

ATTACHMENT 2

CITY OF SANTA ROSA TRANSPORTATION AND PUBLIC WORKS PROJECT WORK ORDER NO. A010136-2016-02

PROJECT NAME: **HEARN AVENUE AT HIGHWAY 101 INTERCHANGE ENGINEERING SERVICES**

CITY PROJECT MANAGER: **CHRIS CATBAGAN**
CONSULTANT PROJECT MANAGER: **DAVID WILLIAMS**

SCOPE OF SERVICE: See Consultant's Scope of Services/Proposal for Services and Fee Schedule dated **May 8, 2017**, attached as Exhibit B-1.

START DATE: **JUNE 2017**

COMPLETION DATE: **DECEMBER 2019**

CHARGE NUMBER FOR PAYMENT: **17075**

NOT-TO-EXCEED AMOUNT FOR THIS WORK ORDER: **\$3,500,000.00**

*CCC OK
2017/5/18
JCM*

TERMS AND CONDITIONS: This Project Work Order is issued and entered into as of the last date written below in accordance with the terms and conditions set forth in the "Master Professional Services Agreement with AECOM Technical Services, Inc., Agreement No. A010136," dated October 11, 2016, which is hereby incorporated and made part of this Project Work Order. In the event of a discrepancy or conflict between the terms and conditions of the Project Work Order and the Master Agreement, the Master Agreement shall govern.

CITY OF SANTA ROSA,
A Municipal Corporation

By: _____
CHRIS COURSEY
Mayor

Date: _____

AECOM Technical Services, Inc.,
A California corporation

By: _____
Name: _____
Title: _____

Date: _____

By: _____
Name: _____
Title: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Santa Rosa City Attorney's Office

Attachments: Exhibit B-1 - Consultant's proposal and fee for services for this Project Work Order

Cost and Scope of Services Proposal

May 8, 2017

Mr. Chris Catbagan
City of Santa Rosa
Transportation and Public Works Department
69 Stony Circle
Santa Rosa, CA 95401

Re: Cost and Scope of Services Proposal for Design Engineering Services Under Master Professional Services Agreement for the Hearn Avenue at Highway 101 – Phase 3 Rebuild Interchange Project

Dear Mr. Catbagan:

AECOM Technical Services, Inc. (AECOM), is pleased to submit our revised final cost and scope of services proposal to the City of Santa Rosa for undertaking Design Engineering Services under Master Professional Services Agreement for the Hearn Avenue at Highway 101 – Phase 3 Rebuild Interchange Project. The maximum not to exceed fee is \$3,500,000 that includes a 4.28% contingency based on our recent discussions with the City on 4/26/2017.

The following attachments are included with this letter:

- Final Scope of Services that includes our major assumptions
- Revised Final Cost Proposal
- AECOM 2017 Rate Schedule
- Preliminary Project Schedule

Based on our recent discussions with the City, we anticipate the project to begin in early July, 2017. We look forward to working with the City on this important project. Please contact David Williams by phone (916.414.1580) or via e-mail (david.a.williams@aecom.com) if you have any questions regarding our submittal.

Sincerely,

AECOM Technical Services, Inc.



Ramsey Hissen, PE
Principal-in-Charge



David Williams, PE
Project Manager

Scope of Services Dated 5/8/2017

TASK 1 PROJECT MANAGEMENT / PROJECT COORDINATION

AECOM will provide project management for each task for the entire duration of the City's Hearn Avenue at Highway 101 – Phase 3 Rebuild Interchange project (Project). Management activities will consist of administration, coordination, meeting attendance, and quality control (QC) as stated in the following:

1.1 Project Administration

AECOM will supervise, coordinate and monitor planning and design for conformance with Caltrans standards and policies. AECOM will establish and implement a QC procedure for design activities, perform in-house QC reviews for each task, and submit Project deliverables to City and/or Caltrans for review in accordance with the approved schedule.

CPM Schedule: Prepare a detailed Critical Path Method (CPM) schedule for the entire Project. The CPM schedule will be prepared and updated on a monthly basis and distributed at the monthly PDT meetings.

Invoice/Progress Reports: Prepare and submit monthly progress reports and invoices in accordance with City requirements. AECOM will submit an invoice for payment 2 weeks after the close of the invoicing period.

Project Files: Maintain Project files in accordance with Caltrans' Uniform Filing System.

1.2 Agency/Subconsultant Coordination

AECOM will coordinate with subconsultants and all involved agencies to ensure timely flow of information for each task activity. This includes, but is not limited to, coordination with Caltrans, SCTA, utility companies and environmental permitting agencies.

1.3 Meetings

Kick-off Meeting: After receipt of Notice to Proceed, AECOM will coordinate a kick-off meeting with the City to review the project scope and schedule, project goals, roles, responsibilities, and expectations.

