Central Avenue Safety Improvement Project
Scope of Work: PA&ED Phase

1. Project Management

The scope outlined below for Project Management will cover activities through the Project Approval and Environmental Document (PA&ED) phase. Scope for tasks, as needed, will be added or expanded for the future optional tasks. The subtasks described below will allow CDM Smith to 1) measure contract conformance, 2) manage risks, changes and quality, 3) lead the consulting team, 4) communicate with the City of Alameda, and 5) successfully deliver the requirements of this Scope of Work.

1.1 Project Management Plan (PMP)

CDM Smith will update and maintain the PMP that was developed during the Project Initiation Document (PID) phase, that will include a project risk register, project schedule and issues log. The risk register will identify potential risks and delineate the actions needed to mitigate the risks. The project schedule will reflect the workflow that culminates in deliverable submittals. It will include project meetings and will reflect City review timelines. The PMP will be reviewed at the monthly coordination meetings and updated accordingly.

Assumption(s):

1. The PMP, including risk register, project schedule, and issues log, will be updated monthly.

Deliverable(s):

1. Project Management Plan (updated monthly)
    a. Risk Register (XLSX)
    b. Project Schedule (PDF)
    c. Issues Log (XLSX)

1.2 Monthly Progress Reports and Invoices

Each month, CDM Smith will submit a progress report and invoice in a format that is agreed upon by the City. Charges, including Subconsultant charges, will be tracked at the task level. The progress reports will include a summary of start, finish, and percent complete for deliverable tasks performed during the billing period, percent complete of overall project elements, and a list of the anticipated deliverable tasks for the next month. Meetings attended will be cited. The progress reports will also identify any problems, issues, concerns or potential scope, schedule, and budget impacts with potential solutions for resolving them.

Assumption(s):

1. Monthly progress reports and invoices will be for the period of November 2019 through February 2021.

Deliverable(s):

1. Monthly progress reports and invoices (PDF, 16)

1.3 Subconsultant Management

CDM Smith will manage team resources to achieve project goals in a consistent, coordinated, and orderly manner. This task includes the work necessary to provide the leadership that the team will need to understand project interfaces, deadlines, budget constraints, and other issues.

CDM Smith will prepare the Subconsultant's contract agreements and will manage Subconsultants so that the CDM Smith Team effectively implements the work plan and coordinates work activities. CDM Smith will review Subconsultants' work; but that review is included as part of the specific task for which the work is developed.

CDM Smith will review the Subconsultants' monthly progress reports and invoices to verify the tasks completed and charges are consistent with the scope of work.

1.4 Document Control

CDM Smith will prepare an electronic filing system for this project and maintain project documents on a project-specific Workroom (SharePoint) site. CDM Smith will maintain a log of requested and provided project data filed on the Workroom. CDM Smith will post draft and final submittal deliverable documents to the Workroom. Posting to the Workroom will constitute a submittal of the deliverable. A register of the deliverables that itemizes deliverable description, associated task, firm responsible, number of copies, and date submitted will be developed. The register will be updated following each submittal and kept on the Workroom.

Deliverable(s):

1. Project specific Workroom (SharePoint site)
2. Register of Deliverables (XLSX)
3. Data Request Log (XLSX)

1.5 Quality Management

The major purpose of a quality program is to validate that the checked and reviewed deliverable documents comply with applicable regulatory and design criteria, codes, and standards in a consistent and uniform manner using industry standards and applicable requirements. Quality Assurance (QA) and Quality Control (QC) program requirements will be included in a Quality Management Plan (QMP).

CDM Smith will update the project-specific QMP from the PID phase covering the QA and QC for this project. The QMP will include a list of deliverables subject to quality control and prescribe the appropriate QC process for that deliverable.

The CDM Smith Quality Manager (CQM) will confirm that QC procedures defined in the QMP are met prior to the release of deliverables to the City. The City Project Manager will review the quality audits conducted by the CDM Smith CQM and at its discretion perform its own review of project QC documentation in coordination with the CQM.

QC processes will be integrated as activities, with durations, in the project schedule, implementing the QC process into the workflow for each deliverable. The cost for implementing the QC process is included in the task that prescribes the deliverable. It is not included in this task.

Assumption(s):

1. The QMP will be revised based on one round of consolidated non-conflicting comments from the City.
2. The QMP will be made available to team members and they will certify that they have read it.
3. QC processes will be integrated into the project schedule.

Deliverable(s):

1. Draft Quality Management Plan (DOCX)
2. Final Quality Management Plan (PDF)
3. Quality Control Log (XLSX)

2. Project Team Meetings

CDM Smith will plan and facilitate project meetings for the duration of the project. Agendas and meeting notes will be provided for project meetings.

2.1 Project Kick-off Meeting

CDM Smith will prepare and conduct a kick-off meeting with City staff. The meeting will address the project's measures of success, roles, responsibilities, quality control procedures, and operating guidelines. The meeting is needed to ensure effective communications and decision-making during the subsequent project execution activities.

CDM Smith attendees will be limited to the CDM Smith Principal-in-Charge, Project Manager and Task Leads.

CDM Smith will prepare draft and final meeting notes. The draft meeting notes will be sent to the City project manager for review. The City's comments will be incorporated into the final meeting notes.

Assumption(s):

1. The Project-Kick off Meeting will be three (3) hours in length and will be held at the City of Alameda City Hall.
2. Attendees for CDM Smith will include the Project Manager, the Principal-in-Charge, the Design Lead and the Environmental Lead.

3. The kick-off meeting will be scheduled for several weeks after Notice to Proceed (NTP) to allow the Design Option concept plans to be updated per comments as indicated in Task 7.1 prior to the meeting.

Deliverable(s):

1. Project kick-off meeting agenda
2. Meeting notes

2.2 Management Team Meetings

CDM Smith will plan and facilitate up to sixteen (16), 30-minute, management team meetings, held via conference call. The purpose of the meetings is to discuss and update the PMP, schedule, risk register, and issues log. Attendees will include the Project Manager and Principal-in-Charge from CDM Smith and the Project Manager from the City.

Assumption(s):

1. Management Team Meetings will be up to thirty (30) minutes and will be held every month.
2. Management Team Meetings will be attended by the CDM Smith Project Manager and the CDM Smith Principal-in-Charge.
3. Management Team Meetings will be scheduled by CDM Smith and held via Skype.

Deliverable(s):

1. Meeting agendas
2. Meeting notes

2.3 Project Team Coordination Meetings

CDM Smith will plan and facilitate up to sixteen (16), one-hour, monthly Project Team Coordination meetings which will be held to coordinate work and resolve project issues. City staff, the CDM Smith Project Manager and task leads will attend as appropriate for the topics of the meeting. Meeting will be held via conference call.

Assumption(s):

1. Project Team Coordination Meetings will be attended by the CDM Smith Project Manager and task leads as needed, up to four (4) attendees.
2. Project Team Coordination Meetings will be up to one (1) hour in length.
3. Project Team Coordination Meetings will be scheduled by CDM Smith and held via Skype.

Deliverable(s):

1. Meeting agendas
2. Meeting notes

3. Public Outreach and Meetings

3.1 Stakeholder Meetings

CDM Smith will facilitate up to three (3) stakeholder meetings to review the status of the Council-approved complete street concept, explain the PA&ED process, and gather input on any unanswered questions relating to transportation deficiencies, project goals, and/or range of alternatives, with a particular focus on the Central Avenue/Webster Street and the Central Avenue/Third Street intersections. Stakeholders will be identified in close consultation with the City and may include local business owners and business associations; bicycle, pedestrian, and/or transit advocates; students and school representatives; and/or residents along the corridor. This scope assumes that City staff will provide contact information for individual stakeholders and will provide the meeting space; CDM Smith will prepare meeting materials (as described in Task 3.4 below) and facilitate the meetings.

Assumption(s):

1. The City will provide the meeting location with required furniture, such as tables and chairs, or CDM Smith will provide a conference call line.
2. CDM Smith will prepare meeting materials (as described in Task 3.4 below) and will facilitate the meetings.
3. Stakeholder meetings will be attended by up to four (4) attendees from CDM Smith.
4. Stakeholder meetings will be up to two (2) hours in length.

