archaeological site boundaries, if prehistoric or historic-era cultural materials are encountered, all construction activities within 100 feet shall halt and the City shall be notified. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; artifact filled wells or privies; and deposits of metal, glass, and/or ceramic refuse.

The project applicant shall ensure that a Secretary of the Interior-qualified archaeologist inspect the find within 24 hours of discovery. If the find is determined to be potentially significant, the archaeologist, shall follow the guidelines provided in Mitigation Measure CUL-2a above.

Significance after Mitigation: Less than Significant.

Impact CUL-3: Project construction could disturb human remains, including those interred outside of formal cemeteries. (*Less than Significant with Mitigation*)

Based on known conditions and previous archaeological research, human burials occur within and in the vicinity of the project area and there is a high potential for the discovery of human remains during construction activities that involve ground disturbance. Disturbance of human remains would be a significant impact. Implementation of **Mitigation Measure CUL-3 (Inadvertent Discovery of Human Remains)** would ensure that impacts to human remains would be less-than-significant. To facilitate legal compliance, project construction personnel shall be alerted to the possibility of encountering human remains during construction, and apprised of the proper procedures to follow in the event they are found.

> **Mitigation Measure CUL-3: Inadvertent Discovery of Human Remains.** Pursuant to Section 7050.5 of the Health and Safety Code, and Section 5097.94 of the Public Resources Code of the State of California, the project applicant shall ensure the following:
>
> - Project construction personnel shall be informed of the potential of encountering human remains during construction, and the proper procedures to follow in the event of the discovery of human remains during construction.
>
> - In the event of the discovery of human remains during construction, work shall stop in that area and within 100 feet of the find. The Alameda County Coroner shall be notified and shall make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to their authority, they shall notify the Native American Heritage Commission who shall identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this State law, then the project applicant shall re-inter the human remains and items associated with Native American burials on the property in a location not subject to further ground disturbance.

Significance after Mitigation: Less than Significant.

Impact CUL-4: Project construction could cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074. (*Significant and Unavoidable with Mitigation*)

CEQA requires the lead agency to consider the effects of a project on tribal cultural resources. As defined in Public Resources Code Section 21074, tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, on the national, state, or local register of historical resources.

Per the requirements of PRC Section 21080, the City sent letters describing the proposed project to the local Native American tribes provided by the California Native American Heritage Commission (NAHC) as having an interest in the Alameda area. Andrew Galvan from the Ohlone Tribe contacted the City and requested a cultural resources monitoring program, including an archaeological monitor and Native American monitor, during ground disturbing activities.

Based on the background research there is an extensive prehistoric archaeological site with human burials (CA-ALA-11) present in a portion of the project area. The site is recommended as eligible for listing in the California Register and for the purposes of CEQA is considered a tribal cultural resource. In the event that construction activities disturb archaeological sites that are considered tribal cultural resources, damage would be considered a significant impact. Implementation of **Mitigation Measure CUL-2a (Archaeological Research Design and Treatment Plan)** described above, as well as **Mitigation Measure CUL-4 (Tribal Cultural Resources Interpretive Program)** would ensure that impacts to tribal cultural resources are recognized and the location is commemorated. In consultation with the appropriate Native American representatives, Mitigation Measure CUL-4 would provide for an interpretive program to honor the location and use of the area prior to historical development. However, unless the resource can be avoided and preserved in place according to the provisions set forth by PRC Section 21084.3, impacts to tribal cultural resources would not be reduced to a less-than-significant level and the impact would remain significant and unavoidable.

> **Mitigation Measure CUL-4: Tribal Cultural Resources Interpretive Program.** In consultation with the affiliated Native American tribal representatives, the proposed project shall be redesigned so as to avoid any adverse effect on the significant tribal cultural resource, if feasible. If preservation in place of the tribal cultural resource is not a sufficient or feasible option, the project applicant shall implement an interpretive program of the tribal cultural resource in consultation with affiliated tribal representatives. The plan shall identify, as appropriate, proposed locations for installations or displays, the proposed content and materials of those displays or installation, the producers or artists of the displays or installation, and a long term maintenance program. The interpretive program may include artist installations, preferably by local Native American artists, oral histories with local Native Americans, artifacts displays and interpretation, and educational panels or other informational displays.

Significance after Mitigation: Significant and Unavoidable.

Cumulative Impacts

Impact C-CUL-1: The project, in combination with past, present, and probable future projects, would substantially contribute to cumulative adverse historic architectural resources impacts. (*Significant and Unavoidable with Mitigation*)

The geographic scope for cumulative impacts on historic architectural resources includes projects in Alameda that would also involve the demolition of historic buildings. Similar to the proposed

project as described under Impact CUL-1, cumulative projects in the project vicinity could have a significant impact on eligible historic architectural resources.

The potential impacts of the project when considered together with similar impacts from other probable future projects in the vicinity could result in a significant cumulative impact on historic architectural resources. The proposed project's contribution to this impact could be cumulatively considerable, as documented above under Impact CUL-1, especially due to the unique nature of the site and its ties to both World War I and World War II. Many World War II-era shipyards in the Bay Area were demolished in the 1950s or 1960s, but, so far, the Alameda Marina has remained, albeit with a substantial loss of integrity as all water-side elements of the former shipyard were removed several decades ago.

Based on the information in this section and for the reasons summarized above, the proposed project could contribute considerably to the cumulative impact to historic resources, even after implementation of **Mitigation Measures CUL-1a, CUL-1b, and CUL-1c**. This impact is considered significant and unavoidable, with mitigation.

Impact C-CUL-2: The project, in combination with past, present, and probable future projects, could result in cumulative adverse impacts on archaeological resources and human remains. (*Less than Significant with Mitigation*)

The geographic scope for cumulative effects on archaeological resources and human remains includes projects in Alameda that would also involve excavation or similar ground disturbance in locations with previously recorded or as yet unknown archaeological resources, potentially with human remains. Similar to the proposed project as described under Impacts CUL-2 and CUL-3, cumulative projects in the project vicinity could have a significant impact on both recorded and unrecorded archaeological resources (including CA-ALA-11), including human remains interred outside of formal cemeteries, given the amount of construction-related ground disturbance that could occur for many of the cumulative projects. The potential impacts of the project when considered together with similar impacts from other probable future projects in the vicinity could result in a significant cumulative impact on archaeological resources and human remains. The proposed project's contribution to this impact could be cumulatively considerable, as documented above under Impacts CUL-2 and CUL-3. Mitigation Measures CUL-2a, CUL-2b, and CUL-3 would require implementation of legally-required appropriate treatment of human remains as well as archaeological testing, monitoring and/or data recovery programs to preserve the scientific value of an archaeological resource. Therefore, with implementation of **Mitigation Measures CUL-2a, CUL-2b, and CUL-3**, the proposed project's contribution to cumulative impacts to archaeological resources and human remains would not be considerable, and the impact would be less than significant with mitigation.

Impact C-CUL-3: The project, in combination with past, present, and probable future projects, could result in cumulative adverse impacts on tribal cultural resources. (*Significant and Unavoidable with Mitigation*)

The geographic scope for cumulative effects on tribal cultural resources includes projects in Alameda that would also involve disturbance in locations with tribal cultural resources, as defined by PRC Section 21074. Cumulative projects that would potentially impact tribal cultural resources would be a potentially significant impact. Similar to the proposed project, other projects in Alameda may include mitigation similar to Mitigation Measure CUL-4, which would provide for an interpretive program to honor the location and use of the area prior to historical development (in consultation with the appropriate Native American tribe). However, unless a tribal cultural resource can be avoided and preserved in place according to the provisions set forth by PRC Section 21084.3, impacts to tribal cultural resources would not be reduced to a less-than-significant level and the cumulative impact would be significant and unavoidable.

4.4.5 References – Cultural Resources

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4.5 Geology, Soils, and Paleontological Resources

4.5.1 Introduction

This section identifies and evaluates potential impacts related to geology, soils, seismic conditions, and paleontological resources that could result from implementation of the proposed project. This section establishes existing conditions based on regional geology and seismicity as well as a preliminary geotechnical investigation for the proposed project (Rockridge Geotechnical, 2012). The existing setting discussion is followed by a discussion of the regulatory framework, including federal, State, and local policies and regulations that pertain to geologic hazards, seismic hazards, and the protection of soil and paleontological resources. The impact analysis determines impacts based on the significance criteria as outlined by CEQA *Guidelines* Appendix G, and appropriate mitigation measures are identified where necessary.

CEQA requires analysis of a project's effects on the environment. Generally, consideration of the potential effects of a site's environment on a project are outside the scope of required CEQA review (*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal. 4th 369). The impacts discussed in this section related to increased exposure of people or structures to risks associated with seismic occurrences and location of people or structures on unstable geologic units are effects on users of the project and structures in the project of preexisting environmental hazards, and therefore "do not relate to environmental impacts under CEQA and cannot support an argument that the effects of the environment on the project must be analyzed in an EIR." (*Id.* at p. 474.) Nonetheless, this section analyzes potential effects of geology, seismicity, and soils on the project's implementation as set forth in CEQA Guidelines, Appendix G, Significance Criteria, in order to provide information to the public and decision-makers.

4.5.2 Environmental Setting

Regional Setting

The project site lies within the geologically complex region of California referred to as the Coast Ranges geomorphic province.[1] The Coast Ranges province lies between the Pacific Ocean and the Great Valley (Sacramento and San Joaquin valleys) provinces and stretches from the Oregon border to the Santa Ynez Mountains near Santa Barbara. Much of the Coast Range province is composed of marine sedimentary deposits and volcanic rocks that form northwest trending mountain ridges and valleys, running subparallel to the San Andreas Fault Zone. The relatively thick marine sediments dip east beneath the alluvium of the Great Valley. The Coast Ranges can be further divided into the northern and southern ranges, which are separated by the San Francisco Bay. The San Francisco Bay lies within a broad depression created from an east-west expansion between the San Andreas and the Hayward fault systems.

[1] A geomorphic province is an area that possesses similar bedrock, structure, history, and age.

Predominantly Franciscan Complex rocks of Jurassic and Cretaceous age (160 to 100 million years old) flank the large depression that makes up the San Francisco Bay. The East Bay Hills are bounded to the west by the Hayward fault that trends from Fremont northwest to Point Pinole in the north. Lying at the western foot of the East Bay Hills, the Bay margin is composed of broad alluvial fan deposits of Quaternary-age (2 million years old to recent in age) that have accumulated from erosion of the surrounding hills.

Structurally, the site is located atop the eastern edge of a fault-bound block named the Marin-San Francisco block. Uplift and erosion of the Berkeley Hills produced large streams depositing broad fans along the bay margin including the San Antonio and Temescal formations. The Merritt Sand beach deposit, which underlies the majority of Alameda and parts of West Oakland, formed along the former eastern bay margin. Some of the Merritt Sand was reworked as sand dune deposits. The Pleistocene deposits were uplifted and dissected by stream channels that were later filled with younger stream and fan deposits of the Temescal formation. During Holocene time (within the past 11,000 years), fluvial activity eroded these sediments and resulted in the estuary channel between Oakland and Alameda. Recent bay mud and estuary deposits filled portions of the channel and buried near-shore portions of the Merritt Sand. Since the late 1800's, Alameda Island has been enlarged by placement of fill into the bay and estuaries, resulting in large sections of Alameda being underlain by artificial fill. In addition, the Oakland-Alameda Estuary was extended by man-made excavation and has been subjected to dredging to facilitate ship passage.

Project Setting

Geology and Soils

Review of geotechnical reports prepared for the project site show the soils to consist of San Antonio formation alluvial deposits overlain by Merritt Sand and alluvial deposit remnants of the Temescal formation, as well as Young Bay Mud and Holocene bay tidal flat deposits that are concealed beneath artificial fill. The San Antonio formation consists primarily of stiff to very stiff clay to silty clay, with occasional lenses of dense sands. Merritt Sand is generally composed of dense to very dense, well-sorted and well-drained, fine sand with thin silty and clayey interbeds also present. The Temescal formation is an alluvial deposit consisting of sandy silt and clay with occasional occurrences of gravel lenses. Young bay mud generally consists of silty clay and clay and is generally slightly sandier than the deeper water bay mud due to localized reworking of the Merritt Sand and Pleistocene alluvial fan deposits. The upper, younger artificial fill on-site is heterogeneous and composed of interbedded silty sand to sandy silt to silty clay. The older (lower) artificial fill is reported to include dredge materials from the bay including young bay mud, Merritt Sand and sediments of the Temescal formation.

In general, according to the most recent geotechnical report for the project site, the stratigraphy of the site from youngest to oldest consists of artificial fill (Qaf), Holocene bay tidal flat deposits (Qh_b) Young Bay Mud (Qb_y), alluvial deposit remnants of the Temescal formation (QT_c), Merritt Sand (QM), alluvial deposits of the upper member of the San Antonio formation (QS_u).

Historically on the project site, decommissioned facilities were often buried by fill, and some areas of the site are still underlain by remnants of old timber structures, foundation elements, abandoned

utilities, riprap, and concrete rubble. Numerous driven timber piles that supported former piers, cranes, and bulkheads were reportedly broken off at the mud line and still remain in place. Large timber cribbing and driven timber piles were reportedly left in place prior to filling of the former graving (dry) docks in the central portion of the site. There are also buried "deadman" anchors that provide lateral restraint to existing (or former) bulkhead structures along the waterfront, including the graving dock.

During the most recent geotechnical investigation at the site, the groundwater table was observed at depths ranging from 8 and 9.5 feet below existing grade. Groundwater beneath the site flows northeast towards the estuary and fluctuates with the tides, based on recent monitoring of wells for the nearby Cargill site at 2016 Clement Avenue (Crawford, 2016). Former groundwater monitoring wells at the project site indicated stabilized water levels ranging from 3.2 to 3.8 below existing grade. The groundwater levels at the site are expected to fluctuate several feet in response to tidal fluctuations with potentially larger fluctuations annually, depending on the amount of rainfall.

Faults and Seismicity

The project site lies within a region of California that contains many active and potentially active faults and is considered an area of high seismic activity, as shown in **Figure 4.5-1** and described in **Table 4.5-1**.[2] The U.S. Geological Survey (USGS) along with the California Geological Survey (CGS) and the Southern California Earthquake Center formed the 2007 Working Group on California Earthquake Probabilities (WGCEP), which has evaluated the probability of one or more earthquakes of magnitude 6.7 or higher occurring in the state of California over the next 30 years. The result of the evaluation indicated a 63 percent likelihood that such an earthquake event will occur in the Bay Area (USGS, 2008). Using information from recent earthquakes, improved mapping of active faults, and a new model for estimating earthquake probabilities, the 2014 WGCEP updated the 30-year earthquake forecast for California. The WGCEP reported that there is a 72 percent probability of at least one earthquake of magnitude 6.7 or greater striking somewhere in the San Francisco Bay region before 2043 (USGS, 2016).

Richter magnitude is a measure of the size of an earthquake as recorded by a seismograph, a standard instrument that records ground shaking at the location of the instrument but not necessarily at the location of a given project. The reported Richter magnitude for an earthquake represents the highest amplitude measured by the seismograph at a distance of 100 kilometers from the epicenter. Richter magnitudes vary logarithmically with each whole number step representing a tenfold increase in the amplitude of the recorded seismic waves. While Richter magnitude was historically the primary measure of earthquake magnitude, seismologists now use Moment Magnitude (Mw) as the preferred way to express the size of an earthquake. The Moment Magnitude scale is related to the physical characteristics of a fault including the rigidity of the rock, the size of fault rupture,

[2] An "active" fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 11,000 years). A "potentially active" fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer (Hart, 2007).

Base Map: U.S. Geological Survey, National Seismic Hazards Maps - Fault Sources, 2008.

EXPLANATION

Strike slip

Thrust (Reverse)

Normal

N

0 5 10 Miles

Approximate scale

U:\PROJECTS\SFO\16xxxx\D160044.01 - Alameda Marina EIR\05 Graphics-GIS-Modeling\Illustrator\Fig 4.5-1 Fault Map.ai

SOURCE: Rockridge Geotechnical

Alameda Marina Master Plan EIR

Figure 4.5-1
Regional Fault Map

ESA

TABLE 4.5-1
ACTIVE FAULTS IN THE PROJECT AREA VICINITY

Fault	Distance and Direction from Project Site	Recency of Movement	Historical Seismicity[a]	Maximum Moment Magnitude Earthquake (Mw)[b]
Hayward	3.7 miles northeast	Historic (1868 rupture)	M 6.8, 1868 Many <M 4.5	7.1
San Andreas	14.3 miles west	Historic (1906; 1989 ruptures)	M 7.1, 1989 M 8.25, 1906 M 7.0, 1838 Many <M 6	7.9
Concord–Green Valley	16.8 miles northeast	Historic (1955)	Historic active creep	6.7
Rodgers Creek	23.6 miles northwest	Historic	M 6.7, 1898 M 5.6, 5.7, 1969	7.0
Calaveras	13.7 miles east	Historic (1861 1911, 1984)	M 5.6–M 6.4,1861 M 6.2, 1911, 1984	6.8
Marsh Creek–Greenville	24.2 miles east	Historic (1980 rupture)	M 5.6 1980	6.9
San Gregorio	19.3 miles west	Prehistoric (Sometime prior to 1775 but after 1270 A.D.)	n/a	7.3

[a] Richter magnitude (M) and year for recent and/or large events. The Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave.

[b] Moment Magnitude (Mw) is related to the physical size of a fault rupture and movement across a fault. Moment magnitude provides a physically meaningful measure of the size of a faulting event (CGS, 2002). The Maximum Moment Magnitude Earthquake, derived from the joint CGS/USGS Probabilistic Seismic Hazard Assessment for the State of California (Peterson, 1996).

SOURCES: Hart, 2007; Jennings, 2010; Peterson e. al., 1996; USGS, 2003a, and USGS and CGS 2006; Rockridge Geotechnical, 2012

and the style of movement or displacement across a fault (CGS, 2002). Although the formulae of the scales are different, they both contain a similar continuum of magnitude values, except that Mw can reliably measure larger earthquakes and do so from greater distances.

Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. For this reason, earthquake intensities are also measured in terms of their observed effects at a given locality. The Modified Mercalli (MM) intensity scale in **Table 4.5-2** is commonly used to measure earthquake damage due to ground shaking. The MM values for intensity range from I (earthquake not felt) to XII (damage nearly total), and intensities ranging from IV to X could occur on those faults that have the highest probability of generating earthquakes of magnitude (M) 6.7 or greater in the Bay Area (USGS, 2003a). The Hayward-Rodgers Creek Fault has a 33 percent probability of one or more magnitude 6.7 or greater quakes by 2043 (USGS, 2016) and has the potential to cause moderate to significant structural damage.[3] The intensities of an earthquake will vary over the region of a fault and generally decrease with distance from the epicenter of the earthquake.

[3] The damage level represents the estimated overall level of damage that will occur for various MM intensity levels. The damage, however, will not be uniform. Not all buildings perform identically in an earthquake. The age, material, type, method of construction, size, and shape of a building all affect its performance.

TABLE 4.5-2
MODIFIED MERCALLI INTENSITY SCALE

Intensity Value	Intensity Description	Average Peak Acceleration (% g[a])
I	Not felt except by a very few persons under especially favorable circumstances.	< 0.17 g
II	Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.	0.17-1.4 g
III	Felt noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly, vibration similar to a passing truck. Duration estimated.	0.17-1.4 g
IV	During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.	1.4–3.9 g
V	Felt by nearly everyone, many awakened. Some dishes and windows broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles may be noticed. Pendulum clocks may stop.	3.5 – 9.2 g
VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; and fallen plaster or damaged chimneys. Damage slight.	9.2 – 18 g
VII	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.	18 – 34 g
VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.	34 – 65 g
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	65 – 124 g
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.	> 124 g
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	> 1.24 g
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	> 1.24 g

a g (gravity) = 980 centimeters per second squared. 1.0 g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

SOURCE: ABAG, 2003; USGS, 2003b; Wald, 1999

The San Andreas, Hayward and Calaveras Faults pose the greatest threat of significant damage in the Bay Area according to the WGCEP (USGS, 2003a). These three faults exhibit strike-slip orientation and have experienced movement within the last 150 years.[4] Other principal faults capable of producing significant ground shaking in the Bay Area are listed on Table 4.5-1 and include the Concord-Green Valley, Marsh Creek-Greenville, San Gregorio and Rodgers Creek Faults.

The major active faults in the area are the Hayward, Rodgers Creek, San Andreas, San Gregorio, and Calaveras faults. Of the faults in the vicinity of the proposed project, the closest active fault to the site is the Hayward fault. Inactive faults are also located throughout the Bay Area. Inactive faults with a long period of inactivity do not provide any guarantee that a considerable seismic event could occur. Occasionally, faults classified as inactive can exhibit secondary movement during a major event on another active fault.

Hayward Fault

The Hayward Fault Zone is the southern extension of a fracture zone that includes the Rodgers Creek Fault (north of San Pablo Bay), the Healdsburg fault (Sonoma County), and the Maacama fault (Mendocino County). The Hayward fault trends to the northwest within the East Bay, and extends from San Pablo Bay in Richmond 60 miles south to San Jose. The Hayward fault in San Jose converges with the Calaveras fault, a similar type fault that extends north to Suisun Bay. The Hayward fault is designated as an active fault.

Historically, the Hayward fault generated one sizable earthquake in the 1800s.[5] In 1868, a Richter magnitude 7 earthquake on the southern segment of the Hayward Fault ruptured the ground for a distance of about 30 miles. Recent analysis of geodetic data indicates surface deformation may have extended as far north as Berkeley. Lateral ground surface displacement during these events was at least 3 feet.

A characteristic feature of the Hayward fault is its well-expressed and relatively consistent fault creep.[6] Although large earthquakes on the Hayward fault have been rare since 1868, slow fault creep has continued to occur and has caused measurable offset. Fault creep on the East Bay segment of the Hayward fault is estimated at 9 millimeters per year (mm/yr) (Peterson, et al., 1996). However, a large earthquake could occur on the Hayward fault with an estimated Mw 7.1 (Table 4.5-1). The WGCEP includes the Hayward–Rodgers Creek Fault Systems in the list of faults with the highest probabilities of generating damaging earthquakes (USGS, 2016).

4 A strike-slip fault is a fault on which movement is parallel to the fault's strike or lateral expression at the surface.
5 Prior to the early 1990s, it was thought that a Richter magnitude 7 earthquake occurred on the northern section of the Hayward Fault in 1836. However, a study of historical documents by the California Geological Survey concluded that the 1836 earthquake was not on the Hayward Fault (Bryant and Cluett, 2000).
6 Fault creep is defined as the slow, more or less continuous movement occurring on faults due to ongoing tectonic deformation (USGS, 2012).

San Andreas Fault

The San Andreas Fault Zone is a major structural feature that forms at the boundary between the North American and Pacific tectonic plates, extending from the Salton Sea in Southern California near the border with Mexico to north of Point Arena, where the fault trace extends out into the Pacific Ocean. The main trace of the San Andreas fault runs through the Bay Area and trends northwest through the Santa Cruz Mountains and the eastern side of the San Francisco Peninsula. As the principal strike-slip boundary between the Pacific plate to the west and the North American plate to the east, the San Andreas is often a highly visible topographic feature, such as between Pacifica and San Mateo, where Crystal Springs Reservoir and San Andreas Lake clearly mark the rupture zone. Near San Francisco, the San Andreas fault trace is located immediately off-shore near Daly City and continues northwest through the Pacific Ocean approximately 6 miles due west of the Golden Gate Bridge.

In the San Francisco Bay Area, the San Andreas Fault Zone was the source of the two major seismic events in recent history that affected the San Francisco Bay region. The 1906 San Francisco earthquake was estimated at M 7.9 and resulted in approximately 290 miles of surface fault rupture, the longest of any known continental strike slip fault. Horizontal displacement along the fault approached 17 feet near the epicenter. The more recent 1989 Loma Prieta earthquake, with a magnitude of Mw 6.9, resulted in widespread damage throughout the Bay Area (ABAG, 2003). The Northern San Andres Fault has a 22 percent likelihood of one or more magnitude 6.7 or greater quakes by 2043 (USGS, 2016).

Calaveras Fault

The Calaveras fault is a major right-lateral strike-slip fault that has been active during the last 11,000 years. The Calaveras Fault is located in the eastern San Francisco Bay region and generally trends along the eastern side of the East Bay Hills, west of San Ramon Valley, and extends into the western Diablo Range, to eventually join the San Andreas Fault Zone south of Hollister. The northern extent of the fault zone is somewhat conjectural and could be linked with the Concord Fault.

This fault separates rocks of different ages, with older rocks west of the fault and younger sedimentary rocks to the east. The location of the main active fault trace is defined by youthful geomorphic features (linear scarps and troughs, right-laterally deflected drainage, and sag ponds) and local groundwater barriers. The Calaveras fault is designated as an Alquist-Priolo Earthquake Fault Zone. There is a distinct change in slip rate and fault behavior north and south of the vicinity of Calaveras Reservoir. North of Calaveras Reservoir, the fault is characterized by a relatively low slip rate of 5-6 mm/year and sparse seismicity. South of Calaveras Reservoir the fault zone is characterized by a higher rate of surface fault creep. The Calaveras Fault has been the source of numerous moderate magnitude earthquakes, and the probability of a large earthquake, greater than M 6.7, is much lower than on the San Andreas or Hayward Faults (USGS, 2003a). However, this fault is considered capable of generating earthquakes with upper bound Mw ranging from 6.6 to 6.8. The Calaveras Fault has a 26 percent probability of one or more magnitude 6.7 or greater quakes by 2043 (USGS, 2016).

Rodgers Creek Fault

The Rodgers Creek Fault Zone (RCFZ), located 23.6 miles northeast of the project site, is considered to be the northern extension of the Hayward Fault Zone. The most recent significant earthquakes on the RCFZ both occurred on October 1, 1969. On this date, two earthquakes of Richter magnitude 5.6 and 5.7 occurred within an 83-minute period. Buildings in Santa Rosa sustained serious damage during these quakes. Prior to these events, the last major earthquake (estimated Richter magnitude 6.7) was generated in 1898 with an epicenter near Mare Island at the north margin of San Pablo Bay. The combined Hayward–Rodgers Creek Fault System has a 33 percent probability of one or more magnitude 6.7 or greater earthquakes by 2043 (USGS, 2016).

Concord-Green Valley Fault

The Concord-Green Valley fault, located 16.8 miles northeast of the project site, extends from Walnut Creek north to Wooden Valley (east of Napa Valley). Historical records indicate that no large earthquakes have occurred on the Concord or Green Valley faults (Bryant, 2005). However, a moderate earthquake of magnitude M 5.4 occurred on the Concord fault segment in 1955. The Concord and Green Valley faults exhibit active fault creep and are considered to have a small probability of causing a significant earthquake. The Concord-Green Valley fault has a 16 percent probability of one or more magnitude 6.7 or greater quakes by 2043 (USGS, 2016).

The San Gregorio Fault

The San Gregorio fault, located 19.3 miles west of the project site, is an active, structurally complex fault zone as much as 5 km wide. The fault zone is mainly located offshore, west of San Francisco Bay and Monterey Bay, with onshore locations at promontories, such as Moss Beach, Pillar Point, Pescadero Point, and Point Año Nuevo. While there is no record of historic seismicity, the most recent earthquake along the San Gregorio Fault Zone is thought to have occurred after 1270 AD to 1400 AD, but prior to the arrival of Spanish missionaries in 1775 AD (Bryant, 2005). The San Gregorio fault has a 6 percent chance of one or more magnitude 6.7 or greater quakes by 2043 (USGS, 2016).

Seismic Hazards

Surface Fault Rupture

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude, sense, and nature of fault rupture can vary for different faults or even along different strands of the same fault. Ground rupture is considered more likely along active faults.

The project site is not within an Alquist-Priolo Fault Rupture Hazard Zone, as designated through the Alquist-Priolo Earthquake Fault Zoning Act, and no mapped active faults are known to pass through the immediate project region.

Ground Shaking

Strong ground shaking from earthquakes generated by active faults in the Bay Area is a significant hazard to the project site and could affect the site during the next 30 years. During the life of the project, proposed improvements are likely to be subjected to at least one moderate to severe earthquake that would cause strong ground shaking.

The severity of ground shaking at the project site resulting from a specific earthquake would depend on the characteristics of the generating fault, distance to the energy source, the magnitude of the event, and the site-specific geologic conditions. Earthquakes on the active faults (listed in **Table 4.5-1**) are expected to produce a range of ground shaking intensities within the project site. Ground shaking may affect areas hundreds of miles distant from the earthquake's epicenter. Historic earthquakes have caused strong ground shaking and damage in the San Francisco Bay Area – the 1989 Loma Prieta earthquake, for example, caused severe damage. This nearly 20 second earthquake generated a moment magnitude of 6.9 with an average peak ground acceleration 0.7 g. At Oakland and San Francisco recording sites over 50 miles away, the average peak ground acceleration was measured at 0.3 g (CGS, 1990).

The primary tool that seismologists use to describe groundshaking hazard is a probabilistic seismic hazard assessment (PSHA). The PSHA for the State of California takes into consideration the range of possible earthquake sources (including such worst-case scenarios as described above) and estimates their characteristic magnitudes to generate a probability map for groundshaking. The PSHA maps depict PGA value that have a 10 percent probability of being exceeded in 50 years (i.e., a 1 in 500 chance of occurring each year). Use of this probability level allows engineers to design structures to withstand ground motions that have a 90 percent chance of *not* occurring in the next 50-year interval, thus making buildings safer than if they were designed only for the ground motions that are expected within the next 50 years. In 2008, the USGS and the CGS updated the model by introducing new parameters and updated fault locations (CGS, 2008). The PGA (10 percent probability of being exceeded in 50 years) for the project location is estimated at 0.589 g.

Liquefaction and Lateral Spreading

Liquefaction is the sudden temporary loss of shear strength in saturated, loose to medium-density granular sediments subjected to ground shaking. It generally occurs when seismically-induced ground shaking causes the pressure of the water between granules to increase to a point equal to the pressure of the soil overburden. When this occurs, the soil can move like a fluid, hence the term liquefaction. Liquefaction can cause foundation failure of buildings and other facilities due to the reduction of foundation bearing strength. Liquefaction-induced lateral spreading is defined as the finite, lateral displacement of gently sloping ground as a result of pore-pressure buildup or liquefaction in a shallow underlying deposit during an earthquake.

The potential for liquefaction depends on the duration and intensity of ground shaking, particle size distribution of the soil, density of the soil, and elevation of the groundwater. Areas at risk due to the effects of liquefaction are typified by a high groundwater table and underlying loose to medium-density granular sediments, particularly younger alluvium and artificial fill sediments and other reclaimed areas along the margin of San Francisco Bay. According to maps compiled

by the Association of Bay Area Governments (ABAG), the project site is considered to have a moderate to very high potential for liquefaction (ABAG, 2017).

The geotechnical investigation completed in 2012 for the project site included an analysis of liquefaction potential. The majority of the liquefaction hazard results from layers within the fill, low-plasticity estuary and tidal flat deposits, and in some locations, low-plasticity portions of the Temescal formation. Most of the material identified as potentially liquefiable were characterized with soil behavior types of silty sand to sandy silt to silty clay and are in the upper 20 feet. There is the potential for as much as several inches of liquefaction-induced ground settlement in some areas, as well as the potential for liquefaction-induced lateral spread displacements along the waterfront (Rockridge Geotechnical, 2012).

Differential Settlement

Earthquake shaking can produce compaction and densification of dry, uniformly graded, granular, and loose soil material. The amount of compaction across an area can vary due to differences in soil types, producing differential settlement. Artificial fill may also be susceptible to differential settlement. Differential settlement can affect existing and proposed foundations, slabs, and pavements. Given the geologic setting and characteristics of the underlying materials of the project site, the site could be subjected to earthquake-induced settlement.

Other Geologic Hazards

Expansive Soil

Expansive soils exhibit a “shrink-swell” behavior, also referred to as linear extensibility. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Structural damage may result over an extended period of time, usually as the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. Typically, soils that exhibit expansive characteristics comprise the upper five feet of the surface. The effects of expansive soils could damage foundations of above-ground structures, paved roads and streets, and concrete slabs. Expansion and contraction of soils, depending on the season and the amount of surface water infiltration, could exert enough pressure on structures to result in cracking, settlement, and uplift.

Settlement

Settlement can occur from immediate settlement, consolidation, shrinkage of expansive soil, and liquefaction. Immediate, or static, settlement occurs when a load from a structure or placement of new fill material is applied, causing distortion in the underlying materials. This settlement occurs quickly and is typically complete after placement of the final load. Consolidation settlement occurs in saturated clay from the volume change caused by squeezing out water from the pore spaces. Consolidation occurs over a period of time and is followed by secondary compression, which is a continued change in void ratio under the continued application of the load. Soils tend to settle at different rates and by varying amounts depending on the load weight or changes in properties over an area, which is referred to as differential settlement.

As described above, under Differential Settlement, the project site is underlain by poorly engineered artificial fill that varies in depth and thickness and weak, compressible bay and estuary deposits. It is anticipated differential settlements due to static load conditions would occur. However, differential settlements can be reduced to a certain extent by supporting structures on stiffened mat foundations. (Rockridge Geotechnical, 2012).

Soil Erosion

Soil erosion is the process whereby soil materials are worn away and transported to another area either by wind or water. Rates of erosion can vary depending on the soil material and structure, soil placement, and human activity. Excessive soil erosion can eventually lead to damage of building foundations and other improvements. Erosion is most likely on sloped areas with exposed soil, especially when unnatural slopes are created by cut and fill activities. Soil erosion rates can therefore be higher during the construction phase. Typically, soil erosion potential during construction is reduced by using modern construction practices; and once an area is graded and covered with concrete, structures, asphalt, or vegetation, the soil erosion potential is nearly eliminated.

Project site soil erosion is dominated by relative sea level fluctuations and changes in the rate of precipitation. Consistent with the sedimentological conditions of the Bay Area, which is in an interglacial period of heavy sedimentation, the project site does not experience excessive soil erosion.

Landslides/Slope Failure

Slope failures, also known as landslides, include many phenomena that involve the downslope displacement and movement of material, either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces. A slope failure is a mass of rock, soil, and debris including submerged sediments that are displaced downslope by sliding, flowing, or falling. Slope failures may occur on slopes of 15 percent or less; however, the probability is greater on steeper slopes. The rate of slope failure can vary from a slow creep over many years to a sudden mass movement. Slope stability can depend on a number of complex variables. The geology, structure, and amount of water affect slope failure potential, as do external processes (i.e., climate, topography, slope geometry, and human activity such as dredging activities). The factors that contribute to slope movements include those that decrease the resistance in the slope materials and those that increase the stresses on the slope (e.g., placement of new structures or other new loading upslope). Slope failure under static forces occurs when those forces initiating failure overcome the forces resisting slope movement without any seismic contribution. Earthquake motions can induce significant horizontal and vertical dynamic stresses in slopes that can trigger failure. Earthquake-induced slope failures can occur in areas with steep slopes that are susceptible to strong ground motion during an earthquake.

The project site is relatively flat and is not within an area where previous occurrence of landslide movement, or local topographic, geological, geotechnical, and subsurface water conditions indicate a potential for permanent ground displacements (Rockridge Geotechnical, 2012).

Paleontological Resources

Paleontological resources are the fossilized remains of plants and animals, including vertebrates (animals with backbones), invertebrates (e.g., starfish, clams, ammonites, and coral marine), and fossils of microscopic plants and animals (microfossils). Paleontological resources are distinct from archeological resources in that they are records of past plant and animal life, and not human history. Fossil discoveries provide paleontologists with valuable evidence to help them reconstruct biological and geological histories. In order for an organism to be preserved, it must be buried and mineralized, which requires a specific set of favorable geologic conditions and a significant amount of time. When fossils are discovered at the earth's surface, it is because the material in which the organism was fossilized has been eroded away by natural processes or exhumed by humans.

On a regional scale, fossilized plants, animals and microorganisms are prevalent throughout the East Bay. Many of the hills in the East Bay are made up of sedimentary bedrock that is known to contain a wide range of fossils, including radiolarians, mollusks, diatoms, foraminifers and nonmarine vertebrates. In addition, Pleistocene-age (1.8 million to 10,000 years ago) alluvial fan and fluvial deposits have been known to yield fresh water mollusks and extinct late Pleistocene vertebrate fossils (Graymer, 2000). Thus, the East Bay as a whole is rich in potentially fossil-yielding rock formations.

However, the proposed project overlies geologic units that have low paleontological potential.[7] The project site is underlain by a combination of dune sands, estuarine mud, and overlying artificial fills. The estuarine mud – also referred to as Young Bay Mud – is a silty clay that is rich in organic materials and is known to be soft and compressible.

In many places, humans have placed poorly engineered fills over the Bay Mud in order to create buildable areas or dispose of materials excavated from elsewhere. At the turn of the twentieth century, engineers expanded Oakland's natural estuary by excavating a tidal canal inland of the Oakland Harbor, creating Alameda Island from the peninsula. A geologic map compiled by the USGS (Graymer, 2000) shows that the northern portion of the project area comprises artificial fill material overlying the Young Bay Mud and Holocene bay tidal flat deposits. It is estimated that the thickness of fill that rings Alameda Island ranges from 5 to 25 feet. The southern portion of the project area is underlain by dune sands. It is commonly referred to as the Merritt Sand—a loose, well-sorted, fine- to medium-grained sand. The Merritt Sand makes up the core of Alameda Island and is likely to be underlain by Young Bay Mud and Holocene bay tidal flat deposits at variable depths.

All of these geologic units represent either historic (in the last 200 years) or Holocene-age (last 11,000 years) geologic units. Such recent deposits are unlikely to preserve the remains of organisms due to the lack of time and burial needed for the organisms to be fossilized. In addition, artificial fills are manmade, and have been mixed and reworked from native geologic materials, and therefore are not fossil-yielding.

[7] Paleontological potential refers to the likelihood a particular rock unit or formation would yield significant fossils, based on its geologic history and records of previous fossil discoveries within the same unit.

The University of California Museum of Paleontology (UCMP) maintains the world's largest database of fossil discoveries and collections, with thousands of records for the East Bay. A search of the database by both sediment age and location revealed few invertebrate fossils and no vertebrate fossils in similar geologic environments in Alameda County. Fourteen marine invertebrate fossils of Quaternary age (within the last 1.8 million years) were found in Oakland, three of which were found in or around Lake Merritt, which has similar geologic conditions as the project area (UCMP, 2017). However, recent marine invertebrate fossils are not considered significant fossil resources because they are typically abundant in similar geologic deposits and do not represent unique specimens that contribute substantially to scientific knowledge. Overall, there is a very low, if any, potential to encounter fossil resources at the project area.

4.5.3 Regulatory Setting

Federal

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1997 to "reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program." To accomplish this, the Act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 to refine the description of agency responsibilities, program goals, and objectives.

NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it with several planning, coordinating, and reporting responsibilities. Programs under NEHRP help inform and guide planning and building code requirements such as emergency evacuation responsibilities and seismic code standards.

Occupational Safety and Health Administration Regulations

Excavation and trenching are among the most hazardous construction activities. The Occupational Safety and Health Administration's (OSHA) Excavation and Trenching standard, Title 29 of the Code of Federal Regulations (CFR), Part 1926.650, covers requirements for excavation and trenching operations. OSHA requires that all excavations in which employees could potentially be exposed to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area.

State

Alquist-Priolo Earthquake Fault Zoning Act

In 1972, the Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) was passed (PRC Sections 2621-2630) to mitigate the effects of surface faulting on structures designed for human occupancy. This law was mainly intended to prevent the construction of buildings for human occupancy directly on the surface trace of active faults. This law only addresses the hazard of surface fault rapture and does not consider other seismic hazards.

Pursuant to the Alquist-Priolo Act, the State Geologist is required to establish regulatory zones, known as Earthquake Fault Zones, around the surface traces of active faults and issue maps accordingly. The maps are to be provided to all affected cities, counties, and California agencies to assist with planning decisions. If a project is within a designated Alquist-Priolo Earthquake Fault Zone, prior to approving any development the city or county must require a geologic investigation to prove that the proposed structures would not be constructed across active faults. As discussed above in the Environmental Setting, no active faults pass through the project site. Therefore, the Alquist-Priolo Act does not apply to the proposed project.

Seismic Hazards Mapping Act

The State regulations protecting the public from geoseismic hazards, other than surface faulting, are contained in PRC, Division 2, Chapter 7.8 (the Seismic Hazards Mapping Act), described here, and 2007 California Code of Regulations, Title 24, Part 2 (the CBC), described further below. Both of these sets of regulations apply to public buildings, and a large percentage of private buildings, intended for human occupancy.

The Seismic Hazards Mapping Act was passed in 1990 following the Loma Prieta earthquake to reduce threats to public health and safety and to minimize property damage caused by earthquakes. The Act requires the State Geologist to delineate various seismic hazard zones, and cities, counties, and other local permitting agencies to regulate certain development projects within these zones. For projects that would locate structures for human occupancy within designated Zones of Required Investigation, the Seismic Hazards Mapping Act requires project applicants to perform a site-specific geotechnical investigation to identify the potential site-specific seismic hazards and corrective measures, as appropriate, prior to receiving building permits.

The *CGS Guidelines for Evaluating and Mitigating Seismic Hazards* (Special Publication 117A) provides guidance for evaluating and mitigating seismic hazards. The CGS is in the process of producing official maps based on USGS topographic quadrangles, as required by the Act. The CGS has completed delineations for the USGS quadrangles in which project site is located. Consequently, the project site is located in a Zone of Required Investigation. As previously discussed, a preliminary geotechnical investigation has been completed for the project (Rockridge, 2012) and a final geotechnical investigation would be required prior to the approval of grading and construction permits. In addition, specific structures (occupied for living or working) constructed for the project would be required to comply with the seismic code requirements within the

California Building Code and Special Publication 117A as a condition of permit approval and would thus be consistent with the Seismic Hazards Mapping Act, as discussed below.

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, means of egress to facilities (entering and exiting), and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under State law, all building standards must be centralized in Title 24 or they are not enforceable. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The 2016 edition of the CBC is based on the 2015 International Building Code (IBC) published by the International Code Council, which replaced the Uniform Building Code. The CBC is updated triennially, and the 2016 edition was published by the California Building Standards Commission on July 1, 2016, and took effect starting January 1, 2017.

The 2016 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-16, *Minimum Design Loads for Buildings and Other Structures*, provides requirements for general structural design and includes means for determining earthquake loads[8] as well as other loads (such as wind loads) for inclusion into building codes. Seismic design provisions of the building code generally prescribe minimum lateral forces applied statically to the structure, combined with the gravity forces of the dead and live loads of the structure, which the structure then must be designed to withstand. The prescribed lateral forces are generally smaller than the actual peak forces that would be associated with a major earthquake. Consequently, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake. However, it is reasonable to expect that a structure designed in-accordance with the seismic requirements of the CBC should not collapse in a major earthquake.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a seismic design category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site; SDC ranges from

[8] A load is the overall force to which a structure is subjected in supporting a weight or mass, or in resisting externally applied forces. Excess load or overloading may cause structural failure.

A (very small seismic vulnerability) to E/F (very high seismic vulnerability and near a major fault). Seismic design specifications are determined according to the SDC in accordance with Chapter 16 of the CBC. Chapter 18 of the CBC covers the requirements of geotechnical investigations (Section 1803), excavation, grading, and fills (Section 1804), load-bearing of soils (1806), as well as foundations (Section 1808), shallow foundations (Section 1809), and deep foundations (Section 1810). For Seismic Design Categories D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

The design of the proposed project is required to comply with CBC requirements as a condition of permit approval, which would make the proposed project consistent with the CBC.

Construction General Permit

Construction associated with the project would disturb more than one acre of land surface affecting the quality of stormwater discharges into waters of the U.S. The proposed project would therefore be subject to the *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). The Construction General Permit regulates discharges of pollutants in stormwater associated with construction activity to waters of the U.S. from construction sites that disturb one or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than one acre of land surface. The permit regulates stormwater discharges associated with construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including installation of water pipelines and other utility lines.

The Construction General Permit requires that construction sites be assigned a Risk Level of 1 (low), 2 (medium), or 3 (high), based both on the sediment transport risk at the site and the receiving waters risk during periods of soil exposure (e.g., grading and site stabilization). The sediment risk level reflects the relative amount of sediment that could potentially be discharged to receiving water bodies and is based on the nature of the construction activities and the location of the site relative to receiving water bodies. The receiving waters risk level reflects the risk to the receiving waters from the sediment discharge. Depending on the risk level, the construction projects could be subject to the following requirements:

- Effluent standards
- Good site management “housekeeping”
- Non-stormwater management
- Erosion and sediment controls
- Run-on and runoff controls
- Inspection, maintenance, and repair
- Monitoring and reporting requirements

The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes specific Best Management Practices (BMPs) designed to prevent sediment and pollutants from contacting stormwater from moving offsite into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management and good housekeeping, and are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. In addition, the SWPPP is required to contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The SWPPP must be prepared before construction begins. The SWPPP must contain a site map(s) that delineates the construction work area, existing and proposed buildings, parcel boundaries, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project area. The SWPPP must list BMPs and the placement of those BMPs that the applicant would use to protect stormwater runoff. Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, vehicle and equipment washing and fueling. The Construction General Permit also sets post-construction standards (i.e., implementation of BMPs to reduce pollutants in stormwater discharges from the site following construction).

In the project area, the Construction General Permit is implemented and enforced by the San Francisco Bay RWQCB, which administers the stormwater permitting program. Dischargers are required to electronically submit a notice of intent (NOI) and permit registration documents (PRDs) in order to obtain coverage under this Construction General Permit. Dischargers are responsible for notifying the RWQCB of violations or incidents of non-compliance, as well as for submitting annual reports identifying deficiencies of the BMPs and how the deficiencies were corrected. The risk assessment and SWPPP must be prepared by a state Qualified SWPPP Developer and implementation of the SWPPP must be overseen by a state Qualified SWPPP Practitioner. A Legally Responsible Person, who is legally authorized to sign and certify PRDs, is responsible for obtaining coverage under the permit.

Construction projects of one acre or more would be required to comply with the Construction General Permit as a condition of permit approval and would thus be consistent with the Construction General Permit.

Local

City of Alameda General Plan

The City has established goals, policies, and implementing actions in the General Plan in regards to seismic and geologic hazards. Goals and actions as outlined in the Safety and Noise Element that would apply to the proposed project are listed as follows:

***Policy SN-6*:** Amend and update the Alameda local California Building Code, as necessary, to incorporate new standards for construction pertaining to development on areas of fill or underlain by Bay Mud or Merritt Sand and the design of new buildings to resist the lateral effects and other potential forces of a large earthquake on any of the nearby faults.

***Policy SN-10*:** Require owners of vulnerable structures, to the extent feasible, to retrofit existing structures to withstand earthquake ground shaking, and require retrofitting when such structures are substantially rehabilitated or remodeled.

a) Continue to implement the City's Soft Story Program including mandatory requirements for substantially improving the seismic performance of multi-family wood frame residential buildings with "soft stories."

b) Continue to implement the City's Wood Framed Building Program including voluntary requirements for substantially improving the seismic performance of one and two-story wood frame residential buildings with vulnerable "cripple walls."

c) Develop incentives and assistance to help property owners make their homes and businesses more earthquake-safe. Pursue a variety of funding sources, such as grants, low-interest loans, and tax credits, to assist residents and businesses with seismic upgrades.

d) Require owners of shoreline properties, to the extent feasible, to inspect, maintain, and repair the perimeter slopes to withstand earthquake ground shaking, consolidation of underlying Bay Mud, and wave erosion.

e) Establish incentives and exemptions from City zoning code requirements, such as off-street parking and/or on-site common open space, to facilitate private rehabilitation and strengthening of soft story multi-family buildings.

City of Alameda Municipal Code

The Alameda Municipal Code Section 13.2-1 adopts the California Building Code (discussed above), with minor revisions. Section 13-2.3 recognizes the following:

a) The City of Alameda is an island community with access dependent upon bridges and underwater tubes and, in the event of a disaster, could be completely isolated from outside assistance.

b) The City of Alameda is adjacent to several earthquake faults, which make buildings and structures susceptible to structural ruptures and fires.

c) The entire municipal water supply for the City of Alameda is transported via three aqueducts, which are vulnerable to earthquake and tidal flooding.

d) Alameda is a low-lying island community with soil and groundwater conditions, which are corrosive to metals.

e) Alameda has very fine, sandy soil conditions.

The City of Alameda Department of Public Works Engineering Department is responsible for reviewing and issuing grading permits for construction projects. The purpose of the grading permit is to ensure land stability and control erosion. The permit covers the removal, placement and movement of soil on private property

Paleontological Resources Regulations and Standard of Practice

California Public Resources Code

Several sections of the California Public Resources Code protect paleontological resources. Section 5097.5 prohibits "knowing and willful" excavation, removal, destruction, injury, and defacement of any paleontologic feature on public lands (lands under state, county, city, district, or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted permission. Section 30244 requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands. The sections of the California Administrative Code pertaining to the California Department of Parks and Recreation afford protection to geological features and "paleontological materials" but grant the director of the State park system authority to issue permits for specific activities that may result in damage to such resources, if the activities are in the interest of the State park system and for State park purposes (California Administrative Code Sections 4307–4309; as cited in USFWS/CDFG, 2006).

PRC Section 5097.5 specifies that any unauthorized removal of paleontological remains is a misdemeanor. Other State requirements for paleontological resource management are in California Public Resources Code Chapter 1.7, Section 5097.5 through 5097.9 (Stats. 1965, c. 1136, p. 2792), Archaeological, Paleontological, and Historical Sites. This statute defines any unauthorized disturbance or removal of a fossil site or remains on public land as a misdemeanor and specifies that State agencies may undertake surveys, excavations, or other operations as necessary on State lands to preserve or record paleontological resources.

California Environmental Quality Act Statute and Guidelines

CEQA requires that public agencies identify the environmental consequences of their proposed projects and project approvals and as such, paleontological resources are afforded consideration under CEQA. Appendix G of the CEQA guidelines (Title 14, Division 6, Chapter 3, California Code of Regulations: 15000 et seq.) includes as one of the questions to be answered in the Environmental Checklist (Appendix G, Section V, Part c) the following: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" CEQA documentation prepared for projects would be required to analyze paleontological resources as a condition of the CEQA process to disclose potential impacts.

Society of Vertebrate Paleontology (SVP) Published Standard Guidelines

Although not a law or regulation, the Conformable Impact Mitigation Guidelines Committee of the Society of Vertebrate Paleontology (SVP) published Standard Guidelines in response to a recognized need to establish procedures for the investigation, collection, preservation, and cataloguing of fossil bearing sites. The Standard Guidelines are widely accepted among paleontologists, followed by most investigators, and identify the two key phases of paleontological resource protection: (1) assessment and (2) mitigation. Assessment involves identifying the potential for a project site or area to contain significant nonrenewable paleontological resources that could be damaged or destroyed by project excavation or construction. Mitigation involves formulating and applying measures to reduce such adverse

effects, including pre-project survey and salvage, monitoring and screen washing during excavation to salvage fossils, conservation and inventory, and final reports and specimen curation. The SVP defines the level of potential as one of four sensitivity categories for sedimentary rocks: high, undetermined, low, and no potential as listed below.

Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data. Rock units which contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or middens and rock units which may contain new vertebrate deposits, traces, or trackways are also classified as having high potential.

- **High Potential** – Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rocks units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations and some volcaniclastic formations (e.g., ashes or tephras), and some low grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e.g., middle Holocene and older, fine grained fluvial sandstones, argillaceous and carbonate rich paleosols, cross bedded point bar sandstones, fine grained marine sandstones, etc.).

- **Low Potential** – Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections or, based on general scientific consensus, only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule, e.g., basalt flows or Recent (i.e., Holocene) colluvium. Rock units with low potential typically will not require impact mitigation measures to protect fossils.

- **Undetermined Potential** – Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource impact mitigation program can be developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.

- **No Potential** – This designation is assigned to geologic formations that are entirely plutonic (volcanic rocks formed beneath the earth's surface) in origin and therefore have no potential for producing fossil remains.

4.5.4 Impacts and Mitigation Measures

Significance Criteria

Consistent with Appendix G of the State CEQA *Guidelines*, a project would cause adverse impacts related to geology, soils, or paleontological resources if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42);
  - Strong seismic ground shaking;
  - Seismic-related ground failure, including liquefaction;
  - Landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on expansive soil, as defined in 24 CCR 1803.5.3 of the California Building Code,[9] creating substantial risks to life or property;
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater; or
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Topics with No Impact or Otherwise Not Addressed in this EIR

Review and comparison of the setting circumstances and project characteristics with the significance criteria stated above clearly indicate that no impacts would be associated with landslides, because the project site is relatively flat and would not be susceptible to landslides. The northeast edge of the site is lined with rip-rap slopes and bulkheads of various construction types along the waterfront. Nearly the entire site is paved with asphalt and/or concrete. As discussed above, the project site is not within an area where previous occurrence of landslide movement, or local topographic, geological, geotechnical, and subsurface water conditions indicate a potential for permanent ground displacements (Rockridge Geotechnical, 2012). Therefore, there would be no impact in this regard.

[9] Although the CEQA Guidelines Appendix G checklist still refers to the out of date Table 18-1-B for identifying expansive soils, the updated CBC no longer cites that table and instead cites 24 CCR 1803.5.3 of the CBC.

Impacts would also not be associated with septic systems or alternative waste disposal systems because the project would not include septic tanks or alternative wastewater disposal systems. Control of wastewater would be through the existing wastewater collection, treatment, and disposal system. Therefore, there would be no impact.

Impacts would also not be associated with paleontological resources, based on the very low potential to encounter fossil resources in the project area. Therefore, there would be no impact.

Impact Analysis

Impact GEO-1: Project development could be damaged by fault rupture and thereby expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death. (*Less than Significant, No Mitigation Required*)

The closest active faults to the project site are the Hayward fault, located approximately 3.7 miles to the east, the Calaveras fault located 13.7 miles to the east, and the San Andreas fault, which is approximately 14.3 miles to the west. Although fault rupture is not necessarily limited to areas that coincide with the mapped fault trace, the project site is sufficiently far enough away from the nearest active fault to be considered not at risk of fault rupture.

Historically, ground surface displacements closely follow the trace of geologically young faults. The site is not within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act, and no known active or potentially active faults exist on the site. Therefore, the risk of fault offset at the site from a known active fault is very low. In a seismically active area, the remote possibility exists for future faulting in areas where no faults previously existed; however, the risk of surface faulting and consequent secondary ground failure from previously unknown faults is also very low (Rockridge Geotechnical, 2012). Therefore, impacts related to the rupture of a known earthquake fault would be less than significant.

Significance: Less than Significant.

Mitigation: None required.

Impact GEO-2: Project development could be damaged by seismically induced ground shaking and thereby expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death. (*Less than Significant, No Mitigation Required*)

According to the WGCEP, the project site is likely to experience at least one major earthquake (i.e., greater than M 6.7) within the next 30 years. The project site would experience strong to very strong ground shaking during a major earthquake on any of the nearby faults. The intensity of such an event would depend on the causative fault and the distance to the epicenter, the moment magnitude, the duration of shaking, and the site-specific soil conditions. The project site is about 3.7 miles from the Hayward fault. Therefore, the potential exists for a large earthquake to induce strong to very strong ground shaking at the site during the life of the project.

The structural elements of the project would undergo appropriate design-level geotechnical evaluations prior to final design and construction. Implementing the regulatory requirements in the CBC and local codes and ordinances, and ensuring that all buildings and structures are constructed in compliance with the law is the responsibility of the project engineers and building officials. The geotechnical engineer, as a registered professional with the State of California, is required to comply with the CBC and local codes while applying standard engineering practice and the appropriate standard of care for the particular region in California, which, in the case of the proposed project, is Alameda County and the City of Alameda.[10] The California Professional Engineers Act (Building and Professions Code Sections 6700-6799), and the Codes of Professional Conduct, as administered by the California Board of Professional Engineers and Land Surveyors, provides the basis for regulating and enforcing engineering practice in California. The local Building Officials are typically with the local jurisdiction (i.e. Alameda County and the City of Alameda) and are responsible for inspections and ensuring CBC and local code and ordinance compliance prior to approval of the building permit. Although damage and injury cannot be completely avoided during a significant seismic event, construction or renovation in compliance with the CBC and local codes and ordinances would reduce the potential damage and personal injury to less than significant levels.

Appropriate grading and design, in accordance with the CBC requirements and local planning and building department requirements, would be used to reduce the secondary effects of ground shaking on structures and associated improvements. Any fill materials would be appropriately compacted and engineered as directed by the California certified engineering geologist or geotechnical engineer assigned to the project.

The preliminary geotechnical investigation prepared for the project concluded that there are no geotechnical conditions at the site that preclude construction of the proposed project (Rockridge Geotechnical, 2012). As required by the CBC, a final design-level geotechnical investigation would be performed for the project and project site in accordance with standard industry practices and code requirements. The investigation would include an analysis of expected ground motions at the site from known active faults. The analysis would be completed in accordance with applicable City ordinances and policies and consistent with the most recent version of the CBC, which requires structural design that can accommodate ground accelerations expected from known active faults. The investigation would determine final design parameters for the earthwork, foundations, foundation slabs, and any surrounding related improvements, including utilities, parking lots, roadways, and sidewalks. The investigation would be reviewed and approved by a certified engineering geologist or geotechnical engineer. Therefore, implementation of the geotechnical recommendations made by the final design-level geotechnical report in accordance with the current seismic design criteria required under the CBC would reduce the potential impacts associated with ground shaking during a major seismic event to less-than-significant levels.

[10] A geotechnical engineer (GE) specializes in structural behavior of soil and rocks. GEs conduct soil investigations, determine soil and rock characteristics, provide input to structural engineers, and provide recommendations to address problematic soils.

Significance: Less than Significant.

Mitigation: None required.

Impact GEO-3: Project development could be damaged by seismically related ground failure including liquefaction and thereby expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death. (*Less than Significant, No Mitigation Required*)

Mapping compiled by ABAG indicates that the project site has a moderate to very high potential for liquefaction (ABAG, 2017). The preliminary geotechnical investigation completed in 2012 for the project site included an analysis of liquefaction potential. The majority of the liquefaction hazard results from layers within the fill, low-plasticity estuary and tidal flat deposits, and in some locations, low-plasticity portions of the Temescal formation. Most of the material identified as potentially liquefiable was characterized with soil behavior types of silty sand to sandy silt to silty clay and are in the upper 20 feet. There is the potential for as much as several inches of liquefaction-induced ground settlement in some areas, as well as the potential for liquefaction-induced lateral spread displacements along the waterfront. The anticipated differential settlements due to both static load conditions and post-liquefaction reconsolidation exceed the typical tolerance of conventional spread footing foundation systems. In locations where static and seismically induced settlements (combined) exceed approximately 3 inches, ground improvement would likely be required beneath shallow foundations. If not addressed during site preparation and/or in foundation design, people could be harmed and structures may be damaged from earthquake-induced liquefaction, rapid settlement, lateral spreading or other earthquake-induced ground failures.

As with the previously discussed requirements for addressing seismic shaking, the impacts from ground failure, including liquefaction, lateral spreading, and sand boils from development of the proposed project would be addressed through a final design-level geotechnical investigation prepared in accordance with CBC and local building code requirements and standard industry practices. Development would be required to conform to the current seismic design provisions of the CBC to mitigate losses from ground failure as a result of an earthquake. Site preparations such as removal of liquefiable fill materials and replacement with engineered fills or treatment of existing soils have proven effective in minimizing the potential for liquefaction related damage. Due to the potential presence of hazardous materials (see further discussion in Section 4.6, *Hazards and Hazardous Materials)*, removal of fill may not be prudent in which case other methods of ground treatment may be more suitable, as determined in the final design-level geotechnical investigation. Therefore, implementation of the geotechnical recommendations made by the final design-level geotechnical report in accordance with current CBC and local building code requirements would reduce the potential impacts associated seismically-related ground failure, including liquefaction, to less-than-significant levels.

Significance: Less than Significant.

Mitigation: None required.

Impact GEO-4: The project could result in soil erosion during excavation, grading, and construction activities. (*Less than Significant, No Mitigation Required*)

Project construction would require earthwork and grading, which would expose soil and potentially subject it to wind and water erosion. The extent of erosion that could occur varies depending on soil type, slope steepness and stability, vegetation/cover, and weather conditions. Water- and wind-induced erosion could occur during the construction phase of the project when concrete and asphalt are removed and soils are stockpiled and exposed.

While soil may be exposed and potentially eroded by wind or water during the construction phases of the proposed project, the site is level, and thus substantial and accelerated erosion due to storm runoff is not anticipated. In addition, natural topsoil does not exist on most portions of the site, which is primarily artificial fill, and thus any minor loss of onsite soils would not represent loss of a natural resource. Finally, the project involves the disturbance of more than one acre, which would require the project to obtain coverage under the state Construction General Permit, as described in the Regulatory Setting. The Construction General Permit would require the preparation and implementation of a SWPPP that would control runon and runoff from the construction areas. With compliance with the Construction General Permit, the impacts would be less than significant.

Significance: Less than Significant.

Mitigation: None required.

Impact GEO-5: The project could result in on- or off-site lateral spreading, subsidence, liquefaction, or collapse from placement of improvements on unstable geologic units or soils. (*Less than Significant, No Mitigation Required*)

The potential for lateral spreading and liquefaction is described above in Impact GEO-3.

The project site is underlain by artificial fills and Young Bay Mud materials which are susceptible to settlement and subsidence. As noted in the preliminary geotechnical report prepared for the proposed project, anticipated differential settlements due to both static load conditions and post-liquefaction reconsolidation would exceed the typical tolerance of conventional spread footing foundation systems. In portions of the site where the fill is thinnest and there are no weak, compressible bay and estuary deposits, such as the edge of the site along Clement Avenue, new buildings may potentially be supported on mat foundations on unimproved ground. In locations where static and seismically induced settlements (combined) exceed approximately 3 inches, ground improvement will likely be required beneath shallow foundations to stiffen the upper weak soils and transfer structural loads to dense to very dense Merritt sands.

Ground improvement can serve to reduce settlements, improving structural performance, and also to increase the bearing capacity of subgrade soils. Alternatively, buildings may be supported on deep foundations that gain support within the Merritt sands.

The preliminary geotechnical report concluded that three ground improvement systems would be viable for the proposed project site: deep soil mixing (SMX), displacement compacted aggregate piers (CAPs), and drilled displacement sand-cement columns (DDSC). All three of these ground improvement systems can serve to stiffen the overall soil matrix by transferring foundation loads to more competent Merritt sands below the weak, compressible surficial soils. They can also be designed to reduce the potential for triggering liquefaction, depending on the horizontal spacing of the elements. (Rockridge Geotechnical, 2012).

As discussed above for Impact GEO-1, a design-level geotechnical investigation would be performed for the proposed improvements and would recommend an appropriate approach to address settlement and subsidence hazards. The investigation would include an analysis of the underlying soil properties including the potential for instability, liquefaction, subsidence, or collapse. As noted above, the project site is underlain by Young Bay Mud deposits which are known to be soft and compressible under new loadings such as the placement of new fills or new construction. The analyses would be in accordance with the CBC and local codes and ordinances and current engineering standards that would effectively mitigate unstable soils. The investigations would determine final design parameters for the earthwork, foundations, foundation slabs, and any surrounding related improvements, utilities, roadways, parking lots, and sidewalks. The investigations would be reviewed and approved by a California registered geotechnical engineer or engineering geologist and submitted to the City for review. Therefore, implementation of the geotechnical recommendations made by the final design-level geotechnical report in accordance with currently required geotechnical design criteria would reduce the potential impacts associated with unstable geologic units or materials to less-than-significant levels.

Significance: Less than Significant.

Mitigation: None required.

Impact GEO-6: Project implementation could occur on expansive soils, creating risks to life and property. (*Less than Significant, No Mitigation Required*)

The effects of expansive soils, if present at the site, could damage foundations of aboveground structures. Surface structures with foundations constructed in expansive soils could experience expansion and contraction depending on the season and the amount of surface water infiltration. This expansion and contraction could exert enough pressure on a structure to result in cracking, settlement, and uplift. As stated above, the proposed project would receive a site-specific design-level geotechnical investigation. As required by the CBC and local codes and ordinances, the final design-level geotechnical investigation would evaluate site materials for potential expansive soils. Any use of imported fill materials or the reuse of existing fills would be required to meet

minimum standards for expansion potential. The final design-level geotechnical report would include recommendations for mitigating any potential hazards associated with expansive soils, if present. Recommended geotechnical practices could include replacement of surface soils with engineered fill that is not susceptible to expansion or treatment of on-site soils with lime that is a proven method of reducing expansive properties. Therefore, implementation of the geotechnical recommendations made by the final design-level geotechnical report in accordance with currently required geotechnical design criteria would reduce the impacts associated with the potential presence of expansive soils to less–than-significant levels.

Significance: Less than Significant.

Mitigation: None required.

Cumulative Impacts

Impact C-GEO-1: The project, in conjunction with past, present and reasonably foreseeable future projects, would not result in significant cumulative impacts with respect to geology, soils, seismicity, or paleontological resources. (*Less than Significant, No Mitigation Required*)

This section presents an analysis of the cumulative effects of the proposed project in combination with other past, present, and reasonably foreseeable future projects that could cause cumulatively significant impacts.

As previously discussed, the proposed project would have no impact relative to landslides, septic tanks, alternative wastewater disposal systems, and paleontological resources and therefore could not contribute to cumulative impacts.

Geology, soils, and seismic impacts tend to be site-specific and depend on the local conditions. For these reasons, the geographic scope for potential cumulative impacts consists of the project area and the immediate vicinity. In general, to have a cumulative impact, two or more projects would have to spatially overlap and occur at the same time.

The timeframe during which the proposed project could contribute to cumulative impacts includes the construction and operations phases. For the proposed project, the operations phase is permanent. However, similar to the geographic limitations discussed above, it should be noted that impacts relative to geologic, seismic, and soils impacts are generally time-specific, and could only be cumulative if two or more events occurred at the same time, as well as overlapping the same location.

The San Francisco Bay Area region is considered seismically active, and any development exposes people and structures to potentially adverse effects associated with earthquakes, including seismic ground shaking and seismic-related ground failure such as liquefaction. In addition, this area is susceptible to expansive soils. Development of the project, combined with past, present, and other reasonably foreseeable development in the area, would result in increased

population and development in an area subjected to seismic risks and liquefaction hazards. However, the proposed project, as well as all other future projects in the region, would be constructed in accordance with the most current version of CBC and local seismic safety ground preparation (e.g., address liquefaction or expansive soil issues) requirements and recommendations contained in each site-specific geotechnical report as required prior to approval of a building permit. Future development would be constructed to standards similar to those that are described above, which likely would exceed those of older structures within the region. With compliance with existing regulations, the potential impacts would not be cumulatively considerable (less than significant)

Construction activities have the potential to cause soil erosion and loss of topsoil. If cumulative projects are constructed at the same time, the erosion effects could be cumulatively considerable. However, the state Construction General Permit would require each project to prepare and implement a SWPPP. The SWPPPs would describe BMPs to control runoff and prevent erosion for each project. Through compliance with this requirement, the potential for erosion impacts would be reduced. The Construction General Permit has been developed to address cumulative conditions arising from construction throughout the state, and is intended to maintain cumulative effects of projects subject to this requirement below levels that would be considered significant. For example, two adjacent construction sites would be required to implement BMPs to reduce and control the release of sediment and/or other pollutants in any runoff leaving their respective sites. The runoff water from both sites would be required to achieve the same action levels, measured as a maximum amount of sediment or pollutant allowed per unit volume of runoff water. Thus, even if the runoff waters were to combine after leaving the sites, the sediments and/or pollutants in the combined runoff would still be at concentrations (amount of sediment or pollutants per volume of runoff water) below action levels and would not be cumulatively considerable (less than significant).

In addition, the proposed project as well as other current and future projects would be required to implement BMPs to comply with the NPDES Phase II MS4 drainage control requirements during the operational phases (see Section 4.8 Hydrology and Water Quality for discussion of MS4 permit). With compliance with MS4 requirements, potential impacts from cumulative projects within the project area would not be cumulatively considerable (less than significant).

Significance: Less than Significant.

Mitigation: None required.

4.5.5 References – Geology, Soils, and Paleontological Resources

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4.6 Hazards and Hazardous Materials

4.6.1 Introduction

This section discusses the extent to which hazardous conditions or hazardous materials are present at the project site and evaluates the potential for implementation of the project to result in significant impacts related to exposing people or the environment to adverse effects related to hazards and hazardous materials. A review of the applicable regulatory framework governing project implementation is also provided. Potential impacts are discussed and evaluated, and mitigation measures are identified where appropriate.

CEQA requires the analysis of potential adverse effects of a project on the environment. While potential effects of the environment on the project are arguably not required to be analyzed or mitigated under CEQA, this section nevertheless analyzes potential effects of hazards and hazardous materials on the built project, as set forth in Appendix G of the CEQA *Guidelines*, in order to provide information to the public and decision-makers.

4.6.2 Environmental Setting

Definitions

Materials and waste are generally considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability); corrode other materials (corrosivity); or react violently, or explode or generate vapors when mixed with water (reactivity). The term “hazardous material” is defined in the State Health and Safety Code (Chapter 6.95, Section 25501[o]) as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment.

A hazardous waste, for the purpose of this EIR, is any hazardous material that is abandoned, discarded, or recycled, as defined in the State Health and Safety Code (Chapter 6.95, Section 25125). The transportation, use, and disposal of hazardous materials, as well as the potential releases of hazardous materials to the environment, are closely regulated through many state and federal laws.

Potential Receptors/Exposure

The sensitivity of potential receptors in the areas of known or potential hazardous materials contamination is dependent on several factors, the primary factor being the potential pathway for human exposure. Exposure pathways include external exposure, inhalation, and ingestion of contaminated soil, air, water, or food. The magnitude, frequency, and duration of human exposure can cause a variety of health effects, from short-term acute symptoms to long-term chronic effects. Potential health effects from exposure can be evaluated in a health risk assessment. The main elements of exposure assessments typically include:

- Evaluation of the fate and transport processes for hazardous materials at a given site;

- Identification of potential exposure pathways;
- Identification of potential exposure scenarios;
- Calculation of representative chemical concentrations; and
- Estimation of potential chemical uptake.

Soil and Groundwater Contamination

In California, regulatory databases listing hazardous materials sites provided by numerous federal, state, and local agencies are consolidated in the "Cortese List" pursuant to Government Code Section 65962.5. The Cortese List is located on the California Environmental Protection Agency's (Cal EPA) website and is a compilation of the following lists:

- List of Hazardous Waste and Substances sites from Department of Toxic Substances Control (DTSC) EnviroStor database;
- List of Leaking Underground Storage Tank Sites by County and Fiscal Year from the State Water Resources Control Board (SWRCB) GeoTracker database;
- List of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit;
- List of active Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO) from the SWRCB; and
- List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, identified by DTSC and listed in the EnviroStor database (DTSC, 2017).

[Irrelevant] The SWRCB GeoTracker database includes leaking underground storage tanks (LUSTs); permitted underground storage tanks (USTs); and spills, leaks, investigations, and cleanup database (SLIC) sites. The DTSC EnviroStor database includes federal and state response sites, voluntary, school, and military cleanups and corrective actions, and permitted sites. The five databases cited above identify sites with suspected and confirmed releases of hazardous materials to the subsurface soil and/or groundwater. The statuses of these sites change as identification, monitoring and clean-up of hazardous materials progress. Typically, a site is closed once it has been demonstrated that existing site uses combined with the levels of identified contamination present no significant risk to human health or the environment.

