CITY OF ALAMEDA
ENVIRONMENTAL CHECKLIST FOR STREAMLINED REVIEW

Pursuant to California Public Resources Code Sections 21166 and CEQA Guidelines Sections 15162 and 15168, and
Pursuant to California Public Resources Code Section 21083.3 and CEQA Guidelines Section 15183
with
Streamlined Environmental Review pursuant to the
Alameda Point Project EIR (SCH # 2013012043) and the
Alameda General Plan 2040 EIR (SCH # 2021030563)

Project Title:	Pacific Fusion Project at Site B of the Alameda Point Project
Lead Agency:	City of Alameda 2263 Santa Clara Street Alameda, CA 94501
Contact Person:	Steven Buckley, Planning Services Manager email at: sbuckley@alamedaca.gov phone: (510) 747-6822
Project Sponsor:	Pacific Fusion Represented by: Mario Tjia, Director Hines 101 California Street, Suite 1000 San Francisco, CA 94111 phone: (203) 848 8889
General Plan Designation:	Mixed-Use, Enterprise Subarea
Zoning:	Alameda Point: Enterprise-1 (AP-E1)

Table of Contents
Pacific Fusion Project at Alameda Point

List of Tables

List of Figures

Technical Appendices

Executive Summary

Pacific Fusion Project

Pacific Fusion is a research and development company based in California and comprised of scientists, engineers and operators who seek to advance progress toward a commercially viable form of fusion power capable of meeting rapidly growing global energy demand while also addressing climate change. To accomplish this objective, Pacific Fusion and their development partner Hines (Project sponsors) are considering the development of a facility in the City of Alameda, within Alameda Point, where they can research and develop an approach to unlocking fusion power that can achieve net energy gain and that can be incorporated into new technology that can become a commercially viable energy source. The Project would be housed in a new building of approximately 225,500 square feet on a roughly 13-acre site that would be conveyed from the City to the Project Sponsors, who construct the facility and provide infrastructure improvements on and near the site, such as street pavement, water, sewer, power, and storm drainage utilities. The site would need to be cleared of existing buildings, utilities, pavement and vegetation before construction of the new facility could begin.

This Project will require discretionary approvals from the City of Alameda, including but not limited to an Option Agreement and Purchase and Sale Agreement, a Development Agreement, Tentative and Final Parcel Maps, and Design Review. The Project will also require discretionary permits, approvals and/or licenses from other regulatory agencies, including a Radioactive Materials License from the California Department of Public Health, Radiation Safety and Environmental Management Division, Radiologic Health Branch. Because the Project requires these and other discretionary actions, the Project is subject to environmental review pursuant to the California Environmental Quality Act (CEQA).

Prior Program EIRs

The City of Alameda has previously certified two Environmental Impact Reports (EIRs) that are relevant to the Project. These prior EIRs include the Alameda Point Project EIR certified in February 2014, and the General Plan 2040 EIR certified in November 2021. The Alameda Point Project EIR evaluated the potential environmental impacts associated with redevelopment and reuse of the 878 acres of land and approximately 1,229 acres of water at the former Naval Air Station Alameda, including new zoning regulations, a master infrastructure plan, and other implementation tools and actions. The Alameda General Plan 2040 EIR was prepared for the City of Alameda's General Plan 2040 to allow the City of Alameda to make an informed decision concerning the environmental impacts that could result from adoption and implementation of the Alameda 2040 General Plan. Both of these prior EIRs are Program EIRs prepared for a series of actions that can be characterized as one large project, and are related geographically, as logical parts of contemplated actions, and/or in connection with issuance of new regulations, plans or other criteria to govern the conduct pursuant to these continuing programs. The Alameda Point Project EIR was also a Project EIR that examined the environmental impacts of the specific development project as defined in that EIR Project Description.

- Implementation of the Alameda Point Project, including anticipated development within its Enterprise Sub-Area and development of the Project site with a land use and development intensity consistent with the Pacific Fusion Project, was previously analyzed in the Alameda Point Project EIR. It is the City of Alameda's intention to utilize the Alameda Point Project EIR for subsequent project-level approvals necessary to implement the Alameda Point Project, including planning, construction, operation and maintenance of individual development-related approvals and infrastructure improvements.

- Implementation of the Alameda Point Project was also assumed and included in the Alameda General Plan, which acknowledged that most of the new jobs anticipated pursuant to the General Plan will be located in Alameda's two Priority Development Areas, including Alameda Point. The City of Alameda expects to utilize the General Plan 2040 EIR with later development proposals that are in conformance with the General Plan to determine whether additional environmental review is required.

Reliance on these Prior EIRs

This CEQA Checklist provides for the environmental review of the proposed Pacific Fusion Project, and separately and independently relies on three different provisions of the CEQA Guidelines:

- CEQA Guidelines Section 15162: Subsequent EIRs
- CEQA Guidelines Section 15168: Use of a Program EIR for Later Activities, and
- CEQA Guidelines Section 15183: Projects Consistent with a Community Plan or Zoning

Each of these provisions of CEQA enable the City of Alameda to consider the extent to which potential environmental effects of the Pacific Fusion Project have already been evaluated and disclosed in prior Program Environmental Impact Reports (EIRs), such that no new EIR needs to be prepared for the Project.

CEQA Guidelines Section 15162: Subsequent EIRs

CEQA Guidelines section 15162 provides that when an EIR has been certified for a project, no subsequent EIR shall be prepared unless the lead agency determines that substantial changes are proposed in the project, that substantial changes occur with respect to the circumstances under which the project is undertaken, or that new information of substantial importance requires major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

As demonstrated in this CEQA Checklist, the Pacific Fusion Project is not a substantial change to the project as analyzed in the Alameda Point Project EIR or the General Plan EIR, that no new circumstances now exist that require major revisions of the previous EIRs, and no new information now indicates that the Project will have new or more substantial environmental impacts than those identified in the prior program EIRs.

CEQA Guidelines Section 15168: Use of a Program EIR for Later Activities

CEQA Guidelines Section 15168 enable later activities within the scope of a Program EIR to be examined in light of that prior Program EIR to determine whether an additional environmental document must be prepared. If a later activity would have effects that were not examined in a prior Program EIR, a new initial study would need to be prepared leading to either an EIR or a negative declaration. However, no subsequent environmental document is required if a later activity is within the scope of the project previously analyzed in a Program EIR.

As demonstrated in this CEQA Checklist, the Pacific Fusion Project is a later (or subsequent) activity that is within in the scope of the prior Program EIRs prepared for the Alameda Point Project and the Alameda General Plan 2040. With implementation of applicable mitigation measures previously identified in these prior Program EIRs, and with implementation of all current regulatory requirement that apply to the Pacific Fusion Project, the Pacific Fusion Project would not result in significant impacts that were not examined in these prior Program EIRs and prior findings regarding impacts, mitigation measures, alternatives, cumulative impacts and overriding considerations would apply.

CEQA Guidelines Section 15183: Projects Consistent with a Community Plan or Zoning

CEQA Guidelines Section 15183 provide an exemption from additional environmental review for those projects that are consistent with the development density established by existing zoning, community plan or General Plan policies for which an EIR was certified, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site.

As demonstrated in this CEQA Checklist, the pacific Fusion Project is consistent with the Alameda Point Project and its subsequent zoning action that zoned and designated the parcel on which the Pacific Fusion Project is to be located to accommodate the density of development as proposed, and the related performance standards and public improvements that were incorporated into the Alameda Municipal Code at that time. As also demonstrated in this CEQA Checklist, the Pacific Fusion Project would not result in any significant environmental impacts that are peculiar to the Pacific Fusion Project or its site; would not result in any environmental impacts not previously analyzed as significant effects in the prior Alameda Point Project EIR and the General Plan 2040 EIR; and would not result in any potentially significant off-site impacts or cumulative impacts that were not discussed in the prior Alameda Point Project EIR and the General Plan 2040 EIR.

Uniqueness of the Pacific Fusion Project

The Pacific Fusion Project is an R&D/light industrial operation that will use small quantities of tritium and deuterium in its operations to demonstrate that the technology is capable of generating fusion power. Tritium is a radioactive isotope that is rare in nature. Deuterium is a heavy isotope of hydrogen and is not radioactive. The Pacific Fusion Project will use a “Pulser system” to deliver fast electric current aimed across an enclosed, shielded chamber that will create an intensely strong magnetic field. That magnetic field will implode a small cylinder containing tritium and deuterium (a non-radioactive isotope), fusing them together (i.e., fusion). The fusion reaction will result in two products - helium and kinetic energy. Helium is a non-toxic, non-hazardous gas that will naturally dissipate, and the kinetic energy is the desired product of the fusion process. Unlike the fission reaction at current nuclear power plants, the fusion reaction does not result in highly radioactive nuclear waste, but rather small quantities of low-level radioactive materials that can be disposed of with traditional disposal methods.

The Code of Federal Regulations and the California Code of Regulations both contain numerous and rigorous regulatory standards for the protection of workers, the public and the environment against radiation hazards. These regulations and standards address the maximum dose limits of radiation (expressed in milli-rem) that are protective of the health of workers and members of the public; procedures for external and internal dose monitoring; radioactive material inventory and access control; radiation safety training; storage and control requirements for radioactive material; proper posting and labelling of shipped radioactive materials; and acceptable waste management and disposal practices.

The Pacific Fusion Project will need to demonstrate to the California Department of Public Health, Radiation Safety and Environmental Management Division, Radiologic Health Branch that it can and will meet and comply with all of these applicable regulatory standards before they are able to obtain a radioactive material license for the possession and use of tritium. Pacific Fusion will also need to demonstrate a shielding plan that achieves public dose limits before they can register and operate their “Pulser” with any radioactive materials. Pacific Fusion will also need to obtain a permit from the Bay Area Air District for its emissions from the facility, testing their emissions from the facility on a regular basis to demonstrate that tritium effluents from the facility do not exceed dose standards for members of the public.

1 - Basis for CEQA Review of the Pacific Fusion Project

The following environmental review of the proposed Pacific Fusion Project separately and independently relies on three different provisions of the California Environmental Quality Act (CEQA) Guidelines. These provisions are found in:

- CEQA Guidelines Section 15162: Subsequent EIRs
- CEQA Guidelines Section 15168: Use of a Program EIR for Later Activities, and
- CEQA Guidelines Section 15183: Projects Consistent with a Community Plan or Zoning

Each of these provisions of CEQA enable the City of Alameda to consider the extent to which potential environmental effects of the Pacific Fusion Project have already been evaluated and disclosed in prior Program Environmental Impact Reports (EIRs), and determine whether additional environmental review is necessary for the Project. For the Pacific Fusion Project, these prior Program EIRs include the City of Alameda's Alameda Point Project Environmental Impact Report (SCH No. 2013012043) as certified February 4, 2014; and the City of Alameda's Alameda General Plan 2040 Environmental Impact Report (SCH No. 2021030563) as certified November 30, 2021.

Prior EIRs

Implementation of the Alameda Point Project, including anticipated development within its Enterprise Sub-Area and development of the Project site with a land use and development intensity consistent with the Pacific Fusion Project, was previously analyzed in the Alameda Point Project Environmental Impact Report (Alameda Point Project EIR or APP EIR).

Implementation of the Alameda Point Project was also assumed and included in the Alameda General Plan, which acknowledged that most of the new jobs anticipated pursuant to the General Plan will be located in Alameda's two Priority Development Areas, including Alameda Point. The General Plan's assumptions about future development at Alameda Point, including development of the Enterprise Sub-Area and development of the Project site with a land use and development intensity consistent with the Pacific Fusion Project, were previously analyzed in the General Plan 2040 Environmental Impact Report (General Plan 2040 EIR or GP EIR).

This CEQA Checklist hereby incorporates by reference the Alameda Point Project EIR and the General Plan 2040 EIR, and their respective analyses of all potential environmental impact topics including all background information pertaining to the environmental setting of Alameda Point and the Project site.

Alameda Point Project EIR

The Alameda Point Project EIR analyzed the potential environmental impacts associated with redevelopment and reuse of the 878 acres of land and approximately 1,229 acres of water at the former Naval Air Station Alameda. The Alameda Point Project included several components, including:

- Replacement, reconstruction and rehabilitation of deteriorated and substandard infrastructure, buildings and shoreline protections
- Rehabilitation and new construction of open space, parks and trails for public enjoyment
- Rehabilitation, reuse, and new construction of approximately 5.5 million square feet of commercial and workplace facilities for approximately 8,900 jobs

- Rehabilitation and new construction of 1,425 residential units for a wide variety of household types for approximately 3,240 residents, and
- Maritime and water related recreation uses in and adjacent to the Seaplane Lagoon

To facilitate redevelopment and reuse plans for Alameda Point, the City of Alameda, as lead agency, adopted:

- a General Plan Amendment
- a Zoning Ordinance Amendment that created zoning sub-districts within Alameda Point
- a Master Infrastructure Plan, and
- a Town Center and Waterfront Precise Plan to facilitate a seamless and integrated mixed-use, transit-oriented community

As a Project EIR, the Alameda Point Project EIR is the CEQA compliance documentation upon which the City of Alameda considered approval of the actions and applicable approvals listed above. The Alameda Point Project EIR also indicated that it was intended to apply to additional and subsequent project-level approvals that may be necessary to implement the Alameda Point Project including planning, construction, operation and maintenance (e.g., use permits, grading permits, building permits, certificates of occupancy) and other development-related approvals (i.e., as a Program EIR). The subsequent approvals that may rely on the Alameda Point Project EIR also include implementation of the Alameda Point Master Infrastructure Plan and all of its anticipated improvements to streets, utilities, new parks and open spaces, and flood protection features.[1]

The Alameda Point Project EIR is available for review at the offices of the Planning Division in the City of Alameda's Planning Department, located at 2263 Santa Clara Avenue. In addition, an electronic copy of this EIR is available on the City's website at:

http://alamedaca.gov/alameda-point/eir

Alameda General Plan 2040 EIR

The Alameda General Plan 2040 EIR is a Program EIR that was prepared in accordance with CEQA for the City of Alameda's Alameda General Plan 2040, and that EIR provided sufficient environmental documentation to allow the City of Alameda to make an informed decision concerning the environmental impacts that could result from adoption and implementation of the Alameda 2040 General Plan. The 2040 General Plan is a statement of goals, objectives, policies and actions to guide and manage change to the physical, environmental, economic and social conditions in City. The Elements of the 2040 General Plan include:

- Land Use & City Design Element
- Conservation & Climate Action Element
- Mobility Element
- Open Space & Parks Element, and a
- Health & Safety Element

[1] Alameda, Alameda Point Project Draft EIR, September 2013, page 1-6

The EIR prepared for the Alameda General Plan 2040 is a Program EIR as defined in Section 15168 of the CEQA Guidelines. A Program EIR may be prepared for a series of actions that can be characterized as one large project and are related either:

- geographically
- as logical parts in the chain of contemplated actions
- in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or
- as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways

The City of Alameda expects to utilize this General Plan 2040 EIR with later Housing Elements projects, Zoning Ordinance amendments, and/or development proposals in conformance with the General Plan, to determine whether additional environmental review is required. Activities that fall within the scope of the Alameda 2040 General Plan as addressed in the General Plan 2040 EIR would not require subsequent environmental review. In cases where supplemental environmental analysis may be required, it is anticipated that evaluation of some future projects may tier from this Program EIR as provided in Section 15152 of the CEQA Guidelines, thereby reducing the extent of additional environmental analysis that is necessary.

The General Plan 2040 EIR is also intended to be reviewed and used by Responsible Agencies that grant other permits or otherwise have jurisdiction over activities undertaken in accordance with the General Plan, including the U.S. Army Corps of Engineers (COE), the California Department of Fish and Wildlife (CDFW), and the San Francisco Bay Regional Water Quality Control Board (RWQCB). The General Plan EIR may be used by the City of Alameda as a reference document, or used by the City to assist in planning for other development projects.[2]

The City's General Plan 2040 EIR is available for review at the offices of the Planning Division in the City of Alameda's Planning Department, located at 2263 Santa Clara Avenue. In addition, an electronic copy of the General Plan 2040 EIR is available on the City's website at:

https://www.alameda2040.org/document-library

Reliance on these Prior EIRs

CEQA Guidelines Section 15162: Subsequent EIRs

CEQA Guidelines section 15162 provides that when an EIR has been certified for a project, no subsequent EIR shall be prepared unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

- Substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new

[2] Alameda, Alameda General Plan 2040 EIR, November 2021, page 1-1 and 1-2

significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:
    a. The project will have one or more significant effects not discussed in the previous EIR;
    b. Significant effects previously examined will be substantially more severe than shown in the previous EIR;
    c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
    d. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

If changes to a project or its circumstances occur, or if new information becomes available after adoption of an EIR, and those changes or new information would result in a new or more significant effect, the lead agency shall prepare a subsequent EIR. Otherwise, the lead agency shall determine whether to prepare a subsequent Negative Declaration, an EIR Addendum, or no further documentation.

No Conditions Requiring a Subsequent EIR pursuant to Section 15162

As demonstrated in this CEQA Checklist, none of the conditions requiring preparation of a subsequent EIR per CEQA Guidelines Section 15162 would apply to the Pacific Fusion Project, such that no additional environmental document must be prepared, and tiered CEQA review of the Project is applicable.

- *No Substantial Changes to the Project:* The proposed Pacific Fusion Project would not result in substantial changes that would require major revisions to the Alameda Point Project EIR or General Plan 2040 EIR. The Alameda Point Project EIR evaluated buildout of approximately 5.5 million square feet of developed space at Alameda Point, including approximately 2.07 million square feet of executive offices, R&D space, maritime wholesaling and manufacturing and light industrial uses to create a thriving employment center within Alameda Point's Enterprise Sub-Area. As described in the Project Description of this CEQA Checklist, the proposed Pacific Fusion Project comprises an approximately 224,500 square-foot building and represents only about 11 percent of the development space anticipated in the Enterprise Sub-Area and as evaluated in the Alameda Point Project EIR. With a few exceptions, the remainder of Alameda Point's Enterprise Sub-Area remains undeveloped or vacant, and the Pacific Fusion Project does not absorb more than its share of expected development space. The Alameda General Plan also acknowledges that it is supplemented by two Specific Plans tailored to the needs and opportunities of Alameda Point that have been prepared pursuant to the Alameda Point Project, including the Waterfront Town Center Precise Plan adopted in 2014 and the Main Street Neighborhood Specific Plan adopted in 2018. The General Plan also cites that most of the new housing and new jobs anticipated pursuant to the General Plan will be located in Alameda's two Priority Development Areas (PDAs) at Alameda Point and at the Northern Waterfront.

As disclosed in this CEQA Checklist, no new significant environmental effects and no substantial increases in the severity of previously identified significant effects as previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR would result from the proposed development of the Pacific Fusion Project.

- *No Substantial Changes in Circumstances:* There are no substantial changes pertaining to the circumstances of the Pacific Fusion Project. The existing conditions pertaining to the Project site and its surroundings, as described in both the Alameda Point Project EIR and the General Plan 2040 EIR, adequately describe the current environment and the circumstances of the Pacific Fusion Project are consistent with the analysis in the Alameda Point Project EIR and the General Plan 2040 EIR. No new significant environmental effects or substantial increase in the severity of previously identified significant effects would result from development of the Pacific Fusion Project.
- *No New Significant Information:* Although there is new information that was not fully known when the Alameda Point Project EIR was certified and certain new information that was not fully known when the General Plan 2040 EIR was certified in 2021, none of this new information indicates any new significant environmental effects or substantial increases in the severity of previously identified significant effects as identified in those prior EIRs. As outlined in this CEQA Checklist, the Project would not have more significant effects, or significant effects that are substantially more severe than shown in the Alameda Point Project EIR or the General Plan 2040 EIR. No mitigation measure or alternatives identified in the Alameda Point Project EIR or the General Plan 2040 EIR that were found to be infeasible are now feasible. No considerably different mitigation measures or alternatives are now available that would substantially reduce significant effects.

CEQA Guidelines Section 15168, Use of a Program EIR for Later Activities

The provisions of CEQA Guidelines Section 15168 enable later activities within in the scope of a Program EIR to be examined in light of that prior Program EIR to determine whether an additional environmental document must be prepared. Specifically,

1) If a later activity would have effects that were not examined in the prior Program EIR, a new initial study would need to be prepared leading to either an EIR or a negative declaration. That later analysis may tier from the Program EIR as provided in Section 15152.

2) If the agency finds that, pursuant to Section 15162 no subsequent EIR would be required, the agency can approve the activity as being within the scope of the project covered by the Program EIR and no new environmental document would be required.

   Whether a later activity is within the scope of a program EIR is a factual question that the lead agency determines based on substantial evidence in the record. Factors that an agency may consider in making that determination include but are not limited to consistency of the later activity with the type of allowable land use, overall planned density and building intensity, geographic area analyzed for environmental impacts, and covered infrastructure as described in the Program EIR.

3) An agency shall incorporate feasible mitigation measures and alternatives developed in the Program EIR into later activities in the program.

4) Where the later activities involve site-specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were within the scope of the Program EIR.

As noted in these CEQA Guidelines, "with a good and detailed project description and analysis of the Program, many later activities could be found to be within the scope of the project described in the Program EIR, and no further environmental documents would be required."

No Additional Environmental Document Required Pursuant to Section 15168

As demonstrated in this CEQA Checklist, the Pacific Fusion Project is within the scope of two prior EIRs (the Alameda Point Project EIR and the General Plan 2040 EIR), and the Project can rely on the analysis of those prior Program EIRs such that no additional environmental document must be prepared.

- *Effects Previously Examined:* This CEQA Checklist provides a summary of the potential environmental effects that were previously examined in the prior Alameda Point Project EIR and the General Plan 2040 EIR, demonstrating that the Pacific Fusion Project (Project) would not have effects that were not examined in these prior Program EIRs.
- *Within the Scope of the Program EIR:* This CEQA Checklist provides a Consistency Analysis that demonstrates with substantial evidence that the Pacific Fusion Project is within the scope of the prior Program EIRs, considering such factors as whether the Project is consistent with the type of allowable land use, the overall planned density and building intensity, geographic area and covered infrastructure as described in the prior Alameda Point Project EIR and the General Plan 2040 EIR.
- *Incorporation of Feasible Mitigation Measures:* This CEQA Checklist identifies and incorporates all feasible mitigation measures and regulatory requirements of the Alameda Point Project EIR and the General Plan 2040 EIR, as applicable to the Project.
- *Written Checklist:* Whereas the Project is defined as a site-specific operation, this CEQA Checklist documents the evaluation of the Project site and its activities to determine that the environmental effects of the Project were within the scope of these prior Program EIRs.

CEQA Guidelines Section 15183, Projects Consistent with a Community Plan or Zoning

CEQA Guidelines Section 15183 provide an exemption from additional environmental review for projects that are "consistent with the development density established by existing zoning, community plan or general plan policies for which an EIR was certified, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site." CEQA Guidelines Section 15183(c) specially provides that "if an impact is not peculiar to the parcel or to the proposed project, has been addressed as a significant effect in the prior EIR, or can be substantially mitigated by the imposition of uniformly applied development policies or standards, then an EIR need not be prepared for the project solely on the basis of that impact."

CEQA Guidelines Section 15183(d) states that the streamlining provisions of this section shall apply only to projects that meet the following conditions:

1) the project is consistent with a community plan adopted as part of a general plan, a zoning action which zoned or designated the parcel on which the project would be located to accommodate a particular density of development, or a general plan of a local agency; and
2) an EIR was certified by the lead agency for the zoning action, the community plan, or the general plan"

CEQA Guidelines Section 15183(b) further states that "in approving a project meeting the requirements of this section, a public agency shall limit its examination of environmental effects to those which the agency determines, in an initial study or other analysis:

1) are peculiar to the project or the parcel on which the project would be located;
2) were not analyzed as significant effects in a prior EIR on the zoning action, general plan, or community plan, with which the project is consistent;
3) are potentially significant off-site impacts and cumulative impacts which were not discussed in the prior EIR prepared for the general plan, community plan or zoning action; or
4) are previously identified significant effects which, as a result of substantial new information which was not known at the time the EIR was certified, are determined to have a more severe adverse impact than discussed in the prior EIR."

CEQA Streamlining Applies to the Project pursuant to Section 15183

As demonstrated in this CEQA Checklist, the Pacific Fusion Project is consistent with the development density established by existing zoning, community plan or general plan policies for which an EIR was certified, project-specific effects that may be peculiar to the project or its site have been considered, and potential impacts are not peculiar to the Project because they can be substantially mitigated by the imposition of uniformly applied development policies or standards. A new EIR need not be prepared for the Project.

- *Consistent with Community Plan, General Plan and Zoning:* As demonstrated in this CEQA Checklist, the Pacific Fusion Project is consistent with the Alameda Point Project (a community plan adopted as part of the General Plan), is consistent with the Alameda 2040 General Plan, and is consistent with the Project site's Enterprise-1 zoning designation, each of which designates or zones the parcel that the Pacific Fusion Project would be located to accommodate the Project's proposed land use type and intensity of development. The EIR for the General Plan 2040 was certified in 2021 by the City of Alameda, and the Alameda Point Project EIR was certified by the City in 2014.
- *No New Peculiar or More Severe Impacts of the Project:* As demonstrated in this CEQA Checklist, the Pacific Fusion Project would not result in any environmental impacts that are peculiar to the Pacific Fusion Project or its site; would not result in any environmental impacts not previously analyzed as significant effects in the prior Alameda Point Project EIR and the General Plan 2040 EIR; would not result in any potentially significant off-site impacts or cumulative impacts that were not discussed in the prior Alameda Point Project EIR and the General Plan 2040 EIR; and would not have significant effects that were not previously identified in the prior Alameda Point Project EIR and the General Plan 2040 EIR and where substantial new information not known at the time these prior EIRs were certified, would now have a more severe adverse impact than discussed in the prior EIRs

CEQA Tiering and Streamlining Conclusions

The proposed Pacific Fusion Project is consistent with all requirements pursuant to CEQA Guidelines Section 15152 as an individual development project to be implemented pursuant to a prior Program EIR. The proposed Pacific Fusion Project is also consistent with all requirements pursuant to CEQA Guidelines Section 15168 for use of a prior Program EIR for subsequent projects. The proposed Pacific Fusion Project is also consistent with all requirements pursuant to CEQA Guidelines Section 15183 for CEQA

streamlining as a project that is consistent with the development density established by existing zoning, community plan or general plan policies for which an EIR was certified.

As demonstrated in this CEQA Checklist, the Project is consistent with the City of Alameda 2040 General Plan, the Alameda Point Project (as a community plan), and the City of Alameda zoning actions implemented pursuant to the Alameda Point Project. Those prior planning actions zoned and designated the properties where the Project is proposed to be located to accommodate future development, at a land use intensity that is consistent with that proposed by the Project.

Prior to its decision to approve the Alameda Point Project and its associated General Plan amendments, zoning ordinance amendments and a Precise Plan (i.e., community plan), the City of Alameda prepared a Draft EIR and Final EIR to consider the potential significant environmental impacts of the Alameda Point Project, and certified that EIR. Similarly, prior to its decision to approve the 2040 General Plan the City of Alameda prepared a Draft EIR and Final EIR to consider the potential significant environmental impacts that might result from implementation of that General Plan, exercised its independent judgment and analysis that the EIR had been completed in compliance with the requirements of CEQA, and certified that General Plan EIR.

Accordingly, the Project qualifies as a project consistent with a prior Program EIR pursuant to CEQA Guidelines Section 15152, for reliance on a prior Program EIR pursuant to CEQA Guidelines Section 15168, and for CEQA streamlining pursuant to CEQA Guidelines Section 15183.

2 - Project Description

Introduction

Pacific Fusion is a small research and development (R&D) company based in California and comprised of scientists, engineers and operators. Its leadership includes members with prior work experience leading the Human Genome Project, the Department of Energy's Advanced Research Projects Agency-Energy (ARPA-E), the Sandia National Laboratories, and the Lawrence Livermore National Laboratory (where the National Ignition Facility achieved fusion ignition in the lab for the first time). Pacific Fusion seeks to advance effort toward a commercially viable form of fusion power capable of meeting rapidly growing global energy demand while also addressing climate change.[3] Pacific Fusion wants to build on the successful fusion achieved by the National Ignition Facility at the Lawrence Livermore National Laboratory.

As noted in an Institut Polytechnique De Paris review, "*fusion startups need to demonstrate their systems' net energy gain and overall engineering gain, and they also have to learn how to run their fusion reaction on scales that can generate a profit*."[4] Pacific Fusion is considering whether to develop a facility in the City of Alameda, within Alameda Point, where they can work to demonstrate how their approach to unlocking fusion power can achieve net energy gain and become commercially viable. This facility would be for research into how to make fusion energy commercially viable and would not be a power plant or a similar facility that sells power.

The purpose of this CEQA Checklist is to evaluate the environmental effects of Pacific Fusion's proposed fusion R&D facility (i.e., the Project) in light of the environmental reviews already conducted by the City of Alameda. These prior environmental reviews include the City's EIR for Alameda Point (i.e., the Alameda Point Project EIR or APP EIR), and its EIR for the Alameda 2040 General Plan Update (i.e., the General Plan 2040 EIR or GP EIR). This CEQA Checklist provides an assessment of the Project's consistency with these previously certified EIRs. The list of City approvals and other agency permits and approvals required of the Project are listed in this Project Description.

Background on Fusion

According to the U.S. Department of Energy:

> All of the energy produced comes from basic chemical and physical processes. That has mostly been accomplished throughout history by burning carbon-based material like wood, coal and gas, or by harnessing power from the sun, wind and water. Alternatively, fission and fusion are two physical processes that produce massive amounts of energy from atoms. They yield millions of times more energy than other sources through nuclear reactions.
>
> Fission: Fission occurs when a neutron slams into a larger atom, forcing it to excite and split into two smaller atoms, also known as fission products. Additional neutrons are also released that can initiate a chain reaction. When each atom splits, a tremendous amount of energy is released. Uranium and plutonium are most commonly used for fission reactions in nuclear

[3] *Pacific Fusion, Introducing Pacific Fusion - Founders' Letter, accessed at: https://www.pacificfusion.com/updates/founders-letter*

[4] Polytechnique insights, A Review By Institut Polytechnique De Paris, *accessed at: https://www.polytechnique-insights.com/en/columns/energy*

power reactors because they are easier to initiate and control. The energy released by fission heats water into steam. The steam is used to spin a turbine to produce carbon-free electricity.

Fusion: Fusion occurs when two atoms slam together to form a heavier atom, like when two hydrogen atoms fuse to form one helium atom. This same process powers the sun, and creates huge amounts of energy, several times greater than fission. It also doesn't produce highly radioactive fission products. Fusion reactions are being studied by scientists, but are difficult to sustain for long because of the tremendous amount of pressure and temperature needed to join the nuclei together. [5]

In December 2022, researchers at Lawrence Livermore National Laboratory (LLNL) National Ignition Facility (NIF) revealed that a fusion reaction had produced more energy than what was required to start it. This technology is still in the early phases of research and development, and neither the facility at LLNL nor the facility proposed by Pacific Fusion are power plants. Instead, Pacific Fusion seeks to further the progress made by LLNL in a new research facility. This research might result in a new, commercially viable, safe clean energy source.

Project Location

The Project site is an approximately 13-acre property in the City of Alameda and within Alameda Point, which is the City's planning area for the former Alameda Naval Air Station (NAS) at the westerly end of Alameda Island (see **Figure 1**).

The site is accessible from Interstate 880, which is approximately 2 miles to the north of the site. Additional regional access to the Project site is via State Route 260 through the Webster-Posey Tube (connecting the island of Alameda and the City of Oakland), entering Alameda approximately 1.5 miles to the northeast of the site. The Alameda Main Street public ferry terminal is approximately 1 mile directly to the north and the Seaplane Lagoon ferry terminal is approximately one-quarter mile to the west.

West Pacific Avenue serves as the primary southern gateway into Alameda Point from Main Street, and the Project is bounded by West Pacific Avenue to the north, Skyhawk Street to the east, West Ticonderoga Avenue to the south, and Orion Street to the west.

Surrounding land uses include the Woodstock and West End residential neighborhoods (less than 0.2 miles to the east), the Encinal Junior and Senior High School (about 0.25 miles to the southeast), Hornet Field Park and the Alameda Community Sailing Center (less than 0.5 miles to the south), the USS Hornet Sea, Air and Space Museum (less than 0.5 miles to the southwest), and the Seaplane Lagoon Linear Park (less than 0.5 miles to the north west). To the north is the Alameda Point Town Center (part of the Alameda Point Town Center and Waterfront Precise Plan, which is a Specific Plan for implementation of the City of Alameda's vision for the heart of the former NAS Alameda).

[5] *US Department of Energy, accessed at: https://www.energy.gov/ne/articles/fission-and-fusion-what-difference*

Figure 1
Project Location

Source: GoogleEarth, 2025

General Plan and Zoning

General Plan

The Land Use Diagram of the Alameda 2040 General Plan and its land use classifications depict and describe the existing and intended location, distribution, intensity and physical character and form of the use of land across the city in support of General Plan policies. The land use classification's standards are intended to further the General Plan's policies and objectives and inform more specific implementation through the zoning ordinance.

According to the General Plan Land Use Diagram (see Chapter 3), the Project site, like much of Alameda Point, is designated as Mixed-Use, which is described as follows:

> ***Mixed-Use***: Areas at Alameda Point and along the Northern Waterfront are designated Priority Development Areas in Plan Bay Area 2050 - the Regional Sustainable Communities Plan. These diverse areas are to include a variety of buildings, with residential densities of 10 to 100 units per acre, and non-residential buildings with an FAR of 0.25 to 4.0. The Mixed-Use areas permit a wide variety of housing types, including multifamily housing, a wide variety of commercial and business uses at a maximum FAR of 0.25 to 4.0 depending, on the sub-district and historic district designations.[6]

The General Plan also provides more definitive land use designations and policies applicable to Alameda Point and its Sub-Areas.[7] The land use designations and policies specific to Alameda Point include the Enterprise, Adaptive Reuse, Waterfront and Town Center, and Main Street Neighborhood sub-areas (see Chapter 3). The Project site is located within the Alameda Point Enterprise Sub-District.

General Plan policy pertaining to the Enterprise Sub-Area is as follows:

> ***Land Use Policy LY-20, Alameda Point Enterprise Sub-District***: Support the development of the Enterprise District for employment and business uses, including office, research and development, biotechnology and high-tech manufacturing and sales, light and heavy industrial, maritime, community serving and destination retail, and similar and compatible uses.
>
> Actions:
>
> a. *Vibrant Employment District*: Support the creation of a pedestrian, bicycle, and transit supportive business environment with high quality, well designed buildings within walking distance of transit, services, restaurants, public waterfront open spaces, and residential areas.
>
> b. *Support and Protect Job Growth*: Encourage and facilitate job growth, and limit intrusion of uses that would limit or constrain future use of these lands for productive and successful employment and business use. [8]

The Project is consistent with these Enterprise District policies and actions. The Project is a research and development (R&D) employment and business use, with a well-designed building located within a

---

6 City of Alameda, *Alameda General Plan 2040*, Land Use Classifications and Diagram, page 47

7 In 2014, the City of Alameda amended its then-current General Plan Land Use Element to be consistent with the development envelope contained in the approved Reuse Plan for Alameda Point. That 2014 amendment is now fully incorporated into the currently applicable 2040 General Plan, approved in November of 2021.

8 City of Alameda, *Alameda General Plan 2040*, November 2021, page 35

transit-rich area.[9] The Project is projected to provide approximately 250 new direct jobs within the City. The Project is proposed as an approximately 225,500 square-foot building on an approximately 13-acre property, with a resulting FAR of 0.4, which is within the Mixed-Use land use designation's range of 0.25 to 5.0 floor-to-area ratio (FAR).

Zoning

Like much of the Alameda Point's Enterprise District south of West Pacific Avenue, the Project site is zoned as Alameda Point: Enterprise-1 (AP-E1). According to the Alameda Municipal Code (AMC) Section 30-4.24, the purpose of this Alameda Point District is to, "provide regulations to facilitate and guide future development at Alameda Point consistent with the goals and objectives of the 1996 Naval Air Station (NAS) Alameda Community Reuse Plan and the City of Alameda General Plan."[10]

The Alameda Point Zoning District is comprised of six sub-districts (see Chapter 3), and each sub-district includes a specific set of regulations. The Enterprise-1 (E-1) sub-district, "provides lands for employment and business uses, including office, research and development, biotechnology and high-tech manufacturing and sales, light and heavy industrial, maritime, community serving and destination retail, and similar and compatible uses. Development standards are intended to create a pedestrian, bicycle, and transit supportive urban environment and ensure high quality, well-designed buildings within walking distance of services, restaurants, public waterfront open spaces, and residential areas. Use standards are intended to encourage and facilitate job growth and limit intrusion of uses that would limit or constrain future use of these lands for productive and successful employment and business use."[11]

The Project is a permitted use as Light Industrial use within the E-1 zoning district. Light Industrial use means an establishment or activity conducted primarily within an enclosed building that includes research and development, manufacture, fabrication, or processing of any article, substance, or commodity and includes storage areas, truck access and loading areas, warehouses, and other similar activities and facilities that do not produce off-site external effects such as smoke, noise, odor, vibration.[12]

The Project, like all improvements in this zoning district requiring building permits, is also subject to approval of a Development Plan per Municipal Code Section 30-4.24, as well as the requirements of the City's Design Review procedures and Design Review regulations.

Existing Site Conditions

The entirety of the Project site is relatively flat and with sparse to no vegetation. The northerly and southerly portions of the site differ, as described below (see **Figure 2**).

[9] City of Alameda, *Alameda General Plan 2040*, November 2021, Transit Rich Areas, page 32

[10] City of Alameda Municipal Code, Article 1, Section 30-4.24 (a)

[11] City of Alameda Municipal Code, Section 30-4.24 - Alameda Point District (c,3)

[12] City of Alameda Municipal Code, Section 30-2: Definitions, Industrial

Figure 2
Pacific Fusion Project Site

Source: HPA Architects and BKF Engineers, *Existing Conditions Plan*, 4/23/25

Northerly Portion of Project Site

The northerly portion of the Project site is currently a vacant un-paved area.

Based on historical documents and aerial images, much of this portion of the site was historically located at the end of a peninsula (Alameda Point), adjacent to the shoreline of San Francisco Bay. This portion of Alameda Point was used as a petroleum refinery along the southwestern shore of the island, which operated from approximately 1879 to 1903. After refinery operations ended, the associated infrastructure was removed and the ground surface elevation was raised by approximately 5 to 10 feet by placing hydraulic dredge fill. This filled area appears to have been used for aircraft parking during the 1940s and 1950s, and then used as part of an aircraft defueling operation, as further described below.

Southerly Portion of Project Site

The southwest portion of the Project site is paved with failing asphalt and/or concrete. This asphalt/ concrete area was used by the Navy as a defueling area between 1961 and 1995, used to remove residual fuel from aircraft that were to be overhauled. The bulk of the fuel from an aircraft was pumped out to a fuel truck while the aircraft was out by the flight line, and then the aircraft was towed to this defueling area to drain the remaining fuel. To stabilize the fuel cells once they were drained, the aircraft fuel system was rinsed with a light preservative oil, which was reused until it had excessive jet fuel contamination, at which point it was recycled. When these operations ceased in 1995, the defueling area was abandoned and has remained a vacant lot, surrounded by a chain-link fence.

The southeasterly portion of the Project site contains an approximately 90,000 square-foot warehouse-type building with a building footprint of 220 feet by 335 feet, with a 2-story frontage along the shorter West Oriskany Avenue frontage offset from the street by about 75 feet. This building is known as Building 530, and was used by the Navy as a “Missile Re-Work Shop”. The building remains vacant and unused since NAS Alameda was decommissioned in 1993 and closed in 1997.

Surrounding Area

Adjacent to the northwest portion of the Project site is a separate parcel of approximately 1.3 acres (see also **Figure 2**), which includes former NAS Alameda Building 397, a 17,400 square-foot aircraft overhaul plant and engine test facility constructed in 1958 and operated by the Naval Air Rework Facility Alameda. This building is now owned by the City of Alameda for storage of equipment from various municipal entities.

Self-storage facilities and large-vehicle storage areas are adjacent to and east of the Project site, including a parcel immediately adjacent to the Project site that is retained by the U.S. Naval Reserve.

Much of the remaining area surrounding the Project site is similarly underutilized, consisting of vacant lots, parking lots and storage containers, and a few scattered former Navy buildings that are also now vacant.

Soils and Groundwater Conditions

The former NAS Alameda property includes 34 total Installation Restoration sites (IR Sites) where residual soil and/or groundwater contamination from Navy activities had been identified. Of those 34 sites, 15 were included in a Finding of Suitability to Transfer (FOST), which summarized how the requirements and notifications for hazardous substances, petroleum products and other materials regulated pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as the Superfund) had been satisfied, prior to transferring those lands to the City .

The Pacific Fusion Project site is located on IR Site 23 (the southerly portion of the Project site) and IR Site 13 (the northerly portion of the Project site).

According to the 2012 Record of Decision for Operable Unit-2A (which includes both IR sites 23 and 13) the Navy, in partnership with U.S. EPA, Cal/EPA DTSC and the Water Board, met its statutory obligations pursuant to CERCLA, concluding the following as specifically pertaining to the Project site:

- Site 13 requires a response action due to localized benzene concentrations in shallow groundwater, posing a vapor intrusion risk. The Navy has selected in-situ bioremediation, monitored natural attenuation and institutional controls to treat benzene and ethylbenzene until remediation goals are achieved
- Site 13 requires no further action for soils
- Site 23 requires no further action for soils or groundwater

According to the 2013 FOST, Site IR 23 is identified as "Response Complete", indicating that remediation goals were achieved and/or regulatory closure was obtained for CERCLA-regulated contaminants. Accordingly, no further actions are required by the Navy at this portion of the Project site for CERCLA-regulated contaminants,[13] and the lands within Site IR 23 were transferred to the City.

Petroleum and petroleum-related constituents, including tarry refinery waste (TRW), are not included in the definition of hazardous substances pursuant to CERCLA. Those IR sites that contain only petroleum or petroleum-related constituents (including IR Site 13 in the northerly portion of the Project site) were moved into a separate Navy Petroleum Program, with remediation to occur pursuant to California regulations that address releases to soil and groundwater from former underground storage tanks (USTs), aboveground storage tanks (ASTs), and pipelines. The Navy has the authority to transfer land with open petroleum sites (i.e., non-CERCLA sites) to the City, while still seeking regulatory closure of those sites. Accordingly, the lands within Site IR 13 were transferred to the City, with the exception that the RWQCB retains its authority to regulate the tarry refinery waste (TRW) and/or co-located petroleum. Pursuant to its Petroleum Program, the Navy has achieved closure on 2 petroleum sites, with a Draft Work Plan for the remaining site in progress.

Separately, Chevron Environmental Management Company, as the responsible party to a previous refinery operation that operated at the northerly portion of Site 13, has entered into a Voluntary Cleanup Agreement with the Water Board to remediate refinery-related contaminants. These remediation efforts limited soil excavation which will likely take place before any ground-disturbing activities take place for the Project, and groundwater remedies which can be designed to accommodate site development and operations of the Project.

Additionally, much of Alameda Point including the Project site is subject to the City of Alameda's Marsh Crust restrictions to appropriately address the presence of historic discharge of petroleum products and wastes from former industrial processes into San Francisco Bay that have accumulated within the subsurface layers. This ordinance requires that all soil below threshold depths must be managed as though it were hazardous, including preparation of a site-specific Construction Site Management Plan and contingency plans for handling materials excavated from below the threshold depth that prove to be hazardous materials.

[13] Tetra Tech EM, Inc., as subcontractor to Trevet, Inc., *Final Finding of Suitability to Transfer (FOST) for Former Naval Air Station Alameda*, April 19, 2013

Project Characteristics

Demolition and Site Preparation

To ready the Project site for new development, the existing approximately 90,000 square-foot Building 530, constructed in 1973, will be demolished. Given the age of the building's construction and its prior use by the Navy as a missile re-work shop, it is likely that the building includes asbestos-containing building materials, lead-based paint and perhaps other hazardous building materials. All such materials will be removed and disposed of in accordance with existing rules and regulations of the Bay Air Quality Management District, Alameda County, and City of Alameda.

Remediation programs for the Project site (by the Navy and Chevron) have been or will be completed, with monitoring efforts demonstrating that remediation goals have been achieved and regulatory closure to be obtained. Groundwater remediation can accommodate Project development and site operations.

New R&D Building

Pacific Fusion seeks to construct a new R&D facility where they can test and advance their work toward development of a commercially viable approach for providing limitless, clean, on-demand fusion power using established science, engineering and manufacturing processes.

Pacific Fusion's plans for development of this R&D facility fundamentally represent a traditional R&D project. The Project includes constructing and operating a 1-story with high bay, approximately 225,500 square-foot building (see **Figure 3**). The Pacific Fusion building will contain:

- approximately 33,500 square feet of office and operational support space,
- approximately 73,000 square feet of lab and testing space,
- approximately 106,000 square feet of high-bay industrial R&D space where the Pulser would be located and operated (see below), and
- approximately 13,000 square feet of central utility space, including the electrical room and fire pump

This proposed R&D building would have a footprint of approximately 600 feet by 350 feet plus ancillary space, with a maximum height of approximately 100 feet at the 300-foot by 350-foot high-bay industrial R&D space and 44 feet on the remainder of the building. The Project's exterior will be a combination of tilt up concrete for the office, lab space and the base of the R&D space, and a precast panel or metal panel construction for the high bay industrial lab space for the Pulser (see **Figures 4 and 5**).

Due to the bearing pressure of the large concrete structure and the sensitive equipment of the Pulser (which cannot withstand substantial settlement once in operation), the Project will rely on deep foundation systems (piles) deriving support from below the underlying Young Bay Mud. The Project's concrete slab foundation would rest on these piles so that the building will not settle with the surrounding soil. Like much the eastern portions of Alameda Point, the Project site is underlain with a layer of sediment that was deposited from the late 1800s to the 1920s, which was contaminated with semi-volatile organic compounds. This layer is referred to as the Marsh Crust. The City of Alameda has adopted a Marsh Crust Ordinance that will require the Project to obtain an excavation permit for excavations into the Marsh Crust to ensure that proper measures are implemented to protect workers from contaminated materials and to require proper disposal of contaminated materials that are encountered.

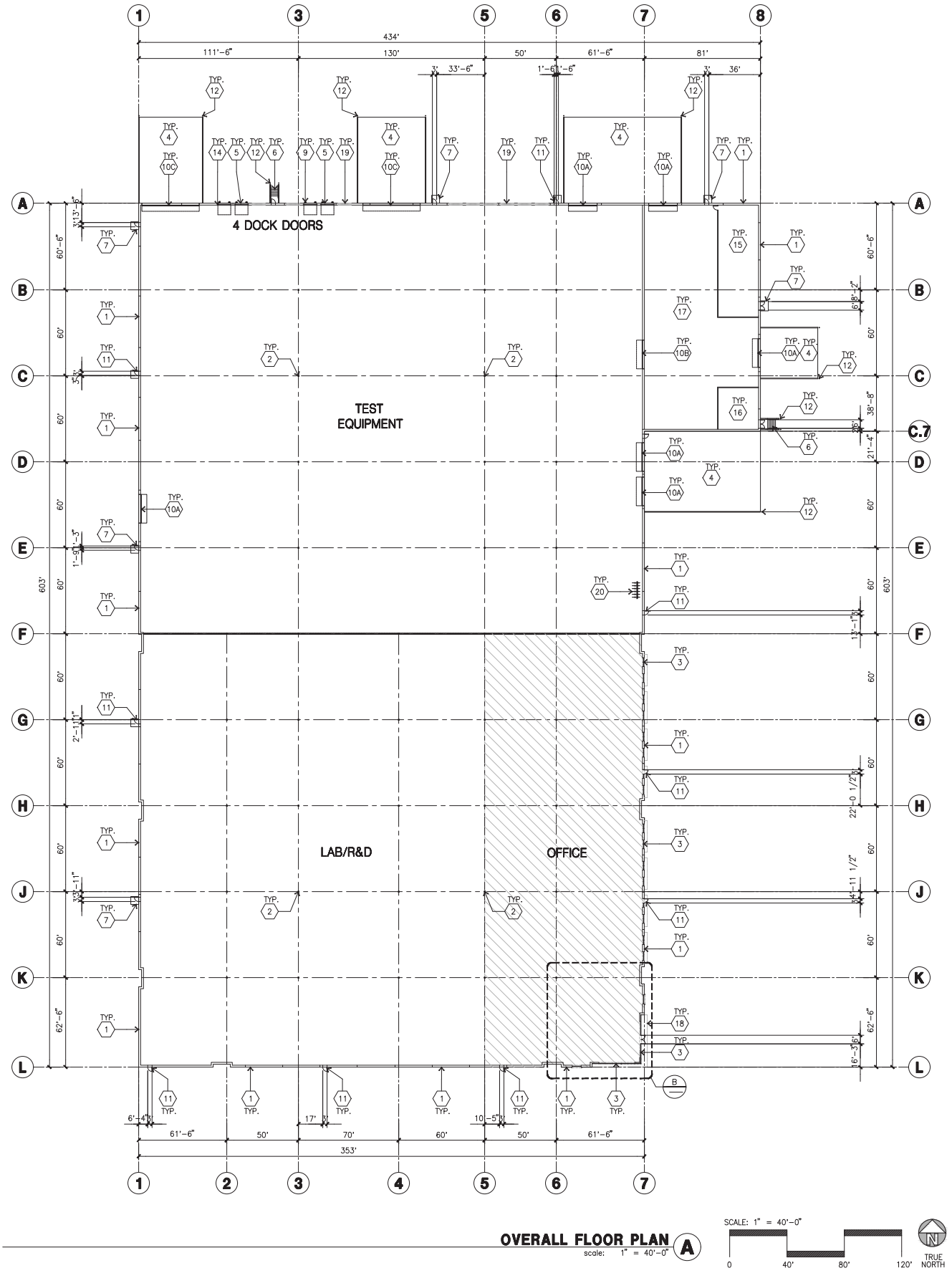
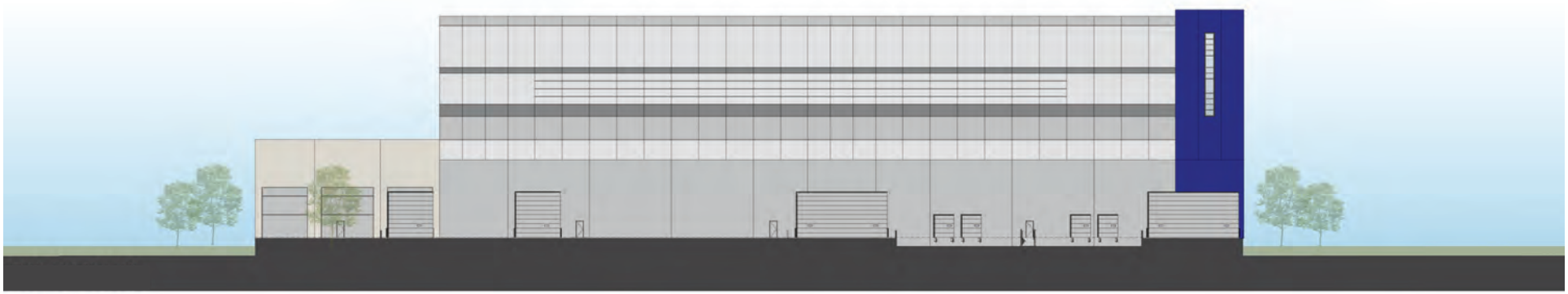


Figure 3
Proposed Pacific Fusion Building Schematic

Source: HPA Architects, *Overall Floor Plan*, 4/23/25

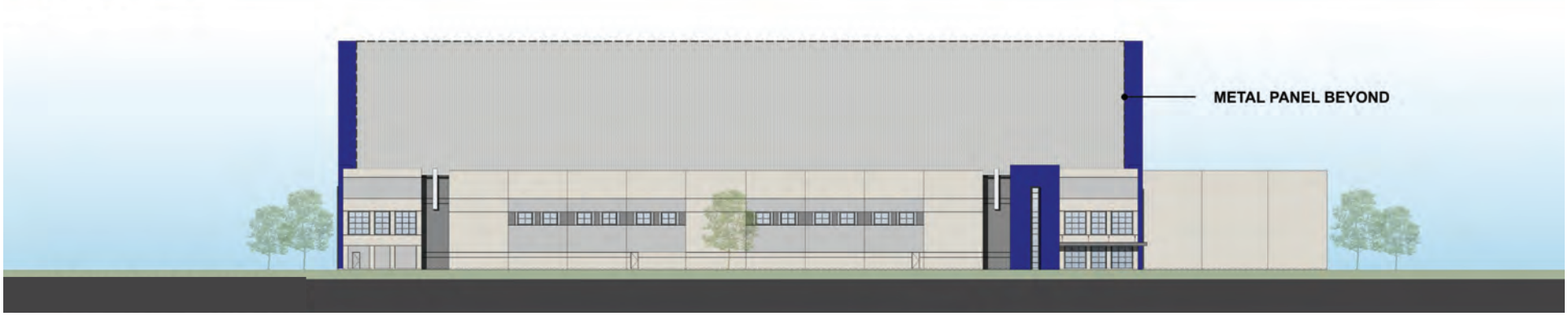


North Elevation - Pacific Avenue

West Elevation - Orion Street

Figure 4
Building Elevation Drawings, North and West

Source: HPA Architects, *Conceptual Elevations,* 4/23/25



South Elevation - Ticonderoga Avenue

East Elevation - Skyhawk Street

Figure 5
Building Elevation Drawings, South and East

Source: HPA Architects, *Conceptual Elevations,* 4/23/25

Other than the Pulser (which is described below), Pacific Fusion's proposed new building would function as a typical R&D facility.

Magnetic Pulser

Pacific Fusion's science and technology is focused on the pursuit of a "pulsed magnetic path to inertial fusion", which uses "fast-rising, high-current pulses to magnetically squeeze and heat small containers of deuterium-tritium fuel, driving the fuel to fusion conditions".[14]

The pulse system (or Pulser) is comprised of multiple modules of electrical capacitors connected in series and parallel, generating the necessary energy for fusion. The Pulser stores electrical energy and then discharges it through pulse tubes and water transmission lines at a target chamber (see **Figure 6**). One "pulse" would require a load size ultra-capacitor energy storage system which will supply the Pulser with anywhere from 5 to 8 MW to charge the Pulser, used for about one minute once a day. At peak operation, the Project would require approximately 3.3 megawatts (MW) of power for its standard lab and office space operations, plus the power demands of the Pulser.

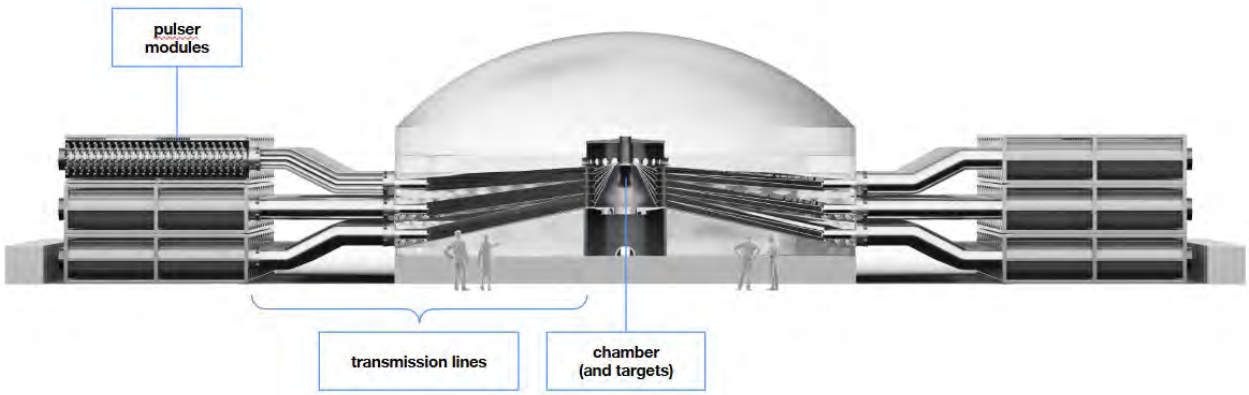


Figure 6: Section of Pacific Fusion's Pulser

The central chamber for the Pulser contains the fusion target, which consists of a small metal cylinder about 1 centimeter in size containing fusion fuels of deuterium and tritium (both isotopes of hydrogen).

- Deuterium is common. About 1 out of every 6,500 hydrogen atoms in seawater is in the form of deuterium.
- Tritium is not common. Tritium is a radioactive isotope that decays relatively quickly, with a 12-year half-life, and is rare in nature. Scientists are actively researching how to produce tritium as part of a sub-system of a fusion power plant at the rate needed to make future power plants self-sufficient for their tritium supply. Producing tritium requires enriched lithium, specifically

[14] Pacific Fusion,

the isotope lithium-6. Since lithium-6 is far less abundant than other lithium isotopes, scientists are also actively researching lithium isotope separation methods.[15]

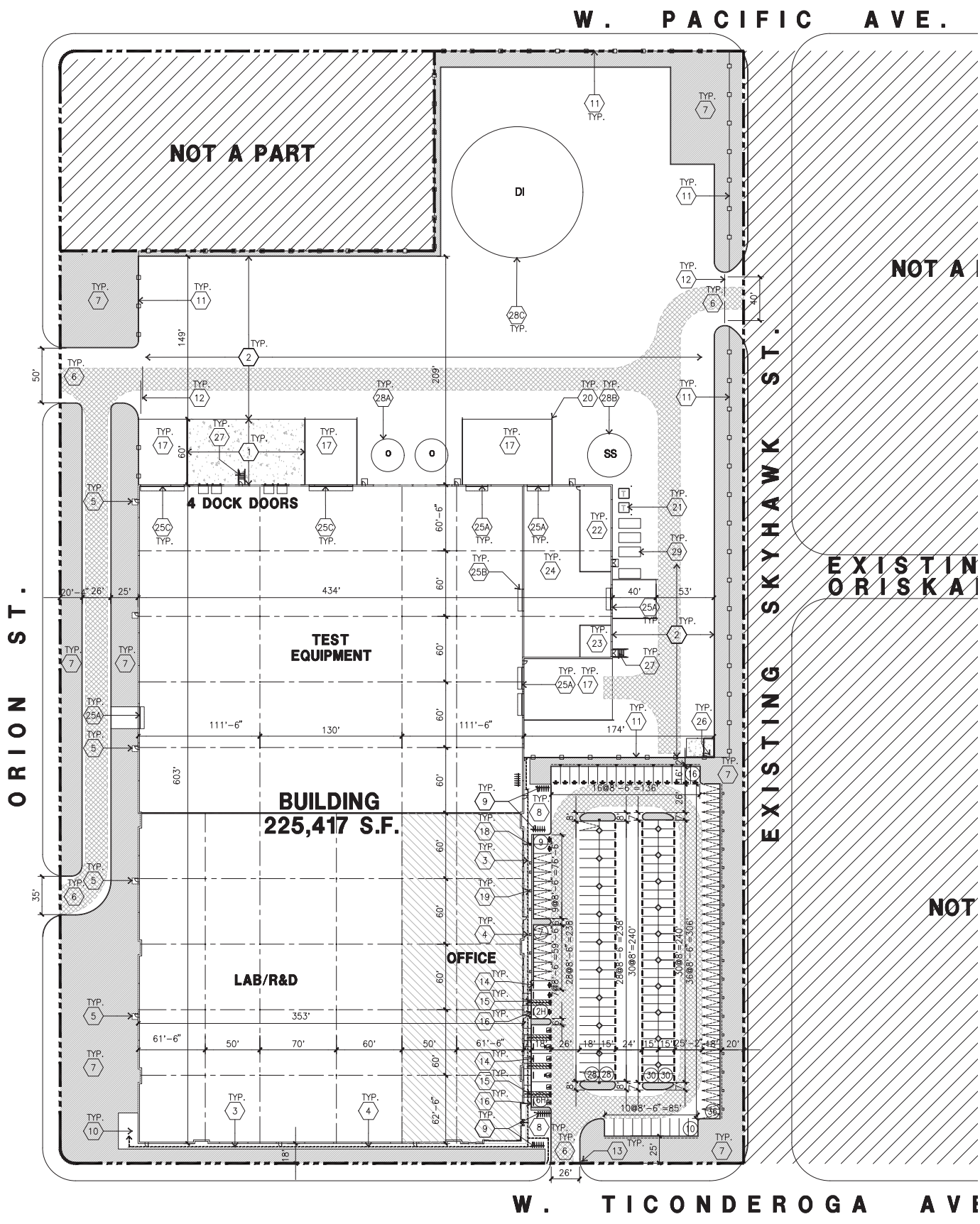
Pacific Fusion's Pulser transmission lines will deliver a controlled and precise burst of energy directly at the fusion target to create ignition. More specifically, the pulse system runs a fast electric current across the metal cylinder to create an intensely strong magnetic field that implodes the metal cylinder, "squeezing" the deuterium and tritium fuel to release energy through fusion. This process is then continually repeated, like in a piston engine. The Pulser technology differs from steady-state fusion, which requires extreme temperatures and intense pressure to fuse deuterium and tritium, and sufficient confinement to hold plasma and maintain the fusion reaction long enough for a net power gain. The Pulser technology also differs from the methodology used at the National Ignition Facility at the Lawrence Livermore National Labs, where lasers were used to create a controlled fusion reaction that, for the first time, produced more energy than it consumed.

Other On-Site Improvements

The Project would include a number of additional site improvements (see **Figure 7**), including:

- a 202-space parking lot, including 6 ADA-accessible (standard and van) spaces, and 72 EV-ready and EV-capable parking spaces as required by City Code, plus 4 large parking stalls for trailer truck parking
- a small frontage road between the Project's building and Orion Street, primarily providing off-street firefighting access to the 100-foot tall high bay structure
- a loading dock with 4 bays accessing the R&D building space/Pulser
- a transformer pad that will take electricity from the overhead power line and transform it to the necessary current to support the building operations and the Pulser
- a covered storage area and trash enclosure, and several 9' x 9' x 20' storage containers
- 4 above-ground storage tanks containing water and oil
- a perimeter landscaped area also serving as bioretention to meet clean stormwater runoff requirements, with an 8-foot tall fence securing the site, with landscaping to be designed to meet City parking lot shading and water efficiency requirements (see **Figure 8**)

[15] U.S. Department of Energy," *DOE Explains...Deuterium-Tritium Fusion Fuel*", accessed at: https://www.energy.gov/science/doe-explainsdeuterium-tritium-fusion-fuel#:~:text=When%20deuterium%20and%20tritium%20fuse,clean%2C%20and%20relatively%20limitless%20energy



Source: HPA Architects, *Overall Site Plan*, 4/23/25

Figure 7
Project SIte Plan

Figure 8
Project Landscape Plan

Source: HPA Architects and GreenDesign LA, *Preliminary landscape Plan*, 4/23/25

Employment

The Project is intended to accommodate approximately 150 full-time personnel working a traditional 8 to 5 schedule, Monday through Friday. Two additional, non-overlapping shifts of 50 operations and technician-type personnel would work at the Project the other 16 hours of each day, for a total of approximately 250 employees. Although workers would be on-site 24 hours per day, deliveries would occur only during typical business hours, and there would be no permanently parked heavy-duty trucks.

Off-Site Improvements

As indicated in the Alameda Point Master Infrastructure Plan (MIP),

> "The existing infrastructure within Alameda Point was installed by the Navy, mostly over 70 years ago and is beyond its service life. Components of the existing infrastructure are currently operable and service the existing tenants at Alameda Point. However, the existing infrastructure is deteriorated, generally unreliable and does not meet current codes or standards. The MIP recommends that the existing infrastructure be incrementally replaced with new systems." [16]

The Alameda Point Master Infrastructure Plan (MIP) establishes a practical yet comprehensive approach to implementing the necessary backbone infrastructure. The MIP outlines phasing and implementation principles for each proposed infrastructure system, recognizing that phased implementation of backbone infrastructure is critical to maintaining financial feasibility. Improvements required for redevelopment of Alameda Point are intended to be phased to match development phases as closely as possible. Each phase will construct the portion of infrastructure required to support the proposed uses and surrounding existing uses, while being balanced to maintain the feasibility of development projects.

The Pacific Fusion Project will be subject to approval of a Purchase and Sale Agreement and Development Agreement between the City and the Project sponsor, and those agreements will identify the extent and timing of the off-site infrastructure improvements that are expected to be constructed by the Project. However, the terms of those agreements have not yet been finalized. In lieu of a finalized agreement, the following list identifies the likely maximum package of off-site infrastructure improvements that may be required of the Pacific Fusion Project, such that the environmental review covers the maximum potential impacts.

Streets

The existing streets within Alameda Point were constructed by the Navy, with expansive areas of pavement for the movement of large airplanes, trucks and materials. Accordingly, the existing street system does not easily facilitate pedestrian and bicycle uses. The existing paved portions of the streets are usable, but in varying levels of need for rehabilitation, and generally all show evidence of wear beyond the pavement service life.

The Project (as defined for this environmental review) assumes that the Project may be responsible for construction of off-site street system improvements relative to the Alameda Point MIP (see **Figure 9**).

[16] City of Alameda, *Alameda Point Master Infrastructure Plan*, prepared by Carlson, Barbee & Gibson, Inc., March 2014, pages 1 and 2

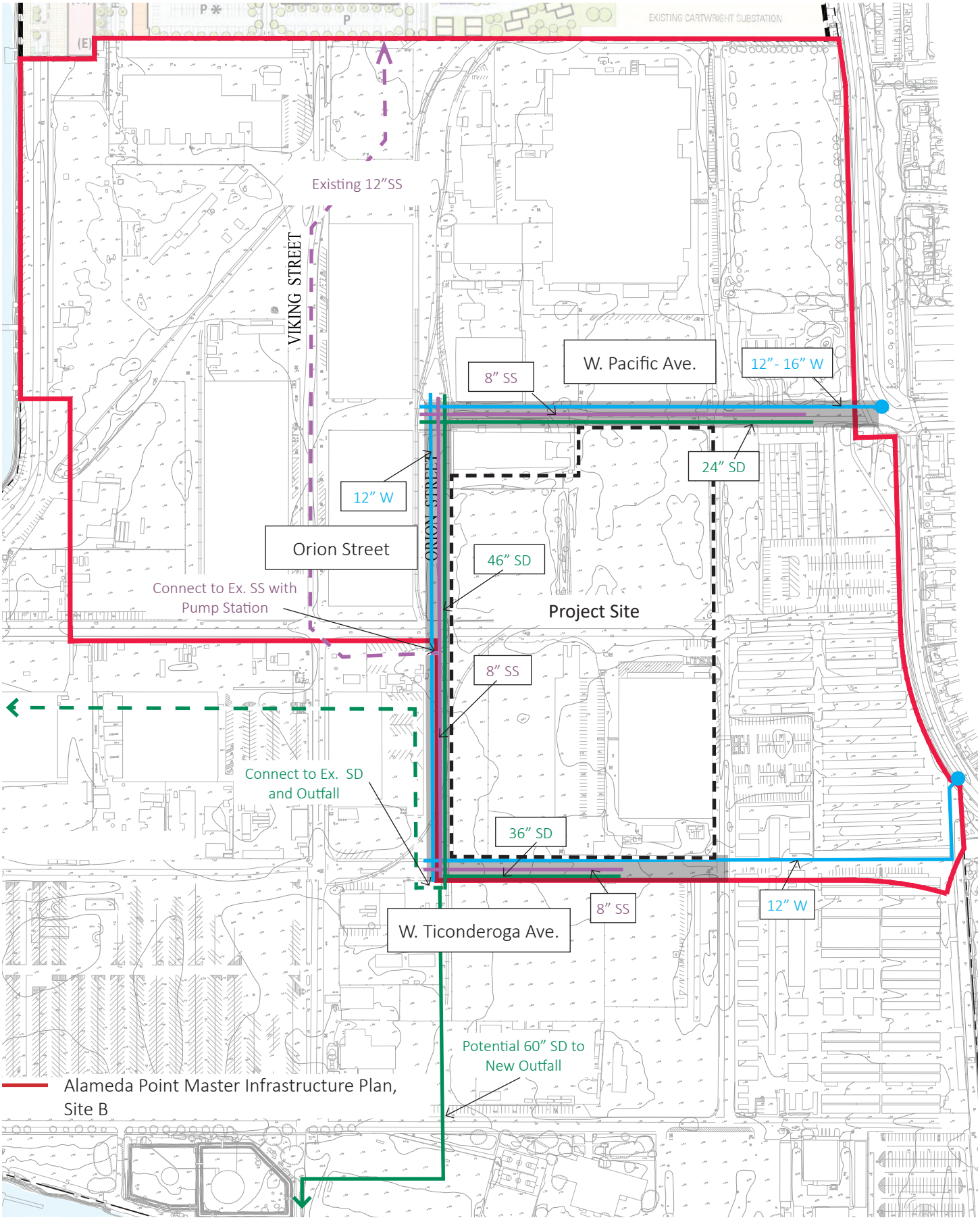


Figure 9
Potential Off-Site Master Infrastructure Improvements

Source: Derived form *Alameda Point Improvement Package, Site B,* CBG, , 4/24

For the environmental analysis, it is assumed that the Project may construct:

- a new segment of West Pacific Avenue extending from the western terminus of the Central Avenue Safety Improvements Project (a City of Alameda project currently under construction), westward to and including full intersection improvements at Orion Street, conforming to the existing roadways north and west of the intersection
- a new segment of Orion Street, from West Pacific Avenue to West Ticonderoga Avenue, and
- a new segment of West Ticonderoga Avenue, from Orion Street to Skyhawk Street, including full intersection improvements at Orion Street conforming to existing roadways to the south and west of the intersection, and partially improved interim intersection improvements at Skyhawk Street

The street-type cross-section which applies to West Pacific Avenue, Orion Street and West Ticonderoga Avenue includes:

- a 72-foot right-of-way and a 40-foot curb-to-curb dimension
- the curb-to curb dimension includes a 12-foot travel way and an 8-foot parking/bioswale in each direction
- On the outside of the curb, frontage improvements include a 3-foot landscape buffer at the curb, a 6-foot bike lane and a 7-foot sidewalk.

This new right-of-way of West Pacific Avenue will conflict with current improvements that support existing Building 360, including existing parking, surface storage and a covered storage area. The parking layout for Building 360 may need to be reasonably modified to maintain access and functionality, and the covered storage area to the north (Building 609) may need to be partially or entirely removed to accommodate the new right-of-way and street improvements.

Each of the street improvements identified above may require removal/abandonment of existing improvements within the existing roadways, and include installation of new public utilities (including storm drainage, sanitary sewer, water (potable and recycled), joint trench, street lighting and landscaping.

Skyhawk Street and West Oriskany Avenue currently consist of a minimum 24-foot width of asphalt pavement in fair to good condition. These roads will remain open and passable to the public, but with no assumed improvements to be made by the Project.

Wastewater Mains

The existing wastewater collection system within Alameda Point is owned and maintained by the City of Alameda. This system collects and conveys wastewater from throughout Alameda Point to a pump station at the northern edge of Alameda Point, where siphons convey wastewater from the entire main island of the City of Alameda and under the Oakland/Alameda Estuary. The siphons then connect into EBMUD's Interceptor, which convey wastewater from the City of Alameda and portions of the City of Oakland to EBMUD's main wastewater treatment plant near the base of the Bay Bridge.

As part of its offsite improvements, the Project may construct a new wastewater collection system of 8-inch sewer lines below the rights-of-way for West Pacific, West Ticonderoga and Orion. The Project will also remove the existing sewer system that is internal to the Project site. The new sewer lines may connect via a lift station to the existing 12-inch sewer line within Viking Way, which flows north to an existing pump station near Orion Street and Trident Avenue (recently constructed at part of Site "A"). The existing condition of the sewer pipe in Viking Way is unknown and must be inspected during the

design process. It is anticipated that this sewer line may need to be slip-lined or rehabilitated from West Oriskany Avenue to the Site "A" pump station.

Stormwater System

Stormwater runoff at Alameda Point is currently conveyed directly to San Francisco Bay through multiple outfalls along the southern shoreline. The existing storm drain system is owned by the City of Alameda, and was installed by the Navy starting over 70 years ago. The system is currently operable but does not meet current standards, including notable capacity limitations and a lack of stormwater quality infrastructure. The MIP anticipates that a new stormwater collection system to be owned and operated by the City of Alameda will be installed at Alameda Point. The new system will integrate new pipelines, pump stations, multi-purpose basins and outfalls, with water quality treatment features designed to meet current City of Alameda, County of Alameda and Regional Water Quality Control Board design criteria. The anticipated stormwater collection system will maintain the existing drainage patterns, but will significantly reduce the number of outfalls to the surrounding waters.

The Project will provide on-site bioretention to improve stormwater quality that exists the Project site, and accounting for the increased runoff attributed to new impervious surfaces created by the Project. These stormwater management measures will be designed and operated consistent with the Alameda Countywide Clean Water Program's implementation of the Municipal Regional Stormwater NPDES Permit (MRP) that was issued for urban stormwater discharges from Alameda County. These MRP provisions require implementation of Low Impact Development (LID) measures as outlined in Section C.3.c of the MRP, including source control, site design and treatment requirements to reduce the amount of stormwater runoff and improve the quality of the stormwater runoff.

As part of its offsite improvements, the Project may construct a new stormwater system of 24-inch, 36-inch and 48-inch storm drains below the rights-of-way for West Pacific, West Ticonderoga and Orion. The Project may also construct an off-site 60-inch gravity-drained stormdrain pipe within the Orion Street alignment from West Ticonderoga Avenue to West Hornet Avenue, and a "jog" around Hornet Field to a new (but already permitted) outfall into San Francisco Bay at the southwesterly end of Hornet Field.

Potable Water

Potable water is supplied to Alameda Point by EBMUD via the existing potable water distribution system within the Alameda street network east of Main Street. The existing potable water system within Alameda Point connects to meters and distributes potable and firefighting water to all areas within Alameda Point. This existing system was installed by the Navy and a majority of the system is over 70 years old. The water system is currently owned by the City of Alameda because it does not meet standards for EBMUD to accept it into their ownership and system. The existing system remains functional and is providing water service to the existing uses within Alameda Point. However, this system is deteriorated, it requires frequent maintenance, and it is not considered reliable. The MIP anticipates a new potable water distribution system to be owned and operated by EBMUD. The system is to be designed and constructed consistent with EBMUD's standard specifications for pipelines 20-inches and smaller. This potable water distribution system will also provide firefighting water supply for Alameda Point. The new distribution pipelines will connect to the existing EBMUD water facilities in Main Street. It will be installed within all backbone streets to provide reliable potable and firefighting water to all development parcels in Alameda Point.

As part of its offsite improvements, the Project may construct a looped water line that includes 12-inch to 16-inch water lines within the rights-of-way under West Pacific Avenue, Orion Street, and West Ticonderoga Avenue. The West Pacific Avenue line will connect to the existing water main at the Central

Avenue Safety Improvements Project. The West Ticonderoga Avenue line may extend past the street improvements that terminate at Skyhawk, connecting to the existing water main in Central Avenue just north of Ticonderoga. Private fire service will be provided via hydrants located along this water loop.

Recycled Water

Currently, there is not an existing source of recycled water at Alameda Point, but EBMUD has plans to extend their recycled water service to the City of Alameda, including Alameda Point. As a key component of Alameda Point's sustainable objectives to reduce potable water consumption and demand, the Alameda Point MIP calls for a new recycled water distribution system to be installed. This system is planned as a network of recycled water pipelines constructed within the proposed rights of ways of the backbone streets, designed and constructed in accordance with EBMUD's regulations, standards and specifications. Recycled water use at Alameda Point will supplement and minimize potable water use, and is anticipated to be used for landscape irrigation, wetland restoration support and irrigation, plumbing fixtures in dual-plumbed buildings, and industrial processes.

As part of its offsite improvements, the Project may construct a segment of a 12-inch recycled water line under Orion Street, from Pacific to Ticonderoga. If installed, this recycled water line would be available for connections to a future recycled water system.

Electrical System

Alameda Municipal Power (AMP) owns and operates the existing electric power facilities at Alameda Point and throughout the City of Alameda. Electricity is supplied to Alameda Point via existing overhead transmission facilities that connect to the Cartwright Substation. The Cartwright Substation is a critical component of the existing electric system and is intended to remain in service throughout the redevelopment of Alameda Point.

One reason that the Project applicant has selected this site in Alameda Point for its R&D facility is the site's proximity to the existing Cartwright Substation, which can provide adequate electrical power to serve the needs of its Pulser system. The Project may construct a joint trench from the existing Cartwright substation, along the west side of Central Avenue, to a connection at the Project site near Pacific Avenue. The joint trench may accommodate a new main line underground electric distribution system service, including new underground conduits, vaults, boxes, cables, transformers, switches and other utility distribution equipment. From the main line, the electric distribution facilities may be installed under the right-of-way of Pacific Avenue to the Project site. This joint utility trench may also accommodate PG&E's natural gas lines, as well as telephone, cable television, possible ancillary fiber-optic cable systems and street light facilities. The proposed electric system and joint trench would be constructed in accordance with AMP's rules and regulations.