Deliverable(s):

1. Meeting agendas
2. Stakeholder meeting notes
3. Refer to Task 3.4 for materials.

3.2 Technical Advisory Committee (TAC) Meeting

CDM Smith will facilitate one (1) TAC meeting midway through the PA&ED process. The suggested TAC meeting would be held to review the corridor assessment and proposed changes to the previous conceptual design and prepare for the public outreach tasks. CDM Smith will work closely with City staff to identify TAC members; preliminarily, we recommend that TAC members include internal City representatives from the Transportation Planning, Community Development, Public Works and other relevant departments as well as AC Transit and the San Francisco Bay Trail representatives. CDM Smith will prepare meeting materials; City staff will be responsible for final determination of TAC membership and will arrange meeting logistics.

Assumption(s):

1. The City will arrange meeting rooms for the TAC meeting and will invite TAC members to the meeting.

2. CDM Smith will prepare meeting materials (as described in Task 3.4 below) and will facilitate the meeting.
3. The TAC meeting will be attended by up to four (4) attendees.
4. The TAC meeting will be up to two (2) hours in length.

Deliverable(s):

1. Meeting agenda
2. TAC meeting notes
3. Refer to Task 3.4 for materials.

3.3 Community Workshop

CDM Smith will collaborate with City staff to organize and facilitate a community workshop. The specific format of the workshop will be refined based on the City's objectives for the meeting. CDM Smith will provide meeting materials and a presentation. City staff will be responsible for meeting logistics.

Assumption(s):

1. The City will provide the workshop location with required furniture, such as tables and chairs, and refreshments, sign-in sheet and agenda/comment card and workshop summary.
2. CDM Smith will prepare meeting materials (as described in Task 3.4 below) and facilitate the meetings.
3. The Community Workshop will be attended by up to six (6) attendees.
4. The Community Workshop will be up to two (2) hours in length.

Deliverable(s):

1. Refer to Task 3.4 for materials.

3.4 Public Outreach Materials and Graphics

CDM Smith will provide outreach and informational graphics such as renderings, maps, and layout for use at the Stakeholder Meetings, the TAC Meeting, and the Community Workshop in Tasks 3.1, 3.2, and 3.3, respectively.

This task provides an allocation of time and expense for the development and reproduction of outreach materials. Specific materials will be determined in coordination with the City project manager and the CDM Smith project manager during the project execution within the budget allotted.

CDM Smith will support City staff in clarifying the specific questions for which the City is seeking input, and in crafting engagement activities within the Stakeholder meetings, TAC meeting, and Community Workshop, that will focus on answers to those questions that move the process forward without reopening aspects of the design that will not change.

Assumption(s):

1. The City project manager and the CDM Smith project manager will determine the public outreach materials to be produced, within the budget allotted for this task.

Deliverable(s):

1. Content for the Stakeholder meetings, TAC meeting, and Community Workshop.

3.5 Transportation Commission and City Council – Request Approval

CDM Smith will support the City capturing all the project findings to date as an information item in the form of a staff report and PowerPoint presentation to the Transportation Commission and City Council.

Assumption(s):

1. Information provided by CDM Smith will include information and data collected as part of other tasks. No additional analysis will take place for this task.

Deliverable(s):

1. Information to support the City's preparation of a Staff Report and PowerPoint
2. Attendance by the CDM Smith Project Manager at the Transportation Commission meeting
3. Attendance by the CDM Smith Project Manager at the Transportation Commission and City Council meetings

4. Caltrans Project Development

This scope assumes the project will have a categorical exemption/categorical exclusion (CE/CATEX) and will not require a Draft Project Report (DPR). CDM Smith will prepare a Project Report (PR) and Design Exception Fact Sheets for review and approval by Caltrans.

4.1 Project Report (PR)

CDM Smith will prepare a PR according to the Caltrans' *Project Development Procedures Manual*. The PSR-PDS developed in the PID phase will be the basis for the PR and will be updated and expanded based on new information and additional analysis.

The PR will contain the following attachments:

- Signed Categorical Exemption/Categorical Exclusion Determination Form (Provided by others)
- Location Map
- Appropriate project detail maps to show existing conditions and proposed improvements
- Typical Sections
- PR Cost Estimate

- Right-of-way Data Sheet
- Storm Water Data Report signed cover sheet
- Life-cycle costs analysis
- Risk register

Assumption(s):

1. The PR will be revised based on one round of consolidated non-conflicting comments from the City.
2. Caltrans will provide one round of comments.
3. One comment resolution meeting will be attended at Caltrans District 4 offices in Oakland, CA.

Deliverable(s):

1. Draft PR to the City (DOCX and PDF)
2. Final PR to Caltrans (DOCX and PDF)
3. Revised Final PR to Caltrans (PDF)

4.2 Design Exception Fact Sheets

CDM Smith will prepare draft and final Advisory and Mandatory Design Exception Fact Sheets for approval of non-standard design features by Caltrans.

Assumption(s):

1. The Design Exception Fact Sheets will be revised based on one round of consolidated non-conflicting comments from the City.
2. Caltrans will provide one round of comments.
3. One comment resolution meeting will be attended at Caltrans District 4 offices in Oakland, CA.

Deliverable(s):

1. Draft Advisory Design Exception Fact Sheet to the City (DOCX)
2. Draft Advisory Design Exception Fact Sheet to Caltrans (DOCX and PDF)
3. Final Advisory Design Exception Fact Sheet to Caltrans (PDF)
4. Draft Mandatory Design Exception Fact Sheet to the City (DOCX)
5. Draft Mandatory Design Exception Fact Sheet to Caltrans (DOCX and PDF)
6. Final Mandatory Design Exception Fact Sheet to Caltrans (PDF)

4.3 Caltrans PDT and Coordination Meetings

CDM Smith will facilitate up to five (5) Project Development Team (PDT) meetings with Caltrans and up to five (5) specialized focus meetings on technical topics to be determined during the project execution. The meetings will be held at the Caltrans District 4 offices in

Oakland, California. CDM Smith will prepare an agenda and PowerPoint presentation for each of these meetings.

CDM Smith will also prepare draft and final meeting notes. The draft meeting notes will be sent to the City and Caltrans project managers for review. Comments from the City and Caltrans will be incorporated into the final meeting notes.

Assumption(s):

1. PDT Meetings will be held at the Caltrans District 4 offices in Oakland.
2. PDT Meetings will occur semi-monthly.
3. Focus Meeting will be held at the Caltrans District 4 offices in Oakland or via Skype.

Deliverable(s):

1. PDT Meeting agendas (PDF, 5)
2. PDT Meeting PowerPoint presentation (PPTX and PDF, 5)
3. Draft PDT Meeting notes (DOCX, 5)
4. Final PDT Meeting notes (PDF, 5)
5. Focus Meeting agendas (PDF, 5)
6. Focus Meeting PowerPoint presentation (PPTX and PDF, 5)
7. Draft Focus Meeting notes (DOCX, 5)
8. Final Focus Meeting notes (PDF, 5)

5. Traffic Analysis

5.1 Gather Existing Data

CDM Smith will conduct and review updated 2019 traffic counts in both the AM and PM peak periods for seven (7) intersections. Traffic counts will include pedestrian and bicycle counts and truck counts categorized by truck type. CDM Smith will coordinate with the City and Caltrans to determine the most appropriate time to conduct the traffic counts. The seven (7) locations are as follows:

- Central Avenue at Main Street/Pacific Avenue;
- Central Avenue at Third Street/Taylor Avenue;
- Central Avenue at Fourth Street;
- Central Avenue at Fifth Street;
- Central Avenue at Webster Street;
- Central Avenue at Eighth Street; and
- Central Avenue at Encinal Avenue/Sherman Street.

Assumption(s):

1. Traffic counts will be conducted for the AM and PM peak periods for all intersections.
2. Traffic counts will include pedestrian, bicycle, and truck counts by truck type for all intersections.
3. Traffic counts will include ADT counts at Central Avenue and Main Street/Pacific Avenue, Central Avenue and Webster Street, and Central Avenue and Encinal Avenue/Sherman Street.