The lists and databases comprising the Cortese List were reviewed to identify any active cleanup sites at or within 1,000 feet of the project site (project vicinity). (Statuses of Cortese List sites are updated periodically and would need to be revisited prior to construction of the project.) Within the project site and vicinity, there are six listed LUST Cleanup sites, five Cleanup Program sites, one Voluntary Cleanup site, two Military UST sites, and one Military Cleanup site currently identified in the State Water Resources Control Board Geotracker and DTSC Envirostor databases, as described in **Table 4.6-1** below (DTSC, 2017; SWRCB, 2017). No other cleanup sites were identified that could have the potential to affect the project site through migration of contaminants onto the project site.

TABLE 4.6-1
REGULATORY SITES LISTED IN THE PROJECT SITE AND VICINITY

Site Name/ Address	Regulatory List	Site Summary
Regulatory Sites Listed within the Project Site		
Pacific Shops, Inc., 1815 Clement Street	LUST Cleanup Site	Cleanup completed as of March 5, 2010. Addressed leaks from two former Bunker oil USTs and a diesel UST that were removed in March 2007.
Pacific Shops, Inc., 1829 Clement Street	SLIC Program Site	Cleanup completed as of December 14, 2010. Involves the subfloor area beneath the building. Spills and discharges of liquids containing heavy metals as well as acids and bases to the subfloor and sewer were documented in 1990. The potential contaminants of concern included arsenic, chromium, copper, and cyanide, affecting the soil, soil vapor, structure, indoor air, and groundwater.
Pacific Shops, Inc., 1851 Clement Street	LUST Cleanup Site	Cleanup completed as of September 22, 1999. Addressed leaks from former gasoline and diesel fuel USTs that were removed in July 1999.
Regulatory Sites Listed within the Vicinity of the Project Site		
2100 Clement Avenue	Voluntary Cleanup Site	No further action as of November 7, 2016. Past uses that caused concern includes manufacturing including residential area, shipyard with ship building and repair, warehousing, and other uses. The potential contaminants of concern included PCEs and TCEs, affecting the soil and soil vapor. The site's commercial buildings have been demolished and the site has been graded in preparation for redevelopment into residential use. Remedial excavations have been completed in areas where the presence of volatile organic compounds in sub-slab and/or soil vapor could have posed a vapor intrusion risk to future residential receptors. Post-remediation soil and soil gas sampling confirm that the potential risk has been mitigated.
Alameda Naval Operational Support Center – West Vault, 2144 Clement Avenue	Military UST Site	Cleanup completed as of April 15, 2013.
Alameda Naval Operational Support Center – Naval and Marine Corps Reserve Center, 2144 Clement Avenue	Military Cleanup Site	Cleanup completed as of May 13, 2013. Past uses that caused concern include dry docks and fueling including vehicle storage and refueling and port use. The potential contaminants of concern include lead, TPH from diesel, and TPH from gasoline, affecting the soil and groundwater.
Alameda Naval Operational Support Center – North UST, 2144 Clement Avenue	Military UST Site	Cleanup completed as of August 15, 2013.
Cargill Salt, 2016 Clement Avenue	SLIC Program Site	Undergoing remediation as of June 15, 2005. PCE has been detected in soil vapor and groundwater at the site. A phytoremediation project was implemented to cleanup PCE in groundwater in June 2005. Groundwater monitoring has continued to assess the effectiveness of the phytormeediation project.

TABLE 4.6-1 (CONTINUED)
REGULATORY SITES LISTED IN THE PROJECT SITE AND VICINITY

Site Name/ Address	Regulatory List	Site Summary
Regulatory Sites Listed within the Vicinity of the Project Site (cont.)		
Pennzoil-Quaker State Alameda Specialty Plant	SLIC Program Site	Undergoing verification monitoring as of September 1, 2009. Lubricating oils were discovered in the tank farm area in 1985 and additional oil was spilled in the area in 1990. Contaminated soil was removed in 2002, however some contaminated soil was left under aboveground storage tanks to maintain their structural integrity. Permit violations were discovered in 2006 and 2008 resulting in the issuance of a Notice of Violation in 2009. Contamination at this facility is also attributed to former USTs adjacent to the shipping area and USTs located east of the aboveground tank containment area, under the warehouse. Groundwater monitoring was conducted quarterly starting in 1995 and semiannually beginning in 2009.
Westline Industries, 1925 Lafayette	LUST Cleanup Site	Cleanup completed as of May 5, 1995.
Encinal Marina Ltd, 2099 Grand Street	LUST Cleanup Site	Cleanup completed as of June 10, 2010.
Grand Marina Village, 2051 Grand Street	SLIC Program Site	Cleanup completed as of July 16, 2010. Past site use as a lumber yard, ship repair yard, auto repair, carpentry shop, blacksmith, animal shelter, and bulk oil storage facility. The potential contaminants of concern included arsenic, diesel, and heating and fuel oil, affecting the soil, groundwater, and surface water. Planned redevelopment as residential.
Grand Street Tank Farm, 2047 Grand Street	SLIC Program Site	Open, but inactive as of June 4, 2009. The potential contaminants of concern include benzene, diesel, gasoline, and TPH, affecting the soil.
Penzoil Gas Station, 2015 Grand Street	LUST Cleanup Site	Cleanup completed as of November 3, 1995.
Whitmore's Auto Service	LUST Cleanup Site	Awaiting assessment as of August 29, 2002. In August 2002, four USTs were removed and significantly elevated levels of hydrocarbon contamination was detected in soil. SPH was detected during tank removal and no free product removal has been completed. The site is not characterized and the extent of contamination is unknown.

SOURCE: DTSC, 2017; SWRCB, 2017

Hazardous Building Materials

Redevelopment of infill sites often involves the need to demolish existing older structures. Many older buildings contain building materials that can be hazardous to people and the environment once disturbed. These materials include lead-based paint (LBP), asbestos-containing materials (ACM), and polychlorinated biphenyls (PCBs).

Lead and Lead-Based Paint

Prior to the U.S. Environmental Protection Agency (U.S. EPA) ban in 1978, LBP was commonly used on interior and exterior surfaces of buildings. Through such disturbances as sanding and scraping activities, or renovation work, or gradual wear and tear, old peeling paint, or paint dust particulates have been found to contaminate surface soils or cause lead dust to migrate and affect indoor air quality. Exposure to residual lead can cause severe adverse health effects, especially in children.

Asbestos

Asbestos is a naturally-occurring fibrous material that was extensively used as a fireproofing and insulating agent in building construction materials before such uses were banned by the EPA in the 1970s. ACM were commonly used for insulation of heating ducts as well as ceiling and floor tiles. Similar to lead-based paint, ACM contained within the building materials present no significant health risk because there is no exposure pathway. However, once these tiny fibers are disturbed, they can become airborne and become a respiratory hazard. Once they are inhaled, they can become lodged in the lung potentially causing lung disease or other pulmonary complications.

State laws and regulations prohibit emissions of asbestos from asbestos-related manufacturing, demolition, or construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos; specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos fibers; and require notice to federal and local governmental agencies prior to beginning renovation or demolition that could disturb asbestos. The San Francisco Bay Area Air Quality Management District (BAAQMD) has the authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified ten days in advance of any proposed demolition or abatement work. (See *Regulatory Setting*, below, for further regulations regarding asbestos removal.)

Polychlorinated Biphenyls (PCBs)

PCBs are organic oils that were formerly used primarily as insulators in many types of electrical equipment including transformers and capacitors. After PCBs were determined to be a carcinogen in the mid to late 1970s, the U.S. EPA banned PCB use in most newer equipment and began a program to phase out certain existing PCB-containing equipment. Fluorescent lighting ballasts manufactured after January 1, 1978, do not contain PCBs and are required to have a label clearly stating that PCBs are not present in the unit.

Mercury

Spent fluorescent light tubes, thermostats, and other electrical equipment contain heavy metals such as mercury that, if disposed of in landfills, can leach into soil or groundwater. Lighting tubes typically contain concentrations of mercury that may exceed regulatory thresholds for hazardous waste and, as such, must be managed in accordance with hazardous waste regulations. Elemental mercury waste is considered hazardous. Mercury can also be present in the plumbing of older buildings in which mercury-containing equipment has been used.

Regional and Site Setting

The project site and vicinity are characterized by a mix of maritime, residential, commercial and retail, warehouse and dry storage uses. The site is generally flat, and consists of public tidelands and privately owned land and submerged land areas. An existing boat marina on-site covers approximately 16.2 acres with more than a dozen piers and approximately 530 boat slips. The northeast edge of the site is lined with rip-rap slopes and bulkheads of various construction types along the waterfront. More than 80 percent of the land portion of the site is currently paved in asphalt or concrete for circulation and outside boat and vehicle storage, which takes up most of the west and east portions of the site. There are approximately 30 buildings on the site, which cover about 16 percent of the total land area. Most of the buildings were built before 1943 and have been renovated extensively over the decades.

The project site featured historic recreational and naval boatyard uses, and has underground storage tanks. A portion of the property was developed in 1914 as the Barnes & Tibbetts shipyard. In 1922, General Engineering & Dry Dock Co. of San Francisco bought and expanded the yard, adding new piers and marine railways. In 1940, with financial assistance from the U.S. Maritime Commission, General Engineering re-built the yard, adding a dry dock and approximately 30 new buildings, many of which still exist today. After World War II, the shipyard remained in operation until it closed for good in the mid-1960s. Pacific Shops, Inc. acquired the property in 1962 and removed most of the shipbuilding infrastructure to construct the Alameda Marina.

One previously documented hazardous materials release occurred at one building (1829 Clement Avenue) on the project site when it was occupied by Kem-Mil-Co, a metal fabricator. Three groundwater monitoring wells were drilled and installed at 1829 Clement Avenue on September 11, 1990 (Treadwell & Rollo, 2006).

Contaminants of Potential Concern On Site

Known, suspected, and possible contaminants of concern at the Alameda Marina were identified in a *Sampling and Analysis Plan* prepared in July 2013. Areas of general concern on the project site included a former potential coal gas manufacturing plant, historical and remnant USTs, oil lines, railway spurs, plating and paint shops. Offsite and onsite volatile organic compound (VOC) sources from general industrial uses are also present, and elevated metal concentration associated with onsite fill material. The known contaminants included hydrocarbons associated with former USTs and VOCs (specifically tetrachloroethylene (PCE)) associated with onsite trenching data and a known offsite source (Cargill Salt site, described below). The suspected contaminants included potential poly aromatic hydrocarbons (PAHs)/poly-nucleated aromatics (PNAs) associated for the former potential coal gas manufacturing area, pesticides/herbicides associated with historical weed suppression and wood treatment, and metals associated with fill material. Unlikely chemicals of concern included PCBs and the full suite of semi-volatile organic compound (SVOCs) (Stellar, 2013a).

During trenching work conducted at the north end of Building 12 in 2013, some soil composite samples were analyzed for VOCs, metals, and hydrocarbons for purposes of soil profiling for offsite disposal. The analyses showed lead at concentrations >100 milligram/kilogram (mg/kg) in

all samples, and PCE to be present at a concentration of 84.6 µg/kg. While the PCE concentration is less than the applicable commercial Environmental Screening Level (ESL) of 550 µg/kg, it does raise the question of the PCE origin in this area. Total hydrocarbons reported totaled 740 mg/kg, a concentration not uncommon in commercial industrial soils (Stellar, 2013b).

Contaminants of Potential Concern Offsite

The Cargill Salt site located at 2016 Clement Avenue is an upgradient offsite source with a reasonable capacity to affect the project site. The contaminants of concern at this offsite source are VOCs, primarily PCE and its breakdown product, trichloroethene (TCE). However, no VOCs were detected onsite in the area immediately down gradient of the offsite source. Additionally, a phytoremediation project was implemented at the Cargill Salt site in June 2005 and has demonstrated reductions in PCE concentrations in groundwater. March 2015 well data at the well immediately up gradient of the project site showed non-detection of VOCs. Therefore, the potential source does not appear to impact the project site (Stellar, 2013b).

Site Cleanup Completed and Remedial Action Objectives

Non-Fuel Related Onsite Contamination

A surface soil investigation in 1988 resulted in the discovery of metal contaminated soil beneath portions of the building at 1829 Clement Avenue that was underlain by a dirt subfloor. Soil samples to 4 feet below grade contained elevated concentrations of heavy metals, cyanide, and other compounds. Based on these initial results, an additional field investigation consisting of 13 soil borings and seven surface soil samples was conducted between February 11 and March 9, 1990. Surface soil samples collected beneath the western portion of the building contained cyanide at concentrations ranging from 120 to 1,300 parts per million (ppm). The results of the 1988 and 1990 investigations indicated that significant quantities of cyanide and metals were generally within the upper 3 to 6 inches of soil beneath the former etch process area in the western portion of the building and in the dried sediment on top of asphalt paving located beneath the treatment area in the eastern portion of the building.

A clean-up program consisting of high-efficiency vacuuming of the asphalt pavement beneath the eastern portion of the building (treatment and storage areas) and hand removal of surface soils beneath the western portion of the building (etch process areas) was conducted between April 16 and May 24, 1990. Following the vacuuming beneath the eastern portion of the building, the pavement surface and concrete footings were sealed with 3 inches of cement slurry and stucco. Following soil removal beneath the western portion of the building, concrete footings were sealed with latex enamel paint. In addition to removal of the contaminated soil, all former process piping and stained wood flooring were removed from the building. Laboratory analysis of nine surficial soil samples collected following clean-up reported cyanide concentrations ranging from less than 1.0 to 8.3 ppm. Residual concentrations of copper ranged from 5.6 to 360 ppm. Visual observation of staining and soil discoloration was used to guide clean-up and sampling activities. ACEH provided a case closure for this SLIC case RO0002624 in December 2010 as applied to the subfloor area beneath the building at 1829 Clement Avenue (Stellar, 2013b).

Known USTs and Closures

There have been three definitive UST closures on the project site, and one suspected but unrecorded UST closure. Leaks from former gasoline and diesel fuel USTs were removed in July 1999. Leaks from two former Bunker oil USTs and a diesel UST were removed in March 2007. There is also a currently operating fuel UST that is permitted, operated, and maintained by Pacific Shops (Stellar, 2013b).

2013 and 2015 Investigations

Soil, soil-gas, and groundwater investigations that evaluated environmental contamination were conducted in July 2013 and September 2015. Relatively elevated metals in the soil—most prominently lead and also chromium—are the main site concern across the project site (except one instance of barium in soil) where the concentrations in the soil itself or the solute extraction classify the soil as hazardous waste. Elevated hydrocarbon concentrations found exceeding their respective ESLs are associated with shallow upper 2 feet of soil. Some PNA and PAH compounds were detected in the soil, but are not suggested to be a known point source, although there is a geographic association with the Navy property along the eastern border of the project site. No VOC, semi-volatile organic compounds (SVCOs), or pesticides were detected above their respective ESLs.

Detections of benzene and ethlybenzene above their ESLs were found in a parking area that has no historical hydrocarbon point source use or issues. It may simply reflect some spillage soil contamination (and subsequent soil-gas contamination) from the area use as a parking lot. Benzene was detected above its ESL elsewhere onsite; however, the concentration was at 43 micrograms per cubic meter ($\mu g/m^3$) compared to benzene ESL or 42 $\mu g/m^3$. The soil-gas data, does not suggest that a specific sub-slab depressurization system (SSDS) is needed beneath the building to mitigate against potential vapor intrusion.

Petroleum hydrocarbons are the primary groundwater contaminant of concern, occurring at concentrations above ESLs in the Total petroleum hydrocarbons (TPHd) and total petroleum hydrocarbons as motor oil (TPHmo) range, not total petroleum hydrocarbons as gasoline (TPHg). Benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected in any of the samples. Naphthalene was detected above its ESL and one PAH, acenaphthene was above its ESL. No SVOCs were detected in the groundwater samples (Stellar, 2013b; 2015).

Wildland Fire

Factors that contribute to the risk of fire include dense and fire-prone vegetation, poor access to fire-fighting equipment because of slopes or inadequate roads, lack of adequate water pressure and service in fire-prone locations, and seasonal atmospheric conditions that result in warm, dry fire seasons with strong afternoon winds. Wildfire hazard maps from the California Department of Forestry and Fire Protection (CAL FIRE) and compiled by the Association of Bay Area Governments (ABAG) show the site as not being within or immediately adjacent to an area that is considered a fire threatened community (ABAG, 2017).[1] The CAL FIRE Fire Hazard Severity Zones maps rank land under local and State responsibility as to wildland fire hazard. The project

[1] The mapping tool used for this interface is not intended for site specific analysis and as a result this discussion is generalized.

site is shown as being located within an area considered to be a Non-Very High Fire Hazard Severity Zone (non-VHFHSZ) (CAL FIRE, 2008). While these maps are not intended for site specific planning, they do indicate potential risks based on existing conditions.

Airports and Air Hazards

Airport Influence Areas are used in land use planning to identify areas commonly overflown by aircraft as they approach and depart an airport, or as they fly within established airport traffic patterns. The project site is located approximately 5 miles north of Oakland International Airport, the nearest airport. Due to the project site's location outside an airport influence area, the public safety requirements to minimize the risk related to airport proximity would not apply.

4.6.3 Regulatory Setting

Federal

The primary federal agencies with responsibility for hazardous materials management include the U.S. EPA, U.S. Department of Labor Occupational Safety and Health Administration (Fed/OSHA), and the U.S. Department of Transportation (DOT). Federal laws, regulations, and responsible agencies are summarized in **Table 4.6-2**.

State and local agencies often have either parallel or more stringent regulations than federal agencies. In most cases, state law mirrors or overlaps federal law and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated. For these reasons, the requirements of the law and its enforcement are discussed under either the state or local agency section.

State

Unified Program

The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs (see below). The Unified Program Administration and Advisory Group (UPAAG) was created to foster effective working partnerships between local, State and federal agencies. The UPAAG's goals and objectives are listed in the UPAAG Strategic Plan. The six programs are:

- Hazardous Materials Release Response Plans and Inventories (Business Plans)
- California Accidental Release Prevention (CalARP) Program
- Underground Storage Tank Program
- Aboveground Petroleum Storage Act (APSA) Program
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs
- California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements

TABLE 4.6-2
FEDERAL LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT

Classification	Law or Responsible Federal Agency	Description
Hazardous Materials Management	Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA)	Imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of and to prevent or mitigate injury to human health or the environment in the event that such materials are accidentally released.
Hazardous Waste Handling	Resource Conservation and Recovery Act of 1976 (RCRA)	Under RCRA, the EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from "cradle to grave."
	Hazardous and Solid Waste Act	Amended RCRA in 1984, affirming and extending the "cradle to grave" system of regulating hazardous wastes. The amendments specifically prohibit the use of certain techniques for the disposal of some hazardous wastes.
Hazardous Materials Transportation	U.S. Department of Transportation (DOT)	Has the regulatory responsibility for the safe transportation of hazardous materials. The DOT regulations govern all means of transportation except packages shipped by mail (49 CRF).
	U.S. Postal Service (USPS)	USPS regulations govern the transportation of hazardous materials shipped by mail.
Occupational Safety	Occupational Safety and Health Act of 1970	Fed/OSHA sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries (29 Code of Federal Regulations [CFR]).
Structural and Building Components (Lead-based paint, PCBs, and asbestos)	Toxic Substances Control Act (TSCA)	Regulates the use and management of PCBs in electrical equipment, and sets forth detailed safeguards to be followed during the disposal of such items.
	U.S. EPA	The EPA monitors and regulates hazardous materials used in structural and building components and effects on human health.

The State agency partners involved in the Unified Program have the responsibility of setting program element standards, working with Cal/EPA on ensuring program consistency, and providing technical assistance to the certified unified program agencies (CUPAs). The following State agencies are involved with the Unified Program:

California Environmental Protection Agency (Cal EPA). The Secretary of the California Environmental Protection Agency is directly responsible for coordinating the administration of the Unified Program. The Secretary certifies Unified Program Agencies. The Secretary has certified 83 CUPAs to date. These 83 CUPAs carry out the responsibilities previously handled by approximately 1,300 State and local agencies.

Department of Toxic Substances Control (DTSC). The Department of Toxic Substances Control provides technical assistance and evaluation for the hazardous waste generator program including onsite treatment (tiered permitting).

Governor's Office of Emergency Services (OES). The Governor's Office of Emergency Services is responsible for providing technical assistance and evaluation of the Hazardous

Material Release Response Plan (Business Plan) Program and the California Accidental Release Response Plan (CalARP) Programs.

Office of the State Fire Marshal (OSFM). The Office of the State Fire Marshal is responsible for ensuring the implementation of the Hazardous Material Management Plans and the Hazardous Material Inventory Statement Programs. These programs tie in closely with the Business Plan Program.

State Water Resources Control Board (SWRCB). The State Water Resources Control Board provides technical assistance and evaluation for the underground storage tank program in addition to handling the oversight and enforcement for the aboveground storage tank program.

Title 22 of the California Code of Regulations & Hazardous Waste Control Law, Chapter 6.5 DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under RCRA and the California Hazardous Waste Control Law. Both laws impose "cradle to grave" regulatory systems for handling hazardous waste in a manner that protects human health and the environment. Cal EPA has delegated some of its authority under the Hazardous Waste Control Law to county health departments and other CUPAs.

Hazardous Materials Management

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that any business that handles hazardous materials prepare a business plan, which must include the following:

- Details, including floor plans, of the facility and business conducted at the site;
- An inventory of hazardous materials that are handled or stored on site;
- An emergency response plan; and
- A safety and emergency response training program for new employees with annual refresher courses.

Hazardous Waste Handling

The Cal EPA/DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely.

Under the federal RCRA, described in **Table 4.6-2**, individual states may implement their own hazardous waste programs in lieu of RCRA, as long as the state program is at least as stringent as federal RCRA requirements. In 1992, USEPA authorized DTSC to be the primary authority for enforcing RCRA hazardous waste requirements in California. DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management

of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

California Human Health Screening Levels

The California Human Health Screening Levels (CHHSLs) were developed as a tool to assist in the evaluation of contaminated sites for potential adverse threats to human health. Preparation of the CHHSLS was required by the California Land Environmental Restoration and Reuse Act of 2001 (SB 32 (Chapter 764, Statutes of 2001, OEHHA, 2010). The CHHSLs are concentrations of 54 hazardous chemicals in soil or soil gas the Cal/EPA considers to be below thresholds of concern for risks to human health. The CHHSLs were developed by OEHHA, an agency under the umbrella of Cal/EPA, and are contained in its report entitled *Human-Exposure-Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil* (OEHHA and Cal EPA 2005). The thresholds of concern used to develop the CHHSLs are an excess lifetime cancer risk of 1 in 1 million and a hazard quotient of 1.0 for noncancer health effects. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by USEPA and Cal/EPA. The CHHSLs can be used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred. Under most circumstances, the presence of a chemical in soil, soil gas, or indoor air at concentrations below the corresponding CHHSLs can be assumed to not pose a significant health risk to people who may live (residential CHHSLs) or work (commercial/industrial CHHSLs) at the site.

California Department of Toxic Substances Control / Hazardous Waste Management

The Federal Resource Conservation and Recovery Act of 1976 (RCRA) established a “cradle-to-grave” regulatory program governing the generation, transportation, treatment, storage, and disposal of hazardous waste. Under RCRA, individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program is at least as stringent as federal RCRA requirements (see **Table 4.6-2**).

The U.S. EPA approved California’s RCRA program, called the Hazardous Waste Control Law (HWCL) in 1992. In California, Cal EPA and the Department of Toxic Substances Control DTSC, a department within Cal EPA, regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; dictate the management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills. These regulations also require hazardous waste generators to prepare a Hazardous Waste Contingency Plan that describe hazardous waste storage and secondary containment facilities, emergency response and evacuation procedures, and employee hazardous waste training program. While DTSC generally retains authority, day to day enforcement of hazardous waste management rules is delegated to the CUPA, Alameda County Department of Environmental Health (ACDEH).

Hazardous Materials Transportation

The State of California has adopted federal DOT regulations for the intrastate movement of hazardous materials. State regulations are contained in Title 26 of the California Code of

Regulations (CCR). In addition, the State of California regulates the transportation of hazardous waste originating in the state and passing through the state (26 CCR). Both regulatory programs apply in California. The two state agencies that have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans).

Occupational Safety and Health Administration

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in Title 29 of the Code of Federal Regulations (CFR). Cal/OSHA standards are generally more stringent than federal regulations.

Cal/OSHA regulations (8 CCR) concerning the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances, and communicating hazard information relating to hazardous substances and their handling. State laws, like federal laws, include special provisions for hazard communication to employees in research laboratories, including training in chemical work practices. Specific, more detailed training and monitoring is required for the use of carcinogens, ethylene oxide, lead, asbestos, and certain other chemicals listed in 29 CFR.

In January 1996, Cal EPA adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The program has six elements: hazardous waste generators and hazardous waste on-site treatment; underground storage tanks; aboveground storage tanks; hazardous materials release response plans and inventories; risk management and prevention programs; and Unified Fire Code hazardous materials management plans and inventories. The plan is implemented at the local level. The Certified Unified Program Agency (CUPA) is the local agency that is responsible for the implementation of the Unified Program. In the City of Alameda, ACDEH is the designated CUPA for all businesses.

California Department of Toxic Substances Control

The DTSC is responsible for regulating management of hazardous waste and correction of releases of hazardous constituents to the environment. The DTSC promulgates rules and regulations, but enforcement of compliance with California hazardous waste management regulations is delegated to local agencies. CCHS is the local agency having jurisdiction over compliance with California hazardous waste management regulations. DTSC retains the authority to intercede in hazardous waste management issues, permitting for hazardous waste treatment, storage and disposal, and review and approval of corrective action planning activity at hazardous waste contaminated sites.

Local

Airborne Pollutants

The BAAQMD is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified ten days in advance of any proposed demolition or abatement work. Cal/OSHA regulates asbestos removal to ensure the health and safety of workers removing asbestos containing materials and also must be notified of asbestos abatement activities.

Alameda County Hazardous Waste Management Program

Assembly Bill (AB) 2948 required counties and cities either to adopt a county hazardous waste management plan as part of their general plan, or to enact an ordinance requiring that all applicable zoning, subdivision, conditional use permit, and variance decisions be consistent with the county hazardous waste management plan. Once each County had its Hazardous Waste Management Program approved by the State, each city had 180 days to 1) adopt a City Hazardous Waste Management Plan containing specified elements consistent with the approved County Hazardous Waste Management Plan; 2) incorporate the applicable portions of the approved Plan, by reference, into the City's General Plan, or 3) enact an ordinance that requires all applicable zoning, subdivision, conditional use permits, and variance decisions be consistent with the specified portions of the plan. Alameda County has adopted a Hazardous Waste Management Program that addresses procedures for hazardous materials incidents. The Alameda County Hazardous Materials Program is part of the Hazardous Materials / Waste Division within Alameda County Department of Environmental Health and is the Certified Unified Program Agency (CUPA) for the City of Alameda. Under the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program, the ACDEH is certified by the DTSC to implement the following programs:

- Hazardous Materials Management Plan and Inventory (HMMP) and the Hazardous Materials Business Plan (HMBP)
- Risk Management program (RMP)
- UST Program
- Spill Prevention, Control and Countermeasure (SPCC) Plan for ASTs
- Hazardous waste generators
- Onsite hazardous waste treatment (tiered permit)

Submittal of updated HMMP and HMBP to the ACDEH in accordance with changes to hazardous materials storage and disposal locations and volumes in association with implementation of the project and future operation of the hospital would be required. Potential removal or installation of USTs or ASTs under the project would also be subject to oversight by ACDEH.

City of Alameda General Plan

The City of Alameda General Plan identifies the policies and strategies necessary to address hazards and hazardous materials. Goals and policies presented in the Safety and Noise, and Open Space and Conservation elements of the General Plan applicable to this project are as follows:

Policy SN-1 Maintain emergency management and disaster preparedness as a top City priority.

a) Maintain and update the recommendations and standards established in the City of Alameda's Emergency Management and Operations Plan as the guide for disaster planning in Alameda.

b) Maintain training programs to ensure that City personnel are sufficiently prepared to respond to an emergency and staff the Emergency Operations Center.

c) Identify and publicize essential emergency facilities in the City, including shelters, evacuation routes, and emergency operation staging areas, and take the necessary actions to ensure that they will remain operational following a disaster.

d) Conduct periodic emergency response exercises to test the effectiveness of local preparedness response, recovery, and mitigation procedures.

Policy SN-29 Continue to identify and assess the risks associated with various hazardous materials transported in Alameda.

Policy SN-30 Increase public awareness of hazardous material use and storage in the City, the relative degree of potential health hazards, and the appropriate channels for reporting odor problems and other nuisances.

a) Promote public education about the safe disposal of household hazardous waste, such as motor oil and batteries, including the locations of designated household hazardous waste disposal sites.

Policy SN-31 Work with county, regional, state and federal agencies to implement programs for hazardous waste reduction, hazardous material facility siting, hazardous waste handling and disposal, public education and regulatory compliance.

a) Continue to remove and monitor methane gas produced as a waste product of materials decomposing in the former landfill on Doolittle Drive.

Policy SN-32 Work with county, regional, state, and federal agencies and private property owners to ensure that the necessary steps are taken to clean up residual hazardous waste on any contaminated sites.

a) Require that all new construction, including construction on former industrial sites, has been cleared for residential, commercial or industrial uses from the appropriate federal, state and local agencies and acts, including the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Program, the Resource Conservation and Recovery Act (RCRA), the California Department of Toxic Substances Control (DTSC), the Regional Water Quality Control Board (RWQCB) and the Alameda County Department of Environmental Health (ACDEH), which is the Certified Unified Program

Agency (CUPA) responsible for implementing state environmental regulations related to hazardous waste and hazardous materials.

Policy SN-33 Continue to support the various resource recovery initiatives and other measures specified in the Alameda County Countywide Integrated Waste Management Plan.

Policy SN-34 Ensure that the City's Emergency Preparedness programs include provisions for hazardous materials incidents, as well as measures to quickly alert the community and ensure the safety of residents and employees following an incident.

a) Improve the training and capability of the Fire Department to handle accidental releases of hazardous materials. Provide ongoing training for hazardous materials enforcement and response personnel. Apply the Emergency Operations Plan, if necessary, in response to a hazardous materials release disaster

Policy SN-35 Require adequate and safe separation between areas and uses with hazardous materials and sensitive uses such as schools, residences and public community facilities.

Policy SN-36 Require that all facilities that handle and/or store hazardous materials are designed to minimize the possibility of environmental contamination and adverse off-site impacts and that they are in compliance with state and federal standards and requirements designed to protect public health and the environment.

Policy SN-37 Encourage residential, commercial and industrial property owners to test their properties for elevated levels of radon gas (more than 4 pico curies per liter).

Policy SN-45 Regulate land uses within designated airport safety zones, height referral areas, and noise compatibility zones to minimize the possibility of future noise conflicts and accident hazards.

Policy SN-46 Maintain a high degree of readiness to respond to aircraft crashes through participation in preparedness drills and mutual aid activities with the City and Port of Oakland to ensure quick and effective response to emergencies.

Policy 5.1.u Participate in the County Hazardous Waste program and/or consider establishment of hazardous waste and/or oil disposal or transfer sites.

Policy 5.1.w Require new marinas and encourage existing marinas to provide easily accessible waste disposal facilities for sewage and bilge and engine oil residues.

4.6.4 Impacts and Mitigation Measures

Significance Criteria

Consistent with Appendix G of the State CEQA *Guidelines*, a project would cause adverse impacts related to hazards and hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials;

- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would result in a safety hazard for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, would result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Exposure of the public to air emission hazards associated with construction and operation of the project is addressed in Section 4.2, *Air Quality*.

Topics with No Impact or Otherwise Not Addressed in this EIR

Review and comparison of the setting circumstances and project characteristics with each of the eight significance criteria stated above clearly show that no impacts associated with hazards or hazardous materials would result for criteria related to: emitting hazardous materials within a quarter mile of a school, impacts to nearby airports, or risk exposure to wildland fires. The following discusses the reasoning supporting this conclusion:

The project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.

Although the proposed project uses would entail the storage, handling, transport, and disposal of hazardous materials and wastes, the project site is not located within 0.25 miles of an existing or proposed school. Therefore, the project would not handle or result in emissions of hazardous materials within 0.25 miles of an existing school, and would have no impact.

The project would not be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport.

There is no airport land use plan that includes the project site, and there are no public airports or public use airports within two miles of the project site. Therefore, the project would have no impact.

The project would not be located in the vicinity of a private airstrip.

There is no private airstrip in the vicinity of the project site. Therefore, the project would have no impact.

The project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires.

The proposed project site is not located in, nor has it been designated as a wildland fire hazard area. The project site is largely surrounded by water and developed areas. Emergency services are provided locally by the City and all new construction would be designed and constructed in accordance with current Fire Safety Codes. Therefore, there would be no impact related to wildland fires.

Approach to Analysis

The following analysis considers existing site uses and regulatory requirements along with the proposed project. Considering some of the general proposed site uses such as residential and commercial core (including maritime, small office, warehouse, retail, and maker uses), some assumptions have been made based on professional judgment about typical uses and practices of handling, storing and disposing of hazardous materials.

Impact Analysis

Impact HAZ-1: Demolition of the existing structures on the project site which likely contain hazardous building materials—such as lead-based paint, asbestos, and PCBs—could potentially expose workers, the public, or the environment to hazardous materials from the transport, use, or disposal of these hazardous materials and waste. ***(Less than Significant with Mitigation)***

Demolition of existing structures on the project site may expose construction workers, the public, or the environment to hazardous materials such as LBP, ACMs, and PCBs. The level of potential impact is dependent upon the age, construction, and building materials of each building. Based on the age of the existing structures, any of these hazardous building materials could be present at the site which, if disturbed, could expose workers and the public during demolition. Any remaining ACMs would need appropriate abatement of identified asbestos prior to demolition. Friable asbestos is regulated as a hazardous air pollutant under the Clean Air Act and, ACMs, as a potential worker safety hazard under the authority of Cal OSHA. Potential exposure to these hazardous building materials can be reduced through appropriate abatement measures.

Exposure to asbestos, and the resulting adverse health effects, is possible throughout the demolition and renovation phases if ACMs are present. RGA Environmental Inc. (RGA) conducted a limited survey to identify suspected ACMs and exterior damaged paint in the buildings at the project site and presented their findings in their November 2006 report. No damaged and friable ACMs were identified during the survey and RGA did not recommend any remedial action related to ACMs. However, RGA did recommend a comprehensive asbestos survey be completed prior to renovation or demolition of any of the structures on the property (Treadwell & Rollo, 2006). In structures slated for demolition under the proposed project, any ACMs detected would be

required to be abated in accordance with state and federal regulations prior to the start of demolition or renovation activities.

Section 19827.5 of the California Health and Safety Code requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. The BAAQMD is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified at least 10 days in advance of any proposed demolition or abatement work. The provisions that cover these operations are found in District Regulation 11, Rule 2.

Asbestos abatement contractors must follow state regulations contained in 8 CCR 1529 and 8 CCR 341.6 through 341.14 where there is asbestos-related work involving 100 square feet or more of ACMs. Asbestos removal contractors must be certified by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur must have a hazardous waste generator number assigned by and registered with the DTSC in Sacramento. The applicant and the transporter of the waste are required to file a hazardous waste manifest that details the transportation of the material from the site and its disposal.

Based on the age of the buildings, all painted surfaces were assumed to contain lead and the location and approximate quantities of damaged lead paint were identified in each building based on RGA's assessment (Treadwell & Rollo, 2006). Both the federal OSHA and Cal OSHA regulate worker exposure during construction activities that disturb LBP. The Interim Final Rule found in 29 CFR 1926.62 covers construction work in which employees may be exposed to lead during such activities as demolition, removal, surface preparation for repainting, renovation, cleanup, and routine maintenance. OSHA-specified compliance includes respiratory protection, protective clothing, housekeeping, special high-efficiency filtered vacuums, hygiene facilities, medical surveillance, and training.

Fluorescent lighting ballasts manufactured prior to 1978, and electrical transformers, capacitors, and generators manufactured prior to 1977, may contain PCBs. In accordance with the Toxic Substances Control Act and other federal and state regulations, the applicant would be required to properly handle and dispose of electrical equipment and lighting ballasts that contain PCBs, reducing potential impacts to a less-than-significant level.

Implementation of **Mitigation Measures HAZ-1a** through **HAZ-1e** would reduce construction period impacts to less-than-significant levels.

> **Mitigation Measure HAZ-1a:** Prior to issuance of any demolition permit, the project applicant shall submit to the Alameda County Department of Environmental Health a hazardous building material assessment prepared by qualified licensed contractors for any structure intended for demolition indicating whether ACMs, LBP or lead-based coatings, and/or PCB-containing equipment, are present.
>
> **Mitigation Measure HAZ-1b:** If the assessment required by Mitigation Measure HAZ-1a indicates the presence of ACMs, LBP, and/or PCBs, the project applicant shall create and implement a health and safety plan in accordance with local, state, and federal requirements

to protect demolition and construction workers and the public from risks associated with such hazardous materials during demolition or renovation of affected structures.

Mitigation Measure HAZ-1c: If the assessment required by Mitigation Measure HAZ-1a finds asbestos, the project applicant shall prepare an asbestos abatement plan and shall ensure that asbestos abatement is conducted by a licensed contractor prior to building demolition. Abatement of known or suspected ACMs shall occur prior to demolition or construction activities that would disturb those materials. Pursuant to an asbestos abatement plan developed by a state-certified asbestos consultant and approved by the City, all ACMs shall be removed and appropriately disposed of by a state certified asbestos contractor.

Mitigation Measure HAZ-1d: If the assessment required by Mitigation Measure HAZ-1a finds presence of LBP, the project applicant shall develop and implement a LBP removal plan. The plan shall specify, but not be limited to, the following elements for implementation:

1. Develop a removal specification approved by a Certified Lead Project Designer.
2. Ensure that all removal workers are properly trained.
3. Contain all work areas to prohibit off-site migration of paint chip debris.
4. Remove all peeling and stratified LBP on building and non-building surfaces to the degree necessary to safely and properly complete demolition activities according to recommendations of the survey. The demolition contractor shall be responsible for the proper containment and/or disposal of intact LBP on all materials to be cut and/or removed during the demolition.
5. Provide on-site personnel and area air monitoring during all removal activities to ensure that workers and the environment are adequately protected by the control measures used.
6. Clean up and/or vacuum paint chips with a high efficiency particulate air (HEPA) filter.
7. Collect, segregate, and profile waste for disposal determination.
8. Properly dispose of all waste.

Mitigation Measure HAZ-1e: If the assessment required by Mitigation Measure HAZ-1a finds presence of PCBs, the project applicant shall ensure that PCB abatement in compliance with applicable regulations is conducted prior to building demolition or renovation. PCBs shall be removed by a qualified contractor and transported in accordance with Caltrans requirements.

Significance after Mitigation: Less than Significant.

Impact HAZ-2: Construction at the project site could potentially disturb soil and groundwater impacted by historical hazardous material use, which could expose construction workers, the public, or the environment to adverse conditions related to the transport, use, or disposal of hazardous materials and waste. (*Less than Significant with Mitigation)*

Construction activities would include demolition of some existing buildings, excavation and trenching, which could potentially intercept and/or disturb or uncover impacted soil and/or groundwater. Construction involving excavation of contaminated soils can pose a risk to project workers (and potentially even to close bystanders) if high concentration contamination is encountered. This issue is relevant only in cases of elevated contaminant concentrations where the exposure threshold(s) is likely to be exceeded.

Exposure to hazardous materials could cause various short-term and/or long-term health effects. Possible health effects could be acute (immediate, or of short-term severity), chronic (long-term, recurring, or resulting from repeated exposure), or both. Acute effects, often resulting from a single exposure, could result in a range of effects from minor to major, such as nausea, vomiting, headache, dizziness, or burns. Chronic exposure could result in systemic damage or damage to organs, such as the lungs, liver, or kidneys. Health effects would be specific to each hazardous material and would depend on a number of factors including dose, route, frequency, and duration of exposure.

The detected concentrations of arsenic and lead onsite were documented below hazardous levels but above the Water Board soil ESLs as it pertains to worker direct exposure risk. Other than implementation of Best Management Practices (BMPs) to minimize dust and dermal contact, as discussed below, no additional health and safety precautions should be required during earth moving operations. Particulate air sampling could be conducted during earth moving activities as part of health and safety monitoring to document usage of proper dust control measures to mitigate potential exposure risk.

To reduce worker health risks associated with potentially contaminated soil, a detailed Site-Specific Environmental Health and Safety Plan (HASP) would be prepared by the selected site contractor as required by **Mitigation Measure HAZ-2a**. The HASP would be consistent with State and federal OSHA standards for hazardous waste operations (California Code of Regulations, Title 8, Section 5192 and 29 Code of Federal Regulations 1910.120, respectively) and any other applicable health and safety standards. Among other things, the HASP would include descriptions of health and safety training requirements for onsite personnel and levels of personal protective equipment to be used, and any other applicable precautions to be undertaken to minimize direct contact with soil and to a lesser degree, groundwater if is encountered.

To reduce environmental risks associated with encountering contaminated soil discovered during grading and construction, the Site Management Plan (SMP), as required by **Mitigation Measure HAZ-2b**, would include protocols to isolate any suspected contaminated soil, notify the appropriate regulatory overseeing agency, sample for hazardous material content, and manage it in accordance with all applicable state, federal, and local laws and regulations. The detailed site-specific SMP would be developed based on the development plan and its staging. The primary

area of concern, as identified in the investigations to date, is focused on the contaminated soil to be removed during the shallow excavation (to about 2 feet below grade) associated with the grubbing and grading stage. The SMP would outline procedures and protocols for handling and disposal of soil excavated during construction activities and the associated excavation impacts and mitigation measures. The SMP measures would be implemented by the excavation contractor and any future earthwork contractors to mitigate potential impacts to human health and the environment during excavation at the site. All site soil excavation and earthwork would be subject to SMP procedures. The SMP would include measures to mitigate the potential impacts of earthwork including: dust control measures, decontamination of construction and transportation equipment, stormwater pollution controls, and treatment of any groundwater prior to disposal to the storm drain, to the sanitary sewer, or at an appropriate offsite facility.

Dust control measures would be implemented during construction activities at the site to minimize the generation of dust. It is particularly important to minimize exposure of onsite construction workers or commercial workers if present on other areas of the site to dust containing any contaminants of concern and to prevent nuisance dust and dust containing contaminants of concern from migrating offsite. Dust generation activities that would be mitigated include those associated with excavation activities, creation of soil stockpiles, truck traffic on unpaved areas of the site, ambient wind traversing soil stockpiles, and loading of soil into transportation vehicles. Dust control measures may include:

- Misting or spraying water while performing excavation activities and loading transportation vehicles;
- Limiting vehicle speeds onsite to 5 miles per hour;
- Controlling excavation activities to minimize the generation of dust;
- Minimizing drop heights while loading transportation vehicles; and
- Covering any soil stockpiles generated as a result of excavating soil potentially impacted by contaminants of concern with plastic sheeting or tarps.

Construction equipment and transportation vehicles that contact exposed native site soils would be decontaminated prior to leaving the site. This would minimize the possibility that earth-moving equipment would track contaminants of concern containing soil onto public roadways.

Decontamination methods would include scraping, brushing, and/or vacuuming to remove dirt on vehicle exteriors and wheels. In the event that these dry decontamination methods are not adequate, methods such as steam cleaning, high-pressure washing, and cleaning solutions would be used, as necessary, to thoroughly remove accumulated dirt and other materials. Wash water resulting from decontamination activities would be collected and managed in accordance with all applicable laws and regulations.

Should rainfall occur during construction on exposed soils at the site, stormwater pollution controls would be implemented to minimize stormwater runoff from exposed soil containing contaminants of concern at the site and to prevent sediment from leaving the site, in accordance with all laws and regulations. Stormwater pollution controls would be based on BMPs to comply with State and local

regulations. Onsite sediment and erosion protection controls would be the primary methods for minimizing discharges of sediments from the site, as discussed in Section 4.8, *Hydrology and Water Quality*.

Potentially contaminated soil could be encountered during the excavation phase, particularly in the upper 2 feet of soil. This soil can be either direct loaded using the profile data associated with Stellar Environmental Solutions' October 2015 report or stockpiled for additional sampling and analyses to define the contamination fate after the excavation stage. If more the one year elapses between the soil profiling and the excavation stage stockpiling, sampling may be required by a regulated landfill.

Trained (with 40-hour hazwopper and associated updates) environmental personnel should be onsite to do the stockpile sampling and be on-call to deal with any suspect contamination discovery. Personnel would monitor for potentially contaminated soils by visual screening, noting any contaminant odors, and utilizing a photoionization detector (PID) to field measure any VOCs during the excavation activity. Monitoring parameters would be recorded at intervals of approximately 1 hour or less.

The project would involve excavation for installation of building substructures and subgrade utilities, and would involve grading that could be substantial in certain areas. Soil disturbance during construction could disperse existing contamination into the environment and expose construction workers and the public to contaminants. With implementation of the Site Health and Safety Plan, in accordance with Cal OSHA requirements, and a SMP, as approved by the U.S. EPA, DTSC, and the Water Board, construction activities would not expose workers to unacceptable levels of known hazardous materials and the potential impact would be reduced to less-than-significant levels. Implementation of **Mitigation Measures HAZ-2a** and **HAZ-2b** would reduce impacts to less than significant levels.

> **Mitigation Measure HAZ-2a:** Prior to issuance of any demolition permit, the project applicant shall submit to the City a Site-Specific Environmental Health and Safety Plan (HASP). The HASP shall be consistent with State and federal OSHA standards for hazardous waste operations (California Code of Regulations, Title 8, Section 5192 and 29 Code of Federal Regulations 1910.120, respectively) and any other applicable health and safety standards. The HASP shall include descriptions of health and safety training requirements for onsite personnel and levels of personal protective equipment to be used, and any other applicable precautions to be undertaken to minimize direct contact with soil and to a lesser degree, groundwater if is encountered. The HASP shall be adhered to during construction and excavation activities. All workers onsite should read and understand the HASP and copies shall be maintained onsite during construction and excavation at all times.
>
> **Mitigation Measure HAZ-2b:** Prior to issuance of a building or grading permit for any ground breaking activities within the project site, the project applicant shall prepare a Site Management Plan (SMP) consistent with US EPA, DTSC, and Water Board standards for incorporation into construction specifications. The SMP shall be present on site at all times and readily available to site workers. The SMP shall specify protocols and requirements for excavation, stockpiling, and transport of soil and for disturbance of groundwater. At a minimum the SMP shall include the following components:

1. *Dust control measures*: Dust generation shall be minimized by any or all appropriate measures. These measures may include:

    a. Misting or spraying water while performing excavation activities and loading transportation vehicles;

    b. Limiting vehicle speeds onsite to 5 miles per hour;

    c. Controlling excavation activities to minimize the generation of dust;

    d. Minimizing drop heights while loading transportation vehicles; and

    e. Covering any soil stockpiles generated as a result of excavating soil potentially impacted by contaminants of concern with plastic sheeting or tarps.

2. *Decontamination measures*: Decontamination methods shall include scraping, brushing, and/or vacuuming to remove dirt on vehicle exteriors and wheels. In the event that these dry decontamination methods are not adequate, methods such as steam cleaning, high-pressure washing, and cleaning solutions shall be used, as necessary, to thoroughly remove accumulated dirt and other materials. Wash water resulting from decontamination activities shall be collected and managed in accordance with all applicable laws and regulations.

3. *Stormwater pollution control measures*: Should rainfall occur during construction on exposed soils at the site stormwater pollution controls shall be implemented to minimize stormwater runoff from exposed soil containing contaminants of concern at the site and to prevent sediment from leaving the site, in accordance with all laws and regulations. Stormwater pollution controls shall be based on BMPs to comply with State and local regulations. Sediment and erosion protection controls may include but are not limited to:

    a. Constructing berms or erecting silt fences at entrances to the project site;

    b. Placing straw bale barriers around catch basins and other entrances to the storm drains;

    c. During significant rainfall events, covering with plastic sheeting or tarps any soil stockpiles generated as a result of excavating soil potentially impacted by contaminants of concern.

4. *Field screening of potential contaminated soil and suspect contamination discovery*: Potentially contaminated soil shall be either direct loaded using the profile data associated with Stellar Environmental Solutions' October 2015 report or stockpiled for additional sampling and analyses to define the contamination fate after the excavation stage. If more the one year elapses between the soil profiling and the excavation stage stockpiling, sampling may be required by a regulated landfill. Trained (with 40-hour hazwopper and associated updates) environmental personnel shall be onsite to do the stockpile sampling and be on-call to deal with any suspect contamination discovery. Personnel will monitor for potentially contaminated soils by visual screening, noting any contaminant odors, and utilizing a photoionization detector (PID) to field measure any VOCs during the excavation activity. Monitoring parameters shall be recorded at intervals of approximately 1 hour or less.

Significance after Mitigation: Less than Significant.

Impact HAZ-3: Hazardous materials used onsite during construction activities (e.g., oils, solvents, etc.) at the project site could potentially be spilled through improper handling or storage, potentially increasing public health and/or safety risks to future residents, maintenance workers, visitors, and the surrounding area. ***(Less than Significant, No Mitigation Required)***

Construction activities would require the use of certain hazardous materials such as fuels, oils, solvents, and glues. Inadvertent release of large quantities of these materials into the environment could adversely impact workers, the public, soil, surface waters, or groundwater quality. The use of construction best management practices implemented as part of a Storm Water Pollution Prevention Plan (discussed further in Section 4.8, *Hydrology and Water Quality*) as required by the National Pollution Discharge Elimination System General Construction Permit would minimize the potential adverse effects to workers, the public, groundwater and soils. These could include the following:

- Establish a dedicated area for fuel storage and refueling activities that includes secondary containment protection measures and spill control supplies;
- Follow manufacturer's recommendations on use, storage and disposal of chemical products used in construction;
- Avoid overtopping construction equipment fuel gas tanks;
- During routine maintenance of construction equipment, properly contain and remove grease and oils; and
- Properly dispose of discarded containers of fuels and other chemicals.

In general, aside from refueling needs for heavy equipment, the hazardous materials typically used on a construction site are brought onto the site packaged in consumer quantities and used in accordance with manufacturer recommendations. The overall quantities of these materials on the site at any one time would not result in large bulk amounts that, if spilled, could cause a significant soil or groundwater contamination issue. Spills of hazardous materials on construction sites are typically localized and would be cleaned up in a timely manner. As described above, refueling activities of heavy equipment would be conducted in a controlled dedicated area complete with secondary containment and protective barriers to minimize any potential hazards that might occur with an inadvertent release. Given the required protective measures (i.e., best management practices) and the quantities of hazardous materials typically needed for construction projects such as the proposed project, the threat of exposure to the public or contamination to soil and/or groundwater from construction-related hazardous materials is considered a less than significant impact.

Significance: Less than Significant.

Mitigation: None required.

Impact HAZ-4: Development facilitated by the proposed project could potentially involve the transportation, use, and storage of hazardous materials, which could present public health and/or safety risks to residents, visitors, and the surrounding area. (*Less than Significant*)

Hazardous material use would be associated with proposed residential, maritime commercial core, and marina land uses on the project site. Businesses associated with maritime/commercial/ retail and building support activities would use hazardous chemicals common in other commercial/retail and support settings. These chemicals could include familiar materials such as toners, paints, lubricants, and kitchen and restroom cleaners as well as relatively small quantities of fuels, oils, and other petroleum-based products. Warehousing and marina uses could include storage, transport, handling, and disposal of larger quantities of hazardous materials. Small quantities of hazardous materials are also associated with residential land uses, including cleaning products, fuels, oils, pesticides, and lubricants. Activities such as automobile, boat, or building maintenance, as well as landscaping, can become sources of releases of hazardous materials.

Because general commercial/retail and household hazardous materials are typically handled and transported in small quantities, and because the health effects associated with them are generally not as serious as industrial uses, operation of a majority of new uses at the project site would not cause an adverse effect on the environment with respect to the routine transport, use, or disposal of general office and household hazardous materials. For commercial/retail uses, the regulatory framework requires appropriate training of employees in the use, storage, and disposal of any hazardous materials and wastes. Industrial uses could include the storage, handling, transport, and disposal of relatively larger quantities of hazardous materials that would similarly be subject to regulatory requirements that are designed to minimize the potential for adverse effects due to exposure. As required by the Alameda County Department of Environmental Health (ACDEH), the Certified Unified Program Agency (CUPA), any businesses that would store hazardous materials and/or waste at its business site would be required to submit business information and hazardous materials inventory forms contained in Hazardous Materials Management Plan and Hazardous Materials Business Plan. The City of Alameda requires all new commercial and other users to follow applicable regulations and guidelines regarding storage and handling of hazardous waste. All hazardous materials are required to be stored and handled according to manufacturer's directions and local, state and federal regulations. With adherence to existing regulatory requirements, impacts related to the routine transport, use or disposal of hazardous materials during operation would be less than significant.

Significance: Less than Significant.

Mitigation: None required.

Impact HAZ-5: Development of the project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and could result in a safety hazard to the public or environment through exposure to previous contamination of soil or groundwater. (*Less than Significant with Mitigation*)

As discussed above, the project site has a history of maritime industrial use, and releases of hazardous materials at the site have been well documented. Contamination of subsurface soils and groundwater can potentially expose workers, the public, or future occupants to legacy contaminants through direct exposure, from contact with contaminated soils through excavation or other ground disturbing activities.

The project site includes three former regulatory sites. A surface soil investigation in 1988 resulted in the discovery of metal contaminated soil beneath portions of the building at 1829 Clement Avenue that was underlain by a dirt subfloor. Spills and discharges of liquids containing heavy metals as well as acids and bases to the subfloor and sewer were documented. The potential contaminants of concern included arsenic, chromium, copper, and cyanide, affecting the soil, soil vapor, structure, indoor air, and groundwater. A clean-up program consisting of high-efficiency vacuuming of the asphalt pavement beneath the eastern portion of the building (treatment and storage areas) and hand removal of surface soils beneath the western portion of the building (etch process areas) was conducted. In addition to removal of the contaminated soil, all former process piping and stained wood flooring were removed from the building. Cleanup was completed and ACEH provided a case closure as of December 14, 2010. Leaks from former gasoline and diesel fuel USTs were removed in July 1999. Cleanup completed and the case was closed as of September 22, 1999. Leaks from two former Bunker oil USTs and a diesel UST were removed in March 2007. Cleanup was completed and the case was closed as of March 5, 2010.

Soil, soil-gas, and groundwater investigations that evaluated environmental contamination were conducted in July 2013 and September 2015. Relatively elevated metals in the soil—most prominently lead and also chromium—are the main site concern across the project site (except one instance of barium in soil) where the concentrations in the soil itself or the solute extraction classify the soil as hazardous waste. Elevated hydrocarbon concentrations found exceeding their respective ESLs are associated with shallow upper 2 feet of soil. Some PNA and PAH compounds were detected in the soil, but are not suggested to be a known point source, although there is a geographic association with the Navy property along the eastern border of the project site. No VOCs, SVCOs, or pesticides were detected above their respective ESLs.

Detections of benzene and ethlybenzene above their ESLs were found in a parking area that has no historical hydrocarbon point source use or issues. It may simply reflect some spillage soil contamination (and subsequent soil-gas contamination) from the area use as a parking lot. Benzene was detected above its ESL elsewhere onsite; however, the concentration was at 43 $\mu g/m^3$ compared to benzene ESL or 42 $\mu g/m^3$. The soil-gas data, does not suggest that a specific SSDS is needed beneath the building to mitigate against potential vapor intrusion.

Petroleum hydrocarbons are the primary groundwater contaminant of concern, occurring at concentrations above ESLs in the TPHd and TPHmo range, not TPHg. Benzene, toluene,

ethylbenzene, and xylenes were not detected in any of the samples. Naphthalene was detected above its ESL and one PAH, acenaphthene was above its ESL. No SVOCs were detected in the groundwater samples (Stellar, 2013b; 2015).

These investigations concluded that a Remedial Risk Management Plan (RRMP) should be developed and followed by current and future owners, tenants, and operators. The plan would include the implementation of any needed corrective action remedies and engineering design. Therefore, with implementation of **Mitigation Measure HAZ-3**, the potential impact would be less than significant.

> **Mitigation Measure HAZ-3:** Prior to issuance of a building or grading permit for any ground breaking activities within the project site, the project applicant shall prepare a Remedial Risk Management Plan (RRMP). The RRMP shall be developed and followed by current and future owners, tenants, and operators. The RRMP shall include the implementation of any needed corrective action remedies and engineering design.

Significance after Mitigation: Less than Significant.

Impact HAZ-6: The project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (*Less than Significant, No Mitigation Required*)

As discussed in Section 4.11, *Public Services and Recreation,* of this EIR, fire protection services would be provided to the project site by the City of Alameda Fire Department. The Fire Department delivers emergency and non-emergency services, including rapid assistance for medical, fire, or other hazardous situations, to the entire City. Development of the project site would be required to ensure that the street system can accommodate emergency response and evacuation.

The circulation plan for the project is designed to ensure appropriate emergency access to and egress from the site in accordance with all City and Fire Code requirements (for further information, see Section 4.12, *Transportation and Traffic*). Proposed improvements would not close or reroute any of the existing roadways and would not interfere with roads, access, and egress of future occupants. Additionally, all project-specific designs, including private internal circulation and building site plans, would be subject to review and approval by the City, including emergency service providers, per project requirements. Therefore, the project would not interfere with an adopted emergency response plan or emergency evacuation plan, and would have a less than significant impact.

Significance: Less than Significant.

Mitigation: None required.

Cumulative Impacts

Impact C-HAZ-1: Hazards at the project site, in combination with past, present, and future projects could potentially contribute to cumulative hazards in the vicinity of the project site. (*Less than Significant, No Mitigation Required*)

Cumulative hazardous materials effects could occur if activities at the project site and other past, existing and proposed development, together, could significantly increase risks in the regional vicinity of the project site. However, most routine hazardous materials activities at the project site would likely involve relatively small quantities of hazardous materials both in interior and exterior settings. Any health or safety effects of routine hazardous materials use would be limited to the specific individuals using the materials and anyone in the immediate vicinity of the use. No interaction would occur between these routine activities and similar activities at different sites. In addition, there would be a slight decrease in the amount of hazardous materials handled on the proposed project site due to the replacement of commercial and industrial uses with residential uses.

Cumulative health and safety impacts could occur if project-related outdoor or offsite hazards were to interact or combine with those of other existing and proposed development. This could only occur through the following mechanisms: air emissions; transport of hazardous materials and waste to or from the project site; inadvertent release of hazardous materials to the sanitary sewer, storm drain, or non-hazardous waste landfill; and potential accidents that require hazardous materials emergency response capabilities. Air emissions are addressed in Section 4. 2, *Air Quality*. The proposed project as well as other past, present, and future projects would be required to adhere to existing regulatory requirements for the appropriate handling, storage, and disposal of hazardous materials that are designed to minimize exposure and protect human health and the environment. Cumulative increases in the transportation of hazardous materials and wastes would cause a less than significant impact because the probability of accidents is relatively low, and the use of legally required packaging minimizes the consequences of potential accidents. In addition, all projects in the area would be required to comply with the same laws and regulations as the project. This includes federal and state regulatory requirements for transporting (Cal EPA and Caltrans) hazardous materials or cargo (including fuel and other materials used in all motor vehicles) on public roads or disposing of hazardous materials (Cal EPA, DTSC, ACEHD). Therefore, this cumulative impact would be less than significant.

Significance: Less than Significant.

Mitigation: None required.

4.6.5 References – Hazards and Hazardous Materials

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4.7 Hydrology and Water Quality

4.7.1 Introduction

This section describes existing hydrologic conditions in the project vicinity and presents applicable regulations that pertain to surface water drainage, stormwater management, flooding potential, and water quality. This section also discusses the changes in hydrology and water quality that could result from construction and operation of the project and identifies potential project impacts and appropriate mitigation measures when necessary.

4.7.2 Environmental Setting

Hydrology

Regional

The Alameda Marina project site lies in the Central Basin within the San Francisco Bay Hydrologic Region. The project site is located on the northern shoreline of Alameda, which lies in between Oakland-Alameda Estuary ("Estuary"), and San Francisco Bay. San Francisco Bay marks a natural topographic separation between the northern and southern coastal mountain ranges. The San Francisco Bay estuarine system conveys the waters of the Sacramento and San Joaquin rivers into the Pacific Ocean. The rivers enter the Bay through the delta at the eastern end of Suisun Bay (RWQCB, 2017). Within the San Francisco Bay Hydrologic Region, the project area is a part of the Central Bay region in Alameda County. This unit is divided into a number of small watersheds that are defined by the natural topographic features of the region. A series of linear drainage basins trending northeast to southwest extend from the ridges of the Oakland hills across the alluvial plain of the East Bay toward San Francisco Bay.[1]

Precipitation patterns along portions of the California coast are strongly influenced by a number of factors with a marked tendency of high mean annual precipitation values in locations with higher elevations that are exposed to incoming storms, with the opposite effect in areas of low elevation. The topography of the project site is generally flat with the highest elevation of over eight feet in the southeast portion to less than a foot in the northern portions of the site (CBG, 2016).

Local

The project site has a flat topography slightly sloping from the south along Clement Avenue down toward the project site marina and Estuary. The elevations along Clement range between an average of 6 and 9 feet City of Alameda Datum.[2] The low-lying areas include the coastline

[1] Alluvial plain is an area formed by deposition of sediment by a stream.
[2] Existing Elevations are based upon the City of Alameda Datum, which plus an additional 6.1 feet is then equal to NAVD88 Datum levels presented in FEMA Flood Insurance Risk Maps.

along Alameda Marina, with the lowest elevations at the northeast corner, at an elevation of approximately 3 to 4 feet City of Alameda Datum (CBG, 2016).

A majority of the project site is developed with existing buildings and paved or asphalt surfaces, and a wharf adjacent to the marina in the center of the project site. The waterfront and shoreline edge was built in the 1950s and over time has been modified. Currently the coastline of the project site consists of rip rap, steel sheet piles with wooden walers, concrete pile walls, walls composed of square piles stocked to create a wall or bare earth, there are minimal fringe areas with grass or shrubberies, which are generally located as decorative planters, or iceplant. Stormwater runoff at Alameda Marina is currently conveyed directly to outfalls by a storm drain system that is partly owned and operated by the City of Alameda and partly by the project sponsor (CBG, 2016a).

The existing drainage patterns of the project site are consistent with the existing topography. Stormwater runoff from along the southern border at Clement Avenue, is collected and conveyed through the existing system and discharged to the Oakland / Alameda Estuary through multiple outfalls along the northern shoreline.

Oakland Inner Harbor and San Francisco Bay

The project site is located in the central portion of Alameda in between Oakland Inner Harbor and San Francisco Bay, Central Basin. The site lies adjacent to the Oakland Inner Harbor – a tidal canal, part of the Oakland Estuary – originally a tidal slough that originated in a vast marsh stretching from Lake Merritt to Brooklyn Basin. The Oakland Estuary is influenced by both freshwater and marine water. The Estuary receives freshwater inflow from a combination of natural creeks, human-made stormwater drainage facilities, and direct surface runoff. The Estuary is also influenced by the marine waters of San Francisco Bay and is subject to tidal currents. Sediment from Oakland's shoreline and creeks is carried by the tidal current to shoals and sandbars, causing siltation of the shipping channels that periodically require dredging.

Water Quality

In addition to the mingling of fresh and marine water associated with industrial waste discharges and urban stormwater runoff contaminants, past and present urban uses in the area have affected water quality of the Oakland Estuary. Pollutant sources discharging into the estuary include both point and nonpoint discharges. A point source is any discernible, confined, and discrete conveyance (e.g., a pipe discharge) of pollutants to a water body from such sources as industrial facilities, stormwater conveyance infrastructure or wastewater treatment plants. Nonpoint source (NPS) pollution is the result of land runoff, rainfall, drainage or seepage from diffuse sources such as agricultural fields, urban streets, confined animal facilities, and streambank erosion. NPS pollution is one of the major impacts on the water quality of San Francisco Bay, its tributary streams, and the region's coastal waters.

Existing waterfront facilities at Alameda Marina include the Oakland Inner Harbor Channel, Oakland-Alameda Estuary, Brooklyn Basin Estuary, Coast Guard Island Cutter stations, the active marina including two boat hoists (one currently decommissioned for safety reasons), and a

graving dock. Historically, the entrances to the marina area and the basin have been dredged to 10 feet below mean lower low waterline (MLLW). The Port of Oakland conducts dredging of the Oakland Inner Harbor channel in cooperation with the U.S. Army Corps of Engineers to maintain the shipping channel. It is expected that the Port will continue to manage dredging activities in the Inner Harbor as well as in the Oakland Estuary to a depth of 50 feet (City of Alameda, 2002; Port of Oakland, 2013).

Groundwater Resources

The project site lies in the East Bay Plain of the San Francisco Bay Hydrologic Region (Department of Water Resources [DWR] Groundwater Basin[3] No. 2-9.04), a northwest-trending alluvial plain bounded on the north by San Pablo Bay, on the east by the contact with Franciscan Basement rock, and on the south by the Niles Cone Groundwater Basin (DWR, 2004). The East Bay Plain extends from Richmond to Hayward. The alluvial materials that extend westward from the East Bay Hills to the edge of San Francisco Bay constitute the deep water-bearing strata for this groundwater basin, which is identified as a potential water source for municipal, industrial, and agricultural use (RWQCB, 2017). Since the early 1950s, historic groundwater levels in the deep aquifer in the basin have varied between 10 and 140 feet below mean sea level (DWR, 2004). Subsurface groundwater at the project site occurs at shallower depths consistent with the low existing ground elevations. During the most recent geotechnical investigation near the site, the groundwater table was observed at depths ranging from 8 and 9.5 feet below existing grade. Groundwater beneath the site flows northeast towards the estuary and fluctuates with the tides, based on recent monitoring of wells for the nearby Cargill site at 2016 Clement Avenue (Crawford, 2016). Former groundwater monitoring wells at the project site indicated stabilized water levels ranging from 3.2 to 3.8 feet below existing grade. The groundwater levels at the site are expected to fluctuate several feet in response to tidal fluctuations with potentially larger fluctuations annually, depending on the amount of rainfall.

Flooding

Flooding is inundation of normally dry land as a result of rise in the level of surface waters or rapid accumulation of stormwater runoff. Flooding can also occur due to tsunamis, seiches, or failure of dams.

100-Year Flood Hazard Area

The Federal Emergency Management Agency (FEMA), through its Flood Insurance Rate Map (FIRM) program, designates areas where flooding could occur during a 1.0 percent annual chance (100-year) flood event or a 0.2 percent annual chance (500-year) flood event. The FIRM defines the Base Flood Elevation (BFE).[4] FEMA defines the areas of inundation by a 100-year flood event as Zone A in the FIRMs. Zone A areas with a specified BFE are further delineated as Zone

[3] A groundwater basin is defined as a hydrogeologic unit containing one large aquifer or several connected and interrelated aquifers (RWQCB, 1995).

[4] FEMA bases the BFE on the North American Vertical Datum of 1988.

AE. Areas designated as Zone V are subject to inundation by a 100-year flood event with additional hazards that result from storm-induced velocity wave action by a 3-foot or higher wave. Similar to Zone AE, Zone VE indicates that a BFE has been designated for Zone V. Most municipalities do not allow construction within Zone A unless the applicant raises the development above the BFE.

The August 3, 2009 FIRM for the project area indicates that the BFE elevation at the site is 9 feet, and that the property is not within a flood zone (FEMA, 2009a and 2009b). Similarly, on April 14, 2015, FEMA released a revised FIRM for the area, which demonstrates the project site is located outside of the 100-year flood zone. The 2015 FIRM additionally shows that a portion of the site is subject to a 500-year storm flood hazard (FEMA, 2015a and 2015b).

With regard to wind/wave runup, the majority of the shoreline within the project site is well protected from wind generated waves and from swell.

Tsunami and Seiche

Seiches are waves in an enclosed or semi-enclosed body of water such as a lake or a reservoir. The tidal canal, with its connection to San Francisco Bay on either end, is not characterized as an enclosed or semi-enclosed body of water and therefore is not susceptible to seiches.

Tsunamis are waves caused by an underwater earthquake, landslide, or volcanic eruption. Flooding from tsunamis would generally affect low-lying areas along the Pacific coastline and San Francisco Bay. In a recent scientific report (Wood et. al., 2013), the U.S. Geologic Survey (USGS) evaluated the potential community exposure to tsunami hazards along the California coastline, including San Francisco Bay. The primary purpose of the study is to support preparedness and education efforts. The report indicates that in the event of a tsunami, the maximum onshore runup elevation in Alameda would be 16.73 feet from a distant source[5] and 4.26 feet from a local source[6]; the distance source instances would inundate a majority of the project site.

The report documents geographic variations in community exposure to tsunami hazards in California. However, the potential losses would only match reported inventories if all residents, employees, and visitors in tsunami-prone areas were unaware of tsunami risks, were unaware of what to do if warned of an imminent threat (either by natural cues or official announcements), and failed to take protective measures to evacuate. This assumption is unrealistic, given the current level of tsunami-awareness efforts in California. Because the tsunami-inundation zone identifies the maximum areas of inundation from various earthquake and landslide sources, it is not meant to imply that all delineated areas would be inundated by a single future tsunami. Finally, the tsunami-inundation zone does not provide any indicator of the probability of specific earthquake or landslide scenarios. The tsunami-inundation zone used in the study is a guide for emergency planning and is not a prediction for a future event (Wood et al., 2013).

5 Aleutian Islands
6 Point Reyes thrust fault

The Alameda General Plan (1991) describes tsunamis and seiches as secondary seismic hazards associated with earthquakes and notes that the likelihood of these hazards occurring due to groundshaking is not as high as other hazards such as earthquakes and landslides, which are discussed further in Section 4.5, *Geology, Soils, and Paleontological Resources*). The California Emergency Management Agency and California Geological Survey have coordinated preparedness efforts in the State and in understanding how communities vary in their exposure to tsunamis, which in turn helps emergency managers, land-use planners, public works managers, and the maritime community understand potential tsunami impacts and determine where to complement regional risk-reduction strategies with site-specific efforts that are tailored to local conditions and needs. The City of Alameda is the local agency that operates the disaster preparedness and emergency services in the project area.

The National Oceanic and Atmospheric Administration (NOAA) operates the Tsunami Warning System with centers located in Hawaii and Alaska. The Pacific Tsunami Warning System (PTWS) in the Pacific, comprised of 26 participating international Member States, monitors seismological and tidal stations throughout the Pacific Basin. The PTWS evaluates potentially tsunamigenic earthquakes and disseminates tsunami warning information. The PTWS is the operational center located in Honolulu, Hawaii, and provides tsunami warning information to national authorities in the Pacific Basin (City of Alameda, 2008). Warnings alert the public that widespread, dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after arrival of the initial wave. Warnings also alert emergency management officials to take action for the entire tsunami hazard zone. Appropriate actions to be taken by local officials may include the evacuation of low-lying coastal areas, and the repositioning of ships to deep waters when there is time to safely do so. Warnings may be updated, adjusted geographically, downgraded, or canceled. To provide the earliest possible alert, initial warnings are normally based only on seismic information (NOAA, 2009). In Alameda, occupants would be notified of the advisory, watch, or warning via the City's Alert and Warning Siren System. The City has developed a Comprehensive Emergency Management Plan (City of Alameda, 2008, discussed further in the Local Regulatory Setting below) to protect the safety and welfare of the residents, employees, and visitors in Alameda during flooding emergencies.

Dam Failure

Flooding can also occur due to dam failure. The California DWR, Division of Safety of Dams (DSOD) oversees the construction of dams that are more than 25 feet high and impound more than 15 acre-feet of water, or more than six feet high and impound more than 50 acre-feet of water. Due to DSOD regulatory oversight, monitoring, and design review, the potential is minimal for the catastrophic failure of a properly designed and constructed dam, whether caused by a seismic event, flood event, unstable slope conditions, or damage from corrosive or expansive soils.