Project Approvals

City of Alameda

In addition to this environmental review document to determine consistency with the 2014 Alameda Point Project EIR and the General Plan 20240 EIR and their respective adopted Mitigation Monitoring and Reporting Programs, the Project will require the following discretionary approvals from the City of Alameda prior to construction:

- Option Agreement and Purchase and Sale Agreement, specifying the price and terms of payment for the Project site and development obligations

- Development Agreement, vesting the rights to develop the Project as set forth under the terms of that Agreement
- Tentative and Final Parcel Maps
- Development Plan approval and approval of Design Review, as required for all new development in Alameda Point
- Determination of consistency with the Alameda Point Master Infrastructure Plan
- Determination of consistency with the Alameda Point Transportation Demand Management Plan

The Project will also require the following administrative level approvals and determinations:

- Infrastructure Improvement Plans for improvements related to on-site and off-site streets, wastewater, stormwater, potable water, recycled water, power, natural gas and communications facilities
- Design-level geotechnical analysis to confirm that the necessary corrective measures would be prepared as part of the design process of proposed improvements
- Excavation permit per City of Alameda Marsh Crust Ordinance
- Demolition, grading, and building permits

Other Agencies

- Bay Area Air District – Permit for asbestos abatement activities and Project's backup emergency generator
- SF Regional Water Quality Control Board - Approval of Water Quality Certification (WQC) and/or a Waste Discharge Requirement (WDR) for Waters of the State
- EBMUD – Review and approval of proposed water, wastewater, and recycled water infrastructure improvements
- California Department of Public Health, Radiation Safety and Environmental Management Division, Radiologic Health Branch – Radioactive Materials License
- Alameda County Department of Environmental Health

3 - Consistency with the General Plan, Community Plan and Zoning

The proposed Pacific Fusion Project is consistent with the General Plan land use designation and zoning for the site as described in the City of Alameda 2040 General Plan, the Alameda Point Project and the zoning code amendments made pursuant to the Alameda Point Project and now incorporated into the Alameda Municipal Code Zoning Ordinance. The Pacific Fusion Project meets the definition of an individual project pursuant to the General Plan and the General Plan 2040 EIR per CEQA Guidelines Section 15168, and meets the requirements for streamlining as a project consistent with the Alameda Point Project and its prior program EIR pursuant to CEQA Guidelines Section 15183, as demonstrated below.

Consistency with Alameda 2040 General Plan

General Plan Land Use Classification

The General Plan's land use diagram and its respective land use classifications depict and describe the intended location, distribution, intensity and physical character and form of the use of land across the City, in support of General Plan policies. The Alameda 2040 General Plan's land use classification for most of Alameda Point, including the Pacific Fusion Project site, is Mixed-Use[17] (see **Figure 10**), defined as follows:

Mixed-Use: The areas at Alameda Point and along the Northern Waterfront are designated Priority Development Areas in Plan Bay Area, the region's Sustainable Communities Plan. These diverse areas include a variety of buildings with residential densities of 10 to 100 units per acre, and FARs of 0.25 to 4.0. The Mixed-Use areas permit a wide variety of housing types including multi-family housing, a wide variety of commercial and business uses, and a maximum FAR of 0.25 to 5.0 depending on the sub-district and historic district designations.[18]

> **Consistency**: The Pacific Fusion Project is an R&D land use, consistent with the wide variety of commercial and business uses intended within the Mixed-Use land use classification. The Pacific Fusion Project's building, at 225,500 square feet on an approximately 13-acre site, has a FAR of approximately 0.4, consistent with the permitted FAR range of 0.25 to 5.0 for this land use classification.

[17] City of Alameda, *Alameda General Plan 2040* - Land Use + City Design Element, page 47

[18] City of Alameda, *Alameda General Plan 2040* - Land Use + City Design Element, page 49

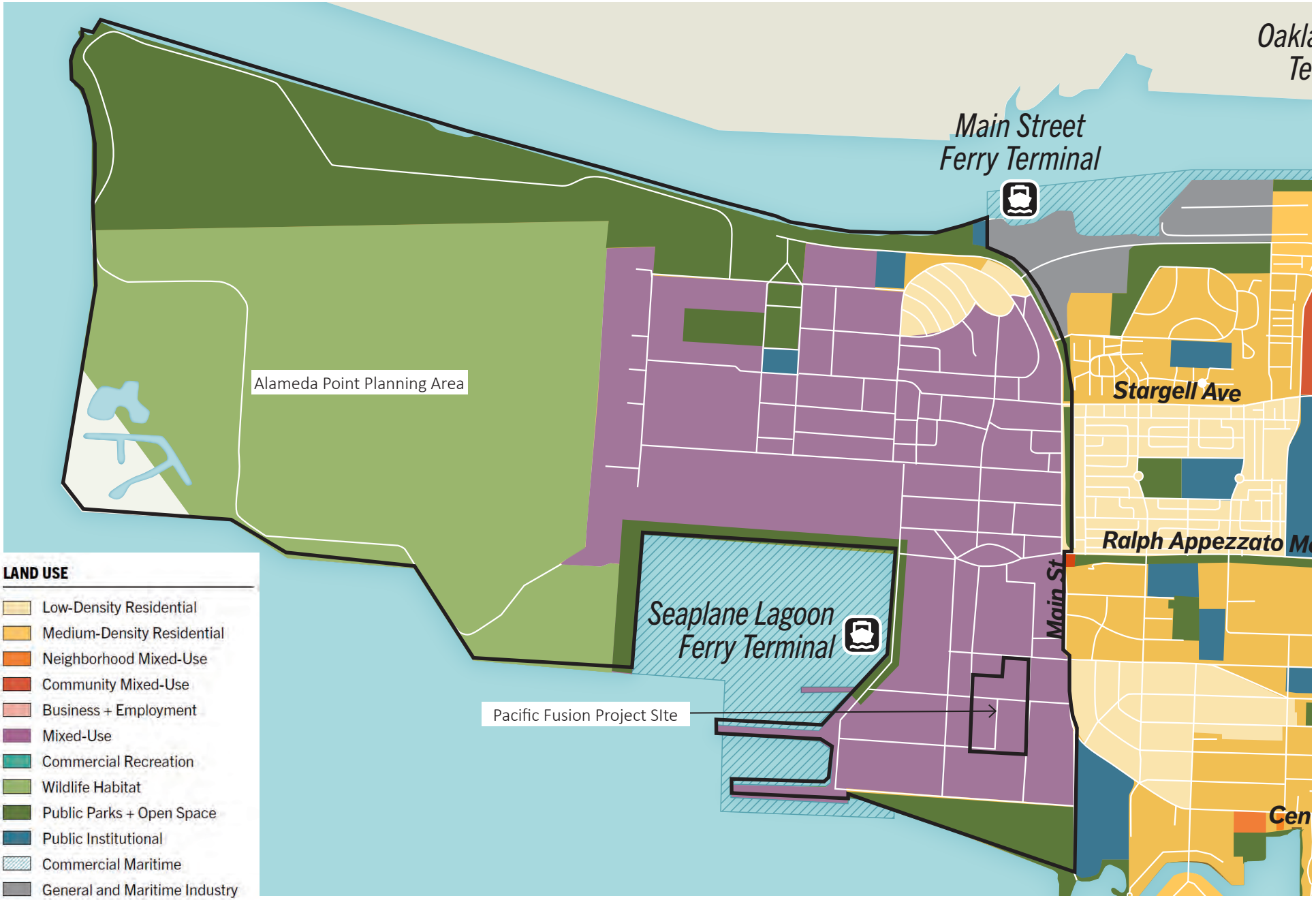


Figure 10
General Plan Land Use Classifications and Diagram

Source: Alameda General Plan 2040, Land Use and City Design Element, Page 2

Consistency with 2040 General Plan Land Use Policy

The 2040 General Plan includes a number of policies and actions that are intended to support the on-going reinvestment in buildings and infrastructure at Alameda Point. The following provides a comparative assessment of the Pacific Fusion Project to these General Plan policies and actions relevant to Alameda Point's Enterprise Sub-District, where the Project site is located.

Land Use Policy 20 - Alameda Point Enterprise Sub-District: Support the development of the Enterprise District for employment and business uses including office, research and development, biotechnology and high-tech manufacturing and sales, light and heavy industrial, maritime, community serving and destination retail, and similar and compatible uses.

> **Consistency**: The Pacific Fusion Project is an R&D land use, consistent with the wide variety of employment and business uses intended for the Enterprise Sub-District as defined in Land Use Policy 20.

Action 20a - Vibrant Employment District: Support the creation of a pedestrian, bicycle, and transit supportive business environment with high-quality, well-designed buildings within walking distance of transit, services, restaurants, public waterfront open spaces, and residential areas.

> **Consistency**: The Pacific Fusion Project would include a well-designed building that is within walking distance of transit (the Main Street Ferry Terminal and the future Seaplane Lagoon Ferry Terminal) and would be within walking distance of future services, restaurants, open spaces and residential areas associated with other Alameda Point Sub-Districts, consistent with Policy Action 20a.

Action 20b - Support and Protect Job Growth: Encourage and facilitate job growth, and limit intrusion of uses that would limit or constrain future use of these lands for productive and successful employment and business use.

> **Consistency**: The Pacific Fusion Project is expected to provide up to 250 new jobs, including approximately 150 full-time personnel working a traditional Monday through Friday schedule, and two non-overlapping shifts of 50 personnel that would work the other hours of each day. These new jobs would primarily be for a highly trained workforce of scientists, technical equipment operators and technicians. The Project would facilitate job growth and would not limit or constrain other lands for future productive and successful employment and business use, consistent with Policy Action 20b.

Action 20c - Pacific Avenue: Support the development of Pacific Avenue as an iconic landscaped boulevard with separated bike paths and pedestrian routes.

> **Consistency**: As indicated in the Project Description, the Pacific Fusion Project may include construction of a number of offsite infrastructure improvements, the scope of which are to be determined pursuant to a Purchase and Sale Agreement and a Development Agreement between the City and the Project sponsor. Depending on the outcome of those agreements, either the City or the Project will construct a new segment of West Pacific Avenue from Central Avenue to Orion Street. The right-of-way for this street section includes a 7-foot parking or bioretention area outside of the curb, a 3-foot landscape strip inside of the curb, a 6-foot one-way bike lane and a 7-foot sidewalk in each direction. The Project would not conflict with any plans, and may implement plans for the development of Pacific Avenue as a landscaped boulevard, consistent with Policy Action 20c.

Action 20d - Residential Uses: Ensure that residential uses are directed to those areas within the district that will not result in limitations or impacts on the ability of research and development, biotechnology, high tech manufacturing, heavy industrial, manufacturing, or distribution businesses to effectively operate in the area.

> **Consistency**: The Pacific Fusion Project does not include any residential use that might limit or impact the ability of businesses to effectively operate in the area, consistent with Policy Action 20d.

Consistency with the Alameda Point Project

As detailed in the Alameda 2040 General Plan, the Alameda Point Project established four distinct sub-areas. These sub-areas include the Waterfront Town Center, the Main Street Neighborhood, the Adaptive Reuse Sub-Area and the Enterprise Sub-Area. The Pacific Fusion Project site is located within the Enterprise Sub-Area (see **Figure 11**).

The Enterprise Sub-area provides approximately 111 acres of land for new high-quality research and development, industrial, manufacturing and office uses. Outside the Naval Air Station Alameda Historic District and well buffered from the Nature Reserve, the Enterprise Sub-area provides opportunities for new construction to accommodate modern uses and specialized industry needs in high quality, well-designed buildings.

As an economic development and real estate conveyance strategy and as a means for planning future infrastructure needs, the City of Alameda has defined an area encompassing the majority of the Enterprise Sub-Area as "Site B" (see **Figure 12**). Site B is bordered by the Waterfront Town Center Sub-area to the north, Seaplane Lagoon to the west, West Ticonderoga Avenue to the south, and Central Avenue/Main Street to the east. An approximately 2.8-acre parcel at the corner of Pacific and Orion that contains an existing building (former Navy Building 397) is currently leased and occupied by an aerospace research and design firm. The remainder of Site B is considered a key catalyst development location for major commercial businesses or end-users.

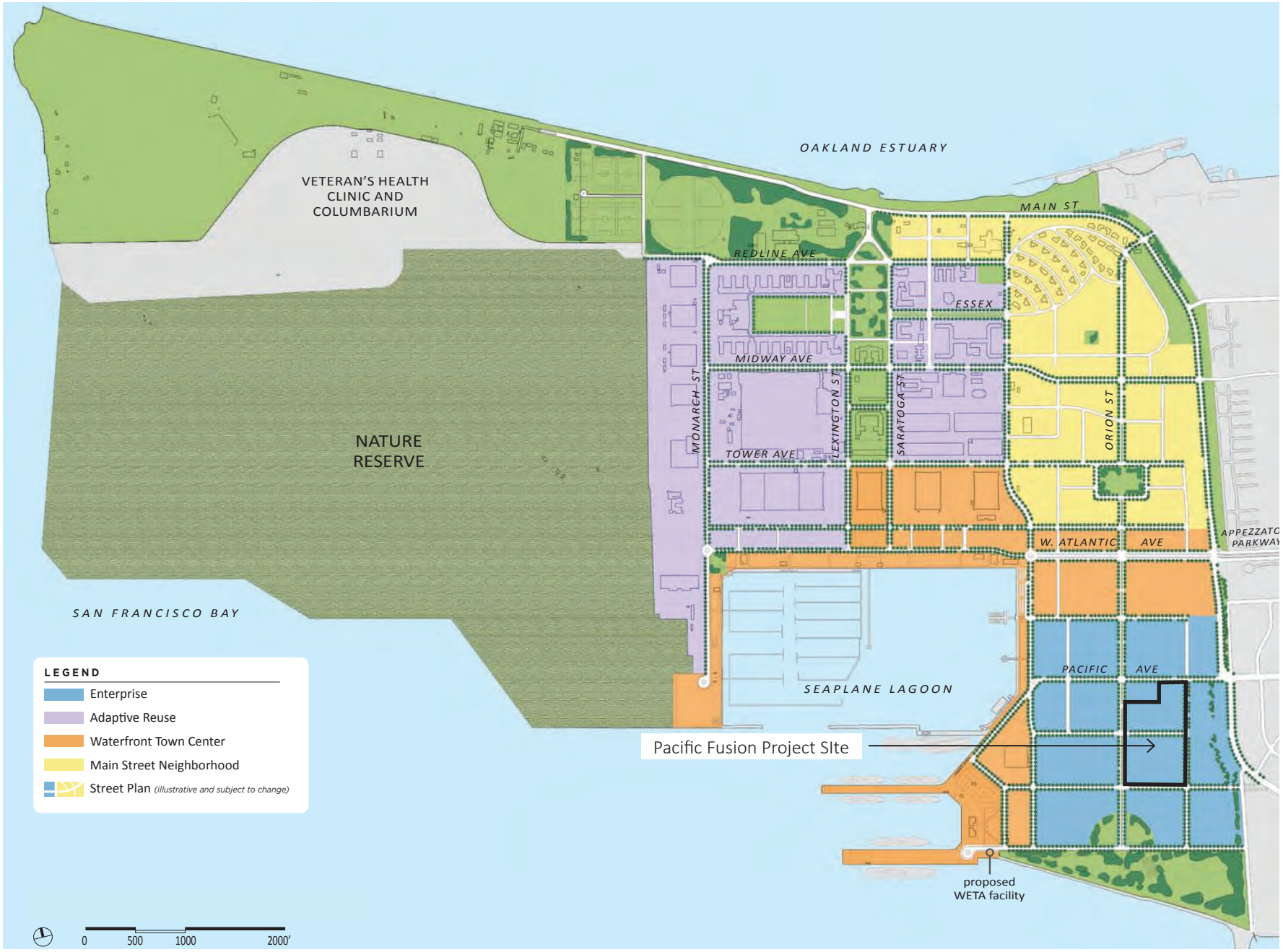


Figure 11
Alameda Point Sub-Areas

Source: Alameda Point Project EIR, Figure 3-1

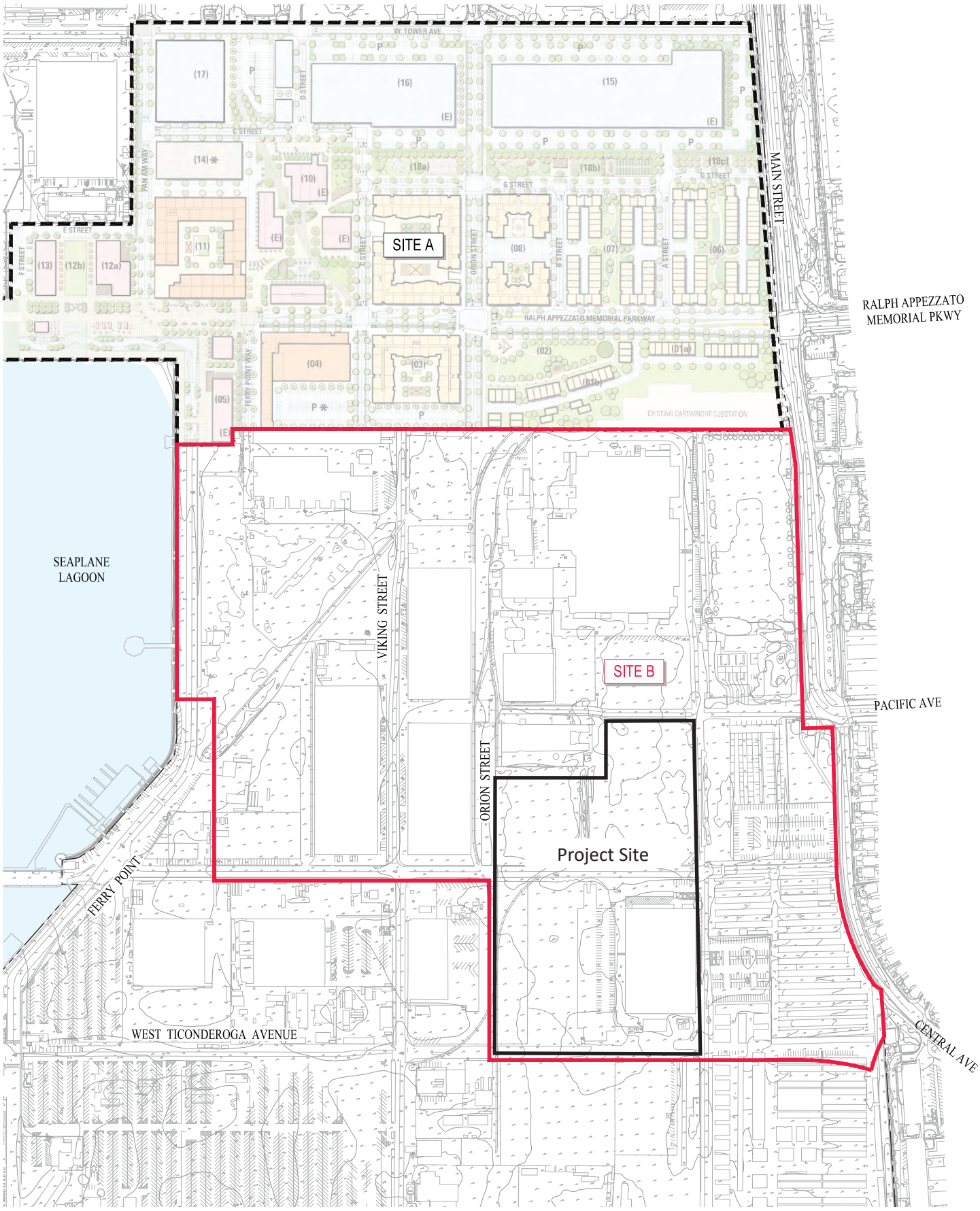


Figure 12
Site "B" of Alameda Point - for Economic Development and Master Infrastructure Planning

Source: CBG, Inc., Alameda Point SIte B, 3/10/17

The following provides a comparative assessment of the Pacific Fusion Project to the plans and intentions of the Alameda Point Project, as described in the APP EIR.[19]

Land Use: Land uses in the Enterprise Sub-Area are intended to create a thriving employment center. Potential uses range from executive and/or research and development offices to maritime wholesaling and manufacturing to light industrial.

> **Consistency**: The Pacific Fusion Project would be an important step toward the creation of a thriving employment center within the Enterprise Sub-Area, expected to provide up to 250 new jobs with a highly trained workforce of scientists, technical equipment operators and technicians within a new R&D facility.

Commercial Block Grid: New commercial block, research and development, workplace and industrial buildings will be organized around a grid consisting of tree-lined, two-lane streets with on-street parking and a network of parks and civic spaces.

> **Consistency**: The Pacific Fusion Project would advance the Alameda Point Project's plans for establishing a commercial/R&D block within Site B of the Enterprise Sub-Area. The Pacific Fusion Project may include improvements to West Pacific Avenue from Central Avenue to Orion Street; and may include improvements to Orion Street from West Pacific Avenue to West Ticonderoga Avenue and improvements to West Ticonderoga Avenue from Orion Street to Skyhawk Street. These potential off-site Project improvements would establish a portion of the grid of tree-lined, two-lane streets with on-street parking within Site B, consistent with the Alameda Point Project's intent for a commercial grid street network.

Parking: Parking would be placed behind buildings that face onto the streets in surface parking lots or in parking structures so that a pedestrian environment is established.

> **Consistency**: The Pacific Fusion Project's proposed site plan would place its new building so that it faces onto Orion Street, with a landscaped pedestrian environment along this primary length of the site. The proposed surface parking area would be established toward the rear of the building, accessed from West Ticonderoga Avenue and Skyhawk Street.

Building Height: The maximum permitted height for buildings in this sub-area will be 100 feet, except for buildings that front onto Main Street, which would be a maximum of 40 feet in height. New buildings along Main Street would step back and step down from Main Street to provide for a transition to the adjacent residential neighborhood on the east side. These buildings would also be set back behind a new linear park on the west side of Main Street.

> **Consistency**: The Pacific Fusion Project's new building is proposed with two different building heights. The northerly portion of the building is as a tall bay, 100-foot-tall building containing the Pulser, and that portion of the building is equal to the maximum permitted height of 100 feet. The southerly portion of the building is comprised of office, lab and other R&D space, and is approximately 44 feet in height. The Pacific Fusion Project site does not front onto Main Street or Central Avenue, so it would not require any step-back or step-down in height. Nonetheless, the southerly portion of the Project that is not the high-bay R&D space would step down to a height of approximately 44 feet at West Ticonderoga Avenue and at the southerly portion of Orion Street and Skyhawk Streets.

[19] City of Alameda, APP Draft EIR, Project Description, page 3-31

Linear Parks: A linear park along Main Street will provide Class I bicycle facilities and pedestrian paths separated from on-street traffic and a green "buffer" between the Enterprise Sub-area buildings and the adjacent existing Alameda neighborhood. The Main Street linear park would also provide an important bicycle and pedestrian connection between this Sub-area and Enterprise Park to the south and the Town Center and Waterfront Sub-area to the North.

> **Consistency**: The Pacific Fusion Project site does not include the properties located along Main Street that are intended to provide bicycle facilities, pedestrian paths and green buffers between the Enterprise Sub-area buildings and the adjacent existing Alameda neighborhood. None of these improvements is proposed as part of the Pacific Fusion Project.

Consistency with the Alameda Zoning Ordinance

The Zoning Ordinance (Alameda Municipal Code Chapter 30) is a set of regulations that promote and protect the public health, safety, and general welfare of Alameda by guiding, controlling, and regulating future growth and development that occurs in the city. Zoning regulations apply to all new construction, building alterations, property line changes and most site construction work. The Project's consistency with applicable zoning standards and regulations is addressed below.

Consistency with the Enterprise 1 (AP-E1) Zoning

The Alameda Point Zoning District is comprised of six sub-districts. The Project site is located in the Enterprise-1 (E-1) sub-district (see **Figure 13**), which includes its own set of specific regulations designed to achieve the purposes and intent of the E-1 sub-district.

Section 30-4.24 - Alameda Point District, c) Alameda Point Sub-district Purpose Description: The E-1 sub-district provides lands for employment and business uses, including office, research and development, biotechnology and high-tech manufacturing and sales, light and heavy industrial, maritime, community serving and destination retail, and similar and compatible uses.

> **Consistency**: The Pacific Fusion Project is an employment/business use that will include professional office and R&D functions, consistent with the E-1 zoning district's intent.

Permitted Uses: Section 30-4.24 (Table B - Industrial category) identifies Light Industrial land use as a permitted use within the E-1 District. According to Section 30-2: Definitions, Light Industrial uses are defined as, "an establishment or activity conducted primarily within an enclosed building that includes research and development, manufacture, fabrication, or processing of any article, substance or commodity and includes storage areas, truck access and loading areas, warehouses, and other similar activities and facilities that do not produce off-site external effects such as smoke, noise, odor or vibration."

> **Consistency**: The Pacific Fusion Project meets the definition of a light industrial use. All activity associated with the Project (which would include R&D and special processing) would be conducted within an enclosed building. The Project would include storage areas, truck access, loading areas and other similar activities. The Project would not produce off-site external effects such as smoke, noise, odor or vibration (see further analyses of these topics in the accompanying Environmental Checklist). The Project's proposed use is consistent with the land use types allowed within this zoning district.

Figure 13
Alameda Point Zoning Districts

Source: Alameda Point Project, 2/15/14

Development Standards: Zoning Ordinance Section 30-4.24 d) - Site Planning and Building Design Requirements, provides regulations for the placement of buildings and improvements to land within the E-1 zoning district. Planned development and design review applications shall be reviewed for consistency with these regulations. The Project's consistency with these Site Planning and Building Design Requirements is as indicated below.

- *Building Orientation: All new buildings shall be oriented toward the main adjacent public right-of-way and shall provide a main public entrance with direct access to the public right-of-way*

  Consistency: The primary façade of the Project's building is oriented toward Orion Street, but the Project is not intended to accommodate public visitors or any substantial foot traffic. Accordingly, the primary entrance to the building is located adjacent to the parking area, at the southeast corner of the building, and immediately accessible from West Ticonderoga.

- *Pedestrian Orientation: Surface parking lots or parking structures shall be minimized in size and placed behind or adjacent to the building. Parking lots shall not be placed between buildings and streets. When placed adjacent to a building, the lot shall provide a landscaped twenty-five (25') foot setback from the public right-of-way.*

  Consistency: The City's Zoning Ordinance has no minimum parking requirement except for accessible parking spaces required by subsection 30-7.4. Per the table provided under subsection 30-7.3, the maximum number of off-street parking spaces for new R&D uses is 2.5 parking spaces per 1,000 square feet of building space. Accordingly, the Project's approximately 225,500 square-foot building would yield a maximum number of 563 parking spaces. The Project proposes to provide 202 parking spaces, thus minimizing the size of the parking lot. The Project would provide a landscaped setback of 25 feet from the public right-of-way at West Ticonderoga, and a 20-foot landscape setback from the parcel boundary at Skyhawk Street.

- *Front Setback: New buildings should be placed as close to the front property line as possible to facilitate pedestrian access. A setback of up to twenty (20') feet may be approved if it can be found that the setback is necessary and appropriate to create a pleasing landscaped buffer between a building over thirty (30') feet in height and the public right-of-way or a public park.*

  Consistency: The Project's building would be placed approximately 71 feet from the front property line at Orion Street. This substantial setback provides for a 20-foot landscape setback adjacent to the street, a 26-foot travel lane, and an additional 25-foot landscape area adjacent to the building. The 26-foot travel lane is necessary to provide an off-street fire lane where fire trucks can park if necessary to fight a fire at the 100-foot tall building. The combined landscape setback areas would provide a pleasing landscaped buffer between the 100-foot tall building and the public right-of-way.

- *Side Street Setback: No side yard setback is required except where the side yard abuts a public street, in which case the side yard setback shall be sufficient to align the building with the front setback of the adjacent buildings.*

  Consistency: The Project's building would be placed approximately 190 feet from the side street at Skyhawk Street to accommodate the parking lot, and approximately 113 feet from the side street at Skyhawk Street where there is no intervening parking lot. No adjacent buildings are present, so there is no adjacent front setback to align with.

- *Minimum Side Setback: No side yard setback shall be required in the E-1 district.*

  Consistency: The Project's building would be placed approximately 209 feet from the only side yard property line at the property now owned by the City of Alameda and containing former NAS Alameda Building #397. The Project site does not abut a public open space, a residential use or a public street, and there are no other adjacent buildings. No maximum side yard setback is indicated in the code requirement.

- *Building Height: The maximum permitted height for any building shall be one hundred (100') feet, except that any building proposed within one hundred (100') feet of the Encinal High School property shall be limited to thirty-five (35') feet in height, and any building or portion of building within 100 feet of the West Hornet Avenue right-of-way shall not exceed 40 feet in height.*

  Consistency: The Project's building is proposed at a maximum height of 100 feet, consistent with the height limit. The building is not within 100 feet of the Encinal High School property and is not within 100 feet of the West Hornet Avenue right-of-way.

- *Building Types and Building Frontage Design: Table A of section 30-4.24 of the Alameda Zoning Code identifies the building types and frontage types that are permitted, conditionally permitted or not permitted within the E-1 sub-district. The definitions and descriptions of building types are described in the Citywide Design Review Manual. The Building Types that are not permitted in the E-1 sub-district are Work-live, Stacked flat, Multiplex, Row House, Courtyard housing, Single-family detached and Carriage house. The Frontage Type that is not permitted is Stoop.*

  Consistency: The Project would not construct a building type that is not permitted in the E-1 sub-district, nor does it propose to construct a frontage type that is not permitted in the E-1 sub-district.

As indicated above, the Project would not be inconsistent with any of the development standards of the Alameda Zoning Ordinance applicable to the Enterprise-1 zoning district.

General Provisions and Exceptions

The Alameda Zoning Ordinance Section 30-5 provides a number of general provisions and exceptions that are, or may be applicable to the Project, as addressed below.

Section 30-5.16 Performance Standard g, Fissionable or Radioactive Material: No activity shall be permitted which utilizes, produces, removes or reprocesses fissionable or radioactive material unless a license, permit or other authority is secured from the state or federal agency exercising control. In all matters relative to such activities, it shall be the responsibility of the user to ascertain and identify the responsible agencies and notify the Community Development Department as to the agencies involved and the status of the required permits.

Consistency: As addressed in detail in the CEQA Checklist, the Project will utilize and reprocess radioactive material. The Project applicant must secure a license and/or permit from the State of California Department of Public Health, Division of Radiation Safety and Environmental Management, Radiologic Health Branch. This State agency is responsible for licensing of radioactive materials, registration of radioactive material users, and inspection of facilities using radiation, investigation of radiation incidents and surveillance of radioactive contamination in the environment.

Section 30-5.14 - Barriers and Fences i), Screening: All exterior storage on the property shall be screened from view by a wall or other approved screening material, rising two (2') feet above the stored goods;

provided no such screen or wall shall exceed ten (10') feet. All storage areas shall be surfaced to provide a durable and dust-free surface and properly graded to dispose of all surface water. When feasible, outdoor storage areas should be located at the rear of the property. For walls or fences located next to street right-of-way, landscaping shall be located in front of the fence or wall. All off-street parking and truck loading areas must be screened from view of any public right-of-way by a low wall or landscaping screen.

Consistency: As demonstrated in the Project's Landscape Plan, the off-street parking area is proposed to be screened from view from West Ticonderoga by a landscaping screen. The truck loading docks have low visibility from any public right-of-way, but will also be screened by a low guard wall or building wall. The Project does not include any outdoor storage racks (e.g., construction materials) but does include four large outdoor liquid storage tanks. The largest of these tanks is a 26-foot tall by 120-foot diameter tanks for storage of de-ionized water. The second largest tanks is a 30-foot tall by 40-foot diameter stainless steel tanks for MiVolt (an electrical insulating fluid). Two other tanks are 15 feet tall by 30 feet in diameter, used for storage of lubricating oil for the Pulser machinery. Because of their height, it is not possible to screen these tanks from view from the public right-of-way. However, three of these tanks are to be located adjacent to the 100-foot tall high-bay R&D space, and will not silhouette against the sky or obstruct into any public views. The larger de-ionized water tank will be located behind a landscape screen along West Pacific Avenue and will be partially shielded from views from Orion Street by the intervening adjacent structure at the corner of Pacific and Orion.

30-5.16 Performance Standards b), Bird-Safe Buildings: Bird-safe building standards apply to new buildings that are greater than 35 feet in height and that have one or more façades in which glass constitutes 50% or more of the area of an individual facade. The bird-safe glazing requirement must be met on any window or unbroken glazed segment with an area of 12 square feet or more located on such façade. The bird-safe building standards do not apply to the ground floor of commercial storefronts directly fronting a public street, alley or sidewalk.

Consistency: The Project's proposed building (at 100 feet) will be greater than 35 feet in height, but none of its façades will include more than 50% of a façade as glass surface. Thus, the Project does not require bird-safe performance standards.

30-5.16 Performance Standards c), Outdoor Lighting/Alameda Dark Skies Ordinance: This ordinance prohibits the operation of searchlights, the use of aerial lasers or any similar high-intensity light, and the installation of new mercury vapor fixtures or other very intense lighting. This ordinance also establishes quantitative standards requiring that all exterior lighting fixtures be fully shielded, minimize light trespass beyond the subject property, that all LED lighting maintain a proscribed color temperature, and that security lighting must adequately protect persons and property but generate excess light beyond proscribed standards.

Consistency: Pursuant to the City's review and prior to issuance of building permits for the Project, the Project sponsor shall demonstrate via site lighting photometric calculations of the Project's lighting schedule that the Project's lighting plan meets all Alameda Dark Skies Ordinance requirements and limits.

Consistency with Oakland Airport and Use Consistency Plan

The Project site is not located within the Oakland International Airport Influence Area (AIA) (see **Figure 14**) and as such, the compatibility criteria contained within the Airport Land Use Compatibility Plan (ALUCP) are not applicable to the Project.[20] As indicated below, the Project is consistent with the safety, noise and airspace protection criteria of the ALUCP. The Project would not conflict with plans and policies intended to protect and promote airport operations safety and/or airspace protection.

Land Use Safety

The ALUCP defines seven safety zones within its AIA, and land use compatibility standards are established to restrict development of certain types of land uses that could pose particular hazards to the public or to vulnerable populations in case of an aircraft accident. The Project site is outside the boundaries of all ALUCP Safety Compatibility Zones, and ALUCP policies regarding these safety zones do not apply.

Noise

The ALUCP establishes boundaries within which noise compatibility policies apply. These boundaries depict "noise impact areas" or noise compatibility zones, defined by noise contours at the 65 dB CNEL, 70 dB CNEL, and 75 dB CNEL contours. Noise compatibility policies apply to each noise impact area or contour. The Project site is located outside of the 60 dB CNEL noise contour line. Industrial, production, manufacturing and related uses (such as the Project) are considered compatible without restrictions, the ALUCP noise exposure criteria do not restrict the Project, and the Project is consistent with the ALUCP noise criteria.

Airspace Protection

The ALUCP includes plans and policies related to airspace protection. The criteria used in establishing these policies is based on the Code of Federal Regulations (CFR) 14, Safe, Efficient Use and Preservation of the Navigable Airspace (Part 77), which governs the FAA's review of proposed construction exceeding certain height limits, defines airspace obstruction criteria, and provides for FAA aeronautical studies of proposed construction.

According to maps included in the ALUCP, the Project site is not located within an FAA Part 77 Subpart B-identified surface, nor is it located in an area requiring an Aviation Easement Zone or Overflight Notification. Pursuant to these federal regulations, these important FAA criteria do not pertain to the Project site.

Based on the above, the Project appears fully consistent with federal FAA regulations and the policies and requirements of the Oakland International Airport ALUCP.

[20] Alameda County Community Development Agency, *Oakland International Airport Airport Land Use Compatibility Plan*, December 2010

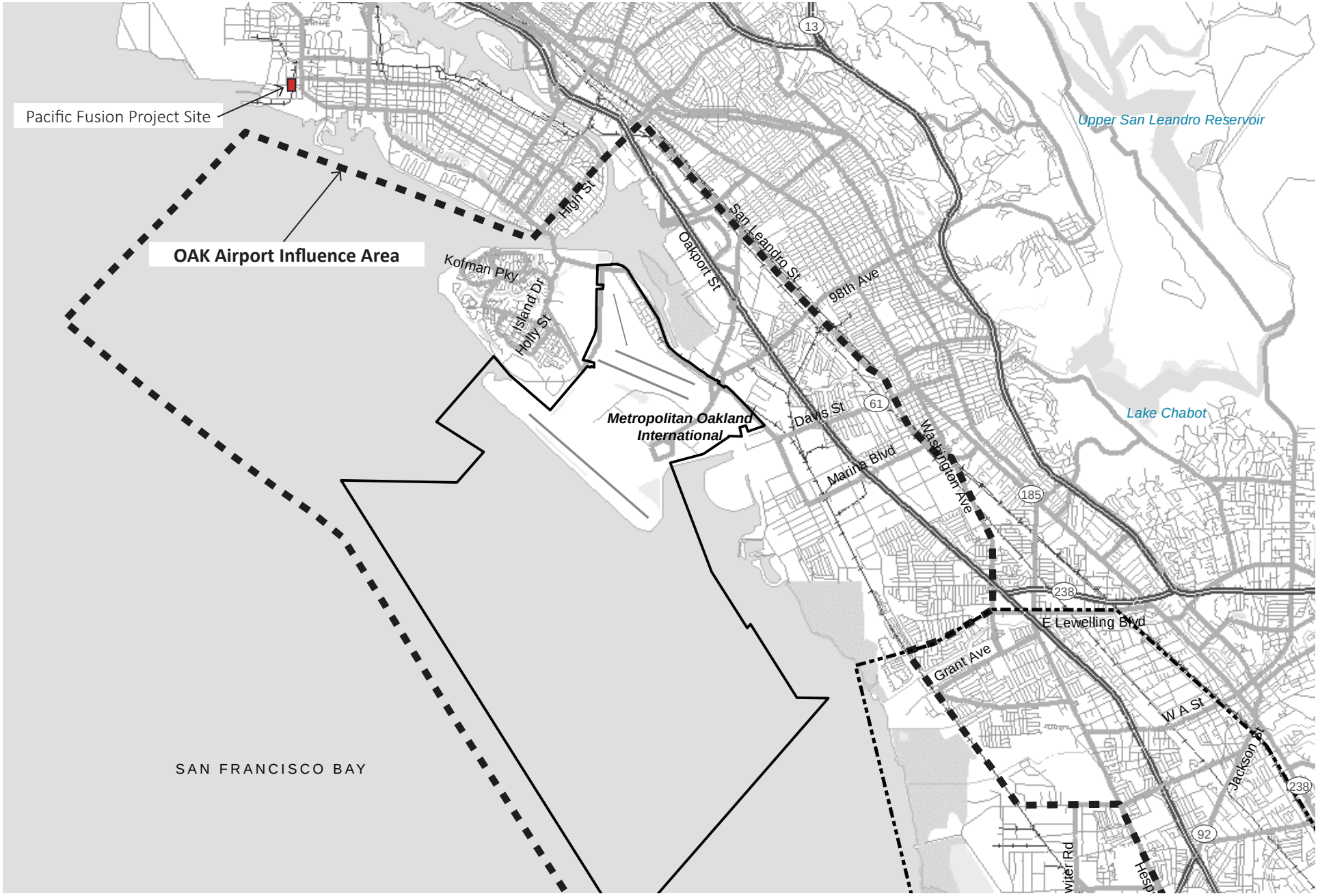


Figure 14
Oakland Airport Influence Area

Source: Alameda County Airport Land Use Use Commission, *Oakland International Airport ALUCP*, December 2010

Conclusions

The consistency analysis presented above demonstrates that the Project is consistent with the City of Alameda's 2040 General Plan land use designation for the site, and the Project's proposed development intensity is consistent with the General Plan's permissible FAR. Similarly, the Project is consistent with Alameda Point Project and its development expectations for the Enterprise Sub-District, as well as E-1 Zoning Ordinance standards that are specifically applicable to the site and the General Provisions and Exceptions standards of the Zoning Ordinance. Furthermore, the FAA regulations, policies and requirements of the ALUCP for the Environs of Oakland Airport do not apply.

As such, the Project satisfies the criteria of CEQA Guidelines Section 15168 as a project consistent with a prior Program EIR, and Section 15183 as a project consistent with the development density established by a community plan, General Plan and zoning, for which prior EIRs (the City of Alameda's Alameda 2040 General Plan EIR and the Alameda Point Project EIR) were certified.

4 - Evaluation of Environmental Effects

This Checklist compares the potential environmental impacts that may result from implementation of the Pacific Fusion Project to the effects previously identified for the Alameda Point Development Program to determine whether the proposed Project's environmental impacts were adequately addressed in the Alameda Point Project EIR (hereafter also referred to as the APP EIR) and the City of Alameda 2040 General Plan EIR (hereafter also referred to as the GP EIR).

The checkboxes in the following Checklist indicate whether the proposed Project would result in environmental impacts that are:

- Equal or Less Severe: The severity of the specific impact of the Project would be the same as, or less than the severity of the specific impact described in the APP EIR and/or GP EIR.
- Substantial Increase in Severity: The Project's individual impact would be substantially greater than the impact described in the APP EIR and/or GP EIR.
- New Significant Impact: The Project would result in a new significant impact that was not previously identified in the APP EIR and/or the GP EIR.

If the following Checklist identifies any impacts as being a "Substantial Increase in Severity" or a "New Significant Impact", the Project would have significant impacts that are:

- peculiar to the Project or Project site (CEQA Guidelines Section 15183(b)[3])
- not analyzed as significant impacts in the previous EIR, including off-site and cumulative impacts (CEQA Guidelines Section 15183(b)[2])
- due to substantial changes represented by the Project (CEQA Guidelines Section 15162(a)[1])
- due to substantial changes in circumstances under which the Project will be undertaken (CEQA Guidelines Section 15162(a)[2]), or
- due to substantial new information not known at the time the EIR was certified (CEQA Guidelines Sections 15162(a)[3] and 15183(b)[4])

Under such a circumstance, the City of Alameda would need to consider whether a new CEQA document would be required for the Project (i.e., a Negative Declaration, or a Subsequent or Supplemental EIR).

Environmental Topics Addressed

The APP EIR and GP EIRs analyzed the following environmental resource topics, which are presented in the Checklist below in the following order:

4-A: Aesthetics

4-B: Air Quality

4-C: Biological Resources

4-D: Cultural and Tribal Cultural Resources

4-E: Energy

4-F: Geology, Soils and Seismicity

4-G: Greenhouse Gases

4-H: Hazards and Hazardous Materials

4-I: Hydrology and Water Quality

4-J: Land Use

4-K: Noise

4-L: Population and Housing

4-M: Public Services and Recreation

4-N: Transportation

4-O: Utilities and Service Systems

Both the APP EIR and the GP EIR concluded that potential impacts pertaining to Agricultural Resource, Mineral Resources and Wildfire are not significant concerns in Alameda. These topics were not addressed in the APP EIR or the GP EIR, and are not included in the following Checklist.

The following Checklist provides a summary of potential environmental impacts that were found to result from implementation of the Alameda Point Project and the City of Alameda General Plan, as determined in the APP EIR and the GP EIR. The Checklist also describes the potential environmental effects of the proposed Pacific Fusion Project and the Pacific Fusion Project's consistency with the conclusions of the APP EIR and GP EIR. The following Checklist identifies mitigation measures and regulatory requirements cited in the APP EIR and GP EIR that are applicable to the Project, and determines whether the environmental impacts of the Project were adequately addressed in those prior EIRs. This Checklist assumes that the Pacific Fusion Project will be required to comply with all applicable mitigation measures and regulatory requirements as identified in the APP EIR and GP EIR, and as adopted by the City of Alameda.

The following CEQA Checklist hereby incorporates by reference the APP EIR and GP EIR's discussions and analyses of all potential environmental impact topics.

4-A: Aesthetics

Would the Project:	Prior EIR Determination: APP EIR and GP EIR	Comparative Project Impact	Applicable Mitigation Measures and Regulatory Reqmts:	Resulting Significance
a. Create a substantial adverse effect on a scenic vista?	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
b. Substantially damage scenic resources including but not limited to trees, rock outcroppings and historic buildings, within a State scenic highway?	APP EIR: No Impact GP EIR: LTS	Equal or Less Severe	-	No Impact
c. Conflict with applicable zoning and other regulations governing scenic quality?	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	APP EIR: LTS with MM GP EIR: LTS	Equal or Less Severe	APP EIR Mitigation Measure 4.K-4, (Lighting Installations)	LTS with MM
Would the Project have impacts that are:	**Not Identified in the APP EIR or GP EIR**	**Peculiar to the Project or its Site**	**New Off-site and/or Cumulative Impacts**	**New or More Severe Due to New Information**
	No	No	No	No

Findings of the Prior EIRs

APP EIR

The APP EIR determined that the Alameda Point Project would have the following less than significant impacts related to aesthetics:

- Development facilitated by the APP would have less than significant effects on a scenic vista
- Development facilitated by the APP would have less than significant effects related to potential damage to scenic resources including but not limited to trees, rocks, outcroppings and historic buildings, within a state scenic highway
- Development facilitated by the APP would have less than significant effects related to potential degradation the existing visual character or quality of Alameda Point and its surroundings in a substantial manner

The APP EIR cited required compliance with the City's General Plan polices and Design Review Ordinance to ensure good design and visual compatibility, and consideration of views and viewsheds.

The APP EIR determined that the Alameda Point Project would have the following potentially significant impacts related to aesthetics:

- Development facilitated by the APP could potentially create a new source of substantial light or glare which could potentially adversely affect day or nighttime views in the area

Mitigation Measures

The APP EIR identified the following mitigation measure that, when implemented on a project-by-project basis, would reduce significant light and glare impacts to less than significant:

- **Mitigation Measure 4.K-4 (Lighting Installations)**

The APP EIR concluded that implementation of the above mitigation measure would reduce impacts related to light and glare to a less than significant level, and would be consistent with requirements pursuant to the United States Fish and Wildlife's 2012 Biological Opinion and the Navy's Declaration of Restrictions that apply to all surplus Federal property conveyed to the City to limit the effects of additional lighting and glare on the least tern colony.

GP EIR

The GP EIR determined that construction and operation of new buildings and facilities allowed pursuant to the Alameda General Plan 2040:

- could disturb existing landscape and introduce heavy construction equipment into public and private views, but this impact would be temporary and not significant under CEQA
- would not adversely affect scenic vistas of San Francisco Bay and lands bordering the Bay, and would not damage scenic resources within a State scenic highway, as there are no State-designated scenic highways in Alameda
- that there is no evidence or reason to believe that Implementation of the Alameda General Plan 2040 would conflict with applicable zoning or other regulations governing scenic quality

The GP EIR did identify the following potentially significant impact:

- future development allowed under the Alameda General Plan 2040 could create new sources of substantial new nighttime lighting that could adversely affect nighttime views in the area, including light pollution and sky glow

However, new development within the City will be subject to the City's Design Review process and the Alameda Dark Skies Ordinance which would minimize the potential for light trespass and contribution to sky glow, and development at Alameda Point is subject to the lighting requirements as documented in a Memorandum of Understanding with the Department of Veterans Affairs. With these regulatory requirements, impacts related to nighttime lighting were found to be less than significant.

Potential Impacts of the Project

Scenic Vistas

There are no scenic vistas across the Project site to the Bay. All of the land in the vicinity of the Project site is relatively flat, and afford no long-range views in any direction. Views of the current Project site are not sensitive because the site consists of existing buildings and paved areas with low scenic qualities. The Project's construction-related impacts on scenic vistas and on visual quality would not be visually prominent from offsite vantage points because the Project site is flat and construction would be temporary. The APP intentionally concentrates the potential for tall buildings in the Enterprise Sub-area, and these tall buildings (including the Project) would redefine Alameda Point's profile against the sky. The Project's 100-foot tall building would be noticeable, but would not result in a substantial or adverse

effect on a scenic vista. The Project would not adversely affect scenic vistas. The proposed street improvements would be consistent with the development of the project area and would not block views. Other off-site improvements will be underground and not visible.

Scenic Highways

There are no officially designated scenic highways in or near the Project site. Since no state scenic highways exist within the project vicinity, impacts related to scenic resources within a state scenic highway would not occur with implementation of the Project.

Visual Character and Quality

The Project would create a generally beneficial aesthetic impact as compared to existing conditions by renovating or removing a vacant building and eliminating open expanses of pavement. The Project would also include new landscaping, street trees and likely roadway improvements that would further contribute to the beneficial aesthetic impact. Other off-site infrastructure improvements would be underground and not visible. The Project would be consistent with, and further the General Plan goal of improving the vitality and character of Alameda Point, and would be consistent with current plans for building massing and design controls that improve the visual change between existing and proposed land uses. The Project would not adversely affect visual character and quality.

Light and Glare

The Project will include exterior lighting for security and aesthetic illumination, which would contribute to the overall ambient nighttime lighting levels. Cumulative increase in ambient nighttime light levels could have adverse effects on the California least tern nesting colony (see further discussion of this topic in the Biology section of this CEQA Checklist).

Mitigation Measures

The Project would involve new sources of nighttime lighting that could contribute to cumulative lighting levels that affect the least tern's nesting colony, and the following APP EIR measures addressing light installations is required of the Project.

- **APP EIR Mitigation Measure 4.K-4, Light Installations**: All lighting installations shall be designed and installed to be fully shielded (full cutoff), and to minimize glare and obtrusive light by limiting outdoor lighting that is misdirected, excessive or unnecessary, unless expressly exempt.

Implementation of this mitigation measure is consistent with requirements pursuant to the United States Fish and Wildlife Biological Opinion and the Navy's Declaration of Restrictions that apply to all surplus federal property conveyed to the City to limit the effects of additional lighting and glare on least terns, and would mitigate this impact to a level of less than significant.

Cumulative Aesthetic Effects

The cumulative context for visual quality encompasses all areas that are visible in the views of Alameda Point, and other nearby areas within the City that could be viewed in combination with development at Alameda Point. The contribution of the Project to cumulative degradation of scenic vistas and the visual quality would be less-than-significant because existing views of and through the Project site are intermittent due to other existing development. Development of the Project would alter the site, but would not substantially degrade the cumulative aesthetics of the area.

Conclusions

The Project would not result in new significant impacts or substantially more severe impacts pertaining to aesthetics than those previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR. Certain mitigation measures and regulatory requirements identified in the prior Alameda Point Project EIR and/or the General Plan 20240 EIR would apply to the Project, and implementation of the mitigation measures and regulatory requirements would substantially reduce potential aesthetic impacts of the Project.

No significant aesthetics impacts are peculiar to the Project or its site. The Project would not result in any new significant aesthetics impacts not previously identified in the prior programmatic Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component of cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative aesthetic effects to which the Project may contribute have already been addressed in these prior EIRs. There are no changes in circumstances or new information of substantial importance relative to potential aesthetic impacts of the Project that require updating the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topic of aesthetics.

4-B: Air Quality

Would the project:	Prior EIR Determination APP EIR / GP EIR	Comparative Project Impact	Applicable Mitigation Measures:	Resulting Significance
a. Conflict with or obstruct implementation of the applicable air quality plan	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
b. During construction, result in a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment under an applicable federal or State ambient air quality standard	APP EIR: **SU** GP EIR: LTS with MM	Equal or Less Severe	GP EIR MM 11-2: Basic Construction Measures	LTS
c. During operations, result in a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment under an applicable federal or State ambient air quality standard	APP EIR: **SU** GP EIR: LTS	Equal or Less Severe	APP EIR MM 4.F-2, Energy Conservation	LTS
d. During construction, expose sensitive receptors to substantial pollutant concentrations	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	GP EIR MM 11-4, Health Risk Assessment (conducted as part of this CEQA Checklist) APP EIR MM 4.F-1.b, Construction Exhaust APP EIR MM 4.F-1c, Demolition Controls (see Haz Mat section) APP EIR MM 4.F-1d, Toxic Air Contaminants and PM2.5	LTS
e. During operations, expose sensitive receptors to substantial pollutant concentrations	APP EIR: LTS GP EIR: LTS with MM	Equal or Less Severe	Regulatory Requirement, Diesel Generator Engine Permit	LTS
f. Create objectionable odors affecting a substantial number of people	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
Would the Project have impacts that are:	**Not Identified in the APP EIR or GP EIR?**	**Peculiar to the Project or its Site?**	**New Off-site and/or Cumulative Impacts?**	**New or More Severe Due to New Information?**
	No	No	No	No

Findings of the Prior EIRs

APP EIR

The APP EIR determined that the Alameda Point Project would have the following less than significant impacts related to air quality:

- Operations facilitated by the APP would not expose sensitive receptors to significant concentrations of toxic air contaminants or respirable particulate matter (PM2.5)
- Development facilitated by the APP would not expose sensitive receptors to significant carbon monoxide concentrations
- Development facilitated by the APP would not create significant objectionable odors affecting a substantial number of people

The APP EIR determined that the Alameda Point Project would have the following significant impacts related to air quality:

- Development facilitated by the APP could potentially result in air quality impacts due to construction activities
- Development facilitated by the APP could potentially generate operational emissions that would result in a considerable net increase of criteria pollutants and precursors for which the air basin is in non-attainment under an applicable federal or state ambient air quality standard
- Development facilitated by the APP could potentially expose persons (new receptors) to substantial levels of toxic air contaminants (TACs), which may lead to adverse health
- Development facilitated by the APP could potentially conflict with or obstruct implementation of the applicable air quality plan

Mitigation Measures

The APP EIR identified the following mitigation measure that, when implemented on a project-by-project basis, would reduce significant air quality impacts:

- **Mitigation Measure 4.F-1a (Fugitive Dust)**
- **Mitigation Measure 4.F-1.b (Construction Exhaust)**
- **Mitigation Measure 4.F-2 (Operational Emission Controls)**
- **Mitigation Measure 4.F-7 (Clean Fuels and TDM)**

The APP EIR concluded that with implementation of the above mitigation measure, estimated construction emissions of regional ozone precursors (ROG and NOx) would be reduced below thresholds for a reasonable conservative development scenario, but because construction activities may overlap there is the potential for construction emissions to exceed the BAAQMD (now BAAD) thresholds and this impact was found to be ***significant and unavoidable***.

Localized emissions of fugitive dust and toxic air contaminants (TACs) was found to be less than significant with mitigation based on the substantial emission reductions due to applied controls, even if construction activities were to overlap.

Even with implementation of operational controls (MM 4.F-2), operational emissions were found to be ***significant and unavoidable***.

With implementation of clean fuels and TDM (MM 4.F-7), potential conflicts with the applicable Clean Air Plan were found to be less than significant.

GP EIR

The GP EIR determined that construction and operation of new buildings and facilities allowed pursuant to the Alameda General Plan 2040:

- Would not conflict with or obstruct implementation of the applicable Air Quality Plan
- Would not result in a cumulatively considerable net increase of operational criteria pollutants
- Would not result in other emissions (such as those leading to odors) that could adversely affect a substantial number of people

The GP EIR did identify the following potentially significant impacts:

- future construction allowed under the Alameda General Plan 2040 could result in a cumulatively considerable net increase of a criteria pollutants for which the region is in non-attainment status under an applicable federal or state ambient air quality standard
- future development allowed under the Alameda General Plan 2040 could expose sensitive receptors to substantial pollutant concentrations

Mitigation Measures

The GP EIR identified the following mitigation measure that, when implemented on a project-by-project basis, would reduce significant air quality impacts:

- **Mitigation Measure 11-2: BAAQMD's Basic Construction Mitigation Measures Recommended for All Projects**
- **Mitigation Measure 11-4: Health Risk Assessment for Sensitive Receptors**

With implementation of Basic Construction Measures (MM 11-2) emissions of construction-period criteria pollutants was found to be less than significant.

Potential Impacts of the Project

The following information regarding the Project's air quality emissions id derived from the following technical report:

- Illingworth & Rodkin, *Project Solis Air Quality Assessment*, May 15, 2025 (see **Appendix A**)

Conflicts with the Clean Air Plan

The APP EIR concluded that the Alameda Point Project would not substantially conflict with or obstruct implementation of the applicable Clean Air Plan, and this impact was found to be less than significant with implementation of a TDM program, EV charging stations and preferential parking for clean, fuel-efficient vehicles. The Project is fully consistent with the Alameda Point Project, and is required to implement a TDM program and to provide EV charging stations and preferential parking for clean, fuel-efficient vehicles per City Code requirements. As such, the Project would not substantially conflict with or obstruct implementation of the applicable Clean Air Plan.

Construction Emissions

The California Emissions Estimator Model (CalEEMod) Version 2022 was used to estimate emissions from the Project's construction activities. CalEEMod computes annual emissions from construction that are based on the project type, size and acreage of the Project. CalEEMod provides emission estimates for both on-site and off-site construction activities. On-site activities include construction equipment emissions, and off-site activity includes worker, hauling and vendor traffic. The construction build-out scenario, including equipment quantities, average hours per day, total number of workdays and schedule, were based on CalEEMod defaults for a project of this type and size. The construction schedule, which includes potential off-site improvements, assumes that the earliest start date would be January 2026 and would be built over a period of approximately 15 months (or 325 construction workdays). Construction traffic is estimated to include:

- 64 truck haul trip for removal of demolition debris
- 96 truck haul trip for import and export of soils
- 36 truck trips for cement and asphalt delivery
- 96 truck haul trips for off-site infrastructure improvements, and
- 80 vendor deliveries (2 trips each) during the final phase of construction to deliver specific equipment

Table 1 shows the annualized average daily construction emissions of ROG, NOx, PM10 exhaust and PM2.5 exhaust, inclusive of all on-site equipment emissions and worker, vendor and truck haul trips during construction of the Project, without mitigation.

Table 1: Construction Period Emissions

	ROG	NOx	PM10 Exhaust	PM2.5 Exhaust
Construction Emissions Per Year (Tons)				
2026+2027 On-site construction	1.38	2.15	0.07	0.07
2026 Off-site construction	0.04	0.64	0.02	0.01
Average Daily Construction Emissions/Year (pounds/day)				
2026+2027 (325 construction workdays)	8.70	17.17	0.55	0.49
Bay Area Air District Thresholds	54 lbs./day	54 lbs./day	82 lbs./day	54 lbs./day
Exceed Threshold?	No	No	No	No

Source: Illingworth & Rodkin, Project Solis Air Quality Assessment, May 15, 2025 (see **Appendix A**)

As indicated, the predicted non-mitigated annualized average construction emissions from the Project would not exceed applicable significance thresholds during any year of construction, and the Project's construction-period emissions of criteria pollutants during construction would be less than significant.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM10 and PM2.5. Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site deposit mud on local streets, which is an additional source of airborne dust after it dries.

The Air District recommends all projects include a "Basic" set of best management practices (BMPs) to manage fugitive dust.

Mitigation Measures

The Project's construction activity would generate fugitive dust, and the following APP EIR mitigation measure addressing dust and exhaust controls is required of the Project.

- **GP EIR Mitigation Measure 11-2: Basic Construction Measures**: During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. The contractor shall implement the following BMPs that are required of all projects under General Plan Policy HS-65 Action A, Policy HS-69 Action A, and Alameda Point DEIR MM 4.F-1a:

  a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

  b. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

  c. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

  d. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

  e. 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.

  f. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

  g. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.

  h. Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.

  i. Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

This GP EIR mitigation measure is consistent with the Air District's recommended Basic BMPs for reducing fugitive dust, and would reduce fugitive dust emissions to levels of less than significant. Enhanced BMPs are only required as control measures if quantified air quality impacts were found to be significant.

Operational Period Criteria Pollutant Emissions

ROG, PM, and NOX emissions from operation of the Pacific Fusion Project would be generated primarily from trucks and autos driven by future employees. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are also typical ROG emission sources from these types of land uses. CalEEMod was used to estimate criteria air pollutant emissions from operation of the Project assuming full build-out.

The Project-specific daily trip generation rate provided in the Project's traffic report (see Transportation section of this CEQA Checklist) was entered into the CalEEMod emissions calculator. The Project is predicted to produce approximately 741 daily trips.[21] Pacific Fusion predicts that the Project, on average, would generate less than 20 truck trips per day. Therefore, 20 truck trips were included in the operational modeling.

CalEEMod defaults for energy use were used, including the 2019 Title 24 Building Standards. These defaults are conservative, as the Project would need to meet the more stringent and latest 2022 or 2025 Title 24 Building Standards. The electricity-produced emission rate was modified in CalEEMod. An emission factor of 105 pounds of CO_2 per megawatt (MW) of electricity was entered into CalEEMod, which is based on Alameda Municipal Power's (AMP) 2023 emissions rate. Based on calculations provided by the Project sponsor, the full electrical demands of the Project, including the unique Pulser plus heating, cooling and other electrical loads is estimated to generate a demand for approximately 6.4 million kWh/year. The Pacific Fusion has confirmed the building will be electric only, with no use of natural gas.

The Pacific Fusion Project would include one diesel-powered emergency generator located near the northeastern corner of the building. The generator would produce a maximum of 300-kW and would be powered by a 402-horsepower (hp) diesel-fired engine. The emissions from operation of the generator were calculated using CalEEMod.

Default model assumptions for emissions associated with solid waste generation and water use were applied to the project. Wastewater treatment was estimated to be 100 percent aerobic conditions to represent City wastewater treatment plant conditions.

Annual emissions were predicted using CalEEMod and daily emissions were estimated assuming 365 days of operation. **Table 2** shows the net average daily operational emissions of ROG, NOX, total PM10, and total PM2.5 during operation of the Project.

Table 2: Operational Period Emissions

	ROG	NOx	PM10 Exhaust	PM2.5 Exhaust
2028 Annual Project Operational Emissions (tons/year)	1.50	1.00	1.31	0.32
Bay Area Air District Thresholds (tons /year)	10	10	15	10
Exceed Threshold?	**No**	**No**	**No**	**No**
2028 Daily Project Operational Emissions (pounds/day)[1]	8.23	5.48	7.19	1.74
Bay Area Air District Thresholds (pounds/day)	54 lbs./day	54 lbs./day	82 lbs./day	54 lbs./day
Exceed Threshold?	**No**	**No**	**No**	**No**

Source: Illingworth & Rodkin, *Project Solis Air Quality Assessment*, May 15, 2025 (see **Appendix A**)

Notes: 1. Assumes 365-day operation

[21] The Pacific Fusion project would have to meet Transportation Demand Management (TDM) program requirements established by the City for Alameda Point with the purpose of reducing new trips from commercial development by 30 percent in the peak hour. This is anticipated to reduce daily trip rates by over 15 percent. However, this reduction was not included in the modeling since the final TDM effectiveness assumption had not been determined at the time of the analysis.

As demonstrated in this table, the Project's operational period emissions would not exceed applicable significance thresholds for criteria pollutants.

Mitigation Measures

The Project's operational emissions would contribute to cumulative operational emissions throughout Alameda Point, and the following APP EIR mitigation measure addressing energy conservation as a means of reducing overall operational emissions is required of the Project.

- **APP EIR Mitigation Measure 4.F-2, Energy Conservation**: The following measures shall be incorporated into project designs for properties within the Alameda Point Project area:
  a. Implement a Transportation Demand Management (TDM) program;
  b. Require smart meters and programmable thermostats;
  c. Meet Green Building Code standards in all new construction;
  d. Install solar water heaters for all uses as feasible;
  e. Use recycled water when available;
  f. Install low-flow fixtures (faucets, toilets, showers);
  g. Use water efficient irrigation systems; and
  h. Institute recycling and composting services

As indicated in the analysis above, the Project would not have a significant operational-period criteria pollutant emission impact, and no individual mitigation measures are required to meet thresholds. Further, many of the APP EIR measures listed above are fully addressed by current regulatory requirements (see the Transportation, Energy, and Utilities/Public Services sections of this CEQA Checklist).

Exposure of Sensitive Receptors to Toxic Air Contaminant Emissions (Health Risk Assessment)

The Project's impacts related to increased health risks can occur from the Project's generation of toxic air contaminants (TACs) and criteria air pollutants (see separate analysis of health risks from radiation exposure in the Hazards and Hazardous Materials section of this CEQA Checklist). The Project would introduce new sources of TACs during construction (e.g., on-site construction and truck hauling emissions) and during its operation (e.g., stationary and mobile sources). The Project would include an emergency generator powered by a diesel-fueled engine. Traffic generated by the Project would consist of mostly light-duty gasoline-powered vehicles and up to 20 truck trips per day assumed as heavy-duty diesel trucks that would produce TAC and air pollutant emissions.

The Project's impacts to existing sensitive receptors were addressed for temporary construction activities, and for long-term operational conditions. There are also other sources of existing TACs and localized air pollutants in the vicinity of the Project, and the impact of these other existing sources was assessed in terms of the cumulative risk, which includes the Project's contribution.

Health Risk Methodology

Health risk impacts were assessed by predicting increased cancer risk, the increase in annual PM2.5 concentrations, and by computing the Hazard Index (HI) for non-cancer health risks. The risk impacts from the Project are the combination of risks from all construction and operation sources. The methodology for computing health risks impacts is derived from Appendix E of the Air District's CEQA Air Quality Guidelines. TAC and PM2.5 emissions were calculated, a dispersion model was used to compute

contaminant concentrations, and cancer risks and HI were calculated based on modeled DPM concentrations.

Modeled Receptors

Receptors for this assessment included locations where sensitive populations closest to the Pacific Fusion Project site would be present for extended periods of time (i.e., chronic exposures). This includes the nearby residences and schools, as shown in **Figure 15**. Residential receptors were assumed to include all receptor groups (i.e., third trimester, infants, children, and adults) with almost continuous exposure to the Project's emissions, while child receptors were assumed at the schools. DPM and PM2.5 concentrations were also calculated at nearby worker receptors. While there are additional sensitive receptors within 1,000 feet of the Project site, the receptors chosen are adequate to identify maximum impacts from the Project.

Health Risk from Project Construction

The primary health risk impact associated with construction projects is cancer risk associated with diesel exhaust (i.e., DPM, which is a known TAC), and exposure to high ambient concentrations of dust (i.e., PM2.5). A Health Risk Assessment of the Project's construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and PM2.5. This assessment includes dispersion modeling to predict offsite concentrations resulting from the Project construction, so that lifetime cancer risks and non-cancer health effects could be estimated.

The CalEEMod model provided total uncontrolled annual PM10 exhaust emissions (assumed as DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, such as trucks. Emissions were reported for both on-site construction (i.e., Project construction) and off-site improvements (i.e., new pipelines and roadway pavement). Total construction-period DPM emissions were estimated to be 0.01 tons (19 pounds), and controlled fugitive dust emissions (assuming application of dust BMPs), to be less than 0.01 tons (3 pounds) from all construction stages. The on-road emissions are a result of haul truck travel during grading activities, worker travel, and vendor deliveries during construction. The U.S. EPA AERMOD dispersion model was used to predict DPM and PM2.5 concentrations at sensitive receptors in the vicinity of the Project site during construction. The AERMOD dispersion model is an Air District-recommended model for use in modeling analysis of these types of emission activities for CEQA projects. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Annual DPM and PM2.5 concentrations from construction activities were calculated at nearby sensitive receptors using the model.

Health Risks from Project Operation

Operation of the Pacific Fusion Project would have long-term emissions from mobile sources (i.e., truck trips) and stationary sources (i.e., emergency generator). While these emissions would not be as intensive at or near the site as construction activity, they would contribute to long-term effects to sensitive receptors. Diesel powered vehicles are the primary concern with local traffic-generated TAC impacts. The Project is anticipated to generate 20 truck trips per day. These trips were assumed as heavy-duty truck trips. These trips were conservatively modeled to use Pacific Avenue and both Main Street and Central Avenue.

Off-Site Receptors for Project Construction and Operational TAC Emissions

Cumulative Sources (Project and Off-Site) of TAC Emissions and Off-Site Receptors

Figure 15
Sensitive Air Quality Receptors, Project and Cumulative Scenarios

Source: Alameda, Illingworth & Rodkin, *Project Solis Air Quality Assessment,* May 2025

The operations analysis involves DPM, organic TACs and PM2.5 emissions from Project truck trips, using the Caltrans version of the CARB EMFAC2021 emissions model (CT-EMFAC2021), which provides emission factors for mobile source criteria pollutants and TACs, including DPM. Dispersion modeling of these TAC and PM2.5 emissions was conducted using the EPA AERMOD air quality dispersion model. TAC and PM2.5 emissions from trucks on each roadway within 1,000 feet of the Project site was evaluated. To calculate the increased cancer risk from the Project's truck trips, the cancer risks were adjusted for exposure duration to account for construction for the first two years, while the operational exposure duration was adjusted for the remaining 28 years of the 30-year exposure period. Details of the emission calculations, dispersion modeling, and cancer risk calculations for the receptors with the maximum cancer risk from truck trips on the nearby roadways are provided in Appendix A.

The Pacific Fusion Project also plans to include one emergency generator, located near the northeastern corner of the building. Operation of the diesel generator would be a source of TAC emissions. The generator would be tested periodically and it would power the building in the event of a power failure. For modeling purposes, it was assumed that the generator would be operated for testing and maintenance purposes. CARB and the Air District's requirements limit the engine operations to 50 hours each per year for testing and maintenance. The engine would be required to meet CARB and EPA emission standards and consume commercially available California low-sulfur diesel fuel. Additionally, the generator would have to meet Air District Best Available Control Technologies (BACT) requirements. Emissions from the operation of the generator were calculated using CalEEMod. The diesel engine would be subject to CARB's Stationary Diesel Airborne Toxics Control Measure (ATCM) and would require permits from the Air District since it will be equipped with an engine larger than 50-HP. BACT requirements would apply to the generator that would limit DPM emissions.

Summary of Project-Related Health Risks at the Off-Site MEIs

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the Air District CEQA guidance for age sensitivity factors and exposure parameters. The Project's risk impacts are the combination of construction and operation sources, which include the on-site construction activity and a diesel-powered generator. The Project's impact is computed by adding the construction cancer risk for an infant to the increased cancer risk for the Project's operational conditions for the generator over a 30-year period. The Project maximum exposed individual (MEI) is identified as the sensitive receptor that is most impacted by the Project's combined construction and operational activities.

Non-cancer health hazards and maximum PM2.5 concentrations were also calculated. The maximum annual PM2.5 concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI value was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation DPM reference exposure level of 5 µg/m3. The annual PM2.5 concentration and HI values are based on an annual maximum risk for the entirety of the Project. The modeled maximum annual DPM and PM2.5 concentrations were identified at nearby receptors to find the MEI. Results of this assessment indicated that the construction MEIs were located at two different receptors (i.e., one for cancer risk and the other for annual PM2.5 concentration). The cancer risk MEI was located at a residence east of the Project site, opposite Central Avenue. The annual PM2.5 MEI was located at an adjacent worker receptor to the northwest of the site. The location of the MEIs and nearby receptors are also shown in **Figure 15**.

Table 3 summarizes the maximum cancer risks, PM2.5 concentrations, and health hazard indexes for Project-related construction, generator and truck trip activities.

Table3: Health Risk Impacts at the Off-Site MEIs

Source	Cancer Risk (per million)	Annual PM2.5 (µg/m3)	Hazard Index
Maximum Cancer Risk - Residential Impacts			
Project Construction (Years 0 – 2), Uncontrolled	6.55 (infant)	0.06	0.01
Project Generators (Years 2 – 30)	0.34	<0.01	<0.01
Project Truck Trips (Years 2 – 30)	0.02	<0.01	<0.01
Project Maximum/Total Impact (Construction and/or Operation)	6.91	0.06	0.01
Air District Single-Source Threshold	>10.0	>0.3	>1.0
Exceed Threshold?	**No**	**No**	**No**
Maximum Annual PM2.5 Concentration - Worker Impacts			
Project Construction (Years 0 – 2), Uncontrolled	0.10 (adult)	0.06	0.01
Project Generators (Years 2 – 30)	0.02	<0.01	<0.01
Project Truck Trips (Years 2 – 30)	<0.01	<0.01	<0.01
Project Maximum/Total Impact (Construction and/or Operation)	<0.13	0.06	0.01
Air District Single-Source Threshold	>10.0	>0.3	>1.0
Exceed Threshold?	**No**	**No**	**No**
Maximum School Impacts - Encinal Junior & Senior High School			
Project Construction (Years 0 – 2), Uncontrolled	3.17 (child)	0.03	<0.01
Project Generators (Years 2 – 7)	0.03	<0.01	<0.01
Project Truck Trips (Years 2 – 7)	<0.01	<0.01	<0.01
Project Maximum/Total Impact (Construction and/or Operation)	<3.21	0.03	<0.01
Air District Single-Source Threshold	>10.0	>0.3	>1.0
Exceed Threshold?	**No**	**No**	**No**

Source: Illingworth & Rodkin, Project Solis Air Quality Assessment, May 15, 2025 (see Appendix A)

Notes: The maximum cancer risk and PM2.5 concentration occur at different receptor locations.

As shown above, the uncontrolled maximum cancer risks, annual PM2.5 concentrations, and HI at the modeled MEIs do not exceed their respective single-source significance threshold.

Mitigation Measures and Regulatory Requirements

The Project's emissions of toxic air contaminants (TAC) would contribute to cumulative construction and operational TAC emissions from development throughout Alameda Point, and the following APP EIR mitigation measures addressing TAC emissions are required of the Project.

- **APP EIR Mitigation Measure 4.F-1.b, Construction Exhaust**: The following control measures for construction emissions will be required for all construction activities within the project area:

  a. 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.

b. Idling times shall be minimized either by shutting off equipment when not in use, or by reducing the maximum idling time to two minutes. Clear signage shall be provided for construction workers at all access points.

c. The Project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOx reduction and 45 percent PM reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available. (The Level 3 Verified Diesel Emissions Control [VDEC] would comply with this measure).

d. Require that all construction equipment, diesel trucks and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM.

e. Require all contractors to use equipment that meets CARB's most recent certification standard for off-road heavy-duty diesel engines.

- **APP EIR Mitigation Measure 4.F-1c, Demolition Controls**: Demolition and disposal of any asbestos containing building material shall be conducted in accordance with the procedures specified by Regulation 11, Rule 2 (Asbestos Demolition, Renovation and Manufacturing) of BAAQMD's regulations.
- **APP EIR Mitigation Measure 4.F-1d, Toxic Air Contaminants and PM2.5**: The project sponsors shall ensure that construction contract specifications include a requirement that all off-road construction equipment used for project improvements be equipped with a Level 3 Verified Diesel Emissions Control (VDEC), which would reduce diesel particulate emissions by at least 85 percent.
- **Regulatory Requirement, Diesel Generator Engine Permit**: As part of the Air District permit requirements for toxics screening analysis, the engine emissions from the diesel generator will have to meet Best Available Control Technology for Toxics (BACT), and pass the toxic risk screening level of less than ten in a million. This risk assessment would be prepared by the Air District. Depending on results, the Air District would set limits for DPM emissions (e.g., more restricted engine operation periods).

Sources of air pollutant emissions complying with all applicable Air District regulations generally will not be considered to have a significant air quality health risk impact.

Cumulative Health Risks of all TAC Sources at the Off-Site Project MEIs

Health risk assessments typically consider all substantial sources of TACs that can affect sensitive receptors located within 1,000 feet of a project site (i.e., influence area). These sources include rail lines, highways, busy surface streets, and stationary sources identified by the Air District. The Air District's geographic information system screening maps identify existing health risks from nearby roadways and stationary sources, and these local roadways and one additional stationary source were identified as cumulative TAC sources.

Table 4 reports both the Project and cumulative health risk impacts (i.e., cancer risk, annual PM2.5 concentration and Hazard Index) at the receptor most affected by project construction (i.e., the MEIs).

Table 4: Cumulative Health Risk Impacts at the Off-Site MEIs

Source	Cancer Risk (per million)	Annual PM2.5 (µg/m3)	Hazard Index
Project Impacts			
Project Maximum/Total Impact (Construction and/or Operation)	6.91	0.06	0.01
Air District Single-Source Threshold	>10.0	>0.3	>1.0
Exceed Threshold?	**No**	**No**	**No**
Cumulative Impacts			
Cumulative Roadways – Air District Screening GIS Data	3.41	0.08	0.01
City of Alameda Public Works Department Facility	0.05	-	-
Combined Sources	10.37	0.14	0.02
Cumulative Source Threshold	>100	>0.8	>10
Exceed Threshold?	**No**	**No**	**No**

Source: Illingworth & Rodkin, Project Solis Air Quality Assessment, May 15, 2025 (see Appendix A)

Notes: The maximum cancer risk and PM2.5 concentration occur at different receptor locations.

As shown above, the predicted health risks would not exceed the single-source or cumulative-source thresholds.