Deliverable(s):

1. AM and PM peak period traffic counts at seven (7) intersections with Central Avenue
2. ADT counts at three (3) intersections with Central Avenue

5.2 Operations Analysis, Evaluation, and Visualization

CDM Smith will update the traffic analysis completed during the PID phase based on the updated traffic counts, time savings from signal timing improvements, and ongoing geometric revisions. The analysis will be completed for the baseline year (2019), the opening year (2022), and the forecast horizon year of 2045. The Build project analysis will include three design options for the intersection of Central Avenue and Webster Street. The following analysis scenarios will be included in the traffic study:

- Existing (2019)
- Opening Year (2022) No Build
- Opening Year (2022) Build
- Future Horizon Year (2045) No Build
- Future Horizon Year (2045) Build

Traffic analysis will be performed consistent with the Highway Capacity Methodology and will include the study intersections. The analysis will be completed using Synchro 10 software. Capacity constraints will be identified based on the overall intersection operating at or near capacity (i.e., with a volume-to-capacity ratio near or above 1.0). In addition, the analysis assumes the same traffic volume for all lane configuration/project scenarios. Coordination with Caltrans is critical in completing the traffic study in a timely fashion so as to capture the impacts from delay and diversions to side streets and other parallel corridors.

CDM Smith will perform a SimTraffic analysis to evaluate travel times between Webster Street and Encinal Avenue and provide a basis for visualizations, if needed. CDM Smith will develop an existing calibrated model for the PM peak period. The calibrated existing SimTraffic model will be used to develop models reflecting future no-build and build conditions. CDM Smith will conduct site reconnaissance of the project location and surrounding roadway network to verify existing intersection control, lane configurations, traffic signal timings, and other roadway characteristics. Peak hour traffic operations and vehicle queue lengths will be observed to help validate the traffic operations model (SimTraffic) results.

CDM Smith will prepare visualizations of the intersection options utilizing the Vissim model and software for up to four (4) intersection options at a maximum of three (3) intersection locations, Central Avenue and Webster Street, Central Avenue and Eighth Street, and Central Avenue at Encinal Avenue/Sherman Street.

Assumption(s):

1. Traffic volume forecasts will be completed and provided by the Caltrans update to the Alameda Countywide travel model.
2. Synchro analysis will be completed for nine (9) scenarios in both the AM and PM peak periods:
    a. Existing (2019)
    b. Opening Year (2022) No Build
    c. Opening Year (2022) "Sharrows"
    d. Opening Year (2022) "Bike Lanes"
    e. Opening (2022) "Two-way Bikeway"
    f. Future Horizon Year (2045) No Build
    g. Future Horizon Year (2045) "Sharrows"
    h. Future Horizon Year (2045) "Bike Lanes"
    i. Future Horizon Year (2045) "Two-way Bikeway"
3. SimTraffic analysis will be completed for five (5) scenarios in the PM peak period:
    a. Existing (2019)
    b. Opening Year (2022) No Build
    c. Opening Year (2022) "Sharrows"
    d. Opening Year (2022) "Bike Lanes"
    e. Opening (2022) "Two-way Bikeway"
4. SimTraffic visualization will be prepared, if needed, for up to four (4) total intersection options at a maximum of three intersection locations (3).

Deliverable(s):

1. Existing (2019) Synchro Outputs (PDF)
2. Opening Year (2022) Synchro Outputs (PDF, 4)
3. Future Horizon Year (2045) Synchro Outputs (PDF, 4)
4. Matrix of corridor travel times from SimTraffic (PDF)
5. SimTraffic visualization video files and a brief description of findings, if needed (4)

5.3 Traffic Operations Analysis Report

CDM Smith will prepare a Traffic Operations Analysis Report (TOAR) to support the PA&ED phase. The TOAR will include an assessment of collision history and traffic volumes. The TOAR will also document the existing and 20-year future conditions (with a 2045 horizon year).

Assumption(s):

1. The TOAR will be revised based on one round of consolidated non-conflicting comments from the City.
2. Caltrans will provide one round of comments.

Deliverable(s):

1. Draft TOAR to the City (DOCX and PDF)
2. Draft TOAR to Caltrans (DOCX and PDF)
3. Final TOAR to Caltrans (PDF)

5.4 Draft Transportation Management Plan

CDM Smith will prepare a draft Transportation Management Plan (TMP) to support the PA&ED phase. The draft TMP will be prepared in accordance with Caltrans' *Transportation Management Plan Guidelines*. The TMP will outline strategies to minimize traffic disruption and congestion during construction. Caltrans TMP Guidelines include operational and demand management strategies in six broad categories. CDM Smith will analyze the various TMP strategies in each of the six categories and will identify whether each strategy will be suitable and what emphasis (high or low) should be assigned to each selected strategy. Once the list of appropriate elements is established, an approximate cost will be developed for each selected strategy. The final step is to compare TMP costs to the expected delay costs requiring mitigation to check for reasonableness and adjust the plan accordingly. One revision to the TMP will be prepared to incorporate comments. The TMP will also make specific provisions for pedestrian and bicycle traffic. No additional traffic counts will be required for the TMP. Supplemental traffic counts to analyze detours are not included in this scope of work. The work does not include specific parking analysis for temporary loss of parking due to construction.

Assumption(s):

1. The TMP will be revised based on one round of consolidated non-conflicting comments from the City.
2. Caltrans will provide one round of comments.

Deliverable(s):

1. Draft TMP to the City (DOCX)
2. Draft TMP to Caltrans (DOCX and PDF)
3. Revised Draft TMP to Caltrans (DOCX and PDF)

6. Environmental

This scope assumes the project will have a categorical exemption/categorical exclusion (CE/CATEX).

6.1 PA&ED Studies

CDM Smith will prepare topic-specific technical analyses. Preliminary analysis indicates the project as currently scoped will not induce growth nor will it impact farmlands/

timberlands, or energy and thus, these disciplines are not included in the following discussion. The following resource areas – hazardous waste/materials, cultural resources, paleontology, water quality, and natural – will have full studies completed as part of the environmental clearance, in accordance with the Caltrans Standard Environmental Resource (SER) handbook guideline and the results of the Preliminary Environmental Analysis Report (PEAR).

6.1.1 Memo Covering Topics with No Impacts/Resources not Present

The Preliminary Environmental Analysis Report (PEAR) technical analysis indicated that the project as currently scoped will not induce growth, impact farmlands/timberlands, or impact energy. Additional technical analysis for these topics is not anticipated.

CDM Smith will prepare a memorandum to document that these topics show no impact or are not present in the project.

Assumption(s):

1. The project will not induce growth, impact farmlands/timberlands, or impact energy.
2. The memorandum will be revised based on one round of consolidated non-conflicting comments from the City.

Deliverable(s):

1. Draft memorandum on topics with no impacts/resources not present (DOCX)
2. Final memorandum on topics with no impacts/resources not present (PDF)

6.1.2 Land Use

Based on anticipation of a *de minimis* finding, CDM Smith will prepare a Section 4(f) report and gain concurrence from agencies with 4(f) jurisdictions. CDM Smith will coordinate with the appropriate agencies to obtain the *de minimis* concurrence on the finding.

Assumption(s):

1. There will be a *de minimis* finding for the section of the Bay Trail that will be reconstructed.
2. The Section 4(f) Assessment will be revised based on one round of consolidated non-conflicting comments from the City.
3. The Section 4(f) Assessment will be revised based on one round of review by Caltrans.

Deliverable(s):

1. Draft 4(f) *de minimus* letter (DOCX)
2. Final 4(f) *de minimus* letter (PDF)
3. Draft Section 4(f) Assessment to the City (DOCX)

4. Draft Section 4(f) Assessment to Caltrans (DOCX and PDF)
5. Final Section 4(f) Assessment to Caltrans (DOCX and PDF)

6.1.3 Community Impacts

CDM Smith will prepare a Community Impact Assessment (CIA) which will fully examine the project's impact to populations covered under environmental justice, relocations, loss of parking, staging areas use, and impacts to community services. The report will also identify utilities, emergency services, and public facilities that could be impacted by the project.

Assumption(s):

1. The CIA will be revised based on one round of consolidated non-conflicting comments from the City.
2. The CIA will be revised based on two rounds of review from Caltrans.

Deliverable(s):

1. Draft CIA to the City (DOCX)
2. Draft CIA to Caltrans (DOCX and PDF)
3. Revised Draft CIA to Caltrans (DOCX and PDF)
4. Final CIA to Caltrans (DOCX and PDF)

6.1.4 Visual and Aesthetics

CDM Smith will document project's visual impact through a memorandum level Visual Impact Assessment (VIA).