Although some areas in Oakland include dam failure inundation areas, there are no dams located within Alameda or immediately upstream.

Sea Level Rise

As discussed in Section 4.2, *Air Quality and Climate Change,* a rise in average global temperature due largely to an increase in greenhouse gas (GHG) emissions is expected to be accompanied by a rise in the global sea level.

The State of California has provided planning guidance for assessing and adapting to the impacts of sea level rise. The State's current guidance (Ocean Protection Council, 2013) incorporates the most recent scientific findings from the National Academy of Science National Research Council (NRC, 2012). For the San Francisco Bay Region, the National Research Council projects sea level rise of 11 inches by 2050 and 36 inches by 2100. These projections consider regional sea levels and vertical land motion. The NRC's possible range for San Francisco Bay sea level rise in 2050 is 5 to 24 inches and in 2100 is 17 to 66 inches. The ranges account for uncertainty in future greenhouse gas emissions and Earth's response to these emissions. In spite of this uncertainty in NRC's and other's projections, all trends are upward and are similar in magnitude when rounded to the nearest foot and allowing for variability of one or two decades.

4.7.3 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. 1251 – 1376) established the basic structure for regulating discharges of pollutants into the waters of the U.S. and gave the US EPA the authority to implement pollution control programs such as setting wastewater standards for industry. The CWA sets water quality standards for all contaminants in surface waters. The statute employs a variety of regulatory and nonregulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The US Army Corps of Engineers (USACE) has jurisdiction over all waters of the U.S. including, but not limited to, perennial and intermittent streams, lakes, and ponds, as well as wetlands in marshes, wet meadows, and side hill seeps. Under Section 401 of the CWA every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certification that the proposed activity will comply with state water quality standards.

The National Pollutant Discharge Elimination System (NPDES) permit program under the CWA controls water pollution by regulating point and nonpoint sources that discharge pollutants into "waters of the U.S." California has an approved state NPDES program. The US EPA has delegated authority for NPDES permitting to the California State Water Resources Control Board (SWRCB), which has nine regional boards. The San Francisco Bay RWQCB regulates water quality in the project site and surroundings.

Section 303(d) of the CWA requires that each state identify water bodies or segments of water bodies that are "impaired" (i.e., not meeting one or more of the water quality standards established by the state). These waters are identified in the Section 303(d) list as waters that are polluted and

need further attention to support their beneficial uses. Once the water body or segment is listed, the state is required to establish Total Maximum Daily Load (TMDL) for the pollutant causing the conditions of impairment. TMDL is the maximum amount of a pollutant that a water body can receive and still meet water quality standards. Generally, TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The intent of the Section 303(d) list is to identify water bodies that require future development of a TMDL to maintain water quality.

United States Environmental Protection Agency

The US EPA is responsible for implementing federal laws designed to protect air, water, and land. While numerous federal environmental laws guide US EPA's activities, its primary mandate with respect to water quality is the CWA. US EPA has developed national technology-based water quality standards and states have developed water quality standards in accordance with the CWA. US EPA also has authority to establish water quality standards if a state fails to do so. In the National Toxics Rule (NTR) and California Toxics Rule (CTR), US EPA has established such standards for certain toxic pollutants applicable to California waters. These standards are used to determine the amount and the conditions under which pollutants can be discharged.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program under the CWA controls water pollution by regulating point and nonpoint sources that discharge pollutants into "waters of the U.S." California has an approved state NPDES program. The US EPA has delegated authority for NPDES permitting to the California State Water Resources Control Board (SWRCB), which has nine regional boards. The San Francisco Bay RWQCB regulates water quality in the Plan Area and surroundings. Under this system, municipal and industrial facilities are required to obtain a NPDES permit that specifies allowable limits, based on available wastewater treatment technologies, for pollutant levels in their effluent. Stormwater discharges are regulated somewhat differently than pollutant discharges. Discharge of stormwater runoff from construction areas of one acre or more requires either an individual permit issued by the RWQCB or coverage under the statewide Construction General Stormwater Permit for stormwater discharges (discussed below). Specific industries and public facilities, including wastewater treatment plants that have direct stormwater discharges to navigable waters, are also required to obtain either an individual permit or obtain coverage under the statewide General Industrial Stormwater Permit.

Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 prohibits work affecting the course, location, conditions or capacity of navigable waters of the United States without a permit from the USACE. Examples of activities requiring a permit from the USACE are the construction of any structure in or over any navigable water; excavation or deposition of materials in such waters; and various types of work performed in such waters, including placement of fill and stream channelization. The Corp's compliance with Section 404 of the Clean Water Act and NEPA will also satisfy requirements under Section 10 of the Rivers and Harbors Act.

State

Porter-Cologne Act

The State Board and the RWQCBs share the responsibility under the Porter-Cologne Act to formulate and adopt water policies and plans, and to adopt and implement measures to fulfill CWA requirements. In order to meet this requirement for the San Francisco Bay area, the Regional Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) was prepared by the RWQCB to protect the water quality of the State according to the beneficial uses identified for each water body.

Prior to authorizations of waste discharge by the RWQCB, the Porter-Cologne Act requires reports of waste discharges to be filed. The RWQCB then prescribes Waste Discharge Requirements, which serve as NPDES permits under a provision of the Porter-Cologne Act.

Regional

Water Quality Control Plan for the San Francisco Region (Basin Plan)

The RWQCB is responsible for developing and implementing the San Francisco Bay Basin Plan, which documents approaches to implementing State and federal policies in the context of actual water quality conditions. The RWQCB's other activities include permitting of waste discharges and implementing monitoring programs of pollutant effects.

The RWQCB most recently revised the Basin Plan on December 31, 2011, which the SWRCB and the Office of Administrative Law previously adopted in 1995. The Basin Plan identifies beneficial uses of receiving waters, water quality objectives imposed to protect the designated beneficial uses, and strategies and schedules for achieving water quality objectives. Section 303(c)(2)(B) of the CWA requires basin plans to include water quality objectives governing approximately 68 of US EPA's list of 126 pollutants.

Water quality objectives are achieved primarily through the establishment and enforcement of Waste Discharge Requirements for each wastewater discharger. State policy for water quality control in California is directed toward achieving the highest water quality consistent with maximum benefit to the people of the State. Therefore, all water resources must be protected from pollution and nuisance that may occur from waste discharges. Beneficial uses of surface waters, ground waters, marshes, and mud flats serve as a basis for establishing water quality standards and discharge prohibitions to attain this goal.

San Francisco Bay Conservation and Development Commission (BCDC)

The BCDC regulates development that falls within the open water, marshes and mudflats of greater San Francisco Bay, and its nine-county shoreline. The BCDC requires permits for the following activities:

- Place solid material, build or repair docks, pile-supported or cantilevered structures, dispose of material or moor a vessel for a long period in San Francisco Bay or in certain tributaries that flow into the Bay;

- Dredge or extract material from the Bay bottom;
- Substantially change the use of any structure in the area;
- Construct, remodel or repair a structure; or
- Subdivide property or grade land.

The BCDC uses the McAteer-Petris Act, the San Francisco Bay Plan, its own regulations and other plans specific to other areas of the bay in order to inform its decisions. The project will require a permit from BCDC, which is necessary prior to the commencement of work within 100 feet of the shoreline.

BCDC policies also require sea level rise risk assessments to be conducted when planning shoreline areas or designing large shoreline projects within BCDC jurisdiction. Risk assessments should be prepared by a qualified engineer, and based on the estimated 100-year flood elevation, taking into account the best estimates of future sea level rise.

San Francisco Estuary Project

The San Francisco Estuary Project was established pursuant to CWA Section 320 to protect and improve the water quality and natural resources of San Francisco Bay-Delta Estuary. The San Francisco Estuary Project, through its *2007 Comprehensive Conservation and Management Plan*, recommends actions in the several areas, such as aquatic resources, water use, pollution prevention and reduction, dredging and waterway modification, and research and monitoring. The project site is located in the San Francisco Bay hydrologic region and drains eventually into San Francisco Bay, which is a part of the Bay-Delta Estuary. Therefore, the following recommended actions would apply to the project:

> **Action PO-2.4:** Improve the management and control of urban runoff from public and private sources.
>
> **Action LU-3.2:** Develop and implement guidelines for site planning and BMPs.

Alameda Countywide Clean Water Program

The City of Alameda is one of the 17 participating agencies in the Alameda Countywide Clean Water Program (ACCWP, 2010), which cooperatively complies with a municipal stormwater permit issued by the RWQCB. The permit contains requirements to prevent stormwater pollution and to protect and restore creek and wetland habitat. The member agencies have developed performance standards to clarify the requirements of the stormwater pollution prevention program, adopted stormwater management ordinances, conducted extensive education and training programs, and reduced stormwater pollutants from industrial areas and construction sites. In the project site vicinity, the ACCWP administers the stormwater program to meet the CWA requirements by controlling pollution in the local storm drain sewer systems.

The ACCWP prepared the *Stormwater Quality Management Plan* in 2003 that was effective through June 2008 and continues to be in use until replaced. This plan describes the ACCWP's approach to reducing stormwater pollution. In conjunction with the stormwater discharge permit

adopted by the RWQCB, the plan is designed to enable the ACCWP member agencies to meet CWA requirements. The plan provides a framework for protection and restoration of creeks and watersheds in Alameda County in part through effective and efficient implementation of appropriate control measures for pollutants. The plan addresses the following major program areas: regulatory compliance, focused watershed management, public information/participation, municipal maintenance activities, new development and construction controls, illicit discharge controls, industrial and commercial discharge controls, monitoring and special studies, control of specific pollutants of concern, and performance standards. New development and construction controls in the plan would apply to the project (ACCWP, 2003).

The *Stormwater Quality Management Plan* recommends tasks to implement source, site design, post-construction stormwater treatment and hydromodification[7] controls (ACCWP, 2003). The ACCWP C.3 Technical Guidance Manual (2013) describes site design measures as low impact development (LID) techniques employed in the design of a project site in order to reduce the project's impact on water quality and beneficial uses. Site design measures are categorized as measures that preserve sensitive areas and high quality open space and that reduce impervious surfaces for the project. The Manual emphasizes site design measures that reduce impervious surfaces, which can reduce the amount of stormwater runoff that will require treatment. This translates into smaller facilities to meet stormwater treatment requirements than would have been needed without the site design measures. Site design measures are also important in minimizing the size of any required hydromodification management measures for the site. For example, areas such as conserved natural spaces, landscaped areas (such as parks and lawns), and green roofs may function as self-treating areas if they are designed to store and infiltrate the rainfall runoff; or areas such as concave landscaped areas at a lower elevation than surrounding paved areas designed to accept runoff from impervious areas. In addition to such LID techniques, stormwater treatment measures such as biofiltration through soil or plant-based filtration devices aid in water quality protection by removing pollutants through a variety of physical, biological, and chemical treatment processes (ACCWP, 2013).

Construction activities associated with the proposed project would be subject to the NPDES permit requirements for stormwater management and discharges. The ACCWP NPDES permit also incorporates updated state and federal requirements related to the quantity and quality of post-construction stormwater discharges from new development and redevelopment projects.

The most recent Municipal Regional Stormwater NPDES Permit[8] (No. CAS612008) that the San Francisco Bay RWQCB issued to ACCWP was adopted in October 2009 and revised in November 2011. The stormwater system at the project site would be regulated under the NPDES permit. In particular, Provision C.3 in the NPDES Permit governs storm drain systems and regulates post-construction stormwater runoff. The provision requires new development and redevelopment projects to incorporate treatment measures and other appropriate source control

7 Hydromodification is alteration of the natural flow of water through a landscape.
8 A regional permit that applies to the cities and unincorporated areas in several Bay Area counties, including Alameda, Contra Costa, San Mateo, Santa Clara, and Solano Counties.

and site design features to reduce the pollutant load in stormwater discharges and to manage runoff flows. "Redevelopment" is defined as a project on a previously developed site that results in the addition or replacement of impervious surface. A redevelopment project that adds or replaces at least 10,000 square feet of impervious surface is required to adhere to the C.3 provisions. The proposed project would replace more than 10,000 square feet of impervious surface; therefore would be required to incorporate treatment measures and appropriate source control and site design measures under the NPDES permit.

Construction General Permit

The California Construction Stormwater Permit (Construction General Permit)[9], adopted by the SWRCB, regulates construction activities that include clearing, grading, and excavation resulting in soil disturbance of at least one acre of total land area. The Construction General Permit authorizes the discharge of storm water to surface waters from construction activities. It prohibits the discharge of materials other than storm water and authorized non-storm water discharges and all discharges that contain a hazardous substance in excess of reportable quantities established at 40 Code of Federal Regulations 117.3 or 40 Code of Federal Regulations 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

The Construction General Permit requires that all developers of land where construction activities will occur over more than one acre do the following:

- Complete a Risk Assessment to determine pollution prevention requirements pursuant to the three Risk Levels established in the General Permit;
- Eliminate or reduce non-storm water discharges to storm sewer systems and other waters of the Nation;
- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP), which specifies Best Management Practices (BMPs) that will reduce pollution in storm water discharges to the Best Available Technology Economically Achievable/Best Conventional Pollutant Control Technology standards; and
- Perform inspections and maintenance of all BMPs.

In order to obtain coverage under the NPDES Construction General Permit, the Legally Responsible Person must electronically file all Permit Registration Documents with the SWRCB prior to the start of construction. Permit Registration Documents must include:

- Notice of Intent;
- Risk Assessment;
- Site Map;
- SWPPP;

9 *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities*, Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ, National Pollutant Discharge Elimination System No. CAS000002.

- Annual Fee; and
- Signed Certification Statement.

Typical BMPs contained in SWPPPs are designed to minimize erosion during construction, stabilize construction areas, control sediment, control pollutants from construction materials, and address post construction runoff quantity (volume) and quality (treatment). The SWPPP must also include a discussion of the program to inspect and maintain all BMPs.

Dewatering Permit

Construction activities such as excavation and trenching in areas with shallow groundwater would require dewatering, which would be subject to the RWQCB construction dewatering permit requirements. Dewatering operations are regulated under State requirements for stormwater pollution prevention and control. Discharge of non-stormwater from a trench or excavation that contains sediments or other pollutants to sanitary sewer, storm drain systems, creek bed (even if dry), or receiving waters is prohibited. Discharge of uncontaminated groundwater from dewatering is a conditionally exempted discharge by the RWQCB. However, the removed water could potentially be contaminated with chemicals released from construction equipment or sediments from excavation. Therefore, disposal of dewatering discharge would require permits either from the RWQCB for discharge to surface creeks and groundwater or from local agencies for discharge to storm or sanitary sewers. The RWQCB lists non-stormwater discharge controls specifically for dewatering operations. The control measures are described in the mitigation for impacts discussion. Discharge of water resulting from dewatering operations would require an NPDES Permit, or a waiver (exemption) from the RWQCB, which would establish discharge limitations for specific chemicals (if they occur in the dewatering flows).

Dredging Permitting

Construction activities associated with implementation of the project, such as the shoreline improvements or wharf construction, could involve dredging. The project sponsor for such projects would be required to apply for and obtain Section 404 permit from the USACE prior to dredging. As a part of the Section 404 permitting process, the project sponsor would be required to obtain a water quality certification from the RWQCB under Section 401 of the CWA. The project would be required to dredge and dispose material in accordance with the requirements of the RWQCB Basin Plan and USACE. The RWQCB may choose to act under the authority of the state Porter Cologne Water Quality Control Act and issue waste discharge requirements for the project in conjunction with the water quality certification. Typically, the dredged material is disposed at ocean or in-bay disposal sites or reused for wetland restoration or dike maintenance. In the event an in-bay disposal is proposed, the project sponsor would be required to provide an adequate alternatives analysis showing that there are no practicable alternatives to in-bay disposal.

The Dredged Material Management Office (DMMO) regulates dredging and dredged material in the San Francisco Bay region. The DMMO consists of representatives from the USEPA-Region 9, U.S. Army Corps of Engineers-San Francisco, San Francisco Bay RWQCB, BCDC, and the State Lands Commission. The DMMO serves as the single point of entry for applicants to the dredging and disposal permitting process. The DMMO regulates two types of dredging

projects; 1) small dredging projects defined by a project depth of less than -12 feet mean lower low water (MLLW) and generating less than 50,000 cubic yards per year on average, and 2) other dredging projects defined by project depth greater than -12 feet MLLW or average annual volumes greater than 50,000 cubic yards (USACE, 2001). The proposed project would likely fall into the first category.

Local

City of Alameda General Plan

The following Guiding Policies and Implementing Policies contained in the City of Alameda *General Plan* are relevant to the project:

Guiding Policies

Policy 5.1s Participate in the Non-Point Source Control Program (NPSC).

Although not fully designed, the NPSC Program is anticipated to include measures for prevention of contamination and source control of pollutants. Treatment of urban runoff, while potentially effective, is costly, and prevention and source control are the preferred methods of abatement. The main objective of the NPSC Program is to ensure that only storm water enters the storm drains, which will involve eliminating illegal connections and strict surveillance and enforcement of "no dumping" mandates. Educational as well as regulatory strategies are under consideration.

Policy 5.1t Consider adopting City standards in addition to those adopted by the County, to deal with non-point source water pollution problems such as sheet flow storm runoff and sedimentation affecting sensitive water habitats.

Policy 5.1w Require new marinas and encourage existing marinas to provide easily accessible waste disposal facilities for sewage and bilge and engine oil residues.

Implementing Policies

Policy 5.1.x Prevent migration of runoff off-site or into wetland areas and water-related habitat by requiring that proposed projects include design features ensuring detention of sediment and contaminants.

Project design should specify techniques to be used to detain runoff. On-site inspection during construction may be necessary to ensure that designs are realized.

Guiding Policies

Policy 8.3.b Ensure that structures proposed for sites located on floodplains subject to the 100-year flood are provided adequate protection from floods.

Portions of Alameda identified to be at risk include areas along Main Street near the Gateway and near the Webster Street/Posey tubes.

Policy 8.3.c Monitor EPA reports on sea level rise in order to anticipate impacts if sea level rise accelerates; coordinate with BCDC to design an appropriate response.

Policy 8.3.e Support a multi-use concept of roadways, including, where appropriate, uses for flood control, open space, nature study, habitat, pedestrian circulation, and outdoor sports and recreation.

Implementing Policies

Policy 8.3.f Use all possible means of reducing the potential for flood damage in Alameda. These include the requirement of flood-proofing, flood forecast and warning or evacuation programs, and stringent groundwater management programs to prevent subsidence.

Relocation of existing structures has been identified as another method of reducing flood damage, but is considered generally economically infeasible and socially unacceptable.

Policy 8.3.i Reduce the effect of surface runoff by the use of extensive landscaping, minimizing impervious surface and drainage easements.

Policy 8.3j Require shoreline owners to maintain perimeter dikes to applicable standards.

Policy 8.3.k Leave adequate setbacks along waterfront areas for the expansion of seawalls and levees.

Policy 8.3l Regularly inspect and maintain seawalls around the City.

Guiding Policies

Policy 9.6b Support improvement programs that address water quality, urban runoff, and flooding.

City of Alameda Emergency Services – Flood Risk

The City has developed a Comprehensive Emergency Management Plan (2008) to protect the safety and welfare of the residents, employees, and visitors in Alameda during emergencies such as earthquakes and floods including tsunamis. The Standardized Emergency Management System (SEMS) is a system required by Government Code §8607(a) for managing response to multi-agency and multi-jurisdiction emergencies in California. The City is responsible for coordination and direction of response and recovery operations in Alameda. SEMS may be activated and resources mobilized in anticipation of possible disasters. Such anticipatory actions may be taken when there are flood watches or earthquake advisories (City of Alameda, 2008).

The City of Alameda Fire Department coordinates the emergency management and disaster preparedness program for the city by working with the Fire and Police Departments, City staff, partner agencies, businesses, and citizens to minimize risk by actively seeking to mitigate hazards, to prepare for, respond to, and successfully recover from natural or manmade disasters when they strike. In its efforts to prepare and inform the community and its residents in case of disasters, the Fire Department offers various training programs, notification methods, and city planning and response information, which include the Alert and Warning Siren System, Code Red Notification System, and the Emergency Operation Plan, which is listed as part of the City of

Alameda's efforts for protection from a tsunami hazard at the project site, and would be implemented by the Fire Department.[10]

The City of Alameda Alert and Warning System is designed to provide a means to notify the community that a severe emergency event has occurred. The network of safety sirens and media links will warn and inform the community of what to do in an emergency or disaster, which include flooding from tsunamis and other public safety incidents (City of Alameda, 2008).

The Alert and Warning system is composed of two main systems: the siren alert system and emergency communications. Five siren towers can be activated simultaneously or separately to alert Alameda residents of an emergency taking place in their vicinity. The siren towers are strategically placed to provide complete audible coverage across town. Upon hearing a siren, residents should Shelter-Shut-Listen, then access one of several communication systems for emergency warnings and information. The ATTENTION or ALERT signal is a 3 to 5-minute steady tone on sirens, horns, or other devices. This signal is meant to transmit the message that an emergency exists and/or is imminent. Citizens are instructed to listen to local radio, area radio, or television stations for essential emergency information. Radio 1280 AM, Alameda Radio, transmits from a base station located at Franklin Park, providing a central point of broadcast. Emergency information will also be presented on Cable Channel 15, Alameda's government access television station and on the City's website (City of Alameda, 2008). Please refer to Section 4.L. *Public Services and Recreation*, for information related to medical emergency services.

4.7.4 Impacts and Mitigation Measures

Significance Criteria

Based on California Environmental Quality Act (CEQA) *Guidelines* Appendix G, the project would cause adverse impacts to hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- Create or substantially contribute to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

[10] http://alamedaca.gov/fire/emergency-operation-plan

- Place housing or other improvements within a 100-year flood hazard zone as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard map or impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.

Topics with No Impact or Otherwise Not Addressed in this EIR

The following impact analysis focuses on potential impacts of the proposed project related to hydrology and water quality. The Appendix G criteria discussed below are not considered relevant to the project based upon the existing conditions and the proposed project plans; therefore, they will not be evaluated further in this EIR:

Groundwater Supplies: The project site is currently almost entirely covered by impervious surfaces and receives little to no recharge from precipitation. With construction of the proposed project and introduction of landscaped areas, there would be a net increase in groundwater recharge. The proposed project would not require the extraction of any groundwater supplies other than potentially temporary dewatering of shallow groundwater during construction, which is discussed under Impact HYD-2 below. Otherwise, there would be no impact to local groundwater supplies or groundwater recharge.

Seiche, Mud Flows, Dam Failure: As discussed above in the setting section, the proposed project site is not located in an area susceptible to seiche, mud flows, or dam failure. There would be no impact related to these hazards. The impacts associated with inundation from a 100-year storm event, a tsunami, and sea level rise are discussed further below.

Impacts Analysis

Impact HYD-1: Project construction facilitated by the proposed project, on-land and in-water, would potentially involve activities that could violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality. (*Less than Significant*)

Stormwater pollution, during both construction and operational phases of the project, can include oils, fuels, heavy metals, pesticides, and other contaminants of concern that originate on rooftops, parking lots, and other impervious surfaces that are subsequently washed into local waterways during storm events. Pollutants also include sedimentation caused by erosion from such activities as ground clearing for construction, chemicals used for lawn and garden maintenance, and litter. New and increased levels of urban land uses on the project site can increase the level of stormwater pollution that could ultimately wash to the Oakland Estuary and San Francisco Bay. Any increased pollution that would violate water quality standards is considered a potentially significant impact.

The proposed project would involve construction associated with redevelopment and new construction as part of residential, retail; commercial recreation; commercial office, industrial, maritime; and marina uses. Project construction would occur on land onsite and also in water for construction of the marina and related uses.

On-land Construction

The majority of construction associated with the proposed project would occur on land and would involve excavation, soil stockpiling, and other ground-disturbing activities associated with the proposed structures, the associated utilities including the new stormwater system. The construction activities would generate loose, erodible soils that, if not properly managed, could be washed into surface water by rain or by water used during construction activities. Soil erosion could cause excess sediment loads in waterways and affect the water quality of the tidal canal and eventually San Francisco Bay.

However, during construction, development under the project would be subject to the NPDES General Construction Permit requirements which include preparation of a SWPPP along with a Notice of Intent prior to construction. Implementation of the SWPPP would begin with the commencement of construction and continue through the completion of the project. At a minimum, the SWPPP would include a description of construction materials, practices and equipment storage and maintenance, a list of pollutants likely to contact stormwater, site specific erosion and sedimentation control practices, list of provisions to eliminate or reduce discharge of materials to stormwater and BMPs for fuel and equipment storage.

The project applicant would develop and implement a monitoring program as required under the General Construction Permit. The project applicant would require the contractor to conduct inspections of the construction site prior to anticipated storm events and after the actual storm events. During extended storm events, inspections would be conducted after every 24-hour period. The goals of these inspections are:

- To identify areas contributing to stormwater discharge,
- To evaluate whether measures to reduce pollutant loadings identified in the SWPPP are adequate and properly installed and functioning in accordance with the General Construction Permit, and
- To evaluate whether additional control practices or corrective maintenance activities are needed.

Construction would involve the use of fuel and other chemicals that, if not managed properly, could also get washed off into the stormwater. These construction impacts, while temporary, would be potentially significant, particularly due to the close proximity of the project site to the tidal canal, Estuary, and San Francisco Bay. Thus equipment, materials and workers would be available for rapid response to spills and/or emergencies. All corrective maintenance or BMPs would be performed as soon as possible, depending upon worker safety. Upon project completion, the project sponsor would submit a Notice of Termination to the RWQCB.

In-water Construction

In addition to construction on land, the proposed project would involve construction within nearby surface waters and by the shoreline such as constructing the proposed stormwater outfalls along the shorelines, and marina improvements. In-water construction activities including removal and disposal of potentially contaminated sediment related to construction and dredging could result in turbidity and re-suspension of sediments. This could adversely affect the water quality of the Estuary and the Bay.

Any construction work that would take place in the marina, graving dock or Estuary would be required to adhere to Section 401 and 404 of the CWA with approvals from the U.S. Army Corps of Engineers and the RWQCB. Please refer to Section 4.3, *Biological Resources,* for a detailed description of related permits and impacts. The applicant would also be required to obtain permits from the U.S. Army Corps of Engineers, RWQCB, BCDC, and the City, which would include measures to protect water quality during construction. The project would incorporate rip-rap, geotextile fabrics, planting or combination of such measures to protect the site from erosion. The rock slope protection would be designed to maintain a stable configuration for erosion and sedimentation control.

The type of dredging and the equipment used for dredging would be strongly influenced by desired depths and the quality of material. Such activities could disturb mud or require removal and disposal of potentially contaminated sediment that could result in turbidity and re-suspension of sediment, which could adversely affect the water quality of the Estuary and the Bay. The project would be subject to the DMMO requirements for dredging and dredged materials and as discussed in the Regulatory Setting section, likely would fall under the first category of projects permitted by the DMMO.

Should testing of the proposed sediments to be dredged be considered necessary, the applicant would prepare a sediment analysis plan (SAP) and obtain an approval of the SAP from the DMMO. The project applicant would conduct sampling and testing of the material. As part of the permit application, the project applicant would propose a disposal location[11] based on the results of the sediment testing and conducting an alternatives analysis for disposal of the dredged material. To minimize impacts on water quality, the project applicant would implement BMPs, such as turbidity monitoring, use of floating debris booms/silt curtains to contain turbidity and suspended sediments in shallow waters, and use of clamshell bucket types that minimize turbidity.

Through compliance with the existing dredging requirements stipulated by the DMMO and permits from the San Francisco Bay RWQCB and BCDC; standard construction specifications incorporated as part of the project; and compliance with the local stormwater control requirements, the potential water quality impacts associated with project construction activities would be **less than significant**.

[11] Given the small quantity of dredged material, disposal of the material is likely to occur at the in-Bay Alcatraz Disposal Site, the Montezuma Wetlands Project beneficial reuse site, or another out-of-Bay disposal location.

Mitigation: None required.

Impact HYD-2: Development of the proposed project could potentially involve dewatering and shoring activities that could potentially result in a discharge, which if contaminated could adversely affect the receiving water quality. (*Less than Significant*)

Excavation and construction of structures with subsurface foundations or open trenches, such as building foundations or pipelines could intercept shallow groundwater and require dewatering (removal of groundwater by pumping) to lower groundwater levels and dry the area for construction. Depending on the nature of construction activities and given the shallow subsurface water levels, groundwater could flow into excavations that extend below the shallow groundwater table. Common practices employed to facilitate construction include either dewatering the excavation or shoring the sides of the excavation to reduce groundwater inflow. If dewatering is conducted, groundwater would be pumped out of the excavation to the surface and then discharged, typically to either the storm drain or sanitary sewer. Water extracted during dewatering could contain chemical contaminants from use of equipment or from pre-existing sources given the likely existing contamination underlying the project site (see Section 4.6 *Hazards and Hazardous Materials* and Impact HAZ-2, for discussion of site contaminants), or could become sediment-laden from construction activities. In areas where dewatering would be implemented, depending on the quality of the groundwater, the discharge could potentially contaminate the receiving waters, which would be a significant impact. However, compliance with permit conditions as part of RWQCB's dewatering permit (if required) would minimize the water quality impact to the receiving waters to a **less-than-significant** level.

Mitigation: None required.

Impact HYD-3: Development of the proposed project would not result in an increase of runoff that would result in erosion, siltation, or flooding on- or off-site. (*Less than Significant*)

The project site is predominantly paved, with runoff flowing into storm drains onsite or directly into the Oakland Estuary or seeping in the ground in portions of unpaved and green spaces. The proposed project would replace some of the existing uses with new residential, maritime industrial/warehouse, and mixed-use retail uses, and introduce improved pervious open spaces.

The project site currently is predominantly covered in impervious surfaces. The proposed project would increase the overall pervious area onsite with the introduction of new pervious surfaces including the dedication of approximately 4.25 acres on the landside portion of the project site to public open space parks and open space (see Figure 3-9). The pervious surfaces would allow for stormwater infiltration and reduce the peak runoff compared to existing conditions. The storm runoff from the project site development (from impervious surfaces) would continue to flow into the water bodies through the proposed storm drain system.

Development of Alameda Marina would be required to comply with the C.3 provision in the NPDES permit by including specific site design features, such as minimizing land features and impervious surfaces, including minimum impact site design standards, and adopting source control measures such as indoor mat/equipment wash racks for restaurants, sanitary drained outdoor covered wash areas for vehicles, equipment, and accessories. The ACCWP oversees the implementation of the NPDES Permit (discussed in the Regulatory Setting), which would apply to the project site. The permit outlines a number of regulatory goals and requirements for stormwater management for new development and redevelopment sites. The permit provisions require the implementation of Low Impact Development (LID) measures as outlined in Section C.3.c of the MRP. These measures include source control, site design, and treatment requirements to reduce the amount of stormwater runoff and improve the quality of the stormwater runoff. The permit identifies appropriate LID stormwater management measures such as rainwater harvesting and reuse, infiltration, evapotranspiration, and biotreatment while emphasizing that biotreatment systems are only to be used where it is practically infeasible to utilize the other three cited measures. [Accordingly, biotreatment would be the primary method of accomplishing stormwater treatment. The LID biotreatment measures that would be implemented throughout the project site include bioretention planters, street planters, bioswales, subgrade infiltration areas and any other treatment measures approved by the RWQCB. Due to shallow groundwater table onsite, there could be limitations with the infiltration of storm runoff.

Linear, bioretention planters, bioswales, and street planters would also be used within the landscape strips of the new street network and housing and commercial buildings would incorporate biotreatment measures and rainwater harvesting, where feasible, to provide pre-treatment of stormwater runoff prior to discharging into the stormwater system. The proposed project would involve stormwater treatment close to the source with bioswales, biofiltration areas and other state of the art technologies to clean stormwater runoff prior to outfall to the Oakland Estuary.

In addition to implementing stormwater management measures onsite, the project applicant would install a new and improved stormwater system throughout the project site to collect and convey the stormwater flows through existing and replaced outfall structures. The new storm drain system would be required to conform to City of Alameda and FEMA flooding design criteria. Stormwater would be discharged to the Oakland Estuary through outfalls on the northern shoreline of the project site (see also Section 4.13, *Utilities and Service Systems* and Section 4.3, *Biological Resources*).

The new stormwater system would integrate new pipelines, multi-purpose basins, and outfalls with water quality treatment features designed to meet current City of Alameda, County of Alameda, and RWQCB design criteria, which include flooding criteria. As a result of incorporating LID and stormwater flow management measures at the project site and installing a storm system designed to reduce the risk of flooding onsite, the project would not cause substantial flooding. The stormwater management system would also be designed to address the potential impacts of future sea level rise through forward planning of adaptation strategies and infrastructure (see Impacts HYD-5 and HYD-7 for further discussion related to flooding and flooding from sea level rise). The impact would be **less than significant**.

Mitigation: None required.

Impact HYD-4: Development of the proposed project would not substantially contribute to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. (*Less than Significant with Mitigation*)

As described above, the proposed project would involve mixed use spaces such as residential, industrial, commercial/ retail, and recreational land and open space areas. Stormwater from the developed portions of the project site would be discharged through the proposed storm drain system into the Estuary similar to the existing setting. Stormwater from the project site could expose pollution or contaminants released onsite and flow into the Bay through direct discharge. However, as discussed in Impact HYD-3, the project would be required to implement various source control and monitoring measures for water quality control outlined in the NPDES permit and the *Stormwater Quality Management Plan*. The measures include hazardous materials storage requirements, elimination of illicit discharges, and others. As outlined in Section C.3.c of the NPDES Permit, the project design would incorporate LID measures such as site design, and treatment requirements to improve the quality of the stormwater runoff. As also discussed above, the LID biotreatment measures such as bioretention planters, street planters, bioswales, subgrade infiltration areas, and any other state-of-the-art treatment measures approved by the RWQCB would also be implemented throughout the project site.

The linear, bioretention planters, bioswales, and street planters along the streets and biotreatment measures and rainwater harvesting, where feasible, would also provide pre-treatment of stormwater runoff prior to discharging into the stormwater system. Selected post-construction stormwater BMPs such as grass swales, pervious pavements, and infiltration basins required as part of the C.3 NPDES requirements would be installed, where practicable, to treat runoff from impervious surface areas. Other administrative BMPs would include signage at inlets to prevent illicit discharge to storm drains, street sweeping, public education, household hazardous waste disposal programs, and spill prevention and control BMPs for areas with higher boat use. Measures such as bioswales, biofiltration, and other state of the art technologies close to the source would treat the stormwater runoff prior to discharging through the proposed outfalls into the Estuary.

In addition, the project would also include new landscaping as part of the 4.25 acres of parks and open space. The project would thus increase the amount of landscaped open space areas and reduce impervious surface areas compared to existing conditions, which would facilitate infiltration and reduce stormwater runoff. The water would infiltrate into the subsurface soils and eventually flow into the Estuary through groundwater seepage. Maintenance of the landscaped areas would involve use of fertilizers and pesticides, which if not properly handled could flow into storm drains and/or the waterways affecting the receiving water quality.

The ACCWP NPDES permit requires the City of Alameda as a permittee, to address pesticides, which have been found by the RWQCB to have a reasonable potential to cause or contribute to

exceedances of water quality standards. This pesticide program includes a proactive Diazinon Pollutant Reduction Plan (or Pesticide Plan). The goals of the Pesticide Plan and of its resulting implementing actions are to reduce or substitute pesticide use (especially diazinon use) with less toxic alternatives. In addition, application of such chemicals as pesticides and fertilizers would require a management approach outlined in **Mitigation Measure HYD-1**, which would reduce the impact to a less than significant level.

Compared to the existing stormwater system that has no water quality control measures, the proposed project would install a newly designed stormwater system, which incorporates water treatment measures throughout the project site, as discussed above. Compliance with the existing water quality protection requirements of the RWQCB and Alameda County, in addition to implementation of **Mitigation Measure HYD-1** below, would effectively reduce surface water pollutants and the potential water quality impact to a **less-than-significant** level.

> **Mitigation Measure HYD-1:** The City shall ensure that future project applicants implement Integrated Pest Management measures to reduce fertilizer and pesticide contamination of receiving waters, as follows:
>
> - Prepare and Implement an Integrated Pest Management Plan (IPM) for all common landscaped areas. The IPM shall be prepared by a qualified professional and shall recommend methods of pest prevention and turf grass management that use pesticides as a last resort in pest control. Types and rates of fertilizer and pesticide application shall be specified.
> - The IPM shall specify methods of avoiding runoff of pesticides and nitrates into receiving storm drains and surface waters or leaching into the shallow groundwater table. Pesticides shall be used only in response to a persistent pest problem that cannot be resolved by non-pesticide measures. Preventative chemical use shall not be employed.
> - The IPM shall fully integrate considerations for cultural and biological resources into the IPM with an emphasis toward reducing pesticide application.

Significance after Mitigation: Less than Significant.

Impact HYD-5: The project would not place housing or structures within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map; or place within a 100-year flood hazard area structures which would impede or redirect flood flows. (*Less than Significant)*

Under the current 2009 FEMA Flood Insurance Rate Maps (FIRM), no part of the dry land area within the project site is currently located within a coastal Zone VE (subject to inundation by a 100-year flood event with additional hazards that result from storm-induced velocity wave action by a 3-foot or higher wave), as defined by FEMA (FEMA, 2009a, and 2009b). Under the Preliminary FEMA FIRMs released in 2015, only a portion of the northeastern-most position of the project site is located within a 500-year flood zone (FEMA, 2015a, and 2015b). However, no homes or other structures are planned for the area located in the 100-year or 500-year flood zone.

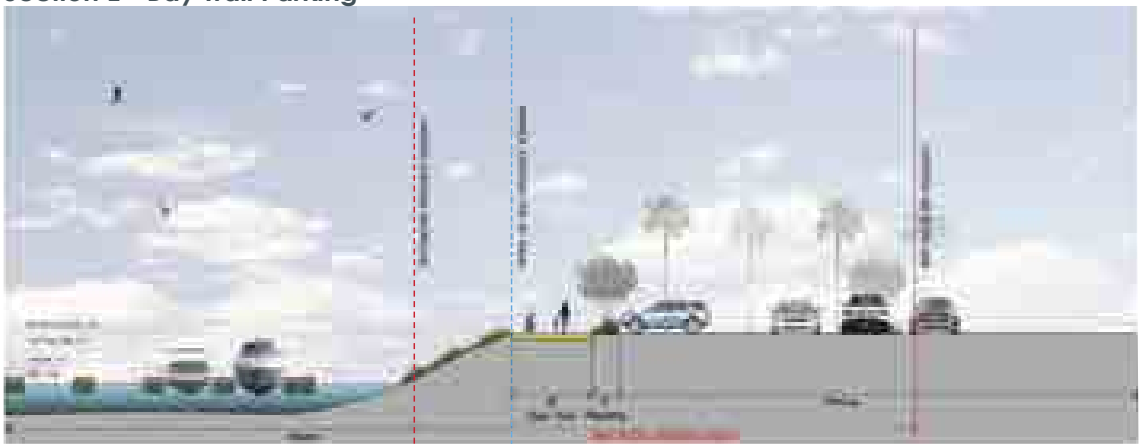
As described in Chapter 3, *Project Description*, the project site would be developed in accordance with FEMA criteria and with additional consideration to sea level rise (see Impact HYD-7). That is, proposed elevations of the public access areas and proposed building foundations would be established to provide built-in protection against a minimum of 36 inches of sea level rise (refer to **Figure 4.7-1**). Shoreline design would also accommodate future adaptive measures for potential future sea level rise in excess of 36 inches. Accordingly, the elevations of the shoreline areas within the project site would range between 5.0 and 7.7 feet (City of Alameda Datum), with finished first floor elevations of all residential buildings no lower than 6.0 feet (City of Alameda Datum).**Error! Bookmark not defined.** This built-in protection would be estimated to provide protection from sea level rise for 60 to 75 years.

The Bay Trail would be constructed along the shoreline. The minimum elevation of the Bay Trail in these areas would conform to BCDC's design guidelines for public use areas along the Bay shoreline. Generally, the Bay Trail would be constructed at or above the 100-year tidal elevation, plus accounting for wind/wave run up. The proposed storm drain system for the project site would be designed for a 25-year storm event in accordance with City of Alameda requirements. The storm system design would also follow additional criteria to provide interior drainage protection for a 100-year storm event – in concert with exterior levees and floodwalls[12] – consistent with FEMA requirements and to contain and convey runoff from a 100-year event (including longer durations than 24 hours) to the Bay without causing flooding of structures. The project is required to prepare and implement a detailed Operations and Maintenance Plan for the interior drainage system describing in detail the associated infrastructure, maintenance plans and schedules, back-up facilities, and emergency protocols. Thus the design of the project site and the proposed development would incorporate flood protection measures and would not subject the structures to a substantial risk of loss from a 100-year storm event.

Flooding is one of the emergencies addressed in the City's Comprehensive Emergency Management Plan (2008), which establishes an emergency organization to direct and control operations during a period of emergency by assigning responsibilities to specific personnel. The plan includes the City's Alert and Warning Siren System, which would be initiated to alert the public and prevent significant losses. The Alert and Warning System is designed to provide a means to notify the community that a severe emergency event has occurred. This network of safety sirens and media links will warn and inform the community of what to do in an emergency or disaster such as floods. The advance warning system would allow for evacuation of people and would provide a high level of protection to public safety. Thus, the risk of loss that the people would be subject to is not considered substantial.

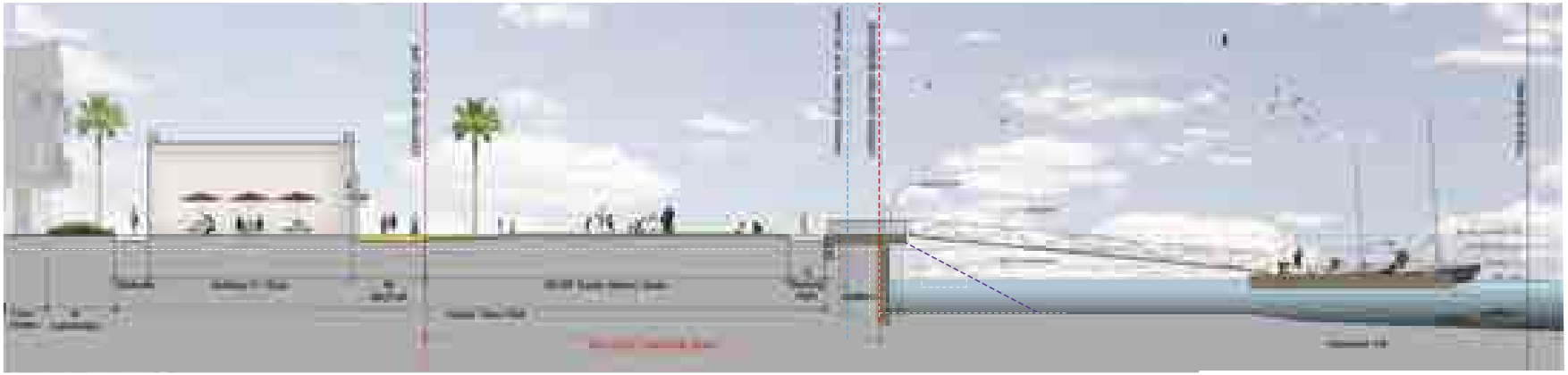
[12] With crest elevation that meets FEMA guidelines for levees including 100-year tidal elevation, plus wave / wind run up, 18-inches of sea level rise plus 1 foot of freeboard.

Section E - Bay Trail Parking



Sections Key Map

Section F - Harbor View Park



SOURCE: Draft Alameda Marina Master Plan

Alameda Marina Master Plan EIR

Figure 4.7-1
Project Site Coastal Elevations

ESA

With compliance with existing City of Alameda requirements for infrastructure, BCDC's design guidelines, and implementation of grading plans which would increase ground elevations above flood hazard levels, impacts related to development within flood hazard zones would be **less than significant**.

Mitigation: None required.

Impact HYD-6: The proposed project could expose people or structures to risk of loss, injury, or death from inundation by a tsunami. (*Less than Significant*)

As discussed in Setting above, low-lying areas along San Francisco Bay are subject to flood hazard from a tsunami. A recent USGS report (Wood et. al., 2013) estimates a high community hazard from a tsunami in Alameda. The report indicates that in the event of a tsunami, the maximum onshore runup elevation in Alameda would be 16.73 feet NAVD88 (10.6 City of Alameda Datum); both would cause inundation of a majority of the project site. Similar to the 100-year flood impact (see Impact HYD-5 above), the level of risk from a tsunami that the proposed development would be subject to would depend on a) the magnitude of the inundation hazard, which is a function of the location and design of the structures and the emergency response/preparedness planning for the public in the event of a tsunami; and b) the likelihood of a tsunami in the project area.

In terms of structures, as described in Chapter 3, *Project Description*, one of the project objectives is to improve the seawall and bulkheads and to elevate the shorelines and/or floodwalls for sea level rise of a minimum height of 36 inches. Shoreline design would also accommodate future adaptive measures for potential future sea level rise in excess of 36 inches. These measures in conjunction with those described in Section 4.5, *Geology, Soils, and Paleontological Resources*, would be compliant with the seismic code and protective from geologic hazards.

In terms of public protection, in the event of an earthquake, which is capable of producing a tsunami that could affect Alameda, the National Warning System (PTWS; see Local Regulatory Setting section above for emergency services) would provide warning to the City. The City of Alameda Alert and Warning Siren System would be initiated, which would sound an alarm alerting the public to tune into local TV, cable TV, or radio stations, which would carry instructions for appropriate actions to be taken as part of the Emergency Alert System. Police would also canvas the neighborhoods sounding sirens and bullhorns, as well as knocking on doors as needed, to provide emergency instructions. Evacuation centers would be set up if required. The advance warning system would allow for evacuation of people prior to a tsunami and would provide high level of protection to public safety.

The USGS report documents geographic variations in community exposure to tsunami hazards in California; however, the potential losses would only match reported inventories if all residents, employees, and visitors in tsunami-prone areas were unaware of tsunami risks, were unaware of what to do if warned of an imminent threat (either by natural cues or official announcements), and failed to take protective measures to evacuate. This assumption is unrealistic, given the

current level of tsunami-awareness efforts in California. Because the tsunami-inundation zone identifies the maximum areas of inundation from various earthquake and landslide sources, it is not meant to imply that all delineated areas would be inundated by a single future tsunami. Finally, the tsunami-inundation zone does not provide any indicator of the probability of specific earthquake or landslide scenarios. The tsunami-inundation zone used in the study is a guide for emergency planning and is not a prediction for a future event (Wood et al., 2013).

As discussed in Section 4.H. *Geology, Soils, and Seismicity*, the project site would likely experience at least one major earthquake within the next 30 years. The intensity of such an event would depend on the causative fault and the distance to the epicenter, the moment magnitude, and the duration of shaking. As a secondary seismic hazard associated with earthquakes, the likelihood of a tsunami occurring due to groundshaking is not as high as other hazards such as earthquakes and landslides, which are discussed further in Section 4.5, *Geology, Soils, and Paleontological Resources*). Considering both the possibility of the tsunami occurring in the project area and the design and location of the structural development proposed at the site, the impact to the structures and the public is considered **less than significant**.

Mitigation: None required.

Impact HYD-7: The project could expose people or structures to a significant risk of loss, injury or death involving flooding related to sea level rise. (*Less than Significant)*

As discussed in Impact HYD-5, the proposed project would involve grading for an elevated coastline with a minimum elevation of 6 feet City of Alameda Datum (12.1 feet NAVD88). The project would also have 50- to 100-foot-wide corridors along the shorelines reserved for the Bay Trail and which can be used for protection measures and adaptive measures to address climate change. All residential structures within the project site would be located at or above the 100-year tidal elevation plus 36 inches for sea level rise considerations. Shoreline design would also accommodate future adaptive measures for potential future sea level rise in excess of 36 inches.

Future adaptive measures would involve expanding the coastal region of the site with raised levees or floodwalls. The stormwater system and the flood protection structures for the proposed project would be designed and implemented to protect the project site from inundation based on the conservative scenario of a high tide during a 100-year stormwater event in combination with sea level rise. The proposed project, as discussed above, would incorporate structural design and adaptive measures over time for protection from flooding from sea level rise (in concert with a 100-year storm and high tide event), hence the impact is considered **less than significant**.

Mitigation: None required.

Cumulative Impacts

Impact C-HYD-1: Increased construction activity and new development facilitated by the proposed project, in conjunction with past, present, reasonably foreseeable future development in Alameda, could potentially impact hydrologic resources including water quality. (*Less than Significant*)

Implementation of the proposed project, together with past present and other reasonably foreseeable future projects in the vicinity could cumulatively increase stormwater runoff and pollutant loading to the Estuary and the Bay. The proposed project and other future projects in the vicinity would be required to comply with drainage and grading requirements intended to control runoff and regulate water quality at each development site. Additionally, new projects would be required to demonstrate that stormwater volumes could be managed by stormwater conveyance facilities designed to control onsite stormwater flows. New development projects in Alameda also would be required to comply with Alameda County and City of Alameda ordinances regarding water quality including ACCWP NPDES permitting requirements. All construction work and dredging activities within the Estuary and marina would require permits from the U.S. Army Corps of Engineers and San Francisco Bay RWQCB which require that all activities minimize adverse effects to water quality. Therefore, the effect of the project on water quality and hydrology, in combination with other cumulative projects, would not be significant. Additionally, the proposed project itself would increase the net pervious surfaces on the project site, thereby decreasing runoff from the site.

Implementation of the proposed project, together with past present and other reasonably foreseeable future projects in the vicinity, could also expose people and/or property to flooding from a 100-year event and sea level rise. These effects could occur through increases in stormwater runoff volumes and during high tide in a 100-year storm event along with sea level rise in the Bay. The proposed project and other future projects in the vicinity would be required to comply with flood control requirements intended to provide flood protection. Additionally, new projects would be required to demonstrate that stormwater volumes could be managed by stormwater conveyance facilities designed to control onsite stormwater flows. New development projects in Alameda also would be required to comply with Alameda County and City of Alameda flood control requirements. As discussed above, the proposed project itself would involve structural measures designed to abate flooding from high tides in a 100-year storm event combined with sea level rise of up to 36 inches initially, with accommodation for future adaptive measures for potential future sea level rise in excess of 36 inches. Therefore, the project, in combination with other cumulative projects, would not result in a significant cumulative impact to people and/or property from a 100-year event in combination with sea level rise. The project would have a less-than cumulatively considerable impact, and cumulative effects, therefore, would be **less than significant**.

Mitigation: None required.

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4.8 Land Use and Planning

4.8.1 Introduction

This section describes the existing and planned land uses in the project area, identifies adopted plans that guide the City's land use and planning decisions, and evaluates land use impacts resulting from implementation of the proposed project.

4.8.2 Setting

Land Uses in the Vicinity

The project site is bounded on the west by Alameda Marina Drive, on the north by the Oakland-Alameda Estuary ("Estuary"), to the east by a northern extension of Willow Street, and to the south by Clement Avenue (see **Figure 3-2: Local Vicinity**, and also **Figure 3-3: Existing Land Use Designations and Zoning**). To the west of the site across Alameda Marina Drive lies the Alameda Power Service Center and also an extension of the Fortmann Marina. North of the site across the Estuary is Coast Guard Island, and also Union Point Park located along Embarcadero in Oakland. To the east of the site lies the Navy Operational Support Center/Alameda Naval and Marine Corps Reserve Center, and to the south across Clement Avenue is a mixture of light industrial, retail and residential uses. The Park Street business district is approximately 0.7 miles to the southeast and the Webster Street business core is approximately 1.5 miles to the west. Regional public transportation connections such as the Fruitvale Bay Area Rapid Transit (BART) Station and AC Transit lines are within 2 miles of the site.

General Plan Land Use and Zoning Designation

The project site is designated as Specified Mixed Use (MU4 Northern Waterfront) in the General Plan Land Use Element. Mixed Use and Commercial Recreation uses are located directly to the west. Directly to the south is Clement Avenue, and parcels along Clement Avenue, parallel to the project site, are Specified Mixed Use and Medium Density Residential. Land adjacent and to the east of the project site is Federal Facilities and Specified Mixed Use. To the north, are the waters of the Oakland Estuary (City of Alameda, 2017a).

The project site falls into two different zoning districts (refer to Figure 3-3: Existing Land Use and Zoning Designations). Approximately 17.06 acres of the project site lies within the City's M-2 General Industrial (Manufacturing) zoning district, and approximately 27.08 acres lies within the City's MX Mixed-Use Planned Development and MF Multi-Family Residential Combining zoning designations.

The M-2 zone allows for general industrial uses, and the MX zone allows for a mix of compatible uses that may include "residential, retail, offices, recreational, entertainment, research-oriented light industrial, water oriented or other related uses" (Alameda Municipal Code 30-4.20a).

The MX and MF overlay designations for Alameda Marina were adopted in 2012 when after substantial public input, the City adopted its former Housing Element (2007-2014) and designated Alameda Marina as a site for mixed-use/ multifamily housing. In 2012, the City also applied a "MF Multifamily Combining District" designation to Alameda Marina and other sites to bring the City's General Plan and Alameda Municipal Code into conformance with State Law.

Around the same time the City also put forward two priority development areas for housing in the 2013 Plan Bay Area, one of which includes Alameda Marina as part of the Northern Waterfront. Plan Bay Area is a regional growth plan from the Association of Bay Area Governments (ABAG). In its updated Housing Element (2015- 2023), the City allocated a number of residential units to Alameda Marina in order to meets its Regional Housing Need Allocation (RHNA).

4.8.3 Regulatory Setting

This section provides applicable plans and major policies and regulations that pertain to the project site, followed by a discussion of the project's overall consistency (or inconsistency) with each plan. Several land use plans, policies, and regulations apply to the project site. Consistent with CEQA, not every policy that could apply to the project is included here. Rather, the focus of this analysis is on potential conflicts with policies that were adopted for the purpose of avoiding or mitigating an environmental effect that could result in significant adverse physical effects on the environment.

Federal

There are no federal regulations with respect to land use that apply to the project.

State

San Francisco Bay Conservation and Development Commission's Plans and Policies

The San Francisco Bay Conservation and Development Commission (BCDC) is a state agency with permit authority over the Bay and its shoreline. Created by the McAteer-Petris Act in 1965 (Title 7.2, commencing with Section 66000, of the California Government Code), BCDC regulates filling, dredging, and changes in use in San Francisco Bay. The creation of BCDC was a legislative response to address environmental damage created by years of extensive and unmanaged filling of the Bay by developing policies and regulations that recognize and protect San Francisco Bay.

Of primary concern to BCDC is the placement of new "fill" (generally defined as any material in or over the water surface, including pilings, structures placed on pilings, and floating structures) in the Bay. The McAteer-Petris Act imposes very strict standards for the placement of new fill. Placement of fill may be allowed only for uses that are (1) necessary for public health, safety or welfare of the entire Bay Area; (2) water-oriented uses, such as water-related industry, water-oriented recreation, and public assembly and the like; or (3) minor fill to improve shoreline

appearance and public access. Fill must be the minimum necessary for the purpose and can be permitted only when no alternative upland location exists.

In addition, BCDC regulates new development within 100 feet of the shoreline to ensure that maximum feasible public access is provided to and along the Bay. BCDC is also charged with ensuring that the limited amount of shoreline property suitable for regional high-priority water-oriented uses (e.g., ports, water-related industry, water-oriented recreation, airports, and wildlife areas) is reserved for these purposes. Land-side uses and structural changes are governed by policies regarding public access. BCDC can require, as conditions of permits, shoreline public access improvements consistent with a proposed project, such as, but not limited to, pathways, observation points, bicycle racks, parking, benches, landscaping, and signs. BCDC planning documents applicable to San Francisco Bay's waterfront are described below.

San Francisco Bay Plan

The San Francisco Bay Plan (Bay Plan) was prepared by BCDC from 1965 through 1969 and amended through 2007 in accordance with the McAteer-Petris Act. The Bay Plan guides the protection and use of the Bay and its shoreline within the nine Bay Area counties. BCDC has permit jurisdiction over shoreline areas subject to tidal action up to the mean high tide line and including all sloughs, tidelands, submerged lands, and marshlands lying between the mean high tide and 5 feet above mean sea level, and the land lying between the Bay shoreline and a line drawn parallel to and 100 feet from the Bay shoreline which is known as the 100-foot shoreline band. Under the McAteer-Petris Act, the Bay Plan provides policy direction for BCDC's permit authority regarding the placement of fill, extraction of materials, determining substantial changes in use of land, water, or structures within its jurisdiction, protection of the Bay habitat and shoreline, and maximizing public access to the Bay.

Part IV of the Bay Plan contains findings and policies that pertain to development of the Bay and shoreline. These findings and policies address the many facets that comprise the uses, needs and design issues associated with balancing the environmental, ecological, economic, recreational and social objectives of development within or along the shoreline of the Bay. The categories of policies include: climate change; safety of fills; shoreline protection; dredging; water-related industry; ports; airports; transportation; commercial fishing; recreation (including marinas); public access; appearance, design and scenic views; salt ponds; managed wetlands; other uses of the Bay and shoreline; fill for various uses; mitigation; Public Trust; and navigational safety and oil spill prevention.

The Bay Plan policies with which the proposed project or variants may pose a potential conflict are listed below. The physical effects associated with the potential conflicts with these policies are discussed in Chapter 4, Environmental Setting, Impacts and Mitigation Measures, under the appropriate resource topic. The compatibility of the project with policies that do not relate to physical environmental issues will be considered by decision-makers as part of their decision whether to approve or disapprove the proposed project.

Development of the Bay and Shoreline, Dredging

Policy 1 Dredging and dredged material disposal should be conducted in an environmentally and economically sound manner. Dredgers should reduce disposal in the Bay and certain waterways over time to achieve the LTMS goal of limiting in-Bay disposal volumes to a maximum of one million cubic yards per year. The LTMS agencies should implement a system of disposal allotments to individual dredgers to achieve this goal only if voluntary efforts are not effective in reaching the LTMS goal. In making its decision regarding disposal allocations, the Commission should confer with the LTMS agencies and consider the need for the dredging and the dredging projects, environmental impacts, regional economic impacts, efforts by the dredging community to implement and fund alternatives to in-Bay disposal, and other relevant factors. Small dredgers should be exempted from allotments, but all dredgers should comply with policies 2 through 12.

Policy 2 Dredging should be authorized when the Commission can find: (a) the applicant has demonstrated that the dredging is needed to serve a water-oriented use or other important public purpose, such as navigational safety; (b) the materials to be dredged meet the water quality requirements of the San Francisco Bay Regional Water Quality Control Board; (c) important fisheries and Bay natural resources would be protected through seasonal restrictions established by the California Department of Fish and Game, the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service, or through other appropriate measures; (d) the siting and design of the project will result in the minimum dredging volume necessary for the project; and (e) the materials would be disposed of in accordance with Policy 3.

Development of the Bay and Shoreline, Recreation

Policy 1 Diverse and accessible water-oriented recreational facilities, such as marinas, launch ramps, beaches, and fishing piers, should be provided to meet the needs of a growing and diversifying population, and should be well distributed around the Bay and improved to accommodate a broad range of water-oriented recreational activities for people of all races, cultures, ages and income levels. Periodic assessments of water-oriented recreational needs that forecast demand into the future and reflect changing recreational preferences should be made to ensure that sufficient, appropriate water-oriented recreational facilities are provided around the Bay. Because there is no practical estimate of the acreage needed on the shoreline of the Bay, waterfront parks should be provided wherever possible.

Policy 3 Recreational facilities, such as waterfront parks, trails, marinas, live-aboard boats, non-motorized small boat access, fishing piers, launching lanes, and beaches, should be encouraged and allowed by the Commission, provided they are located, improved and managed consistent with the following standards:

a). General Recreational facilities should: (1) Be well distributed around the shores of the Bay to the extent consistent with the more specific criteria below. Any concentrations of facilities should be as close to major population centers as is feasible; (2) Not pre-empt land or water area needed for other priority uses, but efforts should be made to integrate recreation into such facilities to the extent that they are compatible.; (3) Be feasible from an engineering viewpoint; and (4) Be consistent with the public access policies

that address wildlife compatibility and disturbance. In addition: (5) Different types of compatible public and commercial recreation facilities should be clustered to the extent feasible to permit joint use of ancillary facilities and provide a greater range of choices for users. (6) Sites, features or facilities within designated waterfront parks that provide optimal conditions for specific water-oriented recreational uses should be preserved and, where appropriate, enhanced for those uses, consistent with natural and cultural resource preservation. (7) Access to marinas, launch ramps, beaches, fishing piers, and other recreational facilities should be clearly posted with signs and easily available from parking reserved for the public or from public streets or trails. (8) To reduce the human health risk posed by consumption of contaminated fish, projects that create or improve fishing access to the Bay at water-oriented recreational facilities, such as fishing piers, beaches, and marinas, should include signage that informs the public of consumption advisories for the species of Bay fish that have been identified as having potentially unsafe levels of contaminants. (9) Complete segments of the Bay and Ridge Trails where appropriate, consistent with policy 4-a-6.

b). Marinas. (1) Marinas should be allowed at any suitable site on the Bay. Unsuitable sites are those that tend to fill up rapidly with sediment and require frequent dredging; have insufficient upland; contain valuable tidal marsh or tidal flat, or important subtidal areas; or are needed for other water-oriented priority uses. At suitable sites, the Commission should encourage new marinas, particularly those that result in the creation of new open water through the excavation of areas not part of the Bay and not containing valuable wetlands. (2) Fill should be permitted for marina facilities that must be in or over the Bay such as breakwaters, shoreline protection, boat berths, ramps, launching facilities, pump-out and fuel docks, and short-term unloading areas. Fill for marina support facilities may be permitted at sites with difficult land configurations provided that the fill in the Bay is the minimum necessary and any unavoidable loss of Bay habitat, surface area, or volume is offset to the maximum amount feasible, preferably at or near the site. (3) No new marina or expansion of any existing marina should be approved unless water quality and circulation will be adequately protected and, if possible, improved, and an adequate number of vessel sewage pump-out facilities that are convenient in location and time of operation to recreational boat users should be provided free of charge or at a reasonable fee, as well as receptacles to dispose of waste oil. (4) In addition, marinas should include public amenities, such as viewing areas, restrooms, public mooring docks or floats and moorages for transient recreational boaters, non-motorized small boat launching facilities, public parking; substantial physical and visual access; and maintenance for all facilities.

e). Non-Motorized Small Boats. (1) Where practicable, access facilities for non-motorized small boats should be incorporated into waterfront parks, marinas, launching ramps and beaches, especially near popular waterfront destinations. (2) Access points should be located, improved and managed to avoid significant adverse effects on wildlife and their habitats, should not interfere with commercial navigation, or security and exclusion zones or pose a danger to recreational boaters from commercial shipping operations, and

should provide for diverse, water-accessible overnight accommodations, including camping, where acceptable to park operators. (3) Sufficient, convenient parking that accommodates expected use should be provided at sites improved for launching non-motorized small boats. Where feasible, overnight parking should be provided. (4) Site improvements, such as landing and launching facilities, restrooms, rigging areas, equipment storage and concessions, and educational programs that address navigational safety, security, and wildlife compatibility and disturbance should be provided, consistent with use of the site. (5) Facilities for boating organizations that provide training and stewardship, operate concessions, provide storage or boathouses should be allowed in recreational facilities where appropriate. (6) Design standards for non-motorized small boat launching access should be developed to guide the improvement of these facilities. Launching facilities should be accessible and designed to ensure that boaters can easily launch their watercraft. Facilities should be durable to minimize maintenance and replacement cost.

f). Fishing Piers. Fishing piers should not block navigation channels, nor interfere with normal tidal flow.

h). Water-oriented commercial-recreation. Water-oriented commercial recreational establishments, such as restaurants, specialty shops, private boatels, recreational equipment concessions, and amusements, should be encouraged in urban areas adjacent to the Bay. Public docks, floats or moorages for visiting boaters should be encouraged at these establishments where adequate shoreline facilities can be provided. Effort should be made to link commercial-recreation centers and waterfront parks by ferry or water taxi.

Development of the Bay and Shoreline, Public Access

Policy 5 Public access should be sited, designed, managed and maintained to avoid significant adverse impacts from sea level rise and shoreline flooding.

Policy 6 Whenever public access to the Bay is provided as a condition of development, on fill or on the shoreline, the access should be permanently guaranteed. This should be done wherever appropriate by requiring dedication of fee title or easements at no cost to the public, in the same manner that streets, park sites, and school sites are dedicated to the public as part of the subdivision process in cities and counties. Any public access provided as a condition of development should either be required to remain viable in the event of future sea level rise or flooding, or equivalent access consistent with the project should be provided nearby.

Policy 7 Public access improvements provided as a condition of any approval should be consistent with the project and the physical environment, including protection of Bay natural resources, such as aquatic life, wildlife and plant communities, and provide for the public's safety and convenience. The improvements should be designed and built to encourage diverse Bay-related activities and movement to and along the shoreline, should permit barrier free access for persons with disabilities to the maximum feasible extent, should include an ongoing maintenance program, and should be identified with appropriate signs.

Policy 9 Access to and along the waterfront should be provided by walkways, trails, or other appropriate means and connect to the nearest public thoroughfare where convenient parking or public transportation may be available. Diverse and interesting public access experiences should be provided which would encourage users to remain in the designated access areas to avoid or minimize potential adverse effects on wildlife and their habitat.

Development of the Bay and Shoreline, Appearance, Design, and Scenic View

Policy 1 To enhance the visual quality of development around the Bay and to take maximum advantage of the attractive setting it provides, the shores of the Bay should be developed in accordance with the Public Access Design Guidelines.

Policy 2 All Bayfront development should be designed to enhance the pleasure of the user or viewer of the Bay. Maximum efforts should be made to provide, enhance, or preserve views of the Bay and shoreline, especially from public areas, from the Bay itself, and from the opposite shore. To this end, planning of waterfront development should include participation by professionals who are knowledgeable of the Commission's concerns, such as landscape architects, urban designers, or architects, working in conjunction with engineers and professionals in other fields.

Policy 10 Towers, bridges, or other structures near or over the Bay should be designed as landmarks that suggest the location of the waterfront when it is not visible, especially in flat areas. But such landmarks should be low enough to assure the continued visual dominance of the hills around the Bay.

Public Trust Lands

The project site is a waterfront site with a shoreline edge that contains approximately 4,000 linear feet. Of the total site area, approximately 17.06 acres of the project site are presently tidelands or submerged lands (i.e., lands privately held below the historic mean high tide line) and are subject to the Public Trust for commerce, navigation and fisheries ("Public Trust" or "Trust"). Of this land, 12.17 acres are leased tidelands, and 5.46 are under fee simple (see table 3-1). In California, the Public Trust doctrine gives the state title to tidelands and submerged lands that existed at the time of statehood in 1850. Lands subject to the Public Trust ("Trust Lands") are held in trust by the State of California on behalf of the public and are to be used to promote Public Trust purposes. Between 1850 and 1879, the State sold some tidelands to private parties. These privately held tideland lots, known as Board of Tideland Commissions' lots or BTLC lots, were no longer considered sovereign land. The State may grant Trust Lands to local entities as trustees. Granted Trust Lands are subject to Public Trust restrictions on their use, as well as any limitations set forth in the granting statute. In 1913, the Legislature granted Trust Lands within the limits of the City of Alameda to the City as trustee.

Navigation, fisheries, maritime uses, hotels, water-oriented recreation, restaurants, visitor-serving retail, parks and open space, and parking are among the activities generally permitted on Trust Lands. Housing and general office are examples of uses generally not permitted on Trust Lands. As such, the project sponsor may propose a land exchange that would remove the Public Trust from certain lands, allowing them to be used for residential and other non-Trust uses, and impose

the Public Trust on certain other lands that are not currently subject to the Trust, including a substantial portion of the waterfront lands within the project site.

The current Public Trust parcel configuration is shown in Figure 3-4, and the potential land exchange is shown in Figure 3-7.

Regional

Plan Bay Area and the Northern Waterfront PDA

The *Plan Bay Area*, which sets forth the region's proposed Sustainable Communities Strategy, was formally adopted by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) in July 2013, and was updated on July 27, 2017 under *Plan Bay Area 2040*. *Plan Bay Area* provides housing and employment projections for the San Francisco Bay Area, as well as counties, cities, and priority development areas (PDAs).[1] In contrast to previous trends where new development primarily occurred on raw rural lands, the *Plan Bay Area* directs development to PDAs. According to ABAG, "this allows the region to reduce the emission of GHGs, house our population in a wide range of neighborhoods, preserve our natural resources, and support the creation of and greater access to new employment opportunities" (ABAG and MTC, 2013).

The project site falls within *Plan Bay Area's* Northern Waterfront PDA, which includes the commercial, industrial, and residential properties along Alameda's northern shoreline extending from Sherman Street to Tilden Way. The *Plan Bay Area* provides the following description for the PDA:

> The City of Alameda envisions this area being redeveloped as a series of mixed use, waterfront and transit oriented neighborhoods that will provide a mix of jobs and transit oriented housing types to serve the next generation of Alameda residents. The plans propose that a mix of uses are developed on former industrial and auto-oriented lands and preserve former railroad right of way for future bus rapid transit or light rail improvements. The Clement Avenue corridor through the Northern Waterfront is a designated transit priority right of way. The plans emphasize the importance of a mix of uses and a diversity of housing types for all income and household types.

According to the *Plan Bay Area*, the Bay Area is expected to "experience more modest growth than in past decades." Even so, ABAG still projects "healthy economic growth of 1.1 million jobs and 2 million people by 2040 as the Bay Area continues to attract cutting-edge, high technology companies, talent, and investment from around the world." This regional projection "assumes a full-employment economy with unemployment rates returning to normal levels within a successful national economy. The forecast also recognizes the challenges with building new housing in the region that is largely multi-family and in infill locations, and the impact that has on

[1] PDAs are areas where future growth within the Bay Area is intended to be concentrated. Within PDAs, "new development will support the day-to-day needs of residents and workers in a pedestrian-friendly environment served by transit" (ABAG and MTC, 2013).

our ability to capture potential job growth. Achieving this growth will require that the region respond to an aging and diversifying population, polarizing wages, high housing and transportation costs, and other issues affecting our quality of life" (ABAG and MTC, 2013).

Plan Bay Area 2040 is the strategic update to the plan. Approved in July 2017 the update anticipates even higher job growth than 2013, of up to 1.3 million new jobs by 2040. Building upon the goals identified in the 2013 *Plan Bay Area*, the update continues to focus on PDAs and Priority Conservation Areas to improve the quality of growth, and to support higher density that currently allowed by cities (ABAG and MTC, 2017).

San Francisco Bay Trail

ABAG administers the San Francisco Bay Trail Plan (Bay Trail Plan). The Bay Trail is a multi-purpose recreational trail that, when complete, would encircle San Francisco Bay and San Pablo Bay with a continuous 500-mile network of bicycling and hiking trails; to date, 330 miles of the alignment have been completed. The trail would connect the shoreline of all nine Bay Area counties, link 47 cities, and cross the major bridges in the region (ABAG, 2016).

Local

City of Alameda General Plan

The City of Alameda General Plan is the principal policy document for guiding future development within the City. It is the framework on which the City must base decisions regarding growth, public services and facilities, and protection and enhancement of the community).

The General Plan establishes comprehensive, long-term land use policies for the City. Consistent with state law, the General Plan includes a Land Use Element; City Design Element; Transportation Element; Open Space and Conservation Element; Parks and Recreation, Shoreline Access, Schools and Cultural Facilities Element; Airport Environs Element (relates to Metropolitan Oakland International Airport); Health and Safety Element; and Housing Element; along with specific elements pertaining to Alameda Point and the Northern Waterfront.