Carbon Monoxide

The Project would not contribute traffic volumes that would exceed 44,000 vehicles per hour or 24,000 vehicles per hour in areas where vertical and/or horizontal mixing is substantially limited, such as in tunnels, parking garages, or underpasses (the threshold for carbon monoxide concentrations) and no further analysis of carbon monoxide impacts is required.

Odor

Construction Odors

New construction smell is often characterized by a mix of equipment exhaust, paint, adhesives and other building materials. These odors can be both unpleasant and potentially harmful due to the release of volatile organic compounds (VOCs).

Regulatory Requirements

The following regulatory requirement as identified in the GP EIR is applicable to the Project.

- **Regulation 7, Odorous Substances**: BAAD's Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. A person (or facility) must meet all limitations of this regulation, but meeting such limitations shall not exempt such person from any other requirements of BAAD, State, or national law. The limitations of this regulation shall not be applicable until BAAD receives odor complaints from 10 or more complainants within a 90-day period, alleging that a person has caused odors perceived at or beyond the property line of such person and deemed to be objectionable by the complainants in the normal course of their work, travel, or residence. When the limits of this

regulation become effective based on citizen complaints described above, the limits shall remain effective until no citizen complaints have been received by BAAD for one year. The limits of this Regulation shall become applicable again if BAAD receives odor complaints from five or more complainants within a 90-day period. BAAD staff investigate and track all odor complaints it receives and it attempt to visit the site and identify the source of the objectionable odor and assist the owner or facility in finding a way to reduce the odor.

Operational Odors

BAAQMD has identified typical sources of odor, 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 uses that have been identified by BAAQMD as potential sources of objectionable odors, and would not emit any substantial odors. This impact would be less than significant without mitigation.

Cumulative Air Quality Effects

Cumulative Operational Emissions

BAAD methodology of assessing whether a project would have a cumulatively considerable contribution to air quality impacts is that, if a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant cumulative adverse air quality impacts to the region's existing air quality conditions. As described above, the Project's operational emissions of ROG, NOx, PM10 and PM2.5 would not exceed the significance thresholds and would not be significant. Accordingly, the Project's operational emissions would not make a cumulatively considerable contribution to emissions from other projects, and would not result in cumulatively significant air quality operational impacts.

Cumulative Health Risk

The BAAD method for determining health risk requires the review of health risks from permitted sources and major streets within 1,000 feet, then adding the Project's operational impacts and compared to a cumulative significance threshold. As demonstrated above, the health impacts from Project development (both construction and operations) plus other existing sources in the area, would not have a cumulative impact that exceeds the cumulative thresholds for cancer risk, chronic health hazards or PM2.5 concentrations.

Cumulative Odors

According to the Alameda Point EIR, the Alameda Point Project would not include uses that have been identified by BAAQMD as potential sources of objectionable odors, and would not locate new sensitive receptors in close proximity to other substantial odor generating sources. No records of odor complaints had been received for the three-year period prior to 2013, and no new odor generating facilities have since been identified. The proposed Project would not contribute new odors that would be cumulatively considerable.

Conclusions

The Project would not result in new significant air quality impacts or substantially more severe air quality impacts than those previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR. Certain mitigation measures and regulatory requirements identified in the prior Alameda Point Project EIR and/or the General Plan 20240 EIR would apply to the Project, and implementation of these

mitigation measures and regulatory requirements would substantially reduce potential air quality impacts of the Project.

No significant air quality impacts are peculiar to the Project or its site. The Project would not result in any new significant air quality impacts not previously identified in the prior programmatic Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component of cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative air quality effects to which the Project may contribute have already been addressed in these prior EIRs. There are no changes in circumstances or new information of substantial importance relative to potential air quality impacts of the Project that require updating the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topic of air quality.

4-C: Biological Resources

Would the project:	Prior EIR Determination: APP EIR and GP EIR	Comparative Project Impact	Applicable Mitigation Measures and Regulatory Reqmts:	Resulting Significance
a. 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 or U.S. Fish and Wildlife Service	GP EIR: LTS with MM APP EIR: LTS	Equal or Less Severe	GP EIR MM 4.E-1f, Bat Pre-Construction Survey GP EIR MM 4.E-1g, Bat Maternity Colony Measures	LTS with MM
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;	GP EIR: LTS with MM APP EIR: LTS	Equal or Less Severe	-	LTS
c. Have a substantial adverse effect on federally protected wetlands (as defined by Section 404 of the Clean Water Act) or on Waters of the State protected wetlands, through direct removal, filling, hydrological interruption, or other means	GP EIR: LTS with MM APP EIR: LTS	Equal or Less Severe	GP EIR MM 4.E-3a, Wetlands GP EIR MM 4.E-3c, Wetland Mitigation and Monitoring Plan	LTS with MM
d. Interfere 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	GP EIR: LTS with MM APP EIR: LTS	Equal or Less Severe	-	LTS
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	GP EIR: LTS with MM APP EIR: LTS	Equal or Less Severe	-	LTS
f. Conflict with any adopted local, regional, or State Habitat Conservation Plan	LTS with MM / LTS	Equal or Less Severe	Regulatory Reqmt: Biological Opinion TC-1C	LTS
Would the Project have impacts that are:	**Not Identified in the APP EIR or GP EIR?**	**Peculiar to the Project or its Site?**	**New Off-site and/or Cumulative Impacts?**	**New or More Severe Due to New Information?**
	No	No	No	No

Findings of the Prior EIRs

APP EIR

The APP EIR determined that the Alameda Point Project would have the following potentially significant impacts related to biological resources:

- Development facilitated by the APP could 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
- Development facilitated by the APP could 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.
- Development facilitated by the APP could 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.
- Development facilitated by the APP could 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.
- Development facilitated by the proposed project would conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Development facilitated by the proposed project would conflict with an adopted local, regional, or State Habitat Conservation Plan.

Mitigation Measures

The APP EIR identified the following mitigation measures that, when implemented on a project-by-project basis, would reduce significant biological resource impacts to less than significant:

- **Mitigation Measure 4.E-1a (Sound Attenuation Monitoring Plan)**
- **Mitigation Measure 4.E-1b (NMFS and CDFW Consultation)**
- **Mitigation Measure 4.E-1c (Additional Noise Attenuation Measures), and**
- **Mitigation Measure 4.E-1d (Dock Lighting)**
- **Mitigation Measure 4.E-1e (Northwest Territories Sensitive Resources Measures)**
- **Mitigation Measure 4.E-1f (Bat Pre-Construction Survey)**
- **Mitigation Measure 4.E-1g (Bat Maternity Colony Measures)**
- **Mitigation Measure 4.E-1h (Monarch Butterflies)**
- **Mitigation Measure 4.E-2a (Native Oysters and Eelgrass),**
- **Mitigation Measure 4.E-2b (Boater Education), and**
- **Mitigation Measure 4.E-2c (Invasive Species Control Plan),**
- **Mitigation Measure 4.E-3a (Wetlands)**

- **Mitigation Measure 4.E-3b (BMPs for Wetlands), and**
- **Mitigation Measure 4.E-3c (Wetland Mitigation and Monitoring Plan)**
- **Mitigation Measure 4.E-4a (Marine Craft Access Corridors)**
- **Mitigation Measure 4.E-4b (Bird Strike Mitigation)**
- **Mitigation Measure 4.E-4c (Breeding Birds)**
- **Mitigation Measure 4.E-4d (Burrowing Owl)**
- **Mitigation Measure 4.E-4e (Noise Mitigation Measures for Breeding Birds)**
- **Mitigation Measure 4.E-4f (Open Refuse Containers)**

The APP EIR concluded that implementation of the above measures would reduce impacts to biological resources, minimize potential conflicts with adopted local, regional, or State Habitat Conservation Plans, and would reduce cumulative biological impacts.

GP EIR

The GP EIR determined that construction and operation of new buildings and facilities allowed pursuant to the Alameda General Plan 2040:

- could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special-status species in local or regional plans, policies or regulations, or by the CDFW, USFWS, or NMFS
- could adversely affect sensitive natural communities identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), or the National Marine Fisheries Service (NMFS)
- could adversely affect federally protected wetlands as defined by Section 404 of the Clean Water Act and the California Porter-Cologne Water Quality Control Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- could 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
- could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and
- could conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan

However, goals, policies, and actions contained in the Conservation and Climate Action Element and the Parks and Open Space Element of the Alameda General Plan 2040 would reduce these impacts, limiting impacts on special-status species, and contributing to the conservation of existing natural resources. In addition, the potential impacts to biological resources that could result from implementation of the proposed General Plan would all be reduced to a less than significant level through implementation of the following regulations and General Plan policies:

a. the 2013 Alameda Point Project Environmental Impact Report addressing planned and proposed redevelopment at Alameda Point

b. the 2012 Biological Opinion (BO) Avoidance and Minimization Measures (AMMs) issued by the USFWS that were adopted in a Memorandum of Agreement (MOA) between the City and the Veterans Administration as a condition of transferring the former NAS Alameda federal property to the City in 2013

c. compliance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Construction Activities

d. implementation of BMPs identified in the Long-Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region (2001) published by the U.S. Army Corps of Engineers

e. biological resources assessments as required of any proposed project site where wetland habitat could be present

f. regulations pursuant to a Nationwide Permit (NWP) prior to project construction, including required mitigation measures for impacts to waters of the United States, including wetlands

g. required compliance Alameda's Bird-Safe Building Ordinance and Dark Skies Ordinance, as well as General Plan Policy CC-34, Actions pursuant to Biological Assessments, including Nesting Bird Survey, Bat Survey, Lighting, Rooftop Antennas and Guy Wires

The GP EIR concluded that implementation of these regulations and policies would reduce potential impacts to biological resources to a less than significant level.

Potential Impacts of the Project

Special-Status Species

Fish and Marine Mammals

The Project site is about 1,050 feet from the nearest shoreline of the Oakland-Alameda Estuary and the Seaplane Lagoon. The Project would not involve any in-water work or shoreline work, other than an off-site stormwater outfall near the Estuary (see more detailed discussion of the stormwater outfall, below). Accordingly, the Project would have no direct effects on special-status fish or marine mammals that inhabit these waters. The Project's construction would not have any direct effects on marine biota (i.e., no mortality, physical injury or physiological stress resulting from habitat loss, or construction and operational noise). Other than potential off-site improvements associated with a new stormwater outfall, the Project does not include maintenance dredging or placement of dredge materials, periodic in-water repairs, and no in-water placement/removal of pilings or mooring anchors, boat-related fueling or localized shading of Bay waters. The Project would not result in higher levels of human interaction with sensitive marine intertidal habitat or with protected and special-status fish and mammal species, and would not increase boat traffic in the surrounding waters. Work at the Project site does not involve any work that might result in temporary or permanent losses of essential fish habitat, critical habitat for special-status fish, or the loss of foraging opportunities for protected fish and marine mammals. The Project's water quality measures consistency with NPDES C.3 provisions would prevent indirect adverse impacts to fish and marine mammals from polluted runoff entering into the Bay.

The Project's on-site construction may involve pilings to support the new building, but these piles would not be placed in the water or driven within the water column, and would not produce high-intensity noise or sound waves within the water. The Project would not cast direct night lighting on the marina, the ferry terminal docks or the Bay waters (see also Consistency with an Adopted Local, Regional, or State Conservation Plan, below).

Potential Off-Site Improvements

The Project may include a number of off-site improvements, potentially including construction of a new stormwater pipeline and outfall to the Bay. If made part of the Project, the new outfall to the Bay would likely include installation of a temporary sheet pile cofferdam around the work area, inland trenching and shoreline slope stabilization, back-filling the outfall headwall structures with engineered fill materials, and rock slope protection along the shoreline. If constructed pursuant to the Project, this off-site improvement would be part of a planned effort pursuant to the Alameda Point Project to upgrade the aging stormwater infrastructure system at Alameda Point by removing As many as six existing stormwater outfalls, abandoning 14 existing outfalls in-place, and installing five new outfalls to replace the removed and abandoned outfalls.

This larger effort to upgrade stormwater infrastructure pursuant to the Alameda Point Project has already been reviewed and approved by

- the San Francisco District of the U.S. Army Corps of Engineers,[22]
- the San Francisco Regional Water Quality Control Board,[23] and
- the San Francisco Bay Conservation and Development Commission[24]

If the Project does assist the City of Alameda by implementing this portion of the larger stormwater infrastructure program for Alameda Point, all construction activity will be required to comply with all applicable conditions and permit approval requirements of these prior agency approvals pertaining to fish, marine mammals and their habitat.

Special-Status Birds

California least tern, California brown pelican, osprey, three species of cormorant, several gull species, grebes, and multiple duck species forage in the waters off Alameda Point, including within Seaplane Lagoon and in and around the breakwaters. The Project site is over 1,000 feet from the nearest shoreline of the Seaplane Lagoon and the breakwaters of the Estuary. Mature trees at Alameda Point offer nesting and roosting habitat for raptors and other birds. Grasslands and ruderal habitat within the APP's Northwest Territories and the Federal Property provide foraging opportunities for raptors, burrowing owl, Alameda song sparrow and a number of other special-status and common species. The Project site only includes three mature trees (including two ornamental landscape trees adjacent to Building 530 and one mature tree within the on-site wetland (see below), is not located near the Seaplane Lagoon or the breakwaters of the Estuary, and is not located within the APP's Northwest Territories, the Federal Property or along the future Bay Trail that is proposed to run along the southern and western perimeters of the Federal Property. The Project would have no direct effects on special-status birds.

If the Project does assist the City of Alameda by implementing a portion of the larger stormwater infrastructure program for Alameda Point, all construction activity will be required to comply with all applicable conditions and permit approval requirements of prior agency approvals (see above)

[22] U.S. Army Corps of Engineers, *Department of the Army Nationwide Permits for Outfall Structures and Associated Intake Structures, and for Temporary Construction, Access and Dewatering, File # 2014-00087S*, September 14, 2018

[23] San Francisco Regional Water Quality Control Board, Amended Clean Water Act (CWA) Section 401 Water Quality Certification, October 24, 2018

[24] San Francisco Bay Conservation and Development Commission, *Permit No. M2014.029.01*, as amended November 2018

pertaining to special-status birds, including California least tern. Construction of off-site improvements also would not require removal of mature trees or impact these areas.

Bats and Butterflies

A fairly dense concentration of monarch butterflies have been observed in the fall using a grove of Monterey pine, stone pine and eucalyptus located in the northeastern part of the Main Street Neighborhood Sub-Area, and it is assumed this autumnal roost site may still be in use by monarch butterflies. The Project, including off-site improvements, is not located in the Main Street Neighborhood Sub-Area and does not involve any tree removal that might otherwise destroy or impact autumnal roosts or overwintering sites. The Project would not affect potential autumnal roosts or overwintering sites of the monarch butterflies.

Mature trees, existing piers, and buildings and other structures at Alameda Point offer nesting and roosting habitat for bats, some of which are protected in California under the State Fish and Game Code and as sensitive status species. Destruction of an occupied, non-breeding bat roost resulting in the death of bats; disturbance that causes the loss of a maternity colony of bats; or destruction of hibernacula are prohibited under the Fish and Game Code and would be considered a significant impact.

Required Mitigation Measures

The Project would involve demolition of an existing structure that could provide bat roosts, and the following APP EIR mitigation measures addressing protected bats are required of the Project.

- **Mitigation Measure 4.E-1f, Bat Pre-Construction Survey**: Potential direct and indirect disturbances to bats shall be identified by locating colonies, and instituting protective measures prior to construction. No more than two weeks in advance of tree removal, demolition of buildings onsite, or initiation of construction within 100 feet of trees or structures providing potential bat roosting sites, a qualified bat biologist (e.g., a biologist holding a CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle and collect bats) shall conduct pre-construction surveys for bat roosts. No activities that could disturb active roosts shall proceed prior to the completed surveys.
- **Mitigation Measure 4.E-1g, Bat Maternity Colony Measures**: If a maternity colony is located within the Project site during pre-construction surveys, the Project shall be redesigned to avoid impacts if feasible, and a no-disturbance buffer acceptable in size to the CDFW shall be created around the roost. Bat roosts (maternity or otherwise) initiated during construction are generally presumed to be unaffected by increased noise, vibration, or human activity and no buffer is necessary as long as roost sites are not directly altered or destroyed. However, the "take" of individuals is still prohibited at any time.

    a. If there is a maternity colony present and the project cannot be redesigned to avoid removal of the tree or structure inhabited by the bats, demolition of that tree or structure shall not commence until after young are flying (i.e., after July 31, confirmed by a qualified bat biologist) or before maternity colonies form the following year (i.e. prior to March 1).

    b. If a non-maternity roost must be removed as part of the project, the non-maternity roost shall be evicted prior to building/tree removal by a qualified biologist, using methods such as making holes in the roost to alter the airflow or creating one-way funnel exits for the bats.

    c. If significant (e.g., maternity roosts or large non-maternity roost sites) bat roosting habitat is destroyed during building/tree removal, artificial bat roosts shall be constructed in an

undisturbed area in the project site vicinity away from human activity and at least 200 feet from project demolition/construction activities. The design and location of the artificial bat roost(s) shall be determined by a qualified bat biologist.

Implementation of these mitigation measures would reduce potential impacts on special status species to a less than significant level.

Riparian Habitat and Other Sensitive Natural Communities

According to the APP EIR, there is no riparian habitat located within the APP area. Sensitive natural communities occurring within or in waters adjacent to the APP area include seasonal wetlands and northern coastal salt marsh, and eelgrass and native oyster beds. Based on habitat maps presented in the APP EIR, the Project site is not located within or near to northern coastal salt marsh, eelgrass or native oyster beds, and would have no impacts on these sensitive natural communities.[25]

Wetlands and Other Waters

Based on habitat maps presented in the APP EIR, the southerly portion of the Project site is identified as "Developed Land". These developed areas of Alameda Point are dominated by runways, roads, structures, concrete and asphalt, and provide little wildlife habitat and essentially no habitat for plants other than opportunistic weedy species adapted to harsh conditions or the horticultural plants used in landscaped areas.

The northerly portion of the site is identified as "Ruderal", with a small portion of the northerly area defined as a "Seasonal Wetland" (see **Figure 16**).[26] Ruderal habitat is typical of land where native vegetation has been removed by grading, disking, cultivation, or other ground disturbances. Disturbed areas, when left undeveloped, may be colonized by both nonnative and native vegetation, usually comprised of weedy, opportunistic, and adaptable plants that are capable of surviving in less than optimal conditions. Seasonal wetlands are inundated during the wet season and support annual and perennial native and non-native wetland indicator species, many of which can be found in both seasonal wetland and upland communities.[27] This plant association may not resemble a wetland community during the dry season when some wetland indicator species are dormant and true upland annual grasses and forbs may take their place as the soils dry.

[25] City of Alameda, *APP Draft EIR*, September 2013, Figures 4.E-1 and 4.E-2

[26] Ibid, City of Alameda, Figure 4.E-1

[27] Ibid, page 4.E-7

Figure 16
Vegetation and Wildlife Habitat, Alameda Point Biological Study Area

Source: Alameda, *Alameda Point Project EIR*, Figure 4.E-1, 2013

Plant species found in the seasonal wetlands on-site include non-natives. Though the seasonal wetlands found within the Project site is of low to moderate quality, it does offer water, food, and cover for a variety of wildlife and numerous bird species may use the seasonal wetlands for foraging and nesting. The small wetland located at the Project site is in the bottom of a vegetated swale. No culverts or storm drains were observed during ESA's 2013 survey, but the swale was too well vegetated to determine if storm drain is present.

The swale is a ditch constructed in upland (see **Figure 17**), and would not be considered jurisdictional by the Corps, but may be considered jurisdictional by the RWQCB. Wetlands that do not meet all federal wetland criteria or do not prove to have a significant nexus to a jurisdictional water may still be considered Waters of the State, which are regulated by the RWQCB under the Porter-Cologne Act. The small seasonal wetland at the Project site is conservatively estimated to be about 1,500 square feet (or 0.035 acres) in size, but may in fact be much smaller.

Potential Off-Site Improvements

According to the San Francisco Regional Water Quality Control Board's Amended Section 401 Water Quality Certification, the Alameda Point Project's plans to upgrade the aging stormwater infrastructure system (by removing six existing stormwater outfalls, abandoning 14 existing outfalls in-place, and installing five new outfalls to replace the removed and abandoned outfalls) will result in permanent and temporary impacts to an approximately 0.22-acre area of waters of the State, but would have an individually beneficial net reduction of approximately 11.4 cubic yards of permanent fill in San Francisco Bay.

If the Project does implement a new stormwater outfall as a portion of this stormwater infrastructure program for Alameda Point, this outfall (identified as Outfall "O") would affect approximately 0.02 acres of waters of the State, but would have an individually beneficial net reduction of approximately 2.2 cubic yards of permanent fill in San Francisco Bay. [28]

[28] San Francisco Regional Water Quality Control Board, *Amended Clean Water Act (CWA) Section 401 Water Quality Certification*, October 24, 2018, Table 2, page 4

Figure 17
Approximate Location of Onsite Seasonal Wetland, as Identified in 2013

Source: Alameda, *Alameda Point Project EIR*, Figure 4.E-1, 2013

Required Mitigation Measures

The Project would involve fill of jurisdictional seasonal wetlands and would require approval of Water Quality Certification and/or a Waste Discharge Requirement from the RWQCB, as identified in the following APP EIR mitigation measures required of the Project.

- **Mitigation Measure 4.E-3a, On-Site Wetlands:** Prior to issuance of final grading or building permits that include work within or in the vicinity of jurisdictional waters, the City shall confirm that the project applicant has obtained all necessary wetland permits and shall further ensure that the project applicant implements measures to avoid or minimize adverse effects on jurisdictional waters and sensitive natural communities.
- **Mitigation Measure 4.E-3c, On-Site Wetland Mitigation and Monitoring Plan**: Where disturbance to jurisdictional waters cannot be avoided, compensation shall be provided at a minimum 1:1 ratio for temporary impacts and permanent loss. Actual compensatory mitigation ratios will be specified in project permits issued by the RWQCB. Compensation shall be detailed on a project-specific basis, and an on-site wetland mitigation and monitoring plan shall be developed prior to the start of the development. Alternatively, off-site mitigation may be pursued through an approved mitigation bank, although this option may result in a higher mitigation ratio. At a minimum, such plans shall include:

  a. Baseline information, including a summary of findings for the most recent wetland delineation applicable to the project site;

  b. Anticipated habitat enhancements to be achieved through compensatory actions, including mitigation site location (onsite enhancement or offsite habitat creation) and hydrology;

  c. Performance and success criteria for wetland creation or enhancement including, but not limited to, the following:

     - At least 70 percent survival of installed plants for each of the first three years following planting
     - Performance criteria for vegetation percent cover in Years 1-4 as follows: at least 10 percent cover of installed plants in Year 1; at least 20 percent cover in Year 2; at least 30 percent cover in Year 3; at least 40 percent cover in Year 4
     - Performance criteria for hydrology in Years 1-5 as follows: Fourteen or more consecutive days of flooding, ponding, or a water table 12 inches or less below the soil surface during the growing season at a minimum frequency of three of the five monitoring years; OR establishment of a prevalence of wetland obligate plant species.
     - Invasive plant species that threaten the success of created or enhanced wetlands should not contribute relative cover greater than 35 percent in Year 1, 20 percent in Years 2 and 3, 15 percent in Year 4, and 10 percent in Year 5.
     - If necessary, supplemental water shall be provided by a water truck for the first two years following installation. Any supplemental water must be removed or turned off for a minimum of two consecutive years prior to the end of the monitoring period, and the wetland must meet all other criteria during this period. At the end of the five-year monitoring period, the wetland must be self-sufficient and capable of persistence without supplemental water.

- At least 75 percent cover by hydrophytic vegetation at the end of the five-year monitoring period. In addition, wetland hydrology and hydric soils must be present and defined as follows:
    - Hydrophytic vegetation – A plant community occurring in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present.
    - Wetland hydrology – Identified by indicators such as sediment deposits, water stains on vegetation, and oxidized rhizospheres along living roots in the upper 12 inches of the soil, or satisfaction of the hydrology performance criteria listed above.
    - Hydric soils – Soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions, which are often characterized by features such as redox concentrations, which form by the reduction, translocation, and/or oxidation of iron and manganese oxides. Hydric soils may lack hydric indicators for a number of reasons. In such cases, the same standard used to determine wetland hydrology when indicators are lacking can be used.
- Five years after any wetland creation, a wetland delineation shall be performed to determine whether created wetlands are developing according to the success criteria outlined in the project permits. If they are not, remedial measures such as re-planting and or re-design and construction of the created wetland shall be taken to ensure that the Project's mitigation obligations are met.

d. If permanent and temporary impacts on jurisdictional waters cannot be compensated on-site through the restoration or enhancement of wetland features incorporated within proposed open space areas, the specific project applicant shall provide additional compensatory mitigation for these habitat losses. Potential options include the creation of additional wetland acreage onsite or the purchase of offsite mitigation. Offsite compensatory mitigation would be required to fulfill the performance standards as described above.

- **Regulatory Requirement, Off-Site Outfall SWPPP and MBPs**: Consistent with the RWQCB's 2018 Water Quality Certification, if the Project does implement this new stormwater outfall, the Project sponsor will be required to prepare and implement a construction phase Storm Water Pollution Prevention Plan (SWPPP) that specifically states which best management practices will be used onsite to prevent the discharge of sediment into waters of the State. The SWPPP shall provide plans and specifications for erosion and sediment best management practices (BMPs), means of waste disposal, methods for implementation of approved local plans, post-construction sediment and erosion control BMPs and maintenance responsibilities, non-stormwater management BMPs, and BMP performance inspection requirements.

Implementation of these mitigation measures and regulatory requirements would reduce the Project's impacts to wetlands/Waters of the State to a less than significant level.

Native Resident or Migratory Fish and Wildlife

The Project would not involve in-water pile driving, increased vessel traffic or increased re-suspension of sediments from dredging, pile removal, or anchor placement and removal. Accordingly, the Project's construction would not have negative effects on resident or migratory birds, including the important nesting colonies for California least tern, and Western and California gulls located at Alameda Point or on essential fish habitat.

The Project site is located within the Pacific Flyway along the eastern shoreline of San Francisco Bay. Direct effects on migratory as well as resident birds moving through an area include death or injury

Given that the Project's new building would not exceed 100 feet in height, and that proposed lighting would be shielded, and that the Project does not include new point sources of light, it is unlikely that the Project would interfere with a migratory bird corridor or provide a hazard for migratory birds. The Project site is not located in the Northwest Territories, the Civic Core or the Marina area where certain measures of the Navy's Declaration of Restrictions limit the effects of lighting and glare on least terns during the nesting season.

The Project site is not located in proximity to the runways, wetlands and grasslands of the Northwest Territories or the Federal Property or near Breakwater Island, and would not adversely affect the California least tern nesting colony, or Caspian tern and western gull nesting colonies. Burrowing owl have not been documented as currently nesting at Alameda Point.

Use of vibratory pile drivers would produce substantially less construction noise than impact hammers, and the resulting noise from construction and demolition would not be expected to significantly disturb avian breeding areas.

Conflict with an Adopted Local, Regional, or State Conservation Plan

As noted in the General Plan EIR, "future development within Alameda Point may, depending on its location, be subject to the 2012 Biological Opinion and its Avoidance and Minimization Measures as issued by the USFWS and adopted by a Memorandum of Agreement (MOA) between the City and the Veterans Administration as a condition of transferring the former NAS Alameda federal property to the City." Pursuant to that Biological Opinion and MOA, future development projects within Alameda Point are required to implement avoidance and minimization measures as applicable to various subareas within Alameda Point to maintain, improve and protect the 550-acre Alameda Point Wildlife Refuge and seasonal Least Tern Colony.

Mitigation Measures

The Project site is located within Biological Subarea V, as identified in that prior MOA,[29] and is more than 1 mile distant from the VA Federal Transfer property (see **Figure 18**).

[29] City of Alameda GP EIR, May 2021, Figure BIO-1

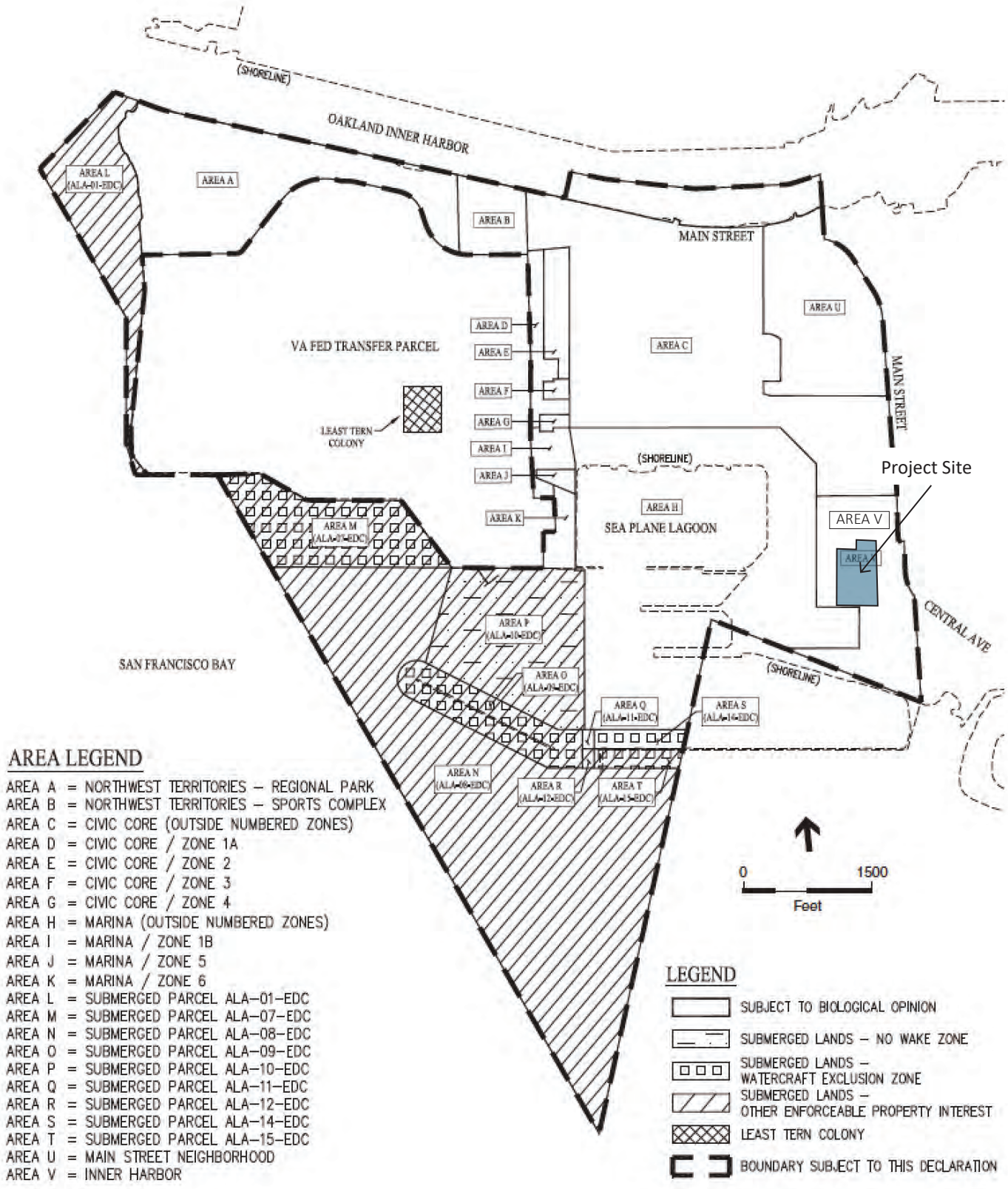


Figure 18
Biological Subareas at Alameda Point, per MOA between the City of Alameda and the Veterans Administration

Source: Alameda, *2040 General Plan EIR*, Figure Bio-1, original source: Carlson, Barbee & Gibson 2013

The Avoidance and Minimization Measure that is applicable and relevant to the Project site is as follows:

- **Regulatory Requirement, Biological Opinion TC-1C**, which requires the following for new development within line of sight of the VA Undeveloped Area:
    a. The number of new lights shall be limited to the minimum number required for building security.
    b. All lights shall be directed away and/or screened from the VA Undeveloped Area.
    c. Tinting of windows, with non-reflective tinting material, within the line of-sight of the VA Undeveloped Area shall be required.

Existing buildings on the adjacent, westerly side of Orion Street currently obstruct line-of-sight views to the VA Undeveloped Area. Whereas the proposed Project will be taller than these adjacent buildings, it is possible that a line-of-sight view to these former VA properties could be present from the top of the Project's new building. Accordingly, new lights placed near the top of the Project's building (if any) shall be directed away from and/or screened to not direct light towards the VA property and/or the least tern colony location, and the Project's potential conflict with terms of the MOA between the City and the VA would be less than significant.

Cumulative Biological Effects

The geographic scope of potential cumulative impacts on biological resources encompasses the sensitive natural communities, species occurrences, and habitats within Alameda Point, as well as biologically linked areas sharing Central San Francisco Bay and its waters. Other past projects have already caused substantial adverse cumulative changes to these biological resources and there has already been a significant cumulative impact to these resources, without the Project.

The majority of other projects considered for cumulative impacts involve land-based redevelopment of previously developed areas on Alameda Island. These cumulative projects would result in local loss of primarily ruderal and developed habitat and, potentially, seasonal wetlands. Other cumulative projects located along Alameda's waterfront will generally not involve in-water work, but their proximity 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 or roosting bats and birds. Other foreseeable projects include in-water work that would include dredging, pile driving, pier improvements and increased boat traffic, and can be assumed to have potentially significant cumulative impacts on marine biological resources.

Environmentally protective laws and regulations, including the California Endangered Species Act, federal Endangered Species Act and the Clean Water Act, require compliance with local, State and federal laws and policies, and all applicable permitting requirements of the regulatory and oversight agencies intended to address potential cumulative impacts on biological resources. These regulatory requirements serve to reduce future contributions to cumulative impacts on biological resources.

If the Project does implement a new stormwater outfall as part of the larger stormwater infrastructure program for Alameda Point, compliance with the regulatory requirements pursuant to the prior approvals of the U.S. Army Corps of Engineers, the Regional Water Quality Control Board and the San Francisco Bay Conservation and Development Commission would reduce the Project's portion of cumulative effects to waters of the State attributed to this outfall to a level of less than cumulatively considerable.

The Project's analyses above, including applicable mitigation measures, support a conclusion of less than significant impacts of the Project on biological resources. These analyses of the Project also support a conclusion of less than significant conflicts with applicable local policies or ordinances or the provisions of an adopted habitat conservation plans. When considered within the existing conditions of biological resources and in the context of other past, present and reasonably foreseeable similar projects, the Pacific Fusion 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, and the Project's cumulative effects on biological resources would be less than significant.

Conclusions

The Project would not result in new significant impacts or substantially more severe impacts to biological resources than those previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR. Certain mitigation measures and regulatory requirements identified in the prior Alameda Point Project EIR and/or the General Plan 20240 EIR would apply to the Project, and implementation of the mitigation measures and regulatory requirements would substantially reduce potential impacts to biological resources of the Project site.

No significant biological resource impacts are peculiar to the Project or its site. The Project would not result in any new significant impacts to biological resources not previously identified in the prior programmatic Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component of cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative effects to biological resources that the Project may contribute toward have already been addressed in these prior EIRs. There are no changes in circumstances or new information of substantial importance relative to biological resources that require an update to the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topic of biological resources.

4-D: Cultural and Tribal Cultural Resources

Would the project:	Prior EIR Determination APP EIR / GP EIR	Comparative Project Impact	Applicable Mitigation Measures and Regulatory Reqmts:	Resulting Significance
a. Cause a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5;	APP EIR: SU GP EIR: LTS	Equal or Less Severe	-	LTS
b. Cause a substantial adverse change in the significance of a unique archaeological resource, pursuant to Section 15064.5	APP EIR: LTS with MM GP EIR:LTS w MM	Equal or Less Severe	GP EIR MM 18-2; Inadvertent Discovery of Cultural Resources	LTS
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	See Geology section of this CEQA Checklist			
e. Disturb any human remains, including those interred outside of formal cemeteries	APP EIR: LTS with MM GP EIR: LTS w MM	Equal or Less Severe	GP EIR MM 18-3, Inadvertent Discovery of Human Remains	LTS
Would the Project have impacts that are:	**Not Identified in the APP EIR or GP EIR?**	**Peculiar to the Project or its Site?**	**New Off-site and/or Cumulative Impacts?**	**New or More Severe Due to New Information?**
	No	No	No	No

Findings of the Prior EIRs

APP EIR

Potentially Significant Impacts

The APP EIR determined that the Alameda Point Project would have the following potentially significant project-level and cumulative impacts related to cultural and Tribal Cultural resources:

- Development facilitated by the APP could potentially have a significant, adverse impact on Historic Resources within the Alameda Historic District

The APP EIR identified that Alameda Point contains the NAS Alameda Historic District, which covers approximately 406.5 acres and contains 99 contributing buildings and structures and one contributing historic cultural landscape feature. Portions of the NAS Alameda Historic District were found to overlap with the Town Center and Waterfront Sub-district of the APP. The APP EIR determined that the Alameda Point Project could result in significant impacts to the NAS Alameda Historic District.

- Development facilitated by the APP could potentially result in the inadvertent discovery of unique archaeological resources.
- Development facilitated by the APP could potentially result in the inadvertent discovery of human remains.

The APP EIR found that no archaeological resources have been recorded on Alameda Point and that the area has a low potential to contain buried prehistoric or historic-era sites. There are no known fossil sites in the Alameda Point area, and the underlying geologic units have a low potential to yield significant paleontological resources. There is no indication that the area has been used for burial purposes in the recent or distant past, and it is unlikely that human remains would be encountered in the Alameda Point. However, the APP EIR determined that it was possible that inadvertent discovery of currently unknown archaeological resources, paleontological resources, or human remains could occur.

Mitigation Measures

The APP EIR identified the following mitigation measures that, when implemented on a project-by-project basis, would reduce significant impacts to historic resources to less than significant:

- **Mitigation Measure 4.D-1a (Historic Preservation Ordinance)**
- **Mitigation Measure 4.D-1b (In-Fill Development Guidelines)**
- **Mitigation Measure 4.D-1c (Demo and Removal Mitigation Plans)**

Each of these mitigation measures would reduce significant impacts attributed to the APP. However, even with implementation of these mitigation measures, the APP's impacts to historic resources was found to remain **significant and unavoidable**.

The APP EIR identified the following mitigation measures to be implemented in the event of an inadvertent discovery:

- **Mitigation Measure 4.D-2 (Archaeological Resources)**
- **Mitigation Measure 4.D-3 (Paleontological Resources)**
- **Mitigation Measure 4.D-4 (Human Remains)**

With implementation of these mitigation measures, the APP EIR found that impacts related to inadvertent discovery of archaeological resources, paleontological resources or human remains would be less than significant.

GP EIR

The GP EIR cited the City of Alameda's Historical Building Study List maintained by the Historical Advisory Board as including approximately 4,000 properties in Alameda. The List serves as preliminary evaluation and constitutes a tool in the ongoing process of identification, evaluation, and preservation of Alameda's architectural and historical resources. It also denotes whether a property is eligible for the National Register of Historic Places (NRHP), the State Historic Resources Inventory, and/or the list of Alameda Historical Monuments, among other qualifiers. The GP EIR recognized that NAS Alameda Historic District was formally listed on the National Register in 2013, and the Alameda City Council approved revisions to the City's Historical Monument designation to ensure consistency with the Navy's nominations of the NAS Alameda Historic District for listing on the National Register. The NAS Alameda Historic District, which includes Seaplane Lagoon, contains 100 contributors to the District, including 99 contributing buildings and structures and one contributing historic designed landscape (see **Figure 19**). However, none of the individual structures or cultural features was found to be individually eligible for listing on the NRHP. The historic district also includes 58 non-contributing buildings, structures, and objects.

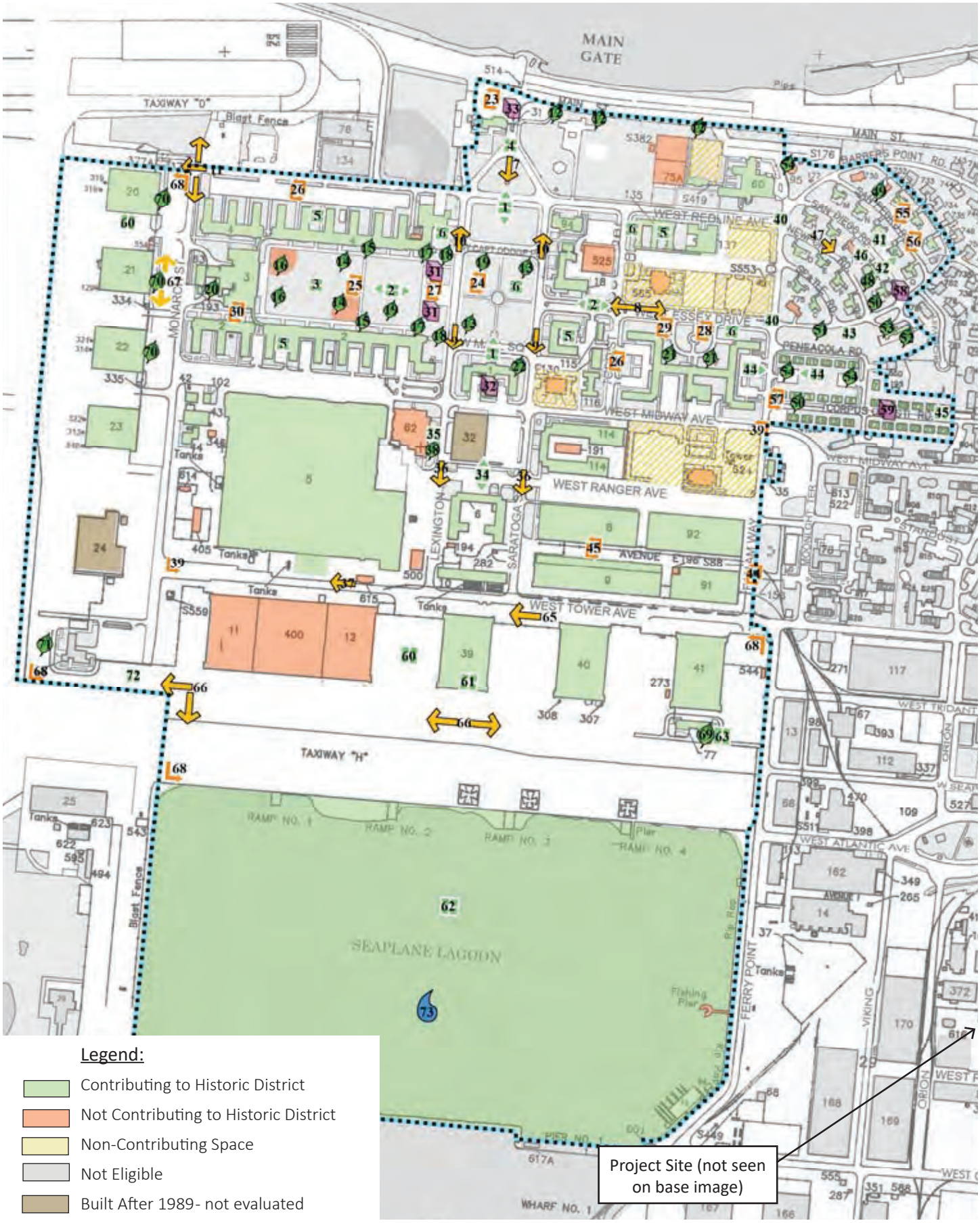


Figure 19
Alameda Point Historic District

Source: Alameda, *Alameda Point Project EIR*, Figure 3-4, from US Department of the Interior

The GP EIR determined that future development activity:

- could cause a substantial adverse change in the significance of a historical resource (including impacts to properties listed on or eligible for listing on the NRHP or CHRP and well as City-designated historic monuments and properties)
- may include subsurface disturbance that could potentially encounter and damage previously undiscovered buried historical or prehistoric archaeological resources, including tribal cultural resources
- could involve subsurface disturbance that could potentially encounter and damage human remains, including those interred outside of formal cemeteries

The GP EIR included the following mitigation measures, to be implemented in the event of an unanticipated discovery:

- **Mitigation Measures 18-2 (Prehistoric or Historic Cultural Resource Discovery)**
- **Mitigation Measure 18-3 (Discovery of Human Remains)**

The GP EIR determined that impacts resulting from inadvertent discovery of archaeological resources, tribal cultural resources, paleontological resources or human remains would be less than significant, provided implementation of these mitigation measures.

Potential Impacts of the Project

Historic Resources

Although the Project site is located within the former Naval Air Station Alameda, it is not located within the portions of the NAS that comprise the NAS Alameda Historic District, as defined in the National Register or the City's Historical Monument designation. The same is true for the proposed off-site improvements.

The Project does propose to demolish the existing Building 530 that is currently located on the site, but this building is not one of the District's 99 contributing buildings and is not within the contributing historically designated landscape. Existing Building 530 is not individually eligible for listing on the NRHP, but rather is one of the 58 non-contributing buildings, structures and objects. The Project's removal of Building 530 would not cause a substantial adverse change in the significance of a historical resource, and this impact would be less than significant. The proposed off-site improvements will not directly impact any known historic resources.

Archaeological and Cultural Resources

Similar to all of Alameda Point, the Project site, including off-site improvements, has a low potential to contain buried prehistoric or historic-era sites, fossil sites, paleontological resources, tribal cultural resources, or buried human remains.

Mitigation Measures

In the event of an unexpected and inadvertent discovery of such resources during construction of the Project, the following General Plan EIR mitigation measures shall be implemented:

- **GP EIR Mitigation Measure 18-2; Inadvertent Discovery of Cultural Resources**

  a. During future development activities consistent with the Alameda General Plan 2040, in the event that prehistoric or historic cultural resources are encountered during excavation

and/or grading of the project site, all activity within a 100-foot radius of the find shall be stopped, the Director of Planning shall be notified, and a qualified archaeologist shall examine the find. The archaeologist shall evaluate the significance of the encountered resource(s) and, if necessary, recommend mitigation measures to document and prevent any significant adverse effects on the resource(s). (Construction personnel shall not collect any cultural resources.) Recommendations may include collection, recordation, and analysis of any significant cultural materials. The results of any additional archaeological effort required through the implementation of this measure and/or Mitigation Measure 10-3 shall be presented in a professional quality report, to be submitted to the Alameda Director of Planning and the Northwest Information Center at Sonoma State University in Rohnert Park.

b. During construction of a future development project, in the event that any cultural resources encountered during subsurface disturbance are determined to be historical resources as defined in Section 15064.5 of the CEQA Guidelines, the project sponsor shall implement the mitigation prescribed in Section 15126.4(b) of the CEQA Guidelines, which identifies preservation in place as the preferred manner of mitigating impacts to buried historic resources, while data recovery and documentation may be appropriate in some circumstances.

c. If any Native American tribal representatives have requested consultation with the City of Alameda regarding general or specific development projects in Alameda, prior to issuance of a grading permit, the City shall notify the tribal representative(s) in writing about the proposed development, soliciting their input regarding the protection of tribal cultural resources (TCRs) during project construction. In accordance with California Public Resources Code Section 21080.3.2, the consultation may include discussion concerning the type of environmental review necessary, the significance of the TCRs, the significance of the project's impacts on the TCRs, and, if necessary, project alternatives or appropriate measures for preservation or mitigation that the California Native American tribe may recommended to the lead agency. Mitigation measures to reduce impacts to TCRs must be developed in coordination with the consulting tribal group. The preferred approach to mitigation is avoidance or preservation in place. If this is not feasible, the mitigation may take the form of interpretive treatment. Mitigation measures agreed to during tribal consultation must then be carried over into the CEQA document and the associated Mitigation Monitoring and Reporting Program (MMRP) that must be adopted by the lead agency as part of the CEQA process. The consultation required by Senate Bill (SB) 18 and Assembly Bill (AB) 52 is considered complete when either the parties agree to measures to mitigate or avoid any significant impact on TCRs, or if one of the parties, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

- **GP EIR Mitigation Measure 18-3, Inadvertent Discovery of Human Remains**

a. In the event that any human remains are encountered during site disturbance at any future development site, all ground-disturbing work in the vicinity of the remains shall cease immediately until the coroner of Alameda County has been contacted, in accordance with Section 7050.5 of the California Health and Safety Code. Human remains may be an inhumation or cremation, and in any state of decomposition or skeletal completeness. If the coroner determines that the human remains are of Native American origin, the Native American Heritage Commission (NAHC) must be contacted within 24 hours, and the project sponsor shall comply with State laws relating to the disposition of Native American burials, regulated by the NAHC. If any human remains are discovered or recognized in any location

other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- the coroner of the County has been informed and has determined that no investigation of the cause of death is required; and
- if the remains are of Native American origin, the Coroner's Office will notify the NAHC of the find, which, in turn, will then appoint a "Most Likely Descendant" (MLD). The MLD, in consultation with the archaeological consultant and the project sponsor, will advise and help formulate an appropriate plan for treatment of the remains and any associated grave goods as provided in Public Resources Code Section 5097.98, which might include recordation, removal, and scientific study of the remains and any associated artifacts. After completion of analysis and preparation of the report of findings, the remains and associated grave goods shall be returned to the MLD for reburial, treatment, or disposal with appropriate dignity.

b. If the Native American Heritage Commission is unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the Commission, the project sponsor shall reinter the human remains and any associated burial items with appropriate dignity on the property in a location not subject to further subsurface disturbance in the future. To protect this site, the project sponsor shall do one or more of the following:

- record the site with the NAHC and the Northwest Information Center at Sonoma State University in Rohnert Park, the regional repository of the California Historical Resources Information System (CHRIS);
- establish an open space or conservation easement to protect the resource; and/or
- record a document with Alameda County titled "Notice of Re-interment of Native American Remains" that shall include a legal description of the property, the name of the owner of the property, and the owner's acknowledged signature

With implementation of these mitigation measures in the event of an unanticipated discovery of archaeological resources, tribal cultural resources, paleontological resources or human remains, the Project's impacts would be less than significant.

Cumulative Historic and Cultural Resource Effects

Historic Resources

Impacts to historic resources due to other past, present and reasonably foreseeable projects in the vicinity could have a significant cumulative impact on historic resources. However, the Pacific Fusion Project, including off-site improvements, has no impact to historic resources and would not combine with other projects that do have such impacts. Therefore, the Project would not have a significant cumulative impact on historic resources.

Cultural, Tribal Cultural or Archaeological Resources

No impacts to known or recorded prehistoric or historic-period archaeological resources or human remains have been identified in Alameda Point or its vicinity. Potential cumulative impacts to unknown or unrecorded archaeological resources are possible, but can be reduced to a less than significant level by application of standard accidental discovery mitigation measures as required of the Project, such that no cumulative impacts to cultural and archaeological resources would occur.

Conclusions

The Project would not result in new significant impacts or substantially more severe impacts to cultural or tribal cultural resources than those previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR. Certain mitigation measures and regulatory requirements identified in the prior Alameda Point Project EIR and/or the General Plan 20240 EIR would apply to the Project, and implementation of the mitigation measures and regulatory requirements would substantially reduce potential impacts to cultural or tribal cultural resources of the Project site.

No significant cultural or tribal cultural resource impacts are peculiar to the Project or its site. The Project would not result in any new significant impacts to cultural or tribal cultural resources not previously identified in the prior programmatic Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component of cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative effects to cultural or tribal cultural resources that the Project may contribute toward have already been addressed in these prior EIRs. There are no changes in circumstances or new information of substantial importance relative to cultural or tribal cultural resources that require an update to the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topic of cultural or tribal cultural resources.

4-E: Energy

Would the Project:	Prior EIR Determination APP EIR / GP EIR	Comparative Project Impact	Applicable Mitigation Measures and Regulatory Reqmts:	Resulting Significance
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation	APP EIR: N/A GP EIR: LTS	Equal or Less Severe	Regulatory Reqmt: Compliance with CalGreen Code	LTS
b. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency	APP EIR: N/A GP EIR: LTS	Equal or Less Severe	-	LTS
Would the Project have impacts that are:	**Not Identified in the APP EIR or GP EIR?**	**Peculiar to the Project or its Site?**	**New Off-site and/or Cumulative Impacts?**	**New or More Severe Due to New Information?**
	No	No	No	No

Findings of the Prior EIRs

APP EIR

The APP EIR did not include separate thresholds for energy, but did address electrical energy as part of its analysis of Utilities and Service Systems. The APP EIR determined that the Alameda Point Project would have the following less than significant project-level and cumulative impacts related to energy:

- Development facilitated by the APP, in combination with other past, present, existing, approved, pending and reasonably foreseeable future projects, would result in less than cumulatively considerable impacts to utilities and service systems
- The APP EIR concluded that the existing Cartwright Substation would be preserved and remain as a key component of the electric distribution system and that individual projects would replace the existing electric power facilities over time, but that the existing transmission facilities and Cartwright Substation have adequate capacity for the Project's estimated ultimate electric demand.

GP EIR

The GP EIR determined that construction and operation of new buildings and facilities allowed pursuant to the Alameda General Plan 2040:

- Would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation, and
- Would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency

The GP EIR concluded that the California Code of Regulations Title 24 Part 6 standards that apply to non-residential buildings require a variety of energy efficiency measures to be implemented during construction to reduce energy use. Subsequent environmental review of future development projects would be required to assess potential impacts under BAAQMD's (now Bay Area Air District, or BAAD) project-level thresholds. Implementation of the Alameda General Plan 2040 policies would ensure that future commercial and industrial development facilitated by the General Plan would not result in a significant environmental impact due to wasteful, inefficient or unnecessary consumption of energy resources.

Comparative Assessment of the Project

Consumption of Energy Resources

During Construction

Construction of the Project will require consumption of gasoline and diesel fuel by construction workers travelling to and from the Project, by trucks delivering construction materials and supplies to the site and from trucks hauling demolition materials away, and by earthmoving, paving and other construction equipment operating on the site. Construction contractors would be required to minimize equipment idling time and maintain equipment in proper operating condition, which would ensure that fuel powering the equipment would not be used in an inefficient or wasteful manner. Construction of the Projects will be required to comply with the CALGreen Code (as reinforced by the Alameda Municipal Code), which is explicitly intended to encourage sustainable construction practices in energy efficiency and other environmental parameters, and includes provisions for energy conservation during construction activities. Accordingly, construction of the Project would have a less than significant energy consumption impact.

Traditional Energy Demands

The Project will have an ongoing traditional demand for energy resources to provide heating, cooling, illumination, and operation of equipment. Gasoline and diesel fuel will be consumed by employees, visitors, deliveries and service vehicles. The CALGreen Code, Title 24 Part 6 standards apply to non-residential buildings, and will require that the Project provide a variety of energy efficiency measures to be implemented during operations to reduce energy use.

Unique Energy Demands

As indicated in the Project Description, the Project also has a unique energy requirement associated with its pulse system (or Pulser). The Pulser is comprised of multiple modules of electrical capacitors connected in series and parallel, storing and discharging electrical energy. The capacitors will obtain power from a series of battery banks that will charged from the main power supply (via the Cartwright Substation) throughout the day, but primarily set for charging to occur during non-peak times. All of the power stored throughout the day in the battery banks will charge the capacitors, which will then discharge all of this electrical energy for a short, approximately 1-minute interval each day. This is a large amount of electrical energy to be discharged during a short, 1-minute period.

Based on calculations provided by the Project sponsor, the full electrical demands of the Project, including the unique Pulser plus heating, cooling and other electrical loads is estimated to generate a demand for approximately 6.4 million kWh/year, which is about 20% more per year than a typical office building of the same floor area. Typical office buildings generate an electrical demand for about 22.5

kWh per square-foot/year.[30] For an office building of similar size as the Project (225,500 square feet), this equates to approximately 5 million kWh/year. The energy demands of any other type of R&D facility that may be constructed within the Enterprise District of Alameda Point would depend on the type of operations that would be specific to that facility. The Pacific Fusion Project's energy demands are not necessarily any greater than a different type of R&D facility.

The purpose of the Pacific Fusion Project is to work toward a proof-of-concept by demonstrating that their approach to unlocking fusion power can achieve net energy gain, and become commercially viable. If proven successful, it is likely that Pacific Fusion will eventually construct a new facility (probably located elsewhere) where they can run their fusion reaction in a manner whereby they can capture the energy gain, and on a scale that is commercially viable and that produces limitless, clean, on-demand power. Whereas that goal may be uncertain until proven, the effort is not wasteful, inefficient or unnecessary.

Consistency with Renewable Energy Plans

The Pacific Fusion Project will obtain its energy requirements from Alameda Municipal Power (AMP), which purchases power from a variety of generators to provide 100 percent clean power to Alameda. These power generators include hydroelectric, geothermal, wind and landfill gas-generated turbines, with a small remainder from is other unspecified clean power sources. The Project's energy supply is from a variety of sources that all meet State and local plan for renewable energy.

The Project represents an important step toward Pacific Fusion's goal to produce limitless, clean and on-demand power. This goal is certainly consistent with Senate Bill 1477's intent to encourage market-based development and adoption of low-emission, clean energy technologies; and it is consistent with the SB 100 Energy Bill that commits California to using 100-percent clean energy by 2045 and speeding-up the State's timeline for moving to carbon-free power sources that do not cause or contribute to increases of GHG emissions. The Project is also consistent with the American Recovery and Reinvestment Act, which seeks promote investment in energy independence, renewable energy technologies and advanced energy technologies.

Cumulative Energy Effects

Alameda Municipal Power (AMP) owns and operates the electric power facilities at Alameda Point and throughout the City. The Cartwright Substation is a critical component of this electric system, and is intended to remain in service throughout the reuse and development of Alameda Point. The substation provides local electric distribution to Alameda Point and portions of the surrounding areas outside of Alameda Point. The estimated total coincident electric demand for the ultimate redevelopment of Alameda Point is approximately 40 to 50 MVA. Conservatively, this estimate of total electrical demand includes the estimated electric demand anticipated for the VA Project. The existing transmission facilities and Cartwright Substation have adequate capacity for the Project's estimated ultimate electric demand, plus all of it other existing and projected future customers, and the substation can be upgraded to increase the electric capacity, if necessary. The electric transmission system facilities, which are 115kV pole lines providing electricity to Alameda Point, could support an additional electric demand of approximately 80 MVA. Thus, the electrical demands of the Project (including its Pulser system) plus all other cumulative development within Alameda Point, is in acceptable condition and would be preserved with implementation of the Project.

[30] Twinview Industry Insights, Benchmarking commercial energy use per square foot, January 2021, accessed at: https://www.twinview.com/insights/benchmarking-commercial-energy-use-per-square-foot

Conclusions

The Project would not result in new significant impacts or substantially more severe impacts pertaining to energy than those previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR. Regulatory requirements identified in the prior Alameda Point Project EIR and/or the General Plan 2040 EIR (e.g., CalGreen-compliant buildings) would apply to the Project, and implementation of these regulatory requirements would substantially reduce potential energy impacts of the Project.

Although the Project's energy usage is unique, no significant energy impacts are peculiar to the Project or its site. The Project would not result in any new significant energy impacts not previously identified in the prior programmatic Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component of cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative energy effects to which the Project may contribute have already been addressed in these prior EIRs. There are no changes in circumstances or new information of substantial importance relative to potential energy impacts of the Project that require updating the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topic of energy.

4-F: Geology, Soils and Seismicity

Would the project:	Prior EIR Determination APP EIR / GP EIR	Comparative Project Impact	Applicable Mitigation Measures:	Resulting Significance
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	APP EIR: No Impact GP EIR: LTS	Equal or Less Severe	-	No Impact
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;				
Strong seismic ground-shaking;	APP EIR: LTS with MM GP EIR: LTS	Equal or Less Severe	APP EIR Mitigation Measure 4.H-1, (Seismic Safety)	LTS with MM
Seismic-related ground failure, including liquefaction	APP EIR: LTS with MM GP EIR: LTS	Equal or Less Severe	APP EIR Mitigation Measure 4.H-2, (Liquefaction)	LTS with MM
Landslides	APP EIR: LTS with MM GP EIR: LTS	Equal or Less Severe	NA	No Impact
b. Result in substantial soil erosion or the loss of topsoil	APP EIR: No Impact GP EIR: LTS	Equal or Less Severe	-	No Impact
c. 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	APP EIR: LTS with MM GP EIR: LTS	Equal or Less Severe	APP EIR Mitigation Measure 4.H-4 (Differential Settlement)	LTS with MM
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code creating substantial risks to life or property	APP EIR: LTS with MM GP EIR: LTS	Equal or Less Severe	APP EIR Mitigation Measure 4.H-5 (Expansive Soils)	LTS with MM
Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater	APP EIR: No Impact GP EIR: LTS	Equal or Less Severe	-	No Impact
Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	APP EIR: NA GP EIR: LTS with MM	Equal or Less Severe	GP EIR Mitigation Measure 14-6, Paleontological Resources	LTS with MM

Would the Project have impacts that are:	Not Identified in the APP EIR or GP EIR?	Peculiar to the Project or its Site?	New Off-site and/or Cumulative Impacts?	New or More Severe Due to New Information?
	No	No	No	No

Findings of the Prior EIRs

APP EIR

Potentially Significant Impacts

The APP EIR determined that the Alameda Point Project would have the following potentially significant project-level and cumulative impacts related to geology, soils and seismicity:

- In the event of a major earthquake in the region, seismic groundshaking could potentially injure people and cause collapse of or structural damage to structures and/or retaining walls developed pursuant to the APP.
- In the event of a major earthquake in the region, people and property at Alameda Point could potentially be exposed to seismically induced ground failure, including liquefaction, lateral spreading and earthquake-induced settlement.
- In the event of a major earthquake in the region, development facilitated by the APP could potentially be subject to adverse effects resulting from seismically induced landslides.
- Development facilitated by the APP could potentially 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.
- Development facilitated by the APP could potentially be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code creating substantial risks to life or property.

Mitigation Measures

The APP EIR identified the following mitigation measures that, when implemented on a project-by-project basis, would reduce significant impacts related to geology, soils and seismicity to less than significant:

- **Mitigation Measure 4.H-1: (Seismic Safety)**
- **Mitigation Measure 4.H-2: (Liquefaction)**
- **Mitigation Measure 4.H-3: (Improvements along North Shoreline)**
- **Mitigation Measure 4.H-4: (Differential Settlement)**
- **Mitigation Measure 4.H-5: (Expansive Soils)**

Implementation of these mitigation measures was found to reduce impacts related to geologic hazards to less than significant levels.

With implementation of all regulatory requirements and mitigation measures, the APP EIR concluded that the Alameda Point Project would not result in any significant and unavoidable impacts related to geology, soils and seismicity.

GP EIR

The GP EIR determined that construction and operation of new buildings and facilities allowed pursuant to the Alameda General Plan 2040:

- would not directly or indirectly cause potentially substantial adverse effects, including the risk of loss, injury or death from seismic ground failure, including liquefaction and fault rupture
- would not result in substantial soil erosion or the loss of topsoil
- could be located on a geologic unit or soil that is unstable, or that would become unstable as a result of a project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse
- could be located on expansive soil, creating substantial direct or indirect risks to life or property, and
- would not have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water

The GP EIR determined that construction of new development allowed under the Alameda General Plan 2040 could:

- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

The GP EIR recommended the following new policy to be added to the Conservation and Climate Action Element:

- **MM 14-6: Paleontological Resources**

The GP EIR concluded that all new development in the region is subject to the seismic design requirements set forth in the California Building Code. Impacts from seismic hazards and unstable soils are largely site-specific, and need to be addressed on a project-by-project, site-specific basis. Compliance with the regulations in the CBC would minimize the potential for impacts from ground instability and seismic ground failure, and ensure that impacts from new development consistent with the Alameda General Plan 2040 would not be significant.

The GP EIR also concluded that, with implementation of Mitigation Measure 14-6, future projects facilitated by the General Plan would have a less than significant impact on paleontological resources.

Comparative Assessment of the Project

Fault Rupture

Fault rupture is most likely to occur along active faults. No portions of Alameda Point, including the Project site and the areas proposed for off-site improvements are within an Alquist-Priolo Fault Rupture Hazard Zone, and no mapped active faults are known to pass through the Project site or its vicinity. Development of the Project would not expose persons or structures to risk of ground rupture along a fault line.

Groundshaking

As disclosed in both the APP EIR and the GP EIR, the City of Alameda (inclusive of Alameda Point and the Project site) will 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 of magnitude and the duration of shaking. Due to the Project's location in an area of high seismic risk, the

Project's employees could be harmed and the Project's structures could be damaged from strong ground shaking.

Several laws and policies exist that will impose stringent seismic safety requirements on the design and construction of the Project. Like all new structures in California, the Project will be subject to the standards of the California Building Code, which contains specific design requirements for areas with very high seismic risks, and the Project applicant is required to submit a geotechnical report pursuant to the Seismic Hazards Mapping Act. Current City policies require that buildings supported on pile foundations (which is assumed to include the Project) must penetrate through Bay Mud deposits to reach firm, non-compressible materials, unless geotechnical findings indicate a more appropriate design. Compliance with these laws and policies will greatly reduce the potential risk to people and structures.

Mitigation Measures

Because the Project site could experience violent groundshaking in the next 50 years, is located on unfavorable materials that amplify groundshaking, and is likely to experience a variety of secondary effects, the following mitigation measure of the APP EIR applies to the Project to ensure proper compliance with laws and policies, and to minimize harm to people and structures.

- **APP EIR Mitigation Measure 4.H-1, Groundshaking**: Prior to approval of a building permit, a site specific, design-level geotechnical investigation shall be prepared for the Project. The investigation shall include detailed characterization of the distribution and compositions of subsurface materials and an assessment of their potential behavior during violent seismic groundshaking.

    a. The analysis shall recommend site preparation and design parameters that would be necessary to avoid or substantially reduce structural damage under anticipated peak ground accelerations in accordance with seismic design requirements within the most current version of the California Building Code and Alameda Municipal Code.

    b. The investigation and recommendations shall be in conformance with all applicable city ordinances and policies and consistent with the design requirements of the calculated Seismic Design Category for the site in accordance with the California Building Code.

    c. The geotechnical report shall be prepared by a California-registered geotechnical engineer and approved by the City, and all recommendations contained in the report shall be included in the final design of the Project.

Compliance with the provisions of the California Building Code/Alameda Building Code would minimize the risk for seismic hazards to adversely affect the Project. Accordingly, the Project's potential impacts pertaining to seismic shaking and/or seismic ground failure would be reduced to less than significant.

Seismically-Induced Ground Failure

As disclosed in both the APP EIR and the GP EIR, the City of Alameda (inclusive of Alameda Point and the Project site) is designated as a Seismic Hazard Zone for liquefaction due to historic occurrences, the presence of unfavorable soils and shallow groundwater. Due to this high liquefaction potential the Project's employees could be harmed and its structure may be damaged from earthquake-induced liquefaction, rapid settlement or other earthquake-induced ground failures.

The Seismic Hazards Mapping Act of 1990 requires that a geotechnical report must be prepared for projects located in a Liquefaction Hazard Zone, and that report must evaluate and provide mitigation for potential liquefaction hazards. The investigation and mitigation recommendations must be made in

accordance with the California Geological Survey, Special Publication 117A's Guidelines for Evaluating and Mitigating Seismic Hazards.

Mitigation Measures

Because the Project site is located in a Liquefaction Hazard Zone, the following mitigation measure of the APP EIR applies to the Project to ensure proper compliance with laws and policies, and to minimize harm to people and structures.

- **APP EIR Mitigation Measure 4.H-2, Liquefaction**: Prior to issuance of a building permit, earthwork, foundation and structural design for the Project shall be conducted in accordance with all recommendations contained in a required geotechnical investigation. The investigation must include an assessment of all potentially foreseeable seismically induced ground failures, including liquefaction, sand boils, lateral spreading and rapid settlement.

    a. Mitigation strategies must be designed for the site-specific conditions of the Project and must be reviewed for compliance with the guidelines of CGS Special Publication 117A prior to incorporation into the Project.

    b. Examples of possible strategies include edge containment structures, compacted soil zones, removal or treatment of liquefiable soils, soil modification, modification of site geometry, lowering the groundwater table, in-situ ground densification, deep foundations, reinforced shallow foundations, and structural design that can accommodate predicted displacements.

Compliance with the provisions of the Seismic Hazards Mapping Act and corresponding requirements of the California Building Code and Alameda Building Code would minimize the risk from earthquake induced liquefaction and rapid settlement beneath the Project. Accordingly, the Project's potential impacts pertaining to liquefaction would be reduced to less than significant.

Seismically Induced Landslides

The Project site is level with very little topographical relief and not subject to landslides, and is not located near the Alameda north shoreline, where new loads from fill placement or buildings may have an adverse effect on static slope stability. The Project is not subject to seismically induced landsides.

Unstable Geologic Unit or Soils

As disclosed in both the APP EIR and the GP EIR, the Project site is underlain by artificial fill over Estuarine (Bay) Mud and dune sand, and is susceptible to subsidence or settlement. The weight of the Project could cause consolidation and settlement of these soils over time, and the Project's structure could be damaged if not designed appropriately. Subsidence related to consolidation of Bay Mud beneath fill and foundation settlement directly related to site-specific structural building loads could affect new structures and underground utilities.

Mitigation Measures

Because the Project site is susceptible to soil consolidation and settlement, the following mitigation measure of the APP EIR applies to the Project to ensure proper compliance with laws and policies, and to minimize harm to people and structures.

- **APP EIR Mitigation Measure 4.H-4, Differential Settlement**: The required geotechnical report for the Project shall determine the susceptibility of the Project site to settlement, and prescribe appropriate engineering techniques for reducing its effects.

a. Where settlement and/or differential settlement is predicted, mitigation measures such as lightweight fill, geofoam, surcharging, wick drains, deep foundations, structural slabs, hinged slabs, flexible utility connections, and utility hangers shall be used. These measures shall be evaluated and the most effective, feasible, and economical measures shall be recommended.

b. Engineering recommendations shall be included in the Project's engineering and design plans, and be reviewed and approved by a registered geotechnical engineer.

c. All construction activities and design criteria shall comply with applicable codes and requirements of the most recent California Building Code, and applicable City construction and grading ordinances.

Compliance with requirements of the most recent California Building Code and applicable City construction and grading ordinances would minimize the risk from soil subsidence or settlement beneath the Project. Accordingly, the Project's potential impacts pertaining to soil subsidence or settlement would be reduced to less than significant.

Expansive Soil

The fill material that was previously placed on much of the Project site occurred prior to current building code practices, and that fill may contain expansive properties. The presence of expansive soil needs to be determined on a site-specific basis, with the integration of geotechnical information into the planning and design of the Project. The use of additional imported fill as may be necessary for the Project must meet geotechnical engineering standards as required by the CBC, which include minimizing the potential for soil expansion.

Mitigation Measures

Because the Project may be susceptible to expansive soils, the following mitigation measure of the APP EIR applies to the Project to ensure proper compliance with laws and policies, and to minimize harm to the Project's structures.

- **APP EIR Mitigation Measure 4.H-5, Expansive Soils**: Prior to issuance of a building permit, subsurface earthwork (e.g., placement of engineered fill), shall be conducted in accordance with all recommendations contained in the required geotechnical investigation.

  a. The geotechnical report must include an assessment of all potentially expansive soils that could adversely affect proposed improvements.

  b. Geotechnical strategies must be designed for the site-specific conditions of the project and must be reviewed for compliance with the requirements of the most recent California Building Code as well as any additional City of Alameda requirements.

Compliance with requirements of the most recent California Building Code and applicable City construction and grading ordinances would minimize the risk from expansive soils beneath the Project. Accordingly, the Project's potential impacts pertaining to expansive soils would be reduced to less than significant.

Substantial Erosion or Loss of Topsoil

Construction activity associated with the Project will expose soil that may be eroded by wind or water. However, the Project site is generally level and substantial or accelerated erosion due to storm runoff is not anticipated. Most of the Project site is overlain by artificial fill, so any minor loss of on-site soils

would not represent loss of a natural resource. Storm Water Pollution and Prevention Plans required during the construction phase of the Project (see the Hydrology section of this CEA Checklist) would control soil erosion that could occur during storm events. Consistent with the conclusions of the APP EIR and the GP EIR, substantial erosion and loss of topsoil would not occur during Project construction.

Inadequate Support for Septic Tanks or Alternative Wastewater Disposal Systems

The Project would not use septic tanks or similar alternative wastewater disposal systems. The Project would be served by the City of Alameda sanitary sewer collection system. Therefore, this issue is not applicable to the Project.

Paleontological Resources

There is low potential, but some possibility that paleontological resources may be present in the subsurface of the Project site. Such resources could be damaged or destroyed during ground-disturbing construction work at the project site.

Mitigation Measures

Because of the potential for paleontological resources to be present, the following mitigation measure of the GP EIR applies to the Project:

- **GP EIR Mitigation Measure 14-6, Paleontological Resources**: If any paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds or impressions are encountered during the Project's site grading or other construction activities, all ground disturbance within 100 feet of the find shall be halted until the services of a qualified paleontologist can be retained to identify and evaluate the scientific value of the resource(s) and, if necessary, recommend mitigation measures to document and prevent any significant adverse effects on the resource(s). Any further mitigation measures recommended by the paleontologist shall be implemented and construction shall not resume in the vicinity of the find until the paleontologist has authorized the resumption of work. Significant paleontological resources shall be salvaged and deposited in an accredited and permanent scientific institution, such as the University of California's Museum of Paleontology.

Compliance with this mitigation measure in the event of an unanticipated discovery of paleontological resources would minimize damaged or destruction of such resources as may be found beneath the Project site. The Project's potential impacts pertaining to paleontological resources would be reduced to less than significant.

Cumulative Geologic Effects

The geographic area considered for the cumulative geology, soils, of seismic hazards effects is the entire San Francisco Bay Area region. This region is considered seismically active and future development would expose additional people and structures to potentially adverse effects associated with earthquakes, including seismic ground shaking and seismic-related ground failure. However, site-specific geotechnical reports that future development projects would be required to prepare would determine how each development could be designed to minimize exposure of people to these effects. Future development would be constructed to standards similar to those that are required with the mitigation measures described above for the Project, which likely would exceed those of older structures within the region. The Project, as well as all other future cumulative projects, would be constructed in accordance with the most current version of the California Building Code seismic safety requirements and recommendations contained in each site-specific geotechnical report. Therefore, impacts to area

geology and soils resulting from development of the Project, combined with other past, present, or probable future projects, would not result in a cumulatively significant impact. The cumulative impact would be less than significant given mandatory compliance with existing state and local building codes and regulations.

Conclusions

The Project would not result in new significant impacts or substantially more severe geologic impacts than those previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR. Certain mitigation measures and regulatory requirements identified in the prior Alameda Point Project EIR and/or the General Plan 20240 EIR would apply to the Project, and implementation of the mitigation measures and regulatory requirements would substantially reduce potential geological impacts of the Project.

No significant geological impacts are peculiar to the Project or its site. The Project would not result in any new significant geologic impacts not previously identified in the prior programmatic Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component of cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative geologic effects to which the Project may contribute have already been addressed in these prior EIRs. There are no changes in circumstances or new information of substantial importance relative to potential geologic impacts of the Project that require updating the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topic of geology.

4-G: Greenhouse Gas Emissions

Would the project:	Prior EIR Determination APP EIR / GP EIR	Comparative Project Impact	Applicable Mitigation Measures:	Resulting Significance
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
Would the Project have significant impacts that are:	**Not Identified in the APP EIR or GP EIR?**	**Peculiar to the Project or its Site?**	**New Off-site and/or Cumulative Impacts?**	**New or More Severe Due to New Information?**
	No	No	No	No

Findings of the Prior EIRs

Alameda Point Project EIR

The APP EIR determined that the Alameda Point Project would have the following less than significant impacts related to greenhouse gas (GHG) emissions:

- Development facilitated by the APP would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment
- Development facilitated by the APP would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases

The APP EIR found that GHG emissions associated with the APP would be below the then-applicable BAAQMD's "efficiency threshold" of 4.6 metric tons of CO2e per service population per year, and therefore would generate GHG emission below thresholds developed based on attainment of AB 32 goals.

General Plan EIR

The GP EIR determined that implementation of the Alameda General Plan 2040:

- would not generate GHG emissions, either directly or indirectly, that could have a significant impact on the environment
- would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions

The GP EIR concluded that future development facilitated by the Alameda General Plan 2040 would be required to comply with the requirements of the General Plan and programs related to GHG emissions, as well as applicable BAAD regulations, and standards in the Alameda Municipal Code. Compliance with these policies, programs and standards would generate GHG emissions per service population that

would not exceed the applicable 4 metric tons of CO2e per service population threshold provided in CARB's Scoping Plan, and would not conflict with the 2017 Climate Change Scoping Plan, the MTC/ABAG Plan Bay Area 2040, or the BAAQMD 2017 Clean Air Plan.