Assumption(s):

1. The VIA will be revised based on one round of consolidated non-conflicting comments from the City.
2. The VIA will be revised based on two rounds of review from Caltrans.

Deliverable(s):

1. Draft VIA to the City (DOCX)
2. Draft VIA to Caltrans (DOCX and PDF)
3. Revised Draft VIA to Caltrans (DOCX and PDF)
4. Final VIA to Caltrans (DOCX and PDF)

6.1.5 Cultural Resources

CDM Smith will conduct the following required studies: Archaeological Survey Report (ASR), an Extended Phase I (XPI) proposal, and XPI report, a Historical Resources Evaluation Report (HRER), and a Historic Property Survey Report (HPSR).

CDM Smith will establish an Area of Potential Effects (APE) for built environment resources and archaeological resources. The Archaeological Survey report will include

a literature search, Native American outreach, and a field survey. Our PEAR research indicated that the project foot print is highly sensitive for archaeological and built environment resources. Caltrans will require subsurface archaeological testing as part of identification, including approval of a testing plan, and the results report. If any historic properties are identified in the APE (i.e., properties listed in or determined eligible for listing in the Nation Register of Historic Places (NRHP)), a finding of effect report may be needed.

The cultural resource studies will be prepared following Caltrans' guidelines set forth in the Standard Environmental Reference (SER), Volume 2, Cultural Resources Procedures and the procedures set forth in the "First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act as it Pertains to the Administration of the Federal-Aid Highway Program in California" (2014) (Caltrans Section 106 PA). Tasks will include fieldwork, research, report preparation, and preparation of DPR 523 forms. Some properties in the APE may be exempt from study as per Attachment 4 of the Section 106 PA. Determinations of eligibility for properties not previously identified as eligible or ineligible for listing in the NRHP would require concurrence from the State Historic Preservation Officer (SHPO).

If the project design has the potential to impact eligible resources, the project will need to prepare a finding of effect document. This could be a Finding of No Adverse Effect (FNAE) or a Finding of Adverse Effect (FAE). Depending on the resource impacted and the type of impact, a FNAE could be accomplished with or without standard conditions of instituting or applying the Secretary of Interior's Standards for the Treatment of Historic Properties (SOIS) for built environment resources. A similar finding may be applicable for archaeological resources protected through the use of an Environmentally Sensitive Area Action Plan. A FNAE-SC-SOIS would be included with the HPSR and would be subject to review by the Caltrans Cultural Studies Office (CSO). Caltrans would not be required to consult with the SHPO on the FNAE-SC-SOIS, which would include a SOIS Action Plan that establishes tasks to ensure project compliance with the SOIS. A FNAE without Standard Conditions or a FAE would require consultation with SHPO regarding the determination of effects. If the project will have an adverse effect, Caltrans and SHPO will enter into a Memorandum of Agreement (MOA) to stipulate measures to resolve the adverse effect. The City of Alameda would be an invited signatory or concurring party to the MOA and be responsible for carrying out the mitigation.

Assumption(s):

1. Based on review of potential project impacts, the APE for built environment resources will include fewer parcels outside the street right of way than are show in the APE presented in the PEAR.

2. The APE Map will be revised based on one round of consolidated non-conflicting comments from the City.
3. The APE Map will be revised based on one round of review from Caltrans.
4. Project archaeologist will conduct a records search at the Information Center.
5. One (1) archaeological site will need to be recorded.
6. Two (2) locations will be tested based on reported prehistoric findings and historic research for the ASR.
7. The ASR will be revised based on one round of consolidated non-conflicting comments from the City.
8. The ASR will be revised based on two rounds of review from Caltrans.
9. The XPI proposal will be revised based on one round of consolidated non-conflicting comments from the City.
10. The XPI proposal will be revised based on two rounds of review from Caltrans.
11. A Native American Monitor will not be required during the XPI testing.
12. Materials collected during the XPI excavation will be noted, photographed if there are diagnostic elements, and returned to the excavation feature.
13. No collection or curation will be required.
14. The XPI report will be revised based on one round of consolidated non-conflicting comments from the City.
15. The XPI report will be revised based on two rounds of review from Caltrans.
16. The XPI report will have negative findings.
17. The HRER will include preparation of up to 15 DPR 523 forms.
18. The City will assist with access to properties in the APE, as needed.
19. The HRER will be revised based on one round of consolidated non-conflicting comments from the City.
20. The HRER will be revised based on two rounds of review by Caltrans.
21. The HPSR will be revised based on one round of consolidated non-conflicting comments from the City.
22. The HPSR will be revised based on two rounds of review by Caltrans.
23. Historic properties identified in the APE will require preparation of a Finding of Effect Report, with is expected to be a Finding of No Adverse Effect (FNAE) without Standard Conditions. This report will analysis up to three built environment historic properties. It is anticipated that the project will not require a MOA.
24. The FNAE will be revised based on one round of consolidated non-conflicting comments from the City.
25. The FNAE will be revised based on two rounds of review by Caltrans.

<u>Deliverable(s):</u>

1. Draft APE Map to the City (PDF)
2. Draft APE Map to Caltrans (PDF)
3. Final APE Map to Caltrans (PDF)
4. Draft ASR to the City (DOCX)
5. Draft ASR to Caltrans (DOCX and PDF)
6. Revised Draft ASR to Caltrans (DOCX and PDF)
7. Final ASR to Caltrans (DOCX and PDF)

8. Draft XPI proposal to the City (DOCX)
9. Draft XPI proposal to Caltrans (DOCX and PDF)
10. Revised Draft XPI proposal to Caltrans (DOCX and PDF)
11. Final XPI proposal to Caltrans (DOCX and PDF)
12. Draft XPI report to the City (DOCX)
13. Draft XPI report to Caltrans (DOCX and PDF)
14. Revised Draft XPI report to Caltrans (DOCX and PDF)
15. Final XPI report to Caltrans (DOCX and PDF)
16. Draft HRER to the City (DOCX)
17. Draft HRER to Caltrans (DOCX and PDF)
18. Revised Draft HRER to Caltrans (DOCX and PDF)
19. Final HRER to Caltrans (DOCX and PDF)
20. Draft HPSR to the City (DOCX)
21. Draft HSPR to Caltrans (DOCX and PDF)
22. Revised Draft HSPR to Caltrans (DOCX and PDF)
23. Final HPSR to Caltrans (PDF)
24. Draft FNAE to the City (DOCX)
25. Draft FNAE to Caltrans (DOCX and PDF)
26. Revised Draft FNAE to Caltrans (DOCX and PDF)
27. Final FNAE to Caltrans (DOCX and PDF)

6.1.6 Paleontology

CDM Smith will prepare a combined Paleontological Evaluation Report (PER) and Paleontological Mitigation Plan (PMP).

Assumption(s):

1. The combined PER and PMP will be revised based on one round of consolidated non-conflicting comments from the City.
2. The combined PER and PMP will be revised based on one round of review from Caltrans.

Deliverable(s):

1. Draft combined PER and PMP to the City (DOCX)
2. Draft combined PER and PMP to Caltrans (DOCX and PDF)
3. Final combined PER and PMP to Caltrans (DOCX and PDF)

6.1.7 Water Quality

CDM Smith will complete an analysis of the water quality issues related to the project and prepare the draft and final Water Quality Assessment Report (WQAR). The WQAR will be required to support the NEPA and CEQA Environmental Document and will provide supporting information for the National Pollutant Discharge Elimination System (NPDES) permitting. This technical study will include a discussion of the proposed project, the general environmental setting of the project area, and the regulatory framework with respect to water quality. It will also provide data on surface

water and groundwater resources within the project area and their water quality health, describe water quality impairments and beneficial uses, identify potential water quality impacts/benefits associated with the proposed project, and recommend avoidance and/or minimization measures for potentially adverse impacts. The WQAR will not make conclusions regarding significance of the impacts; the determination of significance will be addressed in the NEPA/CEQA document based on information provided in the WQAR. Information from the WQAR will also be used to prepare the Storm Water Data Report.