The General Plan, by its comprehensive nature, contains policies that could sometimes conflict with one another, depending on the nature of a particular project. City decision-makers must determine whether, on balance, a project is consistent (i.e., in general harmony) with the General Plan. The fact that a specific project does not meet all General Plan goals, policies, and objectives does not inherently result in a significant effect on the environment, because a significant effect must be related to a significant adverse physical change. To the extent that a General Plan policy that is adopted for the purpose of avoiding or mitigating an environmental effect is used as a significance criterion or contains a regulatory threshold that the project must meet, the project's consistency with such policies is addressed within the relevant impact analysis discussions throughout Chapter 4.

The Alameda General Plan includes policies relating to several CEQA topics. Each section of Chapter 4 includes a Regulatory Setting that describes General Plan policies applicable to that

resource topic. The General Plan Elements relating to land use are described below, and applicable land use policies are listed.

Land Use Element Policies

Policy 2.4c Where a suitable residential environment can be created, give priority to housing on land to be developed or redeveloped in order to meet the qualified objectives of the Housing Element

Policy 2.4.e Expand housing opportunities for households in all income groups.

Policy 2.5a Provide enough retail businesses and services space to enable Alameda to realize its full retail sales potential and provide Alameda residents with the full range of retail business and services.

City Design Element Policies

Policy 3.2.a Maximize views of water and access to shorelines.

Policy 3.2.d Maintain views and access to the water along streets and other public rights-of-way that extend to the bulkhead line. Construct benches, ramps, rails, and seating appropriate for viewing and access, and provide walls or other screening where needed to protect adjoining property. Westline Drive, Grand Street, Park Street, Central Avenue and Encinal Avenue are candidates for architectural or landscape features that would enhance the meeting of land and water.

Policy 3.2.e Encourage landmark structures at prominent locations.

Policy 3.2.g Work with BCDC staff to prepare a schematic plan for development of the 100-foot-wide strip above mean high tide on properties likely to require BCDC development approval.

Transportation Element Policies

Policy 4.1.6.d Minimize the cross-island portion of regional vehicular trips by providing alternative connections to Oakland, such as Water Taxis, shuttles, and a Bicycle Pedestrian Bridge and by encouraging Transportation Systems Management (TSM) and Transportation Demand Management (TDM) techniques.

Policy 4.2.4b Encourage development patterns and land uses that promote the use of alternate modes and reduce the rate of growth in region-wide vehicle miles traveled.

Policy 4.2.4c Encourage mixed use development that utilizes non-single occupancy vehicle transportation modes.

Parks and Recreation, Shoreline Access, Schools and Cultural Facilities Element Policies

Policy 6.1a Expand Alameda's park system.

Policy 6.2h Require shoreline access where appropriate as a condition of development approval regardless of whether development occurs within the area of BCDC regulation.

Health and Safety Element Policies

Consistency with Health and Safety Element policies regarding seismic and geologic hazards are discussed under EIR Section 4.5 *Geology, Soils, and Paleontological Resources*, while consistency with policies related to flooding and sea level rise are discussed in Section 4.8 *Hydrology and Water Quality*.

Parks and Recreation, Shoreline Access, Schools and Cultural Facilities Element Policies

Policy 6.1.e Work with property owner, Tidelands Lease holders, the Army Corp of Engineers, BCDC, the Coastal Conservancy, open space advocates, non-profits, and agencies, and to create a continuous shoreline access and park areas along the northern waterfront.

Policy 6.2.c Ensure marina operating standards that prevent degradation of water quality.

Housing Element Policies

The Housing Element identifies the site as a Housing Opportunity site necessary to assist the City meet its Regional Housing Needs Allocation. Housing Element goals, objectives and/or policies that apply to the project land use are listed below:

Goal #1 Provide housing services and opportunities to support, maintain, and enhance Alameda's diverse community and excellent quality of life and provide for the housing needs of Alameda's future residents and regional housing needs.

Policy HE-1 Support public and private efforts to increase the supply of housing in Alameda consistent with the City's environmental, climate action, transportation, historic preservation and economic development policy objectives.

Goal #3 Create transit oriented pedestrian friendly neighborhoods to reduce regional and local greenhouse gas emissions and local traffic congestion.

Policy HE-10 To reduce greenhouse gas emissions and improve regional transportation services and facilities, facilitate and encourage mixed-use and residential development in the Northern Waterfront area and at Alameda Point consistent with Plan Bay Area, the regional sustainable communities' strategy.

Goal #4 Ensure High Quality Architectural and Sustainable Site Design.

Policy HE-12 Ensure that new residential development utilizes "green" building strategies, environmentally sensitive building technologies, and site planning strategies to minimize greenhouse gas emissions.

City of Alameda Zoning Ordinance

The Zoning Ordinance is a primary tool for implementing the policies of the General Plan, and addresses the physical development standards and criteria for the City of Alameda. One of the purposes of zoning is to implement the land use designations set forth in the General Plan.

Approximately 17.06 acres of the project site lies within the City's M-2 General Industrial (Manufacturing) zoning district, and approximately 27.08 acres lies within the City's MX Mixed-Use Planned Development and MF Multi-Family Residential Combining zoning designations.

Alameda Municipal Code (AMC) Section 30-4.20 states that the purpose of the MX, Mixed-Use Planned Development District Zoning District is to:

> "...encourage the development of a compatible mixture of land uses which may include residential, retail, offices, recreational, entertainment, research oriented light industrial, water oriented or other related uses. The compatibility and interaction between mixed uses is to be insured through adoption of Master Plan (defined in subsection 30-4.20f) and development plan site plan (defined in subsection 30-4.20h), which indicate proper orientation, desirable design character and compatible land uses to provide for:
>
> a. A more pedestrian-oriented nonautomotive environment and flexibility in the design of land uses and structures than are provided by single purpose zoning districts, including but not limited to shared parking;
>
> b. The enhancement and preservation of property and structures with historical or architectural merit, unique topographic, landscape or water areas, or other features requiring special treatment or protection;
>
> c. Recreation areas that are most accessible to both the MX district's inhabitants and other City residents;
>
> d. Environments that are more conducive to mutual interdependence in terms of living, working, shopping, entertainment and recreation; and
>
> e. Flexibility in the design, lay-out and timing of build-out of large-scale mixed use projects in order to respond to market demands while ensuring that development is in conformance with adopted standards, procedures and guidelines. In order to accomplish this purpose, the City may establish Development Standards, Procedures and Guidelines (which govern, among other items, processing procedures, project-wide design guidelines addressing architecture, site planning, parking, circulation, streetscape, open space, landscaping, lighting, project identification and signage, and specific use design guidelines) as part of the Master Plan to which the Development Plans must then conform.

As described above, to ensure that each property zoned MX achieves the stated purposes of the Municipal Code, the MX zoning district requires that prior to development of the site, the property owners/developers must prepare a "Master Plan" for the property for review by the Planning Board and approval by the City Council. To approve a Master Plan, the City Council must find that the Master Plan is consistent with the City of Alameda General Plan, the purposes of the MX Zoning District, and that the Master Plan includes at least three different uses, one of which must be open space in each development phase.

4.8.4 Impacts and Mitigation Measures

Significance Criteria

Consistent with Appendix G of the State CEQA *Guidelines,* a project would have significant adverse impacts to land use and planning if it would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or the regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

Approach to Analysis

The evaluation of land use impacts resulting from implementation of the proposed project is based on: 1) a review of planning documents pertaining to the project site, including the City of Alameda General Plan and City of Alameda Zoning Ordinance; 2) a field review of the project site; 3) a review of planning documents pertaining to lands adjacent to the proposed project site; and 4) consultation with appropriate agencies. Changes in land use are not, in and of themselves, adverse environmental impacts.

Topics with No Impact or Otherwise Not Addressed in this EIR

The project would not conflict with an adopted habitat conservation plan or natural community conservation plan. The Habitat Conservation Plan nearest to the project site is the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP; ECCCHC, 2017 and EBRPD, 2017), whose closest boundary is located approximately 18 miles east of the project site across several urbanized areas (Oakland/Fruitvale, Moraga, Danville, etc.). The project site is not located within an area identified in a habitat conservation plan or natural community conservation plan. In addition, there are no habitat conservation plans or natural community conservation plans proposed for adoption that would include the project site. Thus, the project would have no impact on a habitat conservation plan or a natural community conservation plan. A discussion of special-status species that the project could potentially impact can be found in Section 4.3, *Biological Resources*.

Impact Analysis

Section 15125(d) of the (CEQA Guidelines states that an EIR "shall discuss any inconsistencies between the project and applicable general plans and regional plans" as a part of the discussion of the existing project setting. However, the Guidelines further state that inconsistency with an adopted plan does not necessarily indicate a significant impact by the project. This following impact

analysis focuses on potential impacts of the proposed project related to land use changes and policy conflicts.

Impact LU-1: The proposed project would not physically divide an established community. (*Less than Significant*)

For the purpose of this impact analysis, physically dividing an established community means the creation of barriers that prevent or hinder the existing flow of people or goods through an established community, or the placement of a development in such a manner that it physically separates one portion of an established community from the remainder of that community. For example, a freeway or other limited access roadway or a rail line would be considered such a barrier, as could a fence or wall or, potentially, a system of discontinuous streets, depending on wayfinding guidance provided.

The project site is located within an urban area, adjacent to residential, commercial and industrial land uses. The project site is bordered by the Oakland Estuary to the north, Navy Operational Support Center/Alameda Naval and Marine Corps Reserve Center to the east, the Clement Avenue and residential housing and industrial uses to the south, and Alameda Power Service Center and Fortmann Marina to the west. The project site is currently surrounded by fencing and is only accessible to the public via three main access gates during business hours, when the Marina is active. Apart from access via boats, the Marina does not connect to existing trails or provide access to any of the surrounding land uses.

The proposed project would develop the site with a mix of residential, commercial (including maritime core), marina and public uses and would provide vehicular and pedestrian circulation within the site. The proposed project would contribute financially to improving the existing shoreline and wharf. In addition to providing up to 4.25 acres of shoreline open space and 17.1 acres of marina open space, the project would also develop a segment of the Bay Trail along the perimeter of the project site that would connect to other future segments bordering Fortmann Marina. In addition, the project may ultimately provide a transit connection to Oakland across the Oakland Estuary through participation in a water shuttle, water taxi, or ferry boat service serving the Northern Waterfront.

Based on the above, the proposed project would not divide an established community; rather, the proposed project would improve vehicular, bicycle, and pedestrian access in proximity to the site and provide new circulation routes within and potentially through the site to adjacent portions of Alameda and to Oakland. Therefore, impacts related to physical division of an established community would be less than significant.

Mitigation: None required.

Impact LU-2: The proposed project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the General Plan and zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. (*Less than Significant*)

According to *The General Plan Guidelines* published by the State Office of Planning and Research (OPR), a general rule for consistency determinations can be stated as follows: "An action, program, or project is consistent with the general plan if, considering all its aspects, it will further the objectives and policies of the general plan and not obstruct their attainment."

The City Council, as the legislative body of the City of Alameda, is ultimately responsible for determining whether an activity or project is consistent with the Alameda General Plan. Perfect conformity with a general plan is not required. Instead, the City Council must balance various competing considerations and may find overall consistency with the General Plan despite potential inconsistencies with some individual provisions. The potential inconsistencies with General Plan goals, objectives, and policies do not themselves create a significant environmental impact under the thresholds established in CEQA *Guidelines* Appendix G, because not all land use goals and policies at issue are "adopted for the purpose of avoiding or mitigating an environmental effect." These policies are, instead, expressions of community planning and organization preferences, and the City of Alameda may modify these preferences without necessarily creating a significant adverse impact on the environment.

The current proposal includes residential density and height limits consistent with those established by General Plan policies. The proposed uses on the site would be consistent with nearby existing neighboring residential uses, as well as future nearby mixed use developments that would be similar in character to the proposed project, that is, west of the site within the Northern Waterfront General Plan Amendment area. Future residential, commercial, and recreational uses on the site would not change the character of the neighborhood in a negative way because these uses are intended to foster a pedestrian-friendly, transit-oriented environment. The proposed project would provide additional commercial amenities and recreational opportunities for the adjacent community.

The proposed project within the MU4 Northern Waterfront land use designation represents a transition away from the area's historically industrial uses in favor of residential, commercial, open space and waterfront recreational uses. Further, the MF zone allows, "residential, retail, offices, recreational, entertainment, research-oriented light industrial, water oriented or other related uses" (Alameda Municipal Code 30-4.20a). The MX and MF overlay designations for Alameda Marina and other sites adopted in 2012 designate Alameda Marina as a site for mixed-use/multifamily housing bring the City's General Plan and Alameda Municipal Code into conformance with State Law. The proposed project is, therefore, compatible with the existing and planned land use within the surrounding area.

Consistent with the General Plan's Land Use Element, the proposed project would support the intent of the current City of Alameda General Plan. In particular, the project would be consistent with the General Plan's policies for waterfront sites, mixed use housing development, shoreline

access, and policies regarding architectural resources and historic resources. The proposed project would be developed based upon the existing tidelands boundaries. Alternatively, the project sponsor may propose relocation of the tideland boundary to accommodate residential uses closer to the water. If a land exchange were to be approved, the project site would be developed with the same mix of uses as the proposed project, but in a different configuration.

As discussed above, *Plan Bay Area* identifies the project site within the Northern Waterfront PDA area. The vision for the PDA aligns with that contained in the General Plan; as such, the project as proposed is also consistent with the description in *Plan Bay Area*, and the anticipated population and housing growth projections for the site and surrounding area.

The proposed project would be consistent with the policies from the Transportation Element because it would encourage mixed-use development with transit access, including a potential water taxi location, as well as increased bicycle and pedestrian amenities. The proposed project's potential impacts to vehicular traffic, transit, bicycle, and pedestrian circulation and safety are discussed in Section 4.12, *Transportation and Traffic*.

The consistency of the proposed project with policies applicable to biological resources is discussed in Section 4.3, *Biological Resources*. The project site is located on the shores of the Oakland Estuary and proximate to the San Francisco Bay. Onsite vegetation and stormwater best-management practices would be included in the project, and the proposed project would be consistent with the Open Space and Conservation Element policies. Please see Sections 4.3, *Biological Resources*, and Section 4.7, *Hydrology and Water Quality*, for further discussion of these measures.

The proposed project would expand access to the shoreline and provide new public open spaces by creating passive and active recreational opportunities on-site, including waterfront-recreational opportunities. The proposed project would therefore be consistent with the applicable policies of the Parks and Recreation, Shoreline Access, Schools and Facilities Element.

The proposed project would be required, through existing City and state health and safety regulations, codes and ordinances, to comply with the Health and Safety Element policies. The proposed project would, therefore, be consistent with the Health and Safety Element. Impacts related to seismic events are addressed under Section 4.5, *Geology, Soils and Paleontological Resources*, flooding is addressed under Section 4.7, *Hydrology and Water Quality*, hazardous materials are discussed in Section 4.6, *Hazards and Hazardous Materials*, and noise impacts are addressed in Section 4.9, *Noise and Vibration*.

Buildout pursuant to the project would provide up to 779 units of housing intended for households at a range of income levels. As discussed in the *Population and Housing* section of this EIR (Section 4.10), development that would occur under the proposed project would help Alameda accommodate anticipated growth as opposed to substantially increasing population, and the residential development that would occur under the proposed project would help to meet housing demands from projected population growth in the City and the region.

Portions of the project site are within the jurisdiction of the San Francisco Bay Conservation and Development (BCDC) San Francisco Bay Plan as they are within the 100-foot shoreline band. Because a portion of the project site lies within BCDC jurisdiction, development in those areas would be subject to the *San Francisco Bay Plan*. Buildout of the proposed waterfront improvements and marina and shoreline improvements—including dredging, piers, and piling for the marina—would require BCDC review and permit approval. The project would also be subject to BCDC review to ensure that adequate public access to and along the shoreline has been incorporated. BCDC would rely upon information in the EIR, but would make separate consistency findings with respect to its own plan.

Similar to the projects consistency with the City's Parks and Recreation Shoreline Access guidelines, the proposed project would be required to comply with all applicable BCDC permitting policies. Implementation of the proposed project would allow better and easier public access to the shoreline by establishing a boardwalk/promenade that facilitates and encourages public access to the shoreline. Therefore, implementation of the proposed project would be consistent with the BCDC San Francisco Bay Plan and policies.

The proposed extension of the San Francisco Bay Trail through the project site would serve as a recreational trail, that would connect to the existing trail segment to the west of the site, and meander through the project area to connect to Clement Avenue. As such, the project would be consistent with Bay Trail Plan policies for protecting existing trail segments and expanding proposed trail links along the San Francisco Bay.

Conflicts with a General Plan or other relevant plans do not necessarily result in a significant effect on the environment within the context of CEQA. Section 15358(b) of the CEQA Guidelines states that "effects analyzed under CEQA must be related to a physical change." Appendix G of the CEQA *Guidelines* makes explicit the focus on physical environmental policies and plans, asking whether the project would "conflict with any applicable land use plan, policy, or regulation…. *adopted for the purpose of avoiding or mitigating an environmental effect*" (emphasis added). Hence, the project's conflict or inconsistency with a policy could indicate that an environmental threshold has been exceeded. To the extent that the project exceeds an environmental threshold and significant physical impacts may result from a policy conflict or inconsistency, such physical impacts have been identified and fully analyzed in the relevant topical sections of this EIR.

The physical environmental effects of the proposed project, and associated increases in development, such as increased traffic, noise, air emissions, habitat degradation, visual resources effects and hydrologic impacts, are discussed in their respective sections in this EIR. Assuming approval and adoption of the proposed project described above, the project would be consistent with the applicable land use plans and policies and there would be a less-than-significant land use impact.

Mitigation: None required.

Cumulative Impacts

Impact C-LU-1: The proposed project, combined with cumulative development in the defined geographic area, including past, present, reasonably foreseeable future development, would not have significant adverse cumulative land use impacts. (*Less than Significant*)

The geographic context considered for cumulative land use impacts include the City of Alameda and surrounding area that, when combined with the proposed project, could result in cumulative land use, plans, and policy impacts. Present projects would include any projects currently under construction and reasonably foreseeable future projects are those that could be developed or occur in the project site area by buildout of the City of Alameda General Plan.

As concluded in this section, the proposed project would result in less-than-significant impacts with respect to: physically dividing an established community, conflicting with any land use plan, policy or regulation adopted for purposes of avoiding or mitigating an environmental effect, and conflicting with a habitat conservation plan. The proposed project site is primarily self-contained, because it is bounded by roadways to the south, the Oakland Estuary to the north, the Fortmann Marina to the west, and federally-owned lands to the east.

Land use impacts from the proposed project are local and limited to the project site. The area to the south, east, and west of the project site is generally built out pursuant to the General Plan with a mix of residential and commercial land uses. Although redevelopment of the project site would increase the intensity of commercial, industrial, residential, and recreational uses, these uses would not combine with the developments above to result in cumulative impacts related to physical division of an established community. To the contrary, the cumulative effect of these development projects would be to integrate existing underutilized sites into the larger city fabric, and the projects would improve accessibility and land use compatibility compared to existing conditions. The cumulative impact would be less than significant.

Regarding consistency with plans and policies, future development within the project site must be consistent with the City's General Plan and other applicable land use plans and requirements. The cumulative projects also would be subject to the General Plan and the Zoning Ordinance to ensure land use compatibility. The proposed project would not combine with other developments to result in a significant cumulative land use impact associated with conflicts with plans and policies.

Based on each of these considerations, it is not anticipated that the proposed project, together with other past, present or reasonably foreseeable future development in the area, would result in a cumulative impact with respect to conflicts with land use, plans and policies adopted for the purpose of avoiding or mitigating an environmental effect. Thus, the proposed project would not result in a significant cumulative land use impact.

Mitigation: None required.

4.8.5 References – Land Use and Planning

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4.9 Noise

4.9.1 Introduction

This section provides an overview of the existing noise environment at the proposed project site and surrounding area, as well as a discussion of the regulatory framework addressing noise impacts, an analysis of potential noise impacts that would result from implementation of the project, and mitigation measures where appropriate.

4.9.2 Environmental Setting

General Background on Noise and Vibration Analysis

Overview

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. The sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Because sound pressure can vary greatly within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. When assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA).[1] Frequency A-weighting is typically applied to community noise measurements. **Table 4.9-1** shows some representative noise sources and their corresponding noise levels in dBA.

Noise Exposure and Community Noise

Noise exposure is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant in time. However, noise levels rarely persist consistently over a long period of time. Rather, community noise varies continuously with time with respect to the contributing sound sources in the environment. Community noise is primarily the product of many distinct noise sources that constitute a relatively stable background noise

[1] All noise levels reported herein reflect A-weighted decibels unless otherwise stated.

TABLE 4.9-1
TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT

Examples of Common, Easily Recognized Sounds	Decibels (dBA) at 50 feet	Subjective Evaluations
Near Jet Engine	140	Deafening
Threshold of Pain (Discomfort)	130	
Threshold of Feeling – Hard Rock Band	120	
Accelerating Motorcycle (at a few feet away)	110	
Loud Horn (at 10 feet away)	100	Very Loud
Noisy Urban Street	90	
Noisy Factory	85	
School Cafeteria with Untreated Surfaces	80	Loud
Near Freeway Auto Traffic	60	Moderate
Average Office	50	
Soft Radio Music in Apartment	40	Faint
Average Residence Without Stereo Playing	30	
Average Whisper	20	Very Faint
Rustle of Leaves in Wind	10	
Human Breathing	5	
Threshold of Audibility	0	

NOTE: Continuous exposure above 85 dBA is likely to degrade the hearing of most people. Range of speech is 50 to 70 dBA.

SOURCE: United States Department of Housing and Urban Development, *The Noise Guidebook*, 1985.

exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and changes in atmospheric conditions. What makes community noise constantly variable throughout a day, besides the slowly changing background noise, is the addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual. Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment.

These successive additions of sound to the community noise environment make the community noise level variable from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

L_{eq}: The equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The L_{eq} is the constant sound level, which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

L_{max}: The instantaneous maximum noise level measured during the measurement period of interest.

L_x: The sound level that is equaled or exceeded x percent of a specified time period. The L_{50} represents the median sound level.

DNL: The day-night average noise level (DNL; also referred to as L_{dn}) or energy average of the A-weighted sound levels occurring during a 24-hour period, and which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 PM and 7:00 AM is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.

CNEL: Similar to the DNL, the Community Noise Equivalent Level (CNEL) adds a 5-dBA "penalty" for the evening hours between 7:00 PM and 10:00 PM in addition to a 10-dBA penalty between the hours of 10:00 PM and 7:00 AM.

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- Subjective effects of annoyance, nuisance, dissatisfaction;
- Interference with activities such as speech, sleep, learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants generally experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness and can cause adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion; hence the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but instead combine logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not

100 dBA. When combining sound levels, the relationships presented in **Table 4.9-2** may be used as an approximation.

TABLE 4.9-2
DECIBEL ADDITION RELATIONSHIPS

When Two Decibel Values Differ by:	Add This Amount to the Higher Value:	Example:
0 or 1 dB	3 dB	70 + 69 = 73 dB
2 or 3 dB	2 dB	74 + 71 = 76 dB
4 to 9 dB	1 dB	66 + 60 = 67 dB
10 dB or more	0 dB	65 + 55 = 65 dB

SOURCE: Caltrans, 2013

Health Effects of Environmental Noise

The World Health Organization (WHO) is perhaps the best source of current knowledge regarding the health effects of noise impacts because European nations have continued to study noise and its health effects. According to WHO, sleep disturbance can occur when continuous indoor noise levels exceed 30 dBA or when intermittent interior noise levels reach 45 dBA, particularly if background noise is low. With a bedroom window slightly open (a reduction from outside to inside of 15 dB), the WHO criteria suggest that exterior continuous (ambient) nighttime noise levels should be 45 dBA or below, and short-term events should not generate noise in excess of 60 dBA. The WHO also notes that maintaining noise levels within the recommended levels during the first part of the night is believed to be effective for the ability of people to initially fall asleep (WHO, 1999).

Other potential health effects of noise identified by WHO include decreased performance for complex cognitive tasks, such as reading, attention span, problem solving, and memorization; physiological effects such as hypertension and heart disease (after many years of constant exposure, often by workers, to high noise levels); and hearing impairment (again, generally after long-term occupational exposure, although shorter-term exposure to very high noise levels, for example, exposure several times a year to concert noise at 100 dBA, can also damage hearing). Finally, noise can cause annoyance and can trigger emotional reactions like anger, depression, and anxiety. WHO reports that, during daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA or moderately annoyed with noise levels below 50 dBA.

Vehicle traffic and continuous sources of machinery and mechanical noise contribute to ambient noise levels. Short-term noise sources, such as truck backup beepers, the crashing of material being loaded or unloaded, car doors slamming, and engines revving outside a nightclub, contribute very little to 24-hour noise levels but are capable of causing sleep disturbance and severe annoyance. The importance of noise to receptors depends on both time and context. For example, long-term high noise levels from large traffic volumes can make conversation at a normal voice level difficult or impossible, while short-term peak noise levels, if they occur at night, can disturb sleep.

Noise Attenuation

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate, or lessen, at a rate of 6 to 7.5 dBA per doubling of distance from the source, depending on the topography of the area and environmental conditions (i.e., atmospheric conditions and noise barriers, either vegetative or manufactured, etc.). Widely distributed noise, such as a large industrial facility spread over many acres or a street with moving vehicles, would typically attenuate at a lower rate, approximately 3 to 4.5 dBA per doubling of distance from the source.

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods can be used to quantify vibration including the peak particle velocity (PPV), and the root mean square (RMS). The PPV is defined as the maximum instantaneous peak of the vibration signal and is discussed in terms of inches per second. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is the average of the squared amplitude of the signal. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration [Federal Transit Administration (FTA), 2006].

Existing Noise and Vibration in the Project Vicinity

Noise Environment

Transportation sources, such as automobiles, trucks, trains, and aircraft, are the principal sources of noise in most urban environments. Along major transportation corridors, noise levels can reach 80 DNL, while along arterial streets noise levels typically range from 65 to 70 DNL. The noise environment surrounding the project site is influenced primarily by surface traffic noise on Clement Avenue and land-side operations within the marinas (forklifts, machining within buildings) well as industrial uses on both sides of the Oakland Estuary. Oakland International Airport is located approximately 2.5 miles to the southeast of the project site.

Long-term (48-hour) noise monitoring was conducted on the project site in August of 2017. The long-term noise monitoring location (LT-1) was at the southeastern end of the project site, approximately 50 feet from the center of Clement Avenue, on the portion of the site that is closest to the airport. Additionally, short-term (15-minute) noise monitoring was conducted at noise-sensitive land uses surrounding the project site. The locations of these noise measurements and associated results can be found in **Figure 4.9-1**. Noise monitoring data for these locations are presented in **Table 4.9-3**, with more detailed data sheets presented in **Appendix F** of this EIR. These data indicate the typically urban conditions around the project site which are generally between 55 and 65 dBA (hourly Leq) during daytime hours and less than 55 dBA (hourly Leq) during nighttime hours.

TABLE 4.9-3
MEASURED LONG-TERM AND SHORT-TERM NOISE LEVELS ON THE PROJECT SITE

Site No.	Measurement Location	Noise Level in dBA[a]	
		DNL	Daytime Leq
LT-1	Southeastern portion of project site approximately 50 feet north of Clement Avenue	63	61
ST-1	1627 Red Sails Lane, residential use northwest of the project site	--	56
ST-2	1929 Schiller Street, residential use south of the project site	--	59
ST-3	2022 Clement Avenue, residential use south of the project site	--	65

NOTES:
[a] dBA = A-weighted decibels. DNL = day-night noise level based on 24 1-hour monitoring values. L_{eq} = equivalent steady-state noise level over a given monitoring period produced by the same noise energy as the variable noise levels during that period.

Sensitive Noise Receptors

Some land uses are considered more sensitive to ambient noise levels than others because of the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved for those uses. Residences, schools, rest homes, hospitals, and churches are generally more sensitive to noise than commercial and industrial land uses. While the project site is a marina and an active commercial/industrial land use, the project site is located north of residential land uses. The closest existing residences are immediately across Clement Avenue at several locations along the southern project boundary, with dense single-family housing abundant further south. There is also a relatively new residential neighborhood approximately 300 feet northwest of the project site north of Fortmann Way. Although not technically a "sensitive receptor" for noise, there are likely vessels used as live-aboard's within the marina.

Vibration Environment

Sources of substantial vibration in the project vicinity are minimal, and are generally restricted to vibration and shaking caused by the occasional passing of heavy vehicles on Clement Avenue. There are no sources of substantial vibration on the project site itself, nor are there any amongst the adjacent land uses.

4.9.3 Regulatory Framework

Federal

There are no applicable federal standards that would apply to the project with respect to noise. For vibration, the Federal Transit Administration (FTA) has adopted vibration standards that are used to evaluate potential building damage impacts related to construction activities. While the FTA's criteria were primarily developed to assess construction vibration impacts from transit operations (e.g., bus, commuter rail, etc.), the criteria are broadly applicable to all types of construction activities that could generate vibration. The vibration damage criteria adopted by the FTA are shown in **Table 4.9-4**.

U:\PROJECTS\SFO\16xxxx\D160044.01 - Alameda Marina EIR\05 Graphics-GIS-Modeling\Illustrator\Fig 4.9-1 Noise Locations.ai

SOURCE: Google Earth; ESA

Alameda Marina Master Plan EIR

Figure 4.9-1
Noise Monitoring Locations

ESA

TABLE 4.9-4
CONSTRUCTION VIBRATION DAMAGE CRITERIA

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

SOURCE: FTA, 2006.

In addition, the FTA has also adopted standards associated with human annoyance for ground-borne vibration impacts for the following three land-use categories: Vibration Category 1 – High Sensitivity, Vibration Category 2 – Residential, and Vibration Category 3 – Institutional. The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment but still have the potential for activity interference. The vibration thresholds associated with human annoyance for these three land-use categories are shown in **Table 4.9-5**. No thresholds have been identified or recommended specific to commercial and office uses, although Category 3 standards may be applied as they are defined as land uses with primarily daytime and evening use. Because the project-induced vibration would be from impact pile driving activities, as discussed later in this section, the impact thresholds for the proposed project would be based on Frequent Events as stated in Table 4.9-5.

TABLE 4.9-5
GROUND-BORNE VIBRATION IMPACT CRITERIA FOR GENERAL ASSESSMENT

Land Use Category	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category 1: Buildings where vibration would interfere with interior operations	65 VdB[d]	65 VdB[d]	65 VdB[d]
Category 2: Residences and buildings where people normally sleep	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use	75 VdB	78 VdB	83 VdB

NOTES:
[a] Frequent Events" is defined as more than 70 vibration events of the same source per day.
[b] Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
[c] Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day.
[d] This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes.

SOURCE: FTA, 2006.

State

The State of California does not have statewide standards for environmental noise, but the California Department of Health Services (DHS) has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The purpose of these guidelines is to maintain acceptable noise levels in a community setting for different land use types. Noise compatibility by different land uses types is categorized into four general levels: "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable." For instance, a noise environment ranging from 50 dBA CNEL to 65 dBA CNEL is considered to be "normally acceptable" for multi-family residential uses, while a noise environment of 75 dBA CNEL or above for multi-family residential uses is considered to be "clearly unacceptable." In addition, Section 65302(f) of the California Government Code requires each county and city in the state to prepare and adopt a comprehensive long-range General Plan for its physical development, with Section 65302(g) requiring a Noise Element to be included in the General Plan. The Noise Element must: (1) identify and appraise noise problems in the community; (2) recognize Office of Noise Control guidelines; and (3) analyze and quantify current and projected noise levels.

The California Noise Act of 1973 (Health and Safety Code Sections 46000–46002) sets forth a resource network to assist local agencies with legal and technical expertise regarding noise issues. The objective of the act is to encourage the establishment and enforcement of local noise ordinances.

The State has also established noise insulation standards for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards (Title 24, California Code of Regulations). The noise insulation standards set forth an interior standard of DNL 45 dBA in any habitable room. They require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than DNL 60 dBA. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

Local

City of Alameda General Plan

The City of Alameda General Plan (City of Alameda, 1991) is the principal policy document for guiding future conservation and development within the City. It represents the framework on which the City must base decisions regarding growth, public services and facilities, and protection and enhancement of the community).

The General Plan establishes comprehensive, long-term land use policies for the City. Consistent with state law, the General Plan includes the Land Use Element; City Design Element; Transportation Element; Open Space and Conservation Element; Parks and Recreation, Shoreline Access, Schools and Cultural Facilities Element; Safety and Noise Element; Housing Element; and specific elements/amendments relating to Alameda Point and the Northern Waterfront.

A combined Safety and Noise element became effective on January 1, 2017. The element includes the following noise policies that would be applicable to the project:

Policy SN-50 Where feasible and appropriate, develop and implement noise reduction measures when undertaking improvements, extensions or design changes to Alameda streets.

Policy SN-51 Maintain day and nighttime truck routes that minimize the number of residents exposed to truck noise.

Policy SN-53 Require compliance with the California Building Code requirements to ensure appropriate interior noise levels in new or replacement residential construction, hotels, motels, and schools. In new dwellings subject to an airport noise easement, the maximum interior noise level is not to exceed 45 dB CNEL. If this requirement is met by inoperable or closed windows, a mechanical ventilation system meeting California Building Code requirements must be provided. Require acoustical analyses as allowed by the California Building Code.

Policy SN-54 Ensure that purchasers of property within or adjacent to the following areas are aware of existing and future potential noise conditions and the limitations of the City's ability to abate existing or future noise conditions: Oakland International Airport Influence Areas, as defined by the ALUC, commercial districts, truck routes, major arterials, Alameda United School District facilities, City recreation facilities, and business parks. Require the full disclosure of the existing and potential future noise levels within deeds and lease agreements as a condition of project approval, whenever possible.

Policy SN-55 To the extent feasible, through the development entitlement process, require local businesses to reduce noise impacts on the community by avoiding or replacing excessively noisy equipment and machinery, applying noise-reduction technology, and following operating procedures that limit the potential for conflicts.

Policy SN-56 Require noise reduction strategies in all construction projects. Require a vibration impact assessment for proposed projects in which heavy-duty construction equipment would be used (e.g. pile driving, bulldozing) within 200 feet of an existing structure or sensitive receptor. If applicable, the City shall require all feasible mitigation measures to be implemented to ensure that no damage to structures will occur and disturbance to sensitive receptors would be minimized.

Policy SN-57 In making a determination of impact under the California Environmental Quality Act (CEQA), consider the following impacts to be "significant" if the proposed project causes: an increase in the Ldn noise exposure of 4 or more dBA if the resulting noise level would exceed that described as normally acceptable for the affected land use, as indicated in **Table 4.9-6**, or any increase in Ldn of 6 dBA or more.

TABLE 4.9-6
ACCEPTABLE NOISE LEVELS

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE - L_{dn} or CNEL (db)							
	50	55	60	65	70	75	80	
Residential - Low Density Single Family, Duplex, Mobile Home								
Residential – Multiple Family								
Transient Lodging – Motels, Hotels								
Schools, Libraries, Churches, Hospitals, Nursing Homes								
Auditoriums, Concert Halls, Amphitheaters								
Sports Arena, Outdoor Spectator Sports								
Playgrounds, Neighborhood Parks								
Golf Courses, Riding Stables, Water Recreation, Cemeteries								
Office Buildings, Business, Commercial, Professional								
Industrial, Manufacturing, Utilities, Agriculture								

	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	Clearly Unacceptable	New construction or development generally should not be undertaken.

SOURCE: California Office of Planning and Research, 2003. General Plan Guidelines.

City of Alameda Municipal Code

The following sections of the City of Alameda Municipal Code are relevant to the project.

- In the event the measured ambient noise level exceeds the applicable noise level standard in any category in **Table 4.9-7**, the applicable standards shall be adjusted so as to equal said ambient noise level (Section 4.10-4(c)).
- Each of the noise level standards specified in Table 4.9-7 shall be reduced by five (5) dB(A) for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises (Section 4.10-4(d)).
- If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the applicable noise level standards in Table 4.9-7 (Ord. No. 2177 N.S.) (Section 4.10-4(e)).
- Construction noise is exempted from the noise standards provided it is limited to between the hours of 7:00 am and 7:00 pm Monday through Friday and 8:00 am to 5:00 pm on Saturdays. (Section 4-10.5(b)10)

TABLE 4.9-7
CITY OF ALAMEDA EXTERIOR NOISE STANDARDS

Location	Cumulative Number of Minutes in Any One Hour Time Period	7:00 am to 10:00 pm Standard (dBA)	10:00 pm to 7:00 am Standard (dBA)
Single or Multiple Family Residential, School, Hospital, Church, or Public Library Properties	30	55	50
	15	60	55
	5	65	60
	1	70	65
	0	75	70
Commercial Properties	30	65	60
	15	70	65
	5	75	70
	1	80	75
	0	85	80

SOURCE: City of Alameda, 2012

4.9.4 Impacts and Mitigation Measures

Significance Criteria

Consistent with Appendix G of the State CEQA *Guidelines*, the project would cause significant adverse impacts with respect to noise and/or ground-borne vibration if it would result in:

- Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies;

- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- Exposure of people residing or working in the area around the project site to excessive noise levels (for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport);
- Exposure of people residing or working in the area around the project site to excessive noise levels (for a project within the vicinity of a private airstrip); or
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.

For the purpose of this analysis, the proposed project is considered to result in significant impacts on the environment if it would generate noise or vibration levels in excess of the following thresholds:

Construction Noise. The project would result in a significant construction impact if construction activity would occur outside of the allowable daytime hours specified by the City noise ordinance.

Vibration. Since the City does not have any regulations pertaining to vibration, the FTA thresholds are applied to the project. The project would result in a significant vibration impact if buildings would be exposed to the FTA vibration threshold level of 0.2 PPV for building damage, or if sensitive individuals would be exposed to the FTA vibration threshold level of 72 VdB for human annoyance outside of the allowable daytime hours specified by the City noise ordinance.

Stationary Noise. The City of Alameda noise standards for stationary sources described in Table 4.9-7 have been applied to non-transportation sources associated with project operations. For the nearest sensitive receptors, a resulting offsite noise level from stationary non-transportation sources that exceeds 55 dBA Leq in the daytime (7:00 a.m. to 10:00 p.m.) or 50 dBA Leq in the nighttime (10:00 pm to 7:00 a.m.) at the receiving land use would be considered significant.

Traffic Noise. The significance of project-related traffic noise impacts can be determined by comparing estimated traffic noise levels with the project to existing noise levels without the project. Per Policy SN-57 of the City of Alameda General Plan Health and Safety Element (1991), the significance criteria for changes in noise from project operational traffic are as follows:

1. A 4 dB increase in CNEL as a result of project operations if the resulting noise level would exceed that described as normally acceptable for the affected land use as indicated in Table 4.9-6 (60 dBA DNL or less for residential uses).
2. Any CNEL increase of 6 dB or more, due to the potential for adverse community response.

Topics with No Impact or Otherwise Not Addressed in this EIR

The proposed project would not result in significant impacts related to exposure of people to excessive noise levels based on proximity to public airports or private airstrips, listed above. The project site is more than two miles distant from the nearest public or private airport or airstrip (Oakland International Airport), and is not within the area of the Airport Land Use Plan for the airport. Moreover, the project site is not within the noise contours for the airport (ACCDA, 2012).

There is an existing helipad located on Coast Guard Island located approximately 1,800 feet north of the proposed project site. The operations and frequency of use of this helipad is highly variable. A recent California Supreme Court case found that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents." In *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal. 4th 369, the Supreme Court explained that an agency is only required to analyze the potential impact of such existing environmental conditions on future residents for certain specified projects or if the project would exacerbate those existing environmental hazards or conditions. CEQA analysis is therefore concerned with a project's impact on the environment, rather than with the environment's impact on a project and its users or residents. Since there are no public airports or private airstrips within two miles of the project and the existing helipad located on Cost Guard Island is considered as a part of the existing environment, aircraft related noise would not be a significant impact for land uses to be developed under the proposed project. Therefore, criteria d) and e) of Appendix G, Noise, do not apply to this project, and will not be discussed further.

Approach to Analysis

Construction Noise Levels

Noise impacts are assessed based on a comparative analysis of the noise levels resulting from construction and the noise levels of existing conditions. Analysis of temporary construction noise effects is based on typical construction phases and equipment noise levels and attenuation of those noise levels due to distances between the construction activity and the sensitive receptors in the site vicinity. Construction noise levels for the proposed project were estimated using published noise data for typical individual pieces of equipment from the FTA. The project would result in a violation of the City's noise standards if construction activity would occur outside of the allowable daytime hours specified by the City noise ordinance. Specifically, construction noise is exempted from the noise standards provided it is limited to between the hours of 7:00 am and 7:00 pm Monday through Friday and 8:00 am to 5:00 pm on Saturdays.

Roadway Noise Levels

Roadway noise levels under existing and cumulative with and without project conditions were calculated for selected roadway segments near the project site based on information provided in the traffic study for the proposed project. The roadway segments selected for analysis are expected to be most directly impacted by project-related traffic, which, for the purpose of this analysis, includes the streets that are nearest to the project site that also experiences the highest traffic volumes. These roadways, when compared to other roadways located further away from

the project site, would experience the greatest percentage increase in traffic generated by the proposed project. The noise levels were calculated through the use of California Vehicle Noise Reference Energy mean Emission Levels (Calveno REMELS) and traffic data found in the project's transportation analysis (see Section 4.G, Transportation and Circulation).

Per Policy SN-57 of the City of Alameda General Plan Safety and Noise Element (2017), traffic noise is considered significant if the incremental increase in noise is 4 dB or more if the resulting noise level would exceed that described as normally acceptable for the affected land use (60 dBA DNL or less for residential uses) or if the noise level increased by 6 dB in any noise environment.

Groundborne Vibration Levels

Groundborne vibration levels resulting from construction activities at the project site were estimated using data published by the FTA in its Transit Noise and Vibration Impact Assessment (2006) document. Potential vibration levels resulting from project construction are identified for off-site locations that are sensitive to vibration, including existing residences located nearby, based on their distance from construction activities.

Impact Analysis

Impact NOI-1: Construction of proposed project elements could expose persons to or generate noise levels in excess of the City noise standards or result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. (*Less than Significant with Mitigation*)

Noise levels from construction activity at receptors near the construction areas within the project site would fluctuate depending on the particular type, number, and duration of usage of various pieces of construction equipment. Construction-related material haul trips would raise ambient noise levels along haul routes, depending on the number of haul trips made and types of vehicles used. **Table 4.9-8** shows typical noise levels produced by various types of construction equipment.

The loudest source of noise during project construction would be generated through use of an impact pile driver, which could be required for foundations proposed in the northern portion of the site based on a preliminary geotechnical investigation (Rockridge Geotechnical, 2012). Additionally, piles may be required to replace existing piles of the Marina. The nearest existing offsite residential uses would be located approximately 400 feet south from where impact pile driving would likely occur. Assuming an attenuation rate of 6 dB per doubling of distance, the nearest existing residential receptors located 400 feet south from impact pile driving activities would experience exterior noise levels of up to 83 dBA during impact pile driving. These noise levels would be substantially greater than the existing ambient noise environment at the receptors.

The project would result in a violation of the City's noise standards if construction activity would occur outside of the allowable daytime hours specified by the City noise ordinance. Specifically, construction noise is exempted from the noise standards provided it is limited to between the hours of 7:00 am and 7:00 pm Monday through Friday and 8:00 am to 5:00 pm on Saturdays.

TABLE 4.9-8
TYPICAL NOISE LEVELS FROM DEMOLITION/ CONSTRUCTION EQUIPMENT OPERATIONS

Construction Equipment	Noise Exposure Level, dBA @ 50 Feet
Air Compressor	81
Backhoe	80
Ballast Equalizer	82
Ballast Tamper	83
Compactor	82
Concrete Mixer (Truck)	85
Concrete Pump (Truck)	82
Concrete Vibrator	76
Crane-Derrick	88
Crane-Mobile	83
Dozer	85
Generator	81
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	89
Pile-driver (Impact)	101
Pile-driver (Sonic)	96
Pneumatic Tool	85
Pump	76
Roller	74
Saw	76
Scarifier	83
Scraper	89
Shovel	82
Heavy Diesel Truck	88

SOURCES: Federal Transit Administration, 2006.

Although construction activities associated with the project would be temporary in nature and the maximum noise levels discussed above would be short-term, noise generated during project construction would temporarily elevate ambient noise levels in and around the project area. Consequently, **Mitigation Measure NOISE-1a** and **Mitigation Measure NOISE-1b** are identified to address this significant construction-related noise impact.

With implementation of Mitigation Measure NOISE-1a and Mitigation Measure NOISE-1b, this impact would result in a less than significant impact.

> **Mitigation Measure NOISE-1a:** The applicant shall create and implement development-specific noise and vibration reduction plans, which shall be enforced via contract specifications. Contractors may elect any combination of legal, non-polluting methods to

maintain or reduce noise and vibration to threshold levels or lower, as long as those methods do not result in other significant environmental impacts or create a substantial public nuisance. In addition, the applicant shall require contractors to limit construction activities to daytime hours between 7:00 am and 7:00 pm Monday through Friday and 8:00 am to 5:00 pm on Saturdays. The plan for attenuating construction-related noises shall be implemented prior to the initiation of any work that triggers the need for such a plan.

Mitigation Measure NOISE-1b: To reduce pile driving noise, "vibratory" pile driving or drilled and cast-in-place piles shall be used wherever feasible. The vibratory pile driving technique, despite its name, does not generate vibration levels higher than the standard pile driving technique. It does, however, generate lower, less-intrusive noise levels.

Significance after Mitigation: Less than Significant.

Impact NOI-2: Construction facilitated by the proposed project could potentially result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. (*Less than Significant*)

Since the City does not have specific regulations pertaining to vibration, the FTA thresholds for building damage and annoyance have been applied to the project. The project would result in a significant vibration impact if buildings would be exposed to the FTA vibration threshold level of 0.2 in/sec PPV for building damage, or if sensitive individuals would be exposed to the FTA vibration threshold level of 72 VdB for human annoyance. Vibration impacts are considered below for project construction only, since no major vibration sources would be associated with project operations.

The highest source of vibration during project construction would be generated during impact pile driving. According to the FTA's *Transit Noise and Vibration Impact Assessment*, use of an impact pile driver could generate vibration levels up to 0.644 in/sec PPV and 104 VdB RMS at a distance of 25 feet (FTA, 2006). The nearest sensitive land use to the project site are residential receptors located approximately 400 feet south from where impact pile driving would occur. Assuming an impact pile driver would be used approximately 400 feet from the nearest residential receptor, these residential receptors would be exposed to vibration levels of 0.01 in/sec PPV and 68 VdB RMS, which would not exceed the FTA impact criteria for both building damage and human annoyance (see Table 4.9-4 and Table 4.9-5). This impact would be **less than significant**.

Mitigation: None required.

Impact NOI-3: Traffic and equipment operations associated with the proposed project could result in a substantial permanent increase in ambient noise levels in the vicinity or above levels existing without the project. (*Less than Significant with Mitigation*)

Stationary Noise

New retail and residential uses to be developed under the project could produce stationary-source noise (such as HVAC, loading docks, etc.) that could potentially affect existing or proposed noise-sensitive receptors. Existing maritime facilities on the site generate some noise from the use of machinery, these existing uses are part of the existing environment on the site and the noise generated by maritime commercial uses on the site would not be expected to increase as the result of the project. While stationary sources associated with these land uses would likely be minor and would be subject to the exterior noise standards of the City's Noise Ordinance presented in Table 4.9-7, **Mitigation Measures NOISE-2a** and **NOISE-2b** are identified to ensure compliance with the applicable standards and would reduce any potential impact to less than significant.

Traffic Noise

Most of the noise generated by the development associated with the proposed project would be traffic-generated noise. As discussed in Section 4.12, *Transportation and Traffic*, the estimated daily number of net new vehicle trips generated by the proposed project would be 5,300. These additional vehicle trips would be distributed across local roadways, and would result in higher noise levels than under existing conditions. The significance of project-related traffic noise impacts can be determined by comparing estimated traffic noise level increases resulting from the project relative to baseline noise levels without the project. Per policy SN-57 of the City of Alameda General Plan Safety and Noise Element (2017), the significance criteria for changes in noise from project operational traffic are as follows:

1. A 4 dB increase in CNEL as a result of project operations if the resulting noise level would exceed that described as normally acceptable for the affected land use (60 dBA DNL or less for residential uses).

2. Any CNEL increase of 6 dB or more, due to the potential for adverse community response.

Peak hour traffic noise projections were made using the California Vehicle Noise Reference Energy Mean Emission Levels (Calveno) and traffic data for the project for those road segments that would experience the greatest increase in traffic volume and that would pass through residential areas. According to Caltrans' *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (Caltrans, 2013), peak traffic noise levels are approximately equal to the CNEL/Ldn. The segments analyzed and results of the modeling are shown in **Table 4.9-9** for Existing Conditions, Existing plus Project, Cumulative, and Cumulative plus Project development conditions.

As shown in Table 4.9-9, when project traffic is added to existing traffic levels, the greatest effect on ambient traffic noise levels would occur along the project's southern entrance road, Clement Avenue, where traffic noise would increase by 1.5 dBA. All roadways analyzed are predicted to experience a traffic noise increase of less than 4 dBA. Therefore, the project-level increase in traffic would be a less than significant impact.

TABLE 4.9-9
SUMMARY OF TRAFFIC NOISE MODELING RESULTS AT 50 FEET FROM ROADWAY CENTERLINE

Street Segment	Peak-Hour Noise Level, dBA, Leq[1]									
	Existing [A]	Existing Plus Project [B]	Incremental Increase [B-A]	Significant? (Yes or No)[2]	Cumulative 2040 [C]	Cumulative 2040 Plus Project [D]	Incremental Increase vs Existing [D-A]	Cumulatively Significant? (Yes or No)[2]	Incremental Increase vs Cum. 2040 [D-C]	Cumulatively Considerable? (Yes or No)[2]
Atlantic Avenue										
East of Webster Street	65.0	65.2	0.2	No	67.8	67.9	2.9	No	0.1	No
East of Constitution Way	64.2	64.5	0.3	No	66.0	66.2	2.0	No	0.2	No
Buena Vista Avenue										
East of Sherman Street	64.4	64.8	0.4	No	64.8	64.9	0.5	No	0.1	No
Grand Street										
South of Buena Vista Avenue	60.2	61.5	1.3	No	61.1	61.7	1.5	No	0.6	No
Clement Avenue										
East of Grand Street	62.4	63.6	1.2	No	66.3	66.8	**4.4**	**Yes**	0.5	No
West of Park Street	62.3	63.7	1.4	No	66.3	66.9	**4.6**	**Yes**	0.6	No
Blanding Avenue										
West of Tilden Way	62.7	62.8	0.1	No	65.3	65.3	2.6	No	0	No
Fernside Boulevard										
West of High Street	62.2	62.3	0.1	No	64.4	64.4	2.2	No	0	No

Traffic volumes *Project Transportation Impact Analysis* prepared by Fehr & Peers

1 Noise levels were determined using California Vehicle Noise (Calveno) Reference Energy Mean Emission Levels. In areas where the noise environment is dominated by traffic, the Leq during the peak-hour is generally equivalent to the CNEL/LDN at that location (Caltrans, 2013).

2 Traffic noise is considered significant if the incremental increase in noise is 4 dB or more if the resulting noise level would exceed that described as normally acceptable for the affected land use (60 dBA DNL or less for residential uses) or if the noise level increased by 6 dB in any noise environment.

SOURCE: ESA, 2016

Land Use Compatibility

As Table 4.9-3 shows, the southern portion of the project site area has an existing ambient noise environment greater than 60 dBA CNEL. Furthermore, traffic generated by the proposed project on adjacent streets would result in greater noise exposure in the future than traffic under existing conditions, as shown in Table 4.9-9, potentially exacerbating this existing condition. An exterior noise exposure of 60 dBA or greater is designated as "conditionally acceptable" for residential land uses and could result in potentially incompatible interior noise for new residential land uses. Residences to be developed as part of the project would be subject to the Alameda General Plan policy which requires an acoustical analysis for new or replacement dwellings and hotels, to limit intruding noise to 45 dBA CNEL in all habitable rooms. However, all proposed residential uses would be multi-family uses and therefore would need to comply with Title 24 of the 2016 California building Code with respect to noise insulation standards. Specifically, Section 1207.4 requires that "*Interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric shall be either the day-night average sound level (Ldn) or the community noise equivalent level (CNEL), consistent with the noise element of the local general plan.* **Mitigation Measures NOISE-2a, -2b, and -3** would ensure compliance with the applicable standards and would reduce this impact to **less than significant**.

> **Mitigation Measure NOISE-2a:** Acoustical studies, describing how the exterior and interior noise standards will be met, shall be required for all new residential or noise sensitive developments exposed to environmental noise greater than CNEL 60 dBA, or one-family dwellings not constructed as part of a subdivision requiring a final map exposed to environmental noise greater than CNEL 65 dBA. The studies should also satisfy the requirements set forth in Title 24, Section 1207, of the California Building Code, Noise Insulation Standards, for multiple-family uses, regulated by Title 24.
>
> **Mitigation Measure NOISE-2b:** The applicant shall demonstrate through its acoustical studies that the proposed project will comply with maximum noise levels outlined in the City's Noise Ordinance and the average sound level goals outlined in the City's General Plan.

Significance after Mitigation: Less than Significant.

Cumulative Impacts

The geographic context for changes in the noise and vibration environment due to development of the proposed project would be the adjacent urban areas of the City of Alameda. In order to contribute to a cumulative construction noise impact, another project in close proximity would have to be constructed at the same time as the proposed project. There are numerous foreseeable development projects at various locations near the proposed project site, currently in the planning stages, which could be constructed and operational in the foreseeable future. The largest projects in close proximity to the proposed project are Encinal Terminals Development, Alameda Landing Mixed-Use Development, Alameda Point Project, Alameda Station Retail Development, Boat Works Residential Project, Del Monte Mixed Use Project, Marina Cove II, Alameda Housing

Authority Eagle Avenue Residential Project, 2100 Clement Avenue Townhomes Project, 1435 Webster Street Mixed Use Development, and Veteran's Affair's Clinic and National Cemetery.

The proposed project's main contribution to a cumulative noise impact is future traffic volumes. Cumulative non-transportation (e.g., HVAC noise sources) noise impacts are typically project-specific and highly localized. However, as discussed above, noise impacts from stationary sources associated with the land uses under the proposed project would be minor and the project would be subject to the City's Noise Ordinance and the policies included in the City General Plan. Project-related construction activities within the project area would contribute to cumulative noise levels on a temporary basis.

Impact C-NOI-1: The proposed project would result in exposure of people to cumulative increases in construction noise levels. (*Less than Significant with Mitigation*)

The proposed project may be constructed during the same time and duration as other cumulative projects that could contribute to construction noise levels in the project vicinity.

As previously discussed under Impact NOI-1, construction of the proposed project would result in a temporary substantial increase in ambient noise levels for nearby residences. Therefore, there is a possibility that the proposed project, in conjunction with other present and reasonably foreseeable future projects, could result in a significant cumulative impact associated with construction noise. However, with implementation of Mitigation Measure NOISE-1a and Mitigation Measure NOISE-1b, noise levels generated during construction of the proposed project would be reduced by requiring the applicant to adhere to the City's allowed construction hours and to create and implement a development-specific noise reduction plan. After mitigation, the proposed project's contribution this cumulative impact would not be cumulatively considerable.

Impact C-NOI-2: The proposed project would contribute to cumulative construction that could expose buildings and persons within the project vicinity to significant vibration impacts. (*Less than Significant with Mitigation*)

As previously discussed under Impact NOI-2, the construction activities associated with the proposed project may require the use of impact pile drivers. Vibration levels generated during the construction of the proposed project by itself would not exceed the applied vibration threshold for human annoyance and building damage at nearby existing sensitive receptors. If project-related activities were to coincide with another development in close physical proximity, the combined effect could result in the exposure of sensitive land uses or buildings to higher vibration levels than what was predicted for the proposed project. However, under Mitigation Measures NOISE-1a and -1b, the applicant would be required to create and implement a development-specific noise and vibration reduction plan to reduce noise to below the City's noise threshold and also to use a vibratory pile driver whenever feasible. After mitigation, the proposed project's contribution to this cumulative impact would not be cumulatively considerable.

Impact C-NOI-3: Increases in traffic from development associated with the proposed project in combination with other development would not result in cumulatively considerable noise increases. (*Less than Significant*)

Peak traffic noise levels were predicted at a representative distance of 50 feet from the center of the roadways for the existing, cumulative and cumulative plus project conditions. These predictions used the same modeling methodology described in impact discussion NOI-3, above. Results of this analysis are summarized in Table 4.9-9. According to Caltrans' *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (Caltrans, 2013), peak traffic noise levels are approximately equal to the CNEL/Ldn.

Per Policy SN-57 of the City of Alameda General Plan Safety and Noise Element (2017), the significance criteria for changes in noise from project operational traffic are as follows:

1. A 4 dB increase in CNEL as a result of project operations if the resulting noise level would exceed that described as normally acceptable for the affected land use (60 dBA DNL or less for residential uses).
2. Any CNEL increase of 6 dB or more, due to the potential for adverse community response.

Cumulative traffic noise level significance is determined by a two-step process. First, a comparison is made in noise levels between cumulative conditions with the proposed project and existing baseline conditions. If the increase in roadside noise levels would exceed the incremental threshold established in the City of Alameda's General Plan Policy SN-57, a cumulatively significant noise impact would be identified.

The second step of the cumulative roadside noise analysis (if a cumulative noise impact is identified) is to evaluate if the contribution of the proposed project to roadside noise levels is cumulatively considerable. This second step (if necessary) involves assessing whether the proposed project's contribution to roadside noise levels (i.e., the difference between cumulative conditions and cumulative plus project conditions) would exceed the incremental threshold established in the City's General Plan Policy SN-57. The roadway segments analyzed and the results of the noise increases resulting from modeling are shown in Table 4.9-9.

As shown in Table 4.9-9, cumulative (without project) traffic noise impacts would occur along Clement Avenue, between Grand Street and Park Street as well as along Clement Avenue between Park Street and Tilden Way, where traffic noise levels would increase between 3 to 5 dB over existing conditions. Sensitive receptors located along these roadway segments would be exposed to cumulative (without project) traffic noise that would exceed the established traffic noise increase thresholds. However, the proposed project would not be a major contributor to future cumulative traffic noise levels. As shown in Table 4.9-9, the proposed project would increase cumulative traffic noise levels by at most 0.6 dB, which would not exceed the established cumulatively considerable noise increase threshold. All other local roadway segments analyzed near the project site showed a traffic cumulative noise increase of less than 3 dB.

Consequently, none of the roadway segments analyzed would experience a significant increase in traffic noise from the proposed project, and the proposed project would not have a cumulatively considerable contribution to the overall significant impact.

4.9.5 References – Noise and Vibration

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4.10 Population, Housing, and Employment

4.10.1 Introduction

This section identifies and evaluates the potential impacts related to population, housing, and employment that could result from project implementation.[1] This section includes a description of existing and projected conditions, criteria used to determine impact significance, and a discussion of impacts associated with implementation of the project. The demographic information presented in this section provides the statistical basis for determining population and employment-related inputs and/or impacts in other sections of this EIR.

4.10.2 Environmental Setting

Project Area

The project site is located in the City of Alameda, California, within U.S. Census Tract 4272, which covers an area in the north central portion of Alameda Island that measures about 20 blocks in length by 6 blocks wide, and also includes Coast Guard Island. As of 2010, this Census tract had a population of approximately 4,107 persons living in approximately 1,595 households, with an average persons-per-household rate of 2.51. The median income for a household in Census Tract 4272 was $63,344 per year and the labor force comprised approximately 3,392 workers (U.S. Census, 2015a).

Regional and Local Setting

Population and Housing

The population of the Bay Area, which consists of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties, was approximately 7.2 million in 2010. Population in the area is growing rapidly, with approximately 33 percent growth expected to occur from 2010 to 2040 (ABAG, 2016). In 2010, the population of Alameda County was 1,510,261 (US Census, 2010) In December 2016, the County's total civilian labor force was approximately 842,300 workers (EDD, 2017a). This total represents an increase of approximately 62,200 workers from January 2010 to December 2016 (EDD, 2015a; EDD, 2015b). The unemployment rate for California peaked at 12.4 percent in 2010, then declined to 5.7 percent in November 2015 (EDD, 2015a; EDD, 2015b). Alameda County's unemployment rate was 3.7 percent in December 2016(EDD, 2017a), down from 11.2 percent in January 2010 (EDD, 2017b). There were approximately 31,500 unemployed persons in Alameda County in December 2016 (EDD, 2017a).

[1] Although CEQA *Guidelines* Appendix G includes a heading that refers only to "Population and Housing" (item XIII), topic (A) under that heading also refers to population growth resulting from new businesses. Therefore, the topics of employment and its relation to population growth are addressed in this Draft EIR chapter. Similarly, the employment figures introduced in this Draft EIR chapter are used in various other chapters as appropriate.

The City of Alameda's total labor force in December 2016 was approximately 42,000 workers (EDD, 2017c). Between January 2010 and December 2016, the City's labor force increased by approximately 3,500 workers (EDD, 2017c). The City of Alameda's unemployment rate was 5.3 percent in December 2016 and had previously reached 9.9 percent in July 2010 (EDD, 2017c). There were approximately 1,400 unemployed persons in Alameda in December 2016.

Over the past few years, the Bay Area's economy has produced more jobs than housing units, particularly in job-rich communities. Consequently, the cost of buying or renting a place to live in the region has escalated. Given the amount, location, and type of housing being planned, the region's housing costs are expected to remain among the highest in the nation.

Long-term projections for the City of Alameda by the Association of Bay Area Governments (ABAG) indicate substantial growth of housing, households, and population, as shown in **Table 4.10-1**, at rates exceeding those of the forecasted growth for Alameda County and the Bay Area overall. The ABAG projections reflect market factors as well as regional and local policies that direct an increase in the share of regional development that occurs in the Bay Area's major cities and in higher-density, urban locations.

TABLE 4.10-1
CITY OF ALAMEDA POPULATION, HOUSING, AND JOBS

	2000[a]	**2010**[a]	**2014**[b]	**2040**[c]	***Percent Change 2010-2040***
Population	72,259	73,812	75,763	95,500	*29.4*
Households	30,226	30,123	30,346	36,570	*21.4*
Housing Units	31,644	32,351	32,166	38,240	*18.2*
Jobs	27,380	24,030	26,430[1]	33,220	*38.2*

NOTES:

[1] City of Alameda estimate.

SOURCE: (a) Bay Area Census, 2016; (b) U.S. Census, 2016; City of Alameda, 2014; (c) *ABAG and MTC*, 2013.

The City of Alameda is an urbanized island city with limited developable land remaining within its boundaries. According to the Department of Finance population estimates, Alameda's population was 79,277 on January 1, 2016. For the past two decades, the population in Alameda has been less than its peak in 1994 of 79,291 residents, due to the closing of Naval Air Station Alameda (NAS Alameda) and the Fleet Industrial Supply Center (FISC), now called Alameda Landing. However, between 2000 and 2010 the City of Alameda population increased from 72,259 persons to approximately 73,812 persons, an increase of 2.1 percent (Housing Element, 2014). By 2040, ABAG estimates the population of Alameda will reach 95,500 persons (ABAG and MTC, 2013).

The average household size for the City of Alameda in 2010 was 2.40 persons per household, and ABAG estimated that figure had grown to 2.48 in 2014 (ABAG, 2014). Between 1990 and 2000, the number of households in the City of Alameda increased from 29,235 to 30,226 households, or by approximately 3 percent. Between 2000 and 2010, the number of households decreased to

30,123 households (Bay Area Census, 2016). The number of households is projected by ABAG to increase to 36,570 households in 2040 as shown in Table 4.10-1 (ABAG and MTC, 2013).

According to the 2010 Census, there were 32,351 housing units in the City of Alameda. Of these, 53 percent were detached single-family units and the remaining 47 percent were multi-family units (Housing Element, 2014).

The project site is identified as a housing opportunity site in the City of Alameda General Plan Housing Element, which identifies housing opportunity sites in Alameda to meet the City of Alameda's Regional Housing Needs Allocation for the period 2015 through 2023.

Employment

Just as with population growth, employment history has been turbulent in Alameda over the past decades. Jobs decreased in the 1990's as the result of the NAS Alameda and FISC closures, with total jobs decreasing from 38,730 in 1990 to 27,380 in 2000. Jobs in Alameda declined again between 2000 and 2010 as result of the nationwide economic recession, from 27,380 in 2000 to 24,030 in 2010 (Table 4.10-1) (City of Alameda, 2014). However, since the recession, the City's economy has exhibited a strong recovery with the addition of about 2,400 new jobs through 2015.

4.10.3 Regulatory Setting

This subsection briefly describes regional and local regulations and policies pertaining to population and housing as they apply to the proposed project.

Regional

Association of Bay Area Governments

State Housing Element Law, Government Code Section 65584, requires local governments to plan for their fair share of projected, future regional housing needs. Each jurisdiction must plan for its Regional Housing Needs Allocation (RHNA) when its General Plan Housing Element is updated. The allocation takes into consideration regional and local factors such as jobs, housing, land use and transportation. On July 18, 2013, ABAG adopted the Final Regional Housing Need Plan (RHNP) for the period of 2014 to 2022, which outlines the Regional Housing Needs Allocation (RHNA), and allocates housing needs for communities within the nine-county Bay Area for an eight-year period. Cities and counties are required by State law to account for the RHNA in the housing elements of their General Plans (ABAG, 2013b).

Local

City of Alameda General Plan

The City of Alameda Housing Element was certified by HCD on July 15, 2014 for the period 2015 through 2023, with the 2013 RHNA allocations. The Alameda Marina site is identified as a Housing Opportunity site in the Alameda Housing Element. To address the state, regional, and local need for affordable housing, the ABAG RHNA determined that 222 of the City's new units

are to be affordable to extremely low-income households, 222 are to be affordable to very low-income households, 248 are for low-income households, 283 are for moderate-income households, and 748 are for above moderate-income households. The regional housing need from 2014 to 2022, is provided in **Table 4.10-2**.

TABLE 4.10-2
REGIONAL HOUSING NEED, 2014-2022

Income Limits	Extremely Low	Very Low	Low	Moderate	Above Moderate	Total
2014-2022	222	222	248	283	748	1,723

SOURCE: Housing Element, 2014. ABAG RHNA 2013b.

As mentioned, the Housing Element accommodates the City's RHNA allocation and identifies parcels in the City that are available or underutilized that could be used for development of housing and to meet the City's RHNA. The City's current Housing Element does not specifically identify the proposed project, but identifies the Alameda Marina property as vacant and/or underutilized, and thus available to help meet the City's RHNA requirements.

The City of Alameda General Plan Land Use Element contains the following policies related to population, employment and housing:

Residential Areas

Policy 2.4.c Where a suitable residential environment can be created, give priority to housing on land to be developed or redeveloped in order to meet the quantified objectives of the Housing Element.

Policy 2.4.e Expand housing opportunities for households in all income groups.

Policy 2.4.i Encourage the inclusion of family child care homes in residential areas and child care centers in major residential and commercial developments with special consideration to areas or developments convenient to transit, community centers, and schools.

Policy 5.5.e Minimize commuting by balancing jobs and nearby housing opportunities.

Retail Business and Services

Policy 2.5.a Provide enough retail business and services space to enable Alameda to realize its full retail sales potential and provide Alameda residents with the full range of retail business and services.

Policy 2.5.k Pursue and encourage new retail development that is consistent with the retail policies of the General Plan and Economic Development Strategic Plan; primarily serves the community or addresses a high priority local retail or service need; and will not have a significant long term deleterious effects on existing retail areas and/or the local economy.

4.10.4 Impacts and Mitigation Measures

Significance Criteria

Consistent with Appendix G of the CEQA *Guidelines*, the project would cause significant adverse impacts to population and housing if it would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Approach to Analysis

The methodology for this analysis included reviewing relevant documents, statistics, and policies about the City's housing population and employment data. Additionally, local regulations were reviewed for project applicability, including the General Plan, ABAG plans and polices, and U.S. Census Bureau and California Department of Finance data. The proposed project was evaluated based on the potential effects on Alameda's housing, population and employment.

Topics with No Impact or Otherwise Not Addressed in this EIR

The proposed project would not result in significant impacts pursuant to Significance Criteria related to displacement of existing housing or people, listed above. The project site currently does not include any housing, and the project would not result in the displacement of any existing housing or people; therefore, the proposed project would not result in an impact.

Impact Analysis

Impact POP-1: The proposed project would not induce substantial population or housing growth directly or indirectly. (*Less than Significant)*

Up to 779 residential units could be constructed on the site pursuant to the State Law Density Bonus; the project sponsor is proposing to develop 760 units, comprised of approximately 569 multifamily wrap units, 48 multifamily elevator stacked flats, and 143 multifamily townhouse units, with approximately 103 of these dwelling units offered as affordable housing units distributed throughout the site. However, in order to provide a conservative analysis, this EIR analyzes the higher (779) number of residential uses.

According to ABAG, the average per-household population within the City of Alameda is 2.48 (ABAG, 2014). Using this number, the project would cause an increase in residential population of up to 1,932 people. The population growth resulting from the proposed project is generally consistent with the population growth projections in the City of Alameda General Plan Housing

Element, which are based on those estimates provided by the ABAG RHNA. The projections are also consistent with the Alameda County Transportation Commission's population growth projections for the City of Alameda. The growth in population that would occur with implementation of the proposed project was planned for in the General Plan.

The project would result in the construction of new housing in the Bay Area where regionally housing growth is outpaced by job and population growth, resulting in a housing shortage. As such, the project would not adversely impact the jobs/housing imbalance at a regional level (ABAG, 2015).

The proposed project includes affordable housing, which is an identified need in Alameda and the region. The proposed project site is located within 2 miles of public transportation connections such as the Fruitvale Bay Area Rapid Transit (BART) Station and AC Transit line bus stop (at the intersection of Santa Clara Avenue and Stanton Street), which is consistent with population, housing, transportation, and greenhouse gas reduction (global warming) policies established by the State of California (most recently by SB 375 and AB 32), the Metropolitan Transportation Commission, and ABAG. Furthermore, new AC Transit Bus Line 19 runs along Buena Vista Avenue within one block of the project site, providing the Northern Waterfront area with a direct connection to the Downtown Oakland and Fruitvale BART stations.

The project would constitute infill development within a developed urban area, and new roads and infrastructure would not be extended into an undeveloped area. For the above-described reasons, the project would not cause a new impact related to a substantial increase in population growth, and would be in line with the projected growth planned for the area as defined in the City of Alameda's General Plan. Therefore, the effects of the proposed project on population, housing, and employment would have a **less than significant** environmental effect.

Mitigation: None required.

Impact POP-2: The proposed project would not displace substantial numbers of people or housing units, necessitating the construction of replacement housing elsewhere. (*Less than Significant*)

[The project site is approximately 44 acres, which consists of public tidelands and privately owned land and submerged land areas. It includes an existing boat marina that covers approximately 16.2 acres with more than a dozen piers and approximately 530 boat slips. The land side of the site contains approximately 250,000 square feet of maritime, commercial and retail, warehouse and dry storage uses. Currently there are 37 commercial, office, and industrial buildings on the site, which cover about 16 percent of the total land area. There are no occupied residential units currently on the site. One single-family residential structure is located on the site (Building 37, at 2027 Clement Avenue), but it has never been rented for residential purposes and is currently used as office space. Replacement housing would not need to be constructed elsewhere, as new housing would be constructed on the project site. Therefore, the impact would be less than significant.

Mitigation: None required.

Cumulative Impacts

Impact C-POP-1: Development facilitated by the proposed project, in conjunction with potential past, present, and future development in the surrounding region, would not result in unanticipated population, housing, or employment growth, or the displacement of existing residents or housing units on a regional level. (*Less than Significant*)

Development of the proposed project, present projects, and reasonably foreseeable future projects, when added to past development in the City, would result in population, housing, and employment growth. "Substantial" growth is defined as unplanned growth, for which infrastructure, services, and housing have not been planned. So long as the cumulative project scenario generates cumulative population, housing, and employment conditions that are within the projections of the City and ABAG, there would be no significant adverse growth impact related to population, housing, or employment.