Potential Impacts of the Project

Greenhouse Gas Emissions

Thresholds

The current (2022) Bay Area Air District's (BAAD) CEQA Guidelines provide the Air District's most recent recommendation to local jurisdictions for establishing thresholds of significance for climate impacts. This recommendation relies on a "fair share" approach to determine whether an individual project's GHG emissions would be cumulatively considerable. If a project would contribute its "fair share" of what is needed to achieve the State's long-term GHG reduction goals, then the lead agency can find that the project is adequately contributing to solving the problem of global climate change, and that project's impact is not significant.[31]

These BAAD recommendations identify the necessary design elements required of new development projects in order to achieve California's long-term climate goal of carbon neutrality by 2045. If these design elements are incorporated into the design and construction of a project, then the project would contribute its portion of what is necessary to achieve California's long-term climate goals (i.e., its "fair share"), and a lead agency can conclude that the project would not make a cumulatively considerable contribution to global climate change. Alternatively, a development project for which these design elements are not implemented could still be determined to make a less than significant contribution of GHG emissions by demonstrating consistency with a local GHG reduction strategy that is consistent with state guidance. The specific thresholds of significance for project-level climate impacts from GHG emissions as recommended by the BAAD are as listed under either approach A, or by a determination of consistency per approach B, as follows:

GHG Threshold A: Projects must include, at a minimum, the following project design elements:

1. Buildings

a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).

b. The project will not result in any wasteful, inefficient, or unnecessary energy use as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.

2. Transportation

a. The project will achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target that reflects the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory: Evaluating Transportation Impacts in CEQA:

- Residential projects: 15 percent below the existing VMT per capita

[31] The California Supreme Court endorsed this approach in Center for Biological Diversity v. Department of Fish & Wildlife (2015) 62 Cal.4th 204

- Office projects: 15 percent below the existing VMT per employee
- Retail projects: no net increase in existing VMT

b. The project will achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

or-

GHG Threshold B: Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

The City of Alameda has not officially adopted a GHG threshold for use in CEQA review, so this CEQA Checklist relies on the 2022 BAAD recommendation that, if the required design elements are incorporated into the design and construction of the Project, the Project's GHG impacts would be considered less than significant.

Project's Consistency with GHG Thresholds

The Pacific Fusion Project includes the necessary design elements that are required of new development projects to be considered as achieving its fair-share toward achieving California's long-term climate goal of carbon neutrality by 2045.

- The Project does not include any natural gas appliances or natural gas plumbing. [32] The Project is 100 percent electric, receiving its power supply from Alameda Municipal Power (AMP), which purchases power from a variety of source (hydroelectric, geothermal, wind and landfill gas-generated turbines, with a small remainder from other unspecified clean power sources) to provide 100 percent clean power to Alameda.
- The Project will not result in any wasteful, inefficient or unnecessary energy use as determined by the analysis in the Energy section of this CEQA Checklist pursuant to CEQA Guidelines Section 15126.2(b). The purpose of the Pacific Fusion Project is to work toward a proof-of-concept by demonstrating that their approach to unlocking fusion power can achieve net energy gain and become commercially viable. If proven successful, it is likely that Pacific Fusion will eventually construct a new facility (probably located elsewhere) where they can run their fusion reaction in a manner whereby they can capture the energy gain, and on a scale that is commercially viable, and that produces limitless, clean, on-demand power. Whereas that goal may be uncertain until proven, the effort is not wasteful, inefficient or unnecessary.
- With implementation of its required TDM Plan, the Project will achieve a 15 percent or greater reduction in Project-generated vehicle miles traveled (VMT) as compared to the regional average VMT per employee. This conclusion is documented and demonstrated in the Transportation section of this CEQA Checklist.
- The Project complies with off-street electric vehicle (EV) requirements in the most recently adopted version of CALGreen Tier 2. As documented and demonstrated in the Project

[32] As previoulsy indicated in the Project Description of this CEQA Checklist, a pending Development Agreement between the City and the Project sponsor may require the Project to include construction of a number of off-site infrastructure improvements as identified in the Alameda Point Master Infrastructure Plan. The off-site infrastructure improvements may include installing a natural gas pipeline within a joint trench from the Cartwright substation to the Project site vicinity. This natural gas pipeline was part of the previously approved Alameda Point Project as analyzed in the APP EIR. The Project does not intended to connect to this gas line, and natural gas, and no natural gas would be supplied through that pipe unless a separate future development (not Pacific Fusion) intends to utilize natural gas.

Description of this CEQA Checklist, the Project includes a 202-space parking lot that includes 6 ADA-accessible (standard and van) parking spaces, and 72 EV-ready and EV-capable parking spaces as required by CalGreen Tier 2 and City Code, plus 4 large parking stalls for trailer truck parking.

These design elements are incorporated into the design and construction of the Project, and the Project would contribute its fair-share portion toward achieving California's long-term climate goals. The Project's potential impacts pertaining to GHG emissions would be less than significant.

Conflict with Plans, Policies and Regulations for Reductions in GHG Emissions

In March of 2019, the City of Alameda adopted its Climate Action and Resiliency Plan (CARP) to address climate change impacts and reduce GHG emissions, aligning closely with various state policies.

- The CARP's recommendations to prevent further sea level rise in Alameda align with the mandates of Assembly Bill (AB) 691, requiring trustees of public trust lands to prepare and submit assessments of how they propose to address sea level rise impacts that could result from their activities.
- The CARP also aligns with Senate Bill (SB) 1383 regulations, which target short-lived climate pollutants and requires the state to decrease methane emissions by reducing the landfill disposal of organic waste by 50 percent from 2014 levels by 2020, and by 75 percent by 2025.
- Furthermore, the CARP's goals align with AB 32, the supporting Scoping Plan, and Executive Orders (EOs) B-30-15 and B-55-18. These suggest local governments develop climate plans that address both GHG emissions and climate change adaptation, as well as mandate that California achieve a 40 percent GHG emissions reduction by 2030 and an 80 percent reduction by 2050 (below 1990 levels). EO B-30-15 also directs state planning and investment to carry out both GHG emissions reduction and climate change adaptation measures. In addition, EO B-55-18 establishes a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, as well as to achieve and maintain net negative emissions thereafter. The City has set a goal that is even more ambitious than the State of California's – to reduce emissions by 50 percent below 2005 levels by 2030. Achieving this goal means the City must carry out already committed to actions and new actions as included in the CARP.
- Consistent with California's Building Energy Efficiency Standards to reduce wasteful and inefficient energy consumption as well as enhance the state's overall environmental quality, the City has adopted these CalGreen standards as part of its Municipal Code.

In addition to continuing already committed to GHG reduction actions, the CARP proposes the following new actions:

Transportation: Reduce the impacts of solo driving by encouraging mode shift (e.g., taking the bus, bicycling, walking, and avoiding trips altogether) and electric vehicle (EV) use.

- As noted above, the Project will implement a required TDM Plan designed to achieve a 15 percent or greater reduction in Project-generated vehicle miles traveled (VMT) as compared to the regional average VMT per employee, with an emphasis on encouraging mode shifts to taking the bus, bicycling and walking. Additionally, the Project will comply with off-street EV requirements by providing 72 EV-ready and EV-capable parking spaces as required by CalGreen Tier 2 and City Code.

Buildings: Now that Alameda has shifted to Alameda Power's 100 percent clean electricity, eliminate as much natural gas use as possible by fuel shifting (converting) natural gas use to electricity use. This can be accomplished by requiring new residential developments to be all-electric and replacing gas-powered appliances in existing buildings.

- The Project will be 100 percent electric powered (including its Pulser system) and will obtain its power supply from Alameda Municipal Power, and will not include any new natural gas connections, appliances or equipment.

Sequestration: Draw down carbon already in the atmosphere by applying compost (created from diverted organic waste) in parks and open areas and planting more trees. The City will begin its sequestration efforts with pilot projects and eventually expand them to larger areas.

- The Project will contribute to carbon sequestration by redeveloping a vacant, paved area, including new landscape areas, bio-attenuation stormwater system and tree plantings.

Waste: Reduce the amount of material we send to landfill by increasing composting and recycling, as laid out in the ZWIP Update. This will pave the way for reaching true sustainability by transitioning to a circular economy that keeps raw materials in a constant flow, rather than a linear economy that extracts raw materials and then disposes of them.

- The Project will meet landfill diversion goals by implementing a Solid Waste Management Plan (inclusive of recycling) for its operations, and by meeting waste diversion goals during its demolition and site preparation phase to return construction materials back to the market.

Cumulative GHG Effects

As noted above, the current BAAD's recommended thresholds of significance for climate impacts relies on a "fair share" approach, determining whether an individual project's emissions of GHG would be cumulatively considerable. If a project contributes its "fair share" of what is needed to achieve the State's long-term GHG reduction goals, then that project is adequately contributing to solving the cumulative problem of global climate change, and that project's cumulative GHG impact is not significant. As indicated above, the Project includes the necessary design elements required of new development projects in order to achieve California's long-term climate goal of carbon neutrality by 2045, and accordingly contributes its portion of what is necessary to achieve California's long-term climate goals, and the Project would not make a cumulatively considerable contribution to global climate change.

Conclusions

The Project would not result in new significant impacts or substantially more severe impacts related to GHG emissions and climate change than those previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR. Certain regulatory requirements identified in the prior Alameda Point Project EIR and/or the General Plan 2040 EIR would apply to the Project, and implementation of these regulatory requirements would substantially reduce potential GHG emissions attributable to the Project.

No significant GHG impacts are peculiar to the Project or its site. The Project would not result in any new significant GHG impacts not previously identified in the prior programmatic Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component of cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative GHG effects to which the Project may contribute have already been addressed in these prior EIRs. There are no changes in circumstances or new information

of substantial importance relative to potential GHG impacts of the Project that require updating the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topics of GHG emissions and climate change.

4-H: Hazards and Hazardous Materials

Would the project:	Prior EIR Determination APP EIR / GP EIR	Comparative Project Impact	Applicable Mitigation Measures:	Resulting Significance
a-1. Create a significant hazard to the public or the environment through the routine use of hazardous materials	APP EIR: LTS with MM GP EIR: LTS	Equal or less Severe	Regulatory Reqmt, Radiation Protection Programs Regulatory Reqmt, Dose Limits To Members Of The Public Regulatory Reqmt, Radioactive Material License Regulatory Reqmt, Fusion Device Registration Regulatory Reqmt, Radiological Release Regulations Regulatory Reqmt, Safety and Health Regulations	LTS with RR
a-2. Create a significant hazard to the public or the environment through the routine transport of hazardous materials		Equal or Less Severe	Regulatory Reqmt, Transport of Radioactive Materials	LTS with RR
a-3. Create a significant hazard to the public or the environment through the routine disposal of hazardous materials		Equal or Less Severe	Regulatory Reqmt,, Radioactive Waste	
b. 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	APP EIR: LTS with MM GP EIR: LTS	Equal or Less Severe		
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	APP EIR: LTS GP EIR: LTS	Equal or Less Severe		

d. 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 it create a significant hazard to the public or the environment	APP EIR: LTS with MM GP EIR: LTS	Equal or Less Severe	Regulatory Reqmt, Marsh Crust Ordinance APP EIR MM 4.J-2, Groundwater Management and Hazard Contingency Plans APP EIR MM 4.J-1a, Hazardous Building Material Assessment APP EIR MM 4.J-1b, Health and Safety Plan APP EIR MM 4.J-1c: LBP Removal Plan APP MM 4.J-1d, Asbestos Abatement Plan APP EIR MM 4.J-1e: PCB Abatement	LTS with RR and APP EIR MMs
e. 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 the project result in a safety hazard for people residing or working in the project area?	APP EIR: No Impact GP EIR: LTS	Equal or Less Severe	-	No Impact
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area				
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	No Impact
h) 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	APP EIR: No Impact GP ER: LTS	Equal or Less Severe	-	No Impact
Would the Project have significant impacts that are:	**Not Identified in the APP EIR or GP EIR?**	**Peculiar to the Project or its Site?**	**New Off-site and/or Cumulative Impacts?**	**New or More Severe Due to New Information?**
	No	No	No	No

Findings of the Prior EIRs

APP EIR

The APP EIR determined that the Alameda Point Project would have the following less than significant project-level and cumulative impacts related to hazards and hazardous materials:

- Hazardous materials used during construction activities (e.g., oils, solvents, etc.) at Alameda Point 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
- Development facilitated by the APP 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
- Hazardous materials used at Alameda Point during operations could potentially be spilled through upset or accidental conditions, potentially increasing public health and/or safety risks to future residents, workers, visitors and the surrounding area.
- Hazardous materials use at Alameda Point could potentially emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within 0.25 mile of an existing or proposed school
- Development facilitated by the could potentially impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan

These APP EIR conclusions were supported by a number of existing regulatory requirements. The use of construction BMPs implemented as part of a SWPPP (discussed the Hydrology Section) 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. The Alameda County Department of Environmental Health (ACDEH) requires that any businesses that store hazardous materials and/or waste is required to submit business information and hazardous materials inventory forms contained in Hazardous Materials Management Plan and Hazardous Materials Business Plan. In accordance with the Uniform Fire Code (UFC), the City of Alameda Fire Department conducts site inspections to ensure hazardous materials are stored and handled properly and safety supplies are readily accessible.

Potentially Significant Impacts

The APP EIR determined that the Alameda Point Project would have the following potentially significant project-level and cumulative impacts related to hazards and hazardous materials:

- Demolition of existing structures on Alameda Point that contain hazardous building materials such as lead-based paint, asbestos and PCBs, could potentially expose workers, the public or the environment from the transport, use or disposal of these hazardous materials and waste
- Construction at Alameda Point 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
- Development facilitated by the APP could potentially 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 including vapor intrusion into buildings

Mitigation Measures

The APP EIR identified the following mitigation measures that, when implemented on a project-by-project basis, would reduce significant impacts to historic resources to less than significant:

- **Mitigation Measure 4.J-1a (Hazardous Building Material Assessment)**
- **Mitigation Measure 4.J-1b (Building Materials Health and Safety Plan)**
- **Mitigation Measure 4.J-1c (LBP Removal Plan)**
- **Mitigation Measure 4.J-1d (Asbestos Abatement Plan)**
- **Mitigation Measure 4.J-1e (PCB Abatement)**

With implementation of these mitigation measures, the APP EIR found that impacts related to hazardous building materials would be less than significant.

- **Mitigation Measure 4.J-2 (Site Management Plan)**

With implementation of this mitigation measure, the APP EIR found that impacts related to the disturbance of soil and/or groundwater impacted by historical hazardous material use would be less than significant.

- **Mitigation Measure 4.J-7 (Land-use Restriction Tracking Program)**

The APP EIR found that with continued compliance with deed restrictions, SMP and other permit requirements (including adherence to the Marsh Crust Ordinance) the potential for residual contamination to significantly impact residents, employees or the general public would be minimized and was considered less than significant with mitigation.

GP EIR

The GP EIR found that site preparation activities associated with construction of new buildings and facilities allowed under the Alameda General Plan 2040 and new land uses allowed under the Alameda General Plan 2040:

- would not result in significant exposure of construction workers and future site workers or residents to hazardous concentrations of contaminants in the soils and groundwater
- would not create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials; through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; or through emission of hazardous emissions or handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school
- could be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, but would not create a significant hazard to the public or the environment
- would not result in a significant safety hazard or excessive noise for people living and working within the planning area of Oakland International Airport
- would not significantly impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

- would not expose people or structures, either directly or indirectly, to significant risk of loss, injury or death involving wildland fires

The GP EIR concluded that required compliance with numerous federal, State and local regulations that govern the use, transportation and disposal of hazardous materials would minimize the risk of exposure of people and the environment to hazardous materials impacts, and no further mitigation measures were warranted.

Potential Impacts of the Project

Routine Use of Hazardous Materials

The Pacific Fusion Project is an R&D/light industrial operation that will use a variety of isotopes, chemical elements and industrial process chemicals during its operation. The primary isotopes, chemical elements and industrial process chemicals and fluids to be used at the Project include two non-hazardous materials; deionized water and deuterium (an isotope of hydrogen) and two hazardous materials; MiVolt (poisonous/combustible) and tritium (radioactive). The following describes how these isotopes, chemical elements and industrial process chemicals and fluids will be used for operations at the Project.

MiVolt

MiVolt is a dielectric fluid used for thermal management. According to the manufacturers' Safety Data Sheet, this product is not classified as hazardous, but is considered poisonous if ingested. The MIVOLT substance/mixture contains no components considered persistent, bio-accumulative or toxic.[33] MiVolt is classified by the National Fire Protection Association as a Class III B combustible liquid with a flash point at or above 200°F.

- Use at the Project: The pulse system (or Pulser) is comprised of multiple modules of electrical capacitors connected in series and parallel. Unlike batteries (which store energy chemically) capacitors store energy physically in a form very much like static electricity. The capacitors can supply electrical current much more quickly than a battery, generating the necessary energy for fusion. MiVolt will be used primarily to maintain a consistent, optimum temperature at the Project's electrical storage capacitors. The Project's capacitor systems would be surrounded or submerged in this dielectric liquid to ensure that capacitor cells are cooled so that they operate effectively and safely, and to reduce the likelihood of premature aging, thermal propagation or fire.

Deionized Water

Deionized water, also known as DI water or demineralized water, is water that has undergone a process to remove dissolved ions. Ions are electrically charged atoms or molecules found in water that have a net negative or positive charge. These ions typically come from mineral salts present in the water. In certain applications that use water as a rinse or ingredient, these ions are impurities that are removed from the water, but the deionized water remains simply as water (H_2O).[34]

- Use at the Project: The Pacific Fusion Project will rely on domestic water from the City water system for its deionized water needs. The domestic water will be run through an on-site filter

[33] MiVolt, accessed at: https://www.mivolt.com/

[34] PureTech Industrial Water, accessed at: https://puretecwater.com/resources/what-is-deionized-water/

bed system to remove dissolved ions, this deionized water will be stored on-site for operational use. Specifically, the Pulser's stored electrical energy from the capacitors will be discharged through pulse tubes and water transmission lines at the target chamber, and the chamber will be surrounded by deionized water. The deionized water has no impurities (i.e., no ions, only neutral water molecules) and these neutral molecules don't have charge, so the deionized water will not conduct (i.e., will contain) the electrical charge at the target chamber.

Deuterium

Deuterium is a stable isotope of hydrogen. It is chemically similar to regular hydrogen but has a heavier nucleus (one proton and one neutron, compared to regular hydrogen's single proton), resulting in distinct physical properties. Deuterium isotopes are distributed in molecules that contain hydrogen, including all forms of water, including water in our bodies and seawater in the ocean. Deuterium can have both beneficial and detrimental health effects depending on its concentration and the context. While a natural amount of deuterium is essential for life, excessive amounts can disrupt cellular metabolism and lead to physiological issues. [35]

Tritium

According to the US EPA, "tritium (3H) is a hydrogen atom that has two neutrons in the nucleus and one proton. Tritium is produced naturally in the upper atmosphere when cosmic rays strike nitrogen molecules in the air. Tritium is also produced during nuclear weapons explosions, and as a byproduct in nuclear reactors. Although tritium can be a gas, its most common form is in water because radioactive tritium reacts with oxygen to form water."[36] According to the U.S. Nuclear Regulatory Commission, "Tritium emits a weak form of radiation, a low-energy beta particle similar to an electron. The tritium radiation does not travel very far in air and cannot penetrate the skin. Any exposure to radiation could pose health risks, including increased occurrences of cancer, and this risk increases with exposure in a linear, no-threshold manner."[37]

- Use at the Project: The Pacific Fusion Project will be using deuterium and tritium as a fuel source in its Pulser operations. Inside the Pulser's target chamber is a small metal cylinder containing radioactive tritium (as a gas) and isotopes of deuterium. The Pulser systems' fast electric current is aimed across the metal cylinder to create an intensely strong magnetic field that implodes the cylinder, igniting or fusing the tritium and deuterium fuel together (i.e., fusion). The fusion reaction results in two products; helium and kinetic energy. Helium is a chemical element that is a colorless, odorless, non-toxic, and an inert monatomic gas (i.e., its atoms are not bound to each other), which is not hazardous and naturally dissipates. The kinetic energy is the desired product of the fusion process. In this initial testing process conducted at the Pacific Fusion facility, the kinetic energy will be measured to determine whether a net gain in energy (greater than the electrical energy used to generate the fusion process) has been achieved, but will not be harnessed or stored for power generation. The kinetic energy will be dissipated as sound, air movement or vibrations, all of which will be contained within the chamber. One of the benefits of the fusion reaction (unlike current fission reactor plants) is that it does not result in any radioactive nuclear waste.

[35] International Atomic Energy Association, accessed at: https://www.iaea.org/newscenter/news/what-is-deuterium

[36] U.S. EPA, https://www.epa.gov/radiation/radionuclide-basics-tritium

[37] U.S. Nuclear Regulatory Commission, accessed at: https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/tritium-radiation-fs.html

As further addressed below, the Pacific Fusion Project will require a Radioactive Materials License issued by the California Department of Public Health, Radiation Safety and Environmental Management Division, Radiologic Health Branch. According to its preliminary licensing expectations, the Project may be licensed to a maximum capacity of 1,500 curies (or 1,500 milligrams, at 1 curie per milligram) of tritium. However, the Project sponsor does not expect to maintain an inventory of any more than approximately 400 curies at any one time.

Regulatory Requirements

In California, radioactive material is licensed through the Radiological Health Branch (RHB) of the California Department of Public Health (CDPH). The RHB will also be involved as the machine will need to be registered as a radiation device. The Pacific Fusion Project will be using tritium as a fuel source, and tritium is a radioactive isotope of hydrogen. Accordingly, Pacific Fusion will need to apply for and obtain a radioactive material license from CDPH prior to use of any radioactive materials, and comply with the following regulations.

- **Regulatory Requirement, Radiation Protection Programs**: The Code of Federal Regulations, Title 10: Energy, Part 20: Standards for Protection against Radiation, Section 1101 (10 CFR 20.1101) requires user of radioactive materials to develop, document and implement a radiation protection program commensurate with the scope of activities. The intent of this program is to keep radiation exposure to workers and the public as low as is reasonably achievable. Components of this program include:
    a. Dose limits for workers and members of the public
    b. External and internal dose monitoring programs, as warranted
    c. Radioactive material inventory control
    d. Surveys and monitoring
    e. Access control
    f. Radiation safety training
    g. Storage and control of radioactive material
    h. Posting and labelling
    i. Waste management and disposal
    j. Records
- **Regulatory Requirement, Dose Limits To Members Of The Public**: 10 CFR 20.1301 established the following dose limits to members of the public:
    a. Total dose does not exceed 100 milli-rem (mrem) per year from licensee activities. The EPA estimates that an average person will receive 46 mrem per year just from sources in the ground. An average person in the US also receives about 40 mrem per year from the food we eat.
    b. Dose rate in any unrestricted area does not exceed 2 mrem in any one hour. Two mrem is the approximate dose you would receive from a chest X-Ray.
- **Regulatory Requirement, Radioactive Material License**: The California Code of Regulations, Title 17: Public Health, Section 30194: 30194: Approval of Applications and Specific Terms and Conditions for Specific Licenses, describes the process whereby a license will be approved. Form

RH 2050 is the license application, and the format of the application will follow the format described in Consolidated Guidance about Materials Licenses; Program Specific Guidance about Academic, Research and Development and Other Licenses of Limited Scope. Contents of the application will include:

a. Address where radioactive material is being stored and used

b. Contact person for the license – note this is generally the Radiation Safety Officer (RSO)

c. Material being used, including quantity, chemical form, and physical form

d. Purpose for which the material will be used

e. RSO Training and experience

f. Authorized user training and experience: Only authorized users are allowed to handle radioactive material, work unsupervised with radioactive material, and supervise others working with radioactive material.

g. Training for individuals working in or frequenting restricted areas, includes general radioactive material awareness training

h. Description of the facilities and equipment including a layout of laboratory spaces and where material will be stored and used

i. Description of the Radiation Safety Program and associated radiation safety standard operating procedures

j. Waste Management

- **Regulatory Requirement, Fusion Device Registration**: 17 CCR 30100 defines a radiation machine as any device that produces radiation, excluding those that only produce radiation using radioactive material. Registration of these machines is required in accordance with 17 CCR 30110.

  a. The State of California does not require shielding plans when the machines are not used in the healing arts. However, a shielding plan will be required to meet the public dose limits.

  b. Compliance with the requirements in 10 CFR 20 is required, so the shielding plan will need to address the neutrons and photons produced during the fusion reaction for both the deuterium-deuterium and the deuterium-tritium reactions.

  c. A shielding permit will be required. This will need to be requested through the City/County having jurisdiction for the building permit.

- **Regulatory Requirement, Radiological Release Regulations**: California Health and Safety Code, Section 115271.4 endorses the Clean Air Act and implements the requirements of the National Emission Standards for Radionuclide Emissions from Federal Facilities other than Nuclear Regulatory Commission Licensees and not Covered.

  a. This standard sets a limit for air emissions to not exceed 10 mrem/y.

  b. It specifies the use of the COMPLY code to demonstrate compliance with this limit.

- **Regulatory Requirement, Safety and Health Regulations**: Cal OSHA sets safety standards for the state. All construction and facility operations will need to be compliant with these standards. A detailed Health and Safety Plan (HASP) will be required to document Pacific Fusion's approach to compliance with safety standards.

Project Compliance with Regulations

Pacific Fusion will meet these regulatory requirements through a combination of design (including shielding), access control, control of material storage, and control of releases of radioactive material.

- During Phase 1 testing, Pacific Fusion will not have any radioactive material on-site. All testing will be done with deuterium, a non-radioactive isotope of hydrogen.
- In preparation for Phase 2, Pacific Fusion will apply for and obtain a radioactive material license for the possession and use of tritium, a radioactive isotope of hydrogen.
- Pacific Fusion will need to obtain a permit from the Bay Area Air District for emissions from the facility. Pacific Fusion will obtain and run the COMPLY code on an annual basis to demonstrate to the BAAD that tritium effluents from the facility do not exceed 10 mrem per year for members of the public. This is not required until Pacific Fusion obtains a radioactive material license for the use of tritium and has tritium on site.

Adherence to all of these regulatory requirements would keep radiation exposure to workers and the public as low as is reasonably achievable, and in no case exceeding 100 mrem per year, or 2 mrem in any one hour. With implementation of these regulatory requirements, operation of the Project would not create a significant hazard to the public or the environment through the routine use of hazardous or radioactive materials. This impact would be less than significant with regulatory compliance.

Routine Transport of Hazardous Materials

The Pacific Fusion may use several potential sources of tritium. The exact arrangements with those suppliers are still several years from being finalized. In general, tritium will be shipped by either air or ground using licensed containers and authorized shipping methods.

Regulatory Requirements

California has entered into formal agreement with the Nuclear Regulatory Commission (NRC), whereby the NRC has transferred its regulatory authority over the transport of licensed by-product, source, and less-than-critical quantities of special nuclear material to the State. The Project will be required to adhere to the following regulations regarding transport of their nuclear materials to the site.

- **Regulatory Requirement, Transport of Radioactive Materials**: The Department of Transportation provides uniform regulations pertaining to intrastate and interstate transportation of radioactive materials. Generally, these regulations require the shipper (i.e., Pacific Fusion) to ensure its shippers conform to U.S. Department of Transportation requirements for packaging, labelling, placarding and marking.

The underlying philosophy of these regulations is that safety is best insured by the proper preparation of shipments by shippers, rather than relying on actions to be taken by carriers. These regulations require that packaging provide protection to workers, equipment and the environment with minimal reliance of operational control or human intervention. [38]

With implementation of these regulatory requirements, the risks associated with transport of radioactive and other hazardous materials would keep radiation exposure and exposure to other hazardous chemicals to workers and the public as low as is reasonably achievable.

[38] U.S. Department of Energy, *Radioactive Materials Packaging and Transportation Primer*, 2013

Routine Disposal of Hazardous Materials

As indicated above, one of the benefits of the fusion reaction process, unlike current fission reactor plants, is that it does not result in any radioactive nuclear waste product. The byproducts of fusion reaction are helium and energy, neither of which are hazardous materials. However, during the fusion reaction when the metal cylinder target containing radioactive tritium does implode, that implosion does generate small particles of waste matter from the metal cylinder and the tritium capsule. These small particles will be dispersed throughout the shielded target chamber, but they will not escape from the chamber. These small particles are likely to be charged with low-level radioactivity.

Consistent with all Cal OSHA safety standards and the Project's detailed Health and Safety Plan, Project employees will carefully collect all of these small charged particles from the fusion chamber, and store these particles in storage drums These small particles would be classified as low-level radioactive waste (LLW). Temporary storage of LLW will allow any such waste to be accumulated until there is sufficient volume to perform an efficient off-site disposal.

Relatively small amounts of LLW (one to five shipments per year) may will be shipped to off-site disposal facilities such as the Energy Solutions facility (a licensed Class "A" LLW disposal facility in Utah, Perma-Fix Environmental Services in Oak Ridge, Tennessee; Perma-Fix in Richland Washington; or Waste Control Specialists in Andrews County, Texas. These and any other off-site disposal facilities would only be utilized if they had appropriate permits/licenses, and the capacity and capability to treat, store and/or dispose of the specific LLW.

Regulatory Requirements

- **Regulatory Requirements, Radioactive Waste Disposal**: Radioactive waste is classified according to 10 CFR Part 61 (adopted by California), which defines Class A as Low-activity, short-lived isotopes (all Pacific Fusion waste is Class A); Class B and C as higher activity or longer-lived isotopes; and greater-than-Class-C (GTCC) as "requires federal disposal".

  a. Waste Characterization: Waste must be:
     - Surveyed with radiation detection instruments
     - Analyzed for radionuclide content and half-life
     - Documented with full decay profiles and isotopic inventories

  b. Storage Requirements
     - Must be held in designated, access-controlled areas
     - Containers must be clearly labeled, shielded, and compatible with the waste
     - Temporary storage must comply with California Code of Regulations (CCR) Title 17, and the facility's Radioactive Materials License (RML)

  c. Transportation Requirements
     - Waste must be packaged, labeled, and transported in accordance with U.S. DOT and NRC regulations
     - Must be transferred by a licensed low-level radioactive waste (LLRW) broker or hauler

  d. Disposal Facility Requirements
     - Waste must be sent to a licensed disposal facility authorized to accept the specific class and form of waste (e.g., Energy Solutions in Utah, Waste Control Specialists in Texas)

- Only facilities with the appropriate state and NRC permits may be used

e. Documentation and Recordkeeping

- Detailed waste manifests must accompany each shipment (Uniform Low-Level Radioactive Waste Manifest, NRC Form 540/541)
- Records of disposal, surveys, and transfer must be retained and available for inspection by the California Department of Public Health – Radiologic Health Branch (CDPH-RHB)

f. Decontamination and Clearance (if applicable)

- Non-radioactive materials may be released for unrestricted use only after passing free-release surveys, per state guidelines

With implementation of these regulatory requirements, the disposal of the relatively small volume of low-level radioactive waste generated by the Project would not create a significant hazard to the public or the environment. This impact would be less than significant with regulatory compliance.

Reasonably Foreseeable Upset and Accident Conditions, Including Use of Hazardous Materials within One-Quarter Mile of a School

As identified above, the Project will use small quantities of tritium in its fusion process. Tritium emits a weak form of radiation as a low-energy beta particle. According to the U.S. EPA, "beta particles are more penetrating than alpha particles, but are less damaging to living tissue and DNA because the ionizations they produce are more widely spaced. They travel farther in air than alpha particles, but they can be stopped by a layer of clothing or by a thin layer of a substance such as aluminum. Beta-emitters are most hazardous when they are inhaled or swallowed."[39] According to the Agency for Toxic Substances and Disease Registry, "some beta particles, such as those from tritium, have very little energy and they can't pass through the outer layer of skin."[40] According to the U.S. Nuclear Regulatory Commission, "tritium radiation does not travel very far in air and cannot penetrate the skin. However, any exposure to radiation could pose health risks, including increased occurrences of cancer, and this risk increases with exposure."[41]

The Pacific Fusion Project's proposed fusion chamber would be located approximately 350 feet from the nearest existing light industrial use and its employees, 950 feet from the nearest residence on the opposite side of Central Avenue, and 1,300 feet from the Encinal Junior and Senior High School. These are the nearest receptors for an accidental release of tritium beta particles, and exposure to radiation could pose health risks.

Regulatory Requirements

There are many regulatory requirements applicable to the Project intended to prevent or mitigate releases of regulated substances that could have off-site consequences, summarized below.

- **Regulatory Requirement, Radioactive Material License – Radiation Health and Safety Plan or Emergency Plan**: As identified above, the Project sponsor (Pacific Fusion) will be required to

[39] U.S. EPA, accessed at: https://www.epa.gov/radiation/radiation-basics

[40] Agency for Toxic Substances and Disease Registry, Toxic Substances Portal, accessed at: https://wwwn.cdc.gov/TSP/PHS/PHS.aspx?phsid=482&toxid=86

[41] U.S. Nuclear Regulatory Commission, accessed at: https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/tritium-radiation-fs.html

obtain a license from the Radiological Health Branch (RHB) of the California Department of Public Health prior to its possession and use of tritium. As part of their application for this permit, Pacific Fusion (the registrant) is required to develop, document and implement a Radiation Safety and Protection Program that includes, but is not be limited to, consideration of the following items: [42]

a. Document the delegation and responsibility for each aspect of the radiation program and provisions for ensuring enforcement of radiation safety policies and procedures.

b. Procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA), and documentation of procedures addressing this requirement.

c. All registrants are responsible for the protection of individuals that enter the registrants' controlled areas. The registrant is also responsible for ensuring that the public is protected and that the public dose does not exceed the limits found in 10 CFR 20. Accordingly, the registrant must evaluate whether or not a Dosimetry Program for personnel monitoring of occupational exposures is required.

d. The need for radiation area monitoring shall be evaluated and documented.

e. Entry and exit from controlled areas must be adequate to ensure radiation safety. Design of emergency escape routes shall comply with applicable building codes, with documentation of procedures addressing this requirement. Areas that are required to be posted should be identified.

f. The registrant should evaluate the need for other controls in addition to those mentioned above.

g. Identify any possible emergency exposure situations or radiation accidents and document procedures to address such, to include dose assessment.

h. The facility must also maintain all records of the Radiation Protection Program, including annual program audits and program content review.

i. All registrants are required to have a written operating and safety procedure manual.

j. The Registrant must audit the Radiation Protection Program on an annual basis.

- **Regulatory Requirement, California Accidental Release Prevention Program (CalARP)**: The California EPA oversees statewide implementation of the California Accidental Release Prevention Program, which aims to prevent accidental releases of extremely hazardous substances that pose the greatest risk of immediate harm to the public and the environment, to minimize the damage if releases do occur, and to satisfy community right-to-know laws. The CalARP requires any business that handles more than threshold quantities of an extremely hazardous substance per California regulations to develop a Risk Management Plan (RMP). The RMP is implemented by the business to prevent or mitigate releases of regulated substances that could have off-site consequences through hazard identification, planning, source reduction, maintenance, training, and engineering controls. A Risk Management Plan is a document

[42] California Department of Public Health, Radiological Health Branch (RHB), Radiation Safety and Protection Program Requirement Guidance, accessed at: https://www.cdph.ca.gov/Programs/CEH/DRSEM/Pages/RHB-RML/IND/RandDLabs.aspx

prepared by the owner or operator of a stationary source containing detailed information including, but not limited to the following:

a. Regulated substances held onsite at the stationary source;

b. Off-site consequences of an accidental release of a regulated substance;

c. The accident history at the stationary source;

d. The emergency response program for the stationary source;

e. Coordination with the local emergency responders;

f. Hazard review or process hazard analysis;

g. Operating procedures at the stationary source;

h. Training of the stationary source's personnel

i. Maintenance and mechanical integrity of the stationary source's physical plant; and

j. Incident investigation

- **Regulatory Program, Consolidated Emergency Response/Contingency Plan**: California EPA and the California Environmental Reporting System oversee Consolidated Emergency Response/Contingency Plans, which are designed to consolidate emergency response and contingency plan requirements for hazardous materials handlers and hazardous waste generator facilities. Contents of these Plans include:

  a. Consolidated emergency response / contingency plans

  b. Emergency communications, phone numbers and notifications

  c. Emergency containment and cleanup procedures

  d. Facility evacuation

  e. Arrangements for emergency services

  f. Emergency equipment

  g. Earthquake vulnerability, and

  h. Employee training

- **Regulatory Requirement, Hazardous Materials Business Plan**: The California Health and Safety Code (HSC §25505(a)(3)) requires that a Hazardous Materials Business Plan (HMBP) contain an Emergency Response Plan and Procedures for immediate response to a reportable release or threatened release of a hazardous material. HMBPs must include employee training in safety procedures and emergency response plans and procedures in the event of a reportable release or threatened release. The purpose of the Hazardous Materials Business Plan (HMBP) program is to prevent or minimize harm to public health and the environment from a release or threatened release of a hazardous material. The Alameda County Department of Environmental Health (ACDEH) is the Certified Unified Program Agency (CUPA) responsible for the implementation, enforcement and administration of the HMBP program for facilities located in Alameda County.

Each of these regulations are intended to prevent or minimize harm to public health and the environment from an accidental or threatened accidental release of a hazardous materials that could have off-site consequences. With implementation of these regulatory requirements, potential accidental

conditions at the Project would be minimized such that radiation exposure to workers and the public as low as is reasonably achievable.

Cortese Sites

Department of Defense Installation Restoration Program and CERCLA

The former NAS Alameda property includes 34 total Installation Restoration sites (IR Sites) where residual soil and/or groundwater contamination from Navy activities had been identified. The Navy was responsible for conducting corrective actions and response actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for these IR Sites, prior to transferring these properties to the City of Alameda. The Pacific Fusion Project site is located on IR Site 23 in the southerly portion of the Project site and IR Site 13 in the northerly portion of the Project site (see **Figure 20**).

According to the 2012 Record of Decision for Operable Unit-2A (which includes both IR Sites 23 and 13) the Navy met its statutory obligations pursuant to CERCLA, concluding the following as specifically pertaining to the Project site:

- Site 13 requires a response action due to localized benzene concentrations in shallow groundwater, posing a vapor intrusion risk. The Navy has selected in-situ bioremediation, monitored natural attenuation and institutional controls to treat benzene and ethylbenzene until remediation goals are achieved
- Site 13 requires no further action for soils
- Site 23 requires no further action for soils or groundwater

According to the 2013 Finding of Suitability to Transfer (FOST), Site IR 23 is identified as "Response Complete", indicating that remediation goals were achieved and/or regulatory closure was obtained for CERCLA-regulated contaminants. Accordingly, no further actions were required of the Navy at this portion of the Project site for CERCLA-regulated contaminants.[43]

The FOST also concluded there were no chemicals of concern is the soil, but that benzene and ethylbenzene were detected in the groundwater at IR Site 13, presenting a risk of localized vapor intrusion. In its Record of Decision, the Navy found no further action required for soil, and in-situ bioremediation with monitored natural attenuation and institutional controls for the a localized benzene plume, and further institutional controls restricting use of groundwater for all of IR Site 13.[44] The groundwater area of Site 13 requiring remedial action was excluded from the FOST parcel, and the California Water Board retained its authority to regulate tarry refinery waste and/or co-located petroleum at IR Site 13.

[43] Tetra Tech EM, Inc., as subcontractor to Trevet, Inc., *Final Finding of Suitability to Transfer (FOST) for Former Naval Air Station Alameda*, April 19, 2013

[44] U.S. Navy, Final Record of Decision OU-2A (Sites 9, 13, 19,22, and 23) Alameda Point, September 24, 2012

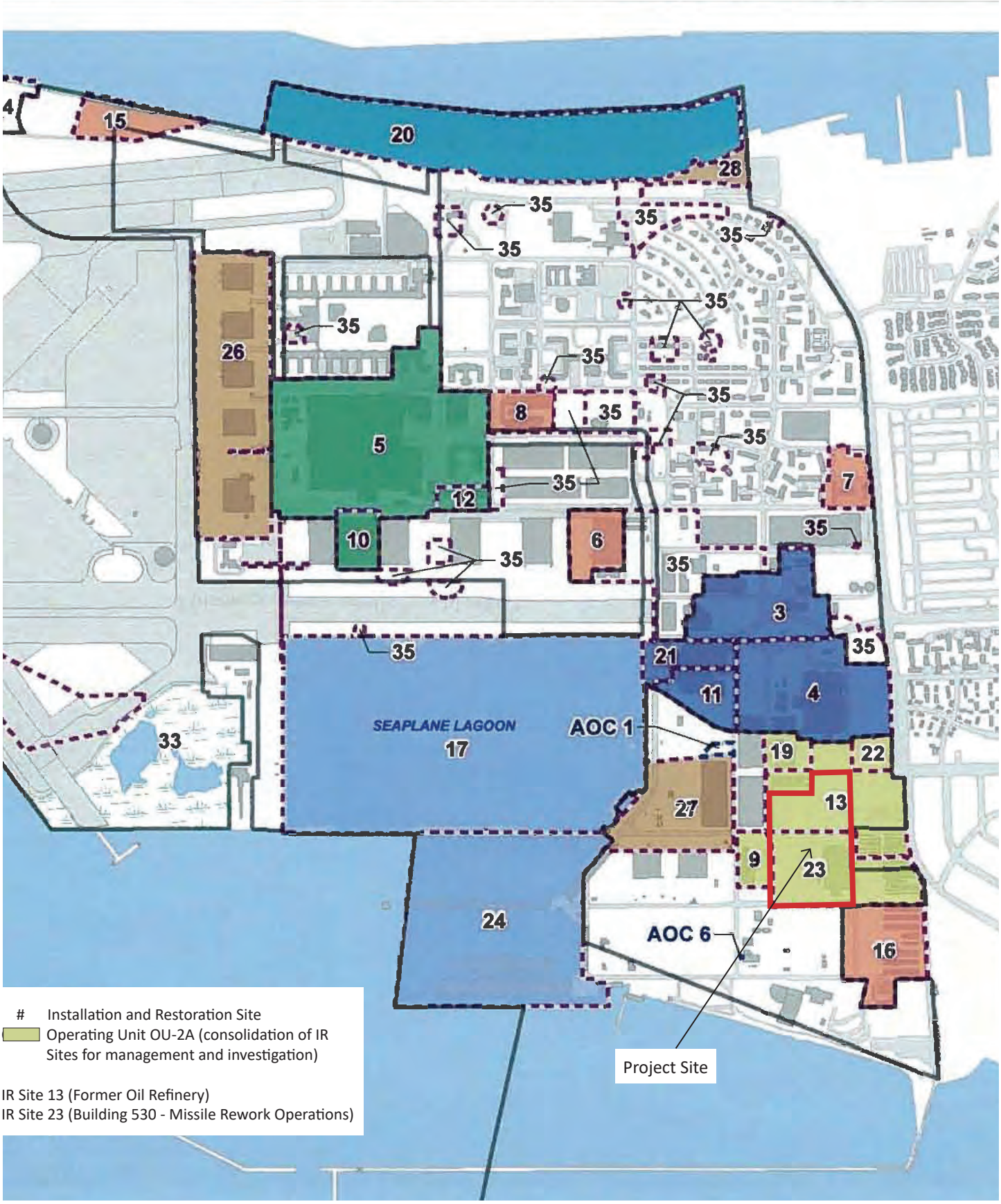


Figure 20
NAS Alameda Installation Restoration (IR) Sites

Source: TetraTech EM Inc. for Naval Facilities Engineering Command, Finding of Suitabiity to Transfer Former NAS Alameda, April 2013

Petroleum Management Plan / Petroleum Program

The Petroleum Program was established by the Navy to address soil and groundwater contamination related to petroleum products, which are excluded from CERCLA regulations. The Navy developed a Fuel Site Closure Plan in 2001 that identified a variety of Corrective Action Areas to be included in the Petroleum Program. Separately, the Navy and DTSC prepared a facility assessment to identify sites potentially requiring closure under RCRA regulations. These sites included individual or collections of underground storage tanks, above ground storage tanks, oil-water separators, generator accumulation points and vehicle wash-down areas. According to the Water Board's GeoTracker website, there are nine Corrective Action Area within or immediately adjacent to the Project site. Of these nine CAAs, the following three CAAs are "Closed" cases:

- IR SITE 23 (T1-1406) – Completed, Case Closed as of 3/2/2020, based on the Final 2019 Annual Groundwater Monitoring Report
- CAA 13, Above Ground Storage Tank B530A (T1-1422) – Completed, Case Closed as of 3/23/2015
- CAA 13, Oil-Water Separator at B530 (T1-1450) - Completed, Case Closed as of 3/9/2015

The following three CAAs are currently remaining Open Cases at the Project site. Case CAA 13 (T1-4872) represent a Corrective Action Area that contains each of these three individual cases associated with Building 530

- CAA 13, Above Ground Storage Tank at B530-B and 530-C (T1-0335)
- CAA 13 Defueling Area at B530 (T1-1447); and
- CAA 13, Oil-Water Separator at B529 (T1-1449)

In situ chemical oxidation (ISCO) treatment of petroleum hydrocarbon-impacted groundwater has been selected as the preferred remedy for the residual petroleum contamination in groundwater at Building 530. The objective of the corrective action at Building 530 is to clean up TPH as diesel in groundwater in a timely manner to support site closure and allow for redevelopment.[45] These four cases will be considered for Case Closure as such time as monitoring data indicates that remediation goals have been achieved. The two other remaining cases are addressed below.

Tarry Refinery Waste and Co-Located Petroleum

The western portion of Alameda Point was historically used for industrial purposes, including a petroleum refinery along the southwestern shore of the Island. Based on available historical information, Pacific Coast Oil Works Company operated a refinery from approximately 1879 to 1903. After refinery operations ended and associated infrastructure was removed, the ground surface elevation was raised by approximately 5 to 10 feet through placement of hydraulic dredge fill. Remaining material associated with the former refinery operations was buried at depths of approximately 5 to 10 feet below ground surface (bgs) relative to the current grade. The northerly portion of the Project site (generally north of West Oriskany Avenue) was part of this former refinery operation. According to Sanborn Fire Insurance maps from 1897, this portion of the Project site included a number of refinery operation including iron oil tanks, laboratory tanks, bleaching tanks, a pump house and other refinery-related operations.

In 2022, a soil assessment was conducted to characterize the nature and extent of possible residual contaminants from this former refinery, and Chevron Environmental Management Company (as

[45] Naval Facilities Engineering Command Southwest, Final Remedial Design for Building 530 at Alameda Point, July 2020

successors/responsible party) entered into a Voluntary Cleanup Agreement with the Water Board for the cleanup of the former refinery operations. The GeoTracker cases associated with this former refinery operation are:

- IR Site 13, Former Oil Refinery OU 2A (T1-11397) – Open, site assessment as of 1/1/2022
- Tarry Refinery Waste Site (T1-1441), Open, site assessment as of 5/5/2025

The remaining material associated with the former refinery operations is tarry material in the soil. The remedial objective is to remove and/or reduce risk from the direct-contact exposure pathway of these tarry materials in the subsurface and surface, based on anticipated use for commercial/industrial development. A Remedial Alternative Analysis for this tarry material portion of the Project site has been prepared, but that report is pending RWQCB approval of a Corrective Action Plan.[46] This Remedial Alternative Analysis identifies the preferred remediation strategy as groundwater monitoring with additional groundwater remediation if necessary, and shallow excavation of visual tarry material up to 6 feet below ground surface to physically remove tarry material and tarry material-impacted soils. The horizontal excavation footprints are proposed to encompass four locations with a total area of approximately 6,450 square feet within the Project site (west of Skyhawk Street and north of Oriskany Avenue) where surface expressions have been observed and where visual tarry material has been identified (see **Figure 21**).[47] Excavated soils from these areas (anticipated to be approximately 1,435 cubic yards) are proposed to be temporarily stockpiled, characterized and transported for disposal to an appropriate waste facility. Excavation backfill to pre-existing grade would include common fill materials from an offsite source or gravel materials to bridge the water table as necessary to allow common fill to be compacted to existing grade, consistent with the Alameda Soil Management Plan. The restored area would be hydro-seeded to reestablish vegetative cover in disturbed areas consistent with local soil erosion and sediment control requirements.[48] These remediation efforts include limited soil excavation which will likely take place before any ground-disturbing activities take place for the Project, and groundwater remedies which can be designed to accommodate site development and operations of the Project.

[46] Arcadis, *Final Remediation Alternatives Analysis and Response to Comments, Tarry Material Site*, November 15, 2024

[47] Arcadis, Figure 5 – Tarry Material Observations and Proposed Cover System and Excavation Extent, November 15, 2024

[48] Arcadis, Alternative 3 – Shallow Excavation of Visual Tarry Material, page 6, November 15, 2024

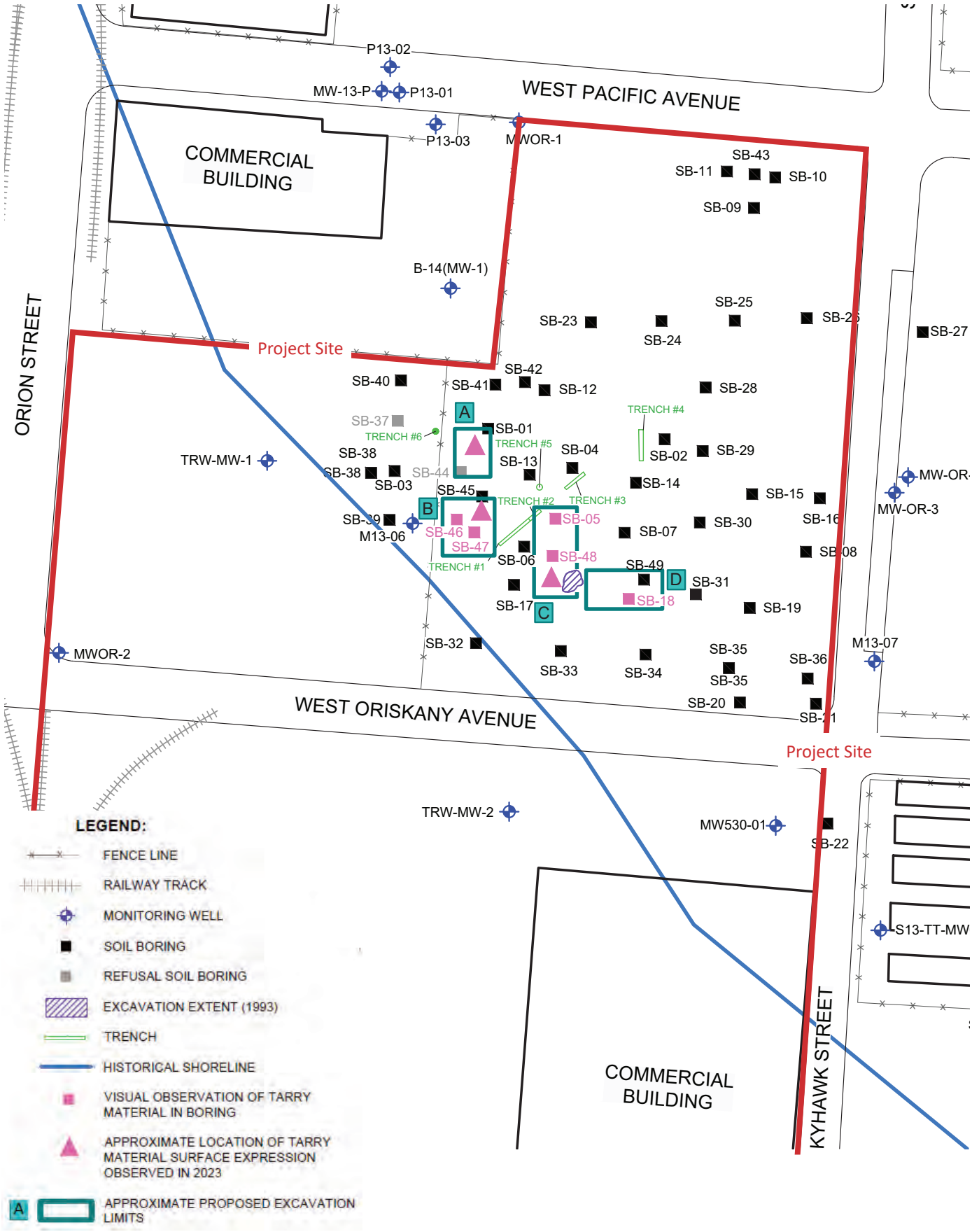


Figure 21
Chevron's Proposed Cover System and Extent of Excavation for Tarry Material Sites

Source: Arcadis, for Chevron Env. Mgt. Co., *Final Remedial Alternative Analysis and Response to Comments for the Tarry Material Site*, Figure 5, November 2024

Marsh Crust

The Marsh Crust is a layer of sediment that is contaminated with semi-volatile organic compounds that were deposited across the tidelands and the former subtidal areas of Alameda Island from the late 1800s until the 1920s. The contamination is believed to have resulted from direct discharges of petroleum products and wastes from former industrial processes into San Francisco Bay.

The City of Alameda has adopted an ordinance known as the Marsh Crust Ordinance, which applies to these former tidal or subtidal areas that have been filled-in to create dry land (see **Figure 22**). This excavation ordinance contains notification and permit requirements for excavations that may encounter a layer of deposits that commonly contain petroleum related substances. Prior to digging, contractors are required to review the Marsh Crust Map that establishes threshold depths. Most excavations at or beneath the threshold depth require a Marsh Crust Permit, an approved site-specific Health and Safety Plan, and special materials handling procedures.

Mitigation Measures and Regulatory Requirements

The two Installation Restoration sites where residual soil and/or groundwater contamination from Navy activities had been identified at the Project site (IR 13 and IR 23) are now identified as either “Response Complete” or as “Operating Properly and Successfully”, indicating that remediation programs have been implemented by the Navy and monitored and maintained until the remediation goals were achieved, and/or that regulatory closure of these sites was obtained. This remedial action to clean up the residual tarry soils within the northerly portion of the Project site will be implemented and completed by Chevron prior to any ground-disturbing activities associated with the Project.

The Project would involve excavation for installation of building substructures and subgrade utilities, and would involve deep foundations (i.e., piles) to support the new structure. Soil disturbance and potential dewatering during construction could disperse currently unknown contamination (if it exists) into the environment and expose construction workers and the public to such contaminants. To reduce environmental risks associated with a potential encounter of contaminated soil or groundwater, a Marsh Crust Permit and/or a Site Management Plan would apply to the Project (see Regulatory Requirements, below) including 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.

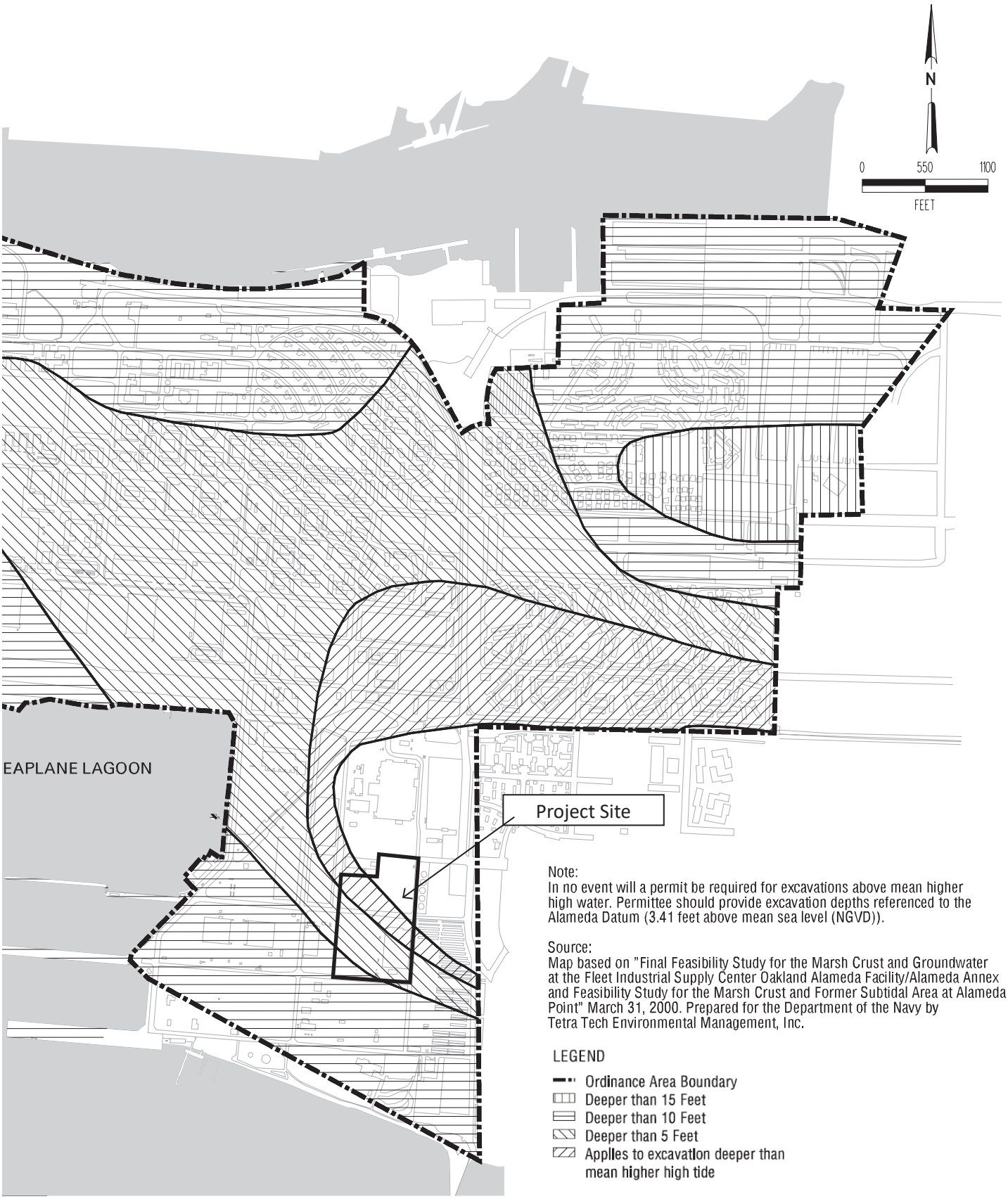


Figure 22 Marsh Crust Map

Source: Alameda, Alameda General Plan EIR, Figure HM-6, May 2021

- **Regulatory Requirement, Marsh Crust Ordinance**: It is unlawful for any person, including utility companies and their employees and contractors, to excavate below a threshold depth above the marsh crust/subtidal zone within the area of the former Naval Air Station Alameda and Fleet and Industrial Supply Center, Alameda Annex and Facility without first obtaining a permit in writing from the Chief Building Official. All excavation below the threshold depth in the area shall be performed solely in accordance with the permit as approved and issued by the City.

  a. Materials Handling: The permittee shall elect to follow one or more of the courses of action set forth below before beginning any excavation activities in the area. Unless otherwise demonstrated by the permittee by means of reconnaissance investigation, or unless the permittee prepares site management plans, soil below the threshold depth in the area of the marsh crust/subtidal zone must be managed as though it were hazardous. The permittee must comply with subsection b) or c) if testing demonstrates that the materials below the threshold depth are hazardous materials. Copies of all reconnaissance testing results and/or existing information used to satisfy the reconnaissance investigation requirements shall be reported to and filed with the City. All observations or encounters with the marsh crust/subtidal zone during excavation shall be reported to the City.

     - *A) Reconnaissance Investigation to Rule Out the Presence of Hazardous Materials Below the Threshold Depth*: The permittee may elect to use reconnaissance borings, pursuant to a plan prepared by a qualified registered engineer or registered geologist, licensed in the State of California, to rule out, to the satisfaction of the Chief Building Official, the presence of hazardous materials below the threshold depth in the area to be excavated. As part or all of the reconnaissance plan, the permittee may make use of existing information, where appropriate, if the existing information is directly relevant to the location and depth to be excavated and contains observations or results of analyses that assist in concluding whether hazardous materials are present. The reconnaissance report shall include a description of all observations from below the threshold depth evidencing the presence or absence of the marsh crust/subtidal zone. If hazardous materials are found below the threshold depth within the area to be excavated at any time (during reconnaissance or during excavation), the permittee shall comply with either subsection b) or subsection c). If hazardous materials are not found below the threshold depth within the area to be excavated, no additional materials controls, except as otherwise may be required under applicable Federal, State or local law, are required.

     - B) *Handling Materials Excavated From Below the Threshold Depth as Hazardous Materials*. If the permittee has not ruled out the presence of hazardous materials or elects not to prepare a site management plan and materials testing program, the permittee shall presume that materials excavated from below the threshold depth must be disposed at an appropriately permitted disposal facility. In addition, no excavated materials from below the threshold depth may be stockpiled prior to disposal or returned to the excavation.

     - *Preparation of Construction Site Management Plan for Handling Materials Excavated From Below the Threshold Depth*. In lieu of handling materials excavated from below the threshold depth, the permittee may elect to hire a qualified registered engineer or registered geologist, licensed in the State of California, to develop a site-specific Construction Site Management Plan, including a materials testing program, to the satisfaction of the Chief Building Official. The construction site management plan shall

include, at a minimum, provisions governing control of precipitation run-on and run-off from stockpiled soils, soil segregation, securing of stockpiled soils, duration of stockpiling, and contingency plans for handling materials excavated from below the threshold depth that prove to be hazardous materials. The permittee shall hire a qualified registered engineer or registered geologist, licensed in the State of California, to oversee compliance with the approved construction site management plan, and shall transmit to the Chief Building Official upon completion of the project written certification of compliance with the construction site management plan. The certification report shall include a description of all observations from below the threshold depth evidencing the presence or absence of the marsh crust/subtidal zone.

b. Health and Safety Plan: The applicant shall cause to be prepared by a certified industrial hygienist, and keep on the construction site at all times, a health and safety plan to protect workers at the excavation site and the public to the satisfaction of the Chief Building Official. The Chief Building Official may prepare and provide to applicants a model health and safety plan which, if used by the applicant, shall be modified by the applicant's certified industrial hygienist to suit the specific requirements of the applicant's project.

c. Excavation Site Best Management Practices: All excavation and materials handling activities permitted under this Section 13-56 shall be conducted in accordance with applicable Alameda Countywide Clean Water Program Best Management Practices and City of Alameda Storm Water Management and Discharge Control Program Ordinance requirements.

- **APP EIR Mitigation Measure 4.J-2.b and 2.c, Groundwater Management and Hazard Contingency Plans**

a. Groundwater Management Requirements: Protocols for conducting dewatering activities and sampling and analysis requirements for groundwater extracted during dewatering activities. The sampling and analysis requirements shall specify which groundwater contaminants must be analyzed or how they will be determined. The results of the groundwater sampling and analysis shall be used to determine which of the following reuse or disposal options is appropriate for such groundwater:

- Onsite reuse (e.g., as dust control);
- Discharge under the general permit for stormwater discharge for construction sites;
- Treatment (as necessary) before discharge to the sanitary sewer system under applicable East Bay MUD waste discharge criteria;
- Treatment (as necessary) before discharge under a site-specific NPDES permit;
- Offsite transport to an approved offsite facility

For each of the options listed, the Alameda Point SMP specifies the particular criteria or protocol that would be considered appropriate for reuse or disposal options. The thresholds used must, at a minimum, be consistent with the applicable requirements of the Water Board and East Bay MUD.

b. Unknown Contaminant/Hazard Contingency Plan: Procedures for implementing a contingency plan, including appropriate notification, site worker protections, and site control procedures, in the event unanticipated potential subsurface hazards or hazardous material releases are discovered during construction. Control procedures shall include:

- Protocols for identifying potential contamination though visual or olfactory observation;
- Protocols on what to do in the event an underground storage tank is encountered;
- Emergency contact procedures;
- Procedures for notifying regulatory agencies and other appropriate parties;
- Site control and security procedures;
- Sampling and analysis protocols; and
- Interim removal work plan preparation and implementation procedures.

Implementation of these regulatory requirements and prior APP EIR mitigation measures would ensure that potential soil disturbance and potential dewatering during construction would not disperse currently unknown contamination into the environment, and would not expose construction workers and the public to significant hazards impacts.

Hazardous Building Materials

To ready the Project site for new development, the existing approximately 90,000 square-foot Building 530, which was constructed in 1973, will be demolished. Given the age of the building's construction and its prior use by the Navy as a missile re-work shop, it is likely that the building includes asbestos-containing building material (ACM), lead-based paint (LBP) and perhaps other hazardous building materials such as PCBs. The APP EIR previously disclosed that demolition of existing buildings at Alameda Point may expose construction workers, the public or the environment to these hazardous materials, and that the existence, extent and condition of known hazardous building materials was fully identified in the Memorandum of Agreement between the Navy and the City.

Mitigation Measures

Because Building 530 is likely to contain hazardous building materials, the following mitigation measures of the APP EIR apply to the Project to minimize exposure of construction workers, the public or the environment to these hazardous building materials:

- **APP EIR Mitigation Measure 4.J-1a, Hazardous Building Material Assessment**: Prior to issuance of any demolition permit, the Project applicant shall submit to the City a hazardous building material assessment prepared by qualified licensed contractors for each structure intended for demolition indicating whether LBP or lead-based coatings, ACMs, and/or PCB-containing equipment are present.
- **APP EIR Mitigation Measure 4.J-1b, Health and Safety Plan**: If the assessment required by Mitigation Measure 4.J-1a indicates the presence of LBP, ACMs, and/or PCBs, the project applicant shall create and implement a health and safety plan to protect demolition and construction workers and the public from risks associated with such hazardous materials during demolition or renovation of affected structures.
- **APP EIR Mitigation Measure 4.J-1c: LBP Removal Plan**: If the assessment required by Mitigation Measure 4.J-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:
    a. Develop a removal specification approved by a Certified Lead Project Designer
    b. Ensure that all removal workers are properly trained

c. Contain all work areas to prohibit off-site migration of paint chip debris.

d. 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 disposal of intact LBP on all equipment to be cut and/or removed during the demolition.

e. 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.

f. Clean up and/or vacuum paint chips with a high efficiency particulate air (HEPA) filter.

g. Collect, segregate, and profile waste for disposal determination.

h. Properly dispose of all waste.

- **Mitigation Measure 4.J-1d, Asbestos Abatement Plan**: If the assessment required by Mitigation Measure 4.J-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 4.J-1e: PCB Abatement**: If the assessment required by Mitigation Measure 4.J-1a finds PCBs, the project applicant shall ensure that PCB abatement is conducted prior to building demolition or renovation. PCBs shall be removed by a qualified contractor and transported in accordance with Caltrans requirements

Compliance with these APP EIR mitigation measures would minimize the risk of exposure of construction workers, the public or the environment to hazardous building materials, reducing these potential impacts to less than significant.

Vicinity of Airport and Airstrip

The Project site is located adjacent to an airstrip that was formerly part of the Alameda Naval Air Station, but that airstrip is no longer active and there is no associated airport land use plan. The nearest airport is the Oakland International Airport, which is approximately 5 miles southeast of the Project site. The Project site is not located within two miles of any other airport or private airstrip and therefore there would be no impact associated with airport or aircraft safety hazards.

Wildfires

The 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 the Project will be designed and constructed in accordance with current Fire Safety Codes. Therefore, the Project would result in no impact related to wildfires.

Cumulative Hazards Effects

Cumulative hazardous materials effects could occur if activities at Project, together with other past, existing and proposed development significantly increase risks in the region. Any health or safety effects of routine hazardous materials use would be limited to the specific projects using these materials and

anyone in the immediate vicinity of these uses. No interaction would occur between these routine activities and similar activities at different sites. Based on the estimated slight increase in use of hazardous materials in construction of the Project, there would not be a substantial change in the amount of hazardous construction-based materials handled within Alameda Point.

Cumulative health and safety impacts could occur if Project-related outdoor or off-site hazards were to interact or combine with those of other existing and proposed development. The 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 typical 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 cumulative impact because the probability of accidents is relatively low, and the use of legally required packaging minimizes the consequences of potential accidents. Therefore, the Project's cumulative impact pertaining to hazardous materials would be less than significant.

The Project's potential environmental effects associated with its use of radioactive materials in its fusion process is unique to the Project, is heavily regulated, and no other past, present or future use of such radioactive materials is known.

The Project's potential environmental effects associated with its use of radioactive materials in its fusion process is unique to the Project, is heavily regulated, and no other past, present or future use of such radioactive materials is known.

Conclusions

The Project would not result in new significant impacts or substantially more severe impacts pertaining to hazards and hazardous materials than those previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR. Certain mitigation measures and regulatory requirements identified in the prior Alameda Point Project EIR and/or the General Plan 20240 EIR would apply to the Project, and implementation of these mitigation measures and regulatory requirements would substantially reduce potential hazards and hazardous material impacts of the Project.

Potentially significant hazardous impacts pertaining to the Project's operations are particularly unique to the Project, but these potentially unique or peculiar impacts are fully addressed pursuant to existing regulatory requirements that apply to the Project. The Project would not result in any new significant hazardous or hazardous materials impacts not previously identified in the prior programmatic Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component of cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative hazards and hazardous materials effects to which the Project may contribute have already been addressed in these prior EIRs. There are no changes in circumstances or new information of substantial importance relative to potential hazards or hazardous materials impacts of the Project that require updating the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topics of hazards and hazardous materials.

4-I: Hydrology and Water Quality

Would the project:	Prior EIR Determination APP EIR / GP EIR	Comparative Project Impact	Applicable Mitigation Measures and Regulatory Reqmts:	Resulting Significance
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality	APP EIR: LTS with MM GP EIR: LTS	Equal or Less Severe	Regulatory Reqmt, General Construction Permit Regulatory Reqmt, Off-Site Storm Water Pollution Prevention Plans APP EIR MM 4.I-1 (Dewatering) Regulatory Reqmt, NPDES C.3 Provisions for New Development or Redevelopment Regulatory Reqmt, NPDES C.3 Provisions for New or Reconstructed Roads	LTS with MM and Regs
b. 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	APP EIR: No Impact GP EIR: LTS	Equal or Less Severe	-	LTS
c. 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	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
d. 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	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
e. 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	APP EIR: LTS with MM GP EIR: LTS	Equal or Less Severe	-	LTS

f. 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	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
h. Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
Would the Project have impacts that are:	**Not Identified in the APP EIR or GP EIR?**	**Peculiar to the Project or its Site?**	**New Off-site and/or Cumulative Impacts?**	**New or More Severe Due to New Information?**
	No	No	No	No

Findings of the Prior EIRs

APP EIR

Less than Significant Effects

The APP EIR determined that the Alameda Point Project would have the following less than significant project-level and cumulative impacts related to hydrology and water quality:

- Construction facilitated by the APP (on land and in the water) would have a less than significant effect related to activities that could violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality.
- Development facilitated by the APP would have a less than significant effect related to potential increases in runoff that may result in flooding on or off-site.
- Maintenance dredging to serve new development facilitated by the APP would have a less than significant effect on the water quality of the Bay.
- Development facilitated by the APP would have a less than significant effect related to exposure of people or structures to risk of loss, injury or death from inundation by a tsunami.

Regulatory Requirements

The APP EIR concluded that several of these potential impacts of the Alameda Point Project would be less than significant due to required implementation of existing regulatory requirements, including:

a. San Francisco Bay Regional Water Quality Control Board (RWQCB) requirements for a General Construction Permit, inclusive of a Storm Water Pollution Prevention Plan that outlines construction stormwater quality management practices (likely based on the Alameda County Clean Water Program Stormwater Quality Management Plan)

b. Permits from the U.S. Army Corps of Engineers, RWQCB, San Francisco Bay Conservation and Development Commission and the City of Alameda, which would include measures to protect water quality during construction

c. Regulatory requirements to implement stormwater management measures on site, as well as to install new stormwater systems throughout the APP to collect and convey stormwater

flows through new outfall structures, thereby minimizing the impact related to increased runoff

Potentially Significant Impacts

The APP EIR also determined that the Alameda Point Project would have the following potentially significant project-level and cumulative impacts related to hydrology and water quality:

- Development facilitated by the APP could potentially involve dewatering and shoring activities, which could result in discharge that, if contaminated, could adversely affect the receiving water quality.
- Development facilitated by the APP could result in increased maintenance at new landscaping and open areas that could result in significant effects on receiving water quality.
- Development facilitated by the APP could potentially place new housing and other structures in an area subject to 100-year flooding, but would have a less than significant effect related to subjecting people or structures to a substantial risk of loss from a 100-year storm event.
- Development facilitated by the APP could potentially be subjected to flooding due to sea level rise.

Mitigation Measures

The APP EIR identified the following mitigation measures that, when implemented on a project-by-project basis, would reduce significant hydrology and water quality impacts to less than significant:

- **Mitigation Measure 4.I-1 (Dewatering)**
- **Mitigation Measure 4.I-2 (Integrated Pest Management)**
- **Mitigation Measure 4.I-6 (Flood Protection Measures), and**
- **Mitigation Measure 4.I-8 (Sea-Level Protection)**

With implementation of all regulatory requirements and mitigation measures, the APP EIR concluded that the Alameda Point Project would not result in any significant and unavoidable impacts related to hydrology and water quality.

APP Stormwater Management Plan

As part of the APP, the City of Alameda prepared a Stormwater Management Plan (SWMP) to address stormwater treatment for future development at Alameda Point.[49] The purpose of the SWMP is to upgrade the aging stormwater infrastructure system at Alameda Point by removing six existing stormwater outfalls, abandoning 14 existing outfalls in-place, and installing five new outfalls to replace the removed and abandoned outfalls. Additionally, the SWMP creates a comprehensive framework to ensure that future development at Alameda Point not only meets the Low Impact Development ("LID") requirements established by the Municipal Regional Stormwater NPDES Permit and Waste Discharge Requirements issued to the City (MRP, Order No R2-2009-0074), but exceeds the MRP requirements by establishing higher LID requirements for individual developments.

The U.S. Army Corps of Engineers (Corps) authorized the SWMP pursuant to Clean Water Act (CWA) Section 404 Nationwide Permits, and the RWQCB certified the SWMP pursuant to CWA Section 401 Water Quality Certification. The requirements of the Water Boards authorization of the SWMP include

[49] City of Alameda, *Alameda Point Preliminary Stormwater Management Plan*, prepared by Balance Hydrologics, Inc., July 2015

the following obligations of the City of Alameda to ensure each new development project within APP complies with the authorized SWMP:

- Prior to the start of construction, the City shall submit an applicant's dewatering plan, including the area to be dewatered, timing of dewatering, and method of dewatering to be implemented. The dewatering plan shall include water quality monitoring and reporting sufficient to ensure all dewatering discharges and bypassed flows meet applicable receiving water limits and water quality objectives in the Basin Plan.
- The City shall ensure that each developer within Alameda Point proposing to disturb one or more acres of land shall obtain coverage under and comply with the Statewide NPDES Construction Stormwater General Permit.
- The City shall ensure that each development project proponent prepares and implements a site-specific Stormwater Pollution Prevention Plan (SWPPP).
- The City shall require that future project proponent submit a proposed project-specific post-construction stormwater treatment plan (SWMP) for Water Board for review and acceptance. The project-specific SWMP shall describe the post-construction stormwater treatment Best Management Practices (BMPs) for post-construction stormwater runoff from the Project's new and re-created impervious surfaces.

Each of the obligations cited above apply to all on-site work related to future development projects, as well as any off-site obligations that development projects may have toward implementation of the overall stormwater infrastructure within Alameda Point.

The RWQCB found that removing and replacement of stormwater outfalls would result in permanent and temporary impacts to Waters of the State, but that overall the SWMP was found to result in a net reduction of permanent fill in San Francisco Bay. The RWQCB determined that these improvements would provide the first step toward greater stormwater treatment at Alameda Point and that no additional mitigation was required.

GP EIR

The GP EIR determined that construction and operation of new buildings and facilities allowed pursuant to the Alameda General Plan 2040 would:

- Would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality
- Would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge or impede sustainable groundwater management of the basin
- Would not substantially alter existing drainage patterns, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation on-or off-site
- Would not substantially alter existing drainage patterns through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-or off-site, or create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff

- Would not substantially alter existing drainage patterns, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would impede or redirect flood flows
- Would not allow future development located within a flood hazard, tsunami or seiche zone could risk the release of pollutants due to project inundation, and
- Would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan

The GP EIR concluded that each new development project pursuant to the General Plan would require evaluation for potential hydrology and water quality impacts, and mitigation would be identified to reduce or avoid potentially significant impacts. Each future development project in Alameda meeting the applicable thresholds would be required to comply with the Construction General Permit and with the NPDES C.3 stormwater regulations, as well as the Alameda Municipal Code and proposed General Plan policies intended to protect water quality and reduce adverse effects from flooding and sea level rise. Compliance with these regulations and policies would minimize the potential for erosion, sedimentation, degradation of water quality, flooding, and interference with groundwater recharge.