Assumption(s):

1. CDM Smith will use the most recent version of the Caltrans WQAR Template as guidance for developing the WQAR.
2. The WQAR will be revised based on one round of consolidated non-conflicting comments from the City.
3. The WQAR will be revised based on two rounds of review by Caltrans.

Deliverable(s):

1. Draft WQAR to the City (DOCX)
2. Draft WQAR to Caltrans (DOCX and PDF)
3. Revised Draft WQAR to Caltrans (DOCX and PDF)
4. Final WQAR to Caltrans (DOCX and PDF)

6.1.8 Hazardous Waste/Materials

The purpose of an Initial Site Assessment (ISA) is to document, to the extent feasible, Recognized Environmental Conditions, which are defined by the American Society for Testing and Materials Standard Practice E1527-05 as "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property." As part of the PID phase of work, CDM Smith prepared an ISA for the project. CDM Smith will update the ISA that was prepared in the PID phase.

Assumption(s):

1. The ISA will be revised based on one round of consolidated non-conflicting comments from the City.
2. The ISA will be revised based on one round of review by Caltrans.

Deliverable(s):

1. Draft ISA to the City (DOCX)
2. Draft ISA to Caltrans (DOCX and PDF)
3. Final ISA to Caltrans (DOCX and PDF)

6.1.9 Air Quality

This scope of work assumes that the previous PID phase analysis for air quality is sufficient for preparing the CE/CATEX. No further analysis is included. CDM Smith will prepare a memorandum documenting the steps previously taken.

Assumption(s):

1. The PID phase analysis for air quality is sufficient for preparation of the CE/CATEX.
2. The air quality memorandum will be revised based on one round of consolidated non-conflicting comments from the City.

Deliverable(s):

1. Draft air quality memorandum (DOCX)
2. Final air quality memorandum (PDF)

6.1.10 Noise and Vibration

Per Caltrans noise policy protocol (which details Caltrans policies and procedures for traffic noise studies in conformance with 23 CFR 772), CDM Smith will prepare a noise study to assess the potential noise impacts and noise abatement measures.

Assumption(s):

1. The noise study will be revised based on one round of consolidated non-conflicting comments from the City.
2. The noise study will be revised based on two rounds of review by Caltrans.

Deliverable(s):

1. Draft noise study to the City (DOCX)
2. Draft noise study to Caltrans (DOCX and PDF)
3. Revised Draft noise study to Caltrans (DOCX and PDF)
4. Final noise study to Caltrans (DOCX and PDF)

6.1.11 Energy and Climate Change

CDM Smith will prepare a memorandum that will discuss the impacts to energy, greenhouse gasses, and climate change/sea level rise.

Assumption(s):

1. The Energy and Climate Change Memorandum PID will be revised based on one round of consolidated non-conflicting comments from the City.
2. The Energy and Climate Change study will be revised based on two rounds of review by Caltrans.

Deliverable(s):

1. Draft Energy and Climate Change Memorandum to the City (DOCX)
2. Draft Energy and Climate Change Memorandum to the Caltrans (DOCX and PDF)
3. Revised Draft Energy and Climate Change Memorandum to the City (DOCX and PDF)
4. Final Energy and Climate Change Memorandum to the City (DOCX and PDF)

6.1.12 Biological Environment

CDM Smith will prepare a Natural Environmental Study-Minimal Impacts (NES-MI). This study will be prepared to document the existing conditions and to assess the potential biological resource impacts associated with the proposed project improvements. It is anticipated that the project will not impact any special-status plant or animal species, wetlands, riparian habitats or other natural communities. Since tree removal is anticipated as part of the project, a tree survey will also be performed along the corridor. A Tree Survey Report will be prepared and will include a matrix of existing trees meeting the threshold criteria established by Caltrans for evaluation, species, size, and notes regarding their health and condition. Special recommendation and construction details to preserve the health of the trees will be described and illustrated.

Assumption(s):

1. The project will not impact any special-status plant or animal species.
2. The Tree Survey Report will be revised based on one round of consolidated non-conflicting comments from the City.
3. The NES-MI will be revised based on one round of consolidated non-conflicting comments from the City.
4. The NES-MI will be revised based on two rounds of review from Caltrans.

Deliverable(s):

1. Draft Tree Survey Report (DOCX)
2. Final Tree Survey Report (PDF)
3. Draft NES-MI to the City (DOCX)
4. Draft NES-MI to Caltrans (DOCX and PDF)
5. Revised Draft NES-MI to Caltrans (DOCX and PDF)
6. Final NES-MI to Caltrans (DOCX and PDF)
7. Filing fees will be paid by the City.

6.2 CE/CATEX

CDM Smith CDM Smith will prepare a CE for compliance with the California Environmental Quality Act (CEQA) and a CATEX for compliance with the National Environmental Policy Act (NEPA). The CE and CATEX will be a combined environmental clearance document that will be processed with Caltrans as the lead agency for both CEQA and NEPA.

Assumption(s):

1. The project qualifies as a CE/CATEX.
2. Caltrans will be the lead agency for both the CE and the CATEX.
3. The CE/CATEX will be a joint document.
4. The CE/CATEX will be revised based on one round of consolidated non-conflicting comments from the City.
5. The CE/CATEX will be revised based on two rounds of review from Caltrans.

Deliverable(s):

1. Draft CE/CATEX to the City (DOCX)
2. Draft CE/CATEX to Caltrans (DOCX and PDF)
3. Revised Draft CE/CATEX to Caltrans (DOCX and PDF)
4. Final CE/CATEX to Caltrans (DOCX and PDF)

7. Support Services

7.1 PID Phase Design Options Update

CDM Smith will update the PID Phase Design Options conceptual plans to incorporate input received from the December 5, 2018 Community Workshop, public survey, the January 23, 2019 Transportation Commission meeting and the March 19, 2019 City Council meeting. The City will provide a consolidated set of comments from these activities to be addressed.

Assumption(s):

1. The City will provide a consolidated set of comments from the Community Workshop, public survey, and the Transportation Commission and City Council meetings to be addressed in the updated design options.

Deliverable(s):

1. Draft Design Options (PDF)
2. Final Design Options (PDF)

7.2 Topographic Survey and Base Mapping

CDM Smith will develop base map drawings for the project area in AutoCAD .DWG format. The survey area will be 5-10 feet behind the back of sidewalk, as access allows, and 25 feet from the curb returns down the side streets. The survey will include existing improvements, sidewalks, curb, gutters, surface utilities, buildings, utility poles, fence type and height, retaining walls, entrances and their finished floor elevations, storm drain and sewer manholes with inverts, driveway cuts and driveway approaches to garages, garages and elevations of their floors, down spots and curb drains, catch basins, large curb drains at corners, trees, hedges, lane markings, signs and spot elevations to generate 0.50-foot contours.

Property lines will be shown based on the assessor's maps and will not be indicative of a boundary survey. Street rights of way will be based on record maps and the City rights of way maps. Survey control points will be established offsite for future construction.

Coordinates, distances, and bearings will be based on California Coordinate System Zone III US Survey Feet. The horizontal datum will be 1983 (Epoch 2018.750). The vertical datum will be North American Vertical Datum (NAVD) 1988.

Deliverable(s):

1. Topographic Base Map (DWG)

7.3 Right-of-Way Coordination

CDM Smith will conduct research for Right-of-Way Plans that show the existing property lines. CDM Smith will define the extent of permanent easement and temporary construction easement acquisition necessary for project construction. The Right-of-Way Plan will show the right-of-way centerlines, section lines, quarter section lines, City limits, existing right-of-way parcel lines, proposed right-of-way lines, and proposed easement lines.

It is anticipated that no fee acquisition right-of-way is needed for the project but approximately 10 temporary construction easements (TCE) and 30 rights of entry may be required.

CDM Smith will provide a Right of Way Cost Estimate and Right of Way Data Sheet for the Project Report. CDM Smith will identify specific right-of-way risks and mitigation measures; schedule and issues input; and, assessment of right-of-way impacts to generate questions/impacts for the design team to advance design efforts and reduce risk, and potential for value engineering/property curative mitigation efforts.