The geographic context for the analysis of cumulative impacts related to population and housing is the City of Alameda. The geographic context for analysis of cumulative impacts to employment would include the City of Alameda, as well surrounding cities and counties in the Bay Area,[2] since a portion of the City's population commutes to jobs outside the City limits and some of the jobs in the City are likely filled by residents living in surrounding areas.

The past and present development in the City is described in the Environmental Setting section of this chapter, which represents the baseline conditions for evaluation of cumulative impacts. Reasonably foreseeable future development forecasts are based on projections of future growth provided by the City and developed to be consistent with ABAG. These forecasts account for other major projects currently in various stages of the approval process.

The increase in housing and population associated with the proposed project would not have a significant cumulative impact on population, housing or employment growth. The City of Alameda routinely prepares growth projections to inform the planning and environmental review process; these projections are based on regional estimates provided by ABAG that reflect growth in the Bay Area as a whole. These projections inform the policies of the General Plan to ensure infrastructure and government services are expanded accordingly. The General Plan currently assumes that residential and commercial uses will be developed at the project site, within the surrounding Northern Waterfront GPA area, and in other locations throughout the City. This growth is anticipated at a regional level by ABAG, which envisions the population within the City reaching 95,500 by 2040, an increase of 15,723 people from 2016. As such, 1,932 new residents that would be associated with the project fall within ABAG's growth estimates for the City of Alameda, and for the region as a whole. The project would result in the construction of

[2] The Bay Area region includes the following counties: Alameda County, Contra Costa County, Marin County, Napa County, San Francisco County, San Mateo County, Santa Clara County, Solano County, and Sonoma County.

new housing in the Bay Area where regionally housing growth is outpaced by job and population growth, resulting in a housing shortage. As such, the project would not adversely impact the jobs/housing imbalance at a regional level.

The direct and indirect impacts of population, housing, and job growth on the project site are considered throughout this EIR and include potential impacts from increased traffic, air pollutant emissions, greenhouse gas emissions, noise, biological resources, cultural resources, hazardous materials, hydrology and water quality, the provision of public services and utilities, and transportation. To the extent that the projected population would result in significant adverse effects to these resources, these impacts have been identified and considered within relevant sections of this document.

Because the population from the proposed project, plus related projects, is within ABAG's projections, the new population has been anticipated by the various utilities and public service providers and other agencies that rely on ABAG's population projections for anticipating future impacts on various resources. The proposed project, in accordance with the City's General Plan and in combination with the development of cumulative projects in the area, would accommodate planned growth, rather than induce unplanned growth. As a result, cumulative impacts related to population and housing are less than significant.

Mitigation: None required.

4.10.5 References – Population, Housing, and Employment

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4.11 Public Services and Recreation

4.11.1 Introduction

This section addresses existing conditions and the potential impacts that implementation of the proposed project could have to public services and analyzes the project's projected demand on each of these services including: police protection services; fire protection and emergency services; parks and recreational facilities; and public schools provided in the City of Alameda.

4.11.2 Environmental Setting

Fire Protection and Emergency Services

The Alameda Fire Department (AFD) provides fire protection and emergency medical services to the project site. The AFD currently has four operating fire stations located throughout the City and 98 sworn and seven non-sworn personnel. The AFD is also equipped to provide emergency medical services with three full-time advanced life support (ALS) ambulances. A response for a first alarm assignment consists of three fire engines, two fire trucks, one ambulance and the Division Chief vehicle. The response team for a first alarm call includes, at minimum, eighteen fire personnel accompanied by at least one paramedic. The AFD also provides non-emergency ambulance transport for patients to or from medical facilities through the Basic Life Support (BLS) Transport Program, including inter-facility transportation, doctors' appointments, dialysis appointments, and medical event standbys.

The project is within two miles of all four stations operated by AFD. The project site is 0.2 miles from Station Number 3, at 1625 Buena Vista Avenue, which would likely be the first to provide fire and emergency response services at the site. Station No. 3 has one fire captain, one fire apparatus operator, one fire engine, one fire boat, and one water rescue boat. In 2016, Station No. 3 responded to 2,154 calls, 1,483 of which were emergency response calls, and 565 of which were other calls (City of Alameda, 2017). A new Station No. 3 has been constructed at the corner of Buena Vista Avenue and Grand Street and has replaced the existing station, and includes a new emergency operations center for the City.

According to the City of Alameda's General Plan Safety and Noise Element, the AFD's goal is to respond to calls within 5 minutes and 20 seconds 90 percent of the time (City of Alameda, 2017). The AFD does not have an official staffing ratio, but generally there are 24 firefighters and one fire chief on duty every day.

Police Protection

Police protection to the project site would be provided by the Alameda Police Department (APD). The Department operates out of one station located at 1555 Oak Street, which is approximately 1.1 miles from the project site. The APD currently has a total of 88 sworn officers and 33 non-sworn personnel (City of Alameda, 2017).

The APD's patrol is based on a five-sector system. Seven days a week, 24 hours a day, officers are assigned to patrol the five sectors during which there are typically one to four officers assigned to each sector. APD aims to respond to 85 percent of all Priority 1 calls for service within three minutes and generally responds to around 5,000 priority calls and 60,000 non-priority calls per year (City of Alameda, 2017).

Schools

The project site is located within the service boundaries of the Alameda Unified School District (AUSD). AUSD operates a childhood development center, ten elementary schools, four middle schools, two comprehensive high schools, a continuation high school, an Early College High School, and an adult continuation school. AUSD's total enrollment was 11,201 students for the 2016-2017 school year (DataQuest, 2017). The District uses a boundary map to assign students to schools by home address. Students residing in the project area are served by Henry Haight Elementary, Wil C. Wood Middle School, and Encinal High School (AUSD, 2017). Henry Haight School is located at 2025 Santa Clara Avenue, approximately 0.6 mile southeast of the site. Wood Middle School is located at 420 Grand Street, about 1.2 miles south of the site and Encinal High School is located at 210 Central Avenue, approximately 2.3 miles from the project site.

Table 4.11-1 shows enrollment trends for the three nearest schools over the last five years. As shown, enrollment at each of these schools has fluctuated over the years. Enrollment at Henry Haight Elementary is up 57 students from enrollment in the 2011-2012 school year, but down 12 students from the 2014-2015 school year. Enrollment at Wil C. Wood Middle School has steadily decreased over the five-year period, down 127 students from the 2011-2012 school year to the 2015-2016 school year, however enrollment for the 2016-2017 school year has increased by 42 students. Enrollment at Encinal High School has also decreased since the 2011-2012 school year, with 37 fewer students enrolled in the 2014-2015 school year. As of the 2015-2016 school year, enrollment at all three facilities was below their maximum student capacity.

TABLE 4.11-1
SCHOOL ENROLLMENT AND CAPACITY

School	Students 2011-2012	Students 2012-2013	Students 2013-2014	Students 2014-2015	Students 2015-2016	Students 2016-2017	Capacity
Henry Haight Elementary	383	414	438	452	438	440	591
Wil C. Wood Middle School	595	537	429	439	468	510	928
Encinal High School	1,089	1,055	1,038	1,052	nd[1]	nd[1]	1,200

NOTES:

[1] No data.

SOURCE: Ed-Data, 2016; CDE, 2016; City of Alameda, 2006.

Parks and Recreation

The City has approximately 155 acres of parkland and approximately 75,763[1] residents, or about 2.1 acres per 1,000 residents, including school playgrounds and fields. The City of Alameda's General Plan does not state a specific goal of park acreage per 1,000 residents; however, most California cities strive for three to six acres of park per 1,000 residents. About 95 percent of Alameda residents live within ⅜-mile of a park, the maximum radius for effective service as indicated by studies in other cities (City of Alameda, 1991).

City Parks and Facilities

The Alameda General Plan provides the following definitions for the four types of parks and community open space that can be found within the City:

- ***Developed Park Land.*** The City has over 200 acres of neighborhood parks, community parks, community open space, greenways, and regional parks.
- ***Planned Park Lands.*** Undeveloped park lands include the 20-acre Mt. Trashmore site, planned 22-acre Jean Sweeny Open Space Park, planned greenways and trails, and the future Catellus Mixed-Use Development and Alameda Point open space.
- ***Limited Access Lands.*** Limited-access park lands either require a fee for use or are closed to the general public, and include the Chuck Corica Municipal Golf Course, College of Alameda recreation and open space facilities, AUSD facilities, and two public swimming pools. The City has a joint agreement with AUSD for the use of the pools, which are used by students, City Swim Clubs, and the Master's Program during the school year. The Recreation and Park Department provides public aquatic programs during the summer at the pools.
- ***School Parks.*** This includes all AUSD school properties, which are generally not available for public use after school and on weekends due to locked gates.

There are three existing parks, and one planned park, that are in proximity to the project site and would be within reasonable walking distance from the site:

- ***Littlejohn Park*** is a 3.45-acre park located at 1401 Pacific Avenue, immediately south of the project site. Littlejohn Park features an unlighted multi-use field for baseball, softball, soccer, and football. The park has several picnic areas, two half basketball courts, a 2-12 year-old age group playground, a community building, and open lawn for informal play. There is enhanced planting at the entry near the community building. Parking is on-street only, and the park is surrounded on three sides by residences. There is ADA access to the group picnic area.
- ***Marina Cove Waterfront Park*** is a 3.2-acre park located at 1591 Clement Avenue that runs along the marina from Clement Avenue to the Alameda Yacht Club. The park features open lawn areas at each end connected by a walk overlooking the water, picnic areas, benches, and a play area, all of which provide opportunities to rest and enjoy the views. Park lighting enhances safety.

[1] City of Alameda population in 2015, according to U.S. Census, 2017, American Community Survey 5-Year Estimates. Accessible online at: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml.

- ***Jean Sweeney Open Space Park*** is a planned 22-acre park located a few hundred feet to the west of the project site, across Sherman Street. The park will feature passive and active recreation, with a bike path along a proposed extension of the CAT running east to west through the site, a community garden, play areas, lawns, and other features. Construction on the park has begun as of mid-July 2017.

TABLE 4.11-2
EXISTING PARK AND OPEN SPACE AREAS WITHIN THE CITY

Type/ Name of Park	Acres	Type/ Name of Park	Acre
Neighborhood Parks		***Open Space***	
Bayport Park	4.25	Encinal Boat Ramp	1.40
Franklin	2.98	Grand Street Boat Ramp	1.40
Godfrey	5.45	Main Street Dog Park	1.30
Harrington (Soccer Field)	2.02	Main Street Linear Park	11.00
Jackson	2.27	Osborne Model Airplane Field	1.30
Littlejohn	3.45	Portola Triangle	2.30
Longfellow	1.14	Scout	0.01
Marina Cove Waterfront Park	3.20	Shoreline	31.83
McKinley	1.22	***Subtotal***	***50.82***
Neptune	3.08		
Rittler	4.80	***Recreational Facilities/Other***	
Tillman	4.01	Alameda Point Gym	0.20
Towata	1.55	Albert DeWitt Officers' Club	3.40
Woodstock	3.96	College of Alameda Hardball Field	4.60
Alameda Point Multi-Purpose Field	4.80	Mastick Senior Center	2.66
City View Skate Park	0.55	***Subtotal***	***10.86***
Main Street Soccer Field	4.92		
Subtotal	***53.65***	***Regional Park***	
		Crown Memorial Beach	80.00
Community Parks		***Subtotal***	***80.00***
Leydecker	5.88		
Lincoln	7.80		
Krusl	7.46		
Washington	14.71		
Subtotal	***35.85***	**Total for all Parks and Facilities**	**228.60**

SOURCE: City of Alameda, 2016f.

Regional Facilities

The East Bay Regional Park District (Park District) spans Alameda and Contra Costa counties and operates 65 parks of approximately 113,000 acres and over 1,200 miles of trails. These parklands provide habitat for birds and other wildlife, in addition to recreational and educational activities for the public. Crown Memorial State Beach, a State park operated by the Park District, is the closest Park District facility to the project site. The park has a 2.5-mile beach, with sand dunes bordering a bicycle trail. The Elsie Roemer Bird Sanctuary at the east end of the park, harbors aquatic birds and other salt marsh creatures. Crab Cove is located at the north end of the

park, and is a marine reserve where all plant and animal life is protected. In addition, a marine educational center (Crab Cove Visitor Center), is located on McKay Avenue within Crown Memorial State Beach, and contains exhibits and aquaria highlighting flora and fauna of San Francisco Bay and other local marine areas.

Crown Memorial State Beach includes a portion of the San Francisco Bay Trail, which is southwest of the project site, adjacent to the water. The Bay Trail is a planned recreational corridor administered by the Association of Bay Area Governments (ABAG) pursuant to Senate Bill 100 that will encircle San Francisco and San Pablo Bays with a continuous 500-mile network of bicycling and hiking trails when completed. Approximately 350 miles of the Bay Trail's ultimate length have been completed (Bay Trail, 2016). Currently, there are no completed segments of the Bay Trail located in close proximity to the project site. Future planned expansions of the Bay Trail within Alameda and adjacent to the site include: Grand Street from Buena Vista Avenue towards Fortmann Way, and along Buena Vista Avenue from Sherman Street to Tilden Way. In addition, much of the shoreline on the northern side of the Oakland Estuary is a completed or planned segment of the Bay Trail.

In addition, the City of Oakland owns and operates Union Point Park, which is a nine-acre facility located to the east of the project site that provides waterfront access, picnic and barbeque facilities, a children's play area, and other amenities. Further from the project site on the northern side of the Oakland Estuary, to the northwest, is Estuary Park, a seven-acre facility that is adjacent to the Jack London Aquatic Center and connected to existing segments of the Bay Trail. Estuary Park provides a boat launch ramp, fish cleaning station, a pier, an athletic field, and other amenities.

4.11.3 Regulatory Setting

This subsection briefly describes policies pertaining to public services as they apply to the proposed project.

State

Senate Bill 50

The California Legislature passed Senate Bill 50 (SB 50) in 1998 adding Government Code Sections 65995.5-65885.7, which authorized school districts to impose fees on developers of new residential construction. SB 50 also restricts the ability of local agencies to deny project approvals on the basis that public school facilities (classrooms, auditoriums, etc.) are inadequate.

Under SB 50, school districts may collect fees to offset the costs associated with increasing school capacity as a result of development. Payment of school development fees is considered, for the purposes of CEQA, to mitigate in full any impacts to school facilities associated with a development project.

San Francisco Bay Conservation and Development Commission's San Francisco Bay Plan

The San Francisco Bay Plan was completed and adopted by the San Francisco Bay Conservation and Development Commission in 1968 and submitted to the California Legislature and Governor in January 1969. The Bay Plan was prepared by the Commission pursuant to the McAteer-Petris Act of 1965 which established the Commission as a temporary agency to prepare an enforceable plan to guide the future protection and use of San Francisco Bay and its shoreline. In 1969, the Legislature acted upon the Commission's recommendations in the Bay Plan and revised the McAteer-Petris Act by designating the Commission as the agency responsible for maintaining and carrying out the provisions of the Act and the Bay Plan for the protection of the Bay and its great natural resources and the development of the Bay and shoreline to their highest potential. Applicable policies from the Bay Plan are provided below.

Recreation

Policy 1 Diverse and accessible water-oriented recreational facilities, such as marinas, launch ramps, beaches, and fishing piers, should be provided to meet the needs of a growing and diversifying population, and should be well distributed around the Bay and improved to accommodate a broad range of water-oriented recreational activities for people of all races, cultures, ages and income levels[...] Because there is no practical estimate of the acreage needed on the shoreline of the Bay, waterfront parks should be provided wherever possible.

Public Access

Policy 2 In addition to the public access to the Bay provided by waterfront parks, beaches, marinas, and fishing piers, maximum feasible access to and along the waterfront and on any permitted fills should be provided in and through every new development in the Bay or on the shoreline, whether it be for housing, industry, port, airport, public facility, wildlife area, or other use, except in cases where public access would be clearly inconsistent with the project because of public safety considerations or significant use conflicts, including unavoidable, significant adverse effects on Bay natural resources. In these cases, in lieu access at another location preferably near the project should be provided.

Policy 5 Public access should be sited, designed, managed and maintained to avoid significant adverse impacts from sea level rise and shoreline flooding.

Policy 9 Access to and along the waterfront should be provided by walkways, trails, or other appropriate means and connect to the nearest public thoroughfare where convenient parking or public transportation may be available. Diverse and interesting public access experiences should be provided which would encourage users to remain in the designated access areas to avoid or minimize potential adverse effects on wildlife and their habitat.

Policy 10 Roads near the edge of the water should be designed as scenic parkways for slow-moving, principally recreational traffic. The road-way and right-of-way design should maintain and enhance visual access for the traveler, discourage through traffic, and provide for safe, separated, and improved physical access to and along the shore. Public transit use and connections to the shoreline should be encouraged where appropriate.

Policy 12 The Public Access Design Guidelines should be used as a guide to siting and designing public access consistent with a proposed project. The Design Review Board should advise the Commission regarding the adequacy of the public access proposed.

Local

City of Alameda General Plan

Public services are addressed in several sections of the City of Alameda General Plan. Fire and police services are addressed in the Health and Safety Element and schools and parks are addressed in the Parks and Recreation, Shoreline Access, Schools and Cultural Facilities Element and the Open Space and Conservation Element. In addition, general policies related to public services are provided in the Land Use Element. Applicable policies from each of these elements are listed below.

Land Use Element: Residential Areas

Policy 2.4.q Require that all new development pay appropriate development impact fees.

Parks and Recreation, Shoreline Access, Schools and Cultural Facilities Element: Shoreline Access and Development

Policy 6.2.a Maximize visual and physical access to the shoreline and to open water.

Policy 6.2.d Through design review of shoreline property, give consideration to views from the water.

Policy 6.2.f Cooperate with property owners adjoining shoreline access points to ensure that public use does not cause unnecessary loss of privacy or unwarranted nuisance.

Policy 6.2.h Require shoreline access where appropriate as a condition of development approval regardless of whether development occurs within the area of BCDC regulation.

Parks and Recreation, Shoreline Access, Schools and Cultural Facilities Element: Schools

Policy 6.3.b Support the Alameda Unified School District efforts to obtain school impact fees needed to maintain adequate educational facilities to serve enrollment generated by new development in the City.

Policy 6.3.c Approval of residential, commercial and industrial development may be conditioned upon the mitigation of the impact of such development on the Alameda Unified School District.

Health and Safety Element Fire Hazards

Policy 8.2.a Maintain and expand the City's fire prevention and fire-fighting capability.

Policy 8.2.b Maintain the current level of emergency medical service.

Policy 8.2.d Assure the compliance of new structures with the City's current Fire, Seismic, and Sprinkler Codes. Existing structures shall be required to comply with the intent of the Codes in a cost-effective manner.

4.11.4 Impacts and Mitigation Measures

Significance Criteria

Implementation of the proposed project could have a significant impact on the environment if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:
  - Fire Protection;
  - Police Protection;
  - Schools;
  - Parks.
- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Approach to Analysis

Project-generated increases in population and land use intensity were evaluated based on information from public services providers regarding their service capabilities, service ratios, response times, and performance objectives. Additionally, this EIR evaluates the project's conformance and consistency with the goals, objectives and policies of the General Plan related to public services and recreation.

Up to 779 residential units could be constructed on the site pursuant to the State Law Density Bonus; the project sponsor is proposing to develop 760 units, comprised of approximately 569 multifamily wrap units, 48 multifamily elevator stacked flats, and 143 multifamily townhouse units, with approximately 103 of these dwelling units offered as affordable housing units distributed throughout the site. However, in order to provide a conservative analysis, this EIR analyzes the higher (779) number of residential uses.

Impact Analysis

Impact PSR-1: The proposed project would result in an increase in calls for fire protection and emergency medical response services, but would not require new or physically altered fire protection facilities in order to maintain acceptable performance objectives. (*Less than Significant*)

The proposed project would demolish existing structures on the project site and allow for development of up to 779 new housing units. The proposed project would include 153,172 sf of

commercial space, with 53,985 sf dedicated to maritime uses in the Maritime Commercial Core, with marina (water side) infrastructure updates, including plans for ongoing dredging, dock maintenance, and maintenance of the existing graving dock. In addition, marina uses would remain relatively unchanged from that which is currently provided, with approximately 530 boat slips in the water.

According to ABAG, the average per-household population within the City of Alameda is 2.48 (ABAG, 2014). Based on this factor, the proposed project would result in 1,932 new residents. This development and additional persons within the project site would generate an increase in demand for fire protection and emergency services.

Project construction would comply with standard fire code requirements administered by the City of Alameda Community Development Department's Permit Center and specified by the California Building Code and California Fire Code. Consistent with City requirements, the project would place fire hydrants a maximum of 250 feet apart, and meet minimum flow requirements of 1,500 gallons per minute (gpm) with 20 pounds per square inch (PSI) residual pressure. The project would also be subject to fire flow requirements set forth in the California Fire Building Code, which specify a typical 3,000 gpm from two hydrants and 1,500 gpm from each hydrant with 20 PSI residual pressure. Additionally, all new buildings would be required to be equipped with complete sprinkler systems. These standard required design features would ensure that adequate infrastructure would be provided for firefighting services. The City of Alameda Municipal Code Chapter 27-26, Police and Fire Fee Requirements, states that new development must pay fees to assist in maintaining level of service standards to accommodate new growth.

The increase in calls for fire services could result in a need for additional equipment and traffic light control devices but the acquisition of such equipment and installation of new light devices would not result in any significant environmental impacts since this type of activity would be relatively minor and would occur in an already developed area. Development on the project site would result in increased tax revenues to pay for fire services, and the project would be required to pay the City's Development Impact Fee, which would be the source of funding for any improvements needed by the Fire Department and would substantially mitigate the project's impacts on fire service to a less than significant level. For the above-described reasons and because the project would not require development of new public fire facilities, the project would have a less-than-significant impact on fire protection services.

Mitigation: None required.

Impact PSR-2: The proposed project would result in an increase in calls for police services, but would not require new or physically altered police facilities in order to maintain acceptable performance objectives. (*Less than Significant*)

Implementation of the proposed project would increase land use intensity and overall density in and around the project site. This related population increase could result in an increase in reported crimes and/or calls for police services. However, it is not anticipated that the proposed project

would result in an increase in calls to such an extent that new police facilities or alterations to existing facilities would be needed. As part of the City's development review and approval procedures, the Police Department would review the proposed site plan and would provide recommendations related to security features and opportunities to reduce crime. The City's Municipal Code Chapter 27-26, Police and Fire Requirements, would require the project to pay development impact fees to maintain service levels and accommodate growth. The project would also result in an increase in tax revenues to fund the provision of police services. It is anticipated that the project would result in an increase in calls for police services for a variety of property- and traffic-related incidents but the increase would not be sufficient to require construction of new police stations in order to maintain adequate response times. As such, the project would have a less-than-significant impact on police services.

Mitigation: None required.

Impact PSR-3: The proposed project would result in new students for local schools, but would not require new or physically altered school facilities to maintain acceptable performance objectives. (*Less than Significant*)

Students generated from development of the proposed project would attend Henry Haight Elementary School, Wil C. Wood Middle School, and Encinal High School. The AUSD uses a student yield factor as a basis for the determination of students generated by a specific project.

Based on these factors, the proposed project's 779 units would generate approximately 95 new students, including 41 K-5 students, 22 grade 6-8 students, and 32 grade 9-12 students. **Table 4.11-1**, summarizes enrollment and capacity for schools that would serve the proposed project. All three schools have sufficient capacity to accept the estimated number of students generated by the proposed project. As such, it is unlikely that the addition of new students associated with the proposed project would cause school enrollment to exceed existing capacity, or result in a need for physical expansion of school facilities.

Payment of the School Facilities Mitigation Fee has been deemed by the State legislature to be full and complete mitigation for the impacts of a development project on the provision of adequate school facilities. The assessment of the adopted School Facilities Mitigation Fee ensures that the project would not result in a significant impact under CEQA, in accordance with Senate Bill 50, which became effective in 1998. With payment of the school impact fees, the proposed project would have a less-than-significant impact upon public school services within the AUSD.

Mitigation: None required.

Impact PSR-4: The proposed project would result in increased use of other governmental facilities, including libraries, but would not require new or physically altered government facilities to maintain acceptable performance objectives. (*Less than Significant*)

The Alameda Free Library offers library services to the residents of Alameda. The West End library branch, located 1.4 miles away from the project site at 788 Santa Clara Avenue, is the closest library. The Library offers a wide range of services, including answering reference questions, staging story times, providing summer reading programs, hosting class visits, and educational events.

While the proposed project would generate an incremental increase in demand for library services, the additional demand that would be generated by an estimated population of 1,932 persons, only a small portion of whom would be expected to utilize the library in any given month, would be expected to be a small fraction of the existing monthly visitors. This would not require an expansion of library facilities, and the project's impact on library services would be considered less than significant.

Mitigation: None required.

Impact PSR-5: The proposed project would increase the use of existing neighborhood and regional parks and recreation centers, but not to the extent that substantial physical deterioration of the facilities would occur or be accelerated, nor would it cause the necessity for new or expanded facilities. (*Less than Significant*)

The proposed residential uses are located within easy walking distance of existing park and recreation areas that include both neighborhood and regional facilities. Although only a portion of new residents are expected to use neighborhood and regional parks in the area, the proposed project would cause an incremental increase in the use of these facilities with connectivity to park areas, paths, trails, and shoreline improvements.

The proposed project provides for development of up to 779 new housing units that are anticipated to result in a population of approximately 1,932 residents in the project site by 2035. These additional residents would generally utilize the 4.25 acres of public open space and 17.10 acres dedicated to marina open space that are proposed as part of the project, as well as the parks that are located in the vicinity of the project. The proposed project includes improvements to new waterfront and Bay Trail Open Space, which would provide a new segment of the San Francisco Bay Trail. This would provide bicycle and pedestrian access throughout the site, with access to public open space on the site, a maritime boardwalk promenade, a harbor view park, and open space areas on either side of the existing graving dock.

Although the proposed project would result in an incremental increase in demand for existing parks, the amount of additional use by new residents would not be expected to result in physical deterioration of the parks, or otherwise adversely affect park facilities. The project would pay the City's Development Fees (described in Municipal Code Chapter 27-2), which would mitigate the impacts of new development on existing city parks by providing funds for the construction or

expansion of new parks. Because the project includes open space and recreational uses and would pay Citywide Development Fees, the project would have a less-than-significant impact on park facilities.

Mitigation: None required.

Impact PSR-6: The proposed project includes recreational facilities and the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. (*Less than Significant*)

As discussed under Impact PSR-5, the proposed project would result in the construction of a new waterfront and Bay Trail Open Space, which would provide a new segment of the San Francisco Bay Trail for bicycle and pedestrian access throughout the site. In addition, the proposed project would provide access to new public open space on the site, and open space areas on either side of the existing graving dock.

Construction activities of the proposed parks and recreational facilities have been evaluated as part of the overall project. The construction of the proposed Alameda Marina project site and open space facilities would be phased over time in a four-phase process with shoreline and land side infrastructure improvements occurring in each phase as necessary. All private and public improvements within the Master Plan area would be consistent with the requirements of the final Master Plan, and with the Alameda Municipal Code. Construction-related impacts in any single location would be temporary. The construction impacts of the proposed project related to new park and recreational facility construction, and, as needed, mitigation measures and other construction related regulatory requirements, are discussed in other sections of this EIR under the applicable resource section.

While construction of the proposed park and recreation facilities could result in potentially significant environmental impacts, implementation of mitigation measures described throughout this EIR would reduce construction-related impacts to a less-than-significant level.

Mitigation: None required.

Cumulative Impacts

Impact C-PSR-1: The project, in conjunction with other past, current, or foreseeable development in Alameda, could result in impacts related to public services and recreation. (*Less than Significant*)

The geographic setting for cumulative impacts to public services is the City of Alameda, or the service area of each respective public service agency. Past and present projects are described in the *Environmental Setting* section of this chapter, which represents the baseline conditions for the evaluation of cumulative impacts. Reasonably foreseeable future development forecasts are based

on projections of future growth and take into account projects going through the entitlement process. Those forecasts account for other major projects currently in various stages of the approval and construction process. The proposed project, in combination with other past, present, and future projects in the City of Alameda would result in an increase in demand for public services for an estimated 95,500 residents that would be living in Alameda by 2040 (ABAG, 2014).

Fire Protection

The proposed project, and cumulative projects, would result in an increase in demand for fire protection and emergency response services over time. As individual development projects pursue City approvals, the City and the AFD consider the ability of existing AFD facilities to accommodate each project. To the extent that future development results in a need for new staff members, equipment, or improvement to or expansions of their facilities, the City and AFD leverage the City's Development Impact Fees and property tax revenues for expanding their services. Like the proposed project, all development projects that are proposed in the City are reviewed by AFD to ensure fire detection and suppression systems, emergency access, and fire hydrants are provided, as required by the California Building Code, Fire Code, and the City's Municipal Code. If new AFD facilities are needed to accommodate cumulative projects, the facility would require discretionary approval and undergo project-specific environmental review pursuant to CEQA to determine the potential for physical, construction-related environmental effects and identify all feasible mitigation measures. The proposed project, in conjunction with other cumulative development, would not have a significant cumulative impact associated with fire protection services, and the project's cumulative impact would be less than significant.

Police Protection

The proposed project, and cumulative projects, would result in an increase in demand for police services over time. As individual development projects pursue City approvals, the City and APD consider the ability of existing facilities to accommodate each project. The City and project site are currently served by APD, which operates out of one station located at 1555 Oak Street. As discussed above, the project would be adequately served by the existing station and no new station would need to be constructed. Adequate emergency access would be required for the proposed Project, and all cumulative projects, pursuant to the existing City plan check process and existing city programs, practices, and procedures, would continue to ensure the adequate provision of police protection services. All future development projects would undergo environmental analysis to determine their potential impact on police services, on a project-by-project basis, and the City would leverage development impact fees and/or property tax revenues to expand their services, as needed. The proposed project, in conjunction with other cumulative development, would not have a significant cumulative impact associated with police services, and the Project's cumulative impact would be less than significant.

Schools

The proposed project, and cumulative projects, would result in an increase in demand for public school services over time. As individual development projects pursue City approvals, the City and AUSD consider the ability of existing facilities to accommodate each project. As discussed under PSR-3 above, the Project Applicant would pay the school impact fees, which would fully

mitigate the impacts of the project under SB 50 by providing funds to expand school facilities and services, as needed. Cumulative development projects in the City would also pay these fees, which would fully mitigate the effects of cumulative development pursuant to SB 50 and thus, no significant cumulative impact to schools would result. It is not known if and when the construction of additional school facilities, beyond those currently planned, might be required or where they would be located. If new AUSD facilities were needed to accommodate cumulative projects, the facility would require discretionary approval and undergo project-specific environmental review pursuant to CEQA to determine the potential for physical, construction-related environmental effects and identify all feasible mitigation measures. The proposed project, in conjunction with other cumulative development, would not have a significant cumulative impact associated with public school services, and the project's cumulative impact would be less than significant.

Parks and Recreation

Development of the proposed project in conjunction with other past, present, and reasonably foreseeable future projects would result in an increased intensity of land use and a corresponding increase in usage of park and recreational facilities. The City periodically conducts studies to support long term planning efforts as part of the General Plan process to ensure adequate parkland acreage is provided to serve new residents. This effort, and future efforts, will continue to inform the future expansion of the City's park system to ensure adequate services are provided. There is an extensive network of local and regional parks, trails, and open space areas provided in the Bay Area, totaling at least 1.4 million acres, with ongoing plans to expand that quantity to 2 million acres (Open Space Council, 2014). Future projects requiring discretionary approval would undergo environmental analysis pursuant to CEQA to ensure adequate park and recreation facilities are provided, and new facilities would undergo project specific environmental review to determine the potential for physical, construction-related effects and identify mitigation measures to reduce those effects. Like the proposed project, past projects have, and present and future projects in the City would, contribute to public park improvements through the construction of park and recreational facilities included as part of the project, payment of fees, or the dedication of land or conservation easements, as permitted by the Quimby Act and required by the City's development impact fees. As such, the approval process would ensure that the substantial physical degradation of existing neighborhood and regional parks and other recreational facilities would not occur or be accelerated as a result of an increase in use from new residents. The proposed project, in conjunction with other cumulative development, would not have a significant cumulative impact associated with park and recreational facilities, and the project's cumulative impact would be less than significant.

Other Public Facilities

The proposed project in combination with past, present, and future development in the City of Alameda would increase the demand for library service. As discussed above, the project would be adequately served by the existing library and no new facilities would need to be constructed. All future development projects would undergo environmental analysis to determine their potential impact on library services, on a project-by-project basis, and the City would leverage development impact fees and/or property tax revenues to expand their services, as needed. If new

library facilities were needed, they would undergo further project-specific environmental analysis to determine the potential for physical, construction-related effects and identify mitigation measures to reduce those effects. The proposed project, in conjunction with other cumulative development, would not have a significant cumulative impact associated with other public facilities, and the project's cumulative impact would be less than significant.

Summary

The proposed project, in conjunction with other cumulative development, would not have a significant cumulative impact associated with public services and recreation, and the project's cumulative impact would be less than significant.

Mitigation: None required.

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4.12 Transportation and Circulation

4.12.1 Introduction

This section describes the current transportation network and regulatory setting and summarizes the effect of the Alameda Marina development project located in the City of Alameda on the existing and future circulation system.

4.12.2 Environmental Setting

Regional Setting

Regional vehicular access is provided primarily by the interstate freeway system, which is most directly accessible to and from the project site via Interstate 880 (I-880).

I-880 is an eight-lane freeway that links Oakland and San Jose through East Bay cities such as San Leandro, Hayward, Union City, Newark, Fremont and Milpitas. I-880 is oriented east/west in the study area and provides access to the City of San Francisco via the Bay Bridge (I-80), as well as to other locations on the San Francisco Peninsula via the San Mateo (SR 92) and Dumbarton (SR 84) Bridges. Primary automobile access between the project site and I-880 is provided via the Park Street, Fruitvale Avenue, and High Street Bridges to the east and the Webster and Posey Tubes to the west. The Park Street Bridge provides direct connections with I-880 freeway ramps, while the Fruitvale Avenue and High Street Bridges connect with I-880 via 8th and 9th Avenues and Oakport Street and Coliseum Way, respectively. The Webster and Posey tubes connect with freeway ramps on 5th and 6th Streets through a detour in Oakland's Chinatown neighborhood.

According to Caltrans and the Metropolitan Transportation Commission (MTC), I-880 is one of the Bay Area's most congested freeways, with several hours of heavy congestion each day. Congestion is heaviest in the northbound direction during the morning commute hours and in the southbound during the afternoon and evening hours. Congestion on I-880 has increased in recent years, resulting in increased vehicular delay for Alameda residents attempting to access the region in the morning or return to Alameda in the evening.

I-980 connects I-880 and I-580 in the study area and continues as SR 24 north of I-580. Access between Alameda and I-980 is provided by the Webster and Posey Tubes via either the I-980/I-880 junction or local Oakland streets.

SR 24 connects Oakland with Contra Costa County via the Caldecott Tunnel.

SR 61 bisects Alameda along Central Avenue, Encinal Avenue, Broadway, and Otis Drive before crossing the Bay Farm Island Bridge to continue as Doolittle Drive past the Oakland International Airport and into San Leandro.

Congestion in the Bay Area has increased significantly over the past twenty years with the addition of over one million residents and almost one million jobs. This congestion has affected

the regional freeway system, as well as the local street networks that connect to those regional freeways.

In the most recent Regional Transportation Plan, the MTC and Association of Bay Area Governments (ABAG) found that the Bay Area consistently ranks as one of the most congested metropolitan areas in the nation. They concluded, however, that additional roadway capacity would not solve the problem and that the region must instead find ways to operate the existing highway and transit networks more efficiently. To that end, Plan Bay Area recommends increasing non-auto travel mode share and reducing vehicle miles traveled (VMT) per capita and per employee by promoting transit-oriented development, transit improvements, and active transportation modes such as walking and bicycling. These strategies seek to not only improve mobility within the region, but also reduce regional and statewide greenhouse gas (GHG) emissions.

Local Setting

The Alameda Marina Project site is located along the northern shoreline of Alameda north of Clement Avenue.

The **Webster and Posey Tubes** provide access between Alameda and Oakland via SR 260 and serve as the western connection between I-880 and the project site. The Webster Tube serves southbound traffic from Oakland to Alameda, while the Posey Tube serves northbound traffic from Alameda to Oakland.

Webster Street is a north/south roadway identified as a Regional Arterial in the City of Alameda General Plan. It extends between Central Avenue in the south and the City of Oakland in the north, travelling through the Webster and Posey Tubes. Webster Street provides two travel lanes in each direction. Sidewalks are provided on both sides of the street south of Willie Stargell Avenue, and parallel parking is allowed south of Atlantic Avenue. Webster Street connects the project site to I-880 and Downtown Oakland.

Constitution Way is a north/south Regional Arterial between the Webster and Posey Tubes in the north and Lincoln Avenue in the south. South of Lincoln Avenue, the roadway continues as 8th Street. Constitution Way provides two travel lanes in each direction, with left turn lanes at most intersections. Sidewalks are provided on both sides of the street, and on-street parking is prohibited.

Park Street is a north/south Regional Arterial between the Park Street Bridge in the north and Shore Line Drive in the south. Park Street provides two travel lanes in each direction. North of San Jose Avenue, sidewalks are provided on both sides of the street, and parallel parking is allowed. The Park Street Bridge connects the project site with Oakland and I-880.

Atlantic Avenue/Ralph Appezzato Memorial Parkway is an east/west Regional Arterial between Ferry Point in the west and Wind River Way in the east. South of Wind River Way, the roadway continues as Sherman Street. The segment between Main and Webster Streets is called Ralph Appezzato Memorial Parkway and continues as West Atlantic Avenue to the west. Atlantic Avenue provides two travel lanes in each direction west of Constitution Way and one travel lane

in each direction east of Constitution Way. The roadway provides sidewalks and Class II bikeways (bike lanes) on both sides of the street east of Constitution Way. West of Constitution Way, sidewalks are only provided on the north side of the street, and no bikeways are provided. On-street parking is prohibited along the entire street.

Clement Avenue is an east/west Regional Arterial along the northern Alameda waterfront between Grand Street in the west and Broadway in the east. The roadway forms the south boundary of the Alameda Marina Project. Clement Avenue provides one travel lane in each direction, with sidewalks and on-street parking on both sides of the street. Clement Avenue is currently being extended in phases between Grand Street and the eastern end of the planned Jean Sweeney Open Space Park at Atlantic Avenue, and will form an intersection at the boundary between Sherman Street and Atlantic Avenue. The Marina Cove and Marina Shores residential developments completed the extension between the Shell Oil facility (adjacent to the current Grand Street terminus) and Entrance Road at Encinal Terminals. A further extension between Entrance Road and Atlantic Avenue is planned for construction as part of the Del Monte Warehouse adaptive reuse project. Once the 250-foot link through the Shell Oil facility to Grand Avenue and the westward extension through to Atlantic Avenue are completed, Clement Avenue will provide an alternate route for trucks and automobiles currently using Buena Vista Avenue, and will also be part of the Cross-Alameda Trail bicycle trail. It.

Buena Vista Avenue is an east/west Island Collector between Poggi Street in the west and Northwood Drive in the east. The roadway is classified as a Transitional Arterial between Sherman and Grand Streets and as a Local Road east of Broadway and west of Webster Street. Buena Vista Avenue continues in the west as Poggi Street. The roadway provides two travel lanes in each direction and left-turn lanes between Jay and Hibbard Streets and at the intersection with Broadway. Sidewalks are provided on both sides of the street, and on-street parking is allowed along the entire roadway except between Sherman and Benton Streets.

Grand Street is a north/south Island Arterial between the Alameda Marina in the north and Shore Line Drive in the south. The roadway is classified as a Local Street north of Clement Avenue. Grand Street provides one travel lane in each direction. Sidewalks and Class II bikeways (bike lanes) are provided on both sides of the street, and on-street parking is prohibited.

Blanding Avenue is an east/west Transitional Arterial between Oak Street in the west and Fruitvale Avenue–Tilden Way in the east. The roadway continues as Fernside Boulevard east of Fruitvale Avenue–Tilden Way. Blanding Avenue provides one travel lane in each direction. East of Broadway, sidewalks are provided on one side of the street and on-street parking is prohibited. Elsewhere, sidewalks are provided on both sides of the street, and parallel parking is allowed.

Tilden Way is a diagonal Regional Arterial between Park Street in the southwest and Blanding Avenue–Fernside Boulevard in the northeast. The roadway continues as Fruitvale Avenue north of Blanding Avenue–Fernside Boulevard. Tilden Way provides two travel lanes in each direction. Sidewalks are provided on one side of the street west of Foley Street and on both sides of the street east of Broadway. On-street parking is prohibited along the entire roadway.

High Street is a north/south Island Arterial between the City of Oakland in the north and Otis Drive in the south. The roadway is classified as a Regional Arterial on the High Street Bridge, which connects the project site with Oakland and I-880. High Street continues as Bayview Drive south of Otis Drive. High Street provides one travel lane in each direction. Sidewalks are provided on both sides of the street, and parallel parking is allowed.

Fernside Boulevard is a north/south and east/west Island Arterial between Tilden Way–Fruitvale Avenue in the northwest and Otis Drive in the southeast. Fernside Boulevard provides one travel lane in each direction for most of the roadway, with left turn lanes at most intersections. Two southbound travel lanes are provided south of Washington Court. Sidewalks and Class II bikeways (bike lanes) are provided on both sides of the street, and parallel parking is allowed. A Class I bikeway (bike path) is provided south of San Jose Avenue.

Travel Conditions

To provide information to the Alameda community and Alameda decision-makers about the relative impact of the proposed project on the transportation system, this EIR provides a Vehicle Miles Traveled (VMT) analysis, a Travel Time analysis, an intersection level of service (LOS) analysis, a transit LOS analysis, a pedestrian LOS analysis, and a safety assessment.

Vehicle Miles Traveled (VMT)

VMT refers to the amount and distance of automobile travel attributable to a project. In 2013, Governor Brown signed Senate Bill (SB) 743, which added Public Resources Code Section 21099 to CEQA, to change the way that transportation impacts are analyzed under CEQA to better align local environmental review with statewide objectives to reduce greenhouse gas emissions, encourage infill mixed-use development in designated priority development areas, reduce regional sprawl development, and reduce vehicle miles traveled in California.

Senate Bill 743 mandated a change in the way that public agencies evaluate transportation impacts of projects under CEQA. Specifically, SB 743 recommended VMT as an appropriate measure for assessing the transportation impact of a project on the environment. SB 743 stated that VMT is a more appropriate measure than automobile delay, and that automobile delay as measure by an intersection Level of Service (LOS) is not an impact on the environment. Automobile delay is a measure of travel speed. Increased travel speed increases safety hazards and encourages automobile use, which increases greenhouse gas emissions and air quality impacts. SB 743 specifically targeted automobile LOS as an inappropriate measure of environmental impact, and encouraged the use of VMT as an appropriate replacement measure.

Increased vehicle miles traveled leads to a number of direct and indirect impacts to the environment and human health. Among other effects, increasing VMT on the roadway network leads to increased emissions of air pollutants, including greenhouse gases, as well as increased consumption of energy. Transportation is associated with more greenhouse gas emissions than any other sector in California. As documented in the City of Alameda Climate Action Plan, more than 54 percent of Alameda's greenhouse gas emissions are produced by local transportation.

Reducing VMT by Alameda residents is the single most effective means to reduce Alameda's greenhouse gas emissions.

This analysis uses the Metropolitan Transportation Commission (MTC) Travel Model to estimate VMT. Based on the MTC Travel Model, the regional average daily VMT per capita is 15.0 and the City of Alameda citywide average daily VMT per capita is 14.5 under 2020 conditions. Since the regional VMT is higher than the citywide VMT per capita, the applicable threshold for the proposed project is the regional residential VMT per capita minus 15 percent, which corresponds to VMT per capita of 12.8.

Travel Time and Speeds

At the request of the City of Alameda Planning Board, travel times and speed were evaluated on the three major corridors in and out of Alameda that would be used by occupants of the proposed project to access the regional roadway network:

- **Webster Street** – both directions of Webster Street (including the Webster/Posey tubes) between Lincoln Avenue in Alameda and 7th Street in Oakland)
- **Park Street** – northbound Park Street from Lincoln Avenue in Alameda to 7th Avenue in Oakland, and southbound Park Street from just north of the Park Street Bridge to Lincoln Avenue
- **Fruitvale Avenue** – both directions between Fernside Boulevard in Alameda and Elmwood Avenue in Oakland

Existing travel times and the corresponding vehicle travel speeds were assessed by collecting travel time information from anonymized cell phone data for weekdays in March 2017 in the northbound and southbound direction along each corridor. **Table 4.12-1** summarizes the typical range of observed travel times (minimum and maximum speeds) and the overall average travel times for each corridor during both the AM and PM peak periods, while **Table 4.12-2** summarizes the corresponding travel speeds. **Appendix G.D** provides the detailed travel time peed data.

Intersection LOS Analysis

For the LOS analysis, traffic operations are measured in terms of a grading system (shown in **Table 4.12-3** for signalized and unsignalized intersections), which is based on "control delay" experienced at intersections. Control delay is a function of signal timing, lane configuration, hourly traffic volumes, pedestrian and bicycle volumes, and parking and bus conflicts, among other variables. However, signal operations are not the only factors that affect delay at intersections. Most notably, downstream constraints such as freeway congestion can cause delay at intersections leading to freeway on-ramps. Motorists in Alameda often face this type of delay, especially on Webster Street and Park Street during the morning commute, as automobiles attempt to access an already-congested I-880. Since this delay is not caused by the intersection itself, it cannot be reduced by modifying its design.

TABLE 4.12-1
EXISTING TRAVEL TIMES

Corridor	Direction	Distance (feet)	Travel Time (min:sec)[1]					
			AM Peak Period			PM Peak Period		
			Minimum	Maximum	Average	Minimum	Maximum	Average
Webster Street (Lincoln Avenue to 7th Street)	Northbound	9,000	5:00	9:10	6:30	4:10	7:10	4:50
	Southbound	9,000	3:30	4:30	4:00	4:30	5:40	5:00
Park Street	Northbound[2]	3,700	2:40	5:30	3:30	2:20	3:50	3:00
	Southbound[3]	2,600	1:40	2:30	2:00	2:00	3:10	2:30
Fruitvale Avenue (Fernside Boulevard to Elmwood Avenue)	Northbound	2,600	1:40	3:00	2:10	1:50	3:00	2:20
	Southbound	2,600	1:20	2:10	1:40	1:30	2:20	1:50

NOTES:
1 Travel times are based on data collected from anonymized cell phones on weekdays during March 2017
2 Northbound Park Street corridor is from Lincoln Avenue to 7th Avenue in Oakland
3 Southbound Park Street corridor is from just north of the Park Street Bridge to Lincoln Avenue

SOURCE: Fehr & Peers, 2017.

TABLE 4.12-2
EXISTING TRAVEL SPEEDS

Corridor	Direction	Distance (feet)	Travel Speed (mph)[1]					
			AM Peak Period			PM Peak Period		
			Minimum	Maximum	Average	Minimum	Maximum	Average
Webster Street (Lincoln Avenue to 7th Street)	Northbound	9,000	11	21	16	14	25	21
	Southbound	9,000	23	29	26	18	23	21
Park Street	Northbound[2]	3,700	8	16	12	11	18	14
	Southbound[3]	2,600	12	18	15	9	14	12
Fruitvale Avenue (Fernside Boulevard to Elmwood Avenue)	Northbound	2,600	10	17	13	10	17	12
	Southbound	2,600	13	21	17	13	21	16

NOTES:
1 Travel speeds are based on travel time data collected from anonymized cell phones on weekdays during March 2017
2 Northbound Park Street corridor is from Lincoln Avenue to 7th Avenue in Oakland
3 Southbound Park Street corridor is from just north of the Park Street Bridge to Lincoln Avenue

SOURCE: Fehr & Peers, 2017.

TABLE 4.12-3
DEFINITIONS FOR INTERSECTION LEVEL OF SERVICE

Unsignalized Intersections		Level of Service Grade	Signalized Intersections	
Description	**Average Total Vehicle Delay (Seconds)**		**Average Control Vehicle Delay (Seconds)**	**Description**
No delay for stop-controlled approaches.	≤10.0	A	≤10.0	Free Flow or Insignificant Delays: Operations with very low delay, when signal progression is extremely favorable and most vehicles arrive during the green light phase. Most vehicles do not stop at all.
Operations with minor delay.	>10.0 and ≤15.0	B	>10.0 and ≤20.0	Stable Operation or Minimal Delays: Generally occurs with good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average delay. An occasional approach phase is fully utilized.
Operations with moderate delays.	>15.0 and ≤25.0	C	>20.0 and ≤35.0	Stable Operation or Acceptable Delays: Higher delays resulting from fair signal progression and/or longer cycle lengths. Drivers begin having to wait through more than one red light. Most drivers feel somewhat restricted.
Operations with increasingly unacceptable delays.	>25.0 and ≤35.0	D	>35.0 and ≤55.0	Approaching Unstable or Tolerable Delays: Influence of congestion becomes more noticeable. Longer delays result from unfavorable signal progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop. Drivers may have to wait through more than one red light. Queues may develop, but dissipate rapidly, without excessive delays.
Operations with high delays, and long queues.	>35.0 and ≤50.0	E	>55.0 and ≤80.0	Unstable Operation or Significant Delays: Considered to be the limit of acceptable delay. High delays indicate poor signal progression, long cycle lengths and high volume to capacity ratios. Individual cycle failures are frequent occurrences. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
Operations with extreme congestion, and with very high delays and long queues unacceptable to most drivers.	>50.0	F	>80.0	Forced Flow or Excessive Delays: Occurs with oversaturation when flows exceed the intersection capacity. Represents jammed conditions. Many cycle failures. Queues may block upstream intersections.

SOURCE: Transportation Research Board, Special Report 209, *Highway Capacity Manual*, 2010.

To provide a baseline for identification of impacts on the local roadway network, existing peak-hour traffic conditions were determined at the following eleven project area intersections:

1. Webster Street/Atlantic Avenue
2. Constitution Way/Atlantic Avenue
3. Challenger Drive/Atlantic Avenue
4. Atlantic Avenue/Buena Vista Avenue
5. Grand Street/Buena Vista Avenue
6. Grand Street/Clement Avenue
7. Park Street/Blanding Avenue
8. Park Street/Clement Avenue
9. Park Street/Tilden Way–Lincoln Avenue
10. Tilden Way–Fruitvale Avenue/Blanding Avenue-Fernside Avenue
11. High Street–Gibbons Drive/Fernside Boulevard

Figure 4.12-1 shows the location of the project site and study intersections. The study intersections represent major traffic routes to and from the project site, locations that could affect operations of other traffic modes, or locations that may be affected by diverted traffic seeking alternate routes to/from the Webster and Posey Tubes.

Traffic counts including turning movements, and pedestrian and bicycle volumes were collected for all eleven study intersections during both AM and PM peak periods (7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, respectively). These periods were selected because they are expected to represent typical worst traffic conditions after completion of the project. Data was collected on November 2, 2016 at all eleven intersections. The collection day was clear with local schools in normal session.

For each study intersection, the hour with the highest traffic volume within each peak period was selected for analysis. **Figure 1** in **Appendix G.A** shows the existing AM and PM peak hour intersection vehicle volumes and the lane configurations and controls at the study intersections. **Figure 2** in **Appendix G.A** shows the existing AM and PM peak hour bicycle and pedestrian volumes. **Appendix G.B** presents the detailed count sheets for the study intersections.

Table 4.12-4 summarizes the existing LOS at the 11 study intersections. All study intersections currently operate at LOS D or better. The intersections with the highest delay are those that provide access to or from Oakland and I-880 on the approach to the Park Street Bridge (Intersections #7 and #8), Webster and Posey Tubes (Intersection #1), or High Street Bridge (Intersection #11). However, delays at these intersections are due to downstream congestion rather than the traffic volume at the intersection. This is particularly true for intersections in the immediate vicinity of the island crossings where the tunnel/bridge connections experience heavy congestion and vehicle queues that adversely affect flow through the adjacent intersections. Refer to the next section Travel Speeds for information regarding corridor travel times. **Appendix G.C** provides the detailed LOS calculations.

The peak period speeds along both directions of the Webster Street corridor range between 11 and 29 mph, the speeds along both directions of the Park Street corridor range between 8 and 18 mph, and the speeds along Fruitvale Avenue range between 10 and 21 mph. In general, speeds are lower in the northbound direction than the southbound direction in the AM peak period due to the high volume of traffic destined for areas outside Alameda. In the PM peak period, this behavior reverses itself, with a high volume of traffic headed back to the island. The range in

LEGEND

Project Site

Study Intersection

U:\PROJECTS\SFO\16xxxx\D160044.01 - Alameda Marina EIR\05 Graphics-GIS-Modeling\Illustrator\Fig 4.12-1 Study Area.ai

SOURCE: Fehr & Peers

Alameda Marina Master Plan EIR

Figure 4.12-1
Study Area and Study Intersections

ESA

TABLE 4.12-4
EXISTING INTERSECTION LEVEL OF SERVICE

Study Intersection Name		Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay[1]	LOS	Delay[1]	LOS
1	Webster Street/Atlantic Avenue	Signal	35	C	40	D
2	Constitution Way/Atlantic Avenue	Signal	18	B	19	B
3	Challenger Drive/Atlantic Avenue	Signal	15	B	20	B
4	Atlantic Avenue/Buena Vista Avenue	Signal	15	B	19	B
5	Grand Street/Buena Vista Avenue	Signal	16	B	15	B
6	Grand Street/Clement Avenue	SSSC	4 (11)	A (B)	8 (15)	A (B)
7	Park Street/Blanding Avenue[2]	Signal	33	C	53	D
8	Park Street/Clement Avenue	Signal	35	C	29	C
9	Park Street/Tilden Way-Lincoln Avenue	Signal	14	B	15	B
10	Tilden Way-Fruitvale Avenue/Blanding Avenue-Fernside Boulevard	Signal	11	B	13	B
11	High Street-Gibbons Drive/Fernside Bouelvard[2]	Signal	35	C	22	C

NOTES:

1 The LOS/Delay for Side-Street Stop-Control (SSSC) intersections represents the worst approach; for Signalized intersections, the LOS/Delay represents the overall intersection.

2 Based on HCM 2000, since HCM 2010 does not calculate LOS for this intersection.

Bold indicates locations with unacceptable level of service (LOS E or worse).

SOURCE: Fehr & Peers, 2017.

speed along both directions of both corridors is primarily due to the congestion along I-880, which affects traffic leaving and coming into Alameda. In addition, travel times along the Park Street corridor may be affected by the ongoing construction on the I-880/23rd Avenue and 29th Avenue Interchange.

Pedestrian, Bicycle, and Transit Travel Conditions

Pedestrian Travel

Alameda is a very walkable city with flat topography, a mild climate, compact development patterns, varied architecture, moderate block sizes, sidewalks, and street trees. Sidewalks are provided along both sides of most residential streets. Though sidewalks typically were not provided in former industrial areas, new developments in these areas have included sidewalks in their construction.

Clement Avenue provides narrow sidewalks on both sides of the street adjacent to the project site. There are no stop signs, or marked crosswalks along Clement Avenue.

Pedestrian access between Downtown Oakland and the west side of the island is provided by a narrow, raised walkway in the Posey Tube that is shared with bicycle traffic. Pedestrians can also take AC Transit buses across the estuary via the Webster or Posey Tubes. The sidewalks across

the Park Street and Miller-Sweeney (Fruitvale Avenue) Bridges on the east side of the island also provide pedestrian access between Oakland and Alameda, but these are more than three miles from the project site.

Bicycle Travel

Alameda's flat terrain and temperate climate make bicycling a feasible mode of transportation around the island for able-bodied travelers.

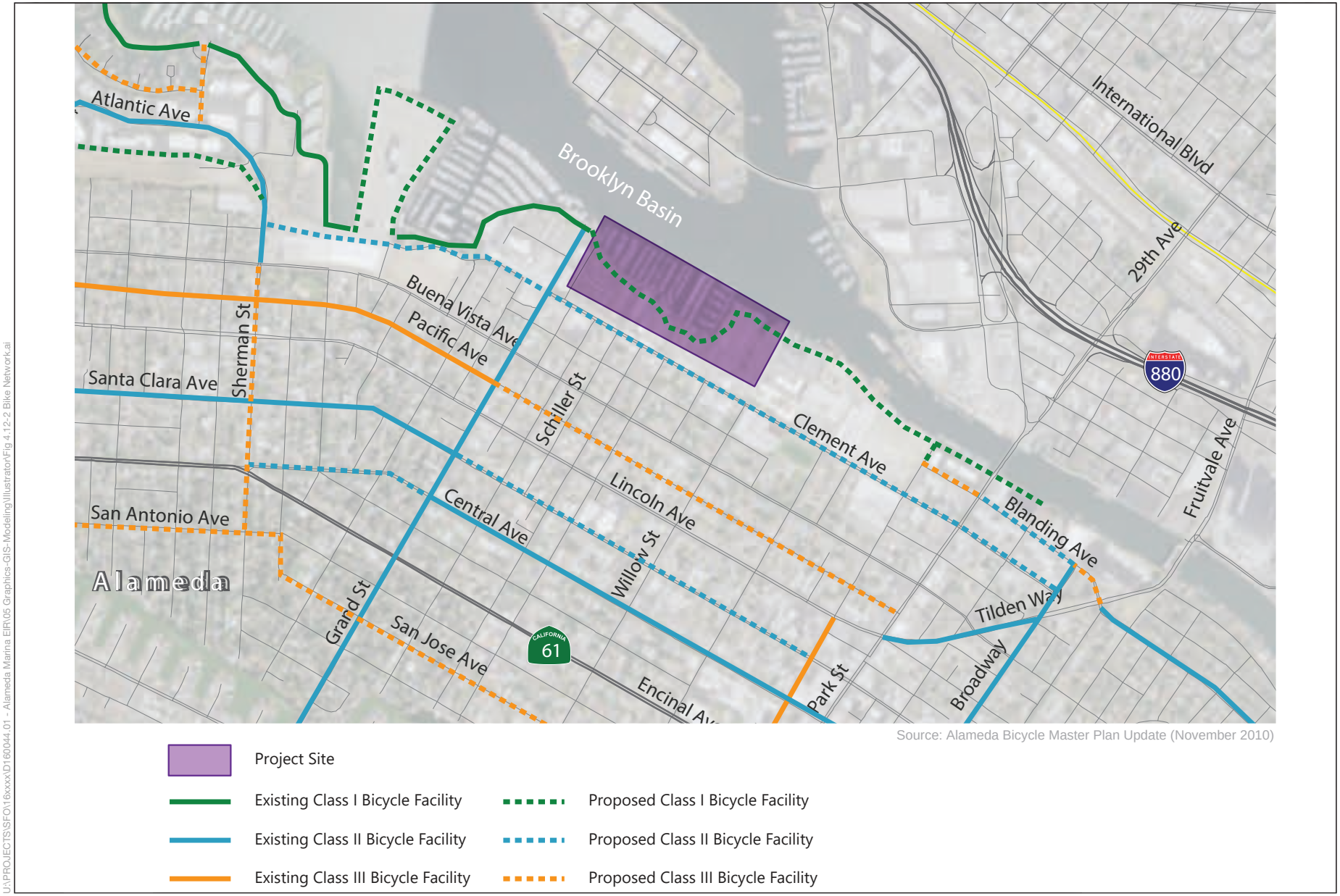
Bicycle access between Downtown Oakland and the west side of the island is provided by a substandard, narrow, raised walkway in the Posey Tube that is shared with pedestrian traffic. Bicyclists can also take AC Transit buses across the estuary via the Webster or Posey Tubes. The sidewalks across the Park Street and Miller-Sweeney (Fruitvale Avenue) Bridges on the east side of the island also provide bicycle access between Oakland and Alameda.

Bikeway facilities are defined as the following four classes according to Chapter 1000 of the Caltrans *Highway Design Manual*:

- **Class I (Bike Path)** – Provides a completely separated right-of-way for the exclusive use of bicyclists and pedestrians, with minimized cross-flows by motorists.
- **Class II (Bike Lane)** – Provides a designated lane for exclusive one-way bicycle travel within the paved area of the roadway.
- **Class III (Bike Route)** – Provides signage designating a shared roadway between bicycles and automobiles.
- **Class IV (Separated Bikeway)** – Provides a right-of-way for the exclusive use of bicycles and includes a separation, such as parking lane, between the bikeway and roadway.

Figure 4.12-2 identifies existing and proposed bikeway facilities in the study area. No bikeway facilities are provided directly adjacent to the project site, although the Class II bikeways (bike lanes) on Grand Street are only two hundred feet from the western edge of the project. The Grand Street bicycle lanes are provided on both sides of the street for the entire length of the road. These facilities connect with other Class II bikeways on Santa Clara Avenue and Central Avenue, which provide access to the Webster Street and Park Street commercial corridors, respectively. The Grand Street bike lanes also provide access to Class I bikeways (bike paths) along the northern and southern shorelines and Class III bikeways (bike routes) on Pacific Avenue and San Jose Avenue.

The *City of Alameda Bicycle Master Plan* (updated November 2010) proposes an extension of the Class I path along the estuary along the entire northern shoreline between the Main Street Ferry Terminal and the Miller-Sweeney (Fruitvale Avenue) Bridge. It also proposes Class II bikeways (bike lanes) on Clement Street between Atlantic Avenue and Tilden Way. These bike lanes would be adjacent to the project site and provide access to the existing bike lanes on Atlantic Avenue, Grand Street, and Broadway, as well as a proposed Class I bikeway (bike path) at the Alameda Beltline.



Source: Alameda Bicycle Master Plan Update (November 2010)

U:\PROJECTS\SFO\16xxxx\D160044.01 - Alameda Marina EIR\05 Graphics-GIS-Modeling\Illustrator\Fig 4.12-2 Bike Network.ai

SOURCE: Fehr & Peers

Alameda Marina Master Plan EIR

Figure 4.12-2
Bicycle Network

ESA

Transit Services

Public transit services in the project vicinity are provided by the Alameda–Contra Costa Transit District (AC Transit), the Bay Area Rapid Transit District (BART), Water Emergency Transit Agency (WETA), and Amtrak. **Figure 4.12-3** shows the transit routes in the vicinity of the project site. Each transit service is described below.

AC Transit provides fixed-route bus service in 13 cities and unincorporated areas in Alameda and Contra Costa counties, extending north to Richmond/Pinole, south to Fremont, east to Castro Valley, and west to San Francisco. Several AC Transit routes operate near the project site, as summarized in **Table 4.12-5**.

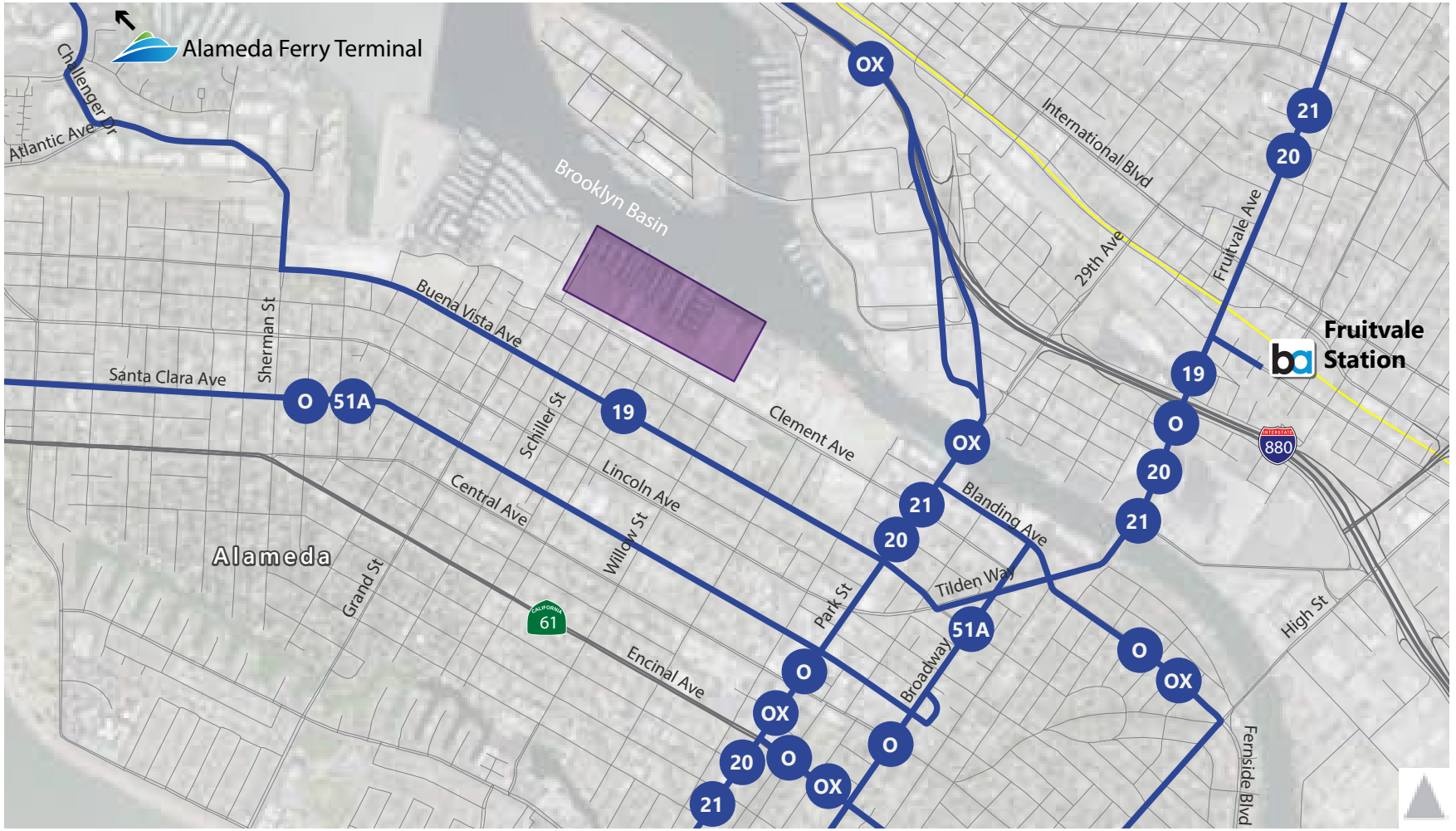
The nearest AC Transit bus route to the project site (Line 19) operates along Buena Vista Avenue, with stops at Grand, Chestnut, and Willow Streets. This line provides access to Downtown Oakland to the west and the Fruitvale BART station to the east. The bus stops are less than one quarter-mile from the project site and do not provide any amenities.

Six other AC Transit routes operate within one-half mile of the project site. Three of these routes (Lines 20, 21, and 51A) are local-only, one route (Line 851) provides night service, and two routes (Lines O and OX) provide Transbay service to San Francisco. Lines 20, 21, and OX stop on Park Street at Clement Avenue, while Lines 51A, 851, and O stop on Santa Clara Avenue at Grand, Chestnut, and Willow Streets. Bus stop shelters and trash receptacles are provided at the Santa Clara Avenue bus stops, with the exception of westbound at Grand Street and eastbound at Willow Street. No amenities are provided at the Park Street bus stops.

BART provides regional commuter rail service in Alameda, Contra Costa, San Francisco, and San Mateo Counties. BART operates on weekdays from 4:00 AM to 1:00 AM, on Saturdays from 6:00 AM to 1:00 AM, and on Sundays from 8:00 AM to 1:00 AM. Each individual line in the system operates a train every 15 to 20 minutes.

The nearest BART station to the project site is the Fruitvale Station. This station is not within walking distance of the project site but can be accessed via nearby AC Transit Lines 19, 20, 21, 51A, 851, and O. Transbay trains depart from the Fruitvale Station approximately every seven to eight minutes during peak commuting hours.

WETA provides ferry service between Alameda and San Francisco. Ferries can be accessed at Alameda Main Street Terminal on the northern shore of Alameda Island or at Jack London Square Terminal in Oakland. Both stations are about three miles from the project site and can be accessed by automobile, AC Transit buses, or active modes. Due to heavy demand, WETA has recently increased frequencies from Alameda and is working with the City of Alameda to construct a terminal at the Seaplane Lagoon at Alameda Point. The City of Alameda has also sought a regional transportation grant to re-establish water shuttle services connecting waterfront locations like the Encinal Terminals and the Main Street and Jack London Square Ferry Terminals.



SOURCE: Fehr & Peers

Alameda Marina Master Plan EIR

Figure 4.12-3
Existing Transit Service

ESA

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TABLE 4.12-5
AC TRANSIT SERVICE SUMMARY

Line	Route	Nearest Stop	Weekday		Weekend	
			Hours	Frequency	Hours	Frequency
Local Routes						
19	Downtown Oakland to Fruitvale BART via the Webster/Posey tubes, Atlantic Ave, Buena Vista Ave, Alameda Bridgeside Center, and Fruitvale Ave	Buena Vista Avenue/ Chestnut Street (about 0.2 miles away)	6:00 AM to 10:30 PM	20 to 30 minutes	6:00 AM to 10:45 PM	30 minutes
20	Dimond District, Oakland, to downtown Oakland via Fruitvale Ave, Fruitvale BART, Park St, Alameda Towne Centre, Shoreline Dr, Grand St, Otis Dr, Westline Dr, Central Ave and Webster St	Park Street/ Clement Avenue (about 0.5 miles away)	5:00 AM to 12:30 AM	30 minutes	5:00 AM to 12:30 AM	30 minutes
21	Dimond District, Oakland, to Oakland Airport via Fruitvale Ave, Fruitvale BART, Park St, Alameda Towne Centre, and Bay Farm Island	Park Street/ Clement Avenue (about 0.5 miles away)	5:45 AM to 10:00 PM	30 minutes	7:15 AM to 10:15 PM	30 minutes
51A	Rockridge BART to Fruitvale BART via College Ave, Broadway (Oakland), Webster St, Santa Clara Ave, and Broadway (Alameda)	Santa Clara Avenue/ Chestnut Street (about 0.4 miles away)	5:00 AM to 12:30 AM	10 to 20 minutes	5:30 AM to 12:45 AM	15 to 20 minutes
Night Routes						
851	Downtown Berkeley to Fruitvale BART via Southside Berkeley (UC campus), College Ave, Broadway, downtown Oakland, Webster St., Santa Clara Ave, Broadway, and Fruitvale Ave	Santa Clara Avenue/ Chestnut Street (about 0.4 miles away)	12:15 AM to 5:00 AM	60 minutes	12:15 AM to 5:00 AM	60 minutes
Transbay Routes						
O	Fruitvale BART to Transbay Temporary Terminal, San Francisco, via Fruitvale Bridge, Fernside Blvd, High St, Encinal Ave, Broadway, Santa Clara Ave and Webster St	Santa Clara Avenue/ Chestnut Street (about 0.4 miles away)	5:00 AM to 10:45 PM	10 to 60 minutes	5:00 AM to 10:45 PM	60 minutes
OX	Bay Farm Island to Transbay Temporary Terminal, San Francisco via Island Dr Park & Ride, Encinal Ave and Park St	Park Street/ Clement Avenue (about 0.5 miles away)	5:30 AM to 9:15 AM (WB) 4:15 PM to 8:45 PM (EB)	10 to 60 minutes	No Weekend Service	

SOURCE: AC Transit, August 2017.

Amtrak provides service from the Oakland Jack London Square Amtrak station. Jack London Square can be accessed from the project site by automobile, AC Transit bus, or active modes. This station is a stop on Amtrak's Capitol Corridor and San Joaquin routes. The Capitol Corridor serves Sacramento and Auburn to the east and Fremont and San Jose to the south, operating 15 trains in each direction on weekdays and 11 trains in each direction on weekends. The Amtrak San Joaquin serves the Central Valley cities of Stockton, Fresno and Bakersfield and operates six trains daily in each direction.