Comparative Assessment of the Project

Site Construction

Construction at the Project site would not involve any in-water construction activities, but would involve excavation, soil stockpiling and other ground-disturbing activities. These construction activities would generate loose, erodible soils that could be washed into surface water by rain or by water used during the construction activities. Soil erosion could cause excess sediment loads in waterways and eventually affect the water quality of the San Francisco Bay. Construction would also involve the use of fuel and other chemicals that could get washed off into the stormwater. These construction impacts, while temporary, would be potentially significant.

Regulatory Requirements

The San Francisco Bay RWQCB requires projects whose construction size is greater than 1 acre to apply for and receive a General Construction Permit. Whereas the Project does involve the disturbance of more than 1 acre of soil during construction, the following regulatory measure as cited in the APP EIR is required of the Project:

- **Regulatory Requirement, General Construction Permit**: The Project sponsor shall apply for and demonstrate evidence of RWQCB approval of a General Construction Permit. Requirements as part of the General Construction Permit would include preparation and execution of a Stormwater Pollution Prevention Plan (SWPPP) that would outline construction stormwater quality management practices to be implemented during the construction process.

    a. The SWPPP would describe erosion control measures to be implemented by the Project during construction (such as installation of silt fences, hay bales and stormwater inlet protections) to prevent sediment and heavy pollutants from running off the site and into the stormdrain system.

    b. The SWPPP would also describe measures to be implemented by the Project during construction to reduce the potential for construction-related pollutants (e.g., fuels, motor oils and other contaminants) to contact stormwater, and to eliminate or reduce the discharge of contaminant materials to stormwater.

Adherence to the RWQCB General Construction Permit requirements would reduce soil erosion and release of hazardous materials into watercourses during construction. With implementation of these regulatory requirements, construction of the Project would not cause degradation of water quality or violate any water quality standards. The impact would be less than significant after regulatory compliance.

Construction Period Dewatering

Across much of the City of Alameda the current depth to groundwater is 10 feet or less, and is less than 6 feet in many areas.[50] Drilling for foundation support piles and excavation for the Project's subsurface foundations and utility trenches could intercept shallow groundwater and require dewatering (i.e., removal of groundwater by pumping) to lower groundwater levels, and require drying the area for construction. Groundwater could flow into excavations that extend below the shallow groundwater table. Practices that are likely to be 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 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 Alameda Point, and could become sediment-laden from construction activities. To address this condition, the Project would be required to implement a relatively impervious shoring system of tight interlocking sheet piles or other impervious-type wall, or to pump and discharge the groundwater inflow. If the groundwater to be discharged is contaminated, impacts to the receiving waters would be a significant impact.

Mitigation Measures

Because of the potential need for dewatering during Project construction, the following mitigation measure of the APP EIR applies to the Project:

- **APP EIR Mitigation Measure 4.I-1, Dewatering**: If groundwater dewatering is required, the Projects shall implement the following measures associated with the extraction of water during Project construction:

    a. The Project shall obtain a groundwater discharge permit as may be required by the RWQCB, addressing treatment of groundwater flows prior to discharge. The Project applicant shall comply with applicable permit conditions associated with the treatment of groundwater prior to discharge.

    b. The Project applicant may discharge extracted water to the sanitary sewer or storm drain system only upon authorization and issuance of required permits from the City of Alameda.

    c. If necessary, a dewatering collection and disposal method shall be prepared and implemented for the Project.

In the event of the need for groundwater dewatering, compliance with this mitigation measure would minimize water quality impacts associated with groundwater discharge. The Project's potential impacts pertaining to dewatering-related water quality concerns would be reduced to a less than significant level.

[50] City of Alameda, *GP EIR,* 2021, page 15-22

Off-Site Construction

The Project may be obligated to construct certain off-site components of the City of Alameda's SWMP, potentially including upgrading the aging stormwater infrastructure pipe system surrounding the Project site with new pipes, constructing off-site stormwater pipes from the Project site to a new outfall at the Bay, and existing stormwater outfall(s). These potential off-site obligations may involve removing portions of the existing shoreline slope protection (rock riprap and concrete rubble) and excavating to subgrade; installing temporary sheet pile cofferdams around each work area for dewatering; constructing new outfall headwalls with reinforced concrete using cast-in-place methods; constructing new outfall pipelines, laid upstream and landside of the outfall headwalls; inland trenching and shoreline slope stabilization; backfilling with engineered fill materials; and installing rock slope protection along the shoreline.

Mitigation Measures

Because the Project may be obligated to construct certain off-site components of this SWMP, the following regulatory requirements of the RWQCB's authorization of the SWMP apply to any such off-site construction conducted pursuant to the Project:

- **Regulatory Requirement, Off-Site Storm Water Pollution Prevention Plans**: To the extent that the Project is responsible for off-site improvements to the City's stormwater system, the Project applicant shall prepare and implement a construction-phase Storm Water Pollution Prevention Plan (SWPPP) that specifically states which best management practices will be used to prevent the discharge of sediment into waters of the State. The SWPPP shall provide plans and specifications for erosion and sediment best management practices (BMPs), means of waste disposal, methods for implementation of approved local plans, post-construction sediment and erosion control BMPs and maintenance responsibilities, non-stormwater management BMPs, and BMP performance inspection requirements.

With implementation of these regulatory requirements, the removal and replacement of components of the City's stormwater system will not violate State water quality standards.

Operational Water Quality and Stormwater Runoff

The Project site is predominantly paved or covered with rooftops of the existing on-site building, with stormwater runoff flowing into on-site storm drains or directly into San Francisco Bay, with minimal infiltration in areas where the existing paving is deteriorating. The Project would replace these existing impervious surfaces with a combination of new impervious surfaces (structures and new paving) as well as new pervious surfaces (i.e., landscape areas). The Project would reduce the extent of impervious surface area of the site by introducing the new landscape areas. These new pervious surfaces would allow for increased stormwater infiltration and reduce the peak stormwater runoff as compared to existing conditions. The stormwater runoff from the Project's new impervious surfaces would flow into the Project's storm drain system, and eventually to the Bay.

The Project may also be obligated to construct certain off-site components of the City of Alameda's Master Infrastructure Plan (MIP), including off-site street segments. The MIP, in conjunction with the SWMP, establishes a comprehensive framework to ensure that future development at Alameda Point meets Low Impact Development (LID) requirements established by the MRP and Waste Discharge Requirements issued to the City. Pursuant to these requirements, all streets in Alameda Point are to be designed and constructed to prevailing "Green Streets Standards", whereby bioretention systems can be designed to support sidewalks, streets and parking areas, and can be used where minimal open or

landscape spaces exist. The City's SWMP provides example configurations of LID treatment measures to shows how a typical street intersection could be retrofitted to include bioretention systems.

Regulatory Requirements

Pursuant to the National Pollutant Discharge Elimination System (NPDES), the San Francisco Bay RWQCB issued a Municipal Regional Stormwater (MRP) NPDES Permit to regulate stormwater discharges from municipalities and local agencies within its jurisdiction.[51] Development projects must comply with the rules and standards of the NPDES Permit. Provisions C.3 of the NPDES stormwater permit are intended to reduce the introduction of urban pollutants into San Francisco Bay and the creeks, streams, lakes and other water bodies in the region. In general, projects subject to Provision C.3 must include capture and on-site treatment of all stormwater from the site prior to its discharge, including rainwater falling on building rooftops. The C.3 provisions apply to projects that create or replace 10,000 square feet or more of impervious surface (certain types of land uses trigger the C.3 provisions at 5,000 square feet).

Whereas the Project does involve the creation and/or replacement of more than 10,000 square feet of impervious surface, the following regulatory measure as cited in the GP EIR is required of the Project:

- **Regulatory Requirement, NPDES C.3 Provisions for New Development or Redevelopment**: The Project is subject to Provisions C.3 as proscribed in the Municipal Regional Stormwater (MRP) NPDES Permit. Accordingly, the Project is required to implement appropriate source controls, low-impact site design measures and stormwater quality treatment measures to reduce the discharge of stormwater pollutants to the maximum extent practicable.

    a. Source control measures are intended to limit pollutant generation, discharge and runoff, and include storm drain inlet stenciling; landscaping that minimizes irrigation and runoff, promotes surface infiltration where possible, minimizes the use of pesticides and fertilizers, and incorporates appropriate sustainable landscaping practices and programs; appropriate covers, drains and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas; and covered trash, food waste and compactor enclosures.

    b. Low Impact Development (LID) site design measure are intended to reduce runoff and mimic the site's pre-development hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapo-transpiring, and/or bio-treating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource.

    c. Stormwater treatment measures may include directing roof runoff, runoff from sidewalks and walkways and runoff from driveways and/or uncovered parking into vegetated areas; and or constructing sidewalks, walkways, driveways, bike lanes and/or uncovered parking lots with pervious pavement systems. Stormwater treatment systems must meet the hydraulic sizing design criteria as specified in the MRP.

- **Regulatory Requirement, NPDES C.3 Provisions for New or Reconstructed Roads**: The Project's construction of new off-site roadways are similarly subject to Provision C.3 requirements, and

[51] California Regional Water Quality Control Board San Francisco Bay Region, *Municipal Regional Stormwater NPDES Permit* (Order No. R2-2022-0018, NPDES Permit No. CAS612008), May 11, 2022

stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire street or road that is reconstructed.

Adherence to NPDES C.3 requirements of the MRP would reduce stormwater runoff and pollutant loads in stormwater runoff from the Project during its operations. The Project includes a preliminary Stormwater Management Plan that demonstrates how the stormwater treatment measures required pursuant to the NPDES C.3 requirements are intended to be implemented at the Project site (see **Figure 23**). With implementation of these regulatory requirements, operation of the Project would not cause degradation of water quality or violate any water quality standards. The impact would be less than significant with regulatory compliance.

Flood Risks and Storm Events

Flood hazards at Alameda Point include areas subject to flooding in a 100-year tidal event, and the perimeter shoreline that is subject to flooding in the 100-year tidal event and wave/wind run up. The highest tide levels associated with storm surge events can be high enough to cause localized flooding of the lowest lying portions of Alameda Point under existing conditions and localized flooding could occur along much of the northern perimeter of Alameda Point whenever any significant rainfall event coincides with the higher high tide peak. The level of risk from a 100-year flood depends on the location and design of the site development and structures.

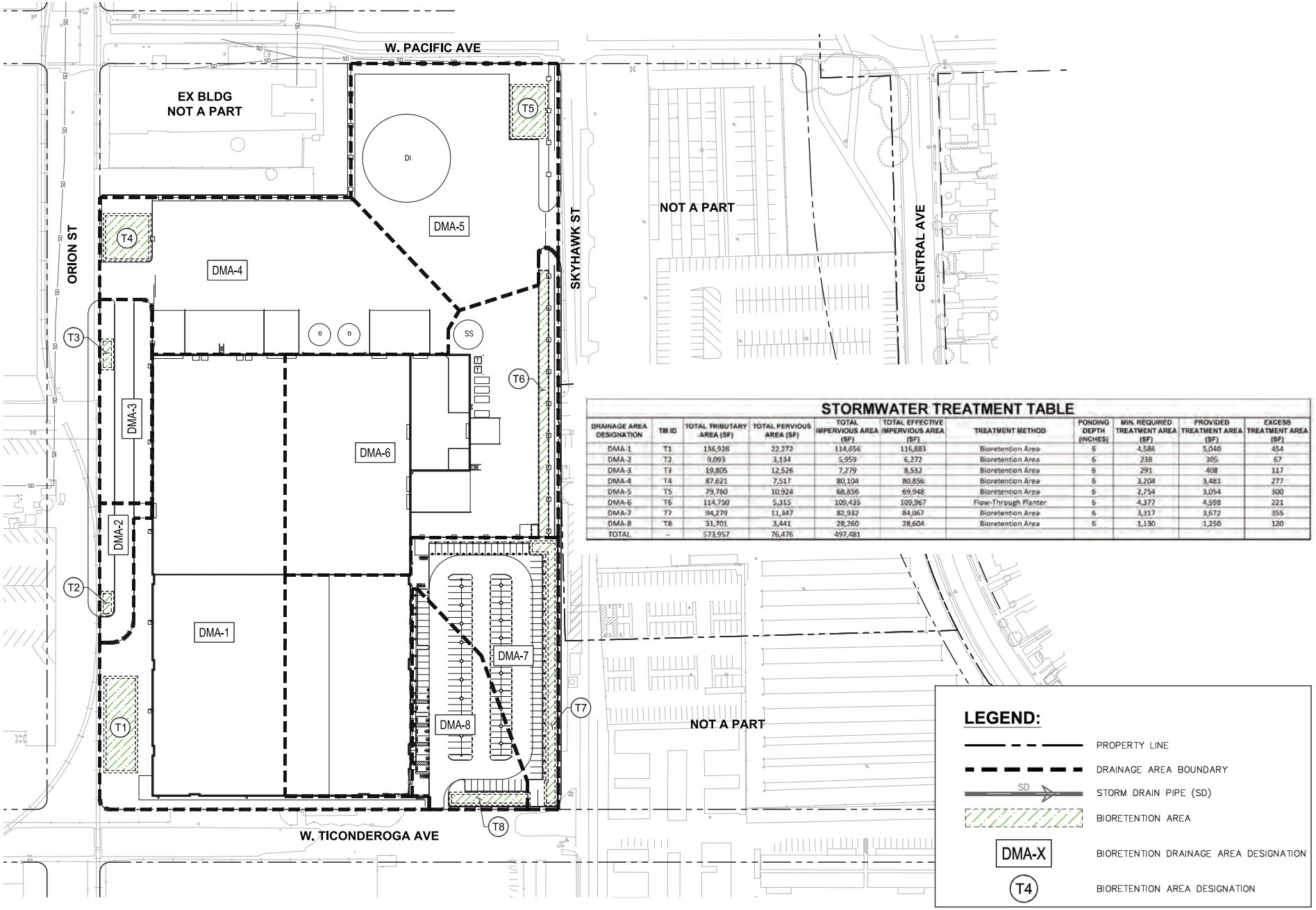
As demonstrated in **Figure 24**, the Project site is not along the perimeter shoreline, is not within the lowest lying portions of Alameda Point, and is not at risk from a 100-year flood. This impact is less than significant for the Project and no mitigation measures are required.

Tsunami Risk

As presented in the APP EIR, a 2013 USGS report estimates a high community-wide hazard from a tsunami throughout Alameda. The report indicates that in the event of a tsunami, the maximum on-shore run-up could cause inundation of a majority of Alameda Point, including the Project site. The level of risk from a tsunami depends on 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 the likelihood of a tsunami. As was concluded in the APP EIR, and considering both the possibility of the tsunami occurrence and the design and location of the Project, the impact to the Project from tsunami hazards is considered less than significant and no mitigation measures are required.

Sea Level Rise

As presented in the APP EIR, the structure within the Project site would be located above the 100-year tidal elevation plus 18 inches for sea level rise considerations (see **Figure 25**). The Project site would be designed to be at or above the 100-year tidal elevation with additional considerations for sea level rise (18 inches) and wave/wind run-up, and the impact to the Project from sea level rise is considered less than significant and no mitigation measures are required.



STORMWATER TREATMENT TABLE

DRAINAGE AREA DESIGNATION	TM ID	TOTAL TRIBUTARY AREA (SF)	TOTAL PERVIOUS AREA (SF)	TOTAL IMPERVIOUS AREA (SF)	TOTAL EFFECTIVE IMPERVIOUS AREA (SF)	TREATMENT METHOD	PONDING DEPTH (INCHES)	MIN. REQUIRED TREATMENT AREA (SF)	PROVIDED TREATMENT AREA (SF)	EXCESS TREATMENT AREA (SF)
DMA-1	T1	136,928	22,272	114,656	116,883	Bioretention Area	6	4,586	5,040	454
DMA-2	T2	9,093	3,134	5,959	6,272	Bioretention Area	6	238	305	67
DMA-3	T3	19,805	12,526	7,279	8,532	Bioretention Area	6	291	408	117
DMA-4	T4	87,621	7,517	80,104	80,856	Bioretention Area	6	3,204	3,481	277
DMA-5	T5	79,780	10,924	68,856	69,948	Bioretention Area	6	2,754	3,054	300
DMA-6	T6	114,750	5,315	109,435	109,967	Flow-Through Planter	6	4,377	4,598	221
DMA-7	T7	94,279	11,347	82,932	84,067	Bioretention Area	6	3,317	3,672	355
DMA-8	T8	31,701	3,441	28,260	28,604	Bioretention Area	6	1,130	1,250	120
TOTAL	-	573,957	76,476	497,481						

Figure 23
Project's Preliminary Stormwater Management Plan

Source: HPA Architecture and BKF Engineers, Preliminary Stormwater Management Plan, Application Sheet C3.0, 4/23/2025

Figure 24
Flood Zones, as Mapped by FEMA

Source: Alameda, *Alameda GP EIR*, Figure WQ-7, from FEMA

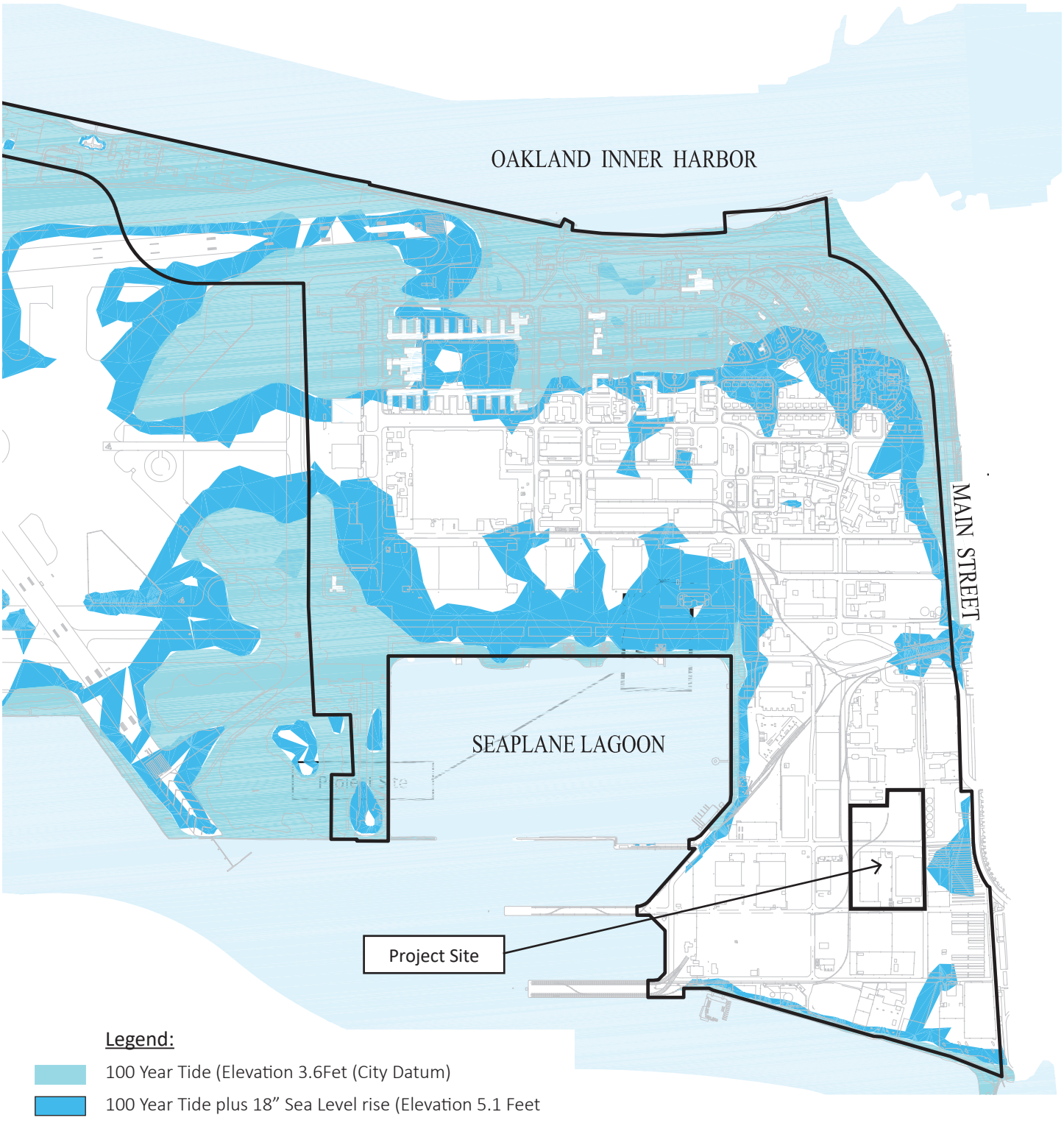


Figure 25
Areas of Inundation Under High Tide and Sea Level Rise Scenarios

Source: Alameda, *Alameda Point Project EIR*, Figure 4.I-1, original source: CBG, 2013

Cumulative Hydrology Effects

Implementation of the Project, together with other past, present and reasonably foreseeable future projects in the vicinity could cumulatively increase stormwater runoff and pollutant loading to the Inner Harbor and the Bay. The 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. All 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 are also required to comply with Alameda County and City of Alameda ordinances regarding water quality, including ACCWP NPDES permitting requirements. Therefore, the effect of the Project, in combination with other cumulative projects' effects on water quality and hydrology would not be significant.

Implementation of other past, present and reasonably foreseeable future projects in the vicinity could expose people and/or property to flooding from a 100-year event and sea level rise. However, the Project site is not susceptible to flooding from high tides in a 100-year storm event, or near-term sea level rise, and would not result in a significant cumulative impact to people and/or property from these conditions. The Project would have less than cumulatively considerable hydrology impacts.

Conclusions

The Project would not result in new significant impacts or substantially more severe impacts to hydrology or water quality than those previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR. Certain mitigation measures and regulatory requirements identified in the prior Alameda Point Project EIR and/or the General Plan 20240 EIR would apply to the Project, and implementation of the mitigation measures and regulatory requirements would substantially reduce potential hydrology and water quality impacts of the Project.

No significant hydrology or water quality impacts are peculiar to the Project or its site. The Project would not result in any new significant hydrology or water quality impacts not previously identified in the prior programmatic Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component of cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative hydrology and water quality effects to which the Project may contribute have already been addressed in these prior EIRs. There are no changes in circumstances or new information of substantial importance relative to potential hydrology or water quality impacts of the Project that require updating the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topics of hydrology or water quality.

4-K: Land Use

Would the project:	Prior EIR Determination APP EIR / GP EIR	Comparative Project Impact	Applicable Mitigation Measures:	Resulting Significance
a. Physically divide an established community	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
b. Cause a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
Would the Project have impacts that are:	**Not Identified in the APP EIR or GP EIR?**	**Peculiar to the Project or its Site?**	**New Off-site and/or Cumulative Impacts?**	**New or More Severe Due to New Information?**
	No	No	No	No

Findings of the Prior EIRs

APP EIR

The APP EIR determined that the Alameda Point Project would have the following less than significant impacts related to land use:

- Development facilitated by the APP would not physically divide an established community
- Development facilitated by the APP would not significantly conflict with applicable land use plans, policies or regulations of any agency with jurisdiction over the project that have been adopted for the purpose of avoiding or mitigating an environmental effect
- Development facilitated by the APP would not significantly conflict with an applicable Habitat Conservation Plan or Natural Community Conservation Plan

No mitigation measures or regulatory measures were identified as being necessary to address these effects.

GP EIR

Similarly, the GP EIR determined that implementation of the Alameda 2040 General Plan would not physically divide an established community, and would not conflict with a land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Comparative Assessment of the Project

Physically Divide a Community

The Pacific Fusion Project would not physically divide an established community by creating barriers that prevent people or goods from moving through the community, and its proposed new structure and potential infrastructure improvements would not physically separate one portion of the community

from the remainder of that community. The Project would construct portions of the Alameda Point's grid street system that would provide improved connections throughout Alameda Point and between Alameda Point and other areas of Alameda.

Consistency with Plans and Policies of Other Agencies

BCDC San Francisco Bay Plan

The Project site is not located within BCDC jurisdiction (which includes all areas of San Francisco Bay that are subject to tidal action, and lands located between the shoreline of San Francisco Bay and a line 100 feet landward of and parallel with that line), and so is not subject to the San Francisco Bay Plan.

To the extent that the Project may construct off-site infrastructure improvements including improvements to the City's stormdrain outfall into the Bay, BCDC has already issued a permit that authorizes removal of six existing outfalls, installing five new outfalls each at its previous location, and permitting temporary construction efforts for these outfalls. [52]

Public Trust

The Project site is not located within the 1,599 acres of both filled land and present tide and submerged land within Alameda Point that are subject to the Public Trust. These lands include Alameda Point's Northwest Territories Open Space District, the proposed Open Space District south of West Hornet Avenue, and the shoreline adjacent to the Seaplane Lagoon.

Alameda General Plan

As demonstrated on the Planning Policy and Zoning Consistency chapter of this CEQA Checklist, the Project is fully consistent with the land use polices and land used designations of the Alameda Point Project, the Alameda 2040 General Plan, and current zoning.

Habitat Conservation Plans or Natural Community Conservation Plans

The San Francisco Estuary Project is a federal/state/local partnership established under the Clean Water Act's National Estuary Program 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 Project poses not conflicts with the San Francisco Estuary Project.

The San Francisco Baylands Habitat Goals and Subtidal Habitat Goals Report provides a scientific foundation and approach for the conservation and enhancement of the baylands and submerged areas of San Francisco Bay. The Project poses not conflicts with the San Francisco Baylands Habitat and Subtidal Habitat Goals.

The USFWS Biological Opinion for Alameda Point as embodied in the Navy's Declaration of Restrictions place certain restrictions on development within Alameda Point, intended to be protective of biological resources. The Project poses not conflicts with the USFWS Biological Opinion for Alameda Point or the Navy's Declaration of Restrictions.

Cumulative Land Use Effects

As analyzed in the Alameda Point Project EIR, future development within Alameda Point (including the Project) would result in less than significant impacts related to physically dividing an established community or conflicting with any land use plan, policy or regulation adopted for purposes of avoiding

[52] San Francisco Bay Conservation and Development Commission, Permit No. M2014.029.01 as amended November 7, 2018

or mitigating an environmental effect. Alameda Point is primarily self-contained and bounded by roadways, the Oakland Estuary, federal land and San Francisco Bay. Land use impacts from projects within Alameda Point are local and generally limited to Alameda Point. The area immediately east of Alameda Point is generally built-out pursuant to the General Plan, and these adjacent uses would not combine with the development in Alameda Point (including the Project) to result in cumulative impacts related to physical division of an established community.

As analyzed in this CEQA Checklist, the Project is consistent with the City's General Plan, the Alameda Point Project and other applicable land use regulations requirements. Other cumulative projects would similarly be subject to the General Plan, Alameda Point Project and the Zoning Ordinance to ensure land use compatibility. The Project would not combine with other developments to result in a significant cumulative land use impact associated with conflicts with plans and policies. Thus, the proposed project would not result in a significant cumulative land use impact.

Conclusions

The Project would not result in new significant impacts or substantially more severe land use impacts than those previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR. No mitigation measures or regulatory requirements were identified in the prior Alameda Point Project EIR and/or the General Plan 20240 EIR that would apply to the Project. The Project's land use impacts are less than significant.

No significant land use impacts are peculiar to the Project or its site. The Project would not result in any new significant land use impacts not previously identified in the prior programmatic Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component of cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative land use effects to which the Project may contribute have already been addressed in these prior EIRs. There are no changes in circumstances or new information of substantial importance relative to potential land use impacts of the Project that require updating the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topic of land use.

4-K: Noise

Would the project:	Prior EIR Determination APP EIR / GP EIR	Comparative Project Impact	Applicable Mitigation Measures:	Resulting Significance
a. Generate a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies	APP EIR: SU GP EIR: LTS	Equal or Less Severe	APP EIR MM 4.G-1a, Construction Hours APP EIR MM 4.G-1b, Construction BMPs APP EIR MM 4.G-1c, Pile Driving APP EIR MM 4.G-1d, Tracking and Responding to Complaints	LTS with MM
b. Generate a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies	APP EIR: SU GP EIR: LTS	Equal or Less Severe	-	LTS
d. Generate excessive groundborne vibration or groundborne noise levels	APP EIR: LTS with MM GP EIR: LTS	Equal or Less Severe	APP EIR MM 4.G-1c, Pile Driving	LTS
e. For a project located within the vicinity of a private airstrip or 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 the project expose people residing or working in the project area to excessive noise levels?	APP EIR: No Impact GP EIR: LTS	Equal or Less Severe	-	No Impact
Would the Project have impacts that are:	**Not Identified in the APP EIR or GP EIR?**	**Peculiar to the Project or its Site?**	**New Off-site and/or Cumulative Impacts?**	**New or More Severe Due to New Information?**
	No	No	No	No

Findings of the Prior EIRs

APP EIR

The APP EIR determined that the Alameda Point Project would have no impact related to aircraft or airport-related noise. Alameda Point is not located within an Airport Influence Area or within an identified noise contour associated with airport operations.

Potentially Significant Impacts

The APP EIR determined that the Alameda Point Project would have the following significant impacts related to noise:

- Construction facilitated by the APP could potentially expose persons to or generate construction noise levels in excess of the City noise standards
- Construction facilitated by the APP could potentially result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels
- Transportation-related operations facilitated by the APP could potentially result in a substantial permanent increase in ambient noise levels in the vicinity or above levels existing without the APP
- Non-transportation-related operations facilitated by the APP could potentially result in a substantial permanent increase in ambient noise levels in the vicinity
- Development facilitated by the APP could potentially place noise-sensitive residential uses in a noise environment that would exceed the City's goal for exterior/interior noise exposure

Mitigation Measures

The APP EIR identified the following mitigation measure that, when implemented on a project-by-project basis, would reduce significant noise impacts:

- **Mitigation Measure 4.G-1a (Standard Construction Hours)**
- **Mitigation Measure 4.G-1b (Daytime Construction Noise BMPs)**
- **Mitigation Measure 4.G-1c (Pile Driving Activities)**
- **Mitigation Measure 4.G-1d (Respond to and Track Complaints)**
- **Mitigation Measure 4.G-4 (Operational Noise Controls)**
- **Mitigation Measure 4.G-5 (Noise Study for Residential Development)**

The APP EIR concluded that with implementation of the above mitigation measures, construction-period vibrations and non-transportation related operational noise impacts would less than significant.

The APP EIR also concluded that with the identified mitigation measures, construction-period noise would comply with the City of Alameda Noise Ordinance and would reduce the construction noise levels from the project to the extent feasible. However, certain construction activities may need to occur outside of the proscribed construction hours and could result in substantial noise in the more sensitive evening and nighttime hours, and that such construction noise would be considered **significant and unavoidable**.

The APP EIR also concluded that because of the uncertainty in quantifying the effectiveness of subsequent implementation of TDM strategies, as a practical matter, increases in noise caused by project traffic would be **significant and unavoidable**.

GP EIR

The GP EIR determined that construction and operation of new buildings and facilities allowed pursuant to the Alameda General Plan 2040:

- Would not generate a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, and
- Would not result in the generation of excessive groundborne vibration or groundborne noise levels

The GP EIR concluded that existing Alameda and State regulations, in combination with General Plan policies would ensure that implementation of the Alameda General Plan 2040 would not expose nearby residents to a substantial permanent increase in ambient noise levels in excess of applicable noise standards. The GP EIR also concluded that General Plan policies requiring vibration impact assessments for heavy-duty construction equipment (e.g. pile driving, bulldozing) within 200 feet of an existing structure or sensitive receptor would 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.

Comparative Assessment of the Project

The following information regarding the Project's air quality emissions id derived from the following technical report:

- Illingworth & Rodkin, *Project Solis Noise Assessment*, May 15, 2025 (see **Appendix B**)

Existing Noise Conditions

The noise environment at the Project site and in the surrounding area is primarily a result of traffic along Central Avenue, with contributions of traffic noise from Pacific Avenue and Main Street. Distant traffic along Atlantic Avenue/Ralph Appezzato Memorial Parkway, aircraft associated with Oakland International Airport, and other industrial uses contribute to the noise environment.

The Federal Highway Administration's Traffic Noise Model was used to calculate peak hour noise levels along Central Avenue, using existing traffic volumes and assuming a conservative traffic volume growth of 2 percent from 2013 (the year of the APP EIR) to 2025, the predicted noise level from existing traffic is estimated to be 63 dBA Leq at 75 feet from the centerline of Central Avenue. Assuming the 24-hour community noise equivalent level (CNEL) or day-night average noise level (Ldn) to be equivalent to the peak hour noise level (as was assumed in the APP EIR), the estimated Ldn along Central Avenue is estimated at 63 dBA at 75 feet.

Identified noise receptor locations (see **Figure 26**) include:

- the nearest residences in the Woodstock and West End neighborhoods
- Encinal Junior and Senior High School located along Central Avenue
- Hornet Field Park
- Alameda Community Sailing Center,
- The USS Hornet Sea, Air and Space Museum), and
- surrounding light industrial land uses

Figure 26
Project Site and Surrounding Noise-Sensitive Receptors

Source: Illingworth & Rodkin, *Pacific Fusion Project Technical Memorandum- Noise and Vibration Assessment*, May 2025

The estimated noise levels at the nearest residences in the Woodstock and West End neighborhoods and at the Encinal Junior and Senior High School (both of which are along Central Avenue) is estimated at 63 dBA Ldn. Typically, hourly average noise levels during nighttime hours are about 10 dBA lower than daytime hourly average noise levels along arterial roadways. Therefore, the existing noise environment during nighttime hours would be about 53 dBA Leq for these receptors along Central Avenue.

Estimated existing noise levels at Hornet Field Park, the Alameda Community Sailing Center and the USS Hornet Sea, Air and Space Museum would be lower than the noise levels at the receptors along Central Avenue, since these receptors would be more than 1,000 feet from the centerline of Central Avenue. While local roadways and light industrial sources would contribute to the noise environment at these other sources, noise levels are expected to be at least 5 dBA lower at these receptor locations as compared to the noise levels at receptors along Central Avenue.

Construction Noise

Construction Noise Threshold

The City of Alameda does not establish noise level thresholds for construction activities.

- The APP EIR's construction period noise threshold was that a 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.
- Similarly, the GP EIR recognized that construction noise is excluded from the exterior noise limits established in the Alameda Municipal Code.

Similar to most jurisdictions in the Bay Area, Alameda does not typically treat construction noise as a significant impact, as long as construction complies with the restrictions on construction hours set forth in the Alameda Municipal Code. These restrictions require noise-generating construction activities to occur only during the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturdays. Construction is prohibited on Sundays and holidays. Although construction noise can be very disruptive and annoying to occupants of neighboring properties to an active construction site, such noise is common in an urban environment and is an unavoidable effect from in-fill, urban redevelopment. It is intermittent and typically of short-term duration.

Standard Demolition and Construction Noise

The Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (RCNM) was used to calculate the typical hourly average noise levels for each phase of Project construction, assuming the two loudest pieces of construction equipment would operate simultaneously. This construction noise model includes representative sound levels for the most common types of construction equipment and the approximate usage factors of such equipment (the usage factors represent the percentage of time that the equipment would be operating at full power). Based on this methodology, almost all phases of construction (demolition, site preparation, grading and excavation, trenching and foundations, building construction and paving) would generate noise levels of between 82 and 84 dBA Leq at 50 feet. These construction phases are assumed to extend over a period of 320 days of work. Interior coating and painting is expected to generate less noise (74 dBA Leq at 50 feet) over a period of 20 days of work.

These temporary construction noise levels were then used to assess noise levels at the receiving property lines of all existing receptors in the Project vicinity. Hourly average construction noise levels were calculated for all construction equipment assumed to be operating simultaneously in each phase

of construction work. This analysis assumes that noise sources are positioned at the center of the Project site, and that they propagate noise toward the receiving property lines.

- Most of the construction activities occurring at the Project site would be partially shielded from the Woodstock & West End residences and the Encinal Junior & Senior High School by the existing intervening storage facilities. Conservatively assuming a 5 dBA attenuation, construction noise levels would range from 43 to 57 dBA Leq at the nearest residential receptors, and from 42 to 56 dBA Leq at the school.
- All other sensitive receptors would have mostly direct line-of-sight to the Project site, and no attenuation is assumed for these receptors. Construction noise levels would range from 41 to 61 dBA Leq at these other noise-sensitive receptors, assuming no attenuation.
- At the industrial uses and storage facilities immediately surrounding the Project site, the non-attenuated construction noise levels would range from 54 to 72 dBA Leq.

At each of these noise receptor locations, construction noise levels are calculated to be below 80 dBA Leq as applied at residential, school and park land uses, below 85 dBA Leq as applied at commercial and office uses, and below 90 dBA Leq as applied at industrial land uses, even when construction occurs in close proximity to the receiving property lines.

Off-Site Construction Noise

As indicated in the Project Description, off-site improvements to be required of the Project have not been confirmed, and the final list of improvements may not include all of the improvements identified in the Project Description. The following noise analysis includes all of the off-site construction work that might be completed pursuant to the Project.

Assuming operation of the two loudest pieces of construction equipment for each off-site construction phase, construction noise levels would intermittently range from 84 to 85 dBA Leq at a distance of 50 feet from roadway and trenching construction corridors. When all equipment per phase operates simultaneously, noise levels would range from 85 to 86 dBA Leq at 50 feet.

- The Woodstock and West End residences would be 60 to 90 feet from the easternmost points of any off-site improvements, and between 240 and 840 feet for most of the possible off-site improvements. At 60 feet, the nearest residences would be exposed to construction noise levels up to 84 dBA Leq. At 240 feet or more, construction noise levels would be at or below 72 dBA Leq (assuming no attenuation).
- The Encinal Junior and Senior High School would be 155 feet from the nearest off-site work, generating un-attenuated construction noise levels up 76 dBA Leq, and would be 885 feet or more from most of the other off-site improvements. At these distances, off-site construction would expose the school to construction noise levels up to 61 dBA Leq.
- Hornet Field Park would be 655 feet or more from most off-site improvements, but the potential new stormdrain would go through the Park, exposing receptors at the Park to construction noise levels up to 86 dBA Leq.
- The Alameda Community Sailing Center would be between 650 and 735 feet from all off-site improvements, exposing receptors at this location to construction noise levels of 63 to 64 dBA Leq.
- The USS Hornet Museum would be 1,140 feet or more from all off-site work, expose receptors at this location to construction noise levels up to 59 dBA Leq.

- All off-site construction improvements would occur in proximity to light industrial uses and storage facilities, with heavy construction operating within 50 feet of certain existing buildings. Construction would move along the alignments all around these industrial and storage use, limiting exposure of any single receptor to construction noise levels up to 86 dBA Leq for a limited period.

As trenching and roadway paving work is completed, construction activities would move along the various off-site alignments, limiting the duration of construction noise exposure. Assuming an installation rate of about 100 feet per day, any single receptor along the corridor would be exposed to noisy construction activities for no more than 10 consecutive days.

Pile Driving Noise

Piles for deep foundations are required for the Project's building. The total number of required piles is unknown, but it is assumed that pile driving would take about two weeks to complete.

During impact pile driving, the hammer guide is placed on top of the pile, and the hammer is raised, and then driven onto the piles in multiple, isolated strikes. Noise generated by impact pile driving is dependent on the size of the piles, the size of the hammer, and force of each strike. Each strike generates a maximum instantaneous noise level, and the number of repeated strikes adds to the disruption at the receiving property lines. The Leq is averaged over a given hour when the activities occur, and dependent on the number of strikes in that hour (estimated in this analysis based on 20% usage). Impact pile driving would not exceed 80 dBA Leq at any of the noise-sensitive receptors. The maximum noise levels measured during each individual strike would be below 80 dBA Lmax at the nearest residential and school receptors, and may be up to 82 dBA Lmax at Hornet Field and the Community Sailing Center.

Alternatively, vibratory pile driving may be used. During vibratory pile driving, the hammer is placed on the pile and the pile is vibrated into the ground using constant operation of the hammer. Depending on the soil conditions and size of the piles, this could take more than 30 minutes in a given hour to install. Vibratory pile driving could reduce construction noise levels during the installation of piles by a minimum of 10 dBA. However, the total time required to install the piles may be lengthened with the use of drilling.

<u>Mitigation Measures</u>

The Project will be required to comply with the City of Alameda Noise Ordinance and its limitations on construction hours, and the following APP EIR mitigation measure applies:

- **Mitigation Measure 4.G-1a, Construction Hours**: The City will require construction contractors to limit standard construction activities hours to comply with the Noise Ordinance. Pile driving activities greater than 90 dBA limited to between 8:00 a.m. and 4:00 p.m. Monday through Friday. No pile driving shall be allowed on weekends and National holidays.

The Project will also be required to comply with the following APP EIR mitigation measures to reduce construction noise levels to the extent reasonable and feasible:

- **Mitigation Measure 4.G-1b, Construction BMPs**: To reduce daytime noise impacts due to construction, the City will require construction contractors to implement the following measures:

    a. Equipment and trucks used for project construction will utilize the best available noise control techniques, such as improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds, wherever feasible.

b. Impact tools (i.e., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust will be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves will be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures will be used, such as drills rather than impact equipment, whenever feasible.

c. Stationary noise sources will be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or other measures to the extent feasible.

d. Haul routes that affect the fewest number of people will be selected.

- **Mitigation Measure 4.G-1c, Pile Driving**: Pile driving activities within 300 feet of sensitive receptors will require additional noise attenuation measures. Prior to commencing construction, a plan for such measures will be submitted for review and approval by the City to ensure that maximum feasible noise attenuation will be achieved. These attenuation measures will include as many of the following control strategies as feasible:

  a. Erect temporary plywood noise barriers if they would block the line of sight between sensitive receptors and construction activities, particularly for existing residences in the northern area of the project site and for residences across Main Street.

  b. Implement "quiet" pile driving technology (such as pre-drilling of piles or use of sonic pile drivers), where feasible, in consideration of geotechnical and structural requirements and conditions; and

  c. Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site.

- **Mitigation Measure 4.G-1d, Tracking and Responding to Complaints**: Prior to the issuance of each building permit, along with the submission of construction documents, the project applicant will submit to the City a list of measures to respond to and track complaints pertaining to construction noise. These measures will include:

  a. Signs will be posted at the construction site that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number with the City of Alameda in the event of noise complaints. The project applicant will designate an onsite complaint and enforcement manager to track and respond to noise complaints; and

  b. Notification of neighbors within 300 feet of the project construction area at least 30 days in advance of pile-driving activities about the estimated duration of the activity.

Implementation of the above mitigation measures would ensure that construction of the Project would comply with the City of Alameda Noise Ordinance, and construction noise impacts would be less than significant, similar to the conclusions of the APPEIR and the GP EIR.

Operational Noise

Operational noise associated with the Project includes the Project's increase in traffic, mechanical equipment, truck loading and unloading and forklift operations. Each of these Project-generated operations are discussed below.

Operational-Level Thresholds

Policy HS-60 of the City's General Plan establishes that a significant noise impact would occur if the Project:

- causes an increase of 4 dBA Ldn or more, if the resulting noise level would exceed the normally acceptable limit for the affected land use; or
- any increase of 6 dBA Ldn or more

Chapter 4-10.4 of the City's Municipal Code provides exterior noise standards for noise-sensitive uses (i.e., residences, hospitals, churches, etc.) and commercial uses:

- For activities occurring for more than 30 minutes in a given hour, noise levels would be limited to 55 dBA L50 during daytime hours and 50 dBA L50 during nighttime hours for noise-sensitive uses, and to 65 dBA L50 during daytime hours and 60 dBA L50 during nighttime hours for commercial uses.
- For activities occurring for more than five minutes in a given hour, noise level limits (L08) would be 10 dBA above the L50 limits.
- Maximum instantaneous noise level limits (Lmax) would be 20 dBA above the L50 limits.

The Municipal Code states that where ambient conditions exceed the standards, ambient noise levels are used as the daytime and nighttime standards. **Table 5** summarizes the applicable standards for the Project at each of the surrounding receptors.[53]

Table 5: Noise Standards Applied to Each of the Surrounding Receptors

		Daytime Standards			Nighttime Standards		
Receptor	Exist Ldn	More than 30 minutes, dBA L_{50}	More than 5 minutes, dBA L_{08}	Max. Level, dBA Lmax	More than 30 minutes, dBA L_{50}	More than 5 minutes, dBA L_{08}	Max. Level, dBA Lmax
Woodstock & West End Res. [a]	67	63	73	83	53	63	73
Encinal School [a]	67	63	73	83	53	63	73
Hornet Field Park [b]	59	55	65	75	50	60	70
Alameda Comm. Sailing Ctr. [b]	59	55	65	75	50	60	70
USS Hornet Museum [b]	59	55	65	75	50	60	70

a For receptors located along Central Avenue, typical ambient noise levels would be up 63 dBA L50 during daytime hours. When arterial roadways are the dominant noise source, nighttime ambient noise levels are typically 10 dBA lower than the daytime noise levels. Since the ambient noise levels due to traffic noise along Central Avenue would exceed the City's thresholds, the ambient noise levels would be the operational noise standards. The daytime and nighttime L08 and Lmax standards are 10 and 20 dBA higher than the L50 noise standards.

b For receptors setback 1,000 feet or more from Central Avenue, the City's 55 dBA L50 daytime and 50 dBA L50 nighttime noise standards for noise-sensitive uses would apply. The daytime and nighttime L08 and Lmax standards are 10 and 20 dBA higher than the L50 noise standards.

[53] Note that the light industrial and storage buildings surrounding the site are not considered noise-sensitive receptors subject to the City's daytime and nighttime noise limits

Operational Noise

Project Traffic

The Transportation Study prepared for this Checklist (see Appendix C) calculated the peak hour vehicle trips potentially generated by the Project. Prior to implementation of required TDM, the Project's daily trip generation is calculated to be 741 vehicles, with peak AM and PM project trips of 75 each. Additionally, the Traffic Study assumes 79 daily truck trips, with 8 peak AM and PM truck trips. When these peak hour Project trips are added to existing (2025) traffic volumes, the Existing plus Project noise levels along Central Avenue would be 68 dBA Ldn, and the Project's contribution to the noise level increase would be 1 dBA Ldn in the Project's vicinity. The Project would not result in a significant permanent traffic noise increase at noise-sensitive receptors in the Project's vicinity.

Under the cumulative scenario, the APP EIR calculated a 4-dBA increase under buildout of Alameda Point. The Project's increased traffic noise is part of that 4-dBA cumulative increase, and would not add additional cumulative noise.

Truck Loading and Unloading

The Project's site plan shows loading docks along the northern façade of the building, and shows drive thru doors along the northern, eastern and western façades of the building. The expected hours of delivery are between 7:00 a.m. and 10:00 p.m. and the expected truck routes would be to the north of the Project site along Main Street.

Heavy trucks typically generate maximum noise levels ranging from 70 to 75 dBA at 50 feet during maneuvering activities, with maximum noise levels from backup beepers being up to 75 dBA. During delivery hours, hourly average noise levels due to truck loading and unloading activities would range from 69 to 73 dBA at 50 feet, assuming three to eight truck trips each hour between 7:00 a.m. and 10:00 p.m. The 24-hour noise level average would be 69 dBA Ldn at 50 feet. Truck maneuvering typically occurs for up to five minutes per delivery. Therefore, the daytime L_{08} standards would apply to this noise source.

Based on these operational noise levels, truck loading and unloading activities would not exceed the City's L_{08} or L_{50} daytime standards at any of the noise-sensitive receptors in the vicinity. The noise level increase due to truck loading/unloading activities would not be measurable or detectable (i.e., no increase in Ldn).

Parking Lot

A surface parking lot would be located to the east of Project's building, and all receptors to the west and north would be mostly shielded from parking lot noise. The only receptors analyzed for this noise source would be the receptors to the east and to the south.

Noise sources associated with the use of the parking lots would include vehicular circulation, loud engines, door slams, and human voices. The hourly average noise levels resulting from all noise-generating activities in a busy parking lot typically range from 40 to 50 dBA Leq at a distance of 100 feet from the parking area. Assuming maximum activities in a busy parking lot for three hours between 6:00 a.m. and 9:00 a.m. and again between 5:00 p.m. and 8:00 p.m. and some activity between 8:00 p.m. and 10:00 p.m., the 24-hour average noise level at 100 feet would be 48 dBA Ldn. Activity throughout the parking lot at the start and end of a shift would be constant for more than 30 minutes in a given hour. Therefore, the daytime L08 and L_{50} standards for each receptor would apply to this noise source.

Based on these operational noise levels, parking lot activities would not exceed the City's L08 or L50 daytime standards at noise-sensitive receptors in the vicinity. For all existing noise-sensitive receptors,

the noise level increase due to parking lot activities would not be measurable or detectable (i.e., no increase in Ldn).

Mechanical Equipment

Most operational mechanical equipment at the Project site, including the Pulser, would be located within the proposed building. The building would adequately shield these mechanical equipment noises from the surrounding receptors. On the exterior of the Project's building, two transformers are located along the eastern façade near the northeastern corner. Receptors to the west would not be subject to noise generated by the transformers. Transformers typically generate noise levels up to 64 dBA measured at 1 meter (about 3 feet). Assuming two transformers run continuously during daytime and nighttime hours, the 24-hour average noise level would be 73 dBA Ldn at a distance of about 3 feet.

These mechanical equipment noises would not exceed the City's L50 daytime or nighttime standards at the noise-sensitive receptors in the vicinity. For all existing noise-sensitive receptors, the noise level increase due to mechanical equipment would not be measurable or detectable (i.e., 0-dBA Ldn increase).

Forklift Operations

Forklifts are typically used to off load heavy trucks at the loading docks at the north end of the building and could also be used to maneuver around the exterior of the site in the yard located north of the building and in the northeastern corner of the building, moving supplies from one location to another about the project site or providing maintenance operations. Forklift operations are expected to occur during daytime hours only and could occur continuously for 30 minutes or more in a given hour. Forklifts typically generate noise levels of 67 dBA at 50 feet. If two to four forklifts operate simultaneously within 50 feet of a receptor, hourly average noise levels would range from 70 to 73 dBA. Assuming this occurs each hour between 7:00 a.m. and 10:00 p.m., the 24-hour average noise level would range from 70 to 73 dBA Ldn at 50 feet.

Based on these operational noise levels, forklift activities would not exceed the City's L50 daytime standards at noise-sensitive receptors in the vicinity. For all existing noise-sensitive receptors, the noise level increase due to forklift activities would not be measurable or detectable (i.e., 0-dBA Ldn increase).

Total Combined Project-Generated Noise

Operational noise levels due to all Project-generated activities (i.e., traffic, truck loading/unloading, parking lot, mechanical equipment, and forklift operations) would not exceed the City's daytime noise limits at noise-sensitive receptors surrounding the site, including at residential uses, the school, the park, the community sailing center, and the museum. For all existing noise-sensitive receptors in the vicinity, the noise level increase due to Project-generated noise levels would not result in a measurable or detectable permanent noise level increase (i.e., 0-dBA Ldn increase).

The City does not have operational noise limits for light industrial uses and storage facilities, and the noise level increase threshold established in the City's General Plan would not apply to the surrounding light industrial land uses and storage facilities. These uses are not considered noise-sensitive receptors and would not be subject to the permanent noise level increase threshold established by the City under CEQA. Therefore, this would be a less than significant impact.

Construction Vibration

Construction of the Project may generate perceptible vibration when heavy equipment or impact tools (e.g., jackhammers, hoe rams) are used. Construction activities would include demolition, site preparation work, foundation work, and new building framing and finishing.

Thresholds

- The California Department of Transportation (Caltrans) recommends a vibration limit of 0.5 in/sec PPV for buildings that are structurally sound and designed to modern engineering standards, which typically includes buildings constructed since the 1990s.
- Conservative vibration limits of 0.3 in/sec PPV has been used for buildings that are found to be structurally sound but where structural damage is a major concern.
- For historical buildings and some old buildings, a vibration limit of 0.25 in/sec PPV would apply.

No historical buildings have been identified within 200 feet of the Project. Conservatively, the 0.3 in/sec PPV threshold would be applied for all structures in the vicinity.

Pile Driving and Other Construction Vibrations

Pile driving produces substantial vibrations and would be required for the Project's foundation. Pile driving would potentially occur for about two weeks, averaging approximately eight hours per day and would not occur within 160 feet of the nearest surrounding building or storage structure. Vibration levels that could be expected from vibratory pile driving (impact drive or sonic drive) would generate typical vibration levels of 0.64 and 0.17 in/sec PPV respectively, with an upper range of vibration levels of 1.16 and 0.73 in/sec PPV, respectively. Other options such as pile drilling would typically generate vibration levels of 0.09 in/sec PPV at a distance of 25 feet. Vibration levels would vary depending on soil conditions, construction methods, and equipment used. Vibration levels are highest close to the source, and then attenuate with increasing distance.

The Project's other construction vibration levels would be dependent on the location of individual pieces of equipment. Equipment scattered throughout the site would not generate a collective vibration level, but a vibratory roller operating near the Project site boundary would generate the worst-case vibration levels for the receptor sharing that property line.

Pile driving is a stationary construction activity occurring at the location of the foundation piles, and is assumed to occur at the nearest building façades to each of the off-site receptors.

- Pile driving activities would be 665 feet to 1,940 feet from the nearest vibration-sensitive receptors. At these distances, the upper range (i.e., worst-case vibration levels) for impact pile driving would be at or below 0.03 in/sec PPV. The upper range of vibratory pile driving would be at or below 0.02 in/sec PPV. Drilling activities would be below 0.01 in/sec PPV.
- The nearest light industrial and storage buildings would be 165 to 260 feet from the nearest pile driving activities. Vibration levels generated by pile driving activities would be below 0.3 in/sec PPV at offsite buildings surrounding the site.

Other on-site, non-pile construction would be propagated to off-site receptors assuming the equipment is operated along the nearest Project site boundary.

- Assuming construction operations along the nearest property lines, construction equipment would be 575 to 1,880 feet from the nearest building façades on the receiving vibration-sensitive sites (i.e., Woodstock and West End residences, Encinal Junior and Senior High School, Hornet Field Park, Alameda Community Sailing Center, and USS Hornet Sea, Air, and Space

Museum). At these distances, typical construction vibration levels would be below 0.01 in/sec PPV.

- At the light industrial buildings and storage facilities immediately surrounding the site, buildings would be 65 to 75 feet from the nearest site boundaries. Using representative vibration levels, the highest potential vibration levels expected at off-site building façades during on-site, non-pile driving activities would result in vibration levels below 0.3 in/sec PPV.

Offsite Construction

Vibrations from potential off-site construction operations would be propagated from these potential construction corridors to the nearest off-site buildings.

- The nearest vibration-sensitive structures to the potential off-site construction alignments would include the Woodstock and West End residences (70 feet from the nearest alignment) and the Encinal Junior and Senior High School (65 feet from the nearest alignment). At these distances, vibration levels from typical construction would be at or below 0.07 in/sec PPV.
- All other structures at vibration-sensitive receptors would be 250 feet or more from the nearest alignment, and be subject to vibration levels below 0.02 in/sec PPV during offsite construction activities.
- The light industrial and storage buildings would be 25 to 40 feet from the alignments, and the highest potential vibration levels expected at these off-site light industrial building façades would result in vibration levels below 0.3 in/sec PPV.

As demonstrated above, all vibration levels generated by on-site and off-site construction would be below the 0.3 in/sec PPV threshold. This would be a less than significant impact.

Aircraft Noise

The Project is not located within the vicinity of a private airstrip or within an airport land use plan's Area of Influence, and would not be exposed to excessive noise levels.

Cumulative Noise Effects

Noise is a localized occurrence and attenuates with distance. Therefore, only future cumulative development projects in the direct vicinity of the Project would have the potential to add to anticipated noise, thus resulting in cumulative noise impacts.

As analyzed above, the noise level increase due to all operations of the Project would not result in a measurable or detectable permanent noise level increase (i.e., 0-dBA Ldn increase) at all existing noise-sensitive receptors in the vicinity. Land uses in the direct vicinity of the Project are, or are expected to be light industrial uses and storage facilities, and the noise level increase threshold established in the City's General Plan do not apply to light industrial land uses as these uses are not considered noise-sensitive receptors. Accordingly, operational noise from the Project would not combine with operational noise from other past, present or future projects to generate a cumulative impact.

The Transportation Study prepared for this Checklist calculated the peak hour vehicle trips potentially generated by the Project, prior to implementation of required TDM, to be 741 daily vehicle trips, with peak AM and PM trips of 75 each period. The Traffic Study also (conservatively) assumed 79 daily truck trips, with 8 peak AM and PM truck trips. When these peak hour Project trips are added to existing (2025) traffic volumes, the Existing plus Project noise levels along Central Avenue was calculated to be 68 dBA Ldn, and the Project's contribution to the noise level increase was found to be 1 dBA Ldn in the

Project's vicinity. Under the future cumulative scenario, the buildout of Alameda Point (including the Project) was calculated to result in a 4-dBA increase, as compared to a cumulative threshold of 5-dBA increase in noise levels. The Project's increased traffic noise is part of that 4-dBA cumulative increase, and would not add additional cumulative noise. Accordingly, the Project would have a less-than-significant cumulative impact with respect to traffic noise.

Conclusions

The Project would not result in new significant impacts or substantially more severe noise impacts than those previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR. Certain mitigation measures and regulatory requirements identified in the prior Alameda Point Project EIR and/or the General Plan 20240 EIR would apply to the Project, and implementation of these mitigation measures and regulatory requirements would substantially reduce potential noise impacts of the Project.

No significant noise impacts are peculiar to the Project or its site. The Project would not result in any new significant noise impacts not previously identified in the prior Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative noise impacts to which the Project may contribute have already been addressed in these prior EIRs. There are no changes in circumstances or new information of substantial importance relative to potential noise impacts of the Project that require updating the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topic of noise

4-L - Population and Housing

Would the project:	Prior EIR Determination APP EIR / GP EIR	Comparative Project Impact	Applicable Mitigation Measures:	Resulting Significance
a. 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)	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
c. Displace substantial numbers of existing people, necessitating the construction of replacement housing elsewhere	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
Would the Project have impacts that are:	**Not Identified in the APP EIR or GP EIR?**	**Peculiar to the Project or its Site?**	**New Off-site and/or Cumulative Impacts?**	**New or More Severe Due to New Information?**
	No	No	No	No

Findings of the Prior EIRs

APP EIR

The APP EIR determined that the Alameda Point Project would have less than significant impacts related to population and housing, either directly or indirectly through inducement of substantial population or housing growth. It also determined the Alameda Point Project would not result in displacement of substantial populations or housing due to its additional population, housing and employment growth, and would not displace existing residents or housing units on a regional level. Accordingly, no mitigation measures related to potential land use impacts were required.

Housing and development as analyzed in the APP EIR was assumed to include 1,425 residential units with a resulting population of approximately 3,240 persons. The APP EIR also assumed an increase of approximately 5.5 million square feet of employment-generating uses in existing and newly constructed buildings, generating jobs for approximately 8,900 employees. The APP EIR determined that most of these jobs would be filled by people already living in the area, or by the new residents of new housing units. These new jobs were not found to induce an unanticipated influx of new labor into the region.

GP EIR

The APP EIR determined that construction of new residential development as pursuant to the General Plan was expected to add approximately 10,000 to 12,000 new housing units by 2040, or an increase to the City's population by 25,100 to 30,120 new residents. While this was found to be a substantial growth in population directly facilitated by the General Plan, it was not unplanned growth, but growth that

would be consistent with planned growth for the City per Plan Bay Area 2040 (the regional strategy adopted by ABAG and MTC for accommodating household and employment growth in the Bay Area region through 2040). This was found to be a less than significant impact.

Comparative Assessment of the Project

Population and Employment Growth

The Project does not include any new housing, and thus would not directly induce any population growth. The Project is an employment-generating use with an estimated employment of approximately 250 persons. These 250 new employees represent only about 3 percent of the overall employment growth as anticipated pursuant to the Alameda Point Project. To the extent that Project employees may choose to reside in Alameda to be in close proximity to their jobs, the fraction of the Project's employees that may make this decision would be a small increment of the population growth as anticipated pursuant to the APP and/or the General Plan. This impact would be less than significant.

Displacement

The Project site is primarily a vacant lot, with portions of the site occupied by a vacant former Navy building. The Project would not displace any housing or any people from the area. The Project site's boundaries do not include the existing building located at the corner of West Pacific Avenue and Orion Street, which is currently occupied by an existing business that leases this building from the City. The Project would not displace this existing business or any other businesses within Alameda Point. This impact would be less than significant.

Cumulative Population and Housing Effects

The cumulative increase in housing and population facilitated by the Alameda Point Project would not have a significant cumulative impact on population, housing or employment grow. The General Plan enables construction of residential and commercial growth, and incorporates construction of additional infrastructures, including roads, utilities and government services to support future growth. Specifically, the General Plan planned for growth at Alameda Point, and Plan Bay Area accounted for regional growth at Alameda Point by identifying Alameda Point as a priority development area (PDA). The Project does not include any housing or population growth, and would not contribute to cumulative population or housing.

Conclusions

The Project would not result in new significant impacts or substantially more severe impacts pertaining to population or housing than those previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR. No mitigation measures or regulatory requirements were identified in the prior Alameda Point Project EIR and/or the General Plan 20240 EIR that would apply to the Project. The Project's population and housing impacts are less than significant.

No significant population or housing impacts are peculiar to the Project or its site. The Project would not result in any new significant population or housing impacts not previously identified in the prior programmatic Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative effects pertaining to population and housing to which the Project may contribute have already been addressed

in these prior EIRs. There are no changes in circumstances or new information of substantial importance relative to potential population or housing impacts of the Project that require updating the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topics of population or housing.

4-M - Public Services and Recreation

Would the project:	Prior EIR Determination APP EIR / GP EIR	Comparative Project Impact	Applicable Mitigation Measures:	Resulting Significance
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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	APP EIR: LTS GP EIR: LTSS	Equal or Less Severe	-	LTS
b. 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	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
c. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	-	LTS
Would the Project have impacts that are:	**Not Identified in the APP EIR or GP EIR?**	**Peculiar to the Project or its Site?**	**New Off-site and/or Cumulative Impacts?**	**New or More Severe Due to New Information?**
	No	No	No	No

Findings of the Prior EIRs

APP EIR

The APP EIR determined that development facilitated by the APP could:

- result in an increase in calls for fire protection and emergency medical response services
- 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
- result in new students for local schools, but would not require new or physically altered school facilities to maintain acceptable performance objectives
- 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

The APP EIR did identify that the Alameda Point Project would likely require new or physically altered fire protection facilities (such as rehabilitation of the existing Fire Station No. 5, which is currently

inactive) in order to maintain acceptable performance standards, but that such new or physically altered fire stations were fully analyzed in the APP EIR and would not result in any additional environmental impacts. Similarly, the APP EIR found that the Area Point Project would include the construction or expansion of recreational facilities (new neighborhood and regional parks, and recreation centers), but the potential environmental effects that might result from construction of such new recreational facilities were fully analyzed elsewhere in the APP EIR would not result in any additional environmental impacts.

GP EIR

The GP EIR determined that the Alameda Fire Department would be expected to increase staffing, equipment and facilities as needed to meet the demand for fire protection services resulting from new development. If and when the City may make a decision to build new fire service facilities, such a proposal would be subject to separate environmental review, but that there was no definitive proposal to build a new fire station. Therefore, the General Plan update was found to have a less than significant impact on fire protection services.

The GP EIR determined that it is likely that construction of new police facilities could be required in the future to accommodate growth in the police force. The existing Alameda Police Department's administration building is already constrained, and construction of a new, modern facility is likely to be pursued in Alameda Point. However, ere no current plans for construction of a new Police Department building PAB, and any future project for this purpose would be subject to separate environmental review. Therefore, the General Plan update was found to have a less than significant impact on police protection services.

The GP EIR determined that future growth and development throughout the City would generate new school-age students who would seek enrollment in Alameda public schools. There was currently excess capacity in Alameda schools as of 2018 (based on data available at the time of preparation of that EIR), and growth in student population facilitated by the General Plan was assumed to be accommodated in existing Alameda Unified School District facilities Future development would be required to pay school fees to ensure that future development would have a less than significant impact on schools.

The GP EIR did not anticipate any new or physically altered library facilities, but that any new or physically altered library facilities that may be proposed in the future would be subject to separate environmental review. Because no new library facilities were anticipated, the GP EIR determined that impacts related to new or altered library facilities would be less than significant.

The GP EIR noted that the General Plan has policies calling for expansion of existing parks, completion of partially completed parks and development of new parks, but that when such individual park projects may be proposed they would be subject to separate environmental review.

Comparative Assessment of the Project

Fire Services

The Projects new structure will be required to meet all standard Fire Code requirements as administered by the City of Alameda Building Services Division and as specified in the California Building Code and California Fire Code. The Project would not result in the need for new or physically altered fire service facilities, but would pay required fire development fees to assist in maintaining level of service standards. As a result, the Project would have a less than significant impact on fire protection services.

Police Services

The Project would not result in the need for new or physically altered police service facilities, but would pay required development fees to assist in maintaining police level of service standards. As a result, the Project would have a less than significant impact on fire protection services.

Schools

The Project would not result in the need for new or physically altered school facilities, but would pay required SB 50 school impact fees to assist in maintaining school level of service standards, and these fees are considered full and complete mitigation for impacts of development projects on school facilities. As a result, the Project would have a less than significant impact on school facilities and services.

Other Public Facilities

The Project will be required, pursuant to the City's Fiscal Neutrality Policy, to fund the Project's proportional share of the cost of additional public services. As a result, the Project would have a less than significant impact on other public facilities and services.

Parks and Recreation

The Project does not propose to construct any new parks or recreation facilities, and would not individually result in the need for new parks or recreation facilities. The Project will be required to pay the City's Development Fees as described in the Municipal Code, which are designed to mitigate impacts of individual development projects on city-owned parks throughout the City. As a result, the Project would have a less than significant impact on local and regional parks and recreational facilities.

Cumulative Public Service Effects

Past, present, and reasonably foreseeable future projects (including the Pacific Fusion Project) have and would continue to be required to comply with existing regulations and existing fee structures regarding public services.

- Fire Protection: Alameda Point is within three miles of three operating fire stations, and Station 5 could re-open if the number of calls from cumulative development resulted in the need for an additional facility. The City's Municipal Code requires payment of fire services impact fees for all cumulative development in Alameda to fund adequate provision of fire protection services and facilities.
- Police Protection: Cumulative development throughout the City would result in an overall increase in the demand for police services, but existing city programs, practices and procedures would continue to ensure the adequate provision of police protection services.
- Schools: The Project would not result in an increased demand on the school district, but school fees from all cumulative development projects would be collected pursuant to SB50 to fund construction of new school facilities if needed.
- Parks and Recreation: Cumulative development in the City will gradually result in an increase in usage of park and recreational facilities. The Alameda Point Project would create new park and recreation facilities to provide for the additional recreation demand resulting from cumulative development.

The Project would have a less than cumulatively considerable contribution to public services and recreation, and cumulative impacts would be less than significant.

Conclusions

The Project would not result in new significant impacts or substantially more severe impacts pertaining to public services and recreation than those previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR. No mitigation measures or regulatory requirements were identified in the prior Alameda Point Project EIR and/or the General Plan 20240 EIR that would apply to the Project. The Project's impacts on public services and recreation are less than significant.

No significant public services or recreation impacts are peculiar to the Project or its site. The Project would not result in any new significant impacts on public services or recreation not previously identified in the prior programmatic Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component of cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative effects pertaining to public services and recreation to which the Project may contribute have already been addressed in these prior EIRs. There are no changes in circumstances or new information of substantial importance relative to public services or recreation impacts of the Project that require updating the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topics of public services or recreation population or housing.

4-N: Transportation

Would the project:	Prior EIR Determination APP EIR / GP EIR	Comparative Project Impact	Applicable Mitigation Measures:	Resulting Significance
a. Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)	APP EIR: NA GP EIR: SU	Equal or Less Severity of Impact	Regulatory Reqmt, Alameda Point Master Transportation Demand Management Plan	LTS
b. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities	APP EIR: LTS GP EIR: LTS	Equal or Less Severity of Impact	-	LTS
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	APP EIR: LTS GP EIR: LTS	Equal or Less Severity of Impact	-	LTS
d. Result in inadequate emergency access	APP EIR: LTS GP EIR: LTS	Equal or Less Severity of Impact	-	LTS
Would the Project have impacts that are:	**Not Identified in the APP EIR or GP EIR?**	**Peculiar to the Project or its Site?**	**New Off-site and/or Cumulative Impacts?**	**New or More Severe Due to New Information?**
	No	No	No	No

Findings of the Prior EIRs

APP EIR

Level of Service Thresholds and Impacts

At the time the Alameda Point Project EIR was prepared in 2014, the City of Alameda relied on CEQA threshold criteria that were in effect at the time, as identified in Appendix G of the 2013 version of the CEQA guidelines. Those thresholds were based on level-of-service metrics for establishing the effectiveness and performance of the circulation system including intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. These thresholds also considered potential conflicts with applicable congestion management programs, including level-of-service standards and travel demand measures for designated roads or highways.

Using these thresholds, the APP EIR analyzed the effects of increased traffic attributed to buildout of the Alameda Point Project on the levels-of-service at multiple intersections and roadways throughout its study area, and found that numerous intersections would exceed established level-of-service thresholds. The APP EIR recommended the following two mitigation measures that would apply to all future development projects throughout Alameda Point:

- **Mitigation Measure 4.C-2a (TDM Program), and**

- **Mitigation Measure 4.C-2b (Monitoring and Improvement Program)**

The Monitoring and Improvement Program requires the City to adopt a program that determines the cost of transportation network improvements identified in the APP EIR; identify appropriate means and formulas to collect fair-share financial contributions from Alameda Point development; to monitor conditions at locations that will be impacted by the redevelopment of Alameda Point; to monitor traffic generated by Alameda Point; and to establish the appropriate time to implement necessary improvements identified in the APP EIR. The APP EIR concluded that many of the level-of-service impacts throughout Alameda's street system could be reduced to levels considered less than significant, but that numerous intersections were found to be impacted by future traffic at levels considered **significant and unavoidable** under Existing plus Project and/or under Cumulative plus Project conditions.

The APP EIR also identified specific intersection and roadway improvements necessary to meet level-of-service metrics in the City of Oakland and on freeways, recognizing that Alameda would have no means to effect any improvements outside of its jurisdiction, and finding these impacts to be **significant and unavoidable**.

Other Thresholds

The APP EIR determined that the Alameda Point Project would have the following less than significant impacts related to transportation:

- Development facilitated by the APP would not result in significant impacts related to inadequate emergency access
- Development facilitated by the APP would not result in significant impacts related to potential increased safety hazards for vehicles, bicyclists and pedestrians on public roadways due to roadway design features or incompatible uses [54]
- Development facilitated by the APP would not result in significant impacts related to potential inconsistencies with adopted polices, plans and programs supporting alternative transportation

General Plan 2040 EIR

Vehicle Miles Travelled (VMT)

The GP EIR acknowledged that SB 743 had been signed into law, building on SB 375, AB 32, and AB 1358, which modified how impacts to the transportation system are assessed for purposes of CEQA. SB 743 required a shift in transportation impact analysis under CEQA from a focus on automobile delay (as measured by level of service and similar metrics), toward a focus on reducing vehicle miles travelled (VMT). Automobile delay as described solely by LOS or similar measures of vehicular capacity or traffic congestion is no longer considered a significant impact on the environment under CEQA, except in certain locations specifically identified in the new criteria. These new criteria, which are now contained in CEQA Guidelines Section 15064.3, were certified and adopted in 2018. Current CEQA Guidelines require all lead agencies in California to now use VMT-based thresholds of significance in CEQA documents. The GP EIR relied on these updated CEQA Guidelines and additional technical guidance published in the Governor's Office of Planning and research (OPR's) Technical Advisory on Evaluating Transportation Impacts in CEQA in considering its selection of VMT metrics, methodology and

[54] The APP EIR did identify potential safety hazards at four intersections in Oakland Chinatown, but since the City of Alameda has no jurisdiction over mitigation in other jurisdications these impacts were conservatively considered to be significant and unavoidable

significance thresholds, as well as criteria which could be used to screen projects out from a VMT impact analysis.

Using these criteria, the GP EIR reached the following conclusions pertaining to transportation:

- The average household VMT per capita in Alameda under both the Baseline (2020) and General Plan Buildout (2040) conditions will be at least 15 percent below the average Bay Area Region household VMT per capita.
- The average commute VMT per worker will exceed 15 percent below the average baseline rate for the Bay Area region.

Relying on the Alameda County Transportation Commission (CTC) Travel Demand Model, the GP EIR found that household VMT per capita and commute VMT per worker would both decrease between 2020 and 2040 under the Alameda General Plan 2040. The average household VMT per capita in Alameda is forecast to decline from Baseline (2020) to General Plan Buildout (2040) conditions by about 3 percent. The average household VMT per capita in Alameda under both the 2020 and 2040 conditions is at least 15 percent below the average Bay Area Region household VMT per capita. As such, the General Plan would have a less than significant impact on household VMT per capita.

The average commute VMT per worker in Alameda is forecast to decrease from 2020 to 2040 with the General Plan by about 7 percent. Although the reduction in commute VMT per worker results in positive environmental benefits (e.g., lower VMT equates to lower GHG emissions), the average commute VMT per worker of 17 miles is only 6 percent below the 2020 Bay Area average, and only 7 percent below the projected 2040 Bay Area average. Therefore, consistent with the OPR's Technical Advisory, the GP EIR concluded that Alameda's commute VMT per worker would not be 15 percent below the average baseline rate for the Bay Area region, resulting in a **significant and unavoidable** transportation impact.

The GP EIR concluded that implementation of robust TDM plans can be expected to considerably reduce the VMT generated by a typical office development served by local and regional multi-modal transportation infrastructure. However, the effectiveness of future TDM plan could not be quantified because the specific strategies that would be included in the TDM plans for each development was not known at the time, and the effectiveness of TDM strategies will be dependent on the specific uses and settings of future development.

The GP EIR conservatively assumed that the VMT reduction due to implementation of TDM plans would not be adequate to reduce the average Alameda commute VMT per worker to a less than significant level. This program-level VMT impact conclusion does not preclude a finding of less than significant impacts for future development projects that are able to achieve the applicable VMT threshold.

<u>Other Thresholds</u>

The GP EIR determined that General Plan buildout would have the following less than significant project-level and cumulative impacts related to transportation:

- The Alameda General Plan 2040 would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, and bicycle and pedestrian facilities
- The Alameda General Plan 2040 would not substantially increase hazards due to a geometric design feature or incompatible land uses
- The Alameda General Plan 2040 would not result in inadequate emergency access

Comparative Assessment of the Project

Vehicle Miles Travelled (VMT)

Information presented in the following portion of this CEQA document is derived from the following primary source:

- Kimley Horn, Project Solis – Alameda, Project Trip Generation and Vehicle Miles Traveled (VMT) Analysis, May 23, 2025, attached as **Appendix C**.

Trip Generation

Based on the Project's proposed use of high bay industrial, laboratory and administrative office, the Institute of Transportation Engineer's (ITE) land use code #130 for Industrial Parks best estimates the trips expected to be generated by the Project. **Table 6** presents the types of trips generated by the Project, and a comparison of the Project's trips as a portion of total trips expected to be generated by the entirety of the Alameda Point Project at buildout.

Table 6: Trip Generation Summary Comparison

Scenario	Size	Daily Trips	AM Peak			PM Peak		
			Total	In	Out	Total	In	Out
Alameda Point	buildout	33,429	2,928			3,249		
Project	220 ksf	741	75	61	14	75	16	59
Project's Proportion of Alameda Point Trips		2%	2%			2%		

Source: Kimley Horn, Project Trip Generation and Vehicle Miles Traveled (VMT) Analysis, May 2,2025

Based on the truck data presented for ITE LU #130, it is anticipated that there will be 8 truck trips in the AM peak-hour, and 8 truck trips in the PM peak-hour included in the estimate above

As demonstrated, the Project represents approximately 2% of the daily, AM and PM peak-hour trips estimated to be generated by the entire Alameda Point development. The Project is consistent with the land uses allowed in the Enterprise Sub-District of Alameda Point as analyzed in the APP EIR, and the Project's expected trip generation is well below the total trips for Alameda Point. Accordingly, the Project is consistent with the prior APP EIR analysis, and the transportation infrastructure as planned for Alameda Point will adequately serve the Project's traffic.

VMT Methodology and Assumptions

Senate Bill 743 (2013) changed the focus of transportation impact analyses in CEQA from measuring impacts to drivers, to measuring the impact of driving. The change was made by replacing Level of Service (LOS) with vehicle miles traveled (VMT). This shift in transportation impact focus was intended to better align transportation impact analyses and mitigation outcomes with the State's goals to reduce greenhouse gas (GHG) emissions, encourage infill development and improve public health through more active transportation. Level of service or other delay metrics may still be used to evaluate the impact of projects on drivers as part of land use entitlement review, fee programs and community plan conformance, but not under CEQA.