Specific to the Right-of-Way Cost Estimate and Right-of-Way Data Sheet for the Project Report, CDM Smith will complete the preliminary right of way cost estimate and corresponding Caltrans Right-of-Way Data Sheet for one (1) alternative for up to 10 parcels. The steps to complete this task, is as follows:

- Take an inventory of the affected properties.
- Secure preliminary parcel information from online database sources and investigate current ownerships. Utilizing this information and Assessor's Roll information, determine other valuation considerations such as zoning, lot and building size, current usage, and other relevant factors.
- Visually inspect each property (aerial and street-level views based upon Google Earth and other available internet resources) and note the effects of all proposed acquisitions.
- Sort each property into product types to determine the set of real estate data to be researched and create valuation data sets for each product type.

- Review proposed project design right of way impacts with Project Design Team for consensus prior to cost estimate preparation.
- Prepare an estimate of the probable cost of each TCE including damages to the remaining parcel, using created data sets from various real estate value databases.
- Prepare an estimate of the total probable loss of business goodwill (if applicable) attributable to each operating business.
- Prepare an estimate of the total services and incidental costs associated with each TCE (appraisals, acquisition and relocation consultants, title/escrow, legal services, etc.).
- Prepare the latest Caltrans Right-of-Way Data Sheet according to the Caltrans Right of Way Manual.
- Provide QA/QC of final work product, submit to client and other Project Team members and respond to inquiries.
- Upon completion of Caltrans review of the Project Report, revise Right-of-Way Cost Estimate/Caltrans Data Sheets if necessary, for up to two (2) reviews.
- Revise dates and signatures to final Caltrans Data Sheets for up to two (2) updates.

Assumption(s):

1. Costs provided for estimates and data sheets are for initial preparation only and do not include revisions based upon design change issues.
2. Caltrans or other reviews will not result in additional properties, types of acquisition, and will occur within six (6) months of initial submittal.

Deliverable(s):

1. Right-of-Way Base Map (DWG)
2. Right-of-Way Cost Estimate
3. Caltrans Right-of-Way Data Sheet
4. Right-of-Way risks and mitigation measures

7.4 Pavement Assessment and Design

CDM Smith will perform a field reconnaissance along the project alignment to observe and map the existing pavement conditions and pavement distress. CDM Smith will research and review available historical data to identify pavement age, materials, and depth. CDM Smith will review the available published geotechnical, geologic, and seismologic data and the existing data on file pertinent to the proposed construction and the site. A site-specific geotechnical investigation will be performed to evaluate the subsurface conditions along the project corridor and to develop geotechnical recommendations for design and construction of earthwork site grading, existing pavement rehabilitation, new roadway pavement section construction and signal structure foundations planned for the project, if applicable.

CDM Smith will characterize existing pavements, base, and sub-base thicknesses and conditions, using data obtained during the utility potholing and by shallow test pits excavated to approximately three (3) feet deep at up to ten (10) locations along the corridor as determined by the field reconnaissance. CDM Smith will collect bulk samples of the aggregate base and from the subgrade soil materials immediately underlying the existing pavement sections. CDM Smith will drill up to a total of six (6) test borings extending to depths of 25 to 30 feet at proposed new intersection traffic signals, if applicable, and in the western portion of the corridor where new roadway pavement will be constructed. Groundwater monitoring standpipe piezometers should also be installed at two (2) of the test boring locations. Locations of test pits and borings will be determined during the field reconnaissance.

Laboratory testing of selected soil samples obtained from the test borings and test pits will be performed to evaluate pertinent engineering properties for design recommendations. Laboratory tests which we anticipate performing include: natural moisture content and unit weight, Atterberg limits (plasticity), sieve analysis, and Resistance R-Value testing. The actual number and type of laboratory tests will depend on soil type and conditions of the collected samples and may deviate from those described above.

Subsurface conditions, pavement characterization, locations of full depth pavement reconstruction, and proposed new structural sections, and geotechnical recommendations for design and construction will be reported in the geotechnical materials report.

Assumption(s):

1. Existing pavement conditions and the location of full depth pavement reconstruction (dig outs) will be determined by field reconnaissance.
2. Pavement and soil data will be obtained from the utility location potholing locations and up to ten (10) additional test pit locations.
3. Six borings to a depth of 25 to 30 feet will be performed in the areas of new intersection signals, if applicable, and new of roadway realignment.
4. The geotechnical investigation will require several permits including a Caltrans Encroachment Permit, City of Alameda Encroachment Permit, and Alameda County Public Works Agency drilling permit.
5. The investigation will require lane closure and traffic control, and a traffic control plan will need to be submitted to Caltrans and the City of Alameda for review. The City of Alameda and Caltrans provided restrictions on the hours during which the work may take place, will be detailed in the encroachment permits when they are issued.
6. The Geotechnical Materials Report will be revised based on one round of consolidated non-conflicting comments from the City.
7. Caltrans will provide one round of comments.

Deliverable(s):

1. Draft Geotechnical Materials Report to the City (DOCX)

2. Draft Geotechnical Materials Report to Caltrans (DOCX)
3. Final Geotechnical Materials Report (PDF)

7.5 Utility Coordination and Exploration

CDM Smith will designate a Utility Coordinator who will be the primary contact with utility owners and will oversee the research and conflict identification and resolution processes performed by the project engineers in coordination with the City's designated utility project manager. CDM Smith will prepare meeting notes to document discussions with utility owners. The Utility Coordinator will attend up to six (6) meetings with utility companies.

CDM Smith will keep records of informal correspondence with utility companies, including email and phone conversations.

CDM Smith will request utility maps from utility owners to supplement base mapping. Upon receipt of additional utility maps, CDM Smith will incorporate new information on utility CADD base maps and update the utility base file corresponding to the current project limits.

CDM Smith will identify utilities via potholing at up to twenty (20) locations. CDM Smith will contact a utility locating service such as USA to locate on the surface utilities in areas designated for potholing. CDM Smith will drill and/or excavate to expose utility. CDM Smith will survey elevation and location of utility and document with survey notes. Paint used to mark utilities will not be removed. A potholing report documenting the methods used to pothole, the locations potholed, and the results of the potholing investigation in terms of horizontal and vertical locations of utilities potholed will be prepared.

CDM Smith will prepare and maintain a spreadsheet to document and track the status of utilities within the project right-of-way. CDM Smith will work with utility owners to establish protection, relocation schedules, and specifications prior to project construction.

CDM Smith will prepare utility disposition plans schematically depicting proposed relocations of utility facilities. CDM Smith will work with project engineering and utility owners to identify locations for relocated utility facilities; work with utility owners' new service departments to arrange for identified new service locations and schedules; and work with affected utility owners to establish preliminary protection and relocation schedules and requirements.

CDM Smith will prepare and send the following formal written correspondence to each affected utility owner as applicable:

- Utility verification request
- Notice to owner of potential conflict and request for determination of liability
- Request to pothole
- Notice to owner of relocation

CDM Smith will prepare up to seven (7) final utility agreements for issuance to utility owners and including in the utility certification project milestone. The list includes the following:

- Alameda Municipal Power
- AT&T
- Comcast
- EBMUD
- Kinder Morgan
- PG&E
- Verizon

CDM Smith will complete a Utility Certification and maintain a Utility Matrix in accordance with Caltrans' *Project Development Procedures Manual*.

The City will coordinate utility company activities for any adjustments required to be included in the final design plans.

Assumption(s):

1. Utility coordination will occur with up to six (6) utility owners.
2. The Utility Coordinator will attend up to six (6) meetings with utility owners.
3. Positive location of utilities by potholing will occur at up to ten (20) locations.

Deliverable(s):

1. Utility Company Meeting agendas (PDF, 6)
2. Draft Utility Company Meeting notes (DOCX, 6)
3. Final Utility Company Meeting note (PDF, 6)
4. Existing utilities base file (DWG)
5. Potholing report (PDF)
6. Utility Tracking Log (XLSX)
7. Utility Verification Request (PDF, 6)
8. Notice to Owner of Potential Conflict (PDF, 6)
9. Request to Pothole (PDF, 6)
10. Notice to Owner of Relocation (PDF, 6)
11. Draft Utility Agreement (DOCX, 6)
12. Final Utility Agreement (PDF, 6)
13. Utility Policy Certification (PDF)
14. Utility Matrix (XLSX)

7.6 Hydrology and Hydraulic Analysis

This task is to support the integration of the proposed safety improvements with existing drainage infrastructure, including replacement and upgrades to roadway drainage and

flood control facilities and the addition of water quality features and green stormwater infrastructure.

CDM Smith will perform a hydrologic and hydraulic (H&H) design analysis to evaluate stormwater runoff patterns and quantify design flow rates and volumes. It is anticipated that the Rational Method or TR-55 will be sufficient to determine peak flows for sizing most drainage components, but the U.S. Army Corps of Engineers (USACE) HEC-HMS or the U.S. Environmental Protection Agency Stormwater Management Model (EPA SWMM) will be used as appropriate for more complex storage and routing analyses. Information developed during the existing conditions analysis, including topography, stormwater catchment areas and characteristics, precipitation statistics, groundwater hydrology, existing infrastructure, etc. will be used to determine ideal locations and sizes for stormwater management improvements.

CDM Smith will determine peak flow rates and water quality design flows and volumes to support flood control and potential treatment BMP design, respectively. The H&H analysis will be performed for both existing and proposed conditions and the results will be documented the Drainage Report. The need for specific stormwater treatment BMPs will be determined during the update to the PID level SWDR to be completed under Task 7.7 below.

Assumption(s):

1. The H&H analyses will be conducted in accordance with the most recent versions of the Caltrans Highway Design Manual, the Statewide Stormwater Management Plan, the Project Planning and Design Guide, and the Caltrans NPDES Permit. Additional guidance, as appropriate, will also be obtained in the Alameda County Flood Control & Water Conservation District Hydrology and Hydraulics Manual.
2. The Drainage Report will be revised based on one set of consolidated non-conflicting comments from the City and one set of consolidated non-conflicting comments from Caltrans.

Deliverable(s):

1. Draft Drainage Report to the City (PDF and DOCX)
2. Draft Drainage Report to Caltrans (PDF and DOCX)
3. Final Drainage Report (PDF and DOCX)

7.7 Stormwater Data Report

The PID level Stormwater Data Report (SWDR) will be revised to confirm the need to incorporate stormwater treatment BMPs, and to identify BMP types and locations for inclusion in the preliminary (35 percent) design plans. CDM Smith will also analyze the potential impacts of incorporating BMPs on project alternatives, right-of-way needs, and project costs. Comments received from the City and Caltrans on the PID level SWDR will also be incorporated as part of this SWDR revision,

Assumption(s):

1. The SWDR will be revised based on one set of consolidated non-conflicting comments from the City and one set of consolidated non-conflicting comments from Caltrans.

Deliverable(s):

1. Draft SWDR to the City (PDF and DOCX)
2. Draft SWDR to Caltrans (PDF and DOCX)
3. Final SWDR (PDF and DOCX)

7.8 Permitting

Permits for the proposed project identified in the PEAR will be re-evaluated during the PA&ED Phase. The project plans and specification will need to comply with the Caltrans Statewide Stormwater Permit and the City of Alameda MS4 permit for stormwater management. It is anticipated that the following permits will be required prior to construction of the project:

- State Water Resources Control Board (SWRCB) Notice of Intent (NOI) and Stormwater Pollution Prevention Plan (SWPPP) for coverage under the National pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities.
- Caltrans Encroachment Permit for work within the Caltrans Right-of-Way.
- City of Alameda Certificate of Approval to remove protected trees within Central Avenue Right-of-Way.
- City of Alameda Marsh Crust Permit for excavation near Central Avenue and the Encinal boat launch access area.

In addition to the permits above, the contractor will be required to obtain additional permits prior to construction which may include the following:

- Bay Area Air Quality Management District (BAAQMD) dust control during grading and construction activities and other air quality permits for the operation of mobile equipment.
- State Water Resources Control or Regional Water Quality Control Board permits for offsite disposal of excavated material at a landfill or other approved disposal site.

Assumption(s):

1. Permits will be obtained during later phases of the project

Deliverable(s):

1. A list of permits including description of permit process, submittal requirements, schedule, and acquisition responsibility.
2. Blank agency permit application and checklist requirements for all required permits.

7.9 Parking Inventory

CDM Smith will perform an inventory of existing parking spaces along the project corridor and will prepare parking exhibits showing the number and location of parking spaces three scenarios, as follows:

- Existing Conditions/No Build Alternative
- No Build Alternative with Daylighting according to current best practices and accessible on-street parking per the U.S. Access Boards Guidelines and improved loading zones, including for trucks and for specific sites
- Build Alternative, including three design options around the intersection of Central Avenue and Webster Street and two design options at the intersection of Central Avenue and Third Street/Taylor Avenue

Assumption(s):

1. The City will provide a list of locations of accessible on-street park and loading zones to be assumed for the No Build Alternative.
2. The Parking Exhibits will be revised based on one round of consolidated non-conflicting comments from The City.
3. The parking study will be completed in time to support the Community Impacts Assessment.

Deliverable(s):

1. Draft Parking Exhibits (PDF)
2. Final Parking Exhibits (PDF)

8. Engineering Plans, Specifications, and Estimates

8.1 35% Plan Development

CDM Smith will update the designs prepared in the PID phase based on the mapping obtained in Task 7.2 and comments on the PID phase designs from the City, TAC members, and Caltrans. Comments from the public survey and Community Workshop will be reviewed and evaluated for applicability based on technical soundness, compatibility with the project purpose and need and project goals, and cost effectiveness within the project's construction budget.

Preliminary plans will be developed and serve as the base documents for further refinement into the final right-of-way plans and construction document in the subsequent phase.

Title Sheet, Sheet Index and General Notes, Key Map, and Abbreviations and Legend

CDM Smith will prepare a Title Sheet containing project information, a Vicinity Map, and a Location Map.

CDM Smith will prepare an Index of Sheets containing the sheet number, drawing number, and sheet description for all sheets. CDM Smith will prepare general notes for the project.

CDM Smith will prepare a list of abbreviations and a legend containing all symbols and linetypes used in the plans.

CDM Smith will prepare a Key Map to show the limits of each plan sheet within the overall project area.

Survey Control, Monumentation, and Centerline Alignment

CDM Smith will prepare plans showing centerline bearings, alignment data, survey control points, and monument.

Right-of-Way

CDM Smith will produce Right-of-Way Plans that show the existing property lines. CDM Smith will define the extent of permanent easement and temporary construction easement acquisition necessary for project construction.

The Right-of-Way Plan will show the right-of-way centerlines, section lines, quarter section lines, City limits, existing right-of-way parcel lines, proposed right-of-way lines, and proposed easement lines.

It is anticipated that no fee acquisition right-of-way is needed for the project.

Demolition

CDM Smith will prepare demolition plans that existing features and elements to be demolished or removed. CDM Smith will identify removal and salvage items and determine the disposition thereof.

Typical Sections

CDM Smith will develop typical sections to capture all the scenarios along the corridor. The pavement section design will be based on recommendations from the Geotechnical Materials Report

Existing Conditions

CDM Smith will prepare plans showing the existing conditions of the Central Avenue corridor.

Plan and Profile

CDM Smith will prepare preliminary plan and profile sheets showing profile grades and geometric data.

Intersection Details

CDM Smith will prepare intersection detail plans showing geometric data, including station/offsets, elevations, and curve data for proposed intersection improvement.

Drainage Plan, Profiles, and Details

CDM Smith will prepare the drainage system design for surface and sub-surface conveyances, drainage inlets, and water quality improvements as modifications to the existing system and for new facilities. It is assumed that the existing upstream and downstream drainage facilities that are outside of the project area are adequately sized and functioning as required and no design for improving these facilities is included.

CDM Smith will prepare the drainage design drawings depicting drainage system horizontal plan view and vertical profile layouts with pipe types and sizes. The drawings will illustrate the new drainage facilities and their connections to the existing facilities. Drainage systems will be numbered and depicted in accordance with Caltrans conventions and will include the necessary details to clearly present the design concepts. These 35 percent level details are intended to provide a basis for cost estimates and will not include final design level construction details. Based on the PID phase water quality evaluation results, the need to include treatment BMPs is anticipated to control sediment, and sediment-associated pollutant discharges from the project area.