4.12.3 Regulatory Framework

State

Senate Bill 743

As described above, Senate Bill (SB) 743 (Steinberg 2013), which added Public Resources Code Section 21099 to CEQA, changes the way that transportation impacts are analyzed to better align local environmental review with statewide objectives to reduce greenhouse gas emissions, encourage infill mixed-use development in designated priority development areas, reduce regional sprawl development, and reduce vehicle miles traveled (VMT) in California.

SB 743 supports and complements the following:

- Assembly Bill 32 (AB 32), which requires statewide greenhouse gas reductions to 1990 levels by 2020, and continued reductions beyond 2020.
- Senate Bill 375 and California Air Resources Board established greenhouse gas reduction targets for metropolitan planning organizations to achieve in Regional Transportation Plans and Sustainable Community Strategies. Targets for the largest metropolitan planning organizations range from 13 percent to 16 percent reduction by 2035.
- Senate Bill 391 requires the California Transportation Plan to support an 80 percent reduction in GHGs below 1990 levels by 2050.
- Executive Order B-30-15, which sets a GHG emissions reduction target of 40 percent below 1990 levels by 2030. Executive Order S-3-05, which sets a GHG emissions reduction target of 80 percent below 1990 levels by 2050. Executive Order B-16-12, which specifies a GHG emissions reduction target of 80 percent below 1990 levels by 2050 specifically for transportation.

In November 2017, OPR released the final update to the CEQA Guidelines consistent with SB 743.

Regional

The Alameda County Transportation Commission (Alameda CTC), through its Congestion Management Program (CMP), oversees how roads of regional significance function, and requires local jurisdictions to evaluate the impact of proposed land use changes (i.e., General Plan amendments, and developments with trip-generating potential of more than 100 new peak-hour vehicle trips) on the regional transportation systems.

Local

City of Alameda General Plan

The City of Alameda General Plan is consistent with State of California transportation planning objectives, standards, and requirements and the Regional Sustainable Communities Strategy (Plan Bay Area). General Plan policies support in-fill, mixed use development, and improvements to access and mobility for all Alameda residents through a variety of modes of transportation, including automobiles, bicycles, transit, and walking. The Transportation Element ensures that decisions regarding the roadway network consider the benefits and impacts to all four modes of transportation as well as the potential quality of life and safety impacts on Alameda neighborhoods that might occur as the result of increasing automobile speeds, noise, and emissions in those local neighborhoods. The following General Plan Transportation Element policies demonstrate consistency between State objectives and Alameda General Plan objectives:

Policy 4.2.4.a Encourage development patterns and land uses that promote the use of alternate modes and reduce the rate of growth in region-wide vehicle miles traveled.

Policy 4.2.4.b Integrate planning for Environmentally Friendly Modes, including transit, bicycling and walking, into the City's development review process.

Policy 4.2.4.c Encourage mixed use development that utilizes non-single occupancy vehicle transportation modes.

Policy 4.3.1.b Consider the use of strategies to give priority to high occupancy vehicles at the bridges and tubes.

Policy 4.3.1.c Actively encourage increases in public transit, including frequency and geographic coverage.

Policy 4.3.1.h Encourage the creation of transit-oriented development and mixed-use development.

Policy 4.4.2.e Mitigations for future development should be solely directed at reducing traffic through TDM measures and transit, bicycle and pedestrian capital projects, as well as more efficient use of existing infrastructure via traffic signal re-timing, etc. in order to reduce the negative environmental effects of development, rather than attempting to accommodate them.

City of Alameda Climate Action Plan

In 2008, the City of Alameda adopted a Local Action Plan for Climate Protection, which establishes a citywide goal of reducing greenhouse gas emission by 25 percent below 2005 levels by 2020. As documented in the Climate Action Plan, more than 54 percent of Alameda's greenhouse emissions are produced by local transportation. Reducing vehicle miles traveled by Alameda residents is the single most effective means to reduce Alameda's greenhouse emissions.

4.12.4 Impacts and Mitigation Measures

Significance Criteria

According to Appendix G of the CEQA *Guidelines*, a project would have a significant impact on the environment if it would:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

- Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the congestion management agency for designated roads or highways.

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

- Substantially increase hazards due to a design feature. (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

- Result in inadequate emergency access.

- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

For the purpose of this EIR, the project would have a significant transportation impact if it has one or more of the following effects:

- **Vehicle Miles Travelled (VMT)**. Fails to reduce regional VMT because the project exceeds both the existing city residential VMT per capita minus 15 percent or the existing regional residential VMT per capita minus 15 percent, whichever is higher.

- **Automobile Travel Time and Intersection Level of Service (LOS)**. Cause an intersection Level of Service to degrade to LOS E or F, or would increase traffic volumes by three percent or more at an intersection that is currently operating at LOS E or F, which would result in a significant increase in automobile emissions.

- **Transit Level of Service**. Degrade transit speeds by 10 percent or more along transit corridors serving the project site during the peak congestion periods

- **Pedestrian Level of Service and Safety**. Cause the pedestrian LOS to degrade to worse than LOS B at a signalized intersection. If the intersection were already worse than LOS B, an impact would be considered significant if the delay at a crosswalk increases by 10 percent.

- **Bicycle Level of Service and Safety**. Cause a bicycle segment LOS to degrade to worse than LOS B. If a street segment were already worse than LOS B, an impact would be considered significant if the bicycle segment LOS score increases by 10 percent or more in value.

- **CMP Roadways**. For a roadway segment of the Congestion Management Program (CMP) Network, the project would cause (a) the LOS to degrade from LOS E or better to LOS F or (b) the V/C ratio to increase 0.03 or more for a roadway segment that would operate at LOS F without the project.

Approach to Analysis

Vehicle Miles Traveled

Per the State of California Office of Planning and Research's (OPR) Final Proposed Updates to the CEQA Guidelines on Evaluating Transportation Impacts (November 2017), Section 15064.3 explains that a "lead agency may use models to estimate a project's vehicle miles traveled…" and as has been done for several decades under CEQA, lead agencies are responsible for deciding their choice of methodology to analyze impacts. OPR recommends that a reduction target per capita of 15 percent below that of either regional or citywide VMT, whichever is higher, be used to determine if a residential project would have a transportation impact on the environment, consistent with Assembly Bill 32 (AB 32).

Based on OPR's recommendations, a new land-use project would have a less-than-significant transportation impact if the project were to achieve either a VMT per capita (resident) that is 15 percent less than the regional VMT rate estimated for 2020, or 15 percent less than the city's VMT rate in 2020, whichever is higher. If a project were to result in VMT rates that exceed both 15 percent-reduction thresholds, the project would be inconsistent with statewide and local environmental and transportation policies and would result in a significant transportation impact. This analysis uses the Metropolitan Transportation Commission (MTC) Travel Model to estimate VMT.

Neighborhoods are expressed geographically in transportation analysis zones, or TAZs, which are used in transportation planning models for transportation analysis and other planning purposes. The MTC Travel Model includes 1,454 TAZs in the nine-county Bay Area region, including 17 TAZs within the City of Alameda. The MTC Travel Model is a model that assigns all predicted trips within, across, or to/from the nine-county San Francisco Bay Area region onto the roadway network and the transit system by mode (single-driver and carpool vehicle, biking, walking, or transit) and transit carrier (bus, rail) for a particular scenario.

The travel behavior from MTC Travel Model is modeled based on the following inputs:

- Socioeconomic data developed by the Association of Bay Area Governments (ABAG)
- Population data created using the 2000 US Census and modified using the open source PopSyn software
- Zonal accessibility measurements for destinations of interest
- Travel characteristics and vehicle ownership rates derived from the 2000 Bay Area Travel Survey (BATS)
- Observed vehicle counts and transit boardings

The daily VMT output from the MTC Travel Model for residential uses comes from a tour-based analysis. The tour-based analysis examines the entire chain of trips over the course of a day, not just trips to and from the project site. In this way, all of the VMT for an individual resident is included; not just trips into and out of the person's home. For example, a resident leaves her apartment in the morning, stops for coffee, and then goes to the office. In the afternoon she heads out to lunch, and then returns to the office, with a stop at the drycleaners on the way. After work, she goes to the gym to work out, and then joins some friends at a restaurant for dinner before returning home. All the stops and trips within her day form her "tour". The tour-based approach would add up the total number of miles driven over the course of her tour and assign it as her daily VMT.

Based on the MTC Travel Model, the regional average daily VMT per capita is 15.0 and the City of Alameda citywide average daily VMT per capita is 14.5 under 2020 conditions. Since the regional VMT is higher than the citywide VMT per capita, the applicable threshold for the proposed project is the regional residential VMT per capita minus 15 percent, which corresponds to VMT per capita of 12.8.

Automobile Travel Time and Intersection Level of Service

Travel times and speeds were analyzed during the peak commute periods of 7:00 to 9:00 AM and 4:00 to 6:00 PM along the major corridors connecting Alameda to the regional transportation system. The current average travel speed along major corridors near the project site was estimated using anonymized cell phone data collected on weekdays during March 2017. The travel speed for the Existing Plus Project, Cumulative No Project, and Cumulative plus Project conditions were estimated by adjusting the existing observed speeds based on the results of the Alameda CTC model, and travel speeds estimated by the HCS 2010 software package, which provides a calculation of corridor travel speed based on traffic volume, intersection and segment geometry, and signal timings. Changes in travel speed affect all users of area streets, including automobile drivers and bus passengers; therefore, the analysis informs the understanding of the impact of the project on both automobiles and transit.

Traffic operations at intersections are measured in terms of a grading system called Level of Service (LOS), which is based on vehicle delay that is a function of the signal timing, intersection lane configuration, hourly traffic volumes, pedestrian volumes, and parking and bus conflicts among other factors.

Calculated LOS does not always reflect the total volume of traffic that wishes to travel through the intersection, but instead is based on the volume of traffic that is counted travelling through the intersection during the peak hour. In Alameda and adjoining areas in Oakland, congestion downstream from the Posey Tube and the I-880 interchanges cause backups that constrain the number of vehicles that get through upstream intersections in an hour. As a result, LOS has historically proven to be an inadequate measure in Alameda because residents experience delays at certain intersections, yet the LOS analysis for those intersections indicate that they should be operating effectively. In those instances, the delays that are experienced are a result of downstream congestion and the resultant backups, and are not a result of the intersection design or the volume of cars moving through the intersection.

Transit Level of Service

Transit travel speeds were analyzed during the peak commute periods of 7:00 to 9:00 AM and 4:00 to 6:00 PM. The current average travel speed along transit corridors near the project site was estimated using anonymized cell phone data collected on weekdays during March 2017. The travel speed for the Existing Plus Project, Cumulative No Project, and Cumulative plus Project conditions were estimated by adjusting the existing observed speeds based on the results of the Alameda CTC model, and travel speeds estimated by the HCS 2010 software package, which provides a calculation of corridor travel speed based on traffic volume, intersection and segment geometry, and signal timings.

Pedestrians Level of Service

The pedestrian patterns in the study area were analyzed during the peak commute hours of 7:00 to 9:00 AM and 4:00 to 6:00 PM, where the number of pedestrians crossing each approach at the study intersections was noted. Potential impacts on pedestrian LOS were evaluated based on the HCM 2010 methodology for determining average delay for pedestrians at signalized study intersections (TRB, 2010). Pedestrian delay (in seconds per person) is based on the effective green signal time for pedestrians to cross each intersection approach, and the actuated cycle length of the signal. **Table 4.12-6** shows the pedestrian LOS grade and associated ranges of delay.

TABLE 4.12-6
LEVEL OF SERVICE (LOS) CRITERIA FOR PEDESTRIANS AT SIGNALIZED INTERSECTIONS

LOS	Pedestrian Delay (seconds)
A	< 10
B	≥ 10 and ≤ 20
C	> 20 and ≤ 30
D	> 30 and ≤ 40
E	> 40 and ≤60
F	> 60

SOURCE: Transportation Research Board, 2010 Highway Capacity Manual, 2010

Bicycle Level of Service

Potential impacts on bicycle LOS were evaluated based on the Florida Department of Transportation methodology for assessing bicyclists' perceived level of comfort along study roadway segments (FDOT, 2013). Bicycle LOS scores are based on five variables: 1) average effective width of the outside through lane (and presence of bike lane); 2) motor vehicle volumes; 3) motor vehicle speeds; 4) truck volumes; and, 5) pavement conditions. **Table 4.12-7** shows the numerical bicycle LOS scores (tied to a LOS letter grade).

TABLE 4.12-7
LEVEL OF SERVICE (LOS) CRITERIA FOR BICYCLES ON ROADWAY SEGMENTS

LOS	Bicycle LOS Score
A	< 1.5
B	> 1.5 and ≤ 2.5
C	> 2.5 and ≤ 3.5
D	> 3.5 and ≤ 4.5
E	> 4.5 and ≤5.5
F	> 5.5

SOURCE: Florida Department of Transportation, 2009 Quality/Level of Service Handbook, 2009

Alameda County Transportation Commission CMP LOS Standards for Monitoring

The Alameda CTC CMP establishes LOS E as the standard for facilities under LOS monitoring in the CMP network. Certain segments are identified in the CMP as "grandfathered segments," which were operating at LOS F during the PM peak in 1991 when existing LOSs were established for the CMP network. The following segments within the project study area are included in the CMP network:

- Freeway: I-880
- Arterials in Alameda: SR 260 (Webster and Posey Tubes), Webster Street, Constitution Way, Park Street, Tilden Way, and Encinal Avenue (SR 61)
- Arterials in Oakland: Webster, Harrison, 7th, and 8th Streets, Fruitvale, 23rd, and 29th Avenues.

The only grandfathered segment in the study area is southbound SR 260 (the Webster Tube) from Seventh Street in Oakland to Atlantic Avenue in Alameda.

The CMP also identifies a Deficiency Plan (a plan for prioritizing street or freeway improvements) as currently being implemented for the freeway connection between eastbound (northbound) SR 260 (the Posey Tube) and I-880 northbound, in Oakland. This I-880 Freeway Access Study involves the Alameda CTC, Caltrans, cities of Alameda and Oakland, BART, and AC Transit, and is evaluating multi-modal solutions to movements through and around Oakland's Chinatown, including travel to and from the west end of Alameda.

Local Agency Thresholds

Since the CMP does not define the threshold of significance for locations that already exceed the LOS standard, local agencies can define the applicable significance criteria. This EIR considers the impacts of the proposed project on CMP roadways to be significant if the addition of project-related traffic would degrade the facility from LOS E or better to LOS F, except where the roadway is at LOS F without the project. For those locations that operate at LOS F without the project, the impacts of the project are considered significant if the contribution of project-related traffic would increase the volume-to-capacity (V/C) ratio by 0.03 or more. This criterion is consistent with other recent EIRs completed in Alameda and Oakland; it was developed based on professional judgment

using a "reasonableness test" of daily fluctuations of traffic. Also a change in V/C ratio of 0.03 has been found to be the threshold for which a perceived change in congestion is observed. The V/C ratio is calculated by comparing the peak-hour volume to the hourly capacity of the road link.

Project Trip Generation

The project trip generation was developed by applying appropriate trip generation rates from the Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 9th Edition. **Table 4.12-8** summarizes the estimated net trip generation for the project using the ITE methodology for typical weekdays. ITE presents trip generation data for a variety of residential uses. This analysis uses ITE data for low rise condominium/townhomes (land use category 231) for the townhome component of the project, and ITE data for apartments (land use category 220) for the stacked flats and multi-family wrap unit components of the project, because these categories best fit these residential units and provide the most conservative (i.e., highest) trip generation estimate for the project.

TABLE 4.12-8
PROJECT VEHICLE TRIP GENERATION

Land Use	ITE Code	Size	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Townhomes	231[a]	162 DU	27	82	109	73	53	126
Stacked Flats	220[b]	48 DU	5	19	24	20	11	31
Multi-Family Wrap Units	220[b]	569 DU	58	232	290	229	124	353
Net New Project Trips			**90**	**333**	**423**	**322**	**188**	**509**

NOTES:

[a] The following ITE trip generation rates were used for the Townhomes (ITE Code 231 – Low-Rise Condominium/Townhouse)
AM: T=0.67 * X; Enter=25%, Exit=75%
PM: T=0.78 * X; Enter=58%, Exit=42%
Where X= number of dwelling units (DU), T=number of vehicle trips

[b] The following ITE trip generation rates were used for the Stacked Flats and Multi-Family Wrap Units (ITE Code 220 – Apartments):
AM: T=0.51 * X; Enter=20%, Exit=80%
PM: T=0.62 * X; Enter=65%, Exit=35%
Where X= number of dwelling units (DU), T=number of vehicle trips

SOURCE: Fehr & Peers, 2017; Trip Generation Manual (9th Edition), ITE, 2012

For the purpose of this analysis, and to provide for a worst-case scenario, it is assumed that the existing trips generated by the 250,000 square feet of existing commercial buildings and uses on the site would remain, and any new trips generated by the project would solely be generated by the introduction of the residential uses described in Table 4.12-8. As shown in **Table 4.12-8**, the project is estimated to generate 423 net AM peak hour trips and 509 net PM peak hour trips for a typical weekday.

Trip Distribution

The project trip distribution was developed using the Alameda CTC Travel Demand Model. A select zone analysis for the AM and PM peak hours for the Traffic Analysis Zone (TAZ) where the project is located was used to estimate the project's distribution and the project trips were assigned to the road network based on the distribution patterns. **Figure 4.12-4** shows the trip distribution assumed for the project.

Using the generation assumptions summarized in **Table 4.12-8** and the distribution assumptions shown in **Figure 4.12-4**, trips were assigned to the roadway network and study intersections. **Figure 3** in **Appendix G.A** shows the trip assignment through each study intersection.

Impact Analysis

Impact TRA-1: The proposed project would not exceed the regional VMT per capita minus 15 percent. (*Less than Significant, with Mitigation*)

City of Alameda has a lower per capita VMT than the region (14.5 for the City of Alameda compared to 15.0 for the Bay Area region). Within the Bay Area region, cities like Alameda, Berkeley, Oakland, and San Francisco at the geographic center of the Bay Area region and closest to the regional job centers with more urban, mixed use neighborhoods, generate a lower per capita VMT than the Bay Area cities located at the edges of the region, such as Livermore, Dublin, and similar cities whose residents have longer commutes to their jobs in the inner Bay Area and live in automobile-oriented suburban neighborhoods that require multiple automobile trips for all or most daily activities.

Within Alameda, the neighborhoods on the main island, including TAZ 948, where the proposed project is located, that have easy access and proximity to transit, commercial services, and other daily needs, have a lower average VMT per capita than the City average. The neighborhoods at Harbor Bay and Bay Farm Island, which are more suburban with fewer multifamily housing and less proximity to transit and services, have a higher per capita VMT than the City average. According to the MTC Travel One Model (2016), the average daily regional VMT per capita is projected to be 15.0 in 2020 (see **Table 4.12-9**). The City of Alameda's projected average daily VMT per capita in 2020 will be 14.5. The average daily VMT per capita for TAZ 948 (project location) is estimated to be 13.1 in 2020. Considering that most of the existing residential developments in TAZ 948 are single family units with lower density than the proposed project, it is expected that the proposed project would have a lower VMT per capita than the TAZ average. However, this EIR conservatively assumes that the proposed project would be generally similar to the existing residential developments in TAZ 948; thus, the project is estimated to have the same VMT per capita as TAZ 948.

TABLE 4.12-9
AVERAGE DAILY VMT PER CAPITA–YEAR 2020 PROJECTIONS

Analysis Zone	Metric	Year 2020 Average VMT
Project TAZ 948	Per Capita	13.1
City of Alameda	Per Capita	14.5
	(minus 15%)	12.0
Region	Per Capita	15.0
	(minus 15%)	12.8

SOURCE: MTC Travel One Model (http://analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerCapita), accessed in August 2017.

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SOURCE: Fehr & Peers

Alameda Marina Master Plan EIR

Figure 4.12-4
Trip Distribution

ESA

As shown in Table 4.12-9, the VMT per capita for the project is estimated to be less than the region and citywide average VMT. However, the VMT per capita for the project would exceed both the citywide VMT per capita minus 15 percent and the regional VMT per capita minus 15 percent. Therefore, the project would have a significant impact on VMT. Implementation of **Mitigation Measure TRA-1**, below, would reduce the impact to a less than significant level.

> **Mitigation Measure TRA-1:** To reduce the amount of VMT generated by the project, as well as the number of automobile trips generated by the project and to reduce automobile LOS impacts, the project shall prepare a Transportation Demand Management (TDM) Plan and funding program for Planning Board review and approval. The TDM plan shall include the following measures to reduce VMT and vehicle trips, particularly single-occupant vehicle trips, by project residents, workers, and visitors:
>
> - All residents and employers at Alameda Marina will pay annual fees to support supplemental transit services and trip reduction services for the residents and employees.
>
> - All residents and employees will be provided with AC Transit Easy Passes, which will provide access to all of AC Transit's services including the San Francisco express commuter buses. The cost of the passes will be included in the mandatory assessments on each unit, which dis-incentives future residents who prefer to drive alone and do not want to use transit.
>
> - Residents of the non-townhome units, who wish to have cars, will be required to lease parking spaces on a monthly basis in a shared parking lot or structure. The cost of the parking will be "unbundled" from the cost of the residential unit, which provides a financial incentive for residents to reduce car ownership and take advantage of the AC Transit passes, which are "bundled" into the cost of their residential units. (The 162 townhomes will have private parking.)
>
> - The project residents will be members of the Alameda Transportation Management Agency, which will provide transportation information services to all of the residents through a TMA website and through annual surveys of resident transportation needs.
>
> - The project will provide access to car share and guaranteed ride home services to make it easier for residents and employees to reduce their dependence on a private automobile and increase use of project-provided transit services.
>
> - Resident annual assessments in the Northern Waterfront area currently fund supplemental commute hour service on the AC Transit Line 19, which provides direct service to Fruitvale and 12th Street BART stations. Future assessments received from project residents and employers will allow for additional transit services and future water shuttle services designed to serve the waterfront developments along the Estuary in Alameda and Oakland and connect the project sites to the regional ferry services provided from Jack London Square in Oakland and the Main Street Terminal in Alameda.

The TDM Plan described above is estimated to reduce the VMT and trips generated by the project by between five to seven percent[1]. By reducing the VMT per capita by more than three percent, the VMT impact of the project would be less than significant.

Significance after Mitigation: Less than Significant.

Impact TRA-2: The proposed project would increase traffic volumes such that traffic conditions at the Park Street/Blanding Avenue and Park Street/Clement Avenue intersections would either deteriorate from LOS D to LOS F or the proposed project would increase traffic volumes by three percent or more. (*Significant and Unavoidable*)

The threshold for determining the level of impact for the proposed project is:

- Would the automobile trips generated by the proposed project cause an intersection Level of Service to degrade to LOS E or F, or increase traffic volumes by three percent or more at an intersection that is currently operating at LOS E or F.

The impacts of the proposed project on intersection LOS under Existing and 2040 conditions are described below.

Existing Plus Project Conditions

The intersection traffic volumes under Existing Plus Project Conditions were developed by adding the project trip assignment to the Existing intersection volumes. **Figure 4** in **Appendix G.A** shows the AM and PM peak hour intersection volumes under Existing Plus Project Conditions. No modifications to the roadway network, including changes to signal timing at the signalized study intersections, are assumed for the Existing Plus Project analysis. **Table 4.12-10a and 10b** summarize the study intersections LOS under Existing Plus Project conditions for the AM and PM peak hours, respectively. **Appendix G.C** provides the detailed LOS calculations.

Cumulative (2040) Conditions

The 2040 No Project traffic volume forecasts were developed using the Alameda CTC Model, which was released in June 2015 and uses land use data consistent with Association of Bay Area Government (ABAG) *Projections 2013* land uses for 2040. The land use database was modified to ensure that the planned and proposed developments in Alameda are correctly accounted. **Appendix G.F** summarizes the modifications to the Alameda CTC Model land use database.

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1 *Quantifying Greenhouse Gas Mitigation Measures* (California Air Pollution Control Officers Association (CAPCOA), August 2010) is a resource for local agencies to quantify the benefit, in terms of reduced travel demand, of implementing various TDM strategies. The focus of the CAPCOA document is reductions to VMT but the research used to generate the reductions also indicates that similar vehicle trip reductions can also be expected. According to the CAPCOA document, the following benefits can be expected:
- AC Transit Easy Passes (one per employee and one per residential unit) – 3 to 4%
- Unbundling parking for residents (assume each parking space would cost about $50 per month) – 1 to 2%
- Providing car-share – about 1%
- All other strategies – less than 1%

TABLE 4.12-10a
EXISTING PLUS PROJECT AM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Study Intersection		Traffic Control	Existing		Existing + Project	
			Delay[1]	LOS	Delay[1]	LOS
1	Webster Street/Atlantic Avenue	Signal	35	C	36	D
2	Constitution Way/Atlantic Avenue	Signal	18	B	18	B
3	Challenger Drive/Atlantic Avenue	Signal	15	B	18	B
4	Atlantic Avenue/Buena Vista Avenue	Signal	15	B	15	B
5	Grand Street/Buena Vista Avenue	Signal	16	B	21	C
6	Grand Street/Clement Avenue	SSSC	4 (11)	A (B)	6 (13)	A (B)
7	Park Street/Blanding Avenue[2]	Signal	33	C	43	D
8	Park Street/Clement Avenue	Signal	35	C	54	D
9	Park Street/Tilden Way-Lincoln Avenue	Signal	14	B	14	B
10	Tilden Way-Fruitvale Avenue/Blanding Avenue-Fernside Boulevard	Signal	11	B	11	B
11	High Street-Gibbons Drive/Fernside Boulevard[2]	Signal	35	C	35	C

NOTES:
1 The LOS/Delay for Side-Street Stop-Control (SSSC) intersections represents the worst movement or approach; for signalized intersections, the LOS/Delay represents the overall intersection.
2 Based on HCM 2000, since HCM 2010 does not calculate LOS for this intersection.

Bold indicates locations with unacceptable level of service (LOS E or greater).

SOURCE: Fehr & Peers, 2017.

TABLE 4.12-10b
EXISTING PLUS PROJECT PM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Study Intersection		Traffic Control	Existing		Existing + Project	
			Delay[1]	LOS	Delay[1]	LOS
1	Webster Street/Atlantic Avenue	Signal	40	D	41	D
2	Constitution Way/Atlantic Avenue	Signal	19	B	19	B
3	Challenger Drive/Atlantic Avenue	Signal	20	B	21	C
4	Atlantic Avenue/Buena Vista Avenue	Signal	19	B	23	C
5	Grand Street/Buena Vista Avenue	Signal	15	B	17	B
6	Grand Street/Clement Avenue	SSSC	8 (15)	A (B)	10 (20)	A (C)
7	Park Street/Blanding Avenue[2]	Signal	53	D	**83**	**F**
8	Park Street/Clement Avenue	Signal	29	C	31	C
9	Park Street/Tilden Way-Lincoln Avenue	Signal	15	B	15	B
10	Tilden Way-Fruitvale Avenue/Blanding Avenue-Fernside Boulevard	Signal	13	B	13	B
11	High Street-Gibbons Drive/Fernside Boulevard[2]	Signal	22	C	22	C

NOTES:
1 The LOS/Delay for Side-Street Stop-Control (SSSC) intersections represents the worst movement or approach; for signalized intersections, the LOS/Delay represents the overall intersection.
2 Based on HCM 2000, since HCM 2010 does not calculate LOS for this intersection.

Bold indicates locations with unacceptable LOS (LOS E or greater). **Shaded Bold** indicates significant impacts.

SOURCE: Fehr & Peers, 2017.

The AM and PM peak hour roadway segment volumes forecasted by the Alameda CTC Model for year 2040 were used to develop 2040 turning movement forecasts at the study intersections and the freeway forecasts using the "Furness" process, which adjusts existing volumes to reflect changes in roadway segment volumes forecasted by the Alameda CTC Model.[2] In addition, this analysis assumes that pedestrian and bicycle volumes at the study intersections would increase proportional to the projected growth in land uses in the study area.

Figures 5 and 6 in **Appendix G.A** show the AM and PM peak hour intersection volumes under Cumulative (2040) No Project and Cumulative (2040) Plus Project Conditions, respectively. The Cumulative (2040) No Project Conditions assumes the same intersection configuration as Existing Conditions. The analysis assumes the completion of the Clement Avenue extension between Entrance Road and Atlantic Avenue and through the Shell Oil property. This analysis assumes that signal timing parameters that do not require upgrades to the signal equipment, such as amount of green time assigned to each intersection approach, would be optimized at the signalized study intersections under 2040 conditions, because signal timing changes are included in the ongoing maintenance of the traffic signal system.

Table 4.12-11a and 11b summarize the study intersections LOS under Cumulative (2040) No Project and Cumulative (2040) Plus Project conditions for the AM and PM peak hours, respectively. **Appendix G.C** provides the detailed LOS calculations.

The proposed project would cause a significant impact at the following intersections:

- Park Street/Blanding Avenue (#7) intersection under Existing Plus Project conditions - The proposed project would increase traffic volumes such that the intersection would deteriorate from LOS D to LOS F in the PM peak hour.
- Park Street/Blanding Avenue (#7) intersection under Cumulative (2040) Plus Project conditions - The proposed project would increase traffic volumes by three percent or more at the intersection which would operate at LOS F during the AM peak hour, and increase traffic volumes such that the intersection would deteriorate from LOS D to LOS F during the PM peak hour.
- Park Street/Clement Avenue (#8) intersection under Cumulative (2040) Plus Project conditions - The proposed project would increase traffic volumes by three percent or more at the intersection which would operate at LOS F during both AM and PM peak hours regardless of the project.

[2] Outlined in NCHRP-255, the industry-standard Furness technique estimates projected (future) intersection turning movement volumes based on comparing existing traffic counts and the Model results. It uses mathematical formulae to balance roadway segment volumes approaching and departing from the intersection and thus balances turning volumes that make sense compared to the existing counts and Model results. This process improves the level of confidence in the forecasted future turning movement volumes.

TABLE 4.12-11a
CUMULATIVE (2040) AM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Study Intersection		Control	2040 No Project		2040 + Project	
			Delay[1]	LOS	Delay[1]	LOS
1	Webster Street/Atlantic Avenue	Signal	**82**	**F**	**86**	**F**
2	Constitution Way/Atlantic Avenue	Signal	27	C	29	C
3	Challenger Drive/Atlantic Avenue	Signal	**103**	**F**	**114**	**F**
4	Atlantic Avenue/Buena Vista Avenue	Signal	15	B	15	B
5	Grand Street/Buena Vista Avenue	Signal	23	C	31	C
6	Grand Street/Clement Avenue	Signal	28	C	39	D
7	Park Street/Blanding Avenue[2]	Signal	**>120**	**F**	**>120**	**F**
8	Park Street/Clement Avenue	Signal	**108**	**F**	**>120**	**F**
9	Park Street/Tilden Way-Lincoln Avenue	Signal	18	B	21	C
10	Tilden Way-Fruitvale Avenue/Blanding Avenue-Fernside Boulevard	Signal	21	C	31	C
11	High Street-Gibbons Drive/Fernside Boulevard[2]	Signal	**63**	**E**	**63**	**E**

NOTES:
1 For signalized intersections, the Delay/LOS represents the overall intersection.
2 Based on HCM 2000, since HCM 2010 does not calculate LOS for this intersection.

Bold indicates locations with unacceptable LOS; **Shaded Bold** indicates significant impacts.

SOURCE: Fehr & Peers, 2017.

TABLE 4.12-11b
CUMULATIVE (2040) PM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Study Intersection		Control	2040 No Project		2040 + Project	
			Delay[1]	LOS	Delay[1]	LOS
1	Webster Street/Atlantic Avenue	Signal	**96**	**F**	**107**	**F**
2	Constitution Way/Atlantic Avenue	Signal	31	C	33	C
3	Challenger Drive/Atlantic Avenue	Signal	44	D	48	D
4	Atlantic Avenue/Buena Vista Avenue	Signal	27	C	28	C
5	Grand Street/Buena Vista Avenue	Signal	19	B	22	C
6	Grand Street/Clement Avenue	Signal	15	B	34	C
7	Park Street/Blanding Avenue[2]	Signal	51	D	**83**	**F**
8	Park Street/Clement Avenue	Signal	**>120**	**F**	**>120**	**F**
9	Park Street/Tilden Way-Lincoln Avenue	Signal	**86**	**F**	**85**	**F**
10	Tilden Way-Fruitvale Avenue/Blanding Avenue-Fernside Boulevard	Signal	**>120**	**F**	**>120**	**F**
11	High Street-Gibbons Drive/Fernside Boulevard[2]	Signal	**58**	**E**	**58**	**E**

NOTES:
1 For signalized intersections, the LOS/Delay represents the overall intersection.
2 Based on HCM 2000, since HCM 2010 does not calculate LOS for this intersection.

Bold indicates locations with unacceptable LOS; **Shaded Bold** indicates significant impacts.

SOURCE: Fehr & Peers, 2017.

Based on the above findings, **Mitigation Measure TRA-2**, below, would be implemented to lessen the severity of the identified impacts.

> **Mitigation Measure TRA-2:** Implement Mitigation Measure TRA-1, which would consist of implementing a TDM program at the project site.

It is expected that implementing TDM strategies would reduce the project trip generation and the magnitude of this impact at the impacted intersections. However, the TDM program would not reduce the project contribution at these intersections sufficiently to reduce this impact to a less than significant level.

Intersection operations at the impacted intersections could be improved through widening the streets to provide additional travel lanes, longer signal cycle lengths, and/or signal optimization. However, these improvements would have a significant secondary impact on pedestrians. In addition, further widening of streets to provide additional travel lanes would not be consistent with Policy 4.4.2.b of the General Plan Transportation Element ("Intersections will not be widened beyond the width of the approaching roadway, with the exception of a single exclusive left turn lane when necessary, with the exception of increasing transit exclusive lanes or non-motorized vehicle lanes"). Furthermore, both impacted intersections are on Park Street, which is a Regional Arterial roadway that has modal preferences in the following order: transit, pedestrians, bicycles, and automobiles. Therefore, these additional improvements would be inconsistent in the context of impacts to non-automobile travel modes, and therefore they are not considered feasible.

Significance after Mitigation: Significant and Unavoidable.

Impact TRA-3: In the event that the planned Clement Avenue extension is not completed prior to project opening, the proposed project could increase traffic volumes at intersections on Buena Vista Avenue such that traffic operations could deteriorate to substandard conditions. (*Less than Significant, with Mitigation*)

As was noted the Existing Setting discussion of this section, Clement Avenue is an east/west Regional Arterial along the northern Alameda waterfront between Grand Street in the west and Broadway in the east. The roadway currently terminates at Grand Street and the Shell Oil Facility, but then begins again to the west of the Shell Oil Facility, where it provides an important means of access and circulation to the recently-completed Marina Cove and Marina Shores residential developments west of the Alameda Marina project site. Improvement to Clement Avenue was a required mitigation for both of those projects, and those improvements have been completed between Hibbard Street and Entrance Road.

The future extension of Clement Avenue westwards from Entrance Road to Atlantic Avenue is also a required mitigation for the approved Del Monte Warehouse project, and is also a conditional mitigation requirement for the proposed Encinal Terminals project in the event that the Del Monte project's contribution does not materialize prior to the Encinal Terminals project coming online. As part of the extension, an approximately 250-foot segment of right-of-way through the Shell Oil

Facility would be purchased, and the extension would be pushed eastwards through to Grand Street. Once the 250-foot link through the Shell Oil facility to Grand Avenue and the westward extension through to Atlantic Avenue are completed, Clement Avenue will provide an alternate route for trucks and automobiles currently using Buena Vista Avenue, and will also be part of the Cross-Alameda Trail bicycle trail. The provision of this alternate route would eliminate significant impacts to Buena Vista Avenue that were identified in both the Del Monte Warehouse and Encinal Terminals EIRs, and also in the Northern Waterfront General Plan Amendment EIR.

The Del Monte Warehouse project was approved in 2014, but as of the date of publication of this Draft EIR, construction has not yet begun, nor has the construction commenced on the project's portion of the westernmost improvements to Clement Avenue adjacent to the Del Monte site. In addition, as of the date of publication of this Draft EIR, an EIR has been certified for the Encinal Terminals project, but the project has not been approved. As such, the Encinal Terminals project's conditional contribution to the extension of Clement Avenue has also not occurred. Therefore, the timeline for the completion of the Clement Avenue extension is uncertain, and it is possible that if the Alameda Marina Master Plan project it is approved and constructed, it could come online before the extension is completed. In that event, significant traffic impacts could occur at locations along Buena Vista Avenue, specifically at its intersection with Entrance Road.

Accordingly, the analysis for the Alameda Marina Master Plan project must consider the possibility that the full extension of Clement Avenue may not occur prior to completion of the project. It must also consider the uncertainty associated with sponsor-provided funding for the extension if the Del Monte Warehouse project and/or the Encinal Terminals project are not constructed as planned and/or proposed prior to completion of the Alameda Marina project. For that reason, the following mitigation measure is to be implemented if such a circumstance should arise:

> **Mitigation Measure TRA-3:** If the Del Monte project fails to begin construction of the Clement Avenue extension from Atlantic Avenue to Entrance Road prior to commencement of construction of the Alameda Marina project, require the Alameda Marina project to construct the extension with a later fair share contribution to be provided by the Del Monte project and other developments in the area.

Implementation of the above mitigation measure would provide partial funding for the Clement Avenue extension. However, the ultimate extension of Clement Avenue will require participation by all of the planned projects in the area, particularly the Del Monte project, which would bear the greatest share of the cost for the remaining segment between Entrance Road and Atlantic Avenue. In consideration of the uncertainty surrounding the full participation of all of the area's project sponsors, it must be assumed that full fair-share funding may not occur. Therefore, if the Del Monte project does not participate in fair-share funding and construction of its component of the extension, the impact would remain significant and unavoidable, even with participation by the Alameda Marina project. Conversely, if the Del Monte project does participate, then the impact would be less than significant. However, that cannot be guaranteed, so at the present time the impact must be considered significant and unavoidable.

Significance after Mitigation: Significant and unavoidable.

Impact TRA-4: Implementation of the proposed project would not cause travel speeds to decrease by 10 percent or more along a corridor that currently serves as a transit route or is planned to serve as a transit route. (*Less than Significant*)

The threshold for determining the level of impact for the proposed project is:

- Would the increase in automobile trips cause travel speeds to degrade by 10 percent or more along a corridor that currently serves as a transit route or is planned to serve as a transit route?

Tables 4.12-12 through 4.12-15 summarize the AM and PM peak hour corridor travel times and speeds, respectively, under Existing and Cumulative (2040) conditions, respectively, for the three main corridors providing transit access to/from the regional roadway network for the project site: Webster and Posey Tubes, Park Street, and Fruitvale Avenue. These tables compare the travel time results for the no project conditions with the plus project conditions under both Existing and 2040 scenarios. The Alameda CTC model and HCS 2010 software were used to estimate the change in travel times for each scenario and compared to the existing travel times collected in March 2017 and described earlier. **Appendix G.D** shows the detailed speed results for each corridor.

TABLE 4.12-12
EXISTING PLUS PROJECT TRAVEL TIMES

Corridor	Direction	Distance (feet)	Travel Time (min:sec)			
			AM Peak Hour		PM Peak Hour	
			Existing[1]	Existing Plus Project[2]	Existing[1]	Existing Plus Project[2]
Webster Street (Lincoln Avenue to 7th Street)	Northbound	9,000	6:30	6:30	4:50	4:50
	Southbound	9,000	4:00	4:00	5:00	5:00
Park Street	Northbound[3]	3,700	3:30	3:50	3:00	3:00
	Southbound[4]	2,600	2:00	2:00	2:30	2:30
Fruitvale Avenue (Fernside Boulevard to Elmwood Avenue)	Northbound	2,600	2:10	2:20	2:20	2:20
	Southbound	2,600	1:40	1:40	1:50	1:50

NOTES:
1 Travel speeds are based on travel time data collected from anonymized cell phones on weekdays during March 2017
2 Existing Plus Project travel speeds are based on the increase in travel time estimated from the HCS 2010 software.
3 Northbound Park Street corridor is from Lincoln Avenue to 7th Avenue in Oakland
4 Southbound Park Street corridor is from the Park Street Bridge to Lincoln Avenue

SOURCE: Fehr & Peers, 2017.

TABLE 4.12-13
EXISTING PLUS PROJECT TRAVEL SPEEDS

Corridor	Direction	Distance (feet)	Travel Speed (mph)					
			AM Peak Hour			PM Peak Hour		
			Existing[1]	Existing Plus Project[2]	Change (%)	Existing[1]	Existing Plus Project[2]	Change (%)
Webster Street (Lincoln Avenue to 7th Street)	Northbound	9,000	16	16	0%	21	21	0%
	Southbound	9,000	26	26	0%	21	20	-5%
Park Street	Northbound[3]	3,700	12	11	-7%	14	14	-2%
	Southbound[4]	2,600	15	15	-2%	12	12	-1%
Fruitvale Avenue (Fernside Boulevard to Elmwood Avenue)	Northbound	2,600	13	13	-1%	12	12	0%
	Southbound	2,600	17	17	0%	16	16	-1%

NOTES:
1 Travel speeds are based on travel time data collected from anonymized cell phones on weekdays during March 2017
2 Existing Plus Project travel speeds are based on the increase in travel time estimated from the HCS 2010 software.
3 Northbound Park Street corridor is from Lincoln Avenue to 7th Avenue in Oakland
4 Southbound Park Street corridor is from the Park Street Bridge to Lincoln Avenue

Bold and shaded indicates a significant transit impact

SOURCE: Fehr & Peers, 2017.

TABLE 4.12-14
CUMULATIVE PLUS PROJECT TRAVEL TIMES

Corridor	Direction	Distance (feet)	Travel Time (min:sec)[1]			
			AM Peak Hour		PM Peak Hour	
			Cumulative	Cumulative Plus Project	Cumulative	Cumulative Plus Project
Webster Street (Lincoln Avenue to 7th Street)	Northbound	9,000	7:50	7:50	6:30	6:30
	Southbound	9,000	4:20	4:20	7:00	7:00
Park Street	Northbound[2]	3,700	4:30	4:30	4:00	4:10
	Southbound[3]	2,600	2:00	2:00	2:50	2:50
Fruitvale Avenue (Fernside Boulevard to Elmwood Avenue)	Northbound	2,600	4:00	4:20	2:50	2:50
	Southbound	2,600	1:50	1:50	2:00	2:10

NOTES:
1 Cumulative and Cumulative Plus Project travel speeds are based on the increase in travel time estimated from the HCS 2010 software.
2 Northbound Park Street corridor is from Lincoln Avenue to 7th Avenue in Oakland
3 Southbound Park Street corridor is from the Park Street Bridge to Lincoln Avenue

SOURCE: Fehr & Peers, 2017.

TABLE 4.12-15
CUMULATIVE PLUS PROJECT TRAVEL SPEEDS

Corridor	Direction	Distance (feet)	Travel Speed (mph)[1]					
			AM Peak Hour			PM Peak Hour		
			Cumulative	Cumulative Plus Project	Change (%)	Cumulative	Cumulative Plus Project	Change (%)
Webster Street (Lincoln Avenue to 7th Street)	Northbound	9,000	13	13	0%	16	16	0%
	Southbound	9,000	24	24	0%	14	14	0%
Park Street	Northbound[2]	3,700	9	9	-2%	10	10	-1%
	Southbound[3]	2,600	14	14	-1%	11	11	0%
Fruitvale Avenue (Fernside Boulevard to Elmwood Avenue)	Northbound	2,600	7	7	-9%	11	11	0%
	Southbound	2,600	16	16	0%	14	14	-1%

NOTES:
1 Cumulative and Cumulative Plus Project travel speeds are based on the increase in travel time estimated from the HCS 2010 software.
2 Northbound Park Street corridor is from Lincoln Avenue to 7th Avenue in Oakland
3 Southbound Park Street corridor is from the Park Street Bridge to Lincoln Avenue

Bold and shaded indicates a significant transit impact

SOURCE: Fehr & Peers, 2017.

Although the traffic generated by the proposed project would increase travel times and reduce travel speeds along the three study corridors, it would not reduce the transit travel speeds by more than ten percent. The transit travel time analysis presented in this document does not account for the bus-only lane on northbound Webster Street between Atlantic and Willie Stargell Avenues. It assumes that buses would use the mixed-flow lanes along this segment. In addition, the cumulative travel times and speeds do not account for the completion of the improvements at the I-880/29th Avenue interchange, which is currently under construction.

Based on the City's significance criteria, the proposed project would not cause a significant impact on transit travel speeds in the project area.

Mitigation: None required.

Impact TRA-5. Implementation of the proposed project would not cause pedestrian LOS to degrade to worse than LOS B, or cause the average delay for pedestrians to increase by 10 percent or more where the service level is already LOS C or worse, and would not create a safety hazard for pedestrians. (*Less than Significant)*

The threshold for determining the level of impact for the proposed project is:

- Would the project cause the Pedestrian LOS to degrade to worse than LOS B (or increase the delay by 10 percent or more if the service level is LOS C or worse without the project) at a signalized intersection or create a safety hazard for pedestrians?

Tables 4.12-16 and 4.12-17 summarize the pedestrian LOS for all crosswalks at the study intersections under Existing and Cumulative (2040) conditions, respectively. These tables compare the pedestrian LOS results for the no project conditions with the plus project conditions under both Existing and 2040 scenarios. The detailed LOS calculations for each study intersection are presented in **Appendix G.G**. The proposed project would not cause a significant impact on pedestrian LOS under Existing or Cumulative (2040) conditions.

Although the proposed project would increase vehicle and pedestrian traffic in the project vicinity, it would not modify the configuration [or signal control of any study intersections,] nor would it include the removal of any pedestrian crossings or introduce any new safety hazards for pedestrians.

Mitigation: None required.

Impact TRA-6. Implementation of the proposed project would not cause the bicycle segment LOS to degrade to worse than LOS B, increase LOS score by 10 percent or more if the bicycle segment LOS is already LOS C or worse, or create a safety hazard for bicyclists. (*Less than Significant*)

The threshold for determining the level of impact for the proposed project is:

- Would the increase in automobile trips cause the Bicycle segment LOS to degrade to worse than LOS B (or increase the bicycle segment LOS score by 10 percent or more if the service level is LOS C or worse without the project) or create a safety hazard for bicyclists?

Tables 4.12-18 and 4.12-19 summarize the bicycle segment LOS under Existing and Cumulative (2040) conditions, respectively. These tables compare the bicycle analysis results for the no project conditions with the plus project conditions under both Existing and 2040 scenarios. The detailed LOS calculation sheets for each study intersection are presented in **Appendix G.H**.

Most study segments are forecasted to operate at LOS A or LOS B during both AM and PM peak hours under Existing Plus Project and Cumulative (2040) Plus Project conditions. Under Existing and Existing Plus Project conditions, the Grand Street segment would operate at LOS C during the AM and PM peak hours in the northbound direction.

The Atlantic Avenue and Grand Street segments are forecasted to operate at LOS C during the AM and PM peak hours under the Cumulative (2040) conditions, regardless of the proposed project. The addition of project trips to the peak-hour volumes along these segments would not cause the bicycle LOS score to increase by more than the 10 percent threshold.

TABLE 4.12-16
EXISTING CONDITIONS PEDESTRIAN LEVELS OF SERVICE (LOS) BY CROSSWALK[1]

Study Intersection		Peak Hour	Scenario	South		North		East		West	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Webster Street/ Atlantic Avenue	AM	Existing	47.9	E	47.9	E	47.9	E	47.9	E
			Existing Plus Project	47.9	E	47.9	E	47.9	E	47.9	E
		PM	Existing	47.9	E	47.9	E	47.9	E	47.9	E
			Existing Plus Project	47.9	E	47.9	E	47.9	E	47.9	E
2	Constitution Way/ Atlantic Avenue	AM	Existing	35.0	D	35.0	D	35.0	D	35.0	D
			Existing Plus Project	35.0	D	35.0	D	35.0	D	35.0	D
		PM	Existing	35.0	D	35.0	D	35.0	D	35.0	D
			Existing Plus Project	35.0	D	35.0	D	35.0	D	35.0	D
3	Atlantic Avenue/ Challenger Drive	AM	Existing	N/A	N/A	28.8	C	28.8	C	28.8	C
			Existing Plus Project	N/A	N/A	28.8	C	28.8	C	28.8	C
		PM	Existing	N/A	N/A	28.8	C	28.8	C	28.8	C
			Existing Plus Project	N/A	N/A	28.8	C	28.8	C	28.8	C
4	Buena Vista Avenue/ Atlantic Avenue	AM	Existing	29.2	C	29.2	C	29.2	C	29.2	C
			Existing Plus Project	29.2	C	29.2	C	29.2	C	29.2	C
		PM	Existing	29.2	C	29.2	C	29.2	C	29.2	C
			Existing Plus Project	29.2	C	29.2	C	29.2	C	29.2	C
5	Grand Street/Buena Vista Avenue	AM	Existing	20.8	C	20.8	C	20.8	C	20.8	C
			Existing Plus Project	20.8	C	20.8	C	20.8	C	20.8	C
		PM	Existing	20.8	C	20.8	C	20.8	C	20.8	C
			Existing Plus Project	20.8	C	20.8	C	20.8	C	20.8	C
6	Grand Street/ Clement Avenue	AM	Existing	0.0	A	0.0	A	N/A	N/A	N/A	N/A
			Existing Plus Project	0.0	A	0.0	A	N/A	N/A	N/A	N/A
		PM	Existing	0.0	A	0.0	A	N/A	N/A	N/A	N/A
			Existing Plus Project	0.0	A	0.0	A	N/A	N/A	N/A	N/A
7	Park Street/Blanding Avenue	AM	Existing	20.8	C	N/A	N/A	20.8	C	20.8	C
			Existing Plus Project	20.8	C	N/A	N/A	20.8	C	20.8	C
		PM	Existing	20.8	C	N/A	N/A	20.8	C	20.8	C
			Existing Plus Project	20.8	C	N/A	N/A	20.8	C	20.8	C
8	Park Street/ Clement Avenue	AM	Existing	22.5	C	22.5	C	22.5	C	22.5	C
			Existing Plus Project	22.5	C	22.5	C	22.5	C	22.5	C
		PM	Existing	22.5	C	22.5	C	22.5	C	22.5	C
			Existing Plus Project	22.5	C	22.5	C	22.5	C	22.5	C
9	Park Street/Tilden Way-Lincoln Avenue	AM	Existing	18.8	B	18.8	B	18.8	B	18.8	B
			Existing Plus Project	18.8	B	18.8	B	18.8	B	18.8	B
		PM	Existing	18.8	B	18.8	B	18.8	B	18.8	B
			Existing Plus Project	18.8	B	18.8	B	18.8	B	18.8	B
10	Tilden Way-Fruitvale Avenue/ Blanding Avenue-Fernside Boulevard	AM	Existing	N/A	N/A	36.4	D	36.4	D	36.4	D
			Existing Plus Project	N/A	N/A	36.4	D	36.4	D	36.4	D
		PM	Existing	N/A	N/A	36.4	D	36.4	D	36.4	D
			Existing Plus Project	N/A	N/A	36.4	D	36.4	D	36.4	D
11	High Street-Gibbons Drive/ Fernside Boulevard	AM	Existing	37.6	D	37.6	D	37.6	D	37.6	D
			Existing Plus Project	37.6	D	37.6	D	37.6	D	37.6	D
		PM	Existing	37.6	D	37.6	D	37.6	D	37.6	D
			Existing Plus Project	37.6	D	37.6	D	37.6	D	37.6	D

[1] LOS/Delay for pedestrians as estimated by HCM 2010.

SOURCE: Fehr & Peers, 2017.

TABLE 4.12-17
CUMULATIVE CONDITIONS PEDESTRIAN LEVELS OF SERVICE (LOS) BY CROSSWALK[1]

Study Intersection		Peak Hour	Scenario	South		North		East		West	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Webster Street/ Atlantic Avenue	AM	Cumulative	47.9	E	47.9	E	47.9	E	47.9	E
			Cumulative Plus Project	47.9	E	47.9	E	47.9	E	47.9	E
		PM	Cumulative	47.9	E	47.9	E	47.9	E	47.9	E
			Cumulative Plus Project	47.9	E	47.9	E	47.9	E	47.9	E
2	Constitution Way/ Atlantic Avenue	AM	Cumulative	35.0	D	35.0	D	35.0	D	35.0	D
			Cumulative Plus Project	35.0	D	35.0	D	35.0	D	35.0	D
		PM	Cumulative	35.0	D	35.0	D	35.0	D	35.0	D
			Cumulative Plus Project	35.0	D	35.0	D	35.0	D	35.0	D
3	Atlantic Avenue/ Challenger Drive	AM	Cumulative	N/A	N/A	28.8	C	28.8	C	28.8	C
			Cumulative Plus Project	N/A	N/A	28.8	C	28.8	C	28.8	C
		PM	Cumulative	N/A	N/A	28.8	C	28.8	C	28.8	C
			Cumulative Plus Project	N/A	N/A	28.8	C	28.8	C	28.8	C
4	Buena Vista Avenue/Atlantic Avenue	AM	Cumulative	29.2	C	29.2	C	29.2	C	29.2	C
			Cumulative Plus Project	29.2	C	29.2	C	29.2	C	29.2	C
		PM	Cumulative	29.2	C	29.2	C	29.2	C	29.2	C
			Cumulative Plus Project	29.2	C	29.2	C	29.2	C	29.2	C
5	Grand Street/ Buena Vista Avenue	AM	Cumulative	20.8	C	20.8	C	20.8	C	20.8	C
			Cumulative Plus Project	20.8	C	20.8	C	20.8	C	20.8	C
		PM	Cumulative	20.8	C	20.8	C	20.8	C	20.8	C
			Cumulative Plus Project	20.8	C	20.8	C	20.8	C	20.8	C
6	Grand Street/Clement Avenue	AM	Cumulative	34.7	D	34.7	D	34.7	D	34.7	D
			Cumulative Plus Project	34.7	D	34.7	D	34.7	D	34.7	D
		PM	Cumulative	34.7	D	34.7	D	34.7	D	34.7	D
			Cumulative Plus Project	34.7	D	34.7	D	34.7	D	34.7	D
7	Park Street/ Blanding Avenue	AM	Cumulative	20.8	C	N/A	N/A	20.8	C	20.8	C
			Cumulative Plus Project	20.8	C	N/A	N/A	20.8	C	20.8	C
		PM	Cumulative	20.8	C	N/A	N/A	20.8	C	20.8	C
			Cumulative Plus Project	20.8	C	N/A	N/A	20.8	C	20.8	C
8	Park Street/Clement Avenue	AM	Cumulative	22.5	C	22.5	C	20.0	C	20.0	C
			Cumulative Plus Project	22.5	C	22.5	C	20.0	C	20.0	C
		PM	Cumulative	22.5	C	22.5	C	20.0	C	20.0	C
			Cumulative Plus Project	22.5	C	22.5	C	20.0	C	20.0	C
9	Park Street/Tilden Way-Lincoln Avenue	AM	Cumulative	18.8	B	18.8	B	18.8	B	18.8	B
			Cumulative Plus Project	18.8	B	18.8	B	18.8	B	18.8	B
		PM	Cumulative	18.8	B	18.8	B	18.8	B	18.8	B
			Cumulative Plus Project	18.8	B	18.8	B	18.8	B	18.8	B
10	Tilden Way-Fruitvale Avenue/ Blanding Avenue-Fernside Boulevard	AM	Cumulative	N/A	N/A	36.4	D	36.4	D	36.4	D
			Cumulative Plus Project	N/A	N/A	36.4	D	36.4	D	36.4	D
		PM	Cumulative	N/A	N/A	36.4	D	36.4	D	36.4	D
			Cumulative Plus Project	N/A	N/A	36.4	D	36.4	D	36.4	D
11	High Street-Gibbons Drive/ Fernside Boulevard	AM	Cumulative	37.6	D	37.6	D	37.6	D	37.6	D
			Cumulative Plus Project	37.6	D	37.6	D	37.6	D	37.6	D
		PM	Cumulative	37.6	D	37.6	D	37.6	D	37.6	D
			Cumulative Plus Project	37.6	D	37.6	D	37.6	D	37.6	D

[1] LOS/Delay for pedestrians as estimated using the HCM 2000 methodology (Chapter 18, formula 18-5 and exhibits 18-9 and 18-13).

SOURCE: Fehr & Peers, 2017.

TABLE 4.12-18
EXISTING PLUS PROJECT BICYCLE LEVELS OF SERVICE (LOS)

Segment	Peak Hour	Scenario	Northbound/Westbound			Southbound/Eastbound		
			Bike Score	LOS	% Change in Bike Score	Bike Score	LOS	% Change in Bike Score
Atlantic Avenue (5th Avenue-Buena Vista Avenue)	AM	Existing	2.6	B	0%	2.4	B	-3%
		Plus Project	2.6	B		2.3	B	
	PM	Existing	2.5	B	0%	2.7	B	-2%
		Plus Project	2.5	B		2.6	B	
Grand Street (Buena Vista Avenue - Clement Avenue)	AM	Existing	2.9	C	0%	1.4	A	29%
		Plus Project	2.9	C		1.8	A	
	PM	Existing	3.0	C	3%	2.3	B	5%
		Plus Project	3.1	C		2.4	B	
Fernside Boulevard (Park Street – High Street)	AM	Existing	0.6	A	50%	0.5	A	0%
		Plus Project	0.9	A		0.5	A	
	PM	Existing	0.5	A	66%	0.9	A	12%
		Plus Project	0.8	A		1.0	A	

SOURCE: Fehr & Peers, 2017.

TABLE 4.12-19
EXISTING PLUS PROJECT BICYCLE LEVELS OF SERVICE (LOS)

Segment	Peak Hour	Scenario	Northbound/Westbound			Southbound/Eastbound		
			Bike Score	LOS	% Change in Bike Score	Bike Score	LOS	% Change in Bike Score
Atlantic Avenue (5th Avenue-Buena Vista Avenue)	AM	Existing	2.9	C	3%	2.6	B	0%
		Plus Project	3.0	C		2.6	B	
	PM	Existing	2.6	B	0%	2.8	C	0%
		Plus Project	2.6	B		2.8	C	
Grand Street (Buena Vista Avenue - Clement Avenue)	AM	Existing	2.9	C	0%	2.2	B	14%
		Plus Project	2.9	C		2.5	B	
	PM	Existing	2.9	C	3%	3.3	C	3%
		Plus Project	3.0	C		3.4	C	
Fernside Boulevard (Park Street – High Street)	AM	Existing	0.7	A	0%	0.5	A	0%
		Plus Project	0.7	A		0.5	A	
	PM	Existing	0.5	A	0%	1.0	A	8%
		Plus Project	0.5	A		1.1	A	

SOURCE: Fehr & Peers, 2017.

Although the proposed project would increase vehicle and bicycle traffic in the project vicinity, it is not expected to significantly affect or modify any existing or future bicycle facilities. Based on the City's significance criteria, the proposed project would not cause a significant impact on bicycle travel in the area.

Mitigation: None required.

Impact TRA-7: The proposed project would not cause congestion of regional significance on a roadway segment on the Congestion Management Program (CMP) and/or the Metropolitan Transportation System (MTS) evaluated per the requirements of the Land Use Analysis Program of the CMP. (*Less than Significant*)

The threshold for determining the level of impact for the proposed project is:

- For a roadway segment of the Congestion Management Program (CMP) Network, would the project cause (a) the LOS to degrade from LOS E or better to LOS F or (b) the V/C ratio to increase 0.03 or more for a roadway segment that would operate at LOS F without the project?

The Alameda County CMP requires the assessment of development-driven impacts to regional roadways. Since the project would generate more than 100 "net new" PM peak-hour trips, Alameda CTC requires the use of the Countywide Travel Demand Model to assess the impacts on the regional roadways near the project site. The CMP and MTS roadways in the project vicinity identified in the NOP comments by Alameda CTC (April 20, 2017 letter) include the following:

- Freeway: I-880
- Arterials in Alameda: SR 260 (Webster and Posey Tubes), Webster Street, Constitution Way, Park Street, Tilden Way, and Encinal Avenue (SR 61)
- Arterials in Oakland: Webster, Harrison, 7th, and 8th Streets, Fruitvale, 23rd, and 29th Avenues.

The Alameda CTC Model used in this study is a regional travel demand model that uses socio-economic data and roadway and transit network assumptions to forecast traffic volumes and transit ridership using a four-step modeling process that includes trip generation, trip distribution, mode split, and trip assignment. This process accounts for changes in travel patterns due to future growth and balances trip productions and attractions. This version of the Alameda CTC Model is based on ABAG *Projections 2013* land uses for 2020 and 2040.

For the purposes of this CMP and MTS Analysis, the project is assumed to not be included in the Alameda CTC Model to present a more conservative analysis. The traffic forecasts for the 2020 and 2040 scenarios were extracted for the CMP and MTS highway roadway segments from that model and used as the "No Project" forecasts. Vehicle trips generated by the project were added to the "No Project" forecasts to estimate the "Plus Project" forecasts.

The CMP and MTS segments were assessed using a V/C ratio methodology. For freeway segments, a per-lane capacity of 2,000 vehicles per hour (vph) was used. For surface streets, a per-lane capacity of 800 vph was used. Roadway segments with a V/C ratio greater than 1.00 signify LOS F.

The "Plus Project" results were compared to the baseline results for the 2020 and 2040 horizon years. **Appendix G.I** provides the 2020 and 2040 peak hour volumes, V/C ratios, and the corresponding LOS for both the without and with project conditions.

The project would contribute to 2020 and 2040 increases in traffic congestion on CMP MTS roadways. However, the project would not cause a roadway segment on the CMP MTS to degrade from LOS E or better to LOS F. The project also would not increase the V/C ratio by more than three percent for roadway segments that would operate at LOS F without the project. Therefore, the project would not have a significant impact on CMP roadways.

Based on the application of the CMP thresholds to the MTS roadway segments, the project would not cause congestion of regional significance on the MTS roadway segments.

Mitigation: None required.

Impact TRA-8: The proposed project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). (*Less than Significant*)

The proposed project would remove the existing driveway on Clement Avenue opposite Chestnut Street but would retain the remaining existing site driveways and provide a new driveway on Clement Avenue opposite Lafayette Street for a total of five driveways. The three western driveways would connect to the commercial core surface parking lots, marina, and the parking garages for the multi-family buildings. The two eastern driveways would access the multi-family townhomes and smaller apartment buildings. In total, the proposed project would provide 1,530 parking spaces (300 commercial, 1,230 residential) and 60 dry boat storage spaces.

Based on a review of the project site plan dated May 31, 2017, all project driveways on Clement Avenue would provide adequate sight distance between vehicles entering and exiting the driveways and pedestrians on the adjacent sidewalk and vehicles along Clement Avenue. All internal project drive aisles and driveways would also provide adequate sight distance between vehicles and pedestrians.

The internal project driveways, drive aisles, and parking aisles would accommodate access and circulation for automobiles and trucks.

The five project driveways would connect to sidewalks along Clement Avenue. Therefore, it is recommended that all project driveways provide a marked crosswalk to indicate the pedestrian right of way along Clement Avenue. Internal to the site, the existing Schiller Street driveway

would continue to provide access to most of the commercial core. There is a mid-block intersection along the driveway that would provide access to a surface lot within the site. Since this area of the site would likely have pedestrians traveling to and from the commercial core buildings, it is recommended that a pedestrian crossing (e.g. marked crosswalk with curb ramps) be provided across the Schiller Street driveway mid-block between Clement Avenue and the northwest parking lot (between Building A and Buildings 15, 17, 18, and 19) to safely facilitate these movements.

The proposed project would not modify the existing transportation network in the surrounding areas. In addition, the commercial and residential uses proposed by the project are compatible with the existing commercial and residential uses in the surrounding areas. Thus, the proposed project would not increase hazards due to a design feature or incompatible uses.

Mitigation: None required.

Impact TRA-9: The proposed project would not result in inadequate emergency access. (*Less than Significant)*

Emergency vehicles would access the project site using one of the project driveways on Clement Avenue or the emergency vehicle only access point in the center of the project site on Clement Avenue between Chestnut and Stanford Streets. Thus, if one access point is blocked, another one could be used to access the project site. Clement Avenue adjacent to the project site would continue to accommodate access by fire apparatus and other emergency response vehicles. Therefore, the project would not cause a significant impact on emergency access.

Mitigation: None required.

Impact TRA-10: Development facilitated by the proposed project could potentially be inconsistent with adopted polices, plans, and programs supporting alternative transportation. (Less than *Significant*)

The Clement Avenue Complete Street project, which is separate from the proposed Alameda Marina project, would provide bike lanes, curb extensions, rectangular rapid flashing beacons, bus shelters, sidewalk/curb ramp improvements, and street trees on Clement Avenue adjacent to the project site. The proposed bike lanes would extend between Grand Street and Broadway, which is consistent with the City's Bicycle Master Plan. This project received funding in April 2017 from the Alameda CTC and is expected to be completed by 2020. The proposed Alameda Marina project would be consistent with the Clement Avenue Complete Street project and would not prevent the implementation of the proposed improvements along Clement Avenue.

The City of Alameda's multi-modal approach to transportation analysis, presented throughout this analysis of transportation impacts, ensures that the City's priorities with respect to modes other

than cars, including pedestrians, bicycles, and transit, are adequately supported. The proposed project would be consistent with the General Plan Transportation Element, including Policy 4.2.4.a, which states, "Encourage development patterns and land uses that promote the use of alternate modes and reduce the rate of growth in region-wide vehicle miles traveled"; Policy 4.2.4.b, which states "Integrate planning for Environmentally Friendly Modes, including transit, bicycling and walking, into the City's development review process"; and Policy 4.2.4.c, which states, "Encourage mixed use development that utilizes non-single occupancy vehicle transportation modes." The proposed project would be a mixed-use development since it would locate residential uses in close proximity to existing commercial and marina uses.

Furthermore, Mitigation Measure TRA-1, described previously, requires the project to develop and implement a comprehensive Transportation Demand Management Program, which would further encourage the use of non-automobile travel modes.

The proposed project would not modify existing pedestrian or bicycle facilities in the surrounding areas and would not adversely affect installation of most future facilities. However, the proposed project does not include implementation of the Class I path along the Alameda Estuary waterfront and connections to the existing segments of the path, consistent with the City's Bicycle Master Plan.

> **Mitigation Measure TRA-4:** The project shall, consistent with the City of Alameda Bicycle Master Plan, provide a Class I bicycle path along the northern waterfront of the project site and ensure that the path would connect to adjacent future bicycle facilities.

Significance after Mitigation: Less than Significant

Impact TRA-11: The proposed project would generate temporary increases in traffic volumes on area roadways during construction. (*Less than Significant*)

Project construction activities would generate off-site traffic that would include the initial delivery of construction vehicles and equipment to the project site, the daily arrival and departure of construction workers, and the delivery of materials throughout the construction period and removal of construction debris. Deliveries would include shipments of concrete, lumber, and other building materials for on-site structures, utilities (e.g., plumbing equipment and electrical supplies), and paving and landscaping materials.

Construction-generated traffic would be temporary and therefore would not result in any long-term degradation in operating conditions on roadways in the project site vicinity. The impact of construction-related traffic would be a temporary and intermittent reduction of the capacities of streets in the project site vicinity because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles. Most construction traffic would be dispersed throughout the day. In addition, prior to issuance of grading and building permits, the project applicant is required to submit a Traffic Control Plan.

The weekday work is expected to start around 7:00 AM and end around 4:00 PM. The construction worker arrival peak would occur between 6:30 AM and 7:00 AM, and the departure peak would occur between 4:00 PM and 4:30 PM. Those peak hours are slightly before the citywide commute peak hours, and the number of trips generated during construction would not only be temporary, but would also be less than the proposed project at buildout.

The requirements within the Traffic Control Plan would include, but not limited to, the following: truck drivers would be notified of and required to use the most direct route between the site and the freeway, as determined by the City Engineering Department; all site ingress and egress would occur only at the main driveways to the project site and construction activities may require installation of temporary (or ultimate) traffic controls as determined by the City Engineer; specifically designated travel routes for large vehicles would be monitored and controlled by flaggers for large construction vehicle ingress and egress; parking for construction workers would be provided on the project site; and warning signs indicating frequent truck entry and exit would be posted on adjacent roads.

Because of the temporary nature of construction-period impacts, and the City-required Traffic Control Plan, project construction impacts are considered less than significant.

Mitigation: None required.

4.12.5 References

Alameda, City of. 2010. *1999 Bicycle Master Plan*, updated November 2010. http://alamedaca.gov/sites/default/files/document-files/bikemasterplanupdateweb.pdf (accessed December 15, 2016).

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Transportation Research Board. 2010. *Highway Capacity Manual 2010*.

4.13 Utilities and Service Systems

4.13.1Introduction

This section discusses existing utilities and service systems that serve the project site, which include water service (potable and fire protection), wastewater collection and treatment, stormwater and drainage, solid waste collection and disposal, and the potential impacts of the project to those utilities. Project impacts related to surface water and stormwater runoff quality are further discussed in Section 4.7, *Hydrology and Water Quality*.

4.13.2 Environmental Setting

Potable Water Supply

Water service in Alameda is provided by the East Bay Municipal Utility District (EBMUD). EBMUD's service area extends into Contra Costa and Alameda counties, from Crockett in the north to San Lorenzo in the south, and from San Francisco Bay east to Walnut Creek. According to the EBMUD 2015 Urban Water Management Plan, in 2015 EBMUD supplied water to approximately 1.4 million people in a service area that includes 20 cities and communities in Contra Costa and Alameda counties (EBMUD, 2016). About 90 percent of the EBMUD water supply originates from the Mokelumne River on the west slope of the Sierra Nevada and is stored at the Pardee Reservoir about 40 miles northeast of Stockton.

The Mokelumne River watershed is the major water source for EBMUD, with the source of water originating in the Sierra Nevada Mountains of eastern California. The watershed of this river collects snowmelt from the western slope of the Sierra Nevada in Alpine, Amador, and Calaveras counties. Water from the river is collected at the Pardee Dam and Reservoir, located 38 miles northeast of Stockton near the town of Jackson. A portion of the water stored in the Pardee Reservoir is conveyed to the EBMUD service area via the Mokelumne Aqueducts. The remainder of the water is released into the nearby Camanche Reservoir. EBMUD has water rights and contracts for up to 325 million gallons per day (mgd) from the Mokelumne River, but the precise amount of this entitlement available in any given year is dependent on a range of variables (EBMUD, 2016).

There are six water treatment plants in the EBMUD water supply and distribution system. Combined, the six plants have a treatment capacity of more than 375 mgd. The City of Alameda is served by the Sobrante and Orinda Water Treatment Plants, which have a combined maximum capacity to treat 240 mgd, and as of September 2017 were operating at 55 percent of capacity (EMBUD, 2017a; 2015b). EBMUD's system storage generally allows it to continue serving its customers during dry-year events.

Raw water is treated at EBMUD's Orinda filter plant and conveyed to Alameda by four existing underwater pipeline crossings at three separate locations between the City of Oakland, Alameda Island, and North Bay Farm Island. EBMUD owns and operates a 24-inch water transmission line that crosses the Oakland/Alameda Estuary near the Webster/Posey Tubes.

This facility supplies water to the majority of the west end of Alameda. In addition to water supplied by this line, there are two lines near the Park Street bridge, a 24-inch steel pipe at Blanding Street at Oak Street, and a 16-inch cast iron pipe at Park Street, which would provide water to the eastern end of Alameda (City of Alameda, 2013, and EBMUD, 2014).