The City's GP EIR includes and incorporates the following VMT thresholds for its analysis:

- Average household VMT per capita at 15 percent below the average baseline rate for the Bay Area region; and
- Commute VMT per worker at 15 percent below the average baseline rate for the Bay Area region.

The Project is considered to result in a significant impact if the employment-based VMT per employee for the Project exceeds 85 percent of (or 15% below) the Alameda County average VMT per employee.

The VMT forecasts generated for the General Plan EIR were produced using the Alameda CTC Model. The Model is used to estimate the household VMT per capita for residential uses and the commute VMT per worker. The Alameda County Transportation Commission (CTC) Model uses a four-step modeling process that considers trip generation, trip distribution, mode split, and trip assignment. The Alameda CTC Model assigns all predicted trips within, across, to or from the nine-county San Francisco Bay Area region to the roadway network and transit system by mode (i.e., single-occupant or carpool vehicle, biking, walking, or transit) and transit carrier (i.e., bus, rail, ferry) for a given scenario. The Alameda CTC Model incorporates land use data and transportation network improvements consistent with Plan Bay Area 2040 (the Sustainable Communities Strategy for the Bay Area region).

VMT Analysis

To compare whether the Project would exceed the VMT anticipated by the General Plan EIR, this analysis uses the same methodology as used in the General Plan EIR, relying on the Alameda CTC Model, which provides VMT mapping resources alongside a VMT Reduction Calculator Tool, developed to assist member agencies in their efforts to comply with the requirements of SB 743.[55] The VMT screening completed for the Project identifies the model's estimated VMT per employee for the Project based on the Alameda CTC VMT mapping tool. The analysis then uses the Alameda CTC VMT Reduction calculator to estimate the percent VMT reduction that should be applied to the model estimate to account for TDM features required of the Project. Finally, the analysis compares the resulting Project VMT per employee to the Bay Area regional average VMT per employee. If the project VMT per employee is greater than 85 percent of the Bay Area average VMT per employee, then the Project would have a significant VMT impact.

The Bay Area regional average VMT per employee is 18.1,[56] which sets the VMT threshold (at 15 percent below the regional average) at 15.4 per employee. The Project is located in traffic analysis zone (TAZ) 468 of the Alameda Countywide Travel Demand Model (see **Figure 27)**. The Model's estimated VMT per employee for TAZ 468 is 15.9 VMT per employee, which exceeds the employee-based VMT threshold.

[55] SB 743 and VMT Tool, Alameda County Transportation Commission, https://www.alamedactc.org/planning/sb743-vmt , accessed April 30, 2025

[56] Alameda, *Alameda General Plan 2040 EIR*, Table TRA-8, May 2021

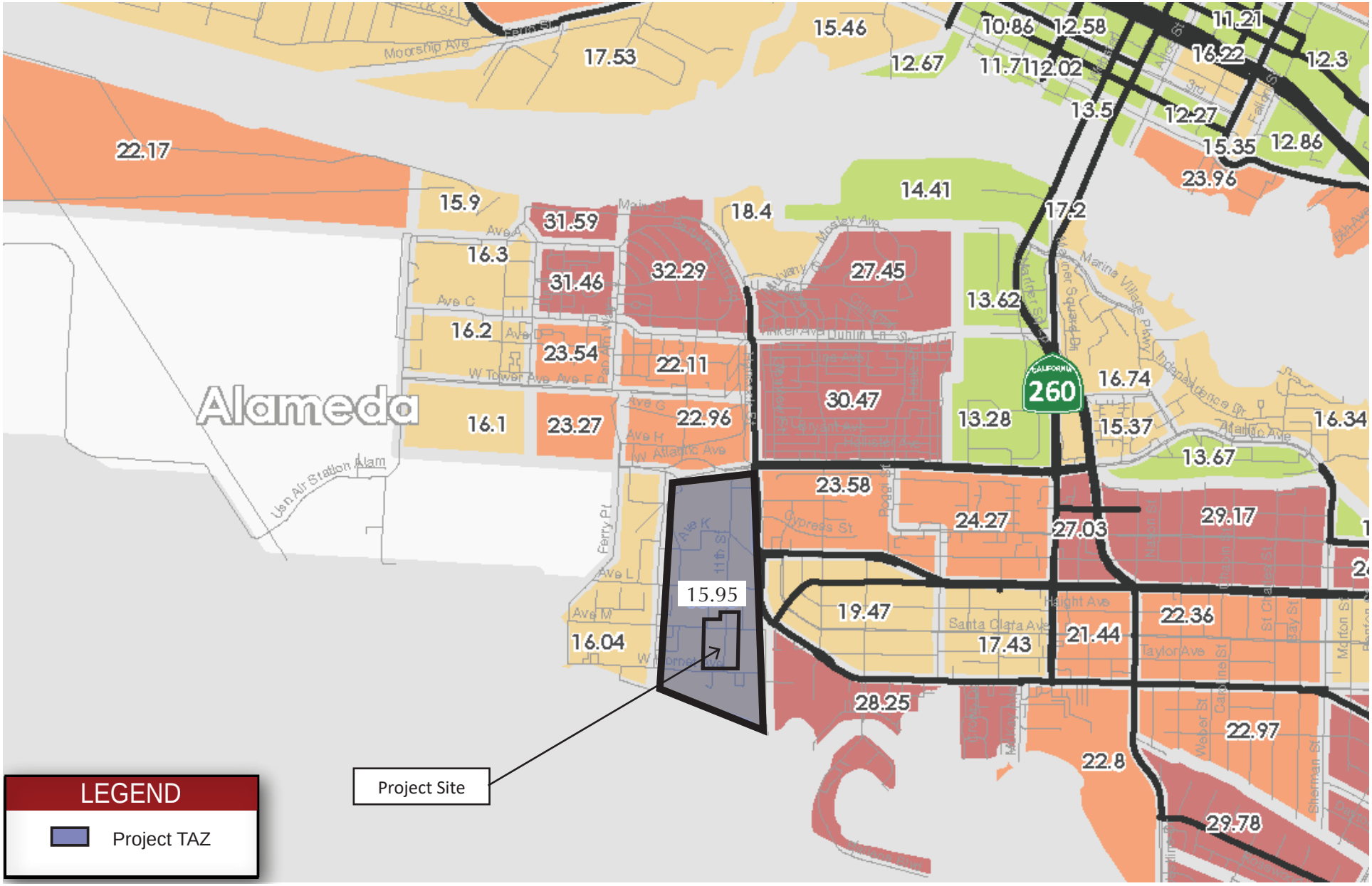


Figure 27
VMT per Employee for the Project's Traffic Analysis Zone

Source: Kimley Horn, Project Solis VMT Analysis, Exhibit 3, May 2025: derived from Alameda County CTC, Year 2020 VMT per Employee, North Planning Area

Mitigation Measures / Required TDM

Alameda Point TMA and TDM Plan

The Project will be required to comply with the City of Alameda Municipal Code, Section 30-4.24 - Alameda Point District, which provides regulations to facilitate and guide future development at Alameda Point consistent with Alameda Community Reuse Plan and City of Alameda General Plan, including the following:

- **Regulatory Requirement, Alameda Point Master Transportation Demand Management Plan**: All new development and uses shall be reviewed for consistency with the Alameda Point Transportation Demand Management Plan.

The Alameda Point Transportation Demand Management Plan (TDM Plan) is intended to implement strategies and measures to reduce automobile travel, particularly single-occupant-vehicles, generated by development within Alameda Point. The Alameda Point Transportation Management Association (Alameda TMA) is responsible for administering and managing the Alameda Point TDM Plan.

As part of any project approvals within Alameda Point, new developments are required to join the Alameda TMA, to pay a special tax to fund the TDM Plan, and to implement project-specific measures as necessary to comply with the TDM Plan. The TDM Plan includes extensive services and programs provided by the Alameda TMA, including shuttle/transit services intended to be within a quarter-mile of all new major development areas. It also includes requirement that developers, employers and resident associations prepare a TDM Compliance Strategy that demonstrates how end-users will comply with the TDM Plan's goals. One goal of the Alameda Point TDM Plan is to reduce peak hour trips generated by all commercial/industrial development within Alameda Point by 30 percent.

Pacific Fusion Project TDM Plan

A preliminary TDM Compliance Strategy (or Project-specific TDM Plan) has been prepared for the Project (see **Appendix D**).[57] The Project's TDM Plan accounts for the Project's funding and active participation in the Alameda TMA, as well as other TDM elements that will promote carpool, bicycling, walking and transit in place of drive-alone vehicle trips to and from the Project site. These elements may change or be adjusted over time to adapt to changing transportation trends and to maximize the efficiency and performance of the program.

Through its participation in the Alameda TMA, the Project will obtain a variety of TDM-related services for its employees, such as:

- the Clipper Bay Pass pilot program (free unlimited rides on all bus, rail and ferry),
- an E-bike rebate program, and
- transportation-related information on the Alameda TMA website (https://www.alamedatma.org/)
- the Project will also be responsible for providing a TDM coordinator responsible for developing information materials, managing transportation services offered as part of the TDM program, monitoring results, and coordinating with City staff and the Alameda TMA

Other trip reduction measures associated with Alameda TMA TDM Plan's mandatory employer commute program include:

[57] Kimley-Horn, *Project Solis Alameda Preliminary TDM Plan*, May 2025

- providing short-term and long-term bicycle parking as required by the Alameda Municipal Code
- providing bicycle end-trip facilities such as showers and lockers
- providing preferential parking for carpools/vanpools

The Project may implement additional TDM measures if needed to achieve the goal of a 30 percent reduction in peak hour trips.

TDM Reductions in VMT

The Alameda CTC VMT Reduction calculator was used to calculate the percent of VMT reduction that should be applied to account for the Project's proposed TDM elements. This VMT Reduction calculator was developed by Alameda CTC to assist agencies in their efforts to comply with the requirements of SB 743, and it is intended to be used in evaluating transportation effects of land use projects under CEQA. It is used to quantify VMT reductions resulting from implementation of a variety of mitigation strategies. Based on the TDM measures listed above, the VMT Reduction calculator's results area as shown in **Table 7.**

Table 7: VMT Analysis Results

Metric	VMT per employee
Bay Area Regional Average	18.1
VMT Target (15% below Average)	15.4
ACTC TDM TAZ #468 (Project Location)	15.9
TDM Plan Reduction (26 %)	-4.2
Proposed Project, with TDM	11.7
Difference from Threshold	-3.7

Source: Kimley-Horn, Project Solis Trip Generation and VMT Analysis, May 23, 2025

Using the County's VMT Reduction Calculator, the Project's TDM plan is expected to produce 26 percent less average VMT per employee than similar adjacent uses without a TDM plan. A 26 percent reduction in employment-based VMT from TAZ 468 results in an average of 11.7 VMT per employee for the Project, which is 3.7 VMT per employee lower than the regional threshold. With implementation of the Project's TDM Compliance Strategy (i.e., its Project-specific TDM Plan), the Project would have a less than significant impact on VMT.

Consistency with Adopted Policies, Plans or Programs Supporting Alternative Transportation

The City of Alameda's multi-modal approach to transportation throughout Alameda Point ensures that priorities with respect to transportation modes other than cars (including pedestrians, bicycles and transit) are adequately supported. The Project will construct a portion of this multi-modal street network including bicycle and pedestrian facilities and access to transit. Additionally, the Project will develop and implement a comprehensive Transportation Demand Management Program for the Project that encourages carpools, use of transit and incentivizing other modes such a biking. Accordingly, the Project would have a less than significant impact with respect to potential conflicts with polices, plans and programs supporting alternative transportation.

Traffic Safety Hazards

The Alameda Point Master Infrastructure Plan calls for a transportation network of "complete streets" to support a variety of modes of transportation. The Project would construct a portion of this "complete street" network, including new street rights-of-way that provide for pedestrian and bicycle circulation to be separated from vehicles. These improvements will enhance public safety as compared to the existing street network. The details of the Project's circulation system improvements will be reviewed by the City Public Works and Planning Departments for consistency with applicable regulations and standards, and the Project will not construct new streets or upgrade existing streets in a manner that would result in unsafe design features such as sharp turns or blind intersections. Accordingly, the Project's potential traffic safety impacts would be less than significant.

Emergency Vehicle Access

Consistent with the Alameda Point Master Infrastructure Plan, the Project would improve access and circulation on the Project site, and between the Project site and other areas of Alameda. The new streets provided by the Project would provide sufficient clearance for emergency vehicles, and the Project includes a 26-foot travel lane along its Orion Street frontage to provide an off-street fire lane where fire trucks can park if necessary to fight a fire at the Project's 100-foot tall building.

The City maintains up-to-date emergency response plans that establish response routes for emergency services that address emergency service needs. Construction of the Project and its roadway and circulation system improvements could result in potential temporary obstructions or delays that may affect emergency response times. However, in accordance with existing City requirements, standards and regulations, the Project will be reviewed by local emergency services providers (including the police and fire departments) for consistency. The Project will be required to adhere to existing City of Alameda requirements, procedures and plans to ensure that it does not result in a significant impact to emergency services. The Project's potential impact related to emergency vehicle access would be less than significant.

Cumulative Transportation Effects

The Alameda Point TDM Plan applies to all cumulative development within Alameda Point, and is part of a regional program of strategies designed to optimize the efficiency of the existing Bay Area multimodal transportation network. While parts of the TDM Program focus on maximizing the limited capacity of streets and highways, it also includes strategies that focus on changing people's travel behavior by shifting travel away from single-occupant vehicle and into more sustainable modes of transportation. The strategies in the Alameda Point TDM Plan not only reduce traffic locally within Alameda, but also contribute to cumulative, regional reduction in VMT, helping to prolong the effective lifespan of the Bay Area's bridges and highways. Accordingly, the Project's TDM Plan addresses not only the Project-specific vehicle mile travelled, but also addresses its share of cumulative VMT throughout the Bay Area region.

Conclusions

The Project would not result in new significant impacts or substantially more severe impacts pertaining to transportation than those previously disclosed in the General Plan 2040 EIR. The mitigation measures and regulatory requirements identified in the prior Alameda Point Project EIR and/or the General Plan 2040 EIR to address transportation effects, including VMT, would apply to the Project. The Project's impacts on transportation are less than significant.

No significant transportation impacts are peculiar to the Project or its site. The Project would not result in any new significant transportation impacts not previously identified in the prior programmatic Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component of cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative effects pertaining to public services and recreation to which the Project may contribute have already been addressed in these prior EIRs. There are no changes in circumstances or new information of substantial importance relative to transportation impacts of the Project that require updating the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topic of transportation.

4-O: Utilities and Service Systems

Would the project:	Prior EIR Determination APP EIR / GP EIR	Comparative Project Impact	Applicable Mitigation Measures:	Resulting Significance
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	GP EIR MM 11-2, Basic Construction Mitigation Measures APP EIR Mm 4.F-1.b, Construction Exhaust Regulatory Reqmt - General Construction Permit APP EIR MM 4.I-1, Dewatering APP EIR MM 4.G-1a, Standard Construction Hours APP EIR MM 4.G-1b, Daytime Construction Noise BMPs	LTS
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	Regulatory Reqmt, CalGreen Commercial Green Building Checklist – Water Efficiency Regulatory Reqmt, Water Efficient Landscape Ordinance Regulatory Reqmt, Alameda Water Reuse Ordinance	LTS
c. Result in a determination by the waste water 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	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	Regulatory Reqmt, EBMUD Limitations on Discharges	LTS
d. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals e. Comply with management and reduction statutes and regulations related to solid waste	APP EIR: LTS GP EIR: LTS	Equal or Less Severe	Regulatory Reqmt, Alameda Municipal Code Section 21-2.1, Recyclable Materials Regulatory Reqmt CALGreen Code Section 5.408.1, Construction Waste Diversion	LTS

Would the Project have impacts that are:	Not Identified in the APP EIR or GP EIR?	Peculiar to the Project or its Site?	New Off-site and/or Cumulative Impacts?	New or More Severe Due to New Information?
	No	No	No	No

Findings of the Prior EIRs

Alameda Point Project EIR

Less than Significant Effects

The APP EIR determined that the Alameda Point Project would have less than significant project-level and cumulative impacts related to utilities and service systems.

Wastewater Collection and Treatment

- EBMUD's Main Waste Water Treatment Plan (MWWTP) has excess dry weather flow capacity capable of accommodating the projected wastewater flows generated by the Alameda Point Project.
- Wastewater generated by Alameda Point would not contain any unusual pollutants, and would be within the existing dry weather capacity and permitted discharge volume of the treatment plant.
- Individual projects at Alameda Point would replace the existing on-site wastewater collection systems, which would greatly reduce I&I flows entering the system in wet weather conditions and thereby reduce wet weather flows from Alameda Point to the MWWTP, further ensuring that the Alameda Point Project would not contribute to exceedance of RWQCB treatment standards for water discharged to the Bay.
- The APP EIR concludes that the EBMUD MWWTP is expected to have adequate capacity to serve projected new demand generated by the APP, and this impact was found to be less than significant.

Stormwater Facilities

- A new stormwater system to be owned and operated by the City would be constructed at Alameda Point, and this new system is to be designed to meet current City, County of Alameda and RWQCB design criteria.
- Construction associated with new and expanded storm water drainage facilities would include in-street trenching and excavation work, and all such work would be required to obtain NPDES permits for construction activities and to execute a Stormwater Pollution Prevention Plan (SWPPP) that would specify construction stormwater quality management practices.
- The Alameda Point Project would reduce the overall impervious area and increase pervious areas. Runoff from individual project sites would flow into the adjacent water bodies through the new storm drain system. Individual projects would be required to adhere to the C.3. provision in the NPDES permit by including specific site design features that minimize land features and impervious surfaces, implement Low Impact Development measures, and provide pretreatment of stormwater runoff prior to discharging into the stormwater system.

The APP EIR concludes that compliance with the requirements of the necessary permits, standard construction specifications required to be incorporated as part of the APP, construction and operation of the new storm drainage system would have less than significant impacts.

Water Supply and Infrastructure

- A Water Supply Assessment was prepared for the APP assuming a total water demand increase of approximately 1.9 million gallons per day (mgd). The WSA determined that an increased water demand of up to 1.9 mgd is accounted for in EBMUD's 2040 water demand projections as published in the 2010 Urban Water Management Plan, and that the APP would not change EBMUD's 2040 water demand projection and would not result in a new significant increase in water use.
- The APP EIR recommends incorporating water conservation measures into the design and construction of all new development projects, recommends that all development projects comply with the California Model Water Efficient Landscape Ordinance, and that the APP is a likely candidate for the use of recycled water (which is consistent with the City's plan to install a recycled water system once EBMUD's East Bayshore Recycled Water Project is extended to Alameda).
- A new water distribution system would be installed to serve Alameda Point, and this system would connect to the existing EBMUD water facilities. This new water system would adequately accommodate the APP's expected water demand.

The APP EIR concludes that future development within the APP would not exceed existing or projected water supply or result in the need for new or expanded water treatment facilities, and the APP's impacts on water supply availability would be less than significant.

Solid Waste Disposal and Recycling

- Solid waste generated by the buildout of the Alameda Point would include debris from demolition of existing non-historic buildings, other buildings not intended for adaptive reuse, utility systems, street improvements, and landscaping. The amount of total debris was estimated to be over 400,000 cubic yards, representing less than 1 percent of the remaining capacity of the Altamont Landfill. Because adequate landfill capacity exists, impacts related to landfill capacity would not be substantial.
- The APP was found to potentially conflict with the City's ability to meet it landfill diversion goals, and the following mitigation measure requires new development to implement solid waste management plan to reduce this impact to a less-than-significant level.
    - **Mitigation Measure 4.M-5 (Solid Waste Management Plan)**

Based on the above, the APP EIR concluded that the APP would represent a less than significant impact on solid waste disposal.

General Plan EIR

The GP EIR determined the following pertaining to utilities and service systems:

- Future residential, commercial and industrial development allowed under the Alameda General Plan 2040 would not require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental impacts

- There would be sufficient water supplies available to serve future residential, commercial, and industrial development allowed under the Alameda General Plan 2040 during normal, dry and multiple dry years
- Future residential, commercial, and industrial development allowed under the Alameda General Plan 2040 would not result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments, and
- The increased population generated by future residential development allowed under the Alameda General Plan 2040 would not result in generation of solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, and would not conflict with federal, State, or local management and reduction statutes and regulations related to solid waste.

Comparative Assessment of the Project

New or Expanded Utility or Service Infrastructure

As indicated in the Project Description of this CEQA Checklist, the Project will be responsible for constructing certain off-site infrastructure improvements as identified in the Alameda Point Master Infrastructure Plan (MIP). The maximum potential off-site infrastructure improvements that may be required of the Pacific Fusion Project (such that this environmental review covers the maximum potential impacts) includes construction of improved street sections on West Pacific Avenue from the western terminus of the Central Avenue Safety Improvements Project to and including full intersection improvements at Orion Street, a new segment of Orion Street from West Pacific Avenue to West Ticonderoga Avenue, and a new segment of West Ticonderoga Avenue from Orion Street to Skyhawk Street. Each of these street improvements may require removal/abandonment of existing improvements within the current roadways, and will include installation of new public utilities including storm drainage, sanitary sewer, water (potable and recycled), joint trench, street lighting and landscaping. Specifically, these infrastructure and utility improvements are anticipated to include:

- a looped water line within the rights-of-way under West Pacific Avenue, Orion Street and West Ticonderoga Avenue (the West Pacific Avenue line will connect to the existing water main at the Central Avenue and the West Ticonderoga Avenue line may extend past the street improvements to connecting to the existing water main in Central Avenue just north of Ticonderoga)
- a segment of recycled water line under Orion Street from Pacific to Ticonderoga, which will be available for connections to a future recycled water system
- a new wastewater collection system sewer lines below the rights-of-way for West Pacific, West Ticonderoga and Orion, removal and replacement of the existing sewer system that is internal to the Project site, a lift station connecting to the existing sewer line within Viking Way (the existing condition of the sewer pipe in Viking Way is unknown and may need to be slip-lined or rehabilitated from West Oriskany Avenue to the Site "A" pump station)
- a new stormwater system of storm drains below the rights-of-way for West Pacific, West Ticonderoga and Orion, plus the construction of a stormdrain pipe within the Orion Street alignment from West Ticonderoga Avenue a new (but already permitted) outfall into San Francisco Bay, and

- a new joint trench from the existing Cartwright substation to a connection at the Project site near Pacific Avenue to accommodate a new main line underground electric distribution system service, PG&E's natural gas lines, as well as telephone, cable television, possible ancillary fiber-optic cable systems and street light facilities

Construction of these new or expanded utility infrastructure elements will generate typical construction-related environmental effects including construction-period noise, dust and air emissions, and potential water quality concerns related to stormwater sediment and spills of contaminants from construction equipment.

Mitigation Measures

As fully addressed in the Air Quality, Noise and Water Quality sections of this CEQA Checklist, construction of these new or expanded utility infrastructure elements will be subject to the following standard regulatory requirements and mitigation measures:

- **GP EIR Mitigation Measure 11-2, BAAQMD's Basic Construction Mitigation Measures**
- **APP EIR Mitigation Measure 4.F-1.b, Construction Exhaust**
- **Regulatory Requirement - General Construction Permit,** including preparation and execution of a Stormwater Pollution Prevention Plan
- **APP EIR Mitigation Measure 4.I-1, Dewatering**
- **APP EIR Mitigation Measure 4.G-1a, Standard Construction Hours**
- **APP EIR Mitigation Measure 4.G-1b, Daytime Construction Noise BMPs**

With implementation of these standard regulatory requirements and mitigation measures, the potential environmental effects related to construction of these new or expanded utility infrastructure elements will be reduced to a level of less than significant and will not violate State water quality standards.

Water Supplies

The Water Supply Assessment (WSA) prepared for the APP EIR assumed a total water demand increase attributed to buildout of Alameda Point of approximately 1.9 mgd.[58] The 2014 WSA determined that an increased water demand of up to 1.9 mgd was accounted for in EBMUD's 2040 water demand projections, and that buildout of Alameda Point would not change EBMUD's 2040 water demand projections and could be supplied from existing and projected water supplies.

The more recent assessment of water supplies as presented in EBMUD's 2015 Urban Water Management Plan (UWMP) determined that EBMUD would have sufficient water supplies to meet customer demand through 2040 during normal years and up to two dry years of a multi-year drought, but would need supplemental water supplies to meet projected demand during a third dry year after 2020. During a third year of drought there would be shortfalls. The water demand projections in the 2015 UWMP factor-in anticipated growth in the region, based on consultation with all of the planning agencies within EBMUD's service area.

The Project's water demands include potable water supply as well as industrial water for operations and cleaning of the Pulser. The total water demand of the Project is estimated at approximately 3.07 million gallons per year, or a daily average of approximately 8,400 gallons per day. The Project's domestic water demand is estimated at about 430 gpd, irrigation water demands are projected to average about 3,470

[58] East Bay Municipal Utility District, *Water Supply Assessment -Alameda Point Project*, August 13, 2013

gpd, and the Pulsers' operational water demands are estimated to be approximately 4,513 gpd. This total water demand for the Project represents less than 1 percent of the 1.9 mgd total water demand projection for buildout of Alameda Point, and is well within EBMUD's 2040 water demand projections. The Project will not exceed the water supplies available to serve the Project and other reasonably foreseeable future development during normal and dry years, but would contribute to water shortfalls during multiple dry years.

Mitigation Measures

The APP EIR recommends incorporating water conservation measures into the design and construction of all new development projects, recommends that all development projects comply with the California Model Water Efficient Landscape Ordinance, and that the APP is a likely candidate for the use of recycled water (which is consistent with the City's plan to install a recycled water system once EBMUD's East Bayshore Recycled Water Project is extended to Alameda). These recommendations are consistent with existing regulatory requirements as itemized below:

- **Regulatory Requirement, CalGreen Commercial Green Building Checklist – Water Efficiency**: The Alameda Building Code adopts by reference the California Building Code Pursuant to the California Building Code (CALGreen) Section 5.303.2.3, the City of Alameda requires that all projects installing new plumbing fixtures either install all new fixtures that meet the prescriptive measures for maximum flow rates, or provide a performance-based calculation demonstrating a minimum 20% reduction in the building's 'water use baseline'.
- **Regulatory Requirement, Water Efficient Landscape Ordinance**: The City's Water Efficient Landscape Ordinance (WELO) brings the Alameda Municipal Code in compliance with the State of California's Model WELO. This ordinance requires documentation from the Project sponsor regarding the water efficiency of proposed landscaped areas, with a complete Landscape Document Package to be submitted prior to Design Review or building permit issuance. The Landscape Document Package shall demonstrate compliance with the required contents of each individual component of the ordinance, and the Project sponsor is required to submit a Certificate of Completion after installation of Project landscaping.
- **Regulatory Requirement, Alameda Water Reuse Ordinance**: Alameda Municipal Code Section 30-57 recognizes that EBMUD may designate Water Reuse Areas within the City as being those areas eligible to receive recycled water. New industrial or commercial development or residential subdivisions that are within the Water Reuse Area shall use recycled water provided by EBMUD, and have a separate plumbing system to serve recycled water uses.

Consistent with the APP EIR's expectation that Alameda Point (including the Project site) will be a designated Water Reuse Area, the Alameda Point Master Infrastructure Plan identifies the routes of anticipated recycled water lines, and the Project may install certain components of the recycled water line within the Orion Street right-of-way.

With implementation of these regulatory requirements, EBMUD will be able to serve the Project and reasonably foreseeable future development with water during normal and dry years, and will be more capable of providing water during multiple dry years. The Project's impact to water supply is consistent with the impacts disclosed in the GP EIR and APP EIR.

Wastewater

Treatment Capacity

As documented in the Alameda General Plan EIR, EBMUD's Main Wastewater Treatment Plant (MWWTP) has secondary treatment capacity of 168 mgd and primary treatment capacity of 320 MGD. As of 2021, the MWWTP had excess secondary treatment capacity of 105 mgd and excess primary treatment capacity of 257 mgd. The GP EIR projected that full buildout of the Alameda General Plan would generate an additional 2.3 mgd of wastewater flow, representing just over about 2 percent of the available secondary treatment capacity and less than 1 percent of the available primary treatment capacity. EBMUD's Capital Improvement Program for fiscal years 2020 through 2024 provides for additional improvements to its wastewater system including drains, reactor piping, clarifiers, digesters, grit handling, concrete structures, and building systems. Given the District's ongoing improvements to its wastewater infrastructure, and that the MWWTP operates at well under half of its permitted capacity, the relatively small incremental increase in wastewater generation that would result from buildout under the General Plan was found to have a less than significant impact on wastewater treatment capacity.

Conservatively assuming that all of the Project's domestic and industrial water demands of approximately 4,900 gpd (not including irrigation water) results in wastewater, the total wastewater treatment demand for the Project represents less than 1 percent of the City's total increased wastewater demand of 2.3 mgd at buildout, and is well within EBMUD's MWWTP capacity.

Regulatory Requirements

East Bay Municipal Utility District's Wastewater Control Ordinance provides that wastewater may be discharged into community sewer systems for treatment and disposal by EBMUD, provided such wastewater does not contain substances prohibited by the Ordinance, or exceed limitations of wastewater concentrations as set forth in the Ordinance; and provided that the discharger pays all wastewater disposal charges and is in compliance with all terms of the Ordinance, including permit provisions if applicable.

- **Regulatory Requirement, EBMUD Limitations on Discharges**: Section 3 of the EBMUD Wastewater Control Ordinance establishes certain limits and limitations on wastewater that may be discharged into the sewer system. These limits and limitations include:

    a. *Local Limits*: No person shall discharge wastewater from a sewer lateral into a community sewer if the concentration of certain listed constituents exceed established limitations.

    b. *Additional Wastewater Concentration Limits*: Wastewater concentration limits for constituents not specifically listed may be established in a Wastewater Discharge Permit based on available treatment technology, existing wastewater conditions in the District's facilities, or other factors.

    c. *Radioactive Limits*: No person shall discharge or cause to be discharged any radioactive wastewater into a community sewer except when the person is authorized to use radioactive material by the Nuclear Regulatory Commission or other governmental agency empowered to regulate the use of radioactive materials, and when the wastewater is discharged in strict conformity with current Nuclear Regulatory Commission regulations and recommendations for safe disposal and in compliance with all rules and regulations of State and local regulatory agencies.

Implementation of this regulatory requirement would ensure that all wastewater that may be discharged by the Project into the community sewer systems for treatment and disposal by EBMUD does not contain any substances prohibited by the Ordinance, or exceed limitations of wastewater concentrations as set forth in the Ordinance, and would not jeopardize EBMUD's wastewater disposal capabilities from their MWWTP. The Project's impact to wastewater is consistent with the impacts disclosed in the GP EIR and APP EIR.

Solid Waste

Construction Waste

Solid waste generated by construction of the Project would include demolition debris from removal of existing Building 530 and removal of old utility systems and street improvements. The demolition of Building 530 would include the abatement of any hazardous building materials including asbestos materials, lead based paints and other materials that may be identified as hazardous (see the Hazards and Hazardous Materials portion of this CEQA Checklist). Existing street improvements that may require demolition would be recycled and reused on- or off-site to the maximum extent feasible, and any local crushing operation and associated stockpiles would require the City's approval.

Using the same ratio of 10.8 square feet of building space per cubic yard of demolition debris, the 255,400 square-foot Building 530 may generate about 23,600 cubic yards of demolition debris. This represents approximately 16 percent of the demolition debris as was calculated per the APP EIR, and less that one-tenth of a percent of the available capacity of the Altamont Landfill. Because adequate landfill capacity exists to accept the Project's construction waste, impacts related to landfill capacity for demolition waste would not be significant.

Operational Waste

CalRecycle reports numerous solid waste generation rates developed by a variety of jurisdictions throughout the State, with a typical rate of approximately 10 pounds per employee per day. With 250 total employees, this would equate to approximately 2,500 pounds of solid waste per day. This represent a very small increase in current waste disposal at the Altamont Landfill, and solid waste generated by operation of the Project could be expected to be less than this worst-case estimate based on the City's landfill diversion expectations.

Regulatory Requirements

The City requires that the Project participate in operational waste recycling and construction waste diversion from landfills, pursuant to its Municipal Code requirements (below).

- **Regulatory Requirement of Alameda Municipal Code Section 21-2.1, Recyclable Materials**: It is mandatory that the owner or occupant of any premises contract with and pay the franchisee for recyclable materials and organic materials collection services, unless otherwise exempt. The owner or occupant shall pay the franchisee at rates established by the franchisee that comply with City-established policies and do not exceed the rate ceilings set by the City. It is mandatory that the customer ensure that recyclable and organic materials are placed in the proper collection containers in accordance with franchisee's instructions.
- **Regulatory Requirement CALGreen Code Section 5.408.1, Construction Waste Diversion**: Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste; or meet a local construction and demolition waste management ordinance, whichever is more stringent.

The impacts of the Project with regard to solid waste generation would be less than significant. Nevertheless, with implementation of these regulatory requirements the solid waste generated by construction and operation of the Project would be further reduced, and the Project would not conflict with ant state or local management and reduction statutes and regulations related to solid waste. The Project's impact to solid waste management is consistent with the impacts disclosed in the GP EIR and APP EIR.

Cumulative Utilities and Services Effects

The GP EIR found that increased water demand that would result from growth facilitated by the Alameda General Plan 2040 (including the Project) would contribute to an increased cumulative demand for domestic water supply in the region. Increased water demand in Alameda (including the Project) would primarily have a cumulative impact on water supplies procured by EBMUD for its service area. EBMUD's most recent UWMP determined that EBMUD would have sufficient water supplies to meet cumulative customer demand through 2040 during normal years and up to two dry years of a multi-year drought, but would need supplemental water supplies to meet projected demand during a third dry year after 2020. The UWMP details the actions the District would take to reduce demand and procure additional water supplies during an extended drought, including implementation of a Water Shortage Contingency Plan.[59] The Project's water demands are part of this overall cumulative water demand, and the Project would not result in a cumulative water demand that is any greater than already disclosed in the GP EIR.

Similarly, the GP EIR found that cumulative growth in the EBMUD wastewater service area is not expected to exceed the existing capacity of EBMUD's WWTP. Current wastewater flows at the plant are far below both the primary and secondary treatment capacity. Even factoring in cumulative growth in the other cities in EBMUD's service area, the increased wastewater flow from cumulative development would not exceed the existing capacity of the WWTP, and construction of new wastewater treatment facilities would not be required.[60] The Project's wastewater treatment demands are part of this overall cumulative wastewater demand, and the Project would not result in a cumulative wastewater treatment demand that is any greater than already disclosed in the GP EIR.

Cumulative impacts on stormwater collection and discharge system are confined to Alameda. The City will continue implementing its Storm Drain Master Plan and other measures to reduce impacts related to stormwater drainage. No major stormwater infrastructure is required to accommodate cumulative stormwater other than already programmed improvements. [61] The Project would have a less than significant cumulative impact on stormwater drainage facilities.

Future growth throughout the Bay Area (including the Project) will contribute to cumulative impacts on the regional waste disposal infrastructure. There is substantial remaining permitted capacity at the region's landfills to accommodate waste generated during the planning horizon, and all cumulative development in Alameda (including the Project) will be required to implement its share of the City's Zero Waste Implementation Plan, including the City's construction and demolition debris recycling

[59] Alameda, GP EIR page 7-54

[60] Alameda GP EIR, page 7-54

[61] Alameda GP EIR, page 7-55

ordinance and relevant CALGreen requirements.[62] The Project's contribution to cumulative waste disposal capacity would not be cumulatively considerable.

Conclusions

The Project would not result in new significant impacts or substantially more severe impacts pertaining to utilities and service systems than those previously disclosed in the Alameda Point Project EIR and/or the General Plan 2040 EIR. Certain mitigation measures and regulatory requirements identified in the prior Alameda Point Project EIR and/or the General Plan 20240 EIR would apply to the Project, and implementation of these mitigation measures and regulatory requirements would substantially reduce potential impacts of the Project on utilities and service systems.

No significant impacts to utilities or service systems are peculiar to the Project. The Project would not result in any new significant impacts to utilities or service systems not previously identified in the prior programmatic Alameda Point Project EIR and/or General Plan 2040 EIR. The Project is one part of cumulative development within Alameda Point, and Alameda Point is one component cumulative development throughout the City of Alameda. Therefore, all potential off-site and cumulative effects related to utilities and service systems to which the Project may contribute have already been addressed in these prior EIRs. There are no changes in circumstances or new information of substantial importance relative to potential impacts of the Project to utilities and/or service systems, and that require updating the analysis or conclusions of the Alameda Point Project EIR and/or the General Plan 2040 EIR. The Project is within the scope of the projects covered by the Alameda Point Project EIR and the Alameda 2040 General Plan EIR, and no new environmental document is required pertaining to the topics of utilities and service systems.

[62] Alameda GP EIR, page 7-55

Sources

Agency for Toxic Substances and Disease Registry, Toxic Substances Portal, accessed at: https://wwwn.cdc.gov/TSP/PHS/PHS.aspx?phsid=482&toxid=86

Alameda, City of, Alameda General Plan, November 2021

- Alameda, General Plan 2040 Environmental Impact Report, Draft EIR, May 2021 - certified November 2021
- Alameda, Alameda Point Preliminary Stormwater Management Plan, prepared by Balance Hydrologics, Inc., July 2015
- Alameda, Alameda Point Master Infrastructure Plan, prepared by Carlson, Barbee & Gibson, Inc., March 2014
- Alameda, Alameda Point Project Environmental Impact Report, Draft EIR, September 2013 - certified February 2014

Alameda, City of Alameda Municipal Code, accessed at: https://library.municode.com/ca/alameda_county/codes/code_of_ordinances

Alameda County Community Development Agency, Oakland International Airport Land Use Compatibility Plan, December 2010

Alameda County Transportation Commission, SB 743 and VMT Tool, https://www.alamedactc.org/planning/sb743-vmt

Arcadis, Final Remediation Alternatives Analysis and Response to Comments, Tarry Material Site, November 15, 2024

California, Department of Public Health, Radiological Health Branch (RHB), Radiation Safety and Protection Program Requirement Guidance, accessed at: https://www.cdph.ca.gov/Programs/CEH/DRSEM/Pages/RHB-RML/IND/RandDLabs.aspx

- California, Regional Water Quality Control Board San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit (Order No. R2-2022-0018, NPDES Permit No. CAS612008), May 11, 2022

California Supreme Court, Center for Biological Diversity v. Department of Fish & Wildlife (2015) 62 Cal.4th 204

California Water Board, Geotracker website, accessed at: https://geotracker.waterboards.ca.gov

East Bay Municipal Utility District, Water Supply Assessment -Alameda Point Project, August 13, 2013

Illingworth & Rodkin, Project Solis Air Quality Assessment, May 15, 2025

- Illingworth & Rodkin, Project Solis Noise Assessment, May 15, 2025

International Atomic Energy Association, accessed at: https://www.iaea.org/newscenter/news/what-is-deuterium

Kimley Horn, Project Solis – Alameda, Project Trip Generation and Vehicle Miles Traveled (VMT) Analysis, May 23, 2025

- Kimley-Horn, Project Solis Alameda Preliminary TDM Plan, May 2025

MiVolt, accessed at: https://www.mivolt.com/

Pacific Fusion, Introducing Pacific Fusion - Founders' Letter, accessed at: https://www.pacificfusion.com/updates/founders-letter

Polytechnique insights, A Review by Institut Polytechnique De Paris, accessed at: https://www.polytechnique-insights.com/en/columns/energy

PureTech Industrial Water, accessed at: https://puretecwater.com/resources/what-is-deionized-water/

San Francisco Bay Conservation and Development Commission, Permit No. M2014.029.01, as amended November 2018

San Francisco Regional Water Quality Control Board, Amended Clean Water Act (CWA) Section 401 Water Quality Certification, October 24, 2018

Shaw Environmental, Inc., Petroleum Corrective Action Summary Report - Corrective Action Area 13, Defueling Area, November 14, 2008

Tetra Tech EM, Inc., as subcontractor to Trevet, Inc., Final Finding of Suitability to Transfer (FOST) for Former Naval Air Station Alameda, April 19, 2013

Twinview Industry Insights, Benchmarking commercial energy use per square foot, January 2021, accessed at: https://www.twinview.com/insights/benchmarking-commercial-energy-use-per-square-foot

U.S. Army Corps of Engineers, Department of the Army Nationwide Permits for Outfall Structures and Associated Intake Structures, and for Temporary Construction, Access and Dewatering, File # 2014-00087S, September 14, 2018

U.S. Department of Energy, accessed at: https://www.energy.gov/ne/articles/fission-and-fusion-what-difference

- U.S. DoE," DOE Explains...Deuterium-Tritium Fusion Fuel", accessed at: https://www.energy.gov/science/doe-explainsdeuterium-tritium-fusion-fuel#:~:text=When%20deuterium%20and%20tritium%20fuse,clean%2C%20and%20relatively%20limitless%20energy

- U.S. Department of Energy, Radioactive Materials Packaging and Transportation Primer, 2013

U.S. Environmental Protection Agency (EPA), https://www.epa.gov/radiation/radionuclide-basics-tritium

U.S. Nuclear Regulatory Commission, accessed at: https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/tritium-radiation-fs.html

Appendix A

Project Solis Air Quality Assessment

Illingworth & Rodkin, May 2025

PROJECT SOLIS
AIR QUALITY ASSESSMENT

Alameda, California

May 15, 2025

Prepared for:

Mario Tija
Director
Hines
101 California Street, Suite 1000
San Francisco, CA 94111

Prepared by:

James Reyff
Jordyn Bauer
Zach Palm

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
429 East Cotati Avenue
Cotati, CA 94931
(707) 794-0400

I&R Project#: 25-036

Introduction

The purpose of this report is to address the potential air quality and health risk impacts associated with the proposed Project Solis: Pacific Fusion Project, which would be a Research & Development (R&D) project located at West Ticonderoga Avenue and Orion Street in Alameda, California. Air quality impacts would be associated with demolition of the existing land uses, construction of the new building and infrastructure, and operation of the project. Air pollutant emissions were estimated using appropriate computer models. In addition, the potential health risks associated with construction and operation of the project and the impact of existing toxic air contaminant (TAC) sources affecting the nearby sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air District (Air District).[1]

Project Description

The 15-acre project site is currently developed with a vacant warehouse-type building and paved areas. The proposed project would demolish the existing uses and construct R&D facility totaling approximately 220,000 square feet (sf). The Pacific Fusion project would include approximately 33,500-sf of office and operational support space, approximately 72,800-sf of lab and testing space, approximately 105,500-sf of high-bay industrial R&D space where the Pulser would be located and operated, and approximately 12,600-sf of central utility space, including the electrical room and fire pump. Additionally, the project would include a 141,750-sf parking lot with 208 parking spaces and would utilize 124 surface parking spaces on the lot adjacent to the project site. The Pacific Fusion project would also include a diesel-powered 300-kilowatt (kW) emergency generator and four or five electrically powered forklifts. Construction is anticipated to occur from January 2026 through March 2027.

The project applicant or City would need to construct off-site improvements to support the Pacific Fusion Project. Details of these improvements are not known but were estimated. This included (1) construction of three separate pipelines for sewer, water and storm drains, (2) construction of a potential storm drain outfall to the south of the site, and (3) pavement of W. Pacific Avenue, Onion Street, and W. Ticonderoga Avenue.

Setting

Ambient Air Quality Standards

The Federal and California Clean Air Acts have established ambient air quality standards for different pollutants. National ambient air quality standards (NAAQS) were established by the Federal Clean Air Act of 1970 (amended in 1977 and 1990) for six "criteria" pollutants. These criteria pollutants now include carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), respirable particulate matter with a diameter less than 10 microns (PM_{10}), fine particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). The air pollutants for which standards have been established are considered the most prevalent air pollutants known to be hazardous to human

[1] Formerly known as the Bay Area Air Quality Management District (BAAQMD), *2022 CEQA Guidelines*, April 2023.

health. California ambient air quality standards (CAAQS) include the NAAQS pollutants and also hydrogen sulfide, sulfates, vinyl chloride, and visibility reducing particles. These additional CAAQS pollutants tend to have unique sources and are not typically included in environmental air quality assessments. In addition, Pb concentrations have decreased dramatically since it was removed from motor vehicle fuels. The Bay Area has attained the CO standard and monitoring data from the last 30 years show relatively low concentrations throughout the Bay Area. Therefore, CO is not an air quality issue for land use type projects such as this one.

Air Pollutants of Concern

High ozone concentrations in the air basin are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X). These precursor pollutants react under certain meteorological conditions to form ozone concentrations. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ambient ozone concentrations. The highest ozone concentrations in the Bay Area occur in the eastern and southern inland valleys downwind of existing air pollutant sources. High ozone concentrations aggravate respiratory and cardiovascular diseases, reduce lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant in the air basin. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter concentrations aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

TACs are a broad class of compounds known to cause morbidity or mortality, often because they cause cancer. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure of TACs can result in adverse health effects, they are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about seventy percent of the cancer risk from TACs (based on the Bay Area average).[2] According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects from diesel exhaust exposure a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants

[2] CARB, *Summary: Diesel Particulate Matter Health Impacts*, Web: https://ww2.arb.ca.gov/resources/summary-diesel-particulate-matter-health-impacts#footnote1_7yob8j5.

programs. Health risks from TACs are estimated using the Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines, which were published in February of 2015 and incorporated into the Air District's California Environmental Quality Act (CEQA) guidance.[3]

$PM_{2.5}$ emissions can include TACs. Due to the adverse health effects caused by $PM_{2.5}$ exposure even at low concentrations, the Air District developed assessing methods and health risk thresholds to address exposure to increased concentrations caused by project $PM_{2.5}$ emissions.[4]

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, people over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. For cancer risk assessments, infants and children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors are the residents in the homes to the east of the Pacific Fusion Project site. Additionally, there are children located in the Kiddie Kampus Cooperative Preschool to the northeast and in the Encinal Junior & Senior High School to the southeast of the project site. Additional sensitive receptors are located at further distances from the site. Due to the project's proximity to nearby businesses, worker receptors were also included in this analysis. The Pacific Fusion project would not introduce new sensitive receptors (i.e., residents) to the area.

Regulatory Setting

Federal Regulations

The United States Environmental Protection Agency (EPA) sets nationwide ambient air quality standards (NAAQS) and emission standards for mobile sources, which include on-road (highway) motor vehicles such trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The EPA also sets nationwide fuel standards.

In the past twenty years, the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of NO_X and particulate matter ($PM_{2.5}$) and because the EPA has identified DPM as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce particulate matter and NO_X emissions from diesel engines up to 95 percent in 2030 when the heavy-duty

[3] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
[4] Bay Area Air District, 2022 CEQA Air Quality Guidelines, Appendix A, p40.

vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[5]

In concert with the diesel engine emission standards, the EPA has also substantially reduced the amount of sulfur allowed in diesel fuels. The sulfur contained in diesel fuel is a significant contributor to the formation of particulate matter in diesel-fueled engine exhaust. The current standards limit the amount of sulfur allowed in diesel fuel to 15 parts per million by weight (ppmw). Ultra-low sulfur diesel (ULSD), as it is referred to, is required for use by all vehicles in the U.S.

All of the above federal diesel engine and diesel fuel requirements have been adopted by California, in some cases with modifications making the requirements more stringent or the implementation dates sooner.

State Regulations

The California Air Resources Board (CARB) has set statewide ambient air quality standards (CAAQS) and emission standards for on-road and off-road mobile sources that are more stringent than those adopted by the EPA. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a regulation to reduce emissions of DPM and NO_X from on-road heavy-duty diesel fueled vehicles.[6] The regulation required affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. Regulations known as the Advanced Clean Cars and Advanced Clean Cars II (ACC II) will require new all new cars and light trucks sold in California will be zero-emission vehicles by 2035.

CARB has also adopted and implemented regulations to reduce DPM and NO_X emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.).[7] The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and NO_X exhaust emissions by imposing limits on idling, requiring vehicles to be report to CARB's DOORS online reporting system, restricting the addition of older vehicles into fleets and banning older Tiered engines, and requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates.[8] Implementation of this regulation, in conjunction with stringent federal off-road equipment engine emission limits for new vehicles, significantly reduces emissions of DPM and NO_X in order to help reduce the health risk throughout California.

---

[5] USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.
[6] Available online: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed: November 21, 2014.
[7] CARB, Web: https://ww2.arb.ca.gov/resources/fact-sheets/overview-amendments-use-road-diesel-fueled-fleets-regulation
[8] CARB, Web: https://ww2.arb.ca.gov/our-work/programs/truckstop-resources/road-zone/road-diesel-regulation

To address the issue of diesel emissions in the state, CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*[9]. In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the Federal on-road and non-road emission standards for new diesel engines, as well as adoption of regulations for ULSD fuel in California.

Truck and Bus Regulation

CARB is actively enforcing heavy-duty diesel vehicle regulations that require fleets to replace or retrofit heavy-duty diesel vehicles, with full implementation of the program scheduled for January 1, 2023. Compliance with the program is generally considered vehicles equipped with a 2010 or newer engine model year. As of January 1, 2020, the DMV cannot register any vehicle that does not meet the requirements of the Truck and Bus Regulation.

Other CARB diesel programs affecting heavy-duty diesel vehicles include:

- Idling limits of no more than 5 minutes with special exceptions
- Emission Control Labels must be affixed to engines of all commercial heavy-duty diesel vehicles, and must be legible as proof the engine, at minimum, meets U.S. federal emissions standards for the engine model year
- The Periodic Smoke Inspection Program requires owners of California-based fleets of two or more diesel vehicles to perform annual smoke opacity tests and to keep records for at least two years for each vehicle.
- The Heavy-Duty Vehicle Inspection Program uses random roadside inspections to verify that diesel engines do not smoke excessively and are tamper-free.

Off-Road Vehicle and Equipment Regulations

CARB has also adopted and implemented regulations to reduce DPM and nitrogen oxides (NOx) emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and NOx exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent Federal off-road equipment engine emission limits for new vehicles, is expected to substantially reduce emissions of DPM and NOx.

Fleet owners must report the vehicle and engine information for all vehicles within their fleets operating in California. Fleet owners must also report owner information. Fleet owners should

[9] California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.

report using DOORS, which is CARB's online reporting tool. CARB issues a unique Equipment Identification Number (EIN) that is assigned to each vehicle. The fleet owner must label their vehicles with the EIN.

Other CARB diesel programs affecting off-road vehicles and equipment include:

- Idling limits of no more than 5 minutes with special exceptions.
- Portable engines 50 hp or greater may require a permit or registration to legally operate. The Bay Area Air District is responsible for taking enforcement action against individuals who own or operate portable equipment without a registration or permit.

Project Air Quality Conditions

The Pacific Fusion project is located in Alameda County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Bay Area Air District (Air District)

The Bay Area Air District has jurisdiction over an approximately 5,600-square mile area, commonly referred to as the San Francisco Bay Area (Bay Area). The District's boundary encompasses the nine San Francisco Bay Area counties, including Alameda County, Contra Costa County, Marin County, San Francisco County, San Mateo County, Santa Clara County, Napa County, southwestern Solano County, and southern Sonoma County.

The Air District is the lead agency in developing plans to address attainment and maintenance of the NAAQS and CAAQS. The District also has permit authority over most types of stationary equipment utilized for the project. The Air District is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

The Air District's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.[10] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program has been implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses has been used to develop emission reduction activities in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE

[10] See Bay Area Air District: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program.

program are focused on the most at-risk communities in the Bay Area. Seven areas have been identified by the Air District as impacted communities. They include Eastern San Francisco, Richmond/San Pablo, Western Alameda, San José, Vallejo, Concord, and Pittsburgh/Antioch. The Pacific Fusion project site is within the Western Alameda CARE area.

Overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.[11] The Air District has identified several overburdened areas within its boundaries. The project site and surroundings is within an overburdened area that is scored at the 77th percentile on CalEnviroScreen, which is primarily due to high DPM and traffic exposure factors.[12]

Clean Air Plan

The Air District is responsible for developing a Clean Air Plan which guides the region's air quality planning efforts to attain both the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). The Air District's *2017 Clean Air Plan* is the current Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (i.e., ROG and NO_X), particulate matter (PM_{10} and $PM_{2.5}$) and greenhouse gas (GHG) emissions.

Bay Area Air District CEQA Air Quality Guidelines

In June 2010, the Air District adopted thresholds of significance to assist in the review of projects under CEQA. In 2023, the Air District revised the *CEQA Air Quality Guidelines* that include significance thresholds to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The current Air District guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They include assessment methodologies for criteria air pollutants, air toxics, odors, and GHG emissions, as shown in Table 1.[13] Air quality impacts and health risks are considered potentially significant if they exceed these thresholds.

The Air District recommends all projects include a "basic" set of best management practices (BMPs) to manage fugitive dust and consider impacts from dust (i.e., fugitive PM_{10} and $PM_{2.5}$) to be less than significant if BMPs are implemented (listed below). The Air District strongly encourages enhanced BMPs for construction sites near schools, residential areas, other sensitive land uses, or if air quality impacts were found to be significant.

[11] See Bay Area Air District: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofoverburdenedcommunities-pdf.pdf?la=en.
[12] OEHAA, CalEnviroScreen 4.0 Maps https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40
[13] Bay Area Air District, 2023. *2022 CEQA Guidelines*. April.

Table 1. Bay Area Air District CEQA Significance Thresholds

Criteria Air Pollutant	Construction Thresholds		Operational Thresholds	
	Average Daily Emissions (lbs./day)		Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
ROG	54		54	10
NO_X	54		54	10
PM_{10}	82 (Exhaust)		82	15
$PM_{2.5}$	54 (Exhaust)		54	10
CO	Not Applicable		9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices (BMPs)*		Not Applicable	
Health Risks and Hazards	**Single Sources/ Individual Project**		**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**	
Excess Cancer Risk	>10.0 in a million	OR Compliance with Qualified Community Risk Reduction Plan	>100 in a million	OR Compliance with Qualified Community Risk Reduction Plan
Hazard Index	>1.0		>10.0	
Incremental annual $PM_{2.5}$	>0.3 µg/m^3		>0.8 µg/m^3	

Note: ROG = reactive organic gases, NO_X = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less.

* The Air District strongly recommends implementing all feasible fugitive dust management practices especially when construction projects are located near sensitive communities, including schools, residential areas, or other sensitive land uses.

Source: Bay Area Air District, 2022

Bay Area Air District Rules and Regulations

Combustion equipment associated with the proposed project includes new diesel engines to power generators that would establish new sources of particulate matter and gaseous emissions. Emissions would primarily result from the testing of the emergency backup generators and operation of the cooling towers. Certain emission sources would be subject to Air District Regulations and Rules. The District's rules and regulations that may apply to the project include:

- Regulation 2 – Permits
  - Rule 2-1: General Requirements
  - Rule 2-2: New Source Review
  - Rule 2-5: New Source Review of Toxic Air Contaminants
- Regulation 6 – Particulate Matter and Visible Emissions
  - Rule 6-3: Wood-Burning Devices
- Regulation 9 – Inorganic Gaseous Pollutants
  - Rule 9-1: Sulfur Dioxide
  - Rule 9-4: Nitrogen Oxides from Fan Type Residential Central Furnace
  - Rule 9-6: Nitrogen Oxides Emissions from Natural Gas-Fired Boilers and Water Heaters

Rule 9-7: Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, And Process Heaters
Rule 9-8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines

Permits

Rule 2-1-301 requires that any person installing, modifying, or replacing any equipment, the use of which may reduce or control the emission of air contaminants, shall first obtain an Authority to Construct (ATC).

Rule 2-1-302 requires that written authorization from the Air District in the form of a Permit to Operate (PTO) be secured before any such equipment is used or operated.

Rule 2-1 lists sources that are exempt from permitting.

New Source Review

Rule 2-2, New Source Review (NSR), applies to all new and modified sources or facilities that are subject to the requirements of Rule 2-1-301. The purpose of the rule is to provide for review of such sources and to provide mechanisms by which no net increase in emissions will result.

Rule 2-2-301 requires that an applicant for an ATC or PTO apply Best Available Control Technology (BACT) to any new or modified source that results in an increase in emissions and has emissions of precursor organic compounds, non-precursor organic compounds, NOx, SO_2, PM_{10}, or CO of 10.0 pounds or more per highest day. Based on the estimated emissions from the proposed project, BACT will be required for NOx emissions from the diesel-fueled generator engines.

Rule 2-5 applies to new and modified sources of TAC emissions. The Air District evaluates the TAC emissions in order to evaluate potential public exposure and health risk, to mitigate potentially significant health risks resulting from these exposures, and to provide net health risk benefits by improving the level of control when existing sources are modified or replaced. Toxics BACT (or TBACT) is applied to any new or modified source of TACs where the source risk is a cancer risk greater than 1.0 in one million and/or a chronic hazard index greater than 0.20. Permits are not issued for any new or modified source that has risks or net project risks that exceed a cancer risk of 10.0 in one million or a chronic or acute hazard index of 1.0.

Stationary Diesel Airborne Toxic Control Measure

The Air District administers the CARB's Airborne Toxic Control Measure (ACTM) for Stationary Diesel engines (section 93115, title 17 CA Code of Regulations). The project's stationary sources will be new stationary emergency stationary emergency standby diesel engines larger than 50 hp. These limits vary based on maximum engine power. All engines are limited to PM emission rates of 0.15 g/hp-hour, regardless of size. This ACTM limits engine operation 50 hours per year for routine testing and maintenance.

Offsets

Rule 2-2-302 requires that offsets be provided for a new or modified source that emits more than 10 tons per year of NOx or precursor organic compounds. It is not expected that emissions of any pollutant will exceed the offset thresholds.

Prohibitory Rules

Regulation 6 pertains to particulate matter and visible emissions. Although the engines will be fueled with diesel, they will be modern, low emission engines. Thus, the engines are expected to comply with Regulation 6.

Rule 6-3 applies to emissions from wood-burning devices. Effective November 1, 2016, no person or builder shall install a wood-burning device in a new building construction.

Rule 9-1 applies to sulfur dioxide. The engines will use ultra-low sulfur diesel fuel (less than 15 ppm sulfur) and will not be a significant source of sulfur dioxide emissions and are expected to comply with the requirements of Rule 9-1.

Rule 9-7 limits the emissions of NOx CO from industrial, institutional and commercial boilers, steam generators and process heaters. This regulation typically applies to boilers with a heat rating of 2 million British Thermal Units (BTU) per hour.

Rule 9-8 prescribes NOx and CO emission limits for stationary internal combustion engines. Since the proposed engines will be used with emergency standby generators, Regulation 9-8-110 exempts the engines from the requirements of this Rule, except for the recordkeeping requirements (9-8-530) and limitations on hours of operation for reliability-related operation (maintenance and testing). The engines will not operate more than 50 hours per year, which will satisfy the requirements of 9-8-111.

BACT for Diesel Generator Engines

Since the generators will be used exclusively for emergency use during involuntary loss of power, the BACT levels listed for IC compression engines in the Air District BACT Guidelines would apply. These are provided for two separate size ranges of diesel engines:

> I.C. Engine – Compression Ignition >50hp and <1.000hp: The Air District applies BACT 2 emission limits based on the ATCM for stationary emergency standby diesel engines larger than 50 brake-horsepower (BHP). NOx emission factor limit is subject to the CARB ACTM that ranges from 3.0 to 3.5 grams per horsepower hour (g/hp-hr). The PM (PM10 or PM2.5) limit is 0.15 g/hp-hr per CARB's ACTM.
>
> I.C. Engine – Compression Ignition >999hp: The Air District applies specific BACT emission limits for stationary emergency standby diesel engines equal or larger than 1,000 brake-horsepower (BHP). NOx emission factor limit is subject to the CARB ACTM that

ranges from 0.5 g/hp-hr. The PM (PM10 or PM2.5) limit is 0.02 g/hp-hr. POC (i.e., ROG) limits are 0.14 g/hp-hr.

Alameda General Plan 2040

In 2014, the City of Alameda amended its then-current General Plan Land Use Element to be consistent with the development envelope contained in the approved Reuse Plan for Alameda Point. That 2014 amendment is now fully incorporated into the currently applicable 2040 General Plan, approved in November of 2021.

The Alameda General Plan 2040 was adopted by the City Council on November 30, 2021 and Amended on June 7, 2022.[14] It includes objectives, policies, and actions designed to guide and manage change to the physical, environmental, economic, and social conditions in the City of Alameda. The following objectives, goals, and actions are applicable to the project:

Health and Safety Element

Objective 7: Protect Alamedans from the harmful effects of air pollutants.

- *Policy HS-65*: **Construction Air Pollution.** Protect public health by requiring best management practices at construction sites and carefully evaluating the potential health risks of projects that generate substantial toxic air contaminants or projects that propose to place a sensitive user in proximity to an existing source of contaminants.

    - ***Actions:***
        a. Construction Dust. Reduce dust and harmful air pollutants resulting from construction activities by requiring compliance with best management practices (BMPs) as recommended by the Air District.

        b. Health Risk Assessment. Require preparation of a Health Risk Assessment in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the Air District. Adopt recommended health risk mitigations for projects that generate substantial TAC emissions within 1,000 feet of sensitive receptors or for sensitive receptor uses proposed to be located within 1,000 feet of an existing major source of toxic air contaminants.

- *Policy HS-68:* **Toxic Air Contaminants.** Minimize and avoid exposure to toxic air contaminants.

    - ***Actions:***
        a. New Sources. As a condition of approval, future discretionary projects that generate substantial TAC emissions (that are not regulated by the Air District, such as construction activities lasting greater than two months or facilities that include more than 100 truck trips per day, 40 trucks with transport refrigeration

[14] City of Alameda, *Alameda General Plan 2040*, June 7, 2022. Web: https://irp.cdn-website.com/f1731050/files/uploaded/AGP_Book_June2022_Amend-1.pdf

units (TRUs) per day, or where TRU unit operations exceed 300 hours per week)) that are located within 1,000 feet of sensitive receptors shall submit a Health Risk Assessment (HRA) prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the Air District prior to discretionary project approval. If the HRA shows that the incremental cancer risk, PM2.5 concentrations, or the appropriate non-cancer hazard index exceeds The Air District project-level thresholds, then the applicant shall be required to identify and demonstrate that mitigation measures are capable of reducing potential PM2.5 concentrations, cancer risks, and non-cancer risks to below Air District project-level significance thresholds.

b. New Sensitive Receptors. As a condition of approval, proposed new sensitive receptor uses proposed within 1,000 feet of existing major sources of TACs (e.g., permitted stationary sources, highways, freeways and roadways with over 10,000 annual average daily traffic (AADT)) shall submit a Health Risk Assessment (HRA) to the City prior to future discretionary project approval. If the HRA shows that the incremental cancer risk, PM2.5 concentrations, or the appropriate non-cancer hazard index exceeds The Air District's cumulative-level thresholds, then the applicant shall be required to identify and demonstrate that mitigation measures (e.g., electrostatic filtering systems) are capable of reducing potential cancer and non-cancer risks to below the Air District's significance thresholds.

- *Policy HS*-69: **Construction Period Air Quality Impacts.** Minimize air quality impacts as the result of construction activities.

  - ***Actions:***

    a. Construction Mitigations. As a condition of approval, future discretionary projects shall implement the following measures or equivalent, expanded, or modified measures based on project- and site-specific conditions: all exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered at least two times per day; all haul trucks transporting soil, sand, or other loose material off-site shall be covered; all visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping shall be prohibited; all vehicle speeds on unpaved roads shall be limited to 15 mph; all roadways, driveways, and sidewalks to be paved shall be completed as soon as possible; idling times shall be minimized either by shutting equipment off when not in use or reducing maximum idling time to 5 minutes; 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; a publicly visible sign shall be posted with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours; and the Air District's

phone number shall also be visible to ensure compliance with applicable regulations.

Alameda Point Project Draft Environmental Impact Report

The following goals and policies relevant to air quality and the proposed project are contained in the City's Alameda Point Project Draft Environmental Impact Report (DEIR) in the *Air Quality and Greenhouse Gases* section.[15,16]

Impact 4.F-1: Development facilitated by proposed project could potentially result in air quality impacts due to construction activities. (Significant)

MM-4.F-1a: Fugitive Dust. The following Air District Best Management Practices for fugitive dust control will be required for all construction activities within the project area. These measures will reduce fugitive dust emissions primarily during soil movement, grading and demolition activities, but also during vehicle and equipment movement on unpaved project sites:

Basic Controls that Apply to All Construction Sites

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 mph.

5. 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.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five 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.

[15] ESA, *Alameda Point Project Draft Environmental Impact Report, September 2013*. Web: https://www.alamedaca.gov/Departments/Alameda-Point

[16] In 2014, the City of Alameda amended its then-current General Plan Land Use Element to be consistent with the development envelope contained in the approved Reuse Plan for Alameda Point. That 2014 amendment is now fully incorporated into the currently applicable 2040 General Plan, approved in November of 2021.

7.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.

8. Post a publicly visible sign with the telephone number and person to contact at the Town regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

MM-4.F-1b: Construction Exhaust. The following control measures for construction emissions will be required for all construction activities within the project area:

- 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.

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes. Clear signage shall be provided for construction workers at all access points.

- The Project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOx reduction and 45 percent PM reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available. (The Level 3 Verified Diesel Emissions Control (VDEC) required under Mitigation Measure 4.F-1d would also comply with this measure)

- Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reduction of NOx and PM.

- Require all contractors to use equipment that meets CARB's most recent certification standard for off-road heavy duty diesel engines.

MM-4.F-1c: Demolition Controls. Demolition and disposal of any asbestos containing building material shall be conducted in accordance with the procedures specified by Regulation 11, Rule 2 (Asbestos Demolition, Renovation and Manufacturing) of Air District's regulations.

MM-4.F-1d: Toxic Air Contaminants and $PM_{2.5}$. The project sponsors shall ensure that construction contract specifications include a requirement that all off-road construction equipment used for project improvements be equipped with a Level 3 Verified Diesel

Emissions Control (VDEC), which would reduce diesel particulate emissions by at least 85 percent.

Impact 4.F-2: Development facilitated by the proposed project could potentially generate operational emissions that would result in a considerable net increase of criteria pollutants and precursors for which the air basin is in nonattainment under an applicable federal or state ambient air quality standard. (Significant)

MM-4.F-2: The following measures shall be incorporated into the project design for properties within the project area;

- Implement a Transportation Demand Management (TDM) program, as described in detail in Mitigation Measure 4.C.1a in Section 4.C, Transportation.
- Require only natural gas hearths in residential units as a condition of final building permit;
- Require smart meters and programmable thermostats;
- Meet Green Building Code standards in all new construction;
- Install solar water heaters for all uses as feasible;
- Use recycled water when available;
- Install low-flow fixtures (faucets, toilets, showers);
- Use water efficient irrigation systems; and
- Institute recycling and composting services.

Impact 4.F-3: Operation of the development facilitated by the proposed project could potentially expose sensitive receptors to substantial concentrations of toxic air contaminants or respirable particulate matter ($PM_{2.5}$). (Less than Significant)

Impact 4.F-5: Development facilitated by the proposed project could potentially expose sensitive receptors to substantial carbon monoxide concentrations. (Less than Significant)

Impact 4.F-6: Development facilitated by the proposed project could potentially create objectionable odors affecting a substantial number of people. (Less than Significant)

Impact 4.F-7: Development facilitated by the proposed project could potentially conflict with or obstruct implementation of the applicable air quality plan. (Significant)

MM 4.F-7a: Implement Mitigation Measure 4.F-2.

MM 4.F-7b: The City shall include of clean fuel-efficient through preferential parking, installation of charging stations, and low emission electric vehicle carsharing programs to reduce the need to have a car or second car vehicles in the TDM Program.

Impact 4.F-8: Development facilitated by the proposed, when combined with past, present and other reasonably foreseeable development in the vicinity, could potentially result in cumulative criteria air pollutant air quality impacts. (Significant)

MM 4.F-8: Implement Mitigation Measures 4.F-2 and 4.F-7b.

Impact 4.F-9: Development facilitated by the proposed project could cumulatively expose persons to substantial levels of TACs, which may lead to adverse health effects. (Less than Significant)

AIR QUALITY IMPACTS AND CONTROL MEASURES

Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan?

The Air District is the regional agency responsible for overseeing compliance with State and Federal laws, regulations, and programs within the San Francisco Bay Area Air Basin (SFBAAB). The Air District, with assistance from the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC), prepares and implements specific plans to meet the applicable laws, regulations, and programs. The most recent and comprehensive of which is the *Bay Area 2017 Clean Air Plan*.[17] The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The Air District has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality and GHG impacts. In formulating compliance strategies, the Air District relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which, in turn, affects region-wide emissions of air pollutants and GHGs.

The 2017 Clean Air Plan, adopted by the Air District in April 2017, includes control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. Guidance provided in the Air District CEQA guidelines recommends that Plans show consistency with the control measures listed within the Clean Air Plan. The Pacific Fusion Project is consistent with the Alameda Point Plan (a community plan adopted as part of the General Plan), is consistent with the Alameda 2040 General Plan, and is consistent with the Project site's Enterprise-1 zoning action, each of which designates or zones the parcel that the Pacific Fusion Project would be located to accommodate the Project's proposed land use type and intensity of development. The EIR for the General Plan was certified in 2021 by the City of Alameda, and the Alameda Point Project EIR was certified by the City in 2014.

At the project-level, there are no consistency measures or thresholds provided in the Air District's CEQA guidance to demonstrate consistency with the Clean Air Plan. The Pacific Fusion project would not introduce any new substantial sources of air pollutants and stationary sources would be permitted by the Air District. The project would not conflict with the latest Clean Air planning efforts since 1) project would have emissions below the Air District thresholds (see Impact below), 2) the project would be considered urban infill as it redevelops an active land use, 3) the project

[17] Bay Area Air District, 2017. *Final 2017 Clean Air Plan.*

would be located near employment centers, and 4) the project would be located near transit with regional connections.

Impact AIR-2 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Alameda Point DEIR Impact 4.F-1 and -2 found that development facilitated by the full build-out of the plan area could potentially generate emissions that would result in a considerable net increase of criteria pollutants and precursors for which the air basin is in nonattainment under an applicable federal of state ambient air quality standard.

Construction Period Emissions

General Plan Policy HS-65: Construction Air Pollution, includes a policy to reduce dust and harmful air pollutants resulting from construction activities by requiring compliance with best management practices (BMPs) as recommended by the Air District. Policy HS-65 would include the measures recommended by the Air District in the 2022 CEQA Air Quality Guidelines.

The California Emissions Estimator Model (CalEEMod) Version 2022 was used to estimate emissions from construction activities and project operation. CalEEMod predicted emissions from construction activity, construction vehicle trips, and evaporative emissions. The Pacific Fusion project land use types and size, and anticipated construction schedule were input to CalEEMod. The CalEEMod model output along with construction inputs are included in *Attachment 1*.

CalEEMod Inputs

Land Use Inputs

The Pacific Fusion project land uses were entered into CalEEMod as described in Table 2.

Table 2. Summary of Pacific Fusion Land Use Inputs

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
Project Construction and On-Site Improvements				
Industrial Park	220	1,000-sf	220,000	15
Parking Lot	142	1,000-sf	141,750	
Off-Site Improvements				
Road Construction[1]		0.64 Mile	-	
New pipelines/trenching (3 lines)		10,397 feet		
Off-site potential 60” main		1,230 feet		
[1]Road construction land uses were used to represent the underground recycled water line in order to capture the linear construction activities.				

Construction Inputs

CalEEMod computes annual emissions for construction that are based on the project type, size, and acreage. The model provides emission estimates for both on-site and off-site construction

activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The construction build-out scenario, including equipment quantities, average hours per day, total number of workdays, and schedule, were based on CalEEMod defaults for a project of this type and size. The construction schedule assumed that the earliest start date would be January 2026 and would be built over a period of approximately 15 months or 325 construction workdays. The earliest full year of operation was assumed to be 2028.

Construction Truck Traffic Emissions

Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on provided demolition materials to be exported, soil imported and/or exported to the site, equipment that would be hauled to the site, and the amount of asphalt and cement truck deliveries. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. Haul trips are calculated by CalEEMod based on the volume of demolition material exported and soil imported or exported. Cement and asphalt truck trips were estimated based on a capacity of 9 cy per truck delivery (2 trips). Pacific Fusion estimates up to 80 vendor deliveries (2 trips each) during the final phase of construction to deliver specific equipment. Table 3 reports the estimate of traffic generated by on- and off-site construction needed for the Pacific Fusion Project.

Table 3. Construction Traffic Estimates

		Daily Trips			
Construction Phase	**Work Days**	**Worker**	**Vendor Truck**	**Hauling Truck**	**Notes**
On Site Work					
Demolition	20	15.0		64.3	Removal of demolition debris
Site Preparation	10	17.5			
Grading	20	15.0		96.3	Import/export of soils
Trenching	20	5.0			
Building Construction	230	92.4	36.1	10.4	Vendor plus cement
Architectural (interior)	20	18.5	8.0		Includes 80 truck deliveries
Paving	20	15.0		26.0	Import of asphalt
Off Site Work					
Pipeline Trenching	104	17.5		21.9	Export demo asphalt and soil, import materials, soil and asphalt
Street Paving	12	17.5		53.6	
Potential offsite 60in line	20	10.0		19.9	

Summary of Computed Construction Emissions

Average daily construction emissions were estimated for the total duration of the project (325 days) since the construction duration is just over one year. Table 4 shows the uncontrolled annualized average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust

during construction of the project. As indicated in Table 4, predicted uncontrolled annualized average project construction emissions would not exceed the Air District significance thresholds during any year of construction.

Table 4. Construction Period Emissions - Uncontrolled

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction Emissions Per Year (Tons)				
2026+2027 On-site construction	1.38	2.15	0.07	0.07
2026 Off-site construction	0.04	0.64	0.02	0.01
Average Daily Construction Emissions Per Year (pounds/day)				
2026+2027 (325 construction workdays)	8.70	17.17	0.55	0.49
Bay Area Air District Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

Fugitive Dust and Air District Recommendations

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site deposit mud on local streets, which is an additional source of airborne dust after it dries. The Air District recommends all projects include a "basic" set of best management practices (BMPs) to manage fugitive dust and considers impacts from dust (i.e., fugitive PM_{10} and $PM_{2.5}$) to be less-than-significant if BMPs are implemented to reduce these emissions. The City of Alameda's General Plan Health and Safety Policy HS-65 Action A, Policy HS-69 Action A, and the City's Alameda Point DEIR MM 4.F-1a would implement the following the Air District basic BMPs during construction:

General Plan Policy HS-65 Action A, HS-69 Action A, and Alameda Point DEIR MM 4.F-1a:

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. The contractor shall implement the following BMPs that are required of all projects under General Plan Policy HS-65 Action A, Policy HS-69 Action A, and Alameda Point DEIR MM 4.F-1a:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. 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.

6. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

7. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.

8. Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.

9. Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

Effectiveness of Policies

The General Plan Policy HS-65 Action A, HS-69 Action A, and Alameda Point DEIR MM 4.F-1a, described above, are consistent with the Air District-recommended basic BMPs for reducing fugitive dust contained in the Air District CEQA Air Quality Guidelines. For this analysis, only the basic set of BMPs are required as the Project emissions and $PM_{2.5}$ impacts were below the Air District thresholds. Enhanced BMPs are only required as control measures if quantified air quality impacts were found to be significant.

Operational Period Emissions

ROG, PM, and NO_X emissions from the Pacific Fusion project would be generated primarily from trucks and autos driven by future employees. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are also typical ROG emission sources from these types of land uses. CalEEMod was used to estimate emissions from operation of the proposed project assuming full build-out.

<u>CalEEMod Inputs</u>

Land Uses

The project land uses were input to CalEEMod as described above for the construction period modeling.

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the

model, the higher the emission rates utilized by CalEEMod. The earliest full year of operation would be 2028 if construction begins in 2026. Emissions associated with build-out later than 2028 would be lower.

Traffic Information

The project-specific daily trip generation rate provided by the traffic consultant was entered into the CalEEMod.[18] The daily trip generation was calculated by the Traffic Consultant using the 11th Edition ITE trip generation rates and the size of the Pacific Fusion project land uses. The project is predicted to produce approximately 741 daily trips. The Saturday and Sunday trip rates were derived by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips to the default weekday rate with the project-specific daily weekday trip rate. The default trip lengths and trip types specified by CalEEMod were used. Pacific Fusion predicts that the project, on average, would generate less than 20 truck trips per day. Therefore, 20 truck trips were included in the operational modeling.

The Pacific Fusion project would have to meet Transportation Demand Management (TDM) program requirements established by the City for Alameda Point with the purpose of reducing new trips from commercial development by 30 percent in the peak hour.[19] This is anticipated to reduce daily trip rates by over 15 percent. However, this reduction was not included in the modeling since the final TDM effectiveness assumption had not been determined at the time of the analysis.