Water Quality Controls

CDM Smith will incorporate Design Pollution Prevention (DPP) and treatment BMPs in accordance with the 2016 Caltrans Statewide Stormwater Management Plan (SWMP), the Caltrans NPDES Permit, the implementation requirements of the San Francisco Bay mercury and polychlorinated biphenyl (PCB) total maximum daily loads (TMDLs), and the statewide trash TMDL. These BMPs aim to prevent or minimize erosion and discharge of sediment in stormwater runoff and, for the trash TMDL, trap all particles retained by a 5 mm mesh screen.

Because the newly added impervious area is less than 50 percent of the total project area, it is assumed that the sediment treatment BMPs will only treat the newly added impervious surface. It is also assumed that the trash related treatment BMPs will only be required in the high trash generating segment of the project area (industrial and commercially zoned land use areas). It is assumed that sufficient space is available within the existing project area boundaries to incorporate the water quality improvements.

The drainage and water quality design will comply with the applicable City and Caltrans flood control standards and water quality control requirements as follows:

1. The drainage design will be conducted in accordance with the most recent versions of the Caltrans Highway Design Manual and the Project Planning and Design Guide. Additional guidance, as appropriate, will also be obtained in the Alameda County Flood Control & Water Conservation District Hydrology and Hydraulics Manual.
2. The capacity of the existing, downstream drainage infrastructure is sufficient to convey the 10-year peak flows from the project area without causing runoff to spread into the travelled lanes of Central Avenue.
3. Water quality facilities (treatment BMPs) will be designed in accordance with the sizing requirements specified in the Caltrans NPDES permit.

Utility Plan

CDM Smith will prepare existing utility plans showing the location and type of all known utilities based on Task 7.4 Utility Coordination and Exploration.

CDM Smith will identify high risk utilities and utilities that are in conflict with the proposed project construction.

CDM Smith will prepare plans to show utility protections and relocations, both by the City's contractor and by others. CDM Smith will work with utility owners to identify appropriate locations for relocated utility facilities and establish preliminary protection and relocation schedules and requirements. CDM Smith will adhere to all utility company standards and requirements and make necessary utility plan revisions as become necessary during final plan design and approvals.

It is assumed the relocation of water, gas, electric, petroleum, telephone, and other communication facilities will be designed and carried out by their respective owners.

Signing and Striping

CDM Smith will prepare preliminary plans depicting proposed pavement delineation and pavement markings, including curb colors for color-specified parking, lane lines, bikeway marking, and pedestrian crosswalk markings. The limits of pavement delineation are assumed to match the roadway improvement limits. Proposed roadway signing plans will be developed at this time.

Traffic Signal and RRFB

CDM Smith will prepare 35 percent design plans for new traffic signals at the following intersections, if applicable:

- Central Avenue and Third Street

CDM Smith will prepare 35 percent design plans for the modification of existing traffic signals and modification at the following intersections:

- Central Avenue and Pacific Avenue/Main Street
- Central Avenue and Fourth Street
- Central Avenue and Webster Street
- Central Avenue and Eighth Street
- Central Avenue and Encinal Avenue/Sherman Street

CDM Smith will prepare 35 percent design plans for rectangular rapid flashing beacons (RRFB) at the following locations, if applicable:

- Central Avenue and Lincoln Avenue
- Central Avenue and Crown Drive

- Central Avenue and Page Street
- Central Avenue and Caroline Street

The plans will include the locations of service and controller cabinets, signal poles and safety lighting, signal heads, vehicle detection, existing and proposed signal phasing, and pole and equipment schedule.

Street Lighting

CDM Smith will prepare 35 percent design plans for the street lighting improvements as well as prepare photometric plans at marked crosswalk locations along the Central Avenue corridor.

Water Pollution Control during Construction

CDM Smith will begin identification of temporary construction site best management practices (BMPs), compile the required information to support the development of the project Stormwater Pollution Prevention Plan (SWPPP), and develop the 35 percent level water pollution control drawings. It is assumed that the Construction Contractor will be responsible for the development and implementation of the SWPPP, based on information provided in the design documents.

Landscape and Irrigation

CDM Smith will prepare planting and landscape materials plans showing location of existing and proposed trees, extents of new planting areas with lists of species to be planted, site furnishings and paving materials. Proposed plantings will comply with both the Model Water Efficient Landscape Ordinance (MWELO) and Rescape California.

CDM Smith will prepare tree preservation and removal plans showing trees to be removed, trees to remain, and tree protection measures including fencing and root buffers.

CDM Smith will prepare preliminary irrigation plans for planted areas requiring irrigation. Irrigation will be low water use and comply with both MWELO and Rescape California.

<u>Assumption(s):</u>

1. Preliminary Engineering (35%) Plans for one (1) option will be prepared.
2. Preliminary Engineering (35%) Plans will comply with the Bay Area Rapid Transit District (BART) CAD Standards Manual.
3. Preliminary Engineering (35%) Plans will consist of:
    a. Title Sheet (1)
    b. Sheet Index and General Notes (1)
    c. Abbreviations (1)
    d. Legend (1)
    e. Key Map (2, 1" = 100')
    f. Survey Control, Monumentation, and Centerline Alignment (4, 1" = 100')

g. Right-of-Way Plan (4, 1" = 40')
h. Demolition Plan (4, 1" = 40')
i. Typical Sections (4)
j. Existing Conditions (4, 1" = 20')
k. Plan and Profiles (16, 1" = 20')
l. Intersection Details (20, 1" = 10')
m. Typical Details (3)
n. Drainage and Water Quality Plans (8, 1" = 40')
o. Drainage and Water Quality Profiles (8, 1" = 10')
p. Drainage and Water Quality Details (2)
q. Utility Plan (4, 1" = 40')
r. Signing and Striping (4, 1" = 40')
s. Traffic Signal and RRFB Plans (1"=20')
t. Street Lighting Plans (12)
u. Temporary Water Pollution Control Drawings (2, 1" = 100')
v. Planting and Landscape Materials Plans (8, 1" = 20')
w. Irrigation Plans and Details (8, 1"= 20')
x. Tree Preservation and Removal Plans and Details (8, 1"=20')

4. The As-Built plans for the existing traffic signals along Central Avenue will be provided by the City of Alameda.

Deliverable(s):

1. 35% plan set (half-size PDF)

8.2 35% Specifications Outline

CDM Smith will prepare an outline of the specifications and special provisions anticipate being required for the project. Actual specifications will not be prepared in this phase.

Deliverable(s):

1. 35% Specification Outline (PDF)

8.3 Engineer's Opinion of Probable Construction Costs

CDM Smith will calculate preliminary construction quantities for cost estimating purposes based on the 35% design plans. Items of work in this task include demolition; roadway concrete and asphalt concrete pavement; curb and gutter; sidewalk; driveways; drainage structures; signs; striping and pavement markings; traffic signals and pedestrian beacons; and landscaping. Unit costs will be obtained from the Caltrans Cost Data Book, recent bid information, and in conjunction with City staff. Allowances will be included for any items not completely defined and measurable for construction cost.

Assumption(s):

1. In providing opinions of cost, financial analyses, economic feasibility projections, and schedules for the project, CDM Smith will have no control over cost or price of labor and materials, unknown or latent conditions of existing equipment or structures that

might affect operation or maintenance costs, competitive bidding procedures and market conditions, time or quality of performance by operating personnel or third parties, and other economic and operational factors that might materially affect the ultimate project cost or schedule. CDM Smith, therefore, will not warranty that the actual project costs, financial aspects, economic feasibility, or schedules will not vary from CDM Smith's opinions, analyses, projections, or estimates.

2. Opinions of cost will include appropriate contingency factors to account for project uncertainties that cannot be explicitly accounted for at the project's various engineering stages. Risks that have been identified will be listed along with potential cost and schedule impacts.
3. The effort to prepare quantities for the estimate unit cost items and lump sums will be provided under the respective design discipline task using the City's standard measurements.
4. All "soft costs" to be included within the cost estimate, such as City procured items and City self-preformed work will be provided to CDM Smith two weeks before the estimate due date.
5. Quantities will be developed from engineered drawings to the maximum extent feasible.
6. Quantities will be developed and broken out on block by block basis.
7. The Engineer's Opinion of Probable Construction Costs will be revised based on one round of consolidated non-conflicting comments from The City.

Deliverable(s):

1. Draft 35% Engineer's Opinion of Probable Construction Costs (PDF)
2. Final 35% Engineer's Opinion of Probable Construction Costs (PDF)