After the most recent crossing failure (Derby Street crossing in 2009), hydraulic model investigations by EBMUD determined that the failure of one of the remaining crossings would lead to a reduction in available fire flow rates on Alameda Island. As a result, in 2014 EBMUD released the Alameda Crossing Master Plan that would develop three new pipeline crossings to replace the existing pipeline crossings to ensure long-term reliability of the water distribution system, meet existing and future water needs, and facilitate repair and replacement of aging infrastructure. The Master Plan addresses issues of long-term service to the island, vulnerabilities of the existing crossings, impacts due to major seismic events, recommendations for new crossings and their construction methods, and steps in the event of failure of any of the remaining crossings or combination of crossings. The EBMUD Board of Directors certified the EIR of the Alameda-North Bay Farm Island Pipeline Crossings Project on December 13, 2016. Construction of Crossing 1 is scheduled to begin as soon as 2018 (EBMUD, 2014, and 2017c).

An 8-inch pipeline owned by EBMUD lies in Clement Avenue, to the south of the project site. There are also existing private water pipelines that extend from the EBMUD distribution system to the existing structures within the project site.

Municipal Water Supply Plans

EBMUD's *2015 Urban Water Management Plan* (UWMP) was adopted by the EBMUD Board of Directors on July, 2016, to assess current and projected water usage, water supply planning, water conservation, and recycling programs over a 20-year planning horizon. The UWMP sets minimum performance goals for water supply in the service area including reliability, flexibility, and the minimization of water rationing. Key components of the UWMP are water conservation and recycling. EBMUD implements numerous water conservation and recycling programs to reduce demand and develops projects to manage future water supply needs (EBMUD, 2016).

According to the UWMP, the projected water demand in 2015 for the district was 190 mgd and is anticipated to increase to 230 mgd in 2040. Further, EBMUD's water supply is adequate to meet existing and projected area-wide demand through 2040 under normal conditions and up to two years of drought. EBMUD's water demand projections account for anticipated future water demands within EBMUD's service boundaries and for variations in demand-attributed changes in development patterns (EBMUD, 2016).

On April 24, 2012, EBMUD adopted the *Water Supply Management Program 2040 Plan* (WSMP). The WSMP is a program-level effort that estimates EBMUD's dry-year water supply needs through 2040 and anticipates 50 mgd of future supply to be provided by water conservation and recycling. The demand for water in EBMUD's service area is projected to increase to 247 mgd by 2040 under a 15 percent maximum customer rationing scenario. EBMUD has developed mitigation and adaptation strategies to deal with the changing climate and its effects on water resources (EBMUD, 2012).

Wastewater

Existing Collection System

Wastewater generated from the project site is currently collected by an existing network of private pipelines and pumps within the project site. The existing private system conveys the project site wastewater and connects to the EBMUD Interceptor 48-inch diameter trunk main located in Clement Avenue at multiple locations along the project frontage.

In November 2015 the City of Alameda completed their Sewer Master Plan. This master plan considered the future development of the project site with approximately 400 new residential units, and did not identify any capacity issues. Overall the Master plan identified a 20-year Capital Improvement Plan for the construction and replacement of approximately 55 miles of pipes (City of Alameda, 2015).

Wastewater Treatment

EBMUD receives wastewater from seven East Bay wastewater collection agencies (referred to as the "Satellites") with a total population of approximately 658,000 people located within an 88-square mile service area. Each Satellite, including the City of Alameda, owns and operates its own wastewater collection system, which delivers wastewater to EBMUD's interceptor system. Wastewater from the City is then transferred to EBMUD's Main Wastewater Treatment Plant (MWWTP), located at the foot of the San Francisco-Oakland Bay Bridge in the City of Oakland.

The MWWTP provides secondary treatment for a maximum flow of 168 million gallons per day (MGD), while primary treatment is provided for up to 320 MGD. On average, about 63 million gallons of wastewater is treated every day (EBMUD, 2017d). The wastewater treatment plant is permitted by the San Francisco Regional Water Quality Control Board (RWQCB) and effluent from the plant is regularly monitored to ensure that water quality standards are not violated. There have been no violation of water quality standards by the treatment plant in recent years (January 1, 2010 through September 10, 2017), and there are no RWQCB enforcement actions pending against EBMUD (SWRCB, 2017).

EBMUD operates three wet weather facilities that handle excess sewage during storm events when flows exceed the capacity of EBMUD's MWWTP. The excess flows are largely caused by stormwater and groundwater leaking into the region's aging sanitary sewer collection pipelines and through improper connections that allow stormwater to flow into the sewer system (infiltration and inflow, or "I&I"). These storage basins provide plant capacity for a short-term hydraulic peak of up to 415 MGD during wet weather events. When the wet weather flow capacity is exceeded, untreated sewage from the wet weather facilities gets discharged to the San Francisco Bay.

In January 2009, EBMUD entered into a Stipulated Order for Preliminary Relief (Stipulated Order) from the U.S. Environmental Protection Agency (EPA), State Water Resources Control Board (SWRCB) and the RWQCB. This Stipulated Order contains the measures that EBMUD is required to implement in order to address discharges of inadequately treated sewage to San Francisco Bay during wet weather conditions. The intent of the Stipulated Order is to formulate

long-term solutions to minimize the high level of infiltration to the East Bay collection systems and eliminate the discharge of the excess flows from EBMUD's wet weather facilities by 2036.

In March 2011, the Satellites (including the City of Alameda) entered into a Stipulated Order with the EPA, SWRCB and the RWQCB. This Stipulated Order obligates Satellites to improve management of their wastewater collection systems, to address sanitary sewer overflows, and to reduce inflow and infiltration (I&I) in their collection systems. The Stipulated Order required that the City of Alameda cooperate with EBMUD in the development of a regional flow monitoring/data assessment program, implement an inflow identification and reduction plan to identify and reduce sources of direct water inflow, develop a pump station renovation plan, develop a sewer cleaning and root control plan, and report annually on progress to EPA (EBMUD, 2011).

Stormwater

Alameda is one of several cities in the Bay Area that is responsible for controlling stormwater pollution by complying with the Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) permit issued by the California Regional Water Quality Control Board. The City implements the Municipal Regional Stormwater NPDES permit requirements with all other Alameda County local agencies as a co-permittee in the Alameda County Clean Water Program. This permit (No. CAS612008) requires the City to prevent the discharge of non-stormwater (materials other than rain water) from entering the municipal storm drain system and San Francisco Bay, including the Oakland Inner Harbor (RWQCB, 2015).

The City of Alameda's Department of Public Works oversees and maintains the storm drainage system throughout the city limits. The City has a Storm Drain/Urban Runoff Project Administration program that provides management and maintenance of the City's storm drainage system, including lagoons, in accordance with the City's NPDES permit requirements. Additional details related to NPDES requirements and permits are described in Section 4.7, *Hydrology and Water Quality*. Currently, all stormwater within the project site is directed through existing public and private drainages which outfall through three public drain mains, and through other private outfalls (refer to **Appendix H** of this EIR).

Recycled Water

There is no existing source of recycled water in the project vicinity. Accordingly, there are no existing recycled water distribution facilities within the project site. Based on EBMUD's response to the October 30, 2016 Notice of Preparation (NOP), the District currently does not anticipate providing recycled water to the project area but recommends that the City and its developers maintain continued coordination and consultation with EBMUD during project development should recycled water become feasible in the future (refer to **Appendix A** of this EIR).

Solid Waste

The City of Alameda delivers its solid waste to the Davis Street Resource Recovery Complex located in San Leandro, where it is sorted and recyclable materials are recovered. Residual solid waste is disposed of at the Altamont Landfill, which accepts the following types of waste: ash,

construction/demolition, contaminated soil, green materials, industrial, mixed municipal, other designated waste, tires, shreds. This landfill has a maximum permitted capacity of 124.4 million cubic yards, a daily permitted capacity of 11,150 tons per day and, as of December 31, 2014, an estimated remaining capacity of 65.4 million cubic yards, which is anticipated to be reached by the current cease operation date of January 2025 (CalRecycle, 2017a). The City has a diversion rate of 79 percent as of 2016, which is above Assembly Bill 939 diversion goals (refer to State regulations below; Stopwaste.Org, 2016). Measure D (the Alameda County Source Reduction and Recycling Initiative Charter Amendment), required the County to divert 75 percent of solid waste from the landfill by 2010.

4.13.3 Regulatory Setting

Federal

U.S. Safe Drinking Water Act

The U.S. Safe Drinking Water Act (SDWA), established on December 16, 1974, is the main federal law that ensures the quality of drinking water by setting standards for drinking water quality and by providing guidance to the states, localities, and water suppliers who implement those standards.

National Pollutant Discharge Elimination System

Federal and state laws relating to wastewater primarily focus on the regulation of pollutant discharges that could contaminate surface waters or groundwater. As such, the Federal Clean Water Act and National Pollutant Discharge Elimination System (NPDES), as well as the state Porter-Cologne Water Quality Control Act, all regulate wastewater treatment and the discharge of treated effluent. (See Section 4.7, *Hydrology and Water Quality*, *Regulatory Setting*).

State

Senate Bill 610 and Senate Bill 221

The purpose and legislative intent of Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) is to preclude projects from being approved without specific evaluations being performed and documented by the local water provider that indicate that water is available to serve the project. SB 610 primarily affects the Water Code, and SB 221 principally applies to the Subdivision Map Act. SB 610 requires the preparation of a Water Supply Assessment (WSA) for large-scale development projects.[1] A WSA evaluates the water supply available for new development based on

[1] All projects that meet any of the following criteria require a WSA: 1) a proposed residential development of more than 500 dwelling units; 2) a proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 ft^2 of floor space; 3) a proposed commercial office building employing more than 1,000 persons or having more than 250,000 ft^2 of floor space; 4) a proposed hotel or motel, or both, having more than 500 rooms; 5) a proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area; 6) a mixed-use project that includes one or more of the projects specified in this subdivision; or 7) a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

anticipated demand. For the broad range of projects that are subject to this law, the statutory WSA must be requested by the lead agency from the local water provider at the time the lead agency determines that an Environmental Impact Report (EIR) is required for the project under CEQA. The water agency must then provide the assessment within 90 days (but may request a time extension under certain circumstances). The WSA must include specific information including an identification of existing water supply entitlements and contracts. The governing board of the water agency must approve the assessment at a public hearing.

SB 221 requires the local water provider to provide "written verification" of "sufficient water supplies" to serve the project. Sufficiency under SB 221 differs from SB 610 in that it is determined by considering the availability of water over the past 20 years; the applicability of any urban water shortage contingency analysis prepared per Water Code Section 10632; the reduction in water supply allocated to a specific use by an adopted ordinance; and the amount of water that can be reasonably relied upon from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer. In most cases, the WSA prepared under SB 610 would meet the requirement for proof of water supply under SB 221.

Urban Water Management Planning Act

The project site is within the EBMUD water service area. EBMUD's Urban Water Management Plan (UWMP) 2016 provides an overview of the District's water supply sources and usage, recycled water and conservation programs, and projected water demands. The UWMP must be updated every five years pursuant to California's Urban Water Management Planning Act.

Assembly Bill 901

Assembly Bill 901 (AB 901) requires the UWMP to document the quality of a supplier's available water source(s) and provide an assessment of the ways in which water quality affects its water management strategies and supply.

Assembly Bill 325

Assembly Bill 325 (AB 325), the Water Conservation in Landscaping Act, directs local governments to require the use of low-flow plumbing fixtures and the installation of drought-tolerant landscaping in all new development. Pursuant to the Act, the Department of Water Resources developed a Model Water Efficient Landscape Ordinance.

Senate Bill 365

Existing provisions of the California Water Code declare that the use of potable water for certain non-potable uses "is a waste or an unreasonable use of water." SB 365 amends and expands the Water Code to strengthen the provision that the use of potable water for the irrigation of residential landscaping, floor-trap priming, cooling towers, or air-conditioning devices is wasteful and unsound if reclaimed water suitable for these purposes is available. SB 365 also gives the power to any public agency—including a state agency, city, county, district, or any other political subdivision of the state—to require the use of reclaimed water for these purposes if certain conditions are met. The conditions that must be met are:

- Reclaimed water meeting the requirements of existing law (Section 13550 of the Water Code) is available to the user;
- The use of reclaimed water does not cause any loss or diminution of any existing water right;
- Public health concerns regarding exposure to mist or spray must be addressed, if appropriate; and
- The water user must prepare an engineering report pursuant to Title 22 regulations governing the use of reclaimed water.

The requirements of the law are applicable to all new industrial facilities and subdivisions for which the Department of Health Services has approved the use of reclaimed water, and for which a building permit is issued on or after March 15, 1994; or, if a building permit is not required, new structures for which construction begins on or after this date.

State Health and Safety Code Section 64562

Section 64562 of the California Health and Safety Code requires each public water system to have sufficient water available from its water sources and distribution reservoirs to supply adequately, dependably, and safely the total requirements of all its users under maximum demand conditions before an agreement can be made to permit additional service connections to that system.

Water Code Sections 10608 et seq. ("SB 7" or "SB X7-7")

Water Code Sections 10608 requires urban retail water suppliers to set and achieve water use targets that will help the state achieve 20 percent per capita urban water use reduction by 2020.

California's Model Water Efficient Landscape Ordinance

In 2004, AB 2717 was passed, it requested the California Urban Water Conservation Council (CUWCC) to convene a stakeholder task force, composed of public and private agencies, to evaluate and recommend proposals by December 31, 2005, for improving the efficiency of water use in new and existing urban irrigated landscapes in California. Based on this charge, the Task Force adopted a comprehensive set of 43 recommendations, essentially making changes to AB 325 of 1990 and updating the Model Local Water Efficient Landscape Ordinance. The recommendation of the bill charges the California Department of Water Resources (DWR) to update the Model Efficient Landscape Ordinance and to upgrade California Irrigation Management Information System (CIMIS).

The Water Conservation in Landscaping Act of 2006 (AB 1881) enacts many, but not all of the recommendations reported to the Governor and Legislature in December 2005 by the CUWCC Landscape Task Force (Task Force). AB 1881 requires DWR, not later than January 1, 2009, by regulation, to update the model ordinance in accordance with specified requirements, reflecting the provisions of AB 2717. AB 1881 requires local agencies, not later January 1, 2010, to adopt the updated model ordinance or equivalent or it will be automatically adopted by statute. Also, the bill requires the Energy Commission, in consultation with the department, to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment,

including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

California Integrated Waste Management Act

Assembly Bill 939, the California Integrated Waste Management Act of 1989, requires cities to divert 25 percent of their solid waste from landfills by 1995, and 50 percent by the year 2000. As noted above, WCCCIWA was diverting approximately 53 percent of its waste stream by 2006. CalRecycle works with municipalities to help improve recycling programs. The State generally places the burden of responsibility for waste stream reduction on local municipalities (i.e., cities and counties), and WCCCIWA has met the CalRecycle's requirements.

California Integrated Waste Management Act of 1989 and SB 1016

The California Integrated Waste Management Act of 1989, or Assembly Bill (AB) 939, established the Integrated Waste Management Board, required the implementation of integrated waste management plans and also mandated that local jurisdictions divert at least 50 percent of all solid waste generated (from 1990 levels), beginning January 1, 2000, and divert at least 75 percent by 2010. In 2006, SB 1016 updated the requirements. The new per capita disposal and goal measurement system moves the emphasis from an estimated diversion measurement number to using an actual disposal measurement number as a factor, along with evaluating program implementation efforts. These two factors will help determine each jurisdiction's progress toward achieving its Integrated Waste Management Act (AB 939) diversion goals. As of 2011, the Alameda's diversion rate was 72 percent, which is above AB 939's 50 percent diversion requirement (StopWaste.Org, 2013). As of 2007 and with the passage of SB 1016, the 50 percent diversion requirement is now measured in terms of per-capita disposal.

In addition to the requirements of AB 939, Alameda County adopted the Alameda County Waste Reduction and Recycling Initiative Charter Amendment (Measure D) in November 1989. Under this charter amendment, the County is required to divert 75 percent of solid waste from landfills by the year 2010.

California Code of Regulations Title 24

The State of California regulates energy consumption under Title 24 of the California Code of Regulations. The Title 24 Building Energy Efficiency Standards were developed by the California Energy Commission (CEC) and apply to energy consumed for heating, cooling, ventilation, water heating and lighting in new residential and non-residential buildings. The CEC updates these standards periodically, and adopted the latest standards in January 2017. These standards establish lighting zones that differentiate the amount of outdoor lighting by geographical location, and establish new performance standards for residential lighting.

California Green Building Standards Code

The 2013 state building standards code (CalGreen) requires that at least 50 percent of weight of non-hazardous job site debris generated by new construction be recycled, reused, or otherwise

diverted from landfill disposal. CalGreen requires submission of plans and verifiable post-project documentation to demonstrate compliance.

Local Plans and Policies

East Bay Municipal Utilities District Water Efficiency Requirements

EBMUD Regulations Section 31 requires the district to review applications for new water service to determine the applicability of, and compliance with, water-efficiency requirements. District staff may inspect the installation of water efficiency measures and fixtures to verify that the items are installed and performing to the required water use levels. Among other requirements, residential service includes high-efficiency or dual-flush toilets, dishwashers, and clothes washing machines, as well as low-flow showerheads and faucets. Outdoor landscaping plans are required for any new or retrofitted landscaping greater than 5,000 square feet of irrigated area, and ornamental turf must be limited to no more than 25 percent of total irrigated area.

EBMUD Regional Private Sewer Lateral Ordinance

In 2009, the United States Environmental Protection Agency (EPA) and the California Regional Water Quality Control Board ordered EBMUD to fix old, cracked sanitary sewer pipes. The EPA's mandate compelled EBMUD and its partners to phase in a Regional Private Sewer Lateral Ordinance beginning in 2011. The ordinance requires affected property owners to obtain a certificate from EBMUD certifying that all of their sewer laterals are leak-free, or that the necessary repairs or replacements have been made.

Alameda County Clean Water Program

Construction activities associated with the proposed project would be subject to the National Pollutant Discharge Elimination System (NPDES) permit requirements for stormwater management and discharges. The Alameda County Clean Water Program (ACCWP) NPDES permit incorporates updated state and federal requirements related to the quantity and quality of post-construction stormwater discharges from new development and redevelopment projects. The stormwater system at the project site would be regulated under the NPDES permit. In particular, Provision C.3 in the NPDES Permit governs storm drain systems and regulates post-construction stormwater runoff. The provision requires new development and redevelopment projects to incorporate treatment measures and other appropriate source control and site design features to reduce the pollutant load in stormwater discharges and to manage runoff flows. The proposed project would replace more than 5,000 square feet of impervious surface; therefore it would be required to incorporate treatment measures and appropriate source control and site design measures under the NPDES permit.

City of Alameda General Plan

Policies from the City’s 1991 General Plan that relate to utilities are listed below.

Open Space for the Preservation of Natural Resources

Policy 5.1.h Continue to support EBMUD in its efforts to promote and implement water conservation measures.

Policy 5.1.i Encourage the use of drought-resistant landscaping.

Policy 5.1.y Work with EBMUD to implement the Alameda Reclamation Project.

Policy 5.1.z Develop a comprehensive City Water Conservation Ordinance that recognizes Alameda's unique climate, soil conditions, and development patterns.

Policy 5.1.aa Review proposed development projects for both water and energy efficiency, and integrate plans for the use of reclaimed wastewater for landscaping as a condition of approval.

Waste Management

Policy 8.4.d Continue to support the resource recovery measures specified in the Alameda County "Solid Waste Management Plan," July 1987.

Policy 8.4.j Implement the recently approved residential area curbside recycling program.

Policy 8.4.k Design and implement a recycling program for commercial and industrial businesses, including paper product recycling strategies for business parks.

City of Alameda Sewer Lateral Ordinance

Under the City's sewer lateral ordinance (No. 3048), private property owners are required to fix old, cracked sanitary sewer pipes to ensure they do not allow the infiltration of rainwater, to reduce the overwhelming of wastewater treatment facilities.

City of Alameda's Water Efficient Landscaping Ordinance

The City of Alameda's Water Efficient Landscaping Ordinance (Alameda Municipal Code Chapter 30, Article IV, Sections 30-58 through 30-59) implements Assembly Bill 325, California's Model Water Efficient Landscape Ordinance (Division 2, Title 23, California Code of Regulations, Chapter 2.7, Sections 490-495).

Alameda Municipal Code

In an effort to meet the state's AB 939 waste reduction mandate, the City's Municipal Code requires that projects valued at $100,000 or more submit a Waste Management Plan (WMP) (see Chapter XXI, Article VI., Subsections 21-24.IA of the Municipal Code) to divert at least 50 percent of all construction and demolition debris.

In addition, in order to increase the diversion rate and facilitate compliance with AB 939 as well as Alameda County's Measure D (the Alameda County Source Reduction and Recycling Initiative Charter Amendment, described above), the City Municipal Code requires all persons receiving solid waste collection to separate recyclable and organic materials for collection.

City of Alameda Bay-Friendly Landscaping Program

Consistent with the state of California's Water Efficiency Landscape ordinance, the City of Alameda amended the Alameda Municipal Code by adding Section 30-60, Bay-Friendly Landscaping Requirements for new City landscaping projects, renovation projects, and public-private partnership projects. This ordinance requires both public and private-sector projects that include new construction and renovation of landscapes of 2,500 square feet of irrigated area or greater to obtain a permit. Applicants are required to meet nine practices of the County's Bay-Friendly basics checklist which include mulching, amending the soil with compost prior to planting, reduction and recycling of landscape construction waste, planting drought tolerant and California native plants, and weather-based irrigation controllers (Stopwaste.Org, 2011).

City of Alameda Zero Waste Implementation Plan

The City of Alameda has developed a draft citywide integrated waste management plan in an effort to identify the policies, programs, and facilities that will be needed to achieve zero waste. The draft plan requires preparation of a project-specific waste management plan as part of the demolition or building permits for development.

4.13.4 Impacts and Mitigation Measures

Significance Criteria

Consistent with Appendix G of the CEQA *Guidelines*, a project would cause adverse impacts to utilities and service systems if it were to:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have insufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs;
- Not comply with federal, state, and local statutes and regulations related to solid waste.

Approach to Analysis

This impact discussion assesses the project's potential impact on utilities and service systems, describes adverse impacts that would result from implementation and projected buildout, and recommends mitigation measures as appropriate.

A Water Supply Assessment (WSA) was prepared by EBMUD to determine the estimated demand and adequacy of water supply associated with the project. EBMUD determined that enough supply would be available to meet the demands of the project, and approved the WSA on October 10, 2017 (see **Appendix H** of this EIR). The WSA assumed a development of up to 779 residential units which equivalent to the most conservative potential buildout of the project.

For other utility systems, the section addresses potential impacts related to the construction of new water, wastewater, and storm water drainage facilities. In addition, this section evaluates the potential for the project to result in temporary adverse impacts on landfill capacity due to the disposal of project-generated demolition debris and construction waste as well as operational impacts on landfill capacity once project construction is completed. The largest potential source of solid waste would be demolished concrete and excavated soil.

Impact Analysis

Impact UTL-1: The proposed project would not result in an exceedance of wastewater treatment requirements of the applicable Regional Water Quality Control Board. (*Less than Significant*)

Wastewater flows from the proposed project would consist of typical residential and commercial sewage. Based on the project's WSA prepared by EBMUD, the project would generate a water demand of approximately 0.17 million gallons per day (mgd; City of Alameda, 2017). Assuming none of this water demand is diverted to onsite recycling efforts or retained onsite for landscaping purposes, the project generated water demand would be transferred into the City's wastewater management system. In their response to the NOP letter, EBMUD confirmed that the MWWTP would have adequate dry weather capacity to accommodate the proposed project and indicated that wet weather flows would be a concern (refer to November 29, 2016 letter from EBMUD under Appendix A). Wastewater generated by the project would not contain any unusual pollutants that would otherwise result in such an exceedance.

As discussed in the *Environmental Setting* above, EBMUD entered into a Stipulated Order from the EPA, SWRCB, and San Francisco RWQCB, which contains measures that EBMUD is required to implement in order to address inadequately treated sewage to San Francisco Bay during wet weather conditions. Subsequently, in March 2011, the East Bay wastewater collection agencies, including the City of Alameda, entered into a Stipulated Order with the EPA, SWRCB, and the RWQCB. This particular Stipulated Order obligates the collection agencies to improve management of their wastewater collection systems, to address sanitary sewer overflows, and to reduce inflow and infiltration (I&I) in their collection systems (EBMUD, 2011).

Consistent with the Stipulated Order and the City of Alameda's Private Lateral Ordinance, the proposed project would construct new wastewater infrastructure to connect to the of Alameda Sewer System in Clement Avenue which conveys flow to the EBMUD Interceptor and an on-site sewer collection system would be installed throughout the proposed street network within the project site (see Impact UTL-2 and HYD-1 for additional details). The new sewer collection system would greatly reduce I&I flows entering the system in wet weather conditions and thereby reduce wet weather flows to the MWWTP. Such improvements are expected to further ensure that the project does not contribute to exceedances of RWQCB treatment standards for water discharged to the Bay; therefore, this impact would be **less than significant**.

Mitigation: None required.

Impact UTL-2: The proposed project would not have wastewater service demands that would result in a determination by the service provider that it does not have adequate capacity to serve projected demand, necessitating the construction of new or expanded wastewater treatment facilities. (*Less than Significant with Mitigation*)

As described above, the project would generate approximately 0.17 mgd of sewage (City of Alameda, 2017). With a current average dry weather flow of approximately 63 mgd and dry weather flow capacity of 168 mgd at EBMUD's MWWTP, EBMUD has adequate dry weather capacity at the MWWTP for the projected wastewater flows (EBMUD, 2017d). In their November 29, 2016 letter in response to the project NOP, EBMUD indicated that the MWWTP and interceptor system are anticipated to have adequate dry weather capacity to accommodate wastewater flows from the project and to treat such flows provided that the wastewater generated by the project meets the requirements of the EBMUD Wastewater Control Ordinance. However, EBMUD indicated that capacity for the project's wet weather flows was of concern (refer to **Appendix A**).

The East Bay regional wastewater collection system experiences exceptionally high peak flows during storms due to excessive infiltration and inflow (I&I) that enters the system through cracks and misconnections in both public and private sewer lines. In order to address wet weather flows, as part of EBMUD's Stipulated Order, the City is working with EBMUD to reduce the amount of I&I entering the wastewater collection system. Under the project, a new onsite sewer collection system would be installed throughout the proposed street network within the project site; pipeline size would range from six to eight inches. All new sanitary sewer lines would be designed and constructed to prevent I&I to the maximum extent feasible.

Mitigation Measure UTL-2 below would ensure the project implements the necessary improvements to reduce I&I flow to the maximum extent feasible. Additionally, as described in Impact UTL-3 below, the project would include installation of a new onsite storm drainage system consisting of new inlets and pipelines that would further reduce wet weather flows to the MWWTP. This measure would reduce the level of impact to less than significant.

> **Mitigation Measure UTL-2: Sewer Design.** The project sponsors shall: 1) Replace or rehabilitate any existing sanitary sewer collection systems, including sewer lateral lines, to ensure that such systems and lines are free from defects or, alternatively, disconnected from the sanitary sewer system; and 2) Ensure any new wastewater collection systems, including new lateral lines, for the project are constructed to prevent infiltration and inflow (I&I) to the maximum extent feasible while meeting all requirements contained in the Regional Private Sewer Lateral Ordinance and applicable municipal codes or City ordinances.

Consistent with the Stipulated Order, such improvements would greatly reduce the system's infiltration and inflow. Since the MWWTP and the EBMUD interceptor are expected to have adequate capacity to serve projected new demand generated by the proposed project, the project would not require the construction of any new wastewater treatment facilities or the expansion of such facilities. Therefore, impacts on existing wastewater treatment facilities would be **less than significant with mitigation**.

Significance after Mitigation: Less than Significant.

Mitigation: Mitigation Measure UTL-2.

Impact UTL-3: The project would result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which would not cause significant environmental effects. (*Less than Significant*)

Currently the project site is primarily covered in concrete, asphalt, and other impermeable surfaces associated with maritime industrial uses. Within the project site, stormwater is directed through public and private storm drains that release into the Oakland Estuary through nine onsite outfalls. Redevelopment of the project site would provide 4.25 acres of public open space, as well as bio-filtration planters, bio-filtration basins, infiltration areas, permeable paving, localized rainwater harvesting, where feasible, and other treatment measures as approved by the City thereby resulting in a reduction of storm run-off rather than an increase in runoff. As part of the project, a new stormwater system that incorporates current stormwater treatment measures for water quality standards (such as those described above), with new inlets and pipelines appropriately sized to convey run-off within project site street network, and with new outfall structures to the Oakland Estuary would be installed. Project-related stormwater collection and drainage would maintain the existing patterns of the project site, and stormwater runoff from the project site would continue to be directed to existing and updated outfalls.

Construction activities of the new storm water drainage facilities would include in-street trenching and excavation work. Construction of this system could result in potentially significant environmental impacts but implementation of mitigation measures described throughout this EIR (i.e., construction mitigation measures related to air quality, noise, hydrology, and transportation) would reduce construction-related impacts to a **less-than-significant** level.

Significance: Less than Significant.

Mitigation: No additional measures required.

Impact UTL-4: The proposed project would have sufficient water supplies available to serve the development from existing entitlements and would not require the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. (*Less than Significant*)

Water Supply

EBMUD supplies approximately 190 mgd of potable water throughout its service area in non-drought years. According to EBMUD's 2015 Urban Water Management Plan (UWMP), EBMUD's water supply is adequate to meet existing and projected area-wide demand through 2040 under normal conditions and up to two years of drought. EBMUD implements numerous water conservation and recycling programs to reduce demand and develops projects to manage future water supply needs. The water demand projections used by EBMUD are derived from a land-use based demand forecast that reflects the City's plans and policies, and assumes an amount of future development permitted under the General Plan's growth management ordinance and additional growth (EBMUD, 2016).

The project specific Water Supply Assessment (WSA) prepared by EBMUD determined the estimated water demand for the proposed project and adequacy of existing supplies to meet this demand. EBMUD determined that enough supply would be available to meet the demands of the project, and approved the WSA on October 10, 2017. The WSA assumed that the project would develop 779 new residential units, approximately 141,000 square feet of office and manufacturing/warehouse uses, approximately 12,000 square feet of retail and services space, 4.3 acres of park and open space, and 530 marina slips, which would have a potable water demand of approximately 167,000 gallons per day (gpd). EBMUD determined that this demand would be adequately supplied with existed water supplies (refer to **Appendix H**).

Section 31 of EBMUD's Water Service Regulations requires that water service shall not be furnished for new or expanded services unless all applicable water-efficiency measures described in the regulation are installed at the project sponsor's expense. The project would comply with the City of Alameda's Bay Friendly and Water Efficient Landscape Ordinance (Alameda Municipal Code Chapter 30, Article IV, Sections 30-58 through 30-59). In addition to compliance with the City of Alameda Water Efficient Landscaping Ordinance (Alameda Municipal Code Chapter 30, Article IV, Sections 30-58 through 30-59), the project sponsor may be required to implement additional water conservation programs and best management practices contained in EBMUD's Water Service Regulations and/or California's Model Water Efficient Landscape Ordinance (Assembly Bill 325).

For these reasons, the proposed project would be adequately served by the existing water supply and the impact would be **less than significant**.

Water Facilities

EBMUD provides potable water service to the City of Alameda and other communities within Contra Costa and Alameda Counties. EBMUD also owns and maintains the distribution pipeline facilities within public streets throughout its service area. An 8-inch pipeline owned by EBMUD lies in Clement Avenue, to the south of the project site. There are also existing private water pipelines that extend from the EBMUD distribution system to the existing structures within the project site.

EBMUD's long-range planning for future water infrastructure and supply needs is based on population projections compiled by ABAG, which takes into account growth planned in the adopted general plans of Bay Area cities and counties. Development of the project site with new homes has been planned for in the Alameda General Plan for the next 20 years, and therefore has been factored into EBMUD's water demand projections within the Water Supply Management Program 2040. The proposed project's incremental increase in demand would not be significant, and would not require the construction of new water treatment facilities or the expansion of such facilities. The 2017 EBMUD Water Supply Assessment confirmed the water supply for the project would be adequate (refer to **Appendix H**).

As described in the Project Description, the project would include a new potable water distribution system within the project sites, including a network of 8-inch diameter pipelines located within the street network. This system will connect to the existing EBMUD pipeline in Clement Avenue. Based on EBMUD's response letter on November 29, 2016 to the October 30, 2016 NOP, these facilities would be owned, installed, and maintained by EBMUD. Construction of these pipelines by EBMUD would require that all soil and groundwater mitigation measures are completed as described in Section 4.5, *Geology, Soils, and Paleontological Resources* and Section 4.6, *Hazards and Hazardous Materials.* In addition, construction of this system could result in potentially significant environmental impacts but implementation of mitigation measures described throughout this EIR (i.e., construction mitigation measures related to air quality, noise, hydrology, and transportation) would reduce construction-related impacts to a **less-than-significant** level.

Significance: Less than Significant.

Mitigation: No additional measures required.

Impact UTL-5: The proposed project would be served by a landfill with sufficient permitted capacity to accommodate solid waste generated by the project, and would comply with federal, state, and local statutes and regulations related to solid waste. (*Less than Significant*)

Construction Waste Impacts

The analysis assumes that most structures on the project site would be demolished. Solid waste generated by buildout of the proposed project (from building demolition and generation of construction debris) would largely consist of the existing vacant warehouses and other buildings.

Some of the buildings contain large-scale roof timbers, roof decking, wall-framing timbers, wood or metal siding, interior wall partitions, and concrete slab floors, as well as other systems (e.g., plumbing, fire suppression). When structures are "deconstructed," rather than demolished, wood and fixtures could be retained for resale or other reuse rather than disposed, and the majority of such materials can be diverted from the waste stream (City of Alameda, 2002). Deconstructed materials can be diverted from landfills to recycling and reuse markets. Solid waste generated from demolition of existing utility systems would also require disposal. Because the portions of existing utility systems within development areas may either be abandoned in place or removed and disposed, the amount of solid waste generated from demolition of existing utility systems is unknown at this time.

In addition, the project would be required to comply with Chapter XXI, Section 21 of the City of Alameda Municipal Code, which requires that new developments submit plans for managing construction debris to promote separation of waste types and recycling. These plans would need to be prepared in coordination with City staff, the project sponsor(s), and demolition subcontractors, and must be approved by City staff prior to issuance of a demolition permit. Based upon compliance with the City's Municipal Code regarding management of construction debris, project construction would result in **less-than-significant** impacts on landfill capacity.

Operation Waste Impacts

CalRecycle reports numerous solid waste generation rates developed by a variety of jurisdictions throughout the state, ranging from 4 pounds per dwelling unit per day (lb/unit/day) to 8.6 pounds per dwelling unit per day (lb/household/day) for multifamily residential development. Based on the highest of these solid waste generation rates (i.e., 8.6 lb/household/day), the proposed project's up to 779 new housing units would generate approximately 6,700 pounds per day (or 3.35 tons per day). CalRecycle also reports solid waste generation rates developed by jurisdictions for commercial and manufacturing/warehouse uses. For the purposes of this analysis, a rate of 5 lb/thousand square feet/day was used for commercial uses, with approximately 12,000 square feet of retail and services space, this results in the minor generation of approximately 60 lb/day (0.03 tons/day). CalRecyle also lists manufacturing/warehouse use generation at a rate of 1.42 lb/thousand square feet/day, thus with approximately 141,000 square feet the project would generate approximately 200 lb/day (0.1 tons/day) of solid waste, for a combined total of an estimated 6,960 (3.48 tons/day) generated by the project (CalRecycle, 2017b).

As of 2014, the Altamont Landfill (which serves Alameda) had an estimated remaining capacity of 65.4 million cubic yards and a permitted daily capacity of 11,150 tons/day (CalRecycle, 2017a). At approximately 3.73 tons/day the project would represent an extremely small fraction of a percent increase in current waste disposal at the Altamont Landfill. Given the City's existing diversion rate and Measure D, the solid waste generated by operation of the project could be expected to be less than this worst-case estimate. Although the Altamont Landfill has an estimated closure date of 2025, it has an estimated disposal capacity through 2045 (CalRecycle, 2017a; and Waste Management, 2017). With nearly 30 years of remaining capacity at the landfill, solid waste generated by the project in the long-term would not substantially reduce existing landfill capacity. Therefore, operation of the project would represent a **less-than-significant** impact on solid waste disposal.

Regulatory

The proposed project would not conflict with or interfere with the City's ability to implement its adopted solid waste management programs and policies, including the Citywide integrated waste management plan and Chapter XXI, Section 21 of the City of Alameda Municipal Code, or Alameda County's Measure D. The project would be served by weekly curbside pickup of recyclable materials by ACI. Waste generated by the proposed project would enter the same stream as other area waste collected by ACI, and would be subject to the same existing requirements regarding recycling and solid waste disposal. Because existing solid waste collection and disposal in Alameda complies with current federal, state and local requirements, and because the project's solid waste would enter the same existing disposal stream, the proposed project would not violate any federal, state, or local statutes or regulations related to solid waste.

Mitigation: None required.

Cumulative Impacts

Impact C-UTL-1: The proposed project, in combination with other past, present, existing, approved, pending, and reasonably foreseeable future projects, would not result in cumulatively considerable impacts to utilities and service systems. (*Less than Significant*)

The geographic setting for cumulative impacts to utilities and service systems is the service area of each respective utility service agency. Past and present projects are described in the *Environmental Setting*, which represents the baseline conditions for the evaluation of cumulative impacts. Reasonably foreseeable future development forecasts are based on projections of future growth and take into account projects going through the entitlement process. Those forecasts account for other major projects currently in various stages of the approval and construction process. The proposed project, in combination with other past, present, and future projects in the City of Alameda, would result in an increase in demand for utilityservices for an estimated 95,500 residents that would be living in Alameda by 2040 (ABAG and MTC, 2013).

Water Supply Availability and Water Treatment

As discussed under Impact UTL-3, EBMUD indicated that there is adequate water available to serve the project, and no new facilities would need to be constructed. All present and future projects that are subject to discretionary approval would be required to undergo project-specific environmental analysis, pursuant to CEQA, to determine the potential for environmental impacts and identify mitigation where feasible. Like the proposed project, all past, present, and future projects have been and would be required to comply with the City of Alameda Municipal Code, including the Water Efficient Landscaping Ordinance. These projects would also be required to ensure adequate water supply is available to serve the proposed development. Therefore, the proposed project, in conjunction with other development, would not have a significant cumulative impact associated with water, and the project's cumulative impact would be less than significant.

Wastewater

As discussed under Impact UTL-1 and Impact UTL-2 above, wastewater flows from the proposed project would consist of typical residential and commercial sewage, resulting in approximately 0.17 mgd of wastewater that would be treated by EBMUD. EBMUD confirmed that the MWWTP would have adequate dry weather capacity to accommodate the proposed project, but that wet weather flows could present a concern (EBMUD letter, 2016, see **Appendix A**). Under the Stipulated Order EBMUD is required to implement several measures in order to address inadequately treated sewage being discharged to San Francisco Bay during wet weather conditions, and subsequently EBMUD's Satellite Agencies entered into a Stipulated Order that obligates them to improve management of their wastewater collection systems, to address sanitary sewer overflows, and to reduce inflow and infiltration (I&I) in their collection systems. To support these efforts, the proposed project would implement **Mitigation Measure UTL-2** by replacing or rehabilitating the wastewater infrastructure that serves the site, and complying with EBMUD's Regional Private Sewer Lateral Ordinance. The physical effects of these improvements are described throughout this EIR, and mitigation is provided to reduce these impacts to a less than significant level, where feasible.

All present and future projects that are subject to discretionary approval would be required to undergo project-specific environmental analysis, pursuant to the CEQA, to determine the potential for environmental impacts and identify mitigation where feasible. Like the proposed project, all past, present, and future projects have been and would be required to comply with the Regional Private Sewer Lateral Ordinance by replacing or rehabilitating existing sewer lines, or installing new lines, to serve the proposed development. These projects would also be required to ensure adequate capacity is available to accommodate new wastewater that is generated by the proposed development. Therefore, the proposed project, in conjunction with other development, would not have a significant cumulative impact associated with wastewater, and the project's cumulative impact would be less than significant.

Stormwater

As part of the project, a new stormwater drainage system that facilitates infiltration and reduces stormwater runoff volumes compared to existing conditions would be installed. The proposed project would also install new inlets and pipelines appropriately sized to convey the site run-off, and may be required to improve any outfall structures that directly discharge runoff from the project site to the Oakland Estuary. The physical effects of these improvements are described throughout this EIR, and mitigation is provided to reduce these impacts to a less than significant level, where feasible.

All present and future projects that are subject to discretionary approval would be required to undergo project-specific environmental analysis, pursuant to CEQA, to determine the potential for environmental impacts and identify mitigation where feasible. Like the proposed project, past, present, and future developments over one acre in size have been or would be required to comply with the requirements of the RWQCB concerning discharges of stormwater during project construction, through obtaining a NPDES permit for construction activities and executing a Stormwater Pollution Prevention Plan (SWPPP) that would outline construction stormwater quality best management practices designed to reduce the potential for pollutants to contact stormwater and

eliminate or reduce discharge of materials to the City's stormwater system. Therefore, the proposed project, in conjunction with other development, would not have a significant cumulative impact associated with stormwater, and the project's cumulative impact would be less than significant.

Landfill Capacity

Solid waste generated in Alameda is sent to the Altamont Landfill. As of December 31, 2014, the Altamont Landfill (which serves Alameda) had an estimated remaining capacity of 65.4 million cubic yards, and a permitted daily capacity of 11,150 tons/day (CalRecycle, 2017a). Past, present, and reasonably foreseeable future development includes existing development, and the projects listed in Table 4.0-1, Alameda Marina Master Plan EIR Cumulative Projects.

All present and future projects that are subject to discretionary approval would be required to undergo project-specific environmental analysis, pursuant to CEQA, to determine the potential for environmental impacts and identify mitigation where feasible. Many past and all present and reasonably foreseeable future development projects have or would generate construction and operational solid waste and, depending on the volumes and end uses, have been or would be required to implement recycling and waste reduction measures. The proposed project would generate a minor amount of construction and demolition waste, mostly attributed to demolition of existing structures and remediation. The proposed project would divert a minimum of 50 percent of its construction waste for recycling or reuse and would comply with the requirements of CALGreen and AB 939. Operation of the proposed project would generate an estimated 6,960 lb/day (3.48 tons/day), representing an incremental increase in waste being sent to the Altamont landfill, and the landfill would have adequate capacity to serve the proposed project. Assuming the residents and businesses on the project site have similar waste generation rates to the rest of Alameda, operational waste generated by the project would not cause the City to exceed their target waste diversion rates. The project would not exceed permitted landfill capacity or violate any state or federal regulations related to solid waste and the proposed project would have a less-than-significant impact on solid waste generation. All past, present, and foreseeable future projects have been and would be required to demonstrate that adequate landfill capacity is available to accommodate increased waste prior to any project approvals. Such projects have been and would also be required to comply with the recycling and reuse measures and targets established by CALGreen and AB 939 for construction and operational waste. Therefore, the proposed project, in conjunction with other development, would not have a significant cumulative impact associated with solid waste, and the project's cumulative impact would be less than significant.

Mitigation: None required.

4.13.5 References – Utilities and Service Systems

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State Water Resources Control Board (SWRCB), California Integrated Water Quality System Project (CIWQS), Wastewater Violation Report, 2010-2017. Available at: ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet. Accessed September 12, 2017.

Stopwaste.Org, 2016. 1990 to 2015 Diversion Rates by Jurisdiction. Available at: www.stopwaste.org/resource/waste-disposal-tonnages-and-diversion-rates-alameda-county-jurisdictions. Updated November 16, 2016. Accessed on September 12, 2017.

Waste Management, 2017. Altamont Landfill – Sustainability. Available at: altamontlandfill.wm.com/sustainability/index.jsp. Accessed September 14, 2017.

4.14 Environmental Topics Not Subjected to Detailed Analysis

Pursuant to CEQA Guidelines Section 15128, this subsection describes the reasons that various possible effects of a project were determined not to be significant, or to have no impact, and, therefore, were not discussed in detail in this EIR. These determinations were generally made because the identified environmental resources are not present within or around the project area or because implementation of the project would clearly have no effect with respect to the topic issue area. These issue areas are described in this section with an explanation of why they are not evaluated further in this EIR.

4.14.1 Agricultural and Forestry Resources

Appendix G of the CEQA *Guidelines* specifies that an impact to agricultural and forestry resources would occur if a project would: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use; conflict with existing zoning for agricultural use, or a Williamson Act contract; conflict with existing zoning, or cause rezoning of, forest land or timberland; result in loss of forest land or conversion of forest land to non-forest use, or; involve other changes that could result in conversion or farmland of forest land to non-agricultural use.

The entirety of Alameda Island, including the project site, is classified as "Urban and Built-up" by the California Farmland Mapping and Monitoring Program (California Department of Conservation, 2014), which is a classification used for lands that present constraints for agricultural use. No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is designated within any portion of the City. The site is not zoned for agricultural uses, and there are no Williamson Act contracts that affect any portion of the project site. No existing agricultural or timber-harvest uses are located on or in the vicinity of the project site. Based on these considerations, development of the site would result in no impacts to agricultural resources.

4.14.2 Mineral Resources

For the purposes of this analysis, mineral resources are any non-fuel mineral resource that is obtained from the ground, including sand and gravel, cement, boron, crushed stone, gold, limestone, and other important excavated resources. Appendix G of the CEQA *Guidelines* specifies that an impact to mineral resources would occur if a project would: result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

The project site has no known existing mineral resources. The project site was historically used for shipbuilding and marina uses, and much of the site is comprised of imported fill material. There are no mineral extraction operations occurring on Alameda Island, nor have those operations been known to occur historically. No mineral resource recovery areas have been designated within the City. Development of the proposed project would not result in the loss of

availability of a known mineral resource that would be of value to the region and the residents of the state; and would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Development of the proposed project would have no impact on mineral resources.

4.14.3 References

California Department of Conservation. 2014. *Alameda County Important Farmland. 2014*.

CHAPTER 5
Alternatives to the Proposed Project

Pursuant to the provisions of CEQA, this chapter describes and evaluates alternatives to the proposed project, including a "No Project" alternative, and identifies an "environmentally superior" alternative. The primary purpose of this section is to provide decision-makers and the public with a qualitative review of project alternatives that eliminate or substantially reduce any of a project's adverse environmental impacts while, at the same time, attaining most of the project objectives.

5.1 CEQA Requirements

CEQA requires that an EIR describe and evaluate a range of reasonable alternatives to the proposed project, and evaluate the comparative merits of the alternatives (*CEQA Guidelines* Section 15126.6(a), (d)). The "range of alternatives" is governed by the "rule of reason," which requires the EIR to set forth only those alternatives necessary to foster informed decision-making and public participation (Section 15126.6(a), (f)).

The range of alternatives shall include alternatives that would feasibly attain most of the basic objectives of the project and would avoid or substantially lessen any of the significant effects of the project (*CEQA Guidelines* Section 15126.6(a)-(c)). CEQA generally defines "feasible" to mean an alternative that is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, technological, and legal factors. In addition, the following may be taken into consideration when assessing the feasibility of alternatives: site suitability; economic viability; availability of infrastructure; general plan consistency; other plans or regulatory limitations; jurisdictional boundaries; and the ability of the proponent to attain site control (Section 15126.6(f)(1)). If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR (Section 15126.6(f)(2)(B)).

The description or evaluation of alternatives does not need to be exhaustive, and an EIR need not consider alternatives for which the effects cannot be reasonably determined and for which implementation is remote or speculative. An EIR need not describe or evaluate the environmental effects of alternatives in the same level of detail as the proposed project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project (*CEQA Guidelines* Section 15126.6(d)).

The "no project" alternative must be evaluated. This analysis shall discuss the existing conditions, as well as what could be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services (*CEQA Guidelines* Section 15126.6(e)(2)).

CEQA also requires that an environmentally superior alternative be selected from among the alternatives. The environmentally superior alternative is the alternative with the fewest or least severe adverse environmental impacts. When the "no project" alternative is the environmentally superior alternative, the EIR must also identify an environmentally superior alternative from among the other alternatives (*CEQA Guidelines* Section 15126.6(e)(2)).

5.2 Factors in the Selection of Alternatives

The nature and scope of the range of alternatives to be discussed is governed by the "rule of reason." The CEQA *Guidelines* recommend that an EIR should briefly describe the rationale for selecting the alternatives to be discussed (Section 15126.6[c]). This alternatives analysis considers the following factors:

- The extent to which the alternative would accomplish most of the basic objectives of the proposed project;
- The extent to which the alternative would avoid or lessen the identified significant, or less-than-significant with mitigation, environmental effects of the proposed project;
- Requests by interested parties, community members, and decision makers at the EIR scoping session for information regarding the relative environmental impacts of different development programs and different numbers of housing units;
- The feasibility of the alternative, taking into account site suitability, availability of infrastructure, general plan consistency, and consistency with other applicable plans and regulatory limitations;
- The extent to which an alternative contributes to a "reasonable range" of alternatives necessary to permit a reasoned choice; and
- The requirement of the CEQA *Guidelines* to consider a "No-Project" alternative, and to identify an "environmentally superior" alternative in addition to the no-project alternative (Section 15126.6[e]).

5.2.1 Project Objectives

As stated above, the selection of alternatives shall consider the basic objectives of the proposed project. As previously presented in Chapter 3, Project Description, the project objectives are to:

Improve and Enhance the Maritime Commercial Marina

- Maintain Alameda Marina as a working waterfront and retain and/or promote Alameda Marina's maritime uses by creating a Maritime Commercial Core that utilizes the maritime footprint more efficiently.

- Encourage the retention and development of waterfront and maritime-related job and business opportunities that relate to the area's waterfront location.
- Upgrade and rehabilitate facilities, unique buildings, as feasible, and provide land for existing maritime businesses, boat berthing and maintenance, boat storage, and waterfront commercial recreation businesses.
- Provide sea level rise protection and other infrastructure upgrades to bring Alameda Marina up to date to make it a safe and accessible place.

Activate and Reconnect the Community to the Waterfront

- Reconnect the community to the waterfront by extending the existing city grid into the site to allow for additional view corridors and access points through the site to the shoreline edge.
- Create public amenities and opportunities for gathering spaces for existing and future community members by developing new open space areas within and along the shoreline edge with a Bay Trail component.

Create a Dynamic New Neighborhood for Everyone

- Provide housing of various types to fulfill the goals of the City's Housing Element and help meet the City's Regional Housing Need Allocation.
- Provide options for housing that meet the need of a wide demographic that includes universally designed units, affordable, rental, work force market-rate and market-rate units.
- Integrate Alameda Marina's core maritime uses, including those governed by the Tidelands Lease, with renovated and new compatible uses, including various types of housing.
- Develop a mixed-use project that allows for a mix of compatible uses at the site.
- Provide opportunities for the improvement of the existing boat Marina and shoreline infrastructure; maintain and generate new jobs; and create better and new open space and recreational areas.

Provide Financially Sound Development

- Develop an economically sustainable and financially sound new development that can fund the construction of the public facilities and services that are needed to serve the plan area and achieve General Plan objectives, while avoiding any financial impact on the City's ability to provide services to the rest of the City.
- Fulfill the project sponsor's obligations under the Tidelands and Marina Lease.

5.2.2 Elimination and/or Reduction of Significant Impacts

CEQA *Guidelines* § 15126.6(b) states that "Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly."

Potentially significant environmental impacts that would result from the proposed project are evaluated in Chapter 4.0, *Environmental Setting, Impacts, and Mitigation Measures*, of this EIR. With implementation of the project design features, standard conditions and requirements, and mitigation measures identified for each resource area significantly impacted, many of the potentially significant impacts resulting from the proposed project would be reduced to a less than significant level. The proposed project impacts listed below would remain significant and unavoidable even after mitigation, and the alternatives evaluated in this EIR have been selected because they are anticipated to reduce and/or eliminate one or more of the significant impacts associated with the proposed project.

Impact CUL-1: Project implementation would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.

Impact CUL-4: Project construction could cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074.

Impact C-CUL-1: The project, in combination with past, present, and probable future projects, would substantially contribute to cumulative adverse historic architectural resources impacts.

Impact C-CUL-3: The project, in combination with past, present, and probable future projects, could result in cumulative adverse impacts on tribal cultural resources.

Impact TRA-2: The proposed project would increase traffic volumes such that traffic conditions at the Park Street/Blanding Avenue and Park Street/Clement Avenue intersections would either deteriorate from LOS D to LOS F or the proposed project would increase traffic volumes by three percent or more.

Impact TRA-3: In the event that the planned Clement Avenue extension is not completed prior to project opening, the proposed project could increase traffic volumes at intersections on Buena Vista Avenue such that traffic operations could deteriorate to substandard conditions.

5.2.3 Alternatives Considered but Rejected from Further Evaluation

CEQA *Guidelines* Section 15126.6(c) requires an EIR to identify and briefly discuss any alternatives that were considered by the lead agency and rejected from further evaluation. In identifying alternatives to the proposed project, primary consideration was given to alternatives that would reduce impacts while still meeting most of the basic project objectives as well as the City's planning goals and objectives, such as those articulated in the Alameda General Plan. The alternative scenarios that the City considered but rejected are discussed briefly below, along with the specific reasons that they were not evaluated further in this document.

Off-Site Location

Section 15126.6(f)(2) of the CEQA *Guidelines* sets forth the following criteria for determining whether to identify an alternative site because "An EIR need not consider an alternative whose

effect cannot be reasonably ascertained and whose implementation is remote and speculative." CEQA *Guidelines* Section 15126.6(f)(2) states:

(A) "Key question. The key question and first step in analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR."

(B) "None feasible. If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR. For example, in some cases there may be no feasible alternative locations for a geothermal plant or mining project, which must be in close proximity to natural resources at a given location."

(C) "Limited new analysis required. Where a previous document has sufficiently analyzed a range of reasonable alternative locations and environmental impacts for projects with the same basic purpose, the lead agency should review the previous document. The EIR may rely on the previous document to help it assess the feasibility of potential project alternatives to the extent the circumstances remain substantially the same as they relate to the alternative (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 573 . . .)."

Because the basic purpose of the proposed project is to redevelop the Alameda Marina site and to fund improvements to the shoreline marina infrastructure there, an alternative site would not be feasible as an alternative to the proposed project. The purpose of the proposed project is to determine the best uses and development standards and requirements for the project site. Consideration of an alternative that analyzes the impact of developing a different property located at some other location would have no practical use or relevance to the decisions that must be made about the development of this particular piece of property. Therefore, an alternative site is not considered a feasible alternative to the proposed project, and is not analyzed in this EIR.

Higher Density/More Housing Units

The current housing shortage within the Bay Area would suggest that proposed projects should consider alternatives whereby the supply of housing would be increased to the greatest extent possible. For purposes of the proposed project, providing more housing units on the site beyond the 779 proposed could conceivably be accomplished in a number of ways: 1) decreasing open space and other areas of the proposed master plan and placing housing there instead; 2) decreasing commercial areas and substituting that use with more housing; 3) increasing the number of floors on buildings, thus providing more space for additional units; and 4) a combination of some or all of the above.

There are a number of constraints, however, that make a higher density development on the site infeasible, or substantially undesirable. Decreasing open space, for example, would conflict with established City polices concerning provision of open space. Decreases in shoreline public open space and public access would also conflict with San Francisco Bay Conservation and Development Commission (BCDC) policies and requirements.

Further reducing or eliminating commercial uses on the site and replacing those uses with housing would conflict with the public's stated desire (as conveyed during public hearings on the

project) to retain maritime commercial uses and maintain a working waterfront on the site. Were these uses to be displaced from the site, they would presumably need to be relocated elsewhere, which would serve to create new impacts at those locations.

Soils on portions of the site and the ability of those soils to support taller and correspondingly heavier buildings present a constraint on constructing taller buildings with more floors and more units. Much of the site is artificial fill overlying bay mud. These soils place limitations on the types of structures that can be placed upon them. These limitations can potentially be overcome with specialized construction techniques, but those techniques substantially increase the cost of construction, and would therefore make the project financially infeasible.

Additional housing units would also increase identified significant and unavoidable impacts to traffic and circulation. More area intersections would be likely to experience unacceptable level of service operations, and other circulation effects could also be created.

Finally, increasing density on the site beyond 30 dwelling units per acre would conflict with existing City land use and zoning policies, and would require an amendment to the City Charter. Such an amendment would require voter approval, which would be a time-consuming and costly effort, with an unknown chance of success.

For each of these reasons, it was determined that a higher density alternative with substantially more housing units is neither feasible nor desirable. Accordingly, such an alternative was dropped from further consideration.

5.3 Description of Alternatives Selected for Analysis

The alternatives selected for analysis are designed to inform the public discussion and the final decisions by the City of Alameda Planning Board and City Council on the proposed Alameda Marina Master Plan. Specifically, the range of alternatives is designed to inform decision makers about:

- Potential modifications to the proposed project that might minimize or avoid environmental impacts.
- The relative change in environmental impact (increase or decrease) that might be expected by potential modifications to the proposed project.
- The impact on the project sponsor's and the City’s ability to achieve the project objectives with the potential modifications to the project.

Based on these considerations, the City has identified the following range of reasonable alternatives to be addressed in this EIR.

- **Alternative 1**: Preservation Alternative
- **Alternative 2**: Extensive Adapted Reuse Alternative
- **Alternative 3:** Reduced Project Alternative
- **Alternative 4:** No Project Alternative

Table 5-1 presents a comparison of these alternatives (and a summary of the proposed project at full buildout) carried forward for consideration and evaluation.

TABLE 5-1
DESCRIPTION OF PROPOSED PROJECT AND ALTERNATIVES SELECTED FOR EVALUATION

Land Use	Proposed Project at Full Buildout	Alternative 1: Preservation Alternative	Alternative 2: Extensive Adapted Reuse Alternative	Alternative 3: Reduced Project Alternative	Alternative 4: No Project Alternative
Residential Units	779	475	550	180	-
Multifamily Wrap Units	*569*	*346*	*346*	*-*	*-*
Multifamily Elevator Stacked Flats	*48*	*-*	*-*	*-*	*-*
Multifamily Townhomes	*162*	*129*	*129*	*100*	*-*
Adaptive Reuse Housing	*-*	*-*	*75*	*-*	*-*
Single-Family Detached Residential	*-*	*-*	*-*	*80*	
Commercial Space (SF)	153,172	250,000[2]	150,000	150,000	250,000[2]
Maritime	*53,985*				
Maker	*20,800*				
Small Office	*66,200*				
Retail	*12,187*				
Meets most objectives?	**Yes**	**No**	**Yes**	**No**	**No**
Feasible?	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Substantially avoids or lessens SU Impact/s? [1]	**NA**	**Yes**	**Yes**	**Yes**	**Yes[3]**

NOTES: SU = Significant and Unavoidable; SF = Square Feet

1 At least one SU impact, but not necessarily all SU impacts, would be eliminated under this alternative.
2 Alternatives 1 and 4 each assume that the existing mix of available commercial uses would remain essentially unchanged.
3 Alternative 4 would eliminate all of the SU impacts associated with the proposed project, but would create new impacts, particularly to existing City-owned shoreline infrastructure.

Alternative 1: Preservation Alternative

This alternative considers the environmental impacts of allowing some additional development, but only in such a manner as to not impact existing structures on the site that have been determined by the City's Historic Advisory Board (HAB) to be contributing elements to the HAB-designated Alameda Marina Historic District. The structures so designated are shown in **Figure 4.4-1** of this EIR. The designated contributing elements include 17 buildings and the graving dock structure in the eastern portion of the site.

Besides designating the district's contributing structures, the HAB also designated a cultural landscape boundary for the district. This boundary is also shown in **Figure 4.4-1**. The designated cultural landscape includes the entire land-side portion of the site, as well as some water-side portions within the marina itself. The boundary roughly corresponds with the outlines of the former shipyard that once occupied the site. Precluding the entirety of the cultural landscape from development would essentially place the entire site off limits from development, which would essentially be identical to the No Project Alternative described below. To provide an alternate comparison to the No Project Alternative, the Preservation Alternative assumes that new

development would occur at the site within the boundary of the designated cultural landscape, but that any such development would not impact the existing contributing buildings or the graving dock. Under this alternative, development would occur at both ends of the site, generally in the U-shaped area around the graving dock in the eastern quarter of the site, and in the existing parking/dry storage area in the western quarter. The central half of the site, as well as much of the site's frontage on Clement Avenue, would generally remain in its current state.

Constructing housing within these two available envelopes would allow for a total of approximately 475 housing units. The units would be a mix of multi-family townhomes and multi-family wrap buildings. The existing designated historic structures would not be affected, and the types of commercial and industrial uses currently taking places in those structures would remain unchanged, so it is assumed that the commercial/industrial square-footage on the site would remain roughly the same as is present currently.

This alternative would be able to achieve more of the objectives for the project than the No Project Alternative because it would still allow for some private reinvestment in Alameda Marina. This alternative would allow limited private investment in up to 475 new residential units, which would be 304 (39 percent) fewer units than the proposed project. Portions of the return on that investment could be used to renovate the public infrastructure on the site, particularly the needed shoreline and marina improvements. The amount available for reinvestment in these facilities, however, would be less than what would be available under the proposed project.

Under this alternative, mixed-use pedestrian-oriented development at Alameda Marina could only be developed on the eastern and western quarters of the site, leaving more than half of the project site in its historic commercial and industrial configuration. The historic structures and the overall layout of Alameda Marina was originally designed for the movement of large equipment and industrial operations, not for pedestrians and bicyclists. The spacing between buildings, the size of the streets and the orientation of buildings were all designed for industrial and commercial uses, not mixed-use development. By prohibiting development within the central core and the southern periphery of the site, this alternative would limit development opportunities at the heart of the project.

Although this alternative would achieve more of the project objectives than the No Project Alternative, it would not achieve the project objectives as well as the proposed project because it would limit private reinvestment and redevelopment, thus it is less likely to attract sufficient private capital to fund the necessary public infrastructure improvements, build the planned open spaces, and rehabilitate the shoreline and marina infrastructure. In addition, this alternative would not generate as many housing opportunities.

Similar to the No Project Alternative, from a regional perspective, this would be less effective than the proposed project with regard to fulfilling the goals of the City's Housing Element and helping to meet the City's Regional Housing Need Allocation. Also from a regional perspective, limiting development of the property to 475 new housing units would increase pressures to allow future development to locate further from the urban centers, which would result in longer Bay Area commutes and increased greenhouse emissions from vehicles.

As shown in **Table 5-13** at the end of this chapter, the Preservation/Less Development Alternative would be marginally better than the No Project Alternative in meeting the project objectives, but not as good as the proposed project.

Alternative 2: Extensive Adapted Reuse Alternative

This alternative would provide for retention of the existing contributing structures of the Alameda Marina Historic District, along with new development within the eastern and western quarters of the site, similar to that of the Preservation Alternative. This alternative would differ from Alternative 1 in that it would allow for adaptive reuse of the existing historic structures on the site rather than utilizing them solely in their current commercial/industrial use. Under this alternative, about 40 percent (100,000 square feet) of the existing structures in the central half of the site would be converted to residential uses, with about 60 percent (150,000 square feet) being retained in their existing commercial/industrial configuration. Such an alternative would provide a similar quantity of commercial/industrial uses as that provided under the proposed project, while also providing for some expansion of residential uses within the historic core of the site.

Under this alternative, it is assumed that the conversion of some of the existing commercial/industrial structures on the site to residential uses could provide for an additional 100 residential units. Together with the 475 units that would be constructed in the eastern and western quarters of the site, this alternative would provide for the construction of approximately 550 total residential units.

As with Alternative 1, this alternative would be able to achieve more of the objectives for the project than the No Project Alternative because it would still allow for some private reinvestment in Alameda Marina. The amount available for reinvestment in these facilities, however, would be less than what would be available under the proposed project.

One of the principal constraints associated with this alternative is the lack of suitability of many of the existing historic structures for adaptive reuse. A great many of the existing structures are at the end of their useable lives, and rehabilitating and converting those structures to new uses would in many instances not be practical or would be cost prohibitive. Most of the structures were constructed for purely industrial uses, and simply do not lend themselves to conversion to other uses without fundamentally altering the principal attributes that make them historic structures in the first place. In those instances, conversion to new uses would not only be costly, but would also undermine the fundamental purpose of the alternative, which would be to preserve the historic attributes of the district.

The other principal constraint associated with this alternative is the cost of converting these structures to different uses, and the effect those additional costs would have on the amount of capital that would be generated by the project. In short, these additional costs would curtail the amount of private capital available to fund the necessary public infrastructure improvements, build the planned open spaces, and rehabilitate the deteriorated shoreline and marina infrastructure.

This alternative would generally meet all of the objectives of the proposed project, in that it would transform some of the site into a new waterfront residential community, provide access to waterfront open space for public use, and generate capital investment in the aging marina and shoreline infrastructure. However, conservatively presuming that this alternative would be technically and economically feasible, it would achieve the last objective to a lesser extent than the proposed project.

As shown in **Table 5-13** at the end of this chapter, the Extensive Adaptive Reuse Alternative would be somewhat better than the No Project Alternative in meeting the project objectives, but not as good as the proposed project.

Alternative 3: Reduced Project Alternative

The Reduced Project Alternative assumes a mix of development across the site, but at a lower density than that of the proposed project. Rather than a mix of multi-family structures and townhomes, this alternative would include a mix of townhomes and detached, single-family residences. The development of new residential uses could occur throughout the site, and would not necessarily preclude the demolition of existing historic structures to make room for new residential uses.

Under this alternative, approximately 100 townhomes would be constructed, and 80 detached single-family residences. Approximately 150,000 square feet of commercial and industrial uses would remain at the site.

Although the economic feasibility of this alternative would be required to be confirmed (ability of this alternative to fund the necessary public infrastructure improvements, build the planned open spaces, and rehabilitate the shoreline and marina infrastructure, as well as the ongoing maintenance costs of the public improvements once constructed), this alternative is potentially feasible.

The Reduced Project Alternative would generally meet all of the objectives of the proposed project, in that it would transform much of the site into a new waterfront residential community, provide access to waterfront open space for public use, and generate capital investment in the aging marina and shoreline infrastructure. However, conservatively presuming that this alternative would be economically feasible, it would achieve the last objective to a much lesser extent than the proposed project.

As shown in **Table 5-13** at the end of this chapter, the Reduced Project Alternative would be marginally better than the No Project Alternative in meeting the project objectives, but not as good as the proposed project.

Alternative 4: No Project/No Development Alternative

The No Project Alternative is the circumstance under which the proposed project does not proceed. This Alternative is analyzed consistent with Section 15126.6(e) of the CEQA *Guidelines*, which states that the No Project Alternative must include the assumption that

conditions at the time the Notice of Preparation of an EIR was circulated for public review would not be changed because the proposed project would not be constructed, and the events or actions that would reasonably be expected to occur in the foreseeable future if the proposed project were not approved.

Under the No Project/No Development Alternative, the project would not be constructed, and the site would remain in the same state as its current condition, with the existing structures, parking areas, and existing marina and shoreline infrastructure remaining in place. Residential units would not be constructed at the site, the commercial core element would not be constructed, the proposed open space would not be developed, and the new portion of the Bay Trail would not be constructed.

This alternative would not meet any of the objectives of the proposed project: it would not transform the site into a new waterfront residential community with open space and public access improvements, nor would it help fulfill the City's planning goals and vision for the site. The site would not contribute to fulfilling the goals of the City's Housing Element or help meet the City's Regional Housing Need Allocation. Most importantly, this alternative would not generate any capital investment in the aging marina and shoreline infrastructure; those facilities would continue to deteriorate, and without the injection of substantial funds from some other source, those facilities would eventually become unsafe and unusable. This alternative would, however, avoid all of the project's impacts as identified in Chapter 4 of this EIR.

5.4 Comparative Analysis of the Alternatives

This section presents a discussion of the comparative environmental effects of each alternative compared to the effects of the proposed project.

As permitted by CEQA, the significant effects of the alternatives are discussed in this EIR in less detail than are the effects of the proposed project (CEQA *Guidelines* Section 15126.6[d]). All impacts are described after implementation of any applicable mitigation measures identified in Chapter 4.

5.4.1 Comparison of Impacts Identified for the Proposed Project and Alternatives

Alternative 1: Preservation Alternative

The Preservation Alternative would retain all of the contributing historic structures on the site, as well as the graving dock. Under this alternative, mixed-use pedestrian-oriented development at Alameda Marina would only be developed on the eastern and western quarters of the site, leaving more than half of the project site in its historic commercial and industrial configuration. Within the eastern and western quarters of the site, a total of 346 multifamily wrap units and 129 multifamily townhomes would be constructed. Available commercial space would remain at approximately 250,000 square feet, located primarily in the central portion of the site. This alternative would include some open space areas, but overall would provide less open space, park, and landscaped

areas than the proposed project. The following discussion summarizes impacts that would occur under the Reduced Project Alternative in comparison to the impacts that would occur under the proposed project.

Impacts

Aesthetics

The Preservation Alternative would result in less-than-significant (no mitigation required) aesthetics impacts, the same as identified with the proposed project, although the alternative would not realize all of the aesthetic enhancements from the proposed project. Development under this alternative would largely retain the existing historic core in the central portion of the site, and would restrict new development to the western and eastern portions of the site. As with the proposed project, new development on the site would be subject to City Design Review, which would ensure continuity of quality design. Retention of the central historic core, however, would also retain some of the negative aesthetic elements that currently exist on the site, namely the blockage of views of the estuary from Clement Avenue along much of the project frontage. Rather than providing view corridors through the site, the existing buildings and walls in the central portion of the site would remain in place, and those structures would continue to block views of the estuary. Retention of these structures would not necessarily worsen views in the area, but the potential for improved views would not be realized. Based on these considerations, this alternative would result in a less-than-significant impact, similar to the proposed project.

Air Quality and Climate Change

The Preservation Alternative would result in less-than-significant (with mitigation) construction and operational impacts, similar to that identified with the proposed project. Development under this alternative would be less than the proposed project. Less construction would occur, there would be fewer residential units, and the overall intensity of use on the site would be less than that envisioned under the proposed project. Accordingly, the quantities of air quality and greenhouse gas emissions associated with the project would also be less. Based on these considerations, this alternative would result in a less-than-significant impact, similar to the proposed project.

Biological Resources

The Preservation Alternative would result in less-than-significant (with mitigation) biological resources impacts, the same as identified with the proposed project. Under this alternative, the existing historic structures on the site would remain in place and would generally maintain their existing uses. Since there would be less demolition across the site, impacts to nesting birds would be less likely to occur. Mitigations for nesting bird avoidance prescribed for the proposed project would also be applicable to this alternative. Similarly, mitigations to protect against avian collisions would also be applicable under the alternative.

Potential impacts to marine resources would be the same under both this alternative and the proposed project. This is based on the fact that all of the proposed in-water activities along the

waterfront, in the marina, and within the graving dock area would still take place. Rehabilitation and replacement of deteriorating structures would still occur, and the same impacts identified for the proposed project would also occur with the alternative. This would include impacts from construction noise and disturbance, pile driving, demolition and removal of structures, and dredging. As with the proposed project, prescribed mitigations would be implemented to avoid a significant effect.

In summary, impacts to biological resources under this alternative would be marginally less than the proposed project, but not substantially so.

Cultural Resources

The Preservation Alternative would also result in significant and unavoidable impacts to cultural resources (with mitigation), though those impacts would be less severe than the proposed project. As discussed in Section 4.4, *Cultural Resources*, of this EIR, the proposed project would result in the following significant and unavoidable cultural resources impacts:

- **Impact CUL-1:** Project implementation would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.
- **Impact CUL-4:** Project construction could cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074.
- **Impact C-CUL-1:** The project, in combination with past, present, and probable future projects, would substantially contribute to cumulative adverse historic architectural resources impacts.
- **Impact C-CUL-3:** The project, in combination with past, present, and probable future projects, could result in cumulative adverse impacts on tribal cultural resources.

The Preservation Alternative would retain all of the contributing buildings within the designated Alameda Marina Historic District. Impacts to these structures would therefore be fully avoided. However, impacts within the larger City-designated cultural landscape would still occur, as development would still be allowed to occur within the defined landscape boundaries. As with the proposed project, this impact would remain significant and unavoidable.

The same mitigations prescribed for the proposed project to avoid subsurface archaeological resources and buried human remains would also be required under this alternative. As with the proposed project, implementation of these measures would effectively mitigate potential impacts to these resources. Impacts to Traditional Cultural Resources, however, would remain significant and unavoidable.

Geology, Soils, and Paleontological Resources

The Preservation Alternative would result in less-than-significant (no mitigation required) geology, soils, and paleontological impacts, the same as identified for the proposed project. As with the proposed project, compliance with applicable building codes and site-specific design requirements would reduce or avoid potential impacts related to seismically-induced ground shaking, lateral spreading, subsidence, liquefaction, collapse, and expansive soils. Overall, like

the proposed project, this alternative would result in less-than-significant geology and soils impacts associated with construction and operation.

For paleontological resources, there is a very low potential to encounter paleontological resources in the project area. This would remain the same regardless of the alternative selected.

Hazards and Hazardous Materials

The Preservation Alternative would result in less-than-significant (with mitigation) hazards and hazardous materials impacts, the same as identified with the proposed project. The Preservation Alternative would not demolish as many on-site buildings as the proposed project, so hazardous materials impacts associated with demolition (i.e., disturbance of asbestos containing materials, lead-based paint, etc.) would be less than the proposed project. Lesser quantities of ground disturbance would also be required, as a substantial portion of the site would be retained in its current condition. As a result, less disturbance of potentially contaminated soils would be required. Regardless, the Preservation Alternative would be subject to the same regulatory requirements and mitigation measures as the proposed project. As with the proposed project, with mitigation, the alternative would avoid significant and unavoidable hazards and hazardous materials impacts.

Hydrology and Water Quality

The Preservation Alternative would result in less-than-significant (with mitigation) hydrology and water quality impacts, the same as identified with the proposed project. The Preservation Alternative would involve construction and earthmoving activities that could affect water quality and alter drainage patterns in a similar fashion as the proposed project. In addition, site infrastructure under this alternative would be subject to the same flood hazard conditions, including flood hazards related to sea level rise, as compared to the project. Adherence to the same project design features, mitigations, and regulatory requirements would ensure the alternative would have less-than-significant impacts to hydrology and water quality.

Land Use and Planning

The Preservation Alternative would result in less-than-significant (no mitigation required) land use and planning impacts, the same as identified for the proposed project. As with the proposed project, the Preservation Alternative would be consistent with existing land use and zoning designations for the project site. Overall, the Preservation Alternative would result in less-than-significant land use and planning impacts like those identified for the project. However, this alternative would not be as supportive toward meeting the City's Regional Housing Needs Assessment (RHNA) goals and its General Plan Housing Element goals and policies since the alternative would have fewer units/less density, as compared to the project.

Noise and Vibration

The Preservation Alternative would result in less-than-significant (with mitigation) construction and operational noise impacts, the same as identified with the proposed project.

Because the Preservation Alternative would contain fewer residential units and thus would generate fewer vehicular trips than the proposed project, marginal reductions in area roadway noise could result from implementation of the alternative. In addition, construction activity would be less with this alternative; therefore, the duration of construction noise would be reduced, as compared to the project. Pile driving associated with the waterfront improvements and repairs would likely be the same under this alternative as they would be under the proposed project. Like the proposed project, with mitigation the alternative would avoid significant and unavoidable construction and operational noise impacts.

Population, Housing and Employment

The Preservation Alternative would result in a less-than-significant (no mitigation required) impacts to population, housing, and employment, the same as identified with the proposed project, although the alternative would have less residential population. As with the project, no displacement of housing or people would occur with the Preservation Alternative. Overall growth with this alternative would be considerably less than with the project (a residential population of 1,178 people compared to the proposed project residential population of 1,932). Less population growth typically results in reductions in other effects (e.g., utility and public service demands). Also, no aspect of the alternative would result in undue growth associated with infrastructure improvements that would induce growth, similar to the proposed project. Further, because this alternative would have less development as compared to the proposed project, it would not be as supportive toward meeting the City's RHNA and the City's Housing Element goals.

Public Services and Recreation

The Preservation Alternative would result in less-than-significant (no mitigation required) impacts to public services and recreation, the same as those identified for the proposed project. As previously discussed for this alternative, there would be less development and on-site population as compared to the project, resulting in lower demand for police, fire and emergency services, schools, and parks and recreation. A somewhat smaller total area of open space area would be provided for this alternative as compared to the project. Overall, the Preservation Alternative would result in less-than-significant impacts to public services and recreation, as compared to those identified for the project.

Transportation and Traffic

The Preservation Alternative would result in significant and unavoidable impacts (with mitigation) for transportation and traffic impacts, the same as identified with the proposed project, although the alternative would have less development. As discussed in Section 4.12, *Transportation and Traffic*, of this EIR, the proposed project would result in the following significant and unavoidable transportation and traffic impacts:

> **Impact TRA-2:** The proposed project would increase traffic volumes such that traffic conditions at the Park Street/Blanding Avenue and Park Street/Clement Avenue

intersections would either deteriorate from LOS D to LOS F or the proposed project would increase traffic volumes by three percent or more.

Impact TRA-3: In the event that the planned Clement Avenue extension is not completed prior to project opening, the proposed project could increase traffic volumes at intersections on Buena Vista Avenue such that traffic operations could deteriorate to substandard conditions.

The Preservation Alternative would generate approximately 38 percent fewer trips than the proposed project. As shown in **Table 5-2**, traffic trips under the Preservation Alternative would be less than for the project (262/316 AM/PM peak hour trips for the alternative compared to 423/509 AM/PM peak hour trips for the project), and the significant and unavoidable impacts of the project would therefore become less severe under this alternative.

TABLE 5-2
PRESERVATION ALTERNATIVE AUTOMOBILE TRIP GENERATION ESTIMATES

Land Use	ITE Code	Units [a]	AM Peak Hour			PM Peak Hour			Daily Total
			In	Out	Total	In	Out	Total	
Townhomes	231 [a]	129 DU	22	64	86	59	42	101	1,080
Multi-Family Wrap Units	220 [b]	346 DU	35	141	176	140	75	215	2,300
Total Alternative 1 Automobile Trips			**57**	**205**	**262**	**199**	**117**	**316**	**3,380**
Proposed Project			90	333	423	322	188	509	5,450
Difference			**-33**	**-128**	**-161**	**-123**	**-70**	**-193**	**-2,070**

NOTES:

[a] The following ITE trip generation rates were used for the Townhomes (ITE Code 231 – Low-Rise Condominium/Townhouse)
AM: T=0.67 * X; Enter=25%, Exit=75%
PM: T=0.78 * X; Enter=58%, Exit=42%
Where X= number of dwelling units (DU), T=number of vehicle trips

[b] The following ITE trip generation rates were used for the Stacked Flats and Multi-Family Wrap Units (ITE Code 220 – Apartments):
AM: T=0.51 * X; Enter=20%, Exit=80%
PM: T=0.62 * X; Enter=65%, Exit=35%
Where X= number of dwelling units (DU), T=number of vehicle trips

SOURCE: Fehr & Peers, 2017; Trip Generation Manual (9th Edition), ITE, 2012

VMT per capita under the Preservation Alternative would be expected to remain largely the same as the proposed project. This is a function of the similar uses under both the proposed project and the Preservation Alternative, and the expectation that residents at the site would make the same types and numbers of trips per capita under either scenario. VMT per capita under both scenarios would still be estimated to be less than the region and citywide average VMT; however, the VMT per capita under both scenarios would exceed both the citywide VMT per capita minus 15 percent and the regional VMT per capita minus 15 percent thresholds. Therefore, the Preservation Alternative would have a significant and unavoidable impact on per capita VMT.

Since the Preservation Alternative would generate fewer peak hour trips than the proposed project, the significant and unavoidable impacts to area intersections identified for the proposed

project would be less severe under this alternative. As shown below in **Tables 5-3** and **5-4**, the reduction in traffic trips under the Preservation Alternative would not result in a change to the significant and unavoidable impacts at the Park Street/Blanding Avenue intersection (both peak hours) nor the Park Street/Clement Avenue intersection (PM peak hour). This is because the intersections would continue to operate at LOS F and the increase in traffic volume at the intersections under the Preservation Alternative would still be greater than three percent. However, the reduction in traffic trips under the Preservation Alternative would result in a less than significant impact at the Park Street/Clement Avenue intersection during the AM peak period, since the increase in traffic volume due to the alternative would be less than three percent. Therefore, the impacts to the area intersections identified in **Impact TRA-2** would generally remain significant and unavoidable under the Preservation Alternative, though the impact would be marginally less severe than it would be under the proposed project.

TABLE 5-3
PRESERVATION ALTERNATIVE CUMULATIVE (2040) AM PEAK HOUR
INTERSECTION LEVEL OF SERVICE

Study Intersection		Control	2040 No Project		2040 + Project	
			Delay[1]	LOS	Delay[1]	LOS
1	Webster Street/Atlantic Avenue	Signal	**82**	**F**	**86**	**F**
2	Constitution Way/Atlantic Avenue	Signal	27	C	29	C
3	Challenger Drive/Atlantic Avenue	Signal	**103**	**F**	**114**	**F**
4	Atlantic Avenue/Buena Vista Avenue	Signal	15	B	15	B
5	Grand Street/Buena Vista Avenue	Signal	23	C	31	C
6	Grand Street/Clement Avenue	Signal	28	C	39	D
7	Park Street/Blanding Avenue[2]	Signal	**>120**	**F**	**>120**	**F**
8	Park Street/Clement Avenue	Signal	**108**	**F**	**>120**	**F**
9	Park Street/Tilden Way-Lincoln Avenue	Signal	18	B	21	C
10	Tilden Way-Fruitvale Avenue/Blanding Avenue-Fernside Boulevard	Signal	21	C	31	C
11	High Street-Gibbons Drive/Fernside Bouelvard[2]	Signal	**63**	**E**	**63**	**E**

NOTES:
1 For signalized intersections, the Delay/LOS represents the overall intersection.
2 Based on HCM 2000, since HCM 2010 does not calculate LOS for this intersection.

Bold indicates locations with unacceptable LOS; **Shaded Bold** indicates significant impacts.

SOURCE: Fehr & Peers, 2017.

TABLE 5-4
PRESERVATION ALTERNATIVE CUMULATIVE (2040) PM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Study Intersection		Control	2040 No Project		2040 + Project	
			Delay[1]	LOS	Delay[1]	LOS
1	Webster Street/Atlantic Avenue	Signal	**96**	**F**	**107**	**F**
2	Constitution Way/Atlantic Avenue	Signal	31	C	33	C
3	Challenger Drive/Atlantic Avenue	Signal	44	D	48	D
4	Atlantic Avenue/Buena Vista Avenue	Signal	27	C	28	C
5	Grand Street/Buena Vista Avenue	Signal	19	B	22	C
6	Grand Street/Clement Avenue	Signal	15	B	34	C
7	Park Street/Blanding Avenue[2]	Signal	51	D	**83**	**F**
8	Park Street/Clement Avenue	Signal	**>120**	**F**	**>120**	**F**
9	Park Street/Tilden Way-Lincoln Avenue	Signal	**86**	**F**	**85**	**F**
10	Tilden Way-Fruitvale Avenue/Blanding Avenue-Fernside Boulevard	Signal	**>120**	**F**	**>120**	**F**
11	High Street-Gibbons Drive/Fernside Bouelvard[2]	Signal	**58**	**E**	**58**	**E**

NOTES:
1 For signalized intersections, the LOS/Delay represents the overall intersection.
2 Based on HCM 2000, since HCM 2010 does not calculate LOS for this intersection.

Bold indicates locations with unacceptable LOS; **Shaded Bold** indicates significant impacts.

SOURCE: Fehr & Peers, 2017.

With respect to Impact **TRA-3**, the uncertainty concerning the ultimate extension of Clement Avenue would remain regardless of which alternative was selected, particularly if the Alameda Marina project is constructed before the Clement Avenue extension is completed. Therefore, **Impact TRA-3** would remain significant and unavoidable under the Preservation Alternative, similar to the proposed project.

Utilities and Service Systems

The Preservation Alternative would result in less-than-significant (with mitigation) impacts to utilities and service system, the same as identified for the proposed project, although the alternative would have less development. As noted above, the Preservation Alternative would result in fewer overall residential units and a reduced residential population increase when compared with the project. As such, the demand for water, wastewater treatment, stormwater treatment, and solid waste disposal would be reduced, when compared with the project. Mitigation for reduced infiltration and inflow into onsite sewer infrastructure would be required regardless of the alternative selected. Overall, the Preservation Alternative would have less-than-significant (with mitigation) impacts related to utilities and services systems, similar to that identified for the proposed project.

Alternative 2: Extensive Adapted Reuse Alternative

This alternative would provide for retention of the existing contributing structures of the Alameda Marina Historic District, along with new development within the eastern and western quarters of the site. Under this alternative, it is assumed that the conversion of some of the existing commercial/industrial structures on the site to residential uses could provide for up to 75 residential units. Together with the 475 units that would be constructed in the eastern and western quarters of the site, this alternative would provide for the construction of approximately 550 total residential units, which would be 229 fewer units than the proposed project. As with the proposed project, about 150,000 square feet of commercial, industrial, and office space would be maintained on the site, which means that about 100,000 square feet of the existing commercial/industrial structures on the site would be converted to residential uses.

Impacts

Aesthetics

The Extensive Adapted Reuse Alternative would result in less-than-significant (no mitigation required) aesthetics impacts, the same as identified with the proposed project, although the alternative would not realize all of the aesthetic enhancements from the proposed project. Development under this alternative would largely retain the existing historic buildings in the central portion of the site, adapt some of those structures for residential use, and include all-new development in the western and eastern portions of the site. As with the proposed project, new development on the site would be subject to City Design Review, which would ensure continuity of quality design. Retention of the existing historic buildings, however, would also retain some of the negative aesthetic elements that currently exist on the site, namely the blockage of views of the estuary from Clement Avenue along much of the project frontage. Rather than providing view corridors through the site, the existing buildings and walls in the central portion of the site would remain in place, and those structures would continue to block views of the estuary. Retention of these structures would not necessarily worsen views in the area, but the potential for improved views would not be realized. Based on these considerations, this alternative would result in a less-than-significant impact, similar to the proposed project.

Air Quality and Climate Change

The Extensive Adaptive Reuse Alternative would result in less-than-significant (with mitigation) construction and operational impacts, similar to that identified with the proposed project. Development under this alternative would be less than the proposed project. Less construction would occur, there would be fewer residential units, and the overall intensity of use on the site would be less than that envisioned under the proposed project. Accordingly, the quantities of air quality and greenhouse gas emissions associated with the project would also be less. Based on these considerations, this alternative would result in a less-than-significant impact, similar to the proposed project.

Biological Resources

The Extensive Adapted Reuse Alternative would result in less-than-significant (with mitigation) biological resources impacts, the same as those identified with the proposed project, although the alternative could have less construction activity. Under this alternative, the existing historic structures on the site would remain in place, but many of the structures would be adapted to residential uses. Less demolition would occur under this alternative, so impacts to nesting birds would be less likely to occur. Mitigations for nesting bird avoidance prescribed for the proposed project would also be applicable to this alternative. Similarly, mitigations to protect against avian collisions would also be applicable under the alternative.

Potential impacts to marine resources would be the same under both this alternative and the proposed project. This is based on the fact that all of the proposed in-water activities along the waterfront, in the marina, and within the graving dock area would still take place. Rehabilitation and replacement of deteriorating structures would still occur, and the same impacts identified for the proposed project would also occur with the alternative. This would include impacts from construction noise and disturbance, pile driving, demolition and removal of structures, and dredging. As with the proposed project, prescribed mitigations would be implemented to avoid a significant effect.

In summary, impacts to biological resources under this alternative would be marginally less than the proposed project, but not substantially so.

Cultural Resources

The Extensive Adapted Reuse Alternative would result in fewer or less severe significant and unavoidable impacts than the proposed project. As discussed in Section 4.4, *Cultural Resources*, of this EIR, the proposed project would result in the following significant and unavoidable cultural resources impacts:

- **Impact CUL-1:** Project implementation would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.
- **Impact CUL-4:** Project construction could cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074.
- **Impact C-CUL-1:** The project, in combination with past, present, and probable future projects, would substantially contribute to cumulative adverse historic architectural resources impacts.
- **Impact C-CUL-3:** The project, in combination with past, present, and probable future projects, could result in cumulative adverse impacts on tribal cultural resources.

The Extensive Adapted Reuse Alternative would retain most of the contributing buildings within the designated Alameda Marina Historic District. Impacts to these structures would therefore be less than under the proposed project, though not all of the buildings would be retained, so the overall impact would remain significant and unavoidable. In addition, impacts within the larger City-designated cultural landscape would still occur, as development would still be allowed to occur within the defined landscape boundaries. As with the proposed project, this impact would also remain significant and unavoidable, but the impacts would be less severe.

The same mitigations prescribed for the proposed project to avoid subsurface archaeological resources and buried human remains would also be required under this alternative. As with the proposed project, implementation of these measures would effectively mitigate potential impacts to these resources. Impacts to Traditional Cultural Resources, however, would remain significant and unavoidable.

Geology, Soils, and Paleontological Resources

The Extensive Adapted Reuse Alternative would result less-than-significant (no mitigation required) geology and soils impacts, the same as identified for the proposed project, although the alternative could have less ground disturbance. As with the proposed project, compliance with applicable building codes and site-specific design requirements would reduce or avoid potential impacts related to seismically-induced ground shaking, lateral spreading, subsidence, liquefaction, collapse, and expansive soils. Overall, like the proposed project, this alternative would result in less-than-significant geology and soils impacts associated with construction and operation.

For paleontological resources, there is a very low potential to encounter paleontological resources in the project area. This would remain the same regardless of the alternative selected.

Hazards and Hazardous Materials

The Extensive Adapted Reuse Alternative would result in less-than-significant (with mitigation) hazards and hazardous materials impacts, the same as identified with the proposed project, although the alternative could have less ground moving activity. This alternative would result in fewer complete demolitions of on-site buildings, but the interiors of many of the retained buildings would be extensively modified, therefore many of the hazardous materials impacts associated with demolition (i.e., disturbance of asbestos containing materials, lead-based paint, etc.) would still occur, though at lesser levels. Lesser quantities of ground disturbance would be required under this alternative, and as a result, less disturbance of potentially contaminated soils would be required. Regardless, the Extensive Adapted Reuse Alternative would be subject to the same regulatory requirements and mitigation measures as the proposed project. As with the proposed project, with mitigation, the alternative would avoid significant and unavoidable hazards and hazardous materials impacts.

Hydrology and Water Quality

The Extensive Adapted Reuse Alternative would result in less-than-significant (with mitigation) hydrology and water quality impacts, the same as identified with the proposed project. The Extensive Adapted Reuse Alternative would involve construction and earthmoving activities that could affect water quality and alter drainage patterns in a similar fashion as the proposed project. In addition, site infrastructure under this alternative would be subject to the same flood hazard conditions, including flood hazards related to sea level rise, as compared to the project. Adherence to the same project design features, mitigations, and regulatory requirements would ensure the alternative would have less-than-significant impacts to hydrology and water quality.

Land Use and Planning

The Extensive Adapted Reuse Alternative would result in less-than-significant (no mitigation required) land use and planning impacts, the same as identified with the proposed project. As with the proposed project, the Extensive Adapted Reuse Alternative would be consistent with existing land use and zoning designations for the project site. Overall, the alternative would result in less-than-significant land use and planning impacts like those identified for the project. However, this alternative would not be as supportive toward meeting the City's Regional Housing Needs Assessment (RHNA) goals and its General Plan Housing Element goals and policies since the alternative would have fewer units/less density, as compared to the project.

Noise and Vibration

The Extensive Adapted Reuse Alternative would result in less-than-significant (with mitigation) construction noise impacts, the same as identified with the proposed project, although the alternative would have less development. Because this alternative would contain fewer residential units and thus would generate fewer vehicular trips than the proposed project, marginal reductions in area roadway noise could result from implementation of the alternative. In addition, demolition and construction activity would be less with this alternative; therefore, the duration of construction noise would be reduced, as compared to the project. Pile driving associated with the waterfront improvements and repairs would likely be the same under this alternative as they would be under the proposed project. Like the proposed project, with mitigation the alternative would avoid significant and unavoidable construction and operational noise impacts.

Population, Housing and Employment

The Extensive Adapted Reuse Alternative would result in less-than-significant (no mitigation required) impacts to population, housing, and employment, the same as identified with the proposed project. As with the project, no displacement of housing or people would occur with the Preservation Alternative. Overall growth with this alternative would be less than with the project (a residential population of 1,364 people compared to the proposed project residential population of 1,932). Less population growth typically results in reductions in other effects. Also, no aspect of the alternative would result in undue growth associated with infrastructure improvements that would induce growth, similar to the proposed project. Further, because this alternative would have less development as compared to the proposed project, it would not be as supportive toward meeting the City's RHNA and the City's Housing Element goals.

Public Services and Recreation

The Extensive Adapted Reuse Alternative would result in less-than-significant (no mitigation required) impacts to public services and recreation, the same as identified with the proposed project. As previously discussed for this alternative, there would be less development and on-site population as compared to the project, resulting in lower demand for police, fire and emergency services, schools, and parks and recreation. A somewhat smaller total area of open space area would be provided for this alternative as compared to the project. Overall, the Extensive Adapted

Reuse Alternative would result in less-than-significant impacts to public services and recreation, as compared to those identified for the project.

Transportation and Traffic

The Extensive Adapted Reuse Alternative would result in significant and unavoidable impacts (with mitigation) for transportation and traffic impacts, the same as identified with the proposed project, although the alternative would have less development. As discussed in Section 4.12, *Transportation and Traffic*, of this EIR, the proposed project would result in the following significant and unavoidable transportation and traffic impacts:

> **Impact TRA-2:** The proposed project would increase traffic volumes such that traffic conditions at the Park Street/Blanding Avenue and Park Street/Clement Avenue intersections would either deteriorate from LOS D to LOS F or the proposed project would increase traffic volumes by three percent or more.
>
> **Impact TRA-3:** In the event that the planned Clement Avenue extension is not completed prior to project opening, the proposed project could increase traffic volumes at intersections on Buena Vista Avenue such that traffic operations could deteriorate to substandard conditions.

As shown in **Table 5-6**, traffic trips under the Extensive Adapted Reuse Alternative would be less than for the project (312/375 AM/PM peak hour trips for the alternative compared to 423/509 AM/PM peak hour trips for the project), and the significant and unavoidable impacts of the project would therefore become less severe under this alternative.

TABLE 5-6
EXTENSIVE ADAPTED REUSE ALTERNATIVE AUTOMOBILE TRIP GENERATION ESTIMATES

Land Use	ITE Code	Units [a]	AM Peak Hour			PM Peak Hour			Daily Total
			In	Out	Total	In	Out	Total	
Townhomes	231 [a]	129 DU	22	64	86	59	42	101	1,080
Multi-Family Wrap Units	220 [b]	346 DU	35	141	176	140	75	215	2,300
Adaptive Reuse Housing	231 [a]	75 DU	13	37	50	34	25	59	630
Total Alternative 2 Automobile Trips			**70**	**242**	**312**	**233**	**142**	**375**	**4,010**
Proposed Project			90	333	423	322	188	509	5,450
Difference			**-20**	**-91**	**-111**	**-89**	**-46**	**-134**	**-1,440**

NOTES:

[a] The following ITE trip generation rates were used for the Townhomes and Adaptive Reuse Housing (ITE Code 231 – Low-Rise Condominium/Townhouse)
AM: T=0.67 * X; Enter=25%, Exit=75%
PM: T=0.78 * X; Enter=58%, Exit=42%
Where X= number of dwelling units (DU), T=number of vehicle trips

[b] The following ITE trip generation rates were used for the Stacked Flats and Multi-Family Wrap Units (ITE Code 220 – Apartments):
AM: T=0.51 * X; Enter=20%, Exit=80%
PM: T=0.62 * X; Enter=65%, Exit=35%
Where X= number of dwelling units (DU), T=number of vehicle trips

SOURCE: Fehr & Peers, 2017; Trip Generation Manual (9th Edition), ITE, 2012

VMT per capita under the Extensive Adapted Reuse Alternative would be expected to remain largely the same as the proposed project. This is a function of the similar uses under both the proposed project and the Extensive Adapted Reuse Alternative, and the expectation that residents at the site would make the same type and number of trips per capita under either scenario. VMT per capita under both scenarios would still be estimated to be less than the region and citywide average VMT; however, the VMT per capita under both scenarios would exceed both the citywide VMT per capita minus 15 percent and the regional VMT per capita minus 15 percent. Therefore, the Extensive Adapted Reuse Alternative would have a significant and unavoidable impact on per capita VMT.

Since the Extensive Adapted Reuse Alternative would generate fewer peak hour trips than the proposed project, the significant and unavoidable impacts to area intersections identified for the proposed project would be less severe under this alternative. As shown below in **Tables 5-7** and **5-8**, the reduction in traffic trips under the Extensive Adapted Reuse alternative would not result in a change to the Significant and Unavoidable impacts at the Park Street/Blanding Avenue intersection (both peak hours) nor the Park Street/Clement Avenue intersection (PM peak hour). This is because the intersections would continue to operate at LOS F and the increase in traffic volume at the intersections would be greater than three percent. However, the reduction in traffic trips under the Extensive Adapted Reuse Alternative would result in a Less Than Significant impact at the Park Street/Clement Avenue intersection during the AM peak period, since the increase in traffic volume due to the alternative would be less than three percent. Therefore, impacts to area intersections identified under **Impact TRA-2** would generally remain significant and unavoidable under the Extensive Adapted Reuse Alternative, though the impact would be marginally less severe than it would be under the proposed project.

With respect to Impact **TRA-3**, the uncertainty concerning the ultimate extension of Clement Avenue would remain regardless of which alternative was selected, particularly if the Alameda Marina project is constructed before the Clement Avenue extension is completed. Therefore, **Impact TRA-3** would remain significant and unavoidable under the Preservation Alternative, similar to the proposed project.

Utilities and Service Systems

The Extensive Adapted Reuse Alternative would result in less-than-significant (with mitigation) impacts to utilities and service systems, the same as identified with the proposed project, although the alternative would have less development. As noted above, the Extensive Adapted Reuse Alternative would result in fewer overall residential units and a reduced residential population increase when compared with the proposed project. As such, the demand for water, wastewater treatment, stormwater treatment, and solid waste disposal would be reduced, when compared with the project. Mitigation for reduced infiltration and inflow into onsite sewer infrastructure would be required regardless of the alternative selected. Overall, this alternative would have less-than-significant (with mitigation) impacts related to utilities and services systems, similar to that identified for the proposed project.

TABLE 5-7
EXTENSIVE ADAPTED REUSE ALTERNATIVE CUMULATIVE (2040) AM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Study Intersection		Control	2040 No Project		2040 + Project	
			Delay[1]	LOS	Delay[1]	LOS
1	Webster Street/Atlantic Avenue	Signal	**82**	**F**	**86**	**F**
2	Constitution Way/Atlantic Avenue	Signal	27	C	29	C
3	Challenger Drive/Atlantic Avenue	Signal	**103**	**F**	**114**	**F**
4	Atlantic Avenue/Buena Vista Avenue	Signal	15	B	15	B
5	Grand Street/Buena Vista Avenue	Signal	23	C	31	C
6	Grand Street/Clement Avenue	Signal	28	C	39	D
7	Park Street/Blanding Avenue[2]	Signal	**>120**	**F**	**>120**	**F**
8	Park Street/Clement Avenue	Signal	**108**	**F**	**>120**	**F**
9	Park Street/Tilden Way-Lincoln Avenue	Signal	18	B	21	C
10	Tilden Way-Fruitvale Avenue/Blanding Avenue-Fernside Boulevard	Signal	21	C	31	C
11	High Street-Gibbons Drive/Fernside Bouelvard[2]	Signal	**63**	**E**	**63**	**E**

NOTES:
1 For signalized intersections, the Delay/LOS represents the overall intersection.
2 Based on HCM 2000, since HCM 2010 does not calculate LOS for this intersection.

Bold indicates locations with unacceptable LOS; **Shaded Bold** indicates significant impacts.

SOURCE: Fehr & Peers, 2017.

TABLE 5-8
EXTENSIVE ADAPTIVE REUSE ALTERNATIVE CUMULATIVE (2040) PM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Study Intersection		Control	2040 No Project		2040 + Project	
			Delay[1]	LOS	Delay[1]	LOS
1	Webster Street/Atlantic Avenue	Signal	**96**	**F**	**107**	**F**
2	Constitution Way/Atlantic Avenue	Signal	31	C	33	C
3	Challenger Drive/Atlantic Avenue	Signal	44	D	48	D
4	Atlantic Avenue/Buena Vista Avenue	Signal	27	C	28	C
5	Grand Street/Buena Vista Avenue	Signal	19	B	22	C
6	Grand Street/Clement Avenue	Signal	15	B	34	C
7	Park Street/Blanding Avenue[2]	Signal	51	D	**83**	**F**
8	Park Street/Clement Avenue	Signal	**>120**	**F**	**>120**	**F**
9	Park Street/Tilden Way-Lincoln Avenue	Signal	**86**	**F**	**85**	**F**
10	Tilden Way-Fruitvale Avenue/Blanding Avenue-Fernside Boulevard	Signal	**>120**	**F**	**>120**	**F**
11	High Street-Gibbons Drive/Fernside Bouelvard[2]	Signal	**58**	**E**	**58**	**E**

NOTES:
1 For signalized intersections, the LOS/Delay represents the overall intersection.
2 Based on HCM 2000, since HCM 2010 does not calculate LOS for this intersection.

Bold indicates locations with unacceptable LOS; **Shaded Bold** indicates significant impacts.

SOURCE: Fehr & Peers, 2017.

Alternative 3: Reduced Project Alternative

The Reduced Project Alternative assumes a mix of development across the site, but at a lower density than that of the proposed project. Rather than a mix of multi-family structures and townhomes, this alternative would include a mix of townhomes and detached, single-family residences. The development of new residential uses could occur throughout the site, and would not necessarily preclude the demolition of existing historic structures to make room for new residential uses.

Under this alternative, approximately 100 townhomes would be constructed, and 80 detached single-family residences. Approximately 150,000 square feet of commercial and industrial uses would remain at the site.

The following discussion summarizes impacts that would occur under the Reduced Project Alternative in comparison to the impacts that would occur under the proposed project.

Impacts

Aesthetics

The Reduced Project Alternative would result in less-than-significant (no mitigation required) aesthetics impacts, the same as identified with the proposed project. Development under this alternative would largely rework the site and allow new development across the site. Many of the existing structures would be demolished and replaced with new development. As with the proposed project, new development on the site would be subject to City Design Review, which would ensure continuity of quality design. New development within the site could be laid out in such a manner as to allow clearer views through the site from Clement Avenue towards the shoreline, which would not be the case with Alternatives 1 or 2. Based on these considerations, this alternative would result in a less-than-significant impact, similar to the proposed project.

Air Quality and Climate Change

The Reduced Project Alternative would result in less-than-significant (with mitigation) construction and operational impacts, similar to that identified with the proposed project. Development under this alternative would be less than the proposed project. Less construction would occur, there would be fewer residential units, and the overall intensity of use on the site would be less than that envisioned under the proposed project. Accordingly, the quantities of air quality and greenhouse gas emissions associated with the project would also be less. Based on these considerations, this alternative would result in a less-than-significant impact, similar to the proposed project.

Biological Resources

The Reduced Project Alternative would result in less-than-significant (with mitigation) biological resources impact, the same as identified with the proposed project. Under this alternative, most of the existing structures on the site would be demolished, which would create

similar impacts as that of the proposed project to nesting birds that could use the buildings or surrounding areas for nesting or roosting. Mitigations for nesting bird avoidance prescribed for the proposed project would also be applicable to this alternative. Similarly, mitigations to protect against avian collisions would also be applicable under the alternative. As such, impacts in this regard would remain less than significant, with mitigation.

Potential impacts to marine resources would be the same under both this alternative and the proposed project. This is based on the fact that all of the proposed in-water activities along the waterfront, in the marina, and within the graving dock area would still take place. Rehabilitation and replacement of deteriorating structures would still occur, and the same impacts identified for the proposed project would also occur with the alternative. This would include impacts from construction noise and disturbance, pile driving, demolition and removal of structures, and dredging. As with the proposed project, prescribed mitigations would be implemented to avoid a significant effect.

In summary, impacts to biological resources under this alternative would be marginally less than the proposed project, but not substantially so.

Cultural Resources

The Reduced Project Alternative would result in similar impacts to cultural resources as the proposed project. As discussed in Section 4.4, *Cultural Resources*, of this EIR, the proposed project would result in the following significant and unavoidable cultural resources impacts:

> **Impact CUL-1:** Project implementation would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.
>
> **Impact CUL-4:** Project construction could cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074.
>
> **Impact C-CUL-1:** The project, in combination with past, present, and probable future projects, would substantially contribute to cumulative adverse historic architectural resources impacts.
>
> **Impact C-CUL-3:** The project, in combination with past, present, and probable future projects, could result in cumulative adverse impacts on tribal cultural resources.

Development under this alternative would largely rework the site and allow new development across the site. Many of the existing historic structures would be demolished and replaced with new development. Impacts to these structures would therefore be similar to the impacts assumed for the proposed project, and would remain significant and unavoidable. In addition, impacts within the larger City-designated cultural landscape would also occur, as development would be allowed to occur within the defined landscape boundaries. As with the proposed project, this impact would also remain significant and unavoidable.

The same mitigations prescribed for the proposed project to avoid subsurface archaeological resources and buried human remains would also be required under this alternative. As with the proposed project, implementation of these measures would effectively mitigate potential impacts

to these resources. Impacts to Traditional Cultural Resources, however, would remain significant and unavoidable.

Geology, Soils, and Paleontological Resources

The Reduced Project Alternative would result in less-than-significant (no mitigation required) geology and soils impacts, the same as identified for the proposed project. As with the proposed project, compliance with applicable building codes and site-specific design requirements would reduce or avoid potential impacts related to seismically-induced ground shaking, lateral spreading, subsidence, liquefaction, collapse, and expansive soils. Overall, like the proposed project, this alternative would result in less-than-significant geology and soils impacts associated with construction and operation.

For paleontological resources, there is a very low potential to encounter paleontological resources in the project area. This would remain the same regardless of the alternative selected.

Hazards and Hazardous Materials

The Reduced Project Alternative would result in less-than-significant (with mitigation) hazards and hazardous materials impacts, the same as identified with the proposed project. Like the proposed project, this alternative would result in extensive demolition across the site, and therefore many of the same hazardous materials impacts associated with demolition (i.e., disturbance of asbestos containing materials, lead-based paint, etc.) would still occur, at similar levels as the proposed project. Likewise, similar quantities of ground disturbance would occur under this alternative, and as a result, disturbance of potentially contaminated soils would be similar to that of the proposed project. Regardless, this alternative would be subject to the same regulatory requirements and mitigation measures as the proposed project. As with the proposed project, with mitigation, the alternative would avoid significant and unavoidable hazards and hazardous materials impacts.

Hydrology and Water Quality

The Reduced Project Alternative would result in less-than-significant (with mitigation) hydrology and water quality impacts, the same as identified with the proposed project. The Reduced Project Alternative would involve construction and earthmoving activities that could affect water quality and alter drainage patterns in a similar fashion as the proposed project. In addition, site infrastructure under this alternative would be subject to the same flood hazard conditions, including flood hazards related to sea level rise, as compared to the project. Adherence to the same project design features, mitigations, and regulatory requirements would ensure the alternative would have less-than-significant impacts to hydrology and water quality.

Land Use and Planning

The Reduced Project Alternative would result in less-than-significant (no mitigation required) land use and planning impacts, the same as identified for the proposed project. As with the proposed project, this alternative would be consistent with existing land use and zoning

designations for the project site. Overall, the alternative would result in less-than-significant land use and planning impacts like those identified for the project. However, this alternative would not be as supportive toward meeting the City's Regional Housing Needs Assessment (RHNA) goals and its General Plan Housing Element goals and policies since the alternative would have fewer units/less density, as compared to the project.

Noise and Vibration

The Reduced Project Alternative would result in less-than-significant (with mitigation) construction and operational noise impacts, the same as identified with the proposed project, although the alternative would have less development. Because this alternative would contain fewer residential units and thus would generate fewer vehicular trips than the proposed project, reductions in area roadway noise could result from implementation of the alternative. In addition, demolition and construction activity would be less with this alternative; therefore, the duration of construction noise would be reduced, as compared to the project. Pile driving associated with the waterfront improvements and repairs would likely be the same under this alternative as they would be under the proposed project. Like the proposed project, with mitigation the alternative would avoid significant and unavoidable construction and operational noise impacts.

Population, Housing and Employment

The Reduced Project Alternative would result in less-than-significant (no mitigation required) impacts to population, housing, and employment, the same as identified with the proposed project, although the alternative would have less residential population. As with the project, no displacement of housing or people would occur with this alternative. Overall growth with this alternative would be substantially less than with the project (a residential population of 446 people compared to the proposed project residential population of 1,932). Less population growth typically results in reductions in other effects. Also, no aspect of the alternative would result in undue growth associated with infrastructure improvements that would induce growth, similar to the proposed project. Further, because this alternative would have less development as compared to the proposed project, it would not be as supportive toward meeting the City's RHNA and the City's Housing Element goals.

Public Services and Recreation

The Reduced Project Alternative would result in less-than-significant (no mitigation required) impacts to public services and recreation, the same as those identified for the proposed project, although the alternative would have less development. As previously discussed for this alternative, there would be less development and on-site population as compared to the project, resulting in lower demand for police, fire and emergency services, schools, and parks and recreation. A somewhat greater total area of open space area could be provided under this alternative, given the lower housing density. Overall, this alternative would result in less-than-significant impacts to public services and recreation, as compared to those identified for the project.

Transportation and Traffic

The Reduced Project Alternative would result in a significant and unavoidable (with mitigation) transportation and traffic impacts, but with fewer impacts than identified with the proposed project. Since the alternative would have less development, it would generate fewer trips and therefore not result in significant impacts at two intersections. As discussed in Section 4.12, Transportation and Traffic, of this EIR, the proposed project would result in the following significant and unavoidable transportation and traffic impacts:

> **Impact TRA-2:** The proposed project would increase traffic volumes such that traffic conditions at the Park Street/Blanding Avenue and Park Street/Clement Avenue intersections would either deteriorate from LOS D to LOS F or the proposed project would increase traffic volumes by three percent or more.
>
> **Impact TRA-3:** In the event that the planned Clement Avenue extension is not completed prior to project opening, the proposed project could increase traffic volumes at intersections on Buena Vista Avenue such that traffic operations could deteriorate to substandard conditions.

This alternative would generate approximately 69 percent fewer trips than the proposed project. As shown in **Table 5-9**, traffic trips under the Reduced Project Alternative would be less than for the project (133/164 AM/PM peak hour trips for the alternative compared to 423/509 AM/PM peak hour trips for the project), and the significant and unavoidable impacts of the project would therefore become less severe under this alternative.

TABLE 5-9
REDUCED PROJECT ALTERNATIVE AUTOMOBILE TRIP GENERATION ESTIMATES

Land Use	ITE Code	Units [a]	AM Peak Hour			PM Peak Hour			Daily Total
			In	Out	Total	In	Out	Total	
Townhomes	231 [a]	100 DU	17	50	67	45	33	78	840
Single-Family Detached	210 [b]	80 DU	17	49	66	54	32	86	860
Total Alternative 3 Automobile Trips			**34**	**99**	**133**	**99**	**65**	**164**	**1,700**
Proposed Project			90	333	423	322	188	509	5,450
Difference			**-56**	**-234**	**-290**	**-223**	**-123**	**-345**	**-3,750**

NOTES:

[a] The following ITE trip generation rates were used for the Townhomes (ITE Code 231 – Low-Rise Condominium/Townhouse)
AM: T=0.67 * X; Enter=25%, Exit=75%
PM: T=0.78 * X; Enter=58%, Exit=42%
Where X= number of dwelling units (DU), T=number of vehicle trips

[b] The following ITE trip generation rates were used for the Single-Family Detached (ITE Code 210 – Single-Family Residential):
AM: T=0.51 * X + 9.74; Enter=25%, Exit=75%
PM: Ln(T)=0.9 * ln(X) + 0.51; Enter=63%, Exit=37%
Where X= number of dwelling units (DU), T=number of vehicle trips

SOURCE: Fehr & Peers, 2017; Trip Generation Manual (9th Edition), ITE, 2012

VMT per capita under the Reduced Project Alternative would be expected to remain largely the same as the proposed project. This is a function of the similar uses under both the proposed project and the Reduced Project Alternative, and the expectation that residents at the site would make the same types and numbers of trips per capita under either scenario. VMT per capita under both scenarios would still be estimated to be less than the region and citywide average VMT; however, the VMT per capita under both scenarios would exceed both the citywide VMT per capita minus 15 percent and the regional VMT per capita minus 15 percent. Therefore, the Reduced Project Alternative would have a significant and unavoidable impact on per capita VMT.

The alternative's contribution to the LOS F intersections at Park Street/Blanding Avenue and Park Street/Clement Avenue would result in a net increase of 1.8 percent and 1.2-1.9 percent at each of those intersections, respectively. As shown below in **Tables 5-10** and **5-11**, the reduction in traffic trips under the Reduced Project Alternative would result in a less than significant impact at the Park Street/Blanding Avenue and Park Street/Clement Avenue intersections, since the increase in traffic volume at each intersection due to the alternative would be less than three percent (though the intersections would operate at LOS F as under No Project conditions). Therefore, impacts to area intersections identified under **Impact TRA-2** would be reduced from significant and unavoidable to less than significant under the Reduced Project Alternative under Cumulative conditions.

TABLE 5-10
REDUCED PROJECT ALTERNATIVE CUMULATIVE (2040) AM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Study Intersection		Control	2040 No Project		2040 + Project	
			Delay[1]	LOS	Delay[1]	LOS
1	Webster Street/Atlantic Avenue	Signal	**82**	**F**	**86**	**F**
2	Constitution Way/Atlantic Avenue	Signal	27	C	29	C
3	Challenger Drive/Atlantic Avenue	Signal	**103**	**F**	**114**	**F**
4	Atlantic Avenue/Buena Vista Avenue	Signal	15	B	15	B
5	Grand Street/Buena Vista Avenue	Signal	23	C	31	C
6	Grand Street/Clement Avenue	Signal	28	C	39	D
7	Park Street/Blanding Avenue[2]	Signal	**>120**	**F**	**>120**	**F**
8	Park Street/Clement Avenue	Signal	**108**	**F**	**>120**	**F**
9	Park Street/Tilden Way-Lincoln Avenue	Signal	18	B	21	C
10	Tilden Way-Fruitvale Avenue/Blanding Avenue-Fernside Boulevard	Signal	21	C	31	C
11	High Street-Gibbons Drive/Fernside Bouelvard[2]	Signal	**63**	**E**	**63**	**E**

NOTES:
1 For signalized intersections, the Delay/LOS represents the overall intersection.
2 Based on HCM 2000, since HCM 2010 does not calculate LOS for this intersection.

Bold indicates locations with unacceptable LOS; **Shaded Bold** indicates significant impacts.

SOURCE: Fehr & Peers, 2017.

TABLE 5-11
REDUCED PROJECT ALTERNATIVE CUMULATIVE (2040) PM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Study Intersection		Control	2040 No Project		2040 + Project	
			Delay[1]	LOS	Delay[1]	LOS
1	Webster Street/Atlantic Avenue	Signal	**96**	**F**	**107**	**F**
2	Constitution Way/Atlantic Avenue	Signal	31	C	33	C
3	Challenger Drive/Atlantic Avenue	Signal	44	D	48	D
4	Atlantic Avenue/Buena Vista Avenue	Signal	27	C	28	C
5	Grand Street/Buena Vista Avenue	Signal	19	B	22	C
6	Grand Street/Clement Avenue	Signal	15	B	34	C
7	Park Street/Blanding Avenue[2]	Signal	51	D	**83**	**F**
8	Park Street/Clement Avenue	Signal	**>120**	**F**	**>120**	**F**
9	Park Street/Tilden Way-Lincoln Avenue	Signal	**86**	**F**	**85**	**F**
10	Tilden Way-Fruitvale Avenue/Blanding Avenue-Fernside Boulevard	Signal	**>120**	**F**	**>120**	**F**
11	High Street-Gibbons Drive/Fernside Bouelvard[2]	Signal	**58**	**E**	**58**	**E**

NOTES:
1 For signalized intersections, the LOS/Delay represents the overall intersection.
2 Based on HCM 2000, since HCM 2010 does not calculate LOS for this intersection.

Bold indicates locations with unacceptable LOS; **Shaded Bold** indicates significant impacts.

SOURCE: Fehr & Peers, 2017.

With respect to Impact **TRA-3**, the uncertainty concerning the ultimate extension of Clement Avenue would remain regardless of which alternative was selected, particularly if the Alameda Marina project is constructed before the Clement Avenue extension is completed. Therefore, **Impact TRA-3** would remain significant and unavoidable under the Preservation Alternative, similar to the proposed project.

Utilities and Service Systems

The Reduced Project Alternative would result in less-than-significant (with mitigation) impacts to utilities and service system, the same as identified for the proposed project, although the alternative would have less development. As noted above, this alternative would result in fewer overall residential units and a reduced residential population increase when compared with the proposed project. As such, the demand for water, wastewater treatment, stormwater treatment, and solid waste disposal would be reduced, when compared with the project. Mitigation for reduced infiltration and inflow into onsite sewer infrastructure would be required regardless of alternative. Overall, this alternative would have less-than-significant (with mitigation) impacts related to utilities and services systems, similar to that identified for the proposed project.

Alternative 4: No Project/No Development Alternative

The No Project/No Development Alternative assumes that the existing project site remains as it is and no development takes place. Under this alternative, the site would remain in the same state as its current condition, with the existing structures, parking areas, and existing marina and shoreline infrastructure remaining in place. Residential units would not be constructed at the site, the commercial core element would not be constructed, the proposed open space would not be developed, and the new portion of the Bay Trail would not be constructed.

The following discussion summarizes a comparison between the potential effects of the No Project/No Development alternative and the proposed project. Because the alternative poses no changes or activity compared to existing baseline conditions, no impacts would result. The discussion does identify where beneficial effects could occur with implementation of the proposed project that would not be realized under the No Project/No Development alternative.

Aesthetics

The No Project/No Development Alternative would result in no impacts to aesthetics, compared to the less-than-significant impact (no mitigation required) identified with the proposed project. The No Project/No Development alternative would result in no change to the existing views as seen from each viewpoint location discussed and evaluated in Section 4.1, *Aesthetics*, of this EIR. No visual impacts or other changes related to aesthetic resources would result from this alternative, as no changes would occur. Under the No Project/No Development Alternative, however, the existing structures on the site would not be demolished, and would continue to obstruct views of the shoreline from several viewpoints. Under the proposed project, these obstructions would be removed and view corridors through the site would be established, creating and improving views to the shoreline. While these beneficial effects that would occur with the proposed project would not occur with this alternative, the No Project/No Development Alternative would have no impacts to aesthetics.

Air Quality and Climate Change

The No Project/No Development Alternative would result in no impacts to air quality and greenhouse gas emissions, compared to the significant and unavoidable (with mitigation) impacts identified with the proposed project. No development would occur with the No Project/No Development Alternative. Therefore, none of the adverse effects related to air quality resulting from demolition, construction, or operations activities on the project site would occur with this alternative, as compared to the project. The No Project/No Development Alternative would have no impacts related to air quality.

The No Project/No Development Alternative would also not result in construction activity or any changes to the land uses existing on the project site. Therefore, no increase in greenhouse gas (GHG) emissions and energy use associated with construction and operation of development would occur.

Biological Resources

The No Project/No Development Alternative would result in no impacts to biological resources, compared to the less-than-significant (with mitigation) impacts identified with the proposed project. No development would occur with the No Project/No Development Alternative. Therefore, none of the project's impacts related to biological resources would occur with this alternative.

Cultural Resources

The No Project/No Development Alternative would result in no impacts to cultural resources, compared to the significant and unavoidable (with mitigation) impacts identified with the proposed project. No development would occur with the No Project/No Development Alternative. Therefore, the significant and unavoidable impacts identified under the proposed project would not occur. There would be no loss of historic structures within the Alameda Marina Historic District, nor would there be any potential degradation or loss of unknown historic, archaeological, and paleontological resources within the project site. Similarly, there would be no effect on Tribal Cultural Resources.

Geology, Soils, and Paleontological Resources

The No Project/No Development Alternative would result in no impacts to geology and soils, compared to the less-than-significant (no mitigation required) impacts identified with the proposed project. As noted in Section 4.5, *Geology, Soils, and Mineral Resources*, of this EIR, development on the project site could be affected by seismically induced ground shaking, spreading, subsidence, liquefaction or collapse. Under the No Project/No Development Alternative, the building code and design parameters required for modern construction, which are designed to protect against such risks, would not be employed for the existing structure on the project site, nor would any structures be removed, thereby leaving the existing older buildings subject to, and posing to people, a greater degree of risks than under the proposed project. However, this alternative would introduce no new people to the site. Overall, while certain beneficial aspects that would occur with the proposed project would not occur with this alternative, the No Project/No Development Alternative would have no impact.

Hazards and Hazardous Materials

The No Project/No Development Alternative would result in no impacts related to hazards and hazardous materials, compared to the less-than-significant (with mitigation) impacts identified with the proposed project. The No Project/No Development Alternative would not result in any development or changes to the project site. With development of the project, any existing hazardous materials conditions at the site would be remediated; under the No Project/No Development Alternative, construction excavation and demolition activities would not take place, and existing hazardous materials underground or within buildings would not be at risk of being released, but site cleanup would also not take place. Overall, while certain beneficial effects that would occur with the proposed project would not occur with this alternative, the No Project/No Development Alternative would have no impacts related to hazards and hazardous materials.

Hydrology and Water Quality

The No Project/No Development Alternative would result in no impacts to hydrology and water quality, compared to the less-than-significant (with mitigation) impacts identified with the proposed project. No development and no changes to the existing hydrologic conditions on the project site would occur under the No Project/No Development Alternative. Under this alternative, shoreline infrastructure improvements would not take place as it would under the proposed project, and therefore the site could remain vulnerable to flooding and/or shoreline encroachment as the existing shoreline infrastructure continues to fail. However, no new homes or recreational facilities would be constructed under this alternative that would be at risk from such flooding, though existing structures would continue to be at risk. Overall, while certain beneficial aspects that would occur with the proposed project would not occur with this alternative, the No Project/No Development Alternative would have no impacts related to hydrology and water quality.

Land Use and Planning

The No Project/No Development Alternative would result in no land use and planning impacts, compared to the less-than-significant (no mitigation required) impacts identified with the proposed project. The No Project/No Development Alternative would not result in any changes to the existing land uses or zoning designation of the project site. As with the proposed project, the impact would therefore be less than significant. However, this alternative would not support the City's Regional Housing Needs Assessment (RHNA) goals and its General Plan Housing Element goals and policies.

Noise and Vibration

The No Project/No Development Alternative would result in no noise impacts, compared to the less-than-significant (with mitigation) impacts identified with the proposed project. The No Project/No Development Alternative would not result in construction activity or any changes to the land uses existing on the project site. Therefore, none of the noise and vibration effects associated with construction and operation of the project would occur.

Population, Housing, and Employment

The No Project/No Development Alternative would result in no impacts to population, housing, or employment, compared to the less-than-significant (no mitigation required) impacts identified with the proposed project. The No Project/No Development Alternative would not result in new development. As with the project, no displacement of housing or people would occur with the No Project / No Development Alternative. No population growth would occur under the No Project/No Development Alternative. Also, no aspect of the alternative would result in undue growth associated with infrastructure improvements that would induce growth, similar to the proposed project. Therefore, the alternative would have no adverse impact related to population, housing, and employment. However, this alternative would not support the City's Regional Housing Needs Assessment (RHNA) goals and its General Plan Housing Element goals and policies.

Public Services and Recreation

The No Project/No Development Alternative would result in no impacts to public services and recreation, compared to the less-than-significant (no mitigation required) impacts identified with the proposed project. The No Project/No Development Alternative would not result in any changes to existing conditions with respect to demand for public services or recreation. Under this alternative, the creation of the onsite park and open space areas and construction of the Bay Trail segment through the site would not take place as it would under the proposed project, and therefore these beneficial impacts would not take place. Overall, the No Project/No Development Alternative would have no impacts related to public services and recreation.

Transportation and Traffic

The No Project/No Development Alternative would result in no impacts to transportation and traffic, compared to the significant and unavoidable (with mitigation) impacts identified with the proposed project. The No Project/No Development Alternative would not result in any new development or changes to the land use activity to generate new peak hour vehicle trips or affect current transportation and traffic patterns. The alternative would have no impact related to transportation and traffic.

Utilities and Service Systems

The No Project/No Development Alternative would result in no impacts to utilities and service systems, compared to the less-than-significant (no mitigation required) impacts identified with the proposed project. The No Project/No Development Alternative would not result in any changes to existing conditions with respect to demand for utilities and service systems. Under this alternative, the installation and/or retrofit of new utility infrastructure would not take place as it would under the proposed project. Regardless, the No Project/No Development Alternative would have no impact related to utilities and service systems.

Overall Comparison of Proposed Project with Alternatives

The analysis of the alternatives is summarized and compared in two tables: **Table 5-12** provides a summary of impact levels within all environmental topic areas. Overall, this table shows that the various alternatives would reduce some, but not all of the project's impacts.

Table 5-13 summarizes the ability of each alternative to meet the project sponsor's and City's objectives for the proposed project. The tables provide a ready means for the reader to review and compare the alternatives with each other, and with the project as proposed.

Table 5-13 indicates that the No Project/No Development Alternative would not have the ability to meet the objectives of the proposed project. The Preservation Alternative would have the ability to meet some of the objectives of the proposed project, although to a substantially lesser degree for objectives pertaining to project capitalization to fund the marina's needed shoreline improvements and the project's ability to support the City's Regional Housing Needs Assessment

(RHNA) goals and its General Plan Housing Element goals and policies. This conclusion also holds true for the Extensive Adaptive Reuse Alternative and the Reduced Project Alternative.

5.5 Environmentally Superior Alternative

Based on the evaluation described in this section, the No Project/No Development Alternative would be the most environmentally superior alternative with the fewest environmental impacts. However, the No Project/No Development Alternative would not meet any of the basic objectives of the project.

CEQA requires that that a second alternative be identified when the "No Project" alternative is the environmentally superior alternative (CEQA *Guidelines*, Section 15126.6(e)). Therefore, the **Preservation Alternative** would be the Environmentally Superior Alternative for the purpose of this analysis, even though it would still result in some of the significant and unavoidable impacts associated with the proposed project. Under the Preservation Alternative, those remaining impacts are described below:

Impact CUL-1: ***Project implementation would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines, Section 15064.5.*** Under the proposed project, this impact would be significant and unavoidable, and is generally driven by the demolition of contributing buildings within the Alameda Marina Historic District and development activities within the larger City-designated cultural landscape. Under the Preservation Alternative, all of the contributing buildings would be retained in their current use, and new development would be restricted to the western and eastern portions of the project site. As such, the loss of the contributing buildings would be avoided, and there would be a less than significant impact in this regard. However, development would still occur within the larger City-designated cultural landscape, so that impact would remain significant and unavoidable, though at a lesser severity than the proposed project.

Impact CUL-4: ***Project construction could cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074.*** As discussed in Section 4.4 of this EIR, *Cultural Resources*, there is an extensive prehistoric archaeological site with human burials present in a portion of the project area. Even under the Preservation Alternative, new development would occur within these areas, and that development would disturb these recorded archaeological resources and human burials. The mitigation prescribed for the proposed project (implementation of a Tribal Cultural Resources Interpretive Program) would also apply to the Preservation Alternative. As with the proposed project, implementation of this mitigation would not fully mitigate the impact, and the impact to tribal cultural resources would remain significant and unavoidable.

Impact C-CUL-1: ***The project, in combination with past, present, and probable future projects, would substantially contribute to cumulative adverse historic architectural resources impacts.*** This significant and unavoidable impact is largely related to the two impacts described above, and as such, this impact would be the same under both the proposed project and the Preservation Alternative.

Impact C-CUL-3: ***The project, in combination with past, present, and probable future projects, could result in cumulative adverse impacts on tribal cultural resources.*** As with

Impact C-CUL-1, this impact is largely related to the project-specific impacts outlined above, and would be the same under both the proposed project and the Preservation Alternative.

Impact TRA-2: ***The proposed project would increase traffic volumes such that traffic conditions at the Park Street/Blanding Avenue and Park Street/Clement Avenue intersections would either deteriorate from LOS D to LOS F or the proposed project would increase traffic volumes by three percent or more.*** The Preservation Alternative would generate fewer peak hour trips than the proposed project, so the significant and unavoidable impacts to area intersections identified for the proposed project would be less severe than under the proposed project. Still, the reduction in traffic trips under the Preservation Alternative would not result in a change to the significant and unavoidable impacts at the Park Street/Blanding Avenue intersection (both peak hours) nor the Park Street/Clement Avenue intersection (PM peak hour). This is because the intersections would continue to operate at LOS F and the increase in traffic volume at the intersections under the Preservation Alternative would still be greater than three percent. However, the reduction in traffic trips under the Preservation Alternative would result in a less than significant impact at the Park Street/Clement Avenue intersection during the AM peak period, since the increase in traffic volume due to the alternative would be less than three percent. Therefore, impacts to area intersections would generally remain significant and unavoidable under the Preservation Alternative, though the impact would be marginally less severe than it would be under the proposed project.

Impact TRA-3: ***In the event that the planned Clement Avenue extension is not completed prior to project opening, the proposed project could increase traffic volumes at intersections on Buena Vista Avenue such that traffic operations could deteriorate to substandard conditions.*** The uncertainty concerning the ultimate extension of Clement Avenue would remain regardless of which alternative was selected, particularly if the Alameda Marina project is constructed before the Clement Avenue extension is completed. Therefore, this impact would remain significant and unavoidable under the Preservation Alternative, similar to the proposed project.

TABLE 5-12
ALTERNATIVES IMPACT SUMMARY AND COMPARISON

Impact	Alternative 1: Preservation	Alternative 2: Extensive Adaptive Reuse	Alternative 3: Reduced Project	Alternative 4: No Project/No Development	Proposed Project
Aesthetics	Less than Significant ⇧	Less than Significant ⇧	Less than Significant	No Impact	Less than Significant
Air Quality and Climate Change	Less than Significant with Mitigation ⇩	Less than Significant with Mitigation ⇩	Less than Significant with Mitigation ⇩	No Impact	Less than Significant with Mitigation
Biological Resources	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	No Impact	Less than Significant with Mitigation
Cultural Resources	Significant and Unavoidable with Mitigation ⇩	Significant and Unavoidable with Mitigation ⇩	Significant and Unavoidable with Mitigation	No Impact	Less than Significant with Mitigation
Geology, Soils, and Paleontological Resources	Less than Significant	Less than Significant	Less than Significant	No Impact	Less than Significant
Hazards and Hazardous Materials	Less than Significant with Mitigation ⇩	Less than Significant with Mitigation ⇩	Less than Significant with Mitigation	No Impact	Less than Significant with Mitigation
Hydrology and Water Quality	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	No Impact	Less than Significant with Mitigation
Land Use and Planning	Less than Significant ⇧	Less than Significant ⇧	Less than Significant ⇧	No Impact	Less than Significant
Noise	Less than Significant with Mitigation ⇩	Less than Significant with Mitigation ⇩	Less than Significant with Mitigation ⇩	No Impact	Less than Significant with Mitigation
Population and Housing	Less than Significant ⇧	Less than Significant ⇧	Less than Significant ⇧	No Impact	Less than Significant
Public Services and Recreation	Less than Significant ⇧	Less than Significant	Less than Significant	No Impact	Less than Significant
Transportation and Traffic	Significant and Unavoidable with Mitigation ⇩	Significant and Unavoidable with Mitigation ⇩	Significant and Unavoidable with Mitigation ⇩	No Impact	Significant and Unavoidable with Mitigation ⇩
Utilities and Service Systems	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	No Impact	Less than Significant with Mitigation

NOTES: ⇧/⇩ - The impact is more/less severe than compared to the proposed project.

TABLE 5-13
ABILITY OF ALTERNATIVES TO SATISFY PROJECT OBJECTIVES

Project Objective	Alternative 1: Preservation	Alternative 2: Extensive Adapted Reuse	Alternative 3: Reduced Project	Alternative 4: No Project/No Development
1. Improve and enhance the maritime commercial marina	Does not meet objective	Meets objective ⇩	Meets objective ⇩	Does not meet objective
2. Activate and reconnect the community to the waterfront	Does not meet objective	Does not meet objective	Meets objective	Does not meet objective
3. Create a dynamic new neighborhood for everyone	Meets objective ⇩	Meets objective ⇩	Meets objective ⇩	Does not meet objective
4. Provide financially sound development	Does not meet objective	Does not meet objective	Does not meet objective	Does not meet objective

NOTES: ⇧/⇩ - The alternative is more/less aligned with the objective.

CHAPTER 6
Other Statutory Considerations

Consistent with CEQA *Guidelines* Section 15126.2, this section discusses significant and unavoidable impacts, significant irreversible environmental changes, growth-inducing impacts, cumulative impacts, and impacts found to be less than significant.

6.1 Significant and Unavoidable Adverse Impacts

Potentially significant environmental impacts that would result from the proposed project are evaluated in Chapter 4.0, *Environmental Setting, Impacts, and Mitigation Measures*, of this EIR. With implementation of the project design features, standard conditions and requirements, and mitigation measures identified for each resource area significantly impacted, many of the potentially significant impacts resulting from the proposed project would be reduced to a less than significant level. The proposed project impacts listed below would remain significant and unavoidable even after mitigation.

Impact C-AQ/CC-2: The proposed project would generate greenhouse gas emissions, either directly or indirectly, that would have a significant impact on the environment for Year 2030 GHG reduction goals. (Significant and Unavoidable with Mitigation)

Impact CUL-1: Project implementation would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines, Section 15064.5. (Significant and Unavoidable)

Impact CUL-4: Project construction could cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074. (Significant and Unavoidable with Mitigation)

Impact C-CUL-1: The project, in combination with past, present, and probable future projects, would substantially contribute to cumulative adverse historic architectural resources impacts. (Significant and Unavoidable with Mitigation)

Impact C-CUL-3: The project, in combination with past, present, and probable future projects, could result in cumulative adverse impacts on tribal cultural resources. (Significant and Unavoidable with Mitigation)

Impact TRA-1: The proposed project would exceed the regional VMT per capita minus 15 percent. (Significant and Unavoidable with Mitigation)

Impact TRA-3: The proposed project would increase traffic volumes by three percent or more at the Park Street/Blanding Avenue intersection which would operate at LOS F during

the AM peak hour under Cumulative (2040) conditions regardless of the project. The proposed project would also increase traffic volumes such that traffic conditions at the intersection would deteriorate from LOS D to LOS F during the PM peak hour under Cumulative Plus Project conditions. (Significant and Unavoidable with Mitigation)

Impact TRA-4: The proposed project would increase traffic volumes by three percent or more at the Park Street/Clement Avenue intersection which would operate at LOS F during both the AM and PM peak hours under Cumulative (2040) conditions regardless of the project. (Significant and Unavoidable with Mitigation)

6.2 Significant Irreversible Environmental Changes

Pursuant to Section 15126.2(c) of the CEQA *Guidelines*, an EIR must consider any significant irreversible environmental changes that would be caused by the proposed project should it be implemented. Section 15126.2(c) states:

> *"Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified."*

Resources that would be permanently and continually consumed by implementation of the proposed project include water, electricity, natural gas, and fossil fuels; however, the amount and rate of consumption of these resources would not result in significant environmental impacts or the unnecessary, inefficient, or wasteful use of resources. Construction activities related to the proposed project, though previously analyzed in Chapter 4.0 of this EIR, would result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels, natural gas, and gasoline for automobiles and construction equipment. With respect to the operational activities of the proposed project, compliance with all applicable building codes, as well as EIR mitigation measures, would ensure that all natural resources are conserved to the maximum extent practicable. It is also possible that new technologies or systems would emerge, or would become more cost-effective or user-friendly, and would further reduce the project reliance upon nonrenewable energy resources.

The CEQA *Guidelines* also require a discussion of the potential for irreversible environmental damage caused by an accident associated with the proposed project. Completion of the proposed project with residential and waterfront land uses would not involve the routine use, transport, storage, or disposal of hazardous wastes other than small amounts of construction chemicals and non-acute hazardous materials by residents and other occupants of the site. As stated in Section 4.6, *Hazardous Materials*, of this EIR, these materials are regulated through a series of federal, state, and local laws and regulations. Compliance with these existing requirements would ensure that the potential for the completed project to cause significant irreversible environmental damage from an accident or upset of hazardous materials would be less than significant.

6.3 Growth-Inducing Impacts

The CEQA *Guidelines* require that an EIR evaluate the growth-inducing impacts of a proposed action (Section 15126.2[d]). A growth-inducing impact is defined by the CEQA *Guidelines* as:

> *[T]he ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth.... It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.*

A project can have direct and/or indirect growth-inducement potential. Direct growth inducement could result if a project involved construction of new housing. A project can have indirect growth-inducement potential if it would establish substantial new permanent employment opportunities (e.g., commercial, industrial or governmental enterprises) or if it would involve a substantial construction effort with substantial short-term employment opportunities and indirectly stimulate the need for additional housing and services to support the new employment demand. Similarly, under CEQA, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. Increases in population could tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. The CEQA *Guidelines* also require analysis of the characteristics of projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

The timing, magnitude, and location of land development and population growth is based on various interrelated land use and economic variables. Key variables include regional economic trends, market demand for residential and non-residential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions. Because general plans define the location, type, and intensity of growth within a given jurisdiction, they are the primary means of regulating development and growth in California.

The growth inducing impacts analysis addresses the potential of the project for growth inducement in the project vicinity or broader area. Under CEQA, a project is generally considered to be growth-inducing if it results in any one of the following:

1. Extension of urban services or infrastructure into a previously unserved area;
2. Extension of a transportation corridor into an area that may be subsequently developed; or
3. Removal of obstacles to population growth (such as provision of major new public services to an area where those services are not currently available).

6.3.1 Extension of Urban Services or Infrastructure

Although on-site infrastructure improvements would occur as part of the proposed project, the site is within an urban setting, and the project infrastructure would improve and upgrade the existing systems that connect to existing City infrastructure and would not require any major

expansions of infrastructure. The project is within a fully developed area and infrastructure would not be extended to any undeveloped areas. Hence, the proposed project would be infill and redevelopment of the site rather than a growth-inducing development.

6.3.2 Extension of Transportation Corridors

The project site is surrounded by urban development and an adjacent street system. As an infill development, the project would not extend transportation corridors into undeveloped areas resulting in growth inducing impacts.

6.3.3 Removal of Obstacles to Population Growth

Section 15126.2(d) of the CEQA *Guidelines* states that an EIR should discuss "the ways in which the project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Growth can be induced in a number of ways, including through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through precedent-setting action. CEQA requires a discussion of how a project could increase population, employment, or housing in the areas surrounding the project as well as an analysis of the infrastructure and planning changes that would be necessary to implement the project.

Projects that are characterized as having significant impacts associated with the inducement of growth are frequently those that would remove obstacles to additional growth, such as the expansion of sewer or water facilities that would permit construction of more development in the service area covered by the new facilities. The project would not remove obstacles to additional growth in this manner, as it would be undertaken in a developed urban area that currently is served by all utilities and services. Similarly, if a project would overburden existing infrastructure so as to require construction of new facilities that could result in significant impacts, then the project may be deemed to have a significant growth-inducing impact. As discussed in the Section 4.13, *Utilities and Service Systems*, the project would not require such additional public service facilities.

The project involves redevelopment of an underutilized site that is currently used for commercial and light industrial uses, some of which would be retained under the proposed project. The project would demolish many of the existing structures and provide residential units on the site, alongside remaining commercial and light industrial uses. The site is fully bound by developed properties and the Oakland Estuary, and the redevelopment of the site would not facilitate population growth on any other property.

Section 4.10, *Population and Housing*, analyzes the project's overall effect on population and housing, including growth-inducing considerations. The project would result in the addition of up to 779 new residential units. Assuming an average of 2.48 persons per unit, consistent with persons per household in the City as a whole [Association of Bay Area Governments (ABAG), 2014] the project could result in an increase in residential population of about 1,932 people.[1] The

[1] Calculation: 2.48 x 779 = 1,932 residents (rounded)

population growth resulting from the proposed project is generally consistent with the population growth projections in the City's General Plan Housing Element, which are based on those estimates provided by the ABAG Regional Housing Needs Assessment (RHNA). The projections are also consistent with the Alameda County Transportation Commission's population growth projections for the City. The growth in population that would occur with implementation of the proposed project was planned for in the City's General Plan.

The project would result in the construction of new housing in the Bay Area where regionally housing growth is outpaced by job and population growth, resulting in a housing shortage. As such, the project would not adversely impact the jobs/housing imbalance at a regional level (ABAG, 2015).

The proposed project includes affordable housing, which is an identified need in Alameda and the region. The proposed project site is located within 2 miles of public transportation connections such as the Fruitvale Bay Area Rapid Transit (BART) Station and AC Transit line bus stop (at the intersection of Santa Clara Avenue and Stanton Street), which is consistent with population, housing, transportation, and greenhouse gas reduction (global warming) policies established by the State of California (most recently by SB 375 and AB 32), the Metropolitan Transportation Commission, and ABAG. Furthermore, the new AC Transit Bus Line 19 runs along Buena Vista Avenue within one block of the project site, providing the area with a direct connection to the Downtown Oakland and Fruitvale BART stations.

6.3.4 Conclusions

The project would constitute infill development within a developed urban area, and new roads and infrastructure would not be extended into an undeveloped area. For the above-described reasons, the project would not cause a new impact related to a substantial increase in population growth, and would be in line with the projected growth planned for the area as defined in the City of Alameda's General Plan. Therefore, the effects of the proposed project on population, housing, and employment would have a less than significant environmental effect.

6.4 Cumulative Impacts

CEQA defines cumulative impacts as two or more individual impacts which, when considered together, are substantial or which compound or increase other environmental impacts. The cumulative analysis is intended to describe the "incremental impact of the project when added to other, closely related past, present, or reasonably foreseeable future projects" that can result from "individually minor but collectively significant projects taking place over a period of time." (CEQA Guidelines Section 15355) The analysis of cumulative impacts is a two-phase process that first involves the determination of whether the project, together with existing and reasonably foreseeable projects, would result in a significant impact. If there would be a significant cumulative impact of all such projects, the EIR must determine whether the project's incremental "contribution" is cumulatively considerable, in which case, the cumulative impact would be significant (CEQA Guidelines Section 15130).

The analysis of each environmental topic included in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, of this EIR considers possible cumulative impacts and identifies circumstances in which the project would contribute to significant cumulative impacts.

Cumulative air quality/climate change, cultural resources, and transportation impacts were identified in the analysis. These cumulative analyses assumed that the project-required mitigation measures identified in this EIR would be implemented. Nonetheless, these identified impacts would be cumulatively considerable and not fully mitigable. No other cumulative impacts were determined to be significant after mitigation.

6.5 References – Other Statutory Sections

ABAG, 2014. ABAG Projections 2009 Housing Element Data Profiles. Accessed January 2014.

ABAG, 2015. San Francisco Bay Area, State of the Region 2015, Economy, Population, Housing.

CHAPTER 7
Report Preparation

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