Energy

CalEEMod defaults for energy use were used, including the 2019 Title 24 Building Standards. These defaults are conservative, as the Project would need to meet the more stringent and latest 2022 or 2025 Title 24 Building Standards. The electricity produced emission rate was modified in CalEEMod. An emission factor of 105 pounds of CO_2 per megawatt (MW) of electricity produced was entered into CalEEMod, which is based on Alameda Municipal Power's (AMP) 2023 residential emissions rate.[20]

The Pacific Fusion project consists of a pulse system (or Pulser) that comprised of multiple modules of electrical capacitors connected in series and parallel, generating the necessary energy for fusion. The Pulser stores electrical energy and then discharges it through pulse tubes and water transmission lines into a target chamber. One "pulse" would require a load size ultra-capacitor energy storage system, which supplies the Pulser with anywhere from 5 to 8 MW of electricity to charge the Pulser. However, the Pulser is used for only about one minute once a day. At peak operation, the Project would require approximately 3.3 MW of power for its standard lab and office space operations, plus the power demands of the Pulser. Most of the other times, the CalEEMod default setting is considered representative of the project's electricity demand.

[18] Kimley Horn, *Memorandum Project Solis- Alameda Project Trip Generation and Vehicle Miles Traveled (VMT) Analysis*, May 2, 2025.
[19] Kimley-Horn and Associates, *Final Report – Alameda point Transportation Demand Management Plan*. May 20, 2014.
[20] Alameda Municipal Power, Power Content Label. Web: https://alamedamp.com/336/Power-Content-Label

The Pacific Fusion project plans do not show any natural gas infrastructure, and the applicant has confirmed the building will be all electric. Therefore, natural gas use for the project land uses was set to zero and reassigned to electricity use in CalEEMod.

Project Generator

The Pacific Fusion project would include one diesel-powered emergency generator located near the northeastern corner of the building. The generator would produce a maximum of 300-kW and would be powered by a 402-horsepower (hp) diesel-fired engine. The generator would be tested periodically and power the building in the event of a power failure. For modeling purposes, it was assumed that the generator would be operated for testing and maintenance purposes as well as non-testing purposes per the Air District's newest Guidelines. CARB and the Air District's requirements limit the engine operations to 50 hours each per year for testing and maintenance. During testing periods, the engine would typically run for less than one hour. The engine would be required to meet CARB and EPA emission standards and consume commercially available California low-sulfur diesel fuel. Additionally, the generator would have to meet Air District BACT requirements for IC Engine-Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump sources. The emissions from operation of the generator were calculated using CalEEMod.

Off-Road Mobile Equipment

The project is anticipated to include the use of forklifts and possibly other off-road equipment that is typical for warehouse uses. The equipment would be used to move products throughout the warehouse prior to shipping and for truck loading/unloading. All off-road equipment would be electric-powered. Emissions from off-road mobile equipment are expected to be negligible and are not included in this analysis. Trucks equipped with TRUs in operation would not be used by the Pacific Fusion project.

Other Inputs

Default model assumptions for emissions associated with solid waste generation and water use were applied to the project. Wastewater treatment was estimated to be 100 percent aerobic conditions to represent City wastewater treatment plant conditions. The Pacific Fusion project would not send wastewater to on-site septic tanks or facultative lagoons.

Summary of Computed Operational Emissions

Annual emissions were predicted using CalEEMod and daily emissions were estimated assuming 365 days of operation. Table 5 shows uncontrolled net average daily operational emissions of ROG, NO_X, total PM_{10}, and total $PM_{2.5}$ during operation of the project. Operational period emissions would not exceed the Air District significance thresholds.

Table 5. Operational Period Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2028 Annual Project Operational Emissions (*tons/year*)	1.50	1.00	1.31	0.32
Bay Area Air District Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Thresholds?	*No*	*No*	*No*	*No*
2028 Daily Project Operational Emissions (*pounds/day*)[1]	8.23	5.48	7.19	1.74
Bay Area Air District Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	*No*	*No*	*No*	*No*
Notes: [1]Assumes 365-day operation.				

Impact AIR-3: Expose sensitive receptors to substantial pollutant concentrations?

Project impacts related to increased health risk can occur by generating emissions of TACs and air pollutants. This project would introduce new sources of TACs during construction (e.g., on-site construction and truck hauling emissions) and operation (e.g., stationary and mobile sources). Project construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors. The project would include an emergency generator powered by a diesel-fueled engine. Traffic generated by the project would consist of mostly light-duty gasoline-powered vehicles, which would produce TAC and air pollutant emissions. However, there would be up to 20 truck trips per day, which were assumed to be heavy heavy-duty diesel trucks.

Project impacts to existing receptors were addressed for temporary construction activities and long-term operational conditions. There are also several sources of existing TACs and localized air pollutants in the vicinity of the project. The impact of existing sources of TACs was assessed in terms of the cumulative risk which includes the project contribution.

Health Risk Methodology

Health risk impacts were addressed by predicting increased cancer risk, the increase in annual $PM_{2.5}$ concentrations, and by computing the Hazard Index (HI) for non-cancer health risks. The risk impacts from the project are the combination of risks from construction and operation sources. These sources include on-site construction activity, construction truck hauling, operation of the project generator and increased traffic from the Pacific Fusion project. To evaluate the increased cancer risks from the project, a 30-year exposure period was used, per the Air District guidance,[21] with the sensitive receptors being exposed to both project construction and operation emissions during this timeframe.

The project increased cancer risk is computed by summing the project construction cancer risk and operation cancer risk contributions. Unlike the increased maximum cancer risk, the annual $PM_{2.5}$ concentration and HI values are not additive but based on the annual maximum values for the entirety of the project. The project maximally exposed individual (MEI) is identified as the sensitive receptor(s) that is most impacted by the project's construction and operation.

The methodology for computing health risks impacts is contained in Appendix E of the Air District's *CEQA Air Quality Guidelines*. TAC and $PM_{2.5}$ emissions were calculated, a dispersion

[21] Bay Area Air District, Appendix E of the 2022 *CEQA Guidelines*, April 2023

model was used to compute contaminant concentrations, and cancer risks and HI were calculated based on modeled DPM concentrations.

Modeled Receptors

Receptors for this assessment included locations where sensitive populations closest to the Pacific Fusion project site would be present for extended periods of time (i.e., chronic exposures). This includes the nearby residences and schools, as shown in Figure 1. Residential receptors were assumed to include all receptor groups (i.e., third trimester, infants, children, and adults) with almost continuous exposure to project emissions, while child receptors were assumed at the schools. DPM and $PM_{2.5}$ concentrations were also calculated at nearby worker receptors. While there are additional sensitive receptors within 1,000 feet of the project site, the receptors chosen are adequate to identify maximum impacts from the project.

Health Risk from Project Construction

The primary health risk impact issues associated with construction projects are cancer risks associated with diesel exhaust (i.e., DPM), which is a known TAC, and exposure to high ambient concentrations of dust (i.e., $PM_{2.5}$). DPM poses both a potential health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[22] This assessment included dispersion modeling to predict the offsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be estimated.

Construction Emissions

The CalEEMod model provided total uncontrolled annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, such as trucks. Emissions were reported for both on-site construction (i.e., Project construction) and off-site improvements (i.e., new pipelines and roadway pavement).

Total DPM emissions were estimated to be 0.01 tons (19 pounds) and controlled fugitive dust emissions ($PM_{2.5}$), assuming application of the City's General Plan Policy HS-65 Action A, to be less than 0.01 tons (3 pounds) from all construction stages. The on-road emissions are a result of haul truck travel during grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used to represent vehicle travel while at or near the construction site. It was assumed that the emissions from on-road vehicles traveling at or near the site would occur at the construction site.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and $PM_{2.5}$ concentrations at sensitive receptors (i.e., residences) in the vicinity of the project construction area. The AERMOD dispersion model is an Air District-recommended model for use in modeling analysis of these types

[22] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

of emission activities for CEQA projects.[23] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

To represent both on- and off-site construction equipment exhaust emissions, an area source was used with an emission release height of 20 feet (6 meters).[24] Since most of the off-site construction emissions would occur near the edge of the project site, these emissions were included in the project construction area source. The release height incorporates both the physical release height from the construction equipment (i.e., the height of the exhaust pipe) and plume rise after it leaves the exhaust pipe. Plume rise is due to both the high temperature of the exhaust and the high velocity of the exhaust gas. It should be noted that when modeling an area source, plume rise is not calculated by the AERMOD dispersion model as it would do for a point source (exhaust stack). Therefore, the release height from an area source used to represent emissions from sources with plume rise, such as construction equipment, was based on the height the exhaust plume is expected to achieve, not just the height of the top of the exhaust pipe.

For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 7 feet (2 meters) was used for the area source. Fugitive dust emissions at construction sites come from a variety of sources, including truck and equipment travel, grading activities, truck loading (with loaders) and unloading (rear or bottom dumping), loaders and excavators moving and transferring soil and other materials, etc. All of these activities result in fugitive dust emissions at various heights at the point(s) of generation. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For all these reasons, a 7-foot release height was used as the average release height across the construction site. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Figure 1 shows the Pacific Fusion project construction site and receptors.

AERMOD Inputs and Meteorological Data

The modeling used a five-year meteorological data set (2013-2017) from the Oakland International Airport prepared for use with the AERMOD model by the Air District. Construction emissions were modeled as occurring Monday through Friday between 7:00 a.m. to 7:00 p.m. when the majority of construction is expected to occur according to the applicant. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2026-2027 period were calculated at nearby sensitive receptors using the model. Receptor heights of 5 feet (1.5 meters) were used to represent the breathing height on the first floors of nearby residences and worker receptors.[25] Receptor heights of 3 feet (1 meter) was used to represent the breathing height of children at the nearby schools.

[23] Bay Area Air District, Appendix E of the 2022 *CEQA Guidelines*, April 2023
[24] California Air Resource Board, 2007. *Proposed Regulation for In-Use Off-Road Diesel Vehicles, Appendix D: Health Risk Methodology*. April. Web: https://ww3.arb.ca.gov/regact/2007/ordiesl07/ordiesl07.htm
[25] Bay Area Air District, *Appendix E of the 2022 CEQA Guidelines.* April 2023.

Health Risks from Project Operation

Operation of the Pacific Fusion project would have long-term emissions from mobile sources (i.e., truck trips) and stationary sources (i.e., emergency generator). While these emissions would not be as intensive at or near the site as construction activity, they would contribute to long-term effects to sensitive receptors. The project expects to have approximately four to five electric powered forklifts used during all hours of operation. Since the forklifts would not be diesel powered and therefore not emit substantial TACs, a health risk analysis of the forklifts was not conducted.

Project Truck Trips

Diesel powered vehicles are the primary concern with local traffic-generated TAC impacts. This project is anticipated to generate 20 truck trips per day. These trips were assumed to be heavy heavy-duty truck (HHDT) trips. These trips were conservatively modeled to use Pacific Avenue and both Main Street and Central Avenue.

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for project truck trips using the Caltrans version of the CARB EMFAC2021 emissions model, known as CT-EMFAC2021. CT-EMFAC2021 provides emission factors for mobile source criteria pollutants and TACs, including DPM. Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (TOG), running evaporative losses for TOG, and tire and brake wear and fugitive road dust for $PM_{2.5}$. Additionally, $PM_{2.5}$ emissions from vehicle tire and brake wear from re-entrained roadway dust were included in these emissions. DPM emissions are projected to decrease in the future and are reflected in the CT-EMFAC2021 emissions data. Inputs to the model include region (Alameda County), type of roadway (major/collector), 100 percent HHDT trips (truck 2 input), year of analysis (2028 - operational start year), and season (annual). Traffic speed was 15 miles per hour (mph) on Pacific Avenue and at the speed limit for collector roadways.

Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the EPA AERMOD air quality dispersion model, which is recommended by the Air District for this type of analysis.[26] TAC and $PM_{2.5}$ emissions from trucks on each roadway within 1,000 feet of the project site was evaluated. Vehicle traffic on each roadway was evaluated as an R-Line source for each opposing travel direction on the roadways. The same meteorological data and off-site sensitive receptors used in the previous construction site dispersion modeling scenario were used in the roadway modeling. Other inputs to the model included road geometry, hourly traffic emissions, and receptor locations. Concentrations were calculated using the same receptor heights that were utilized in the construction health risk modeling.

Computed Cancer and Non-Cancer Health Impacts

To calculate the increased cancer risk from the project truck trips, the cancer risks were adjusted for exposure duration to account for construction for the first two years, while the operational exposure duration was adjusted for the remaining 28 years of the 30-year exposure period. The

[26] Bay Area Air District, *Appendix E of the 2022 CEQA Guidelines.* April 2023.

cancer risk, $PM_{2.5}$ concentration, and HI impacts from truck trips on the off-site receptors are shown in Table 6. Figure 2 shows the roadways links modeled and receptor locations where concentrations were calculated. Details of the emission calculations, dispersion modeling, and cancer risk calculations for the receptors with the maximum cancer risk from truck trips on the nearby roadways are provided in *Attachment 2.*

Project Generator

The Pacific Fusion project plans include one emergency generator. The generator would provide up to 300-kW powered by a 402-hp diesel-powered engine. The generator would be located near the northeastern corner of the building. The location of the modeled generator is shown in Figure 1.

Operation of the diesel generator would be a source of TAC emissions. The generator would be tested periodically and power the building in the event of a power failure. For modeling purposes, it was assumed that the generator would be operated for testing and maintenance purposes. During testing periods, the engine would typically run for less than one hour. CARB and the Air District's requirements limit the engine operations to 50 hours each per year for testing and maintenance. The engine would be required to meet CARB and EPA emission standards and consume commercially available California low-sulfur diesel fuel. Additionally, the generator would have to meet Air District BACT requirements for IC Engine-Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump sources. The emissions from the operation of the generator were calculated using CalEEMod.

The diesel engine would be subject to CARB's Stationary Diesel Airborne Toxics Control Measure (ATCM) and require permits from the Air District, since it will be equipped with an engine larger than 50-HP. BACT requirements would apply to the generator that would limit DPM emissions. As part of the Air District permit requirements for toxics screening analysis, the engine emissions will have to meet Best Available Control Technology for Toxics (BACT) and pass the toxic risk screening level of less than ten in a million. The risk assessment would be prepared by the Air District. Depending on results, the Air District would set limits for DPM emissions (e.g., more restricted engine operation periods). Sources of air pollutant emissions complying with all applicable Air District regulations generally will not be considered to have a significant air quality health risk impact.

Dispersion Modeling

To estimate potential increased cancer risks and $PM_{2.5}$ impacts from operation of the generator, the same previous AERMOD dispersion model was used to compute the maximum annual DPM concentration at off-site MEIs. Emissions of DPM were based on PM_{10} exhaust emissions predicted by CalEEMod for operation of the project generator. The same receptors, breathing heights, and meteorological data used in the construction dispersion modeling were used for the generator modeling. Stack parameters (stack height, exhaust flow rate, and exhaust gas temperature) for modeling the generator were based on Air District default parameters for

emergency generators.[27] Annual average DPM and $PM_{2.5}$ concentrations were modeled assuming that generator testing could occur at any time of the day (24 hours per day, 365 days per year).

Computed Cancer and Non-Cancer Health Impacts

To calculate the increased cancer risk from the generator, the cancer risks were adjusted for exposure duration to account for construction for the first two years, while the operational exposure duration was adjusted for the remaining 28 years of the 30-year exposure period. Table 6 lists the health risks from the project generator at the location of the receptors discussed above. The emissions and health risk calculations for the proposed generator are included in *Attachment 2*.

Summary of Project-Related Health Risks at the Off-Site MEIs

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the Air District CEQA guidance for age sensitivity factors and exposure parameters. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. Third trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period, while child exposures were assumed at the nearby preschool and high school and adults only exposures was assumed at the worker receptors.

The Project risk impacts are the combination of construction and operation sources. For this project, these sources include the on-site construction activity and a diesel-powered generator. The project impact is computed by adding the construction cancer risk for an infant to the increased cancer risk for the project operational conditions for the generator over a 30-year period. The project MEI is identified as the sensitive receptor that is most impacted by the project's construction and operational activities.

Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated. The maximum modeled annual $PM_{2.5}$ concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI value was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation DPM reference exposure level of 5 $\mu g/m^3$. The annual $PM_{2.5}$ concentration and HI values are based on an annual maximum risk for the entirety of the project.

The modeled maximum annual DPM and $PM_{2.5}$ concentrations were identified at nearby receptors to find the MEI. Results of this assessment indicated that the construction MEIs were located at two different receptors (i.e., one for cancer risk and the other for annual $PM_{2.5}$ concentration). The cancer risk MEI was located on the first floor (5 feet above the ground) of a residence east of the project site, opposite Central Avenue. The annual $PM_{2.5}$ MEI was located at an adjacent worker receptor to the northwest of the site. The location of the MEIs and nearby receptors are shown in Figure 1. Table 6 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction, generator, and truck trip activities. *Attachment 2* to this report includes the emission calculations used for the construction, generator, and truck trip modeling and the cancer risk calculations.

[27] The San Francisco Community Risk Reduction Plan: Technical Support Document, BAAQMD, San Francisco Dept. of Public Health, and San Francisco Planning Dept., December 2012

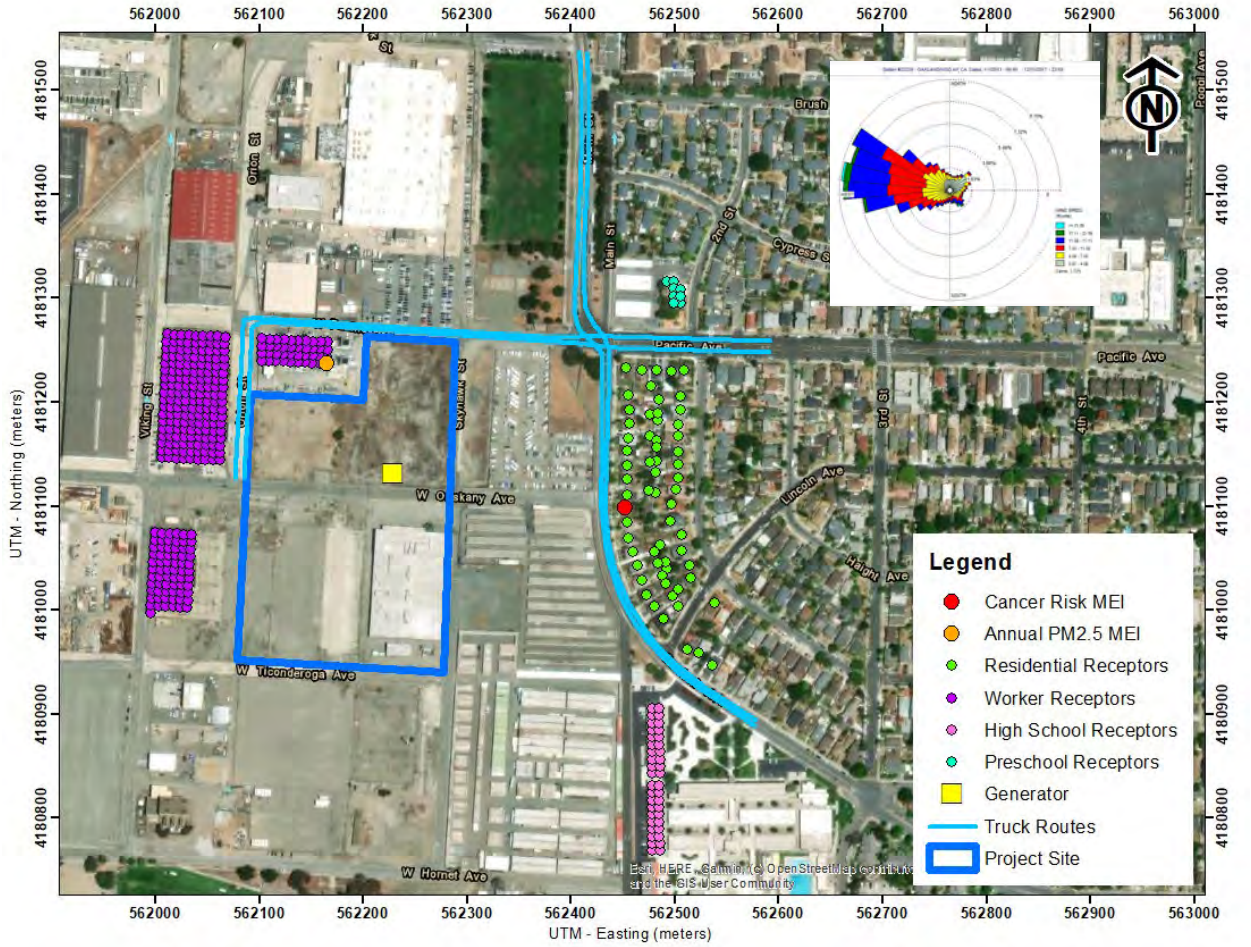
Construction health risk impacts are shown in Table 6. The uncontrolled maximum cancer risks, annual $PM_{2.5}$ concentrations, and HI at the modeled MEIs do not exceed its Air District single-source significance threshold.

Table 6. Construction Risk Impacts at the Off-Site MEIs

Source	Cancer Risk[1] (per million)	Annual $PM_{2.5}$[1] ($\mu g/m^3$)	Hazard Index
Maximum Cancer Risk - Residential Impacts			
Project Construction (Years 0 – 2) Uncontrolled	6.55 (infant)	0.06	0.01
Project Generators (Years 2 – 30)	0.34	<0.01	<0.01
Project Truck Trips (Years 2 – 30)	0.02	<0.01	<0.01
Project Maximum/Total Impact (Construction and/or Operation)	6.91	0.06	0.01
Air District Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	*No*	*No*	*No*
Maximum Annual $PM_{2.5}$ Concentration - Worker Impacts			
Project Construction (Years 0 – 2) Uncontrolled	0.10 (adult)	0.06	0.01
Project Generators (Years 2 – 30)	0.02	<0.01	<0.01
Project Truck Trips (Years 2 – 30)	<0.01	<0.01	<0.01
Project Maximum/Total Impact (Construction and/or Operation)	<0.13	0.06	0.01
Air District Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	*No*	*No*	*No*
Maximum School Impacts - Encinal Junior & Senior High School			
Project Construction (Years 0 – 2) Uncontrolled	3.17 (child)	0.03	<0.01
Project Generators (Years 2 – 7)	0.03	<0.01	<0.01
Project Truck Trips (Years 2 – 7)	<0.01	<0.01	<0.01
Project Maximum/Total Impact (Construction and/or Operation)	<3.21	0.03	<0.01
Air District Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	*No*	*No*	*No*

Notes: [1] The maximum cancer risk and $PM_{2.5}$ concentration occur at different receptor locations.

Figure 1. Locations of Project Construction Site, Project Operational Pollutant Sources, Off-Site Receptors, Maximum TAC Impact Locations (MEIs), and Oakland Airport Wind Rose



Cumulative Health Risks of all TAC Sources at the Off-Site Project MEIs

Health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site (i.e., influence area). These sources include rail lines, highways, busy surface streets, and stationary sources identified by the Air District.

A review of the project area using the Air District's geographic information systems (GIS) screening maps identified the existing health risks from nearby roadways and stationary sources at the MEIs. Local roadways and one stationary source was identified as TAC sources with the potential to affect the project MEIs. Figure 2 shows the sources affecting the MEIs. Health risk impacts from these sources upon the MEIs are reported in Table 7. Details of the cumulative screening and health risk calculations are included in *Attachment 3.*

Figure 2. Locations of Project Site, MEIs, and Nearby TAC and $PM_{2.5}$ Sources

Nearby Local Roadways

The project site is located in an industrial area with nearby streets. Cancer risk, $PM_{2.5}$ concentrations, and HI associated with traffic on the nearby roadways were estimated using the Air District screening values provided via GIS data files (i.e., raster files).[28] Air District raster files provide screening-level cancer risk, $PM_{2.5}$ concentrations, and HI for roadways within the Bay Area and were produced using AERMOD and 20x20-meter emissions grid. The raster file uses EMFAC2021 data for vehicle emissions and fleet mix for roadways and includes Appendix E of the Air District's CEQA Air Quality Guidance for risk assessment assumptions. These estimates represent conservative risks reflective of 2022 conditions and are meant to provide a conservative estimate of future conditions, which do not reflect the increased proportion of zero emission motor vehicles that will result in lower future emissions.[29] These screening values are considered higher than values that would be obtained with refined modeling methods. These raster data are based on region-wide emissions rather than just those that occur within 1,000 feet of the project. More

[28] Bay Area Air District, *Health Risk Screening and Modeling*, 2022. Web: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/health-risk-screening-and-modeling

[29] Bay Area Air District, *2022 CEQA Air Quality Guidelines Appendix E, Section 9,* April 2023.

information regarding the assumptions used to develop the screening layers can be found in Sections 6 and 7 in Appendix E of the Air District's 2022 CEQA Guidance.[30] Screening-level cancer risk, $PM_{2.5}$ concentration, and HI for the cumulative roadway impacts at the construction MEIs are listed in Table 7.

Bay Area Air District Permitted Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using the Air District's *Permitted Stationary Sources 2022* GIS website, which identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for OEHHA guidance.[31] One source was identified using this tool; an emergency diesel generator. The screening risk and hazard levels provided by the Air District for the stationary source was adjusted for distance using the Air District's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. Health risk impacts from the stationary source upon the MEI is reported in Table 7.

Summary of Cumulative Risks at the Off-Site MEIs

Table 7 reports both the project and cumulative health risk impacts (i.e., cancer risk, annual $PM_{2.5}$ concentration and Hazard Index) at the receptor most affected by project construction (i.e., the MEIs). The project's predicted health risks would not exceed the Air District single-source and cumulative-source thresholds.

Table 7 Cumulative Health Risk Impacts at the Project MEIs

Source	Cancer Risk[1] (per million)	Annual $PM_{2.5}$[1] ($\mu g/m^3$)	Hazard Index
Project Impacts			
Project Maximum/Total Impact (Construction and/or Operation)	6.91	0.06	0.01
Bay Area Air District Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	*No*	*No*	*No*
Cumulative Impacts			
Cumulative Roadways – Air District Screening GIS Data	3.41	0.08	0.01
City of Alameda Public Works Department (Facility ID #15806, Generator), MEIs at +1,000 feet	0.05	-	-
Combined Sources	10.37	0.14	0.02
Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
Exceed Threshold?	*No*	*No*	*No*

Notes: [1] The maximum cancer risk and $PM_{2.5}$ concentration occur at different receptor locations.

[30] Bay Area Air District, *2022 CEQA Air Quality Guidelines Appendix E, Sections 6 and 7*, April 2023.
[31] Bay Area Air District, https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3

GHG Emissions

As described above, CalEEMod was used to compute air pollutant and GHG emissions. While air pollutant emissions include direct and off-site traffic emissions from the project, GHG emissions also include indirect emissions associated with electricity generation, electricity transmission, emissions associated with water usage and sewage treatment, and the transportation and landfill of solid waste. These emissions are computed by CalEEMod using default factors that are representative of a R&D land use for the project. The Pacific Fusion project Pulser will require additional electricity. Each day, approximately 8 MW of additional energy was assumed to be used, in addition to other the electricity demands of the project represented by CalEEMod default electricity use settings. This electricity would be provided by AMP.

Annual GHG emissions associated with the operation of the Pacific Fusion Project are reported in Table 8. The GHG emissions per capita are based on projections that the project will employ 250 workers.

Table 8. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Emissions (2028)
Area	1
Energy Consumption	71
Mobile	820
Solid Waste Generation	29
Water Usage	5
Total (MT CO_{2e}/year)	926
GHG Emissions per capita	With Pulser 6.26
	Without Pulser 5.73

Supporting Documentation

Attachment 1 includes the CalEEMod output for project construction and operational criteria air pollutant emissions. Also included are any modeling assumptions.

Attachment 2 includes the health risk assessment. The AERMOD dispersion modeling files, which are quite voluminous, are available upon request and would be provided in digital format.

Attachment 3 includes the cumulative health risk screening and calculation results from existing TAC sources affecting the MEIs.

Appendix B

Project Solis Technical Memorandum for the Noise and Vibration Assessment

Illingworth & Rodkin, June 2025

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
429 E. Cotati Avenue
Cotati, CA 94931
Tel: 707-794-0400 *Fax: 707-794-0405*
www.illingworthrodkin.com *illro@illingworthrodkin.com*

M E M O

Date: June 4, 2025

To: Mario Tjia
Director, Hines

From: Carrie J. Janello
Senior Consultant, Illingworth & Rodkin, Inc.

SUBJECT: Pacific Fusion Project at Alameda Point, Alameda, CA – Technical Memorandum for the Noise and Vibration Assessment

The Pacific Fusion Project, consisting of a research and development (R&D)/light industrial facility, is proposed on a 12.9-acre site east of Orion Street between West Pacific Avenue and West Ticonderoga Avenue in Alameda, California. The proposed building would be one story tall and approximately 224,500 square feet. The Pacific Fusion building will contain approximately 33,500 square feet of office and operational support space, approximately 72,800 square feet of lab and testing space, approximately 105,500 square feet of high-bay industrial R&D space where the Pulser is located and operated, and approximately 12,600 square feet of central utility space, including the electrical room and fire pump.

This technical memorandum evaluates the project's potential to result in significant impacts with respect to applicable California Environmental Quality Act (CEQA) guidelines. This memorandum provides a brief description of the fundamentals of environmental noise and groundborne vibration, summarizes applicable regulatory criteria, discusses ambient noise conditions in the project vicinity, evaluates the potential noise and vibration impacts generated by the construction and operation of the proposed project on the existing noise-sensitive receptors surrounding the site, and presents mitigation measures, where necessary, to mitigate project impacts to a less-than-significant level.

Fundamentals of Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (*frequency*) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds

with a lower pitch. *Loudness* is the intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level (dBA).* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level* (*CNEL*) is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 pm - 10:00 pm) and a 10 dB addition to nocturnal (10:00 pm - 7:00 am) noise levels. The *Day/Night Average Sound Level* (*DNL* or L_{dn}) is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

TABLE 1 Definition of Acoustical Terms Used in this Report

Term	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e. g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 pm to 10:00 pm and after addition of 10 decibels to sound levels measured in the night between 10:00 pm and 7:00 am.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

TABLE 2 Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Technical Noise Supplement (TeNS), California Department of Transportation, September 2013.

Effects of Noise

Sleep and Speech Interference

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noises of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn}. Typically, the highest steady traffic noise level during the daytime is about equal to the L_{dn} and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12 to 17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling.[1] Sleep and speech interference is therefore possible when exterior noise levels are about 57 to 62 dBA L_{dn} with open windows and 65 to 70 dBA L_{dn} if the windows are closed. Levels of 55 to 60 dBA are common along collector streets and secondary arterials, while 65 to 70 dBA is a typical value for a primary/major arterial. Levels of 75 to 80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed, those facing major roadways and freeways typically need special glass windows.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation between noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 50 dBA L_{dn}. At a L_{dn} of about 60 dBA, approximately 12 percent of the population is highly annoyed. When the L_{dn} increases to 70 dBA, the percentage of the population highly annoyed increases to about 25 to 30 percent of the population. There is, therefore, an increase of about 2 percent per dBA between a L_{dn} of 60 to 70 dBA. Between a L_{dn} of 70 to 80 dBA, each decibel increase increases by about 3 percent the percentage of the population highly annoyed. People appear to respond more adversely to aircraft noise. When the L_{dn} is 60 dBA, approximately 30 to 35 percent of the population is believed to be highly annoyed. Each decibel increase to 70 dBA adds about 3 percentage points to the number of people highly annoyed. Above 70 dBA, each decibel increase results in about a 4 percent increase in the percentage of the population highly annoyed.[2]

[1] Based on the U.S. Department of Transportation Federal Highway Administration document “Highway Traffic Noise: Analysis and Abatement Guidance” (2010) and data from Illingworth & Rodkin, Inc. noise monitoring projects.
[2] Kryter, Karl D. The Effects of Noise on Man. Menlo Park, Academic Press, Inc., 1985.

Fundamentals of Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One method is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. In this report, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. Table 3 displays the reactions of people and the effects on buildings that continuous or frequent intermittent vibration levels produce. The guidelines in Table 3 represent syntheses of vibration criteria for human response and potential damage to buildings resulting from construction vibration.

TABLE 3 Reaction of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Threshold at which there is a risk of damage to fragile buildings with no risk of damage to most buildings
0.25	Strongly perceptible to severe	Threshold at which there is a risk of damage to historic and some old buildings.
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential structures
0.5	Severe - Vibrations considered unpleasant	Threshold at which there is a risk of damage to new residential and modern commercial/industrial structures

Source: Transportation and Construction Vibration Guidance Manual, California Department of Transportation, April 2020.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related groundborne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess groundborne vibration and almost exclusively to assess the potential of vibration to cause damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.
Structural damage can be classified as cosmetic only, such as paint flaking or minimal extension

of cracks in building surfaces; minor, including limited surface cracking; or major, that may threaten the structural integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher. The damage criteria presented in Table 3 include several categories for ancient, fragile, and historic structures, the types of structures most at risk to damage. Most buildings are included within the categories ranging from "Historic and some old buildings" to "Modern industrial/commercial buildings". Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

The annoyance levels shown in Table 3 should be interpreted with care since vibration may be found to be annoying at lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage.

Regulatory Background

This section describes the relevant guidelines, policies, and standards established by State Agencies, Alameda County, and the City of Alameda. The State CEQA Guidelines, Appendix G, are used to assess the potential significance of impacts pursuant to local General Plan policies or the applicable standards of other agencies. A summary of the applicable regulatory criteria is provided below.

State of California

State CEQA Guidelines. The California Environmental Quality Act (CEQA) contains guidelines to evaluate the significance of effects of environmental noise attributable to a proposed project. Under CEQA, noise impacts would be considered significant if the project would result in:

(a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

(b) Generation of excessive groundborne vibration or groundborne noise levels;

(c) For a project located within the vicinity of a private airstrip or 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, if the project would expose people residing or working in the project area to excessive noise levels.

Alameda County

Oakland International Airport: Airport Land Use Commission Compatibility Plan. The Airport Land Use Compatibility Plan was prepared for the Alameda County ALUC in December 2012,

and included noise compatibility policies to prevent the development of noise-sensitive land uses in portions of the airport environ that are exposed to significant levels of aircraft noise. The compatibility of new nonresidential development with noise levels generated by the Airport is provided in Table 3-1.

City of Alameda

City of Alameda General Plan 2040. Chapter 6 of the City of Alameda General Plan 2040, which was amended in June 2022, includes policies and actions with the goal of maintaining an adequate noise environment in the City of Alameda. The following are applicable to this proposed project:

Objective 6. Protect Alameda residents from the harmful effects of exposure to excessive noise from aircraft, buses, boats, trucks and automobiles, and adjacent land uses.

Policy HS-41: **Support Policies to Reduce Transportation Noise.** Support state and federal legislation to reduce transportation noise from cars, trucks, and aircraft.

Policy HS-58: **Business Operations.** 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 HS-59: **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 will be minimized.

Policy HS-60: **Significant CEQA Impacts.** 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 day-night average sound level (L_{dn}) of 4 or more dBA if the resulting noise level would exceed that described as normally acceptable for the affected land use, as indicated by State guidelines, or any increase in L_{dn} of 6 dBA or more.

TABLE 3-1
NOISE COMPATIBILITY CRITERIA

Land Use Category	Exterior Noise Exposure (dB CNEL)		
	60	65	70
Agricultural, Recreational, and Animal-Related			
Outdoor amphitheaters			
Zoos; animal shelters; neighborhood parks; playgrounds			
Regional parks; athletic fields; golf courses; outdoor spectator sports; water recreation facilities			
Nature preserves; wildlife preserves; livestock breeding or farming			
Agriculture (except residences and livestock); fishing			
Residential, Lodging, and Care			
Residential, (including single-family, multi-family, and mobile homes)*			
Residential hotels; retirement homes; hospitals; nursing homes; intermediate care facilities			
Hotels; motels; other transient lodging			
Public			
Schools; libraries			
Auditoriums; concert halls; indoor arenas; places of worship; cemeteries			
Commercial and Industrial			
Office buildings; office areas of industrial facilities; medical clinics; clinical laboratories; commercial - retail; shopping centers; restaurants; movie theaters			
Commercial - wholesale; research and development			
Industrial; manufacturing; utilities; public rights-of-way			

Land Use	Acceptability	Interpretation/Comments
	Compatible	*Indoor Uses*: Standard construction methods will sufficiently attenuate exterior noise to an acceptable indoor community noise equivalent level (CNEL). *Outdoor Uses*: Activities associated with the land use may be carried out with essentially no interference from aircraft noise. * The maximum acceptable noise exposure for new residential development in the vicinity of OAK is anything below 60 CNEL (see Policy 3.3.1.2 (b).)
	Conditional	*Indoor Uses*: Building structure must be capable of attenuating exterior noise to the indoor CNEL of 45 dB; standard construction methods will normally suffice. *Outdoor Uses*: CNEL is acceptable for outdoor activities, although some noise interference may occur; caution should be exercised with regard to noise-sensitive uses.
	Incompatible	*Indoor Uses*: Unacceptable noise interference if windows are open; at exposures above 65 dB CNEL, extensive mitigation techniques are required to make the indoor environment acceptable for performance of activities. *Outdoor Uses*: Severe noise interference makes outdoor activities unacceptable.

Source: ESA, 2007; *California Airport Land Use Compatibility Handbook* (Caltrans, 2002); PUC 21001 *et seq.*, California State Aeronautics Act.
Note: The layout of this table was created using the framework developed in previous compatibility plans (Mead & Hunt, 2006).

Source: Oakland International Airport, Airport Land Use Compatibility Plan, December 2010, Amended December 15, 2012.

City of Alameda Municipal Code. Chapter IV of the City's Municipal Code includes noise control regulations, and the following apply to the proposed project:

Chapter 4-10.4 – Exterior Noise Standards

b. Exterior noise levels when measured at any receiving single or multiple family residential, school, hospital, church, public library or commercial property situated in the City do not conform to the provisions of this subsection when they exceed the noise level standards set forth in Table I or Table II (Tables 4 and 5, respectively, in this report) following:

TABLE 4 Receiving Land Use Noise Level Standards, dB(A) – Single or Multiple Family Residential, School, Hospital, Church, or Public Library Properties

Category	Cumulative Number of Minutes in Any One (1) Hour Time Period	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
1[a]	30	55	50
2	15	60	55
3	5	65	60
4	1	70	65
5	0	75	70

[a] For example, this means the measured noise level may not exceed fifty-five (55) dB(A) for more than thirty (30) minutes out of any one (1) hour time period.

TABLE 5 Receiving Land Use Noise Level Standards, dB(A) – Commercial Properties

Category	Cumulative Number of Minutes in Any One (1) Hour Time Period	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
1[a]	30	65	60
2	15	70	65
3	5	75	70
4	1	80	75
5	0	85	80

c. In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standards shall be adjusted so as to equal said ambient noise level.

d. Each of the noise level standards specified above shall be reduced by five (5) dB(A) for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

Chapter 4-10.5 – Prohibited Acts

b. *Specific Provisions.* The following acts, and the causing or permitting thereof, are a violation of this section:

7. Loading and Unloading. Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 p.m. and 7:00 a.m. in such a manner as to cause a noise disturbance across a residential real property line. This action shall not apply to such activities where the items handled are still in interstate commerce.

8. Vibration. Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at one hundred fifty (150′) feet (forty-six [46] meters) from the source if on a public space or public right-of-way.

10. Construction. Construction other than during the following hours: 7:00 a.m. to 7:00 p.m. Monday through Fridays and 8:00 a.m. to 5:00 p.m. on Saturdays.

Chapter 4-10.7 – Special Provisions (Exceptions)

e. *Construction*. The provisions of this section shall not apply to noise sources associated with construction provided the activities take place between the hours of 7:00 a.m. to 7:00 p.m. Monday through Fridays or 8:00 a.m. to 5:00 p.m. on Saturdays.

Existing Noise Environment

The project site is located east of Orion Street between West Pacific Avenue and West Ticonderoga Avenue as shown on Figure 1. Surrounding land uses include the Woodstock and West End residential neighborhoods, approximately 520 feet to the east; the Encinal Junior and Senior High School, approximately 635 feet to the southeast; the Hornet Field Park and the Alameda Community Sailing Center, approximately 700 feet to the south; the USS Hornet Sea, Air and Space Museum, approximately 1,875 feet southwest; and the Seaplane Lagoon, approximately 1,015 feet west. Other light industrial buildings and storage buildings surround the project site.

The noise environment at the site and in the surrounding area results primarily from traffic along Pacific Avenue, Main Street, and Central Avenue. Distant traffic along Atlantic Avenue/Ralph Appezzato Memorial Parkway, aircraft associated with Oakland International Airport, and other industrial uses also contribute to the noise environment.

As part of the Alameda Point Project Draft Environmental Impact Report (EIR),[3] existing (2013), existing plus project, cumulative, and cumulative plus project traffic volumes were provided along Central Avenue, south of Pacific Avenue. The existing (2013) peak hour volumes along Central Avenue would be 332 vehicles per hour, and would consist of 95% passenger cars (a total of 315),

[3] ESA, "Alameda Point Project Draft Environmental Impact Report," SCH No. 2013012043, September 2013.

FIGURE 1 Aerial Image Showing the Project Site and the Surrounding Noise-Sensitive Receptors

Source: Google Earth, 2025.

3% medium trucks (a total of 10), and 2% heavy trucks (a total of 7).[4]

Assuming a conservative traffic volume growth of 2% per year from 2013 to 2025, the existing (2025) peak hour traffic volumes along Central Avenue are estimated to be 421 vehicles per hour, consisting of 400 passenger cars, 13 medium trucks, and 8 heavy trucks, assuming the same vehicle mix. These traffic volumes were used as inputs in the Federal Highway Administration's Traffic Noise Model, version 2.5 (FHWA's TNM2.5) to calculate the peak hour noise level at a distance of 75 feet from the centerline of Central Avenue. The predicted noise level from existing trips is estimated to be 63 dBA L_{eq} at 75 feet from the centerline of Central Avenue. Assuming the 24-hour community noise equivalent level (CNEL) or day-night average noise level (L_{dn}) to be equivalent to the peak hour noise level, which was assumed in Table 4.G-6 of the Draft EIR, the estimated L_{dn} along Central Avenue would be 63 dBA at 75 feet.

These noise levels would represent the ambient noise environment at the Woodstock and West End residences and the Encinal Junior and Senior High School located along Central Avenue. Typically, hourly average noise levels during nighttime hours are about 10 dBA lower than daytime hourly average noise levels along arterial roadways such as Central Avenue. Therefore, the L_{eq} during nighttime hours would be about 53 dBA for receptors along Central Avenue.

The ambient noise levels at the remaining noise-sensitive receptors in the site vicinity (i.e., Hornet Field Park, Alameda Community Sailing Center, and USS Hornet Sea, Air and Space Museum) would be lower than the noise levels at the receptors along Central Avenue since these receptors would be more than 1,000 feet from the centerline of Central Avenue. While local roadways and light industrial sources would contribute to the noise environment at these sources, noise levels are expected to be at least 5 dBA lower at these receptor locations, as compared to the noise levels at receptors along Central Avenue.

Operational Noise

Operational noise associated with the proposed project includes project traffic, mechanical equipment, truck loading and unloading, and forklift operations. Each of these project-generated operations are discussed below.

According to Policy HS-60 of the City's General Code, a significant impact would occur if the proposed project causes: an increase of 4 dBA L_{dn} or more if the resulting noise level would exceed the normally acceptable limit for the affected land use; or any increase of 6 dBA L_{dn} or more.

Chapter 4-10.4 of the City's Municipal code provides exterior noise standards for noise-sensitive uses (i.e., residences, hospitals, churches, etc.) and commercial uses. For activities occurring for more than 30 minutes in a given hour, noise levels would be limited to 55 dBA L_{50} during daytime hours and 50 dBA L_{50} during nighttime hours for noise-sensitive uses and to 65 dBA L_{50} during daytime hours and 60 dBA L_{50} during nighttime hours for commercial uses. For activities occurring for more than five minutes in a given hour, noise level limits (L_{08}) would be 10 dBA above the L_{50} limits. Maximum instantaneous noise level limits (L_{max}) would be 20 dBA above the L_{50} limits.

The Municipal Code further states that where ambient conditions exceed the standards, ambient noise levels would be used as the daytime and nighttime standards. Table 6 summarizes the applicable standards for the proposed project at each of the surrounding receptors. Note, the light industrial and storage buildings surrounding the site are not considered noise-sensitive receptors subject to the City's daytime and nighttime noise limits; however, operational noise levels generated by the proposed project are provided at these receptors for informational purposes.

Project Traffic

The traffic study included peak hour project trips generated by the proposed project. Daily project trips would by 741 vehicles, with peak AM and PM project trips of 75 each. Additionally, the traffic study included 79 daily truck trips with 8 peak AM and PM truck trips. When the peak hour truck trips and peak hour project trips are added to existing (2025) volumes, the existing plus project noise levels along Central Avenue would be 68 dBA L_{dn}. By comparing the existing plus project traffic scenario to the existing (2025) traffic scenario, the project's contribution to the noise level increase was determined to be 1 dBA L_{dn} in the project vicinity. Therefore, the project would not result in a significant permanent noise increase at noise-sensitive receptors in the project vicinity.

The Alameda Point Draft EIR calculated a 4 dBA increase when the full Area Plan buildout was added to existing volumes in 2013. The findings for the proposed project would not add an additional impact and would be included in the 4 dBA increase. No additional impact would occur with the proposed project.

Truck Loading and Unloading

The site plan shows loading docks along the northern façade of the building, as well as drive thru doors along the northern, eastern, and western façades of the building. As mentioned above, there would be 79 daily truck trips generated by the proposed project, with 8 peak AM and PM truck trips. The expected hours of delivery are between 7:00 a.m. and 10:00 p.m. and the expected truck routes would be to the north of the project site along Main Street.

Truck maneuvering noise would include a combination of engine, exhaust, and tire noise, as well as the intermittent sounds of back-up alarms and releases of compressed air associated with truck/trailer air brakes. Heavy trucks typically generate maximum noise levels ranging from 70 to 75 dBA at 50 feet during maneuvering activities, with maximum noise levels from backup beepers being up to 75 dBA. During delivery hours, hourly average noise levels due to truck loading and unloading activities would range from 69 to 73 dBA at 50 feet, assuming three to eight truck trips each hour between 7:00 a.m. and 10:00 p.m. The 24-hour noise level average would be 69 dBA L_{dn} at 50 feet.

Truck maneuvering typically occurs for up to five minutes per delivery. Therefore, the daytime L_{08} standards provided in Table 6 for each receptor would apply to this noise source.

TABLE 6 Standards Applied to Each of the Surrounding Receptors

Receptor	L_{dn}	Daytime Standards			Nighttime Standards		
		More than 30 minutes, dBA L_{50}	More than 5 minutes, dBA L_{08}	Max. Level, dBA L_{max}	More than 30 minutes, dBA L_{50}	More than 5 minutes, dBA L_{08}	Max. Level, dBA L_{max}
Woodstock & West End Res.	67	63	73[a]	83[a]	53[a]	63[a]	73[a]
Encinal Junior & Senior High School	67	63	73[a]	83[a]	53[a]	63[a]	73[a]
Hornet Field Park	59	55[b]	65[b]	75[b]	50[b]	60[b]	70[b]
Alameda Community Sailing Center	59	55[b]	65[b]	75[b]	50[b]	60[b]	70[b]
USS Hornet Sea, Air & Space Museum	59	55[b]	65[b]	75[b]	50[b]	60[b]	70[b]

[a] For receptors located along Central Avenue, typical ambient noise levels would be up 63 dBA L_{50} during daytime hours. When arterial roadways are the dominant noise source, nighttime ambient noise levels are typically 10 dBA lower than the daytime noise levels. Since the ambient noise levels due to traffic noise along Central Avenue would exceed the City's thresholds, the ambient noise levels would be the operational noise standards. The daytime and nighttime L_{08} and L_{max} standards are 10 and 20 dBA higher than the L_{50} noise standards.

[b] For receptors setback 1,000 feet or more from Central Avenue, the City's 55 dBA L_{50} daytime and 50 dBA L_{50} nighttime noise standards for noise-sensitive uses would apply. The daytime and nighttime L_{08} and L_{max} standards are 10 and 20 dBA higher than the L_{50} noise standards.

TABLE 7 Operational Noise Levels from the Nearest Loading Areas to the Receiving Property Lines

Receptor	Distance from Center of Nearest Loading Area, feet	L_{08}, dBA	L_{50}, dBA	Operational L_{dn}, dBA	Noise Level Increase, dBA L_{dn}
Woodstock & West End Res.	625	48 to 53	47 to 51	47	0
Encinal Junior & Senior High School	970	44 to 49	43 to 48	44	0
Hornet Field Park	1,090	43 to 48	42 to 47	43	0
Alameda Community Sailing Center	1,180	43 to 48	42 to 47	43	0
USS Hornet Sea, Air & Space Museum	2,075	38 to 43	37 to 41	37	0
North Light Ind.	215	57 to 62	56 to 61	57	N/A[a]
West Light Ind.	140	61 to 66	60 to 64	60	N/A[a]
East Storage	110	63 to 68	62 to 66	63	N/A[a]

[a] As stated in Objective 6 of the City's General Plan, Policy HS-60, which defines a significant noise level increase under CEQA, is intended to protect residential uses and other noise-sensitive uses. Therefore, noise level increases at the surrounding light industrial and storage uses are not subject to the City's permanent noise level thresholds.

Table 7 summarizes expected noise levels generated by typical truck maneuvering at the surrounding receptors. All noise levels in Table 7 are unattenuated.

Based on the operational noise levels in Table 7, truck loading and unloading activities would not exceed the City's L_{08} or L_{50} daytime standards, which are summarized in Table 6, at the noise-sensitive receptors in the project vicinity. For all existing noise-sensitive receptors, the noise level increase due to truck loading/unloading activities would not be measurable or detectable (0 dBA L_{dn} increase).

Parking Lot

A surface parking lot would be located to the east of project building, and all receptors to the west and north would be mostly shielded from parking lot noise. The only receptors analyzed for this noise source would be the receptors to the east and to the south.

Noise sources associated with the use of the parking lots would include vehicular circulation, loud engines, door slams, and human voices. The maximum noise level of a passing car at 15 mph typically ranges from 45 to 55 dBA at a distance of 100 feet. The noise generated during an engine start is similar. Door slams cause slightly lower noise levels. The hourly average noise levels resulting from all of these noise-generating activities in a busy parking lot typically range from 40 to 50 dBA L_{eq} at a distance of 100 feet from the parking area. Noise levels decrease at a rate of 6 dB per doubling of distance. Assuming maximum activities in a busy parking lot for three hours between 6:00 a.m. and 9:00 a.m. and again between 5:00 p.m. and 8:00 p.m. and some activity between 8:00 p.m. and 10:00 p.m., the 24-hour average noise level at 100 feet would be 48 dBA L_{dn}.

While a single vehicle accessing a parking lot and maneuvering to and from a parking spot would typically take up to five minutes, activity throughout the parking lot at the start and end of a shift would be constant for more than 30 minutes in a given hour. Therefore, the daytime L_{08} and L_{50} standards provided in Table 6 for each receptor would apply to this noise source.

Table 8 summarizes expected noise levels generated by parking lots at the surrounding receptors. All noise levels in Table 8 are unattenuated.

Based on the operational noise levels in Table 8, parking lot activities would not exceed the City's L_{08} or L_{50} daytime standards, which are summarized in Table 6, at the noise-sensitive receptors in the project vicinity. For all existing noise-sensitive receptors, the noise level increase due to parking lot activities would not be measurable or detectable (0 dBA L_{dn} increase).

Mechanical Equipment

Most operational mechanical equipment proposed at the project site, including the Pulser, would be located within the proposed building, which would adequately shield the mechanical equipment noise from the surrounding receptors. On the exterior of the proposed building, the site plan shows two transformers located along the eastern façade near the northeastern corner of the building. The receptors to the west would not be subject to noise generated by the transformers.

Transformers up to 1,000 kVA typically generate noise levels up to 64 dBA, as measured at 1 meter (about 3 feet). Assuming two transformers run continuously during daytime and nighttime hours, the 24-hour average noise level would be 73 dBA L_{dn} at a distance of about 3 feet.

For this analysis, it is assumed that both transformers operate continuously throughout each hour in a 24-hour period. Therefore, the daytime and nighttime L_{50} standards provided in Table 6 for each receptor would apply to this noise source. Table 9 summarizes the unattenuated operational noise levels for mechanical equipment noise.

Based on the operational noise levels in Table 9, mechanical equipment noise would not exceed the City's L_{50} daytime or nighttime standards, which are summarized in Table 6, at the noise-sensitive receptors in the project vicinity. For all existing noise-sensitive receptors, the noise level increase due to mechanical equipment would not be measurable or detectable (0 dBA L_{dn} increase).

Forklift Operations

Forklifts are typically used to off load heavy trucks at the loading docks at the north end of the building and could also be used to maneuver around the exterior of the site in the yard located north of the building and in the northeastern corner of the building, moving supplies from one location to another about the project site or providing maintenance operations.

Forklift operations are expected to occur during daytime hours only and, conservatively, could occur continuously for 30 minutes or more in a given hour. Forklifts typically generate noise levels of 67 dBA at 50 feet. While usage of forklifts on the project site is difficult to anticipate, if two to four forklifts operate simultaneously within 50 feet of a receptor, hourly average noise levels would range from 70 to 73 dBA. Assuming this occurs each hour between 7:00 a.m. and 10:00 p.m., the 24-hour average noise level would range from 70 to 73 dBA L_{dn} at 50 feet.

Table 10 summarizes expected noise levels generated by forklift operations at the surrounding receptors, assuming two to four forklifts operate simultaneously within 50 feet of the project's boundaries. All noise levels in Table 10 are unattenuated.

Based on the operational noise levels in Table 10, forklift activities would not exceed the City's L_{50} daytime standards, which are summarized in Table 6, at the noise-sensitive receptors in the project vicinity. For all existing noise-sensitive receptors, the noise level increase due to forklift activities would not be measurable or detectable (0 dBA L_{dn} increase).

TABLE 8 Operational Noise Levels from the Center of the Parking Lot to the Receiving Property Lines

Receptor	Distance from Center of Parking Lot, feet	L_{08}, dBA	L_{50}, dBA	Operational L_{dn}, dBA	Noise Level Increase, dBA L_{dn}
Woodstock & West End Res.	690	28 to 38	23 to 33	32	0
Encinal Junior & Senior High School	800	27 to 37	22 to 32	30	0
Hornet Field Park	1,025	25 to 35	20 to 30	28	0
Alameda Community Sailing Center	905	26 to 36	21 to 31	29	0
East Storage	100	45 to 55	40 to 50	48	N/A[a]

[a] As stated in Objective 6 of the City's General Plan, Policy HS-60, which defines a significant noise level increase under CEQA, is intended to protect residential uses and other noise-sensitive uses. Therefore, noise level increases at the surrounding light industrial and storage uses are not subject to the City's permanent noise level thresholds.

TABLE 9 Operational Noise Levels from the Transformers to the Receiving Property Lines

Receptor	Distance from Center of Nearest Loading Area, feet	L_{50}, dBA	Operational L_{dn}, dBA	Noise Level Increase, dBA L_{dn}
Woodstock & West End Res.	630	21	27	0
Encinal Junior & Senior High School	1,040	< 20	23	0
Hornet Field Park	1,420	< 20	20	0
Alameda Community Sailing Center	1,315	< 20	21	0
North Light Ind.	290	27	34	N/A[a]
East Storage	100	37	43	N/A[a]

[a] As stated in Objective 6 of the City's General Plan, Policy HS-60, which defines a significant noise level increase under CEQA, is intended to protect residential uses and other noise-sensitive uses. Therefore, noise level increases at the surrounding light industrial and storage uses are not subject to the City's permanent noise level thresholds.

TABLE 10 Operational Noise Levels from the Forklifts to the Receiving Property Lines

Receptor	Distance from the Nearest Operating Forklifts, feet	L_{50}, dBA	Operational L_{dn}, dBA	Noise Level Increase, dBA L_{dn}
Woodstock & West End Res.	600	48 to 51	46 to 49	0
Encinal Junior & Senior High School	895	45 to 48	43 to 46	0
Hornet Field Park	1,225	42 to 45	40 to 43	0
Alameda Community Sailing Center	1,125	43 to 46	41 to 44	0
USS Hornet Sea, Air & Space Museum	2,205	37 to 40	35 to 38	0
North Light Ind.	50	70 to 73	68 to 71	N/A[a]
West Light Ind.	120	62 to 65	60 to 63	N/A[a]
East Storage	80	66 to 69	64 to 67	N/A[a]

[a] As stated in Objective 6 of the City's General Plan, Policy HS-60, which defines a significant noise level increase under CEQA, is intended to protect residential uses and other noise-sensitive uses. Therefore, noise level increases at the surrounding light industrial and storage uses are not subject to the City's permanent noise level thresholds.

Total Combined Project-Generated Noise

Operational noise levels due to project-generated activities (i.e., traffic, truck loading/unloading, parking lot, mechanical equipment, and forklift operations) would not exceed the City's daytime noise limits at the noise-sensitive receptors surrounding the site, which include residential uses, a school, a park, a community sailing center, and a museum.

For all existing noise-sensitive receptors in the project vicinity, the noise level increase due to project-generated noise levels would not result in a measurable or detectable permanent noise level increase (i.e., 0 dBA L_{dn} increase).

The City does not have operational noise limits for light industrial uses and storage facilities and therefore the noise level increase threshold established in the City's General Plan would not apply to the surrounding light industrial land uses and storage facilities. These uses are not considered noise-sensitive receptors and would not be subject to the permanent noise level increase threshold established by the City under CEQA. For all the foregoing reasons, total combined Project-generated noise would be a less-than-significant impact.

Construction Noise

Construction of the proposed project would include onsite demolition, building assembly, paving, and landscaping. As part of the Alameda Point Master Infrastructure Plan (MIP), each phase of development will include construction of a portion of the infrastructure required to support the proposed uses and surrounding existing uses, while being balanced to maintain the feasibility of the development projects. While terms have not been finalized, the maximum package of offsite infrastructure improvements required of the Pacific Fusion Project would include roadway extensions, intersection improvements, frontage improvements, a new wastewater collection system, a new stormwater system, a looped water line, a 12-inch recycled water line, and a join trench from the existing Cartwright substation to the project site to accommodate a new main line underground electric distribution system service. Noise generated by both onsite and offsite construction activities are discussed in this section.

Chapter 4-10.5 of the City's Municipal Code limits construction work hours to between 7:00 a.m. and 7:00 p.m. Monday through Fridays and 8:00 a.m. to 5:00 p.m. on Saturdays.

Noise impacts resulting from construction depend upon the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive areas. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction lasts over extended periods of time.

Construction activities generate considerable amounts of noise, especially during earth-moving activities when heavy equipment is used. The construction of the proposed project would involve demolition of existing structures and pavement, substantial excavation and foundation work including pile driving activities, building assembly, paving, and landscaping. The hauling of

excavated materials and construction materials would generate truck trips on local roadways, as well. For the proposed project, impact pile driving may be required and is assumed in this analysis. Construction activities for individual projects are typically carried out in phases. During each phase of construction, there would be a different mix of equipment operating, and noise levels would vary by phase and vary within phases, based on the amount of equipment in operation and the location at which the equipment is operating.

The highest noise levels would be generated during grading, excavation, and foundation construction. The assembly of large buildings from steel structures could also cause considerable noise for fairly long durations. The typical range of maximum instantaneous noise levels for the proposed project would be 70 to 90 dBA L_{max} at a distance of 50 feet (see Table 11) from the equipment. At 50 feet, maximum noise levels generated by impact pile driving would be 105 dBA L_{max}.

Table 12 shows the hourly average noise level ranges, by construction phase, typical for various types of projects. Hourly average noise levels generated by construction typically are about 75 to 89 dBA L_{eq} for R&D buildings and about 78 to 88 dBA L_{eq} for roadwork and trenching, measured at a distance of 50 feet from the center of a busy construction site. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor. Shielding by buildings or terrain often results in lower construction noise levels at distant receptors.

TABLE 11 Construction Equipment 50-Foot Noise Emission Limits

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor[3]	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
Insitu Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Notes:

[1] Measured at 50 feet from the construction equipment, with a “slow” (1 sec.) time constant.

[2] Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.

[3] Portable Air Compressor rated at 75 cfm or greater and that operates at greater than 50 psi.

TABLE 12 Typical Ranges of Construction Noise Levels at 50 Feet, L_{eq} (dBA)

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	**II**	**I**	**II**	**I**	**II**	**I**	**II**
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I - All pertinent equipment present at site.
II - Minimum required equipment present at site.

Source: U.S.E.P.A., Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

Onsite Construction

Project construction would include demolition of the existing 90,000-square-foot Building 530 currently on the project site and is expected to start in early January 2026. As part of the project site preparation, remediation programs have been or will be completed, with monitoring efforts demonstrating that remediation goals have been achieved and regulatory closure was obtained.

The new R&D building would have a footprint of approximately 600 feet by 350 feet, with a maximum height of approximately 100 feet at the 300-foot by 350-foot high-bay industrial R&D space. The project's exterior will be a combination of tilt up concrete for the office, lab space and the base of the R&D space, and a precast panel or metal panel construction for the high bay industrial lab space for the Pulser. Due to the bearing pressure of the large concrete structure and the sensitive equipment of the Pulser, which cannot withstand substantial settlement once in operation, the project will rely on deep foundation systems (i.e., piles) deriving support from below the underlying Young Bay Mud. The Project's concrete slab foundation would rest on these piles so that the building will not settle with the surrounding soil. Other onsite site improvements would include the following:

- 202-space parking lot
- A small frontage roadway between the project's building and Orion Street, which shall provide offsite firefighting access to the 100-foot-tall bay structure
- A loading dock with four bays accessing the R&D building space/Pulser
- A transformer pad
- A covered storage area and trash enclosure and several nine-foot by nine-foot by 20-foot storage containers
- Four above-ground storage tanks for water and oil

- A perimeter landscaped area, which shall also serve as bioretention to meet clean stormwater runoff requirements, with an eight-foot-tall fence securing the site and landscaping designed to meet the City parking lot shading and water efficiency requirements

Total onsite project construction is expected to take about 15 months to complete, ending at the end of March 2027. The applicant proposes construction between 7:00 a.m. and 7:00 p.m.

Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (RCNM) was used to calculate the typical hourly average noise levels for each phase of construction, assuming the two loudest pieces of equipment would operate simultaneously, as recommended by the Federal Transit Administration (FTA) for construction noise evaluations. This construction noise model includes representative sound levels for the most common types of construction equipment and the approximate usage factors of such equipment that were developed based on an extensive database of information gathered during the construction of the Central Artery/Tunnel Project in Boston, Massachusetts (CA/T Project or "Big Dig"). The usage factors represent the percentage of time that the equipment would be operating at full power.

Equipment expected to be used in each construction phase of the onsite work is summarized in Table 13, along with the quantity of each type of equipment and the reference noise level at 50 feet, assuming the operation of the two loudest pieces of construction equipment for each construction phase, per recommendation by the FTA. As previously mentioned, pile driving would be required for the proposed project during the foundation work; however, the type of pile driving (i.e., impact driving, vibratory driving, drilling) has not been specified. Additionally, the number of rigs has not yet been established. Pile driving activities, which are very noisy, dominate the noise environment where utilized and typically operate as an isolated construction activity with little to no other equipment operating simultaneously. Therefore, noise levels shown in Table 13 do not include pile driving activity.

TABLE 13 Construction Noise Levels During Onsite Work at a Distance of 50 feet

Phase of Construction	Total Workdays	Construction Equipment (Quantity)	Estimated Construction Noise Level at 50 feet, dBA L_{eq}
Demolition	20	Concrete/Industrial Saw (1)[a] Excavator (3) Rubber-Tired Dozer (2)[a]	84
Site Preparation	10	Rubber-Tired Dozer (3)[a] Tractor/Loader/Backhoe (4)[a]	82
Grading/Excavation	20	Excavator (1) Grader (1)[a] Rubber-Tired Dozer (1) Tractor/Loader/Backhoe (3)[a]	84
Trenching/Foundation	20	Tractor/Loader/Backhoe (1)[a] Excavator (1)[a]	82
Building – Exterior	230	Crane (1) Forklift (3) Generator Set (1)[a] Tractor/Loader/Backhoe (3)[a] Welder (1)	82
Building – Interior/ Architectural Coating	20	Air Compressor (1)[a]	74
Paving	20	Paver (2)[a] Paving Equipment (2)[a] Roller (2)	83

[a] Denotes two loudest pieces of construction equipment per phase (not including pile driving).

Temporary construction noise was also assessed at the receiving property lines of all existing receptors in the project vicinity. Table 14 summarizes the hourly average noise levels calculated for all construction equipment operating simultaneously in each phase (except for pile driving activities) for the onsite construction work when the source levels are positioned at the center of the project building and propagated to the receiving property lines. Most of the heavy construction activities would occur at the building footprint and would be partially shielded from the Woodstock & West End residences and the Encinal Junior & Senior High School by the intervening storage facilities. Conservatively, 5 dBA attenuation is assumed at these receptors. All other receptors would have mostly direct line-of-sight to the project site, and no attenuation is assumed for these receptors in Table 14.

As shown in Table 13, construction noise levels would intermittently range from 74 to 84 dBA L_{eq} at a distance of 50 feet from the non-pile driving equipment. When the noise source is positioned at the center of the proposed building, construction noise levels would range from 43 to 57 dBA L_{eq} at the nearest residential receptors and from 42 to 56 dBA L_{eq} at the nearest school, assuming a conservative attenuation of 5 dBA due to the intervening storage facilities. Construction noise levels would range from 41 to 61 dBA L_{eq} at the other noise-sensitive receptors, assuming no attenuation. At the industrial uses and storage facilities immediately surrounding the project site,

unattenuated construction noise levels would range from 54 to 72 dBA L_{eq} when activities are centered at the building center. Since noise-sensitive receptors would be located 550 feet or more from the project site, construction noise levels during non-pile driving activities would be below 70 dBA L_{eq}. For the surrounding industrial uses, construction noise levels would be at or below 84 dBA L_{eq} during non-pile driving activities even when construction occurs in close proximity to the receiving property lines.

Isolated pile driving activity is required for the foundation of the building and would occur along the perimeter of the building footprint, as well as within the footprint of the building. While the total number of required piles is unknown, it is assumed that pile driving would take about two weeks to complete. Table 15 summarizes the hourly L_{eq} and L_{max} for various pile driving options.

During impact pile driving, the hammer guide is placed on top of the piles, and the hammer is picked up and driven into the piles in multiple, isolated strikes. Noise generated by impact pile driving is dependent on the size of the piles, the size of the hammer, and force of each strike. Each strike generates a maximum instantaneous noise level, and the number of repeated strikes adds to the disruption at the receiving property lines. The L_{eq} is averaged over a given hour when the activities occur, and the L_{eq} for impact pile driving depends on the number of strikes in that hour, which is unknown at this time. The L_{eq} shown in Table 15, therefore, is estimated based on 20% usage. Assuming 20% usage, the maximum noise levels measured during each individual strike would potentially be up to 82 dBA L_{max} at the south park and community sailing center, and L_{max} levels would be up to 98 dBA at these receptors.

During vibratory pile driving, the hammer is placed on the pile, and the pile is vibrated into the ground using constant operation of the hammer. Depending on the soil conditions and size of the piles, this could take more than 30 minutes in a given hour to install. Hence, the L_{eq} and the L_{max} are virtually the same in Table 15.

Using a standard drill rig or an auger drill rig would further reduce construction noise levels during the installation of piles as part of the foundation work of the proposed project by a minimum of 10 dBA compared to vibratory pile driving. However, the total required time to install the piles may be lengthened with the use of drilling.

TABLE 14 Construction Noise Levels During Onsite Activities for the Proposed Project at the Receiving Property Lines in the Project Vicinity

	Calculated Hourly Average Noise Levels, L_{eq} (dBA)							
	Woodstock & West End Res. (925ft)	**Encinal Junior & Senior High School (1,120ft)**	**Hornet Field Park (1,085ft)**	**Alameda Community Sailing Center (1,145ft)**	**USS Hornet Sea, Air & Space Museum (2,200ft)**	**North Light Ind. (510ft)**	**West Light Ind. (315ft)**	**East Storage (380ft)**
Demolition	56[a]	54[a]	60	59	54	66	70	69
Site Preparation	57[a]	56[a]	61	60	55	67	72	70
Grading/ Excavation	57[a]	55[a]	61	60	54	67	71	70
Trenching/ Foundation[b]	51[a]	50[a]	55	55	49	62	66	64
Building – Exterior	56[a]	54[a]	59	59	53	66	70	68
Building – Interior/ Architectural Coating	43[a]	42[a]	47	47	41	54	58	56
Paving	56[a]	55[a]	60	59	54	66	71	69

[a] Conservative 5 dBA attenuation applied to construction noise levels due to intervening storage facilities.
[b] Not including pile driving activities.

TABLE 15 Pile Driving Noise Levels Propagated from the Nearest Building Façade to the Receiving Property Lines in the Project Vicinity

	Construction Noise Levels (dBA)															
	Woodstock & West End Res. (645ft)		**Encinal Junior & Senior High School (880ft)**		**Hornet Field Park (740ft)**		**Alameda Community Sailing Center (805ft)**		**USS Hornet Sea, Air & Space Museum (1,935ft)**		**North Light Ind. (225ft)**		**West Light Ind. (145ft)**		**East Storage (115ft)**	
	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
Impact Pile Driving	67[a]	78[a]	64[a]	75[a]	71	82	70	81	63	73	81	92	85	96	87	98
Vibratory Pile Driving	67[a]	68[a]	64[a]	65[a]	70	72	70	71	62	63	81	82	85	86	87	88
Drilling	45-50[a]	53-58[a]	42-48[a]	50-55[a]	49-54	57-62	48-53	56-61	40-46	48-53	59-64	67-72	63-68	71-76	65-70	73-78

[a] Conservative 5 dBA attenuation applied to construction noise levels due to intervening storage facilities.

Offsite Construction

Construction activities occurring offsite is expected to start in early January 2026 and be completed in approximately 12 months. The applicant proposes construction between 8:00 a.m. and 5:00 p.m. on weekdays only. While this section discusses the assumed offsite improvements to be completed by the proposed project, these have not been confirmed and may not include all of these activities. This analysis represents the maximum offsite construction work that could be completed under the proposed project.

It is assumed that the project would be responsible for construction of street system improvements relative to the Alameda Point MIP (see Figure 2). The following street system improvements are assumed for this analysis:

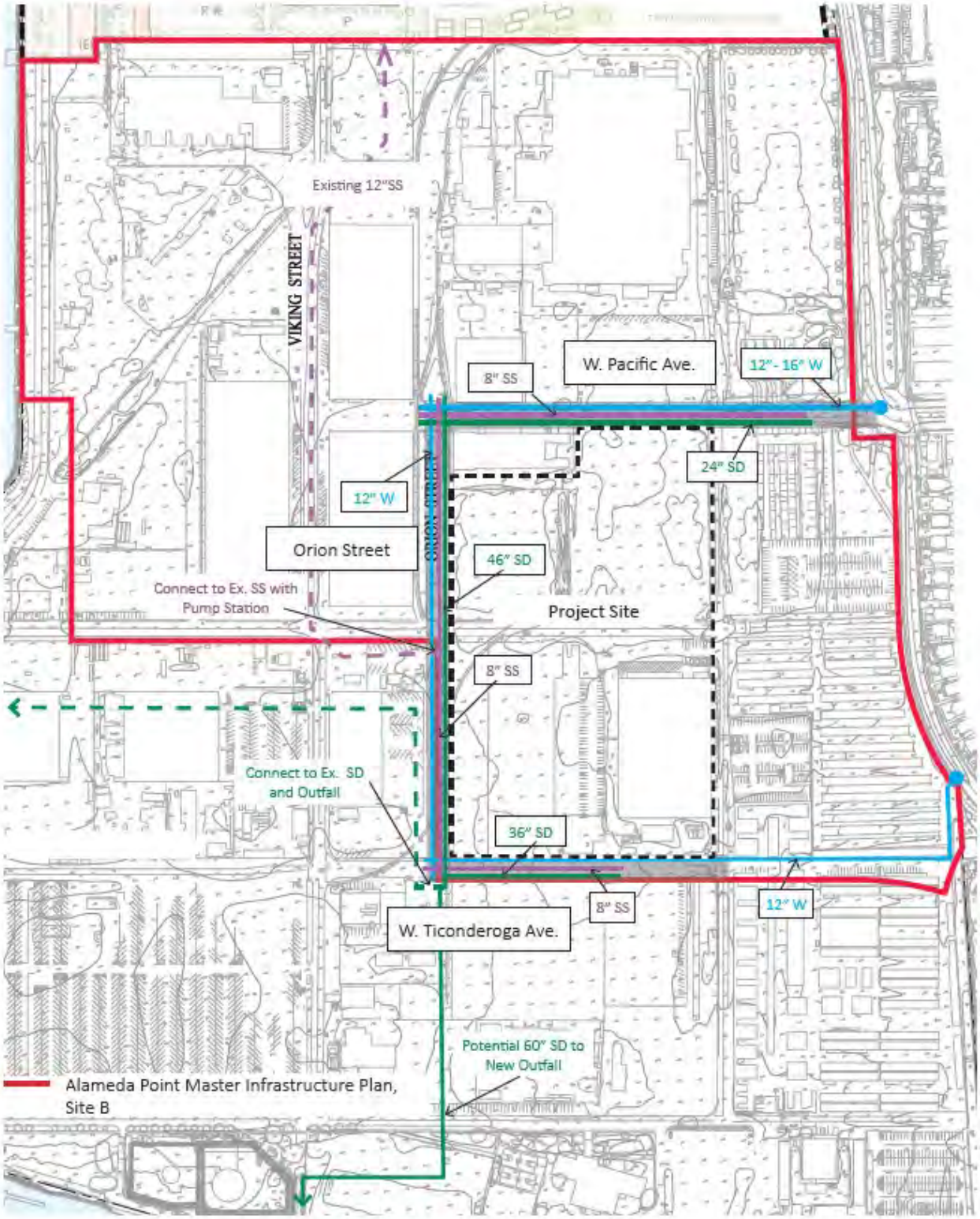
- A new segment of West Pacific Avenue extending from the western terminus of the Central Avenue Safety Improvements Project (a City of Alameda project currently under construction), westward to and including full intersection improvements at Orion Street, conforming to the existing roadways north and west of the intersection
- A new segment of Orion Street, from West Pacific Avenue to West Ticonderoga Avenue
- A new segment of West Ticonderoga Avenue, from Orion Street to Skyhawk Street, including full intersection improvements at Orion Street conforming to existing roadways to the south and west of the intersection, and partially improved interim intersection improvements at Skyhawk Street
- Frontage improvements on the outside of the curb include a three-foot landscape buffer at the curb, a six-foot bike lane and a seven-foot sidewalk. The project would install these frontage improvements on the project-side of the street.

The project may also construct a new wastewater collection system of eight-inch sewer lines below the rights-of-way for West Pacific Avenue, West Ticonderoga Avenue, and Orion Street. The existing sewer system that is internal to the project site would be removed, and the new sewer lines may connect via a lift station to the existing 12-inch sewer line within Viking Way, which flows north to an existing pump station near Orion Street and Trident Avenue.

The project may construct a new stormwater system of 24-inch, 36-inch, and 48-inch storm drains below the rights-of-way for West Pacific Avenue, West Ticonderoga Avenue, and Orion Street. The project may also construct an offsite 60-inch gravity-drained storm drain pipe within the Orion Street alignment from West Ticonderoga Avenue to West Hornet Avenue and a “jog” around Hornet Field Park to a new outfall into San Francisco Bay at the southwesterly end of Hornet Field Park.

A looped water line, which includes 12- to 16-inch water lines within the rights-of-way under West Pacific Avenue, West Ticonderoga Avenue, and Orion Street may also be constructed under the project. The West Pacific Avenue line would connect to the existing water main at the Central Avenue Safety Improvements Project. The West Ticonderoga Avenue line may extend past the street improvements that terminate at Skyhawk Street, connecting to the existing water main in Central Avenue just north of Ticonderoga Avenue. Private fire service will be provided via hydrants located along this water loop.

FIGURE 2 Potential Offsite Master Infrastructure Improvements



Source: Derived from Alameda Point Improvement Package, Site B, CBG, April 2024.

A segment of a 12-inch recycled water line under Orion Street, from Pacific Avenue to Ticonderoga Avenue, may also be constructed, which would be available for connections to a future recycled water system.