PDT Meetings: Conduct monthly PDT meetings (Up to 24 meetings assumed). This will include preparation and submittal of agenda and preparation of meeting notes for each PDT meeting, and development and tracking of the action items list. The agenda will be submitted at least 1 week prior to the meeting and the meeting notes/action items will be submitted within one week after the meeting. A partnering/kick-off PDT meeting will be scheduled with Caltrans and City soon after the Notice-to-Proceed.

City Coordination Meetings: Attend up to 12 ad-hoc coordination meetings at City.

Technical Meetings/Workshops: Attend meetings/workshops (Up to 24 meetings assumed) such as design coordination meetings, right of way coordination meetings, workshop meetings, comment review sessions, and safety review meetings with City, Caltrans and other agencies to resolve issues. Meetings will be held during the performance of each task or as needed by AECOM, City, Caltrans, or other agencies.

Management Review Meeting: Attend the Management Review Meeting (MRM) at Caltrans following the 95% submittal.

Public Meeting: Attend and lead one (1) public meeting with City to facilitate public information sessions and project progress information forums.

1.4 Risk Management

A Risk Register will be prepared for the project to address potential issues, such as delays to critical path studies or reviews and discovery of additional data needs or unforeseen site conditions. The Risk Register prepared for the PA&ED phase of the project will be used as the starting point and will be reviewed, updated, and distributed on a quarterly basis, or as needed.

1.5 Quality Control

AECOM will ensure that all documents requiring Caltrans oversight review are prepared in accordance with Caltrans’ 2015 Standard Plans and Specifications, guidelines and procedures. AECOM will establish and implement a quality control procedure for all design services that includes performing in-house quality control reviews for each task, coordinating work to assure quality, accuracy and consistency of all documents, and ensuring compliance with other codes and standards as acceptable to Caltrans and approved by City.

Task 1 – Deliverables:

- Initial and Updated Project Schedule
- Monthly Progress Reports and Invoices
- Initial and Updated Risk Register
- Meeting Agenda and Minutes
- QA/QC Plan and QA/QC Documentation

TASK 2 PROJECT FUNDING PLANNING

AECOM will draw on our local and national expertise and experience to assist the City in pursuit of funds for the project construction phase. Our studies and scope are designed to meet the procedural requirements needed to secure federal funding, including FHWA federal-aid or state funding under the Caltrans Local Assistance Procedures Manual.

Task 2 – Deliverables:

- Input to Funding Applications

TASK 3 PRELIMINARY ENGINEERING AND TECHNICAL REPORTS

This task will consist of compiling and reviewing existing data pertinent to the Project and preparing the necessary supporting analysis and reports. Also included are planning phase activities, identifying and requesting supplemental information and surveys, conducting site visits/field review/field trips, coordination with adjacent projects, and obtaining information and requirements related to utilities, right-of-way, permits and geotechnical conditions. The AECOM activities will include the following:

3.1 Data Collection and Review

AECOM will obtain an Access Encroachment Permit from Caltrans to conduct any necessary site investigations to thoroughly explore existing site conditions, take photographic records, perform pot holing, geotechnical investigations, and hazardous materials investigations.

AECOM will obtain and review available data and information necessary for final design of the Project. This information may be obtained from City, Caltrans, SCTA, utility companies, or other organizations.

AECOM can utilize the available aerial topographic and existing right of way mapping for the project from the PA&ED phase of the Project until the updated aerial topographic and existing right of way mapping is provided by Caltrans. AECOM will identify locations where supplemental topographic field surveys to be performed by Caltrans are needed (eg. pavement conforms, bridge locations, retaining wall locations, and to confirm ground and invert elevations at drainage features including manholes, inlets and culverts).

3.2 Supplemental Design Exceptions Fact Sheets

AECOM will review the design exceptions fact sheets approved during the PA&ED phase. If needed, AECOM will prepare supplemental mandatory and advisory design exceptions fact sheets to document any new exceptions that were not previously identified and work with Caltrans District and HQ geometricians to review and obtain approval of the fact sheets.

3.3 Geotechnical Site Investigation and Reports

The preliminary geotechnical reports prepared during the PA&ED phase will be evaluated. Borings and cone penetration tests (CPT) are anticipated for the new bridge, retaining walls, and overhead sign structure. Shallower explorations will also be planned for the investigation of planned new roadway subgrade conditions. A work plan outlining field exploratory borings and laboratory testing will be submitted for Caltrans review and approval. Drilling permits for geotechnical borings and CPTs will be obtained by AECOM. Underground Services Alert (USA) will be notified 48 hours before drilling to locate all buried utilities in the vicinity of the proposed drilling locations.

Up to 10 shallow borings (10-foot depth or less) are proposed in areas where new roadway pavement will occur while up to 9 deeper borings (35