The project would construct a joint trench from the existing Cartwright substation, along the west side of Central Avenue, to a connection at the project site near Pacific Avenue. The joint trench would accommodate a new main line underground electric distribution system service, including new underground conduits, vaults, boxes, cables, transformers, switches and other utility distribution equipment. From the main line, the electric distribution facilities would be installed under the right-of-way of Pacific Avenue to the project site. This joint utility trench would also accommodate PG&E's natural gas lines, as well as telephone, cable television, possible ancillary fiber-optic cable systems and street light facilities. The proposed electric system and joint trench would be constructed in accordance with Alameda Municipal Power's (AMP's) rules and regulations.

Equipment expected to be used in each construction phase of the onsite work is summarized in Table 15, along with the quantity of each type of equipment and the reference noise level at 50 feet, assuming the operation of the two loudest pieces of construction equipment for each construction phase, per recommendation by the FTA. As shown in Table 15, construction noise levels would intermittently range from 84 to 85 dBA L_{eq} at a distance of 50 feet from roadway and trenching construction corridor. When all equipment per phase operates simultaneously, noise levels would range from 85 to 86 dBA L_{eq} at 50 feet.

The Woodstock and West End residences would be 60 to 90 feet from the easternmost points of the offsite improvement alignments (see blue line in Figure 2). The nearest offsite construction along the green and purple alignments would be 240 and 840 feet, respectively, from the nearest residences. At 60 feet, the nearest residences would be exposed to construction noise levels up to 84 dBA L_{eq}, but at 240 feet or more, construction noise levels would be at or below 72 dBA L_{eq}, assuming no attenuation. Trenching and roadway paving work would move along the alignments shown in Figure 2, limiting the exposure to construction noise.

The Encinal Junior and Senior High School would be 155 feet from the offsite work along the blue line alignment, generating unattenuated construction noise levels up 76 dBA L_{eq}, and would be 885 feet or more from the nearest green and purple alignments, exposing the school to construction noise levels up to 61 dBA L_{eq}.

The Hornet Field Park would be 655 feet or more from the blue and purple alignments, generating construction noise levels up to 64 dBA L_{eq}. However, the 60-inch lines south would go through the park, exposing receptors at the park to construction noise levels up to 86 dBA L_{eq}.

The Alameda Community Sailing Center would be 650 feet or more from the blue alignment (exposing receptors to construction noise levels up to 64 dBA L_{eq}) and 735 feet from the green and purple alignments (exposing receptors to construction noise levels up to 63 dBA L_{eq}).

TABLE 15 Construction Noise Levels During Offsite Work at a Distance of 50 feet

Phase of Construction	Total Workdays	Construction Equipment (Quantity)	Estimated Construction Noise Level at 50 feet, dBA L_{eq}
Paved Road Trench	104	Concrete/Industrial Saw (1)[a] Excavator (1) Tractor/Loader/Backhoe (1)[a] Paver (1) Roller (1) Welder (1) Sweeper/Scrubber (1)	85
Street Paving	20	Paver (1) Paving Equipment (1)[a] Roller (1) Tractor/Loader/Backhoe (1)[a]	84
60-inch Lines (South)	12	Concrete/Industrial Saw (1)[a] Excavator (1) Tractor/Loader/Backhoe (1)[a] Paver (1) Roller (1) Welder (1) Sweeper/Scrubber (1)	85

[a] Denotes two loudest pieces of construction equipment per phase.

The USS Hornet Sea, Air, and Space Museum 1,140 feet or more from all offsite work, which would expose receptors to construction noise levels up to 59 dBA L_{eq}.

All offsite construction improvements would occur along Orion Street, West Pacific Avenue and West Ticonderoga Avenue, along which the light industrial uses and storage facilities surrounding the project site are located. Therefore, construction activities would occur right along the property lines of these receptors, with heavy construction operating within 50 feet of the buildings. Construction would move along the alignments all around these receptors, limiting the exposure of any single receptor to construction noise levels up to 86 dBA L_{eq} for a limited period.

As trenching and roadway paving work is completed, construction activities would move along the alignments shown in Figure 2. While multiple noise-sensitive receptors, as well as light industrial uses and storage facilities, located in the project site vicinity would be exposed to construction noise at any given time, the active construction work would move along the alignments, limiting total exposure. Assuming an installation rate of about 100 feet per day, any single receptor along the corridor would be exposed to noisy construction activities for no more than 10 consecutive days.

Construction Noise Summary

The Alameda Point Draft EIR included three mitigation measures to reduce project construction activities occurring within the Plan Area. The proposed project would adhere to these measures, which are listed as follows:

Mitigation Measure 4.G-1b: To reduce daytime noise impacts due to construction, the City will require construction contractors to implement the following measures:

- Equipment and trucks used for project construction will utilize the best available noise control techniques, such as improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible.

- Impact tools (i.e., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust will be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves will be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures will be used, such as drills rather than impact equipment, whenever feasible.

- Stationary noise sources will be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or other measures to the extent feasible.

- Haul routes that affect the fewest number of people will be selected.

Mitigation Measure 4.G-1c: Pile driving activities within 300 feet of sensitive receptors will require additional noise attenuation measures. Prior to commencing construction, a plan for such measures will be submitted for review and approval by the City to ensure that maximum feasible noise attenuation will be achieved. These attenuation measures will include as many of the following control strategies as feasible:

- Erect temporary plywood noise barriers if they would block the line of sight between sensitive receptors and construction activities, particularly for existing residences in the northern area of the project site and for residences across Main Street.

- Implement “quiet” pile driving technology (such as pre-drilling of piles or use of sonic pile drivers), where feasible, in consideration of geotechnical and structural requirements and conditions; and

- Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site.

Mitigation Measure 4.G-1d: Prior to the issuance of each building permit, along with the

submission of construction documents, the project applicant will submit to the City a list of measures to respond to and track complaints pertaining to construction noise. These measures will include:

- Signs will be posted at the construction site that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number with the City of Alameda in the event of noise complaints. The project applicant will designate an onsite complaint and enforcement manager to track and respond to noise complaints; and

- Notification of neighbors within 300 feet of the project construction area at least 30 days in advance of pile-driving activities about the estimated duration of the activity.

The proposed project would comply with the City of Alameda Noise Ordinance, and implementation of the above mitigation measures would reduce the construction noise levels from the project.

After implementation of the noise mitigation measures included in the Draft EIR, temporary construction activities would be reduced as much as possible, protecting the nearby noise-sensitive receptors, to the most feasible extent possible. Construction noise from the project would be consistent with the noise impacts previously disclosed in the Alameda Point Draft EIR. Considering the expected duration of elevated noise levels, incorporation of the above measures would reduce the temporary construction noise impact to a less-than-significant level.

Construction Vibration

The construction of the project may generate perceptible vibration when heavy equipment or impact tools (e.g., jackhammers, hoe rams) are used. Construction activities would include demolition, site preparation work, foundation work, and new building framing and finishing.

The California Department of Transportation (Caltrans) recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, which typically consist of buildings constructed since the 1990s. Conservative vibration limits of 0.3 in/sec PPV has been used for buildings that are found to be structurally sound but where structural damage is a major concern (see Table 3 for further explanation). For historical buildings and some old buildings, a vibration limit of 0.25 in/sec PPV would apply, and for ruins or ancient monuments, a cautious vibration limit of 0.08 in/sec PPV is often used to provide the highest level of protection. No historical buildings, ancient monuments or ruins have been identified within 200 feet of the project. Conservatively, the 0.3 in/sec PPV threshold would be applied for all structures in the project vicinity.

Damage due to construction vibration would fall into three categories: threshold damage (or cosmetic), minor damage, and major damage. Threshold damage, or cosmetic damage, would entail hairline cracking in plaster, the opening of old cracks, the loosening of paint or the dislodging of loose objects. Minor damage would include hairline cracking in masonry or the loosening of plaster, and major structural damage would include wide cracking or shifting of foundation or bearing walls.

Pile driving, which produces substantial vibrations, would be required for the foundation of the proposed building. Pile driving would potentially occur for about two weeks, averaging approximately eight hours per day and would not occur within 160 feet of the nearest surrounding building or storage structure.

Table 16 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet. At 25 feet, typical impact and vibratory pile driving would generate vibration levels of 0.64 and 0.17 in/sec PPV, respectively, with the upper limit on vibration levels of 1.16 and 0.73 in/sec PPV, respectively. Other options, such as drilling, would typically generate vibration levels of 0.09 in/sec PPV at a distance of 25 feet.

TABLE 16 Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 ft. (in/sec)	Minimum Distance to Meet 0.3 in/sec PPV (feet)
Pile drive (impact)	upper range	1.158	86
	typical	0.644	51
Pile drive (sonic)	upper range	0.734	57
	typical	0.170	15
Clam shovel drop		0.202	18
Hydromill (slurry wall)	in soil	0.008	1
	in rock	0.017	2
Vibratory Roller		0.210	19
Hoe Ram		0.089	9
Large bulldozer		0.089	9
Caisson drilling		0.089	9
Loaded trucks		0.076	8
Jackhammer		0.035	4
Small bulldozer		0.003	< 1

Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, September 2018, as modified by Illingworth & Rodkin, Inc., May 2025.

Vibration levels would vary depending on soil conditions, construction methods, and equipment used. Table 16 also summarizes the distances to the 0.3 in/sec PPV threshold for older conventional buildings located in the project vicinity.

Vibration levels are highest close to the source and then attenuate with increasing distance at the rate $\left({}^{D_{ref}}/_{D}\right)^{1.1}$, where D is the distance from the source in feet and D_{ref} is the reference distance of 25 feet. Construction vibration levels would be dependent on the location of individual pieces of equipment. Equipment scattered throughout the site would not generate a collective vibration level, but a vibratory roller, for instance, operating near the project site boundary would generate the worst-case vibration levels for the receptor sharing that property line.

Onsite Construction

Pile driving is a stationary construction activity occurring at the location of the foundation piles. The nearest pile locations to the surrounding offsite buildings surrounding the site would at the proposed building façades. For this analysis, pile driving operations are assumed at the nearest building façades to each of the offsite buildings, and all other onsite construction is propagated to the offsite buildings assuming equipment to be operating along the nearest project site boundary, which represents the worst-case conditions.

Vibration levels summarized in Table 16 represents the range of vibration levels within which all construction equipment fall. During onsite construction activities not including pile driving, operation of construction equipment along the project site boundaries would represent the worst-case vibration conditions for the offsite buildings surrounding the site. Assuming operation along the nearest property lines, construction equipment would be 575 to 1,880 feet from the nearest building façades on the receiving noise-sensitive sites (i.e., Woodstock and West End residences, Encinal Junior and Senior High School, Hornet Field Park, Alameda Community Sailing Center, and USS Hornet Sea, Air, and Space Museum). At these distances, vibration levels would be below 0.01 in/sec PPV. For the light industrial buildings and storage facilities immediately surrounding the site, buildings would be 65 to 75 feet from the nearest project site boundaries. Using these representative vibration levels, Table 17 summarizes the highest potential vibration levels expected at the offsite building façades during onsite, non-pile driving activities. Table 17 also summarizes the specific equipment to be used in each phase and the corresponding vibration levels for the equipment. All non-pile driving construction activities occurring on the project site would result in vibration levels below 0.3 in/sec PPV at offsite buildings surrounding the site.

Pile driving activities occurring at the proposed building would be 665 to 1,940 feet from the nearest noise-sensitive receptors. At these distances, the upper range (i.e., worst-case vibration levels) for impact pile driving would be at or below 0.03 in/sec PPV. The upper range of vibratory pile driving would be at or below 0.02 in/sec PPV. Drilling activities at the proposed building would be below 0.01 in/sec PPV. The nearest light industrial and storage buildings would be 165 to 260 feet from the nearest pile driving activities. Table 18 summarizes the pile driving vibration levels at the nearest surrounding buildings. Vibration levels generated by pile driving activities would be below 0.3 in/sec PPV at offsite buildings surrounding the site.

TABLE 17 Construction Vibration Levels During Onsite Project Construction (Not Including Pile Driving)

Phase	Equipment	PPV at 25 ft., in/sec	Vibration Levels at Nearest Building Façade	
			North Light Ind. (65ft)	West Light Ind. & East Storage (75ft)
Demolition	Concrete/Industrial Saw	0.003	0.001	0.001
	Excavator	0.089	0.031	0.027
	Rubber-Tired Dozer	0.089	0.031	0.027
Site Preparation	Rubber-Tired Dozer	0.089	0.031	0.027
	Tractor/Loader/Backhoe	0.003	0.001	0.001
Grading/ Excavation	Excavator	0.089	0.031	0.027
	Grader	0.089	0.031	0.027
	Rubber-Tired Dozer	0.089	0.031	0.027
	Tractor/Loader/Backhoe	0.003	0.001	0.001
Trenching/ Foundation	Tractor/Loader/Backhoe	0.003	0.001	0.001
	Excavator	0.089	0.031	0.027
Building Exterior	Crane	0.003	0.001	0.001
	Forklift	0.003	0.001	0.001
	Generator Set	0.003	0.001	0.001
	Tractor/Loader/Backhoe	0.003	0.001	0.001
	Welder	0.003	0.001	0.001
Building Interior	Air Compressor	0.003	0.001	0.001
Paving	Paver	0.003	0.001	0.001
	Paving Equipment	0.003	0.001	0.001
	Roller	0.21	0.073	0.063

Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, September 2018, as modified by Illingworth & Rodkin, Inc., May 2025.

TABLE 18 Vibration Source Levels for Construction Equipment

Equipment		Vibration Levels at Nearest Building Façade		
		North Light Ind. (260ft)	West Light Ind. (165ft)	East Storage (190ft)
Pile drive (impact)	upper range	0.088	0.145	0.124
	typical	0.049	0.081	0.069
Pile drive (sonic)	upper range	0.056	0.092	0.079
	typical	0.013	0.021	0.018
Caisson drilling		0.007	0.011	0.010

Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, September 2018, as modified by Illingworth & Rodkin, Inc., May 2025.

Offsite Construction

Offsite construction operations would occur along the alignments shown in Figure 2 and operations would be propagated from project corridors to the nearest offsite buildings. The nearest noise-sensitive structures to the offsite construction alignments would include the Woodstock and West End residences (70 feet from the nearest alignment) and the Encinal Junior and Senior High School (65 feet from the nearest alignment). At these distances, vibration levels would be at or below 0.07 in/sec PPV. All other structures at the noise-sensitive receptors would be 250 feet or more from the nearest alignment and be subject to vibration levels below 0.02 in/sec PPV during offsite construction activities.

The light industrial and storage buildings would be 25 to 40 feet from the alignments. Table 19 summarizes the highest potential vibration levels expected at the offsite building façades during offsite construction activities based on the equipment provided by the applicant. All offsite construction activities would result in vibration levels below 0.3 in/sec PPV at offsite buildings surrounding the site.

Construction Vibration Summary

All onsite and offsite vibration levels would be below the 0.3 in/sec PPV threshold at the surrounding offsite buildings. This would be a less-than-significant impact.

TABLE 19 Construction Vibration Levels During Offsite Project Construction

Phase	Equipment	PPV at 25 ft., in/sec	Vibration Levels at Nearest Building Façade		
			North Light Ind. (25ft)	West Light Ind. (30ft)	East Storage (40ft)
Paved Road Trench	Concrete/Industrial Saw	0.003	0.003	0.002	0.002
	Excavator	0.089	0.089	0.073	0.053
	Tractor/Loader/Backhoe	0.003	0.003	0.002	0.002
	Paver	0.003	0.003	0.002	0.002
	Roller	0.21	0.21	0.172	0.125
	Welder	0.003	0.003	0.002	0.002
	Sweeper/Scrubber	0.089	0.089	0.073	0.053
Street Paving	Paver	0.003	0.003	0.002	0.002
	Paving Equipment	0.003	0.003	0.002	0.002
	Roller	0.21	0.21	0.172	0.125
	Tractor/Loader/Backhoe	0.003	0.003	0.002	0.002
60-inch Lines (South)	Concrete/Industrial Saw	0.003	0.003	0.002	0.002
	Excavator	0.089	0.089	0.073	0.053
	Tractor/Loader/Backhoe	0.003	0.003	0.002	0.002
	Paver	0.003	0.003	0.002	0.002
	Roller	0.21	0.21	0.172	0.125
	Welder	0.003	0.003	0.002	0.002
	Sweeper/Scrubber	0.089	0.089	0.073	0.053

Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, September 2018, as modified by Illingworth & Rodkin, Inc., May 2025.

Summary

Operational noise generated by the proposed project would not exceed City noise standards at surrounding noise-sensitive uses or result in a permanent noise level increase exceeding 4 dBA L_{dn} at noise-sensitive receptors. Temporary construction vibration would not generate vibration levels exceeding the Caltrans limit at buildings surrounding the project site.

With the incorporation of Mitigation Measures 4.G-1b, 4.G-1c, and 4.G-1d included in the Alameda Point Draft EIR and the understanding that exposure to pile driving and offsite improvement noise would occur for no more than two weeks at any given receptor, the temporary construction noise impact would be reduced to less-than-significant level.

Appendix C

Project Solis Trip Generation and Vehicle Miles Traveled (VMT) Analysis

Kimley Horn, May 2025

Kimley»Horn

Memorandum

To: Mr. Mario Tjia
Hines, Inc.

From: Mike Mowery, P.E.
Curtis Yee, P.E.

Re: Project Solis - Alameda
Project Trip Generation and Vehicle Miles Traveled (VMT) Analysis

Date: May 23, 2025

The purpose of this memorandum is to document VMT analysis and a trip generation analysis for the limited purpose to estimate the weekday daily, AM peak hour, and PM peak-hour trips anticipated to be generated by the proposed project to determine whether the project would be within the scope of the Alameda General Plan 2040 project (General Plan) and within the impact analyzed for the Alameda Point Project.

Project Description

The proposed project contemplates developing within the Alameda Point development area in Alameda, California. The project proposes approximately 224,500 square feet of building containing a mix of research and development uses, including high bay light industrial, laboratory, and administrative office. This trip generation analysis was completed to compare the proposed project's use with the previously approved Alameda Point development. A map of the project location and surrounding vicinity is depicted in **Exhibit 1**. The project's proposed uses are consistent with the uses assumed in the *Alameda Point EIR* for the Enterprise District, which is the district in which the project would be located.

Trip Generation

A traffic impact analysis was previously completed for Alameda Point as a part of the *Alameda Point Environmental Impact Report (EIR)* [1]. As described in the traffic portion of the EIR the prior analysis trip generation was derived from the Alameda Countywide travel demand model. **Table 1** presents the Alameda Point estimated trip generation from the prior traffic analysis. The trip estimates in **Table 1** is based on an assumption that the share of trips made using transit will be consistent with the 2012 transit ridership patterns in Alameda and does not assume any reduction in automobile trip generation rates to account for the potential future benefits of Transportation Demand Management (TDM) programs required on Alameda Point and discussed in the Draft TDM[2].

Based on the expected uses of high bay light industrial, laboratory, and administrative office it was determined that ITE LU 130 (Industrial Park) best estimates the trip generation anticipated to be experienced for the proposed project site within Alameda Point. **Table 1** presents the comparison of trips from the prior analysis and the proposed project.

[1] *Alameda Point Project | Environmental Impact Report,* ESA, September 2013.
[2] *Project Solis Alameda | Preliminary Transportation Demand Management Plan*, Kimley-Horn & Associates, May 2025.

Table 1 – ITE Trip Generation Land Use Summary and Comparison

Scenario	ITE Land Use Code	Land Use	Size	Units	Daily Trips[1]	AM Peak			PM Peak		
						Total	In	Out	Total	In	Out
Alameda Point	N/A	Alameda Point			33,429	2,928			3,294		
Total Assumed Trips					**33,429**	**2,928**			**3,294**		
Proposed	130	Industrial Park	220.000	1,000 Sq Ft	741	75	61	14	75	16	59
Total Proposed Trips					**741**	**75**	**61**	**14**	**75**	**16**	**59**

As shown in Table 1, the proposed project is estimated to generate 741 daily trips, 75 AM, and 75 PM peak-hour trips. The project represents approximately 2.2% of the daily trips, 2.5% of the AM, and 2.3% of the PM peak-hour trips estimated to be generated by the Alameda Point development. Based on the truck data plots presented for ITE LU 130, it is anticipated that there will be 8 truck trips in the AM peak-hour and 8 truck trips in the PM peak-hour included in the estimate provided in Table 1. Based on the expected project use, the project is not anticipated to exceed the 16 truck trips estimated for the peak-hours. The 16 truck trips represent approximately 2.2% of the total project trips. The proposed project is consistent with the uses allowed in the *Alameda Point EIR* and the proposed project trips are below the total trips for Alameda Point. Therefore, the proposed project is accounted for in the prior analysis.

It should also be noted that while the proposed project is anticipated to generate approximately 2.2% of the daily trips for Alameda Point, the building size of approximately 224,500 square feet represents 4% of the 5.5 million square feet of total building square footage for the development, per Table 3-1 in the prior DEIR[2]. As such, it is anticipated that the planned transportation infrastructure presented in the DEIR will adequately serve the proposed project traffic.

Vehicle Miles Traveled (VMT) Analysis

Purpose of Analysis

Senate Bill 743 (2013) changed the focus of transportation impact analyses in CEQA from measuring impacts to drivers, to measuring the impact of driving. The change was made by replacing Level of Service (LOS) with VMT. This shift in transportation impact focus was intended to better align transportation impact analyses and mitigation outcomes with the State's goals to reduce greenhouse gas (GHG) emissions, encourage infill development, and improve public health through more active transportation. Level of service or other delay metrics may still be used to evaluate the impact of projects on drivers as part of land use entitlement review, fee programs, and community plan conformance.

The City prepared the Alameda General Plan 2040 EIR ("General Plan EIR") to analyze environmental impacts of the updated 2024 General Plan, which includes and incorporates the growth allowed on Alameda Point. The General Plan EIR used the following VMT thresholds for its analysis:

- Average household VMT per capita 15 percent below the average baseline rate for the Bay Area region; and
- Commute VMT per worker 15 percent below the average baseline rate for the Bay Area region.

The VMT forecasts generated for the General Plan EIR were produced using the Alameda CTC Model. The Model is used to estimate the household VMT per capita for residential uses and the commute VMT per worker. The Alameda County Transportation Commission (CTC) Model uses a four-step modeling process that considers trip generation, trip distribution, mode split, and trip assignment. The Alameda CTC Model assigns all predicted trips within, across, to, or from the nine-county San Francisco Bay Area region to the roadway network and transit system by mode (i.e., single-occupant or carpool vehicle, biking, walking, or transit) and transit carrier (i.e., bus, rail, ferry) for a given scenario. The Alameda CTC Model incorporates

land use data and transportation network improvements consistent with Plan Bay Area 2040 (the Sustainable Communities Strategy for the Bay Area region).

The General Plan EIR concluded that the Alameda General Plan 2040 would result in average household VMT per capita below the VMT threshold and average commute VMT per worker above the VMT threshold. The General Plan EIR listed a number of General Plan policies that would reduce the commute VMT per worker in Alameda but conservatively concluded that impacts for worker VMT would remain significant and unavoidable because, due to the programmatic nature of the General Plan EIR's analysis, it was infeasible to quantify the reductions achieved by such policies. The General Plan EIR notes that the program-level VMT impact for employment-based uses does not preclude the finding of less-than-significant impact for future development projects that achieve the applicable VMT thresholds of significance.

Methodology and Assumptions

The project proposes employment uses. Therefore, the project is considered to result in a significant impact if the commute VMT per worker for the proposed project exceeds 85-percent of the Bay Area regional average VMT per worker.

To compare whether the project would exceed the VMT anticipated by the General Plan EIR, this analysis uses the same methodology as used in the General Plan EIR, relying on the Alameda CTC Model, which provides VMT mapping resources alongside a VMT Reduction Calculator Tool, developed to assist member agencies in their efforts to comply with the requirements of SB 743[3]. The VMT screening completed for the proposed project identifies the model estimated VMT per employee for the proposed project based on the Alameda CTC VMT mapping tool. The analysis then uses the Alameda CTC VMT Reduction calculator to estimate the percent VMT reduction that should be applied to the raw model estimate to account for the proposed TDM features of the Project. Finally, the analysis compares this post-processed project VMT per employee to the Bay Area regional average VMT per employee. If the project VMT per employee is greater than 85 percent of the Bay Area average VMT per employee, then the project would have a significant VMT impact.

Analysis

As shown in **Table 2** the Bay Area Regional average VMT per employee is 18.1, which sets the VMT threshold (15 percent below the average) to 15.4. The proposed Project is located in traffic analysis zone (TAZ) 468 from the Alameda Countywide Travel Demand Model (ACTC TDM) as shown in **Exhibit 2.**

Table 2 – VMT Analysis Results

Metric	VMT per employee
Bay Area Regional Average[4]	18.1
VMT Target (15% below Average)	15.4
ACTC TDM TAZ 468	15.9
TDM Plan Reduction (26 %)	-4.2
Proposed Project	11.7
Difference from Threshold	**-3.7**

[3] SB 743 and VMT Tool, Alameda County Transportation Commission, https://www.alamedactc.org/planning/sb743-vmt, accessed April 30, 2025

[4] *Alameda General Plan 2040 Draft Environmental Impact Report*: *Table TRA-8*. City of Alameda. May 2021.

Model estimated VMT per employee for TAZ 468 is provided in the County's screening map as 15.9 VMT per employee. TDM measures from the Project TDM Plan are expected to reduce Project VMT per employee at the Project site and are summarized in **Table 3**. Using the County's VMT Reduction Calculator the project TDM plan shows that the Project is expected to produce 26 percent less average VMT per employee than similar adjacent uses without a TDM plan. A 26 percent reduction of TAZ 468 employment based VMT results 11.7 VMT per employee for the proposed project which is 3.7 VMT per employee below the regional threshold. Thus, the proposed project is expected to have **a less than significant VMT impact.**

Table 3 – Proposed Project TDM Measures

ACTC TDM ID	Measure	Description
Community Provided Measures		
4E	Bike Sharing	AMTA provides BIKELINK on-demand bike sharing services. BikeLink locations at Alameda Seaplane and Main Street ferry terminals.
4F	Car Sharing	Car sharing provides employees with access to a vehicle for midday trips, reducing the need to drive their personal vehicle to work.
5D	Free or Subsidized Transit Pass	AMTA members are eligible Clipper Bay Pass pilot program which provides free unlimited rides on all bus, rail, and ferry.
-	Ride matching Services	Facilitate ride matching for residents and employees. Existing programs such as 511.org can be utilized to facilitate carpooling.
-	Guaranteed Ride Home Program	Guaranteed Ride Home (GRH) is a program that provides a "back-up" ride to employees who use transit, carpool, biking/walking, or other alternative as their commute mode. Alameda CTC provides this service for employees within Alameda County
Site-Specific Measures		
1B	Actively Participate in Transportation Management Association (TMA)	The project will join the Alameda TMA.
1B	TDM Coordinator	TDM Coordinator will administer, update, and monitor TDM program, as well as coordinate with ATMA and the City.
1B	Information Programs	TDM Coordinator will work with the ATMA to determine if there are additional supplemental materials that they should create. Keeping information and materials updated and relevant will be required.
1B, 3D	Bicycle Parking	The Project is providing XX short-term and XX long-term bicycle parking.
1B, 3D	Bicycle End-Trip Facilities	Provide end-trip facilities such as showers and lockers.
4D	On-Site Bicycle Repair Facility	Do-it-yourself bicycle repair stands will be provided, including tire gauges, air pumps, wrenches and other tools for minor repairs.
1B	Pre-tax Commuter Benefits	Allow employees to pay for transit passes with pre-tax earnings and can help encourage transit use among employees.
1B, 1F	Encourage Telecommuting and Alternative Work Schedule	Implement alternative work schedule which could take the form of staggered starting times, flexible schedule, or compressed work weeks.
3B	Parking Cash-Out	A parking "cash-out" program gives employees the choice of keeping their parking space at work or accepting a cash payment in lieu of the space.
1B	Preferential parking permit program	Provide preferential parking for carpool/vanpool

Source: Project Solis Alameda Preliminary Transportation Demand Management Plan May 2025.

Conclusions

The following findings are made based on the trip generation and VMT analysis completed for the proposed project:

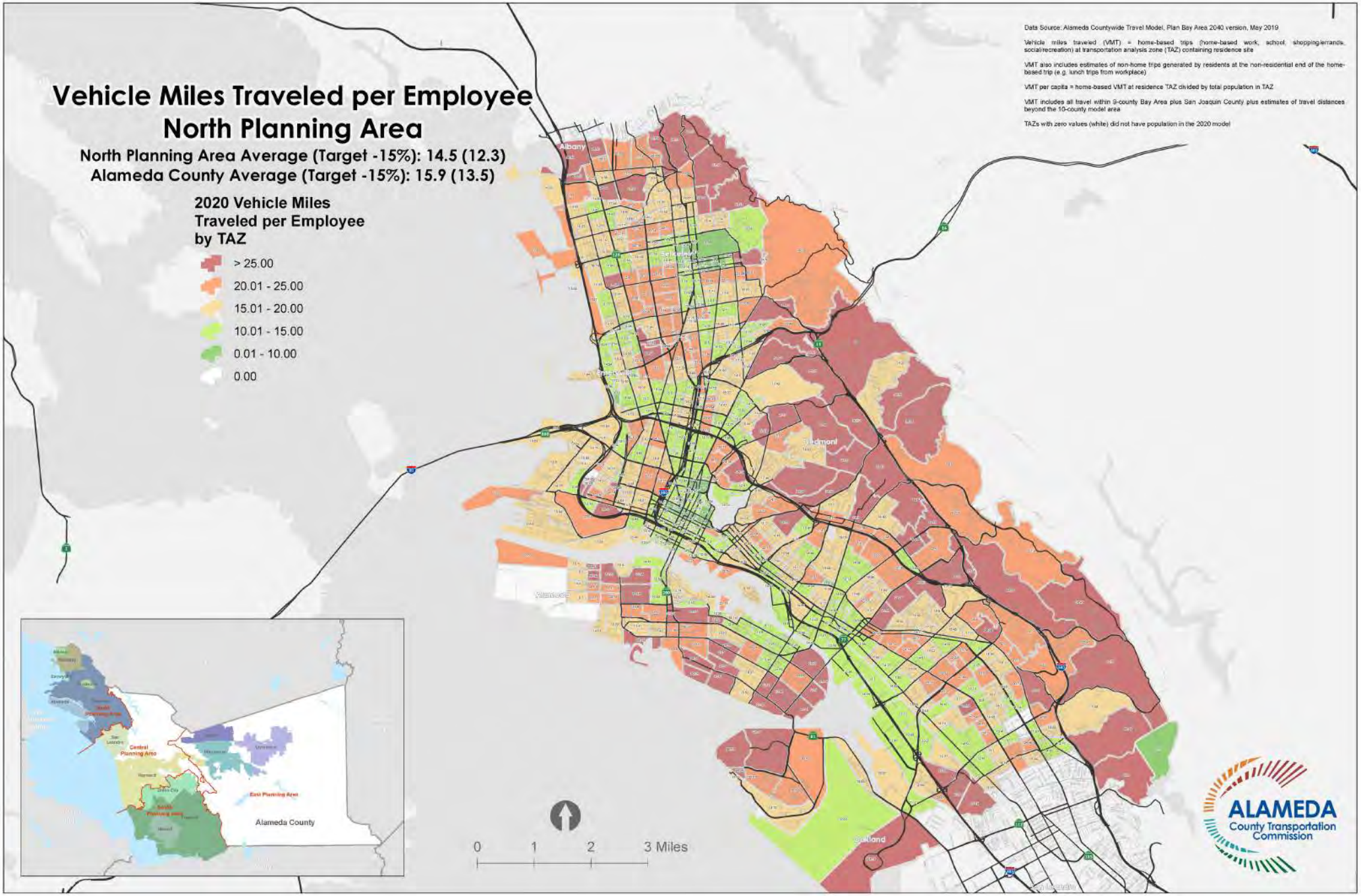
- The project, located within the Alameda Point specific plan area, proposes 224,500 square feet of building containing a mix of uses including high bay industrial, laboratory, and administrative office. The project applicant also proposes a transportation demand management (TDM) plan which includes specific achievable measures to reduce vehicle travel to and from the project site.
- The project trip generation represents approximately 2.2% of the daily trips, 2.5% of the AM, and 2.3% of the PM peak-hour trips estimated to be generated by the Alameda Point specific plan development.
- The proposed project is expected to produce 11.7 VMT per employee which is 3.7 VMT per employee below the Bay Area regional threshold of 15.4 VMT per employee. Thus, the proposed project is expected to have a less than significant VMT impact.

Attachments:

Exhibit 1 – Project Location and Vicinity Map
Exhibit 2 – Vehicle Miles Traveled per Employee Map – North Planning Area
Exhibit 3 – VMT per Employee for Project TAZ

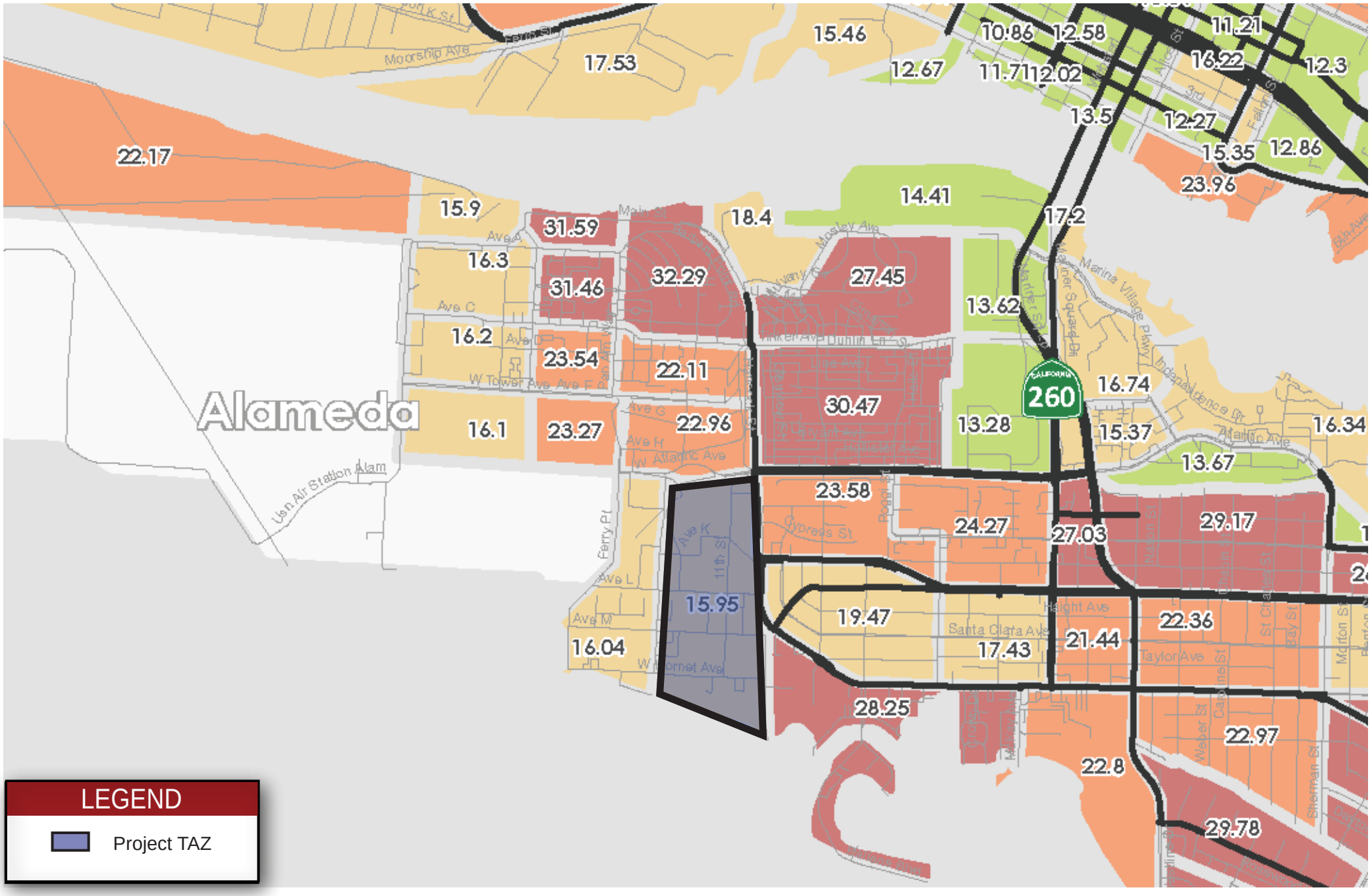
Kimley»Horn

Exhibit 1
Project Location and Vicinity Map



Kimley»Horn

Exhibit 2
Vehicle Miles Traveled per Employee Map - North Planning Area



Kimley»Horn

Exhibit 3
VMT per Employee for Project TAZ

Appendix D

Project Solis Preliminary Transportation Demand Management (TDM) Plan

Kimley-Horn, May 2025

Project Solis Alameda

Preliminary Transportation Demand Management (TDM) Plan

May 2025

Contents

1. Introduction

This document presents a preliminary Transportation Demand Management ("TDM") plan for the Project Solis Development Project ("Project"), which is a proposed industrial development located in Alameda ("City"), California.

1.1. Project Description

The proposed project contemplates developing within the Alameda Point development area, as show in **Figure 1**, in Alameda, California. The site is bordered by Pacific Avenue to the north, Skyhawk Street to the east, Oriskany Avenue to the south, and Orion Street to the west. The project proposes 220,000-square feet building containing a mix of uses including high bay industrial, laboratory, and administrative office.

Figure 1: Project Vicinity

1.1.1. Project Trip Generation

Trip generation for the Project was determined based on data from the Institute of Transportation Engineer's (ITE) publication, *Trip Generation, 11th Edition* for ITE Land Use 130: Industrial Park. **Table 1** presents the overall trip generation for the proposed Project. For a typical weekday, the Project will generate 741 daily trips, 75 trips in the AM peak hour, and 75 trips in the PM peak hour. Chapter 3 of *Alameda Point Transportation Demand Management (TDM) Plan* requires a minimum of 30% in peak

hour trips for commercial development which equates to a trip target of 52 trips in the AM peak hour and 52 trips in the PM peak hour.

Table 1: Project Trip Generation Summary

Land Use	Daily Trips	AM Peak	PM Peak
Industrial Park	741	75	75
30% TDM Requirement	-	-23	-23
Trip Target	-	52	52

Source: Kimely-Horn *Project Trip Generation and Vehicle miles Traveled (VMT) Analysis* (2025)

1.1.2. Project Vehicle Miles Traveled

Table 2 summarized the vehicles miles traveled (VMT) target and Project VMT. The Project's VMT was determined based on Alameda County Transportation Commission (Alameda CTC) North Planning Area VMT maps. Based on the VMT maps, the Project's VMT (15.9 VMT per employee), exceeds the VMT Target for the project is 15% below the Bay Area Regional average (15.4 VMT per employee) by 4%.

Table 2: Vehicle Miles Traveled Summary

	VMT per employee
Bay Area Regional Average	18.1
VMT Target (15% below Average)	15.4
Project VMT	15.9
Project target VMT reduction	4%

Source: Kimely-Horn *Project Trip Generation and Vehicle miles Traveled (VMT) Analysis* (2025)

1.2. Transportation Demand Management (TDM) Requirements

This TDM plan was developed to meet County and City requirements.

1.2.1. City of Alameda Municipal Code

The City's requirements related to trip reduction and TDM are stated in Chapter 30-7.7 of the City's Municipal Code. The intent of these requirements is to "*relieve automobile congestion and provide for the safe, efficient, and equitable use of the public street network by pedestrians, bicyclists, transit, emergency vehicles, and automobiles; and to reduce the air pollution, storm water runoff, urban heat island effects, and greenhouse gas emissions generated by automobile use*."

Section 30-7.7 states the employer's responsibilities, which includes:

a) *TDM Program. Any development or project under Section 30-7.2 that will result in a net increase of one hundred ten (110) vehicle trips per day onto the public street network as determined by the Institute of Transportation Engineers (ITE) Trip Generation Manual shall implement a TDM Program designed to reduce the number of vehicle trips generated by the project. The TDM program shall implement measures and/or improvements designed to change individual travel behavior to encourage greater use of alternative modes of transportation to reduce single-occupancy vehicle trips, vehicle miles traveled, and parking demand.*

1.2.2. General Plan

Policy ME-20 of the City's General Plan "require that new developments support citywide traffic reduction, greenhouse gas reduction, and sustainable transportation." To achieve this goal, some actions include adopting the Transportation Demand Management ordinance and expanding the Alameda Transportation Management Association to provide transportation services to all new developments, existing business associations and neighborhoods.

1.2.3. Alameda Point Transportation Demand Management Plan

The Alameda Point Transportation Demand Management Plan serves as a resource and guide to reduce single-occupant vehicles (SOV) for existing and future development within the Alameda Point area. This plan includes trip reduction goals which includes 30% trip reduction for commercial spaces. The plan also provides recommended TDM measures and monitoring efforts.

2. Existing Conditions

This section provides additional information on the existing transit services, bicycle facilities, and pedestrian facilities near the Project site, as well as existing commuting trends.

2.1. Existing Transit Service

Table 3 summarizes the transit services near the vicinity of the Project. Note Alameda TMA members are eligible for Clipper Bay Pass pilot program which provides free unlimited rides on all bus, rail, and ferry.

2.1.1. AC Transit

AC Transit provides multiple bus routes throughout Alameda County. Bus Route 96 services Alameda Point. The closest bus stop is located at the intersection of Pacific Avenue and Main Street, which is approximately 440 feet east of the Project. Note Routes 661 and 663 in the vicinity of site, but are Service to School lines that operate school days only.

2.1.2. San Francisco Bay Ferry

San Francisco Bay Ferry provides ferry services between San Francisco and Alameda. There are two ferry terminals in the vicinity of the Project site.

Alameda Seaplane is the closest terminal located 970 feet west of the Project site. This terminal provides ferry services Mondays through Fridays to downtown San Francisco. Ferry riders may also use BikeLink at the terminal to rent a bicycle.

In addition, the Main Street Alameda Ferry Terminal is located approximately a mile north of the site. This terminal provides routes to Downtown San Francisco, South San Francisco, and Oakland. Currently there are no transit services that connect the Main Street Alameda Ferry Terminal with the Project site, but ferry riders may use the BikeLink at the terminal to rent a bicycle.

2.1.3. BART

Bay Area Rapid Transit (BART) is a heavy elevated rail and subway public transportation system that connects the San Francisco Peninsula with cities in the Bay Area such as Oakland, Fremont, Walnut Creek, and Dublin. The closest BART station is the Lake Merrit (3.8 miles) station. Riders may take AC Transit bus route 96 from the Lake Merrit station to the nearest bus stop and walk to the Project site.

Table 3: Existing Transit Service

Route	Description	Weekday			Weekend	
		Operating Hours[1]	Headway[2] (minutes)		Operating Hours[1]	Headway[2] (minutes)
			Peak	Off-Peak		
AC Transit						
96	Alameda Point to Dimond District via Midway Ave	6:00 AM to 10:40 PM	30	30	6:00 AM to 10:40 PM	30
San Francisco Bay Ferry						
Alameda Seaplane	Alameda Seaplane to Downtown SF	6:30 AM to 10:50 PM	30-55	50-95	Does not operate on Weekends	
Oakland & Alameda[3]	Oakland to Downtown SF	9:45 AM – 10:05 PM	35	70-85	8:30 AM to 10:35 PM	25-80
South San Francisco[3]	Oakland to South SF	6:05 AM to 6:30 PM	55-60	-	Does not operate on Weekends	
Bart						
Blue/Orange/ Green	Lake Merrit Station	5:00 AM – 1:00 AM	15-20	15-20	5:55 AM to 1:00 AM	15-20

Notes:
[1] Operating Hours rounded to the nearest 5 minutes for weekdays. Sunday may have reduced operating hours.
[2] Headways are defined as the time between transit vehicles on the same route.
[3] Services to Main Street Alameda Ferry Terminal
Source: AC Transit (December 2024); San Francisco Bay Ferry (March 2025) BART (November 2023)

2.2. Existing Bicycle and Pedestrian Facilities

2.2.1. Bicycle Facilities

Bicyclists may access the Project through the existing bikeway facilities throughout Alameda. **Table 4** lists the existing bicycle facilities near the Project site.

Table 4: Existing Bicycle Facilities

Road	Segment	Facility Type
Atlantic Avenue	Pan Am Way to Main Street	Protected Bicycle Lane
Ferry Point	Atlantic Avenue to Seaplane Ferry Terminal	Protected Bicycle Lane
Main Street	Main Street Ferry Terminal to Pacific Avenue	Bicycle Lane
Main Street	Main Street Ferry Terminal to Lincoln Avenue	Bicycle Walk/Path
Ralph Appezzato Memorial Parkway	Main Street to SR 260	Bicycle Walk/Path

Source: BikeWalk *Alameda Bicycle and Walking Map* (2022)

2.2.2. BikeLink

BikeLink is an on-demand bicycle parking and rental service. A person can rent a bicycle with a BikeLink Card. There are currently BikeLink locations at Alameda Seaplane and Main Street ferry terminals.

2.2.3. Alameda TMA E-Bike Rebate

Members of Alameda TMA can apply for a $300 rebate when purchasing an electric bike.

2.2.4. Pedestrian Facilities

There are currently sidewalks and/or a walking path on Main Street and continuous sidewalk on Pacific Avenue east of Main Street which connects to transit stops and other uses. Currently there are no sidewalks along the project frontage, however the Project will construct sidewalks and curb ramps along its frontage.

2.3. Other Transportation Options

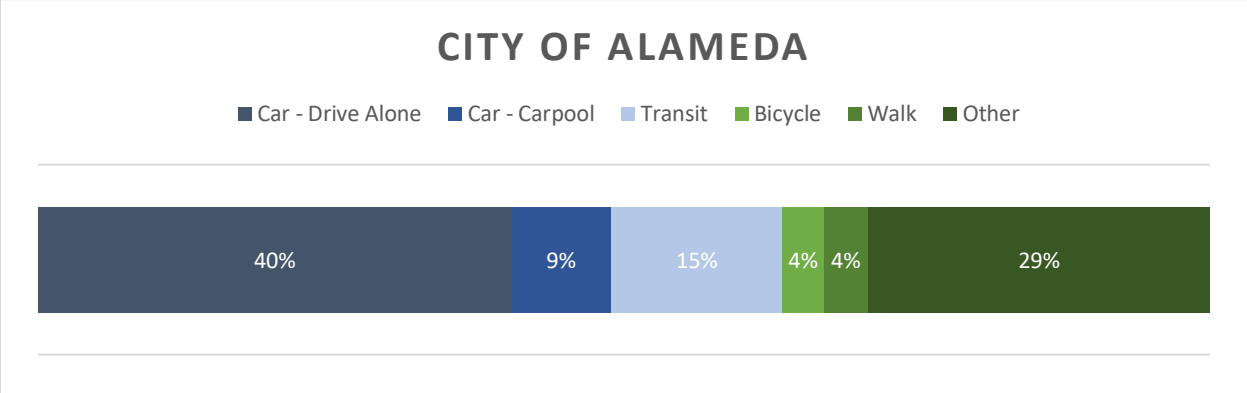
There are other transition options in addition to walking, biking, and transit.

2.3.1. Car Sharing

Car sharing reduces car ownership. Within the City of Alameda, Getaround is a peer-to-peer sharing service that allows people to rent their private vehicles to others through a mobile app. Alameda CTC provides a Zipcar pick-up location at Jack London Square in Oakland.

2.4. Existing Mode Split

Figure 2 illustrates the City's work commute transportation mode split base on the recent American Community Survey. The most common mode is automobiles where 40% drive alone in cars and 9% carpool. Other modes include transit (15%), bicycle (4%), walking (4%), and other (29%).



Source: *American Community Survey – B08301 Means of Transportation to Work (2023)*

Figure 2: City of Alameda Commute Work Mode Splits

3. Transportation Demand Management (TDM) Program

3.1. Framework

The TDM program will be comprised of three major components: 1) Education, 2) Program Elements, and 3) Monitoring. The Education component is discussed in Section 3.2; the Program Elements component is discussed in Section 3.3; and the Monitoring component is discussed in Section 4.

3.1.1. Transportation Management Association Membership

Transportation Management Association (TMA) assists with oversight and coordinating TDM-related programs and measures. Alameda Transportation Management Association (Alameda TMA or ATMA) is the TMA for Alameda, where businesses can join as members.

Alameda TMA provides a variety of TDM-related services for its members such as:

- Clipper Bay Pass pilot program (free unlimited rides on all bus, rail, and ferry)
- E-bike rebate program
- Transportation-related information on their website (https://www.alamedatma.org/)

3.1.2. TDM Coordinator

The TDM Coordinator(s) will be responsible with developing information materials, managing transportation services offered as part of the TDM program, monitoring results, and coordinating with City staff and ATMA.

3.2. Education

The Education component focuses on awareness and communication to reduce vehicle trips to the building by employees and visitors. This can be implemented by providing informational kiosks, new employee packages, etc. In addition, the following website are helpful resources:

- 511 (https://511.org/)
- Alameda TMA (https://www.alamedatma.org/)
- Alameda CTC Commute Options and Benefits (https://www.alamedactc.org/programs-projects/commute-options-and-benefits)

3.3. Program Elements

The TDM program will implement elements that will promote carpool, bicycling, walking, and transit in place of drive-alone vehicle trips to and from the Project site. These elements may change or be adjusted to adapt to changing transportation trends and to maximize the efficiency and performance of the program. **Table 5** presents the TDM elements.

Table 5 is organized based on community provided elements that employees have access to through ATMA or Alameda CTC and site-specific elements that the Project will implement.

3.3.1. VMT Reduction

The Alameda County Transportation Commission (Alameda CTC) VMT Reduction Calculator was used to estimate the anticipated VMT reduction by implementing the TDM program. VMT reduction was

determined based on Project's Transportation Analysis Zone (TAZ) as well information related to TDM measure being implemented.

Reductions associated Mandatory Employer Commute Program (1B) were assumed due to the City's and Alameda Point TDM requirements that also include regular performance monitoring, as well as including TDM measures such as providing service that encouraging carpooling/vanpooling, encouraging alternative or flexible scheduling, and providing bicycle end-trip facilities for all employees. Details on specific TDM measures are provided in **Table 5**. Based on these factors, The VMT Reduction Calculation resulted in a maximum reduction of 26% in employee commute trips. VMT Reduction Calculator output is included in the **Appendix**.

3.3.2. Additional TDM Measures

As discussed previously, the Project expects changes in commute patterns over time and will revise the TDM program to accommodate these changes. In addition, the Project may implement new measures if needed to achieve its 30% peak hour trip reduction goal.

Table 5: TDM Program Elements

ACTC TDM ID	Measure	Description
Community Provided Measures		
4E	Bike Sharing	AMTA provides BIKELINK on-demand bike sharing services. BikeLink locations at Alameda Seaplane and Main Street ferry terminals.
4F	Car Sharing	Car sharing provides employees with access to a vehicle for midday trips, reducing the need to drive their personal vehicle to work.
5D	Free or Subsidized Transit Pass	AMTA members are eligible Clipper Bay Pass pilot program which provides free unlimited rides on all bus, rail, and ferry.
-	Ride matching Services	Facilitate ride matching for residents and employees. Existing programs such as 511.org can be utilized to facilitate carpooling.
-	Guaranteed Ride Home Program	Guaranteed Ride Home (GRH) is a program that provides a "back-up" ride to employees who use transit, carpool, biking/walking, or other alternative as their commute mode. Alameda CTC provides this service for employees within Alameda County
Site-Specific Measures		
1B	Actively Participate in Transportation Management Association (TMA)	The project will join the Alameda TMA.
1B	TDM Coordinator	TDM Coordinator will administer, update, and monitor TDM program, as well as coordinate with ATMA and the City.
1B	Information Programs	TDM Coordinator will work with the ATMA to determine if there are additional supplemental materials that they should create. Keeping information and materials updated and relevant will be required.
1B, 3D	Bicycle Parking	The Project is providing XX short-term and XX long-term bicycle parking.
1B, 3D	Bicycle End-Trip Facilities	Provide end-trip facilities such as showers and lockers.
4D	On-Site Bicycle Repair Facility	Do-it-yourself bicycle repair stands will be provided, including tire gauges, air pumps, wrenches and other tools for minor repairs.
1B	Pre-tax Commuter Benefits	Allow employees to pay for transit passes with pre-tax earnings and can help encourage transit use among employees.
1B, 1F	Encourage Telecommuting and Alternative Work Schedule	Implement alternative work schedule which could take the form of staggered starting times, flexible schedule, or compressed work weeks.
3B	Parking Cash-Out	A parking "cash-out" program gives employees the choice of keeping their parking space at work or accepting a cash payment in lieu of the space.
1B	Preferential parking permit program	Provide preferential parking for carpool/vanpool

4. Monitoring and Evaluation

To ensure that the TDM program is working effectively and achieving its target, regular monitoring of commute patterns and reviewing the TDM program is necessary for the life of the Project.

4.1. Review of TDM Program

The TDM program should be reviewed at least on an annual basis. Adjustments should be made based on information from annual commute surveys, shifts in traffic pattern, and change in technology. If necessary, adjustments to the TDM program may include:

- Implementing additional TDM elements
- Modifications to existing TDM elements (i.e. adding additional bicycle storage)

If adjustments are made to the TDM program, the TDM coordinator(s) will communicate these adjustments to employees.

4.2. Monitoring

Regular monitoring is needed to assess compliance with meeting Alameda Point TDM Plan requirement of 30% reduction in peak hour trips. The monitoring process would include the following:

- Annual Travel Survey
- Trip Counts
- Annual Report

4.2.1. Annual Travel Survey

An annual travel survey will be conducted to assess the current use of alternative transportation options by employees and visitors. Results of the survey should be used to identify adjustments that could be made to sustain or increase the use of transit, carpool, bicycle, and walking.

4.2.2. Trip Counts

To access compliance with meeting the 30% peak hour trip reduction requirement, the Project will conduct trip count assessment at the Project's driveways.

4.2.3. Annual Report

The Project will prepare an annual report which describes the operation and utilization of TDM measures. The report will also report on the results of the travel survey and trip counts.

4.3. Evaluation

The ATMA Board of Directors will review the annual report to determine if the Project is in compliance in achieving its TDM target. As needed and based on the findings presented in the Annual Report, The Project in collaboration with the TMA Board of Directors and City, will develop an annual detailed refinement plan for the TDM Compliance Strategy to improve performance of the program to reasonably meet the trip reduction targets.

Appendix

MOBILITY MANAGEMENT VMT REDUCTION CALCULATOR TOOL

Return to Main

Project Information

Project Name (optional):	Project Solis
Project Address (optional):	
Project Type (optional):	Industrial
	Office
Analysis Location (TAZ # from website):	468
Jurisdiction (auto calculated from TAZ #):	Alameda

TDM Strategy Results

TDM ID	Strategy Name	Strategy Type	VMT Type	Change in VMT	Exclusions
1A	Voluntary Employer Commute Program	Project/Site	Employee commute trips		
1B	Mandatory Employer Commute Program	Project/Site	Employee commute trips	-26.0%	
1C	Employer Carpool Program	Project/Site	Employee commute trips		
1D1	Implement Subsidized or Discounted Transit Program (for Employees)	Project/Site	Employee commute trips		
1D2	Implement Subsidized or Discounted Transit Program (for Residents)	Project/Site	Project-generated trips		
1E	Employer Vanpool Program	Project/Site	Employee commute trips		
1F	Employer Telework Program	Project/Site	Employee commute trips		
2A	Transit Oriented Development	Project/Site	Project-generated trips		
2B1	Increase Residential Density	Project/Site	Project-generated trips		
2B2	Increase Employment Density	Project/Site	Employee commute trips		
2C	Integrate Affordable and Below Market Rate Housing	Neighborhood/City	All neighborhood/city trips		
3A1	Price Workplace Parking	Project/Site	Employee commute trips		
3A2	Unbundle Parking Costs from Property Cost	Project/Site	Project-generated trips		
3B	Parking Cash Out	Project/Site	Employee commute trips		
3C	Limit Parking Supply	Project/Site	Project-generated trips		
3D	Provide Bike Parking	Project/Site	Project-generated trips		
4A	Street Connectivity Improvement	Neighborhood/City	All neighborhood/city trips		
4B	Pedestrian Facility Improvement	Neighborhood/City	All neighborhood/city trips		
4C	Bikeway Network Expansion	Neighborhood/City	All neighborhood/city trips		
4D	Bike Facility Improvement	Neighborhood/City	Trips on roadway with bikeway addition		
4E	Bikeshare	Neighborhood/City	All neighborhood/city trips		
4F	Carshare	Neighborhood/City	All neighborhood/city trips		
4G	Community-Based Travel Planning	Neighborhood/City	All neighborhood/city trips		
4H	Provide Neighborhood Traffic Calming Measures	Neighborhood/City	All neighborhood/city trips		
5A	Transit Service Expansion	Neighborhood/City	All neighborhood/city trips		
5B	Transit Frequency Improvements	Neighborhood/City	All neighborhood/city trips		
5C	Transit-Supportive Treatments	Neighborhood/City	All neighborhood/city trips		
5D	Transit Fare Reduction	Neighborhood/City	All neighborhood/city trips		
5E	Microtransit NEV Shuttle	Neighborhood/City	All neighborhood/city trips		

Employee Commute Trips - Total Change in VMT	-26.0%
Project-Generated Trips - Total Change in VMT	0.0%
All Neighborhood/City Trips - Total Change in VMT	0.0%
Trips on Roadway Affected by Bikeway Addition - Total Change in VMT	0.0%

MOBILITY MANAGEMENT VMT REDUCTION CALCULATOR TOOL

Citations for all

1A. Voluntary Employer Commute Program
(1) Boarnet, M., Hsu, H., Handy, S. 2014. Impacts of Employer-Based Trip Reduction Programs and Vanpools on Passenger Vehicle Use and Greenhouse Gas Emissions. September. Available: https://ww2.arb.ca.gov/sites/default/files/2020-06/Impacts_of_Employer- Based_Trip_Reduction_Programs_and_Vanpools_on_Passenger_Vehicle_Use_and_Greenhouse_Ga s_Emissions_Policy_Brief.pdf. Accessed: January 2021.

1B. Mandatory Employer Commute Program
(1) Nelson/Nygaard Consulting Associates. 2015. Genentech – South San Francisco Campus TDM and Parking Report. June. Available: http://ci-ssfca. granicus.com/MetaViewer.php?view_id=2&clip_id=859&meta_id=62028. Accessed: January 2021.

1C. Employer Carpool Program
(1) San Diego Association of Governments (SANDAG). 2019. Mobility Management VMT Reduction Calculator Tool – Design Document. June. Available: https://www.icommutesd.com/docs/default-source/planning/tool-design-document_final_7-17-19.pdf?sfvrsn=ec39eb3b_2. Accessed: January 2021.

1D1. Implement Subsidized or Discounted Transit Program (for Employees)
(1) Federal Highway Administration (FHWA). 2017. National Household Travel Survey – 2017 Table Designer. Travel Day PMT by TRPTRANS by HH_CBSA, Workers by WRKTRANS by HH_CBSA. Available: https://nhts.ornl.gov/. Accessed: January 2021.

(2) Handy, L., Boarnet, S. 2013. Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions. Available: http://www.arb.ca.gov/cc/sb375/policies/transitservice/transit_brief.pdf. Accessed: January 2021.

(3) Litman, T. 2020a. Transit Price Elasticities and Cross-elasticities. Victoria Transport Policy Institute. April. Available: https://www.vtpi.org/tranelas.pdf. Accessed: January 2021.

(4) Taylor, B., Miller, D., Iseki, H., & Fink, C. 2008. Nature and/or Nurture? Analyzing the Determinants of Transit Ridership Across US Urbanized Areas. Transportation Research Part A: Policy and Practice, 43(1), 60-77. Available: https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.367.5311&rep=rep1&type=pdf. Accessed: January 2021.

1D2. Implement Subsidized or Discounted Transit Program (for Residents)
(1) Federal Highway Administration (FHWA). 2017. National Household Travel Survey – 2017 Table Designer. Travel Day PMT by TRPTRANS by HH_CBSA, Workers by WRKTRANS by HH_CBSA. Available: https://nhts.ornl.gov/. Accessed: January 2021.

(2) Handy, L., Boarnet, S. 2013. Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions. Available: http://www.arb.ca.gov/cc/sb375/policies/transitservice/transit_brief.pdf. Accessed: January 2021.

(3) Litman, T. 2020a. Transit Price Elasticities and Cross-elasticities. Victoria Transport Policy Institute. April. Available: https://www.vtpi.org/tranelas.pdf. Accessed: January 2021.

(4) Taylor, B., Miller, D., Iseki, H., & Fink, C. 2008. Nature and/or Nurture? Analyzing the Determinants of Transit Ridership Across US Urbanized Areas. Transportation Research Part A: Policy and Practice, 43(1), 60-77. Available: https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.367.5311&rep=rep1&type=pdf. Accessed: January 2021.

1E. Employer Vanpool Program
(1) Federal Highway Administration (FHWA). 2017. National Household Travel Survey – 2017 Table Designer. Travel Day VT by HH_CBSA by TRPTRANS by TRIPPURP. Available: https://nhts.ornl.gov/. Accessed: January 2021.

(2) San Diego Association of Governments (SANDAG). 2019. Mobility Management VMT Reduction Calculator Tool – Design Document. June. Available: https://www.icommutesd.com/docs/default-source/planning/tool-design-document_final_7- 17-19.pdf?sfvrsn=ec39eb3b_2. Accessed: January 2021.

1F. Employer Telework Program
(1). Cambridge Systematics. 2009. "Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions." Technical Appendices. Prepared for the Urban Land Institute. www.reconnectingamerica.org/assets/Uploads/2009movingcoolerexecsumandappend.pdf

(2). California Air Pollution Control Officers Association. 2010. "Quantifying Greenhouse Gas Mitigation Measures." www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

2A. Transit Oriented Development
(1) Tal, G., et al. 2013. "Technical Background Document on the Impacts of Transit Access (Distance to Transit) Based on a Review of the Empirical Literature." www.arb.ca.gov/cc/sb375/policies/transitservice/transit_brief.pdf

(2) Federal Highway Administration. 2017a. National Household Travel Survey – 2017 Table Designer. Travel Day PMT by TRPTRANS by HH_CBSA. Available: https://nhts.ornl.gov/. Accessed: January 2021.

(3) Federal Highway Administration. 2017b. National Household Travel Survey – 2017 Table Designer. Average Vehicle Occupancy by HHSTFIPS. Available: https://nhts.ornl.gov/. Accessed: January 2021.

(4) Lund, H., Cervero, R., and Wilson, R. 2004. Travel Characteristics of Transit-Oriented Development in California. January. Available: https://community-wealth.org/sites/clone.communitywealth. org/files/downloads/report-lund-cerv-wil.pdf. Accessed: January 2021.

2B1. Increase Residential Density
(1) Ewing, R., Bartholomew, K., Winkelman, S., Walters, J., Chen, D. 2007. Growing Cooler: The Evidence on Urban Development and Climate Change. October. Available: https://www.nrdc.org/sites/default/files/cit_07092401a.pdf. Accessed: January 2021.

(2) Stevens, M. 2016. Does Compact Development Make People Drive Less? Journal of the American Planning Association 83:1(7–18), DOI: 10.1080/01944363.2016.1240044. November. Available: https://www.researchgate.net/publication/309890412_Does_Compact_Development_Make_Pe ople_Drive_Less. Accessed: January 2021.

2B2. Increase Employment Density
(1) Institute of Transportation Engineers (ITE). Trip Generation Manual. 10th Edition. Available: https://www.ite.org/technical-resources/topics/trip-and-parking-generation/trip-generation- 10th-edition-formats/. Accessed: January 2021.

(2) Stevens, M. 2016. Does Compact Development Make People Drive Less? Journal of the American Planning Association 83:1(7–18), DOI: 10.1080/01944363.2016.1240044. November. Available: https://www.researchgate.net/publication/309890412_Does_Compact_Development_Make_Pe ople_Drive_Less. Accessed: January 2021.

2C. Integrate Affordable and Below Market Rate Housing
(1) Bento, Antonio M., Maureen L. Cropper, Ahmed Mushfiq Mobarak, and Katja Vinha. 2005. "The Effects of Urban Spatial Structure on Travel Demand in the United States." The Review of Economics and Statistics 87,3: 466-478.

(2) Nelson\Nygaard, 2005. Crediting Low-Traffic Developments (p.15). http://www.montgomeryplanning.org/transportation/documents/TripGenerationAn alysisUsingURBEMIS.pdf Criteron Planner/Engineers and Fehr & Peers Associates (2001).

(3) Index 4D Method. A Quick-Response Method of Estimating Travel Impacts from Land- Use Changes. Technical Memorandum prepared for US EPA, October 2001.

(4) Holtzclaw, John; Clear, Robert; Dittmar, Hank; Goldstein, David; and Haas, Peter (2002), "Location Efficiency: Neighborhood and Socio-Economic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles and San Francisco", Transportation Planning and Technology, 25 (1): 1-27.

3A1. Price Workplace Parking
(1) Lehner, S., Stefanie, P. 2019. The Price Elasticity of Parking: A Meta-analysis. Transportation Research Part A: Policy and Practice 121 2019. Available: http://sustainabletransportationsc.org/garage/pdf/parking_elasticity.pdf. Accessed: January 2021.

3A2. Unbundle Parking Costs from Property Cost
(1) AAA. 2019. Your Driving Costs. September. Available: https://exchange.aaa.com/wpcontent/uploads/2019/09/AAA-Your-Driving-Costs-2019.pdf. Accessed: January 2021.

(2) California Department of Transportation (Caltrans). 2002. 2000–2001 California Statewide Household Travel Survey Final Report. Available: https://trid.trb.org/view.aspx?id=681358. Accessed: January 2021.

(3) Litman, T. 2020. Parking Requirement Impacts on Housing Affordability. June. Available: https://www.vtpi.org/park-hou.pdf. Accessed: January 2021.

3B. Parking Cash Out
(1) Nelson/Nygaard Consulting Associates. 2015. Genentech – South San Francisco Campus TDM and Parking Report. June. Available: http://ci-ssfca. granicus.com/MetaViewer.php?view_id=2&clip_id=859&meta_id=62028. Accessed: January 2021.

3D. Provide Bike Parking
(1) Buehler, R. 2012. Determinants of bicycle commuting in the Washington, DC region: The role bicycle parking, cyclist showers, and free car parking at work. Transportation Research Part D, 17, 525– 531. Available: http://www.pedbikeinfo.org/cms/downloads/DeterminantsofBicycleCommuting.pdf. Accessed: January 2021.

(2) Federal Highway Administration (FHWA). 2017a. National Household Travel Survey – 2017 Table Designer. Travel Day PT by TRPTRANS by HH_CBSA. Available: https://nhts.ornl.gov/. Accessed: January 2021.

(3) Federal Highway Administration (FHWA). 2017b. National Household Travel Survey – 2017 Table Designer. Workers by WRKTRANS by HH_CBSA. Available: https://nhts.ornl.gov/. Accessed: January 2021.

3C. Limit Parking Supply
(1) California Department of Transportation (Caltrans). 2012. California Household Travel Survey (CHTS). Available: https://www.nrel.gov/transportation/secure-transportation-data/tsdccalifornia- travel-survey.html. Accessed: January 2021.

(2) Chatman, D. 2013. "Does TOD need the T? On the importance of factors other than rail access." Journal of the American Planning Association 79, no. 1. Available: https://trid.trb.org/view/1243004 . Accessed: January 2021.

4A. Street Connectivity Improvement
(1) Fehr & Peers. 2009. Proposed Trip Generation, Distribution, and Transit Mode Split Forecasts for the Bayview Waterfront Project Transportation Study.

(2) Stevens, M. 2016. Does Compact Development Make People Drive Less? Journal of the American Planning Association 83:1(7–18), DOI: 10.1080/01944363.2016.1240044. November. Available: https://www.researchgate.net/publication/309890412_Does_Compact_Development_Make_Pe ople_Drive_Less. Accessed: January 2021.

(3) U.S. Environmental Protection Agency, 2021. EnviroAtlas: Estimated Intersection Density of Walkable Roads. Available: https://enviroatlas.epa.gov/enviroatlas/DataFactSheets/pdf/Supplemental/Estimatedintersectiondensityofwalkableroads.pdf. Accessed: April 2021.

4B. Pedestrian Facility Improvement
(1) Frank, L., Greenwald, M., Kavage, S. and Devlin, A. 2011. An Assessment of Urban Form and Pedestrian and Transit Improvements as an Integrated GHG Reduction Strategy. WSDOT Research Report WA-RD 765.1, Washington State Department of Transportation. April. Available: www.wsdot.wa.gov/research/reports/fullreports/765.1.pdf. Accessed: January 2021.

(2) Handy, Susan, Glan-Claudia, Sciara, and Boarnet, Marlon. 2014. Impacts of Pedestrian Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions: Policy Brief. September. Available: https://ww2.arb.ca.gov/sites/default/files/2020- 06/Impacts_of_Pedestrian_Strategies_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emission s_Policy_Brief.pdf. Accessed: January 2021.

(3) Federal Highway Administration (FHWA). 2019. 2017 National Household Travel Survey Popular Vehicle Trip Statistics. Available: https://nhts.ornl.gov/vehicle-trips. Accessed: January 2021.

4C. Bikeway Network Expansion
(1) Federal Highway Administration (FHWA). 2017. National Household Travel Survey – 2017 Table Designer. Travel Day PMT by TRPTRANS by HH_CBSA. Available: https://nhts.ornl.gov/. Accessed: January 2021.

(2) Pucher, J., Buehler, R. 2011. Analysis of Bicycling Trends and Policies in Large North American Cities: Lessons for New York. March. Available: http://www.utrc2.org/sites/default/files/pubs/analysis-bike-final_0.pdf. Accessed: January 2021.

4D. Bike Facility Improvement
(1) California Air Resources Board (CARB). 2020d. Quantification Methodology for the Strategic Growth Council's Affordable Housing and Sustainable Communities Program. September. Available: https://ww2.arb.ca.gov/sites/default/files/classic/cc/capandtrade/auctionproceeds/draft_sgc_ ahsc_qm_091620.pdf. Accessed: January 2021.

(2) Federal Highway Administration (FHWA). 2017. National Household Travel Survey – 2017 Table Designer. Travel Day PT by TRPTRANS by HH_CBSA. Available: https://nhts.ornl.gov/. Accessed: January 2021.

4E. Bikeshare
(1) California Air Resources Board (CARB). 2020a. Revisiting Average Trip Length Defaults and Adjustment Factors for Quantifying VMT Reductions from Car Share, Bike Share, and Scooter Share Services. May. Available: https://ww2.arb.ca.gov/sites/default/files/classic//cc/capandtrade/auctionproceeds/sharedm obility_technical_052920.pdf. Accessed: January 2021.

(2) Federal Highway Administration (FHWA). 2017. National Household Travel Survey – 2017 Table Designer. Travel Day PT by TRPTRANS by HH_CBSA. Available: https://nhts.ornl.gov/. Accessed: January 2021.

(3) Federal Highway Administration (FHWA). 2018. Summary of Travel Trends 2017 – National Household Travel Survey. July. Available: https://www.fhwa.dot.gov/policyinformation/documents/2017_nhts_summary_travel_trends.p df. Accessed: January 2021.

(4) Lazarus, J., Pourquier, J., Feng, F., Hammel, H., Shaheen, S. 2019. Bikesharing Evolution and Expansion: Understanding How Docked and Dockless Models Complement and Compete – A Case Study of San Francisco. Paper No. 19-02761. Annual Meeting of the Transportation Research Board: Washington, D.C. Available: https://trid.trb.org/view/1572878. Accessed: January 2021.

(5) Metropolitan Transportation Commission (MTC). 2017. Plan Bay Area 2040 Final Supplemental Report – Travel Modeling Report. July. Available: http://2040.planbayarea.org/files/2020-02/Travel_Modeling_PBA2040_Supplemental%20Report_7-2017.pdf. Accessed: January 2021.

4F. Carshare
(1) Cervero, R., Golub, A., Nee, B. 2007. San Francisco City CarShare: Longer-Term Travel-Demand and Car Ownership Impacts. January. Available: https://iurd.berkeley.edu/wp/2006-07.pdf. Accessed: January 2021.

(2) Lovejoy, K., Handy, S., Boarnet, M. 2013. Impacts of Carsharing on Passenger Vehicle Use and Greenhouse Gas Emissions Policy Brief. October. Available: https://ww2.arb.ca.gov/sites/default/files/2020-06/Impacts_of_Carsharing_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emissions_Policy_B rief.pdf. Accessed: January 2021.

(3) San Diego Association of Governments (SANDAG). 2017. San Diego Regional Transportation Study. Volume 1: Technical Report. Available: https://www.sandag.org/uploads/publicationid/publicationid_2145_23025.pdf. Accessed: January 2021.

4G. Community-Based Travel Planning
(1) Metropolitan Transportation Commission (MTC). 2021. Plan Bay Area 2050, Supplemental Report. (forthcoming)

5A. Transit Service Expansion
(1) Handy, S., Lovejoy, K., Boarnet, M., Spears, S. 2013. Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions. October. Available: https://ww2.arb.ca.gov/sites/default/files/2020-06/Impacts_of_Transit_Service_Strategies_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emi ssions_Policy_Brief.pdf. Accessed: January 2021.

(2) Federal Highway Administration (FHWA). 2017. National Household Travel Survey – 2017 Table Designer. Average Vehicle Occupancy by HHSTFIPS. Available: https://nhts.ornl.gov/. Accessed: January 2021.

5B. Transit Frequency Improvements
(1) Federal Highway Administration (FHWA). 2017a. National Household Travel Survey – 2017 Table Designer. Travel Day PMT by TRPTRANS by HH_CBSA. Available: https://nhts.ornl.gov/. Accessed: January 2021.

(2) Federal Highway Administration (FHWA). 2017b. National Household Travel Survey – 2017 Table Designer. Average Vehicle Occupancy by HHSTFIPS. Available: https://nhts.ornl.gov/. Accessed: January 2021.

(3) Handy, S., Lovejoy, K., Boarnet, M., Spears, S. 2013. Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions. October. Available: https://ww2.arb.ca.gov/sites/default/files/2020-06/Impacts_of_Transit_Service_Strategies_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emi ssions_Policy_Brief.pdf. Accessed: January 2021.

(4) San Diego Association of Governments (SANDAG). 2019. Mobility Management VMT Reduction Calculator Tool – Design Document. June. Available: https://www.icommutesd.com/docs/default-source/planning/tool-design-document_final_7- 17-19.pdf?sfvrsn=ec39eb3b_2. Accessed: January 2021.

5C. Transit-Supportive Treatments
(1) Federal Highway Administration (FHWA). 2017a. National Household Travel Survey – 2017 Table Designer. Travel Day PMT by TRPTRANS by HH_CBSA. Available: https://nhts.ornl.gov/. Accessed: January 2021.

(2) Federal Highway Administration (FHWA). 2017b. National Household Travel Survey – 2017 Table Designer. Average Vehicle Occupancy by HHSTFIPS. Available: https://nhts.ornl.gov/. Accessed: January 2021.

(3) San Diego Association of Governments (SANDAG). 2019. Mobility Management VMT Reduction Calculator Tool – Design Document. June. Available: https://www.icommutesd.com/docs/default-source/planning/tool-design-document_final_7-17-19.pdf?sfvrsn=ec39eb3b_2. Accessed: January 2021.

(4) Transportation Research Board (TRB). 2007. Transit Cooperative Research Program Report 118: Bus Rapid Transit Practitioner's Guide. Available: https://nacto.org/docs/usdg/tcrp118brt_practitioners_kittleson.pdf. Accessed: January 2021.

5D. Transit Fare Reduction

(1) Federal Highway Administration (FHWA). 2017a. National Household Travel Survey – 2017 Table Designer. Travel Day PMT by TRPTRANS by HH_CBSA. Available: https://nhts.ornl.gov/. Accessed: January 2021.

(2) Federal Highway Administration (FHWA). 2017b. National Household Travel Survey – 2017 Table Designer. Average Vehicle Occupancy by HHSTFIPS. Available: https://nhts.ornl.gov/. Accessed: January 2021.

(3) Handy, S., Lovejoy, K., Boarnet, M., Spears, S. 2013. Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions. October. Available: https://ww2.arb.ca.gov/sites/default/files/2020-06/Impacts_of_Transit_Service_Strategies_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emi ssions_Policy_Brief.pdf. Accessed: January 2021.

(4) San Diego Association of Governments (SANDAG). 2019. Mobility Management VMT Reduction Calculator Tool – Design Document. June. Available: https://www.icommutesd.com/docs/default-source/planning/tool-design-document_final_7- 17-19.pdf?sfvrsn=ec39eb3b_2. Accessed: January 2021.

5E. Microtransit NEV Shuttle

(1) WSP. 2019. “Draft TDM Off-Model Methodology—March 2019 Revision.” Memo to SANDAG.

(2) Alameda CTC Travel Demand Forecasting Model scenario run (May 2019 version; base year 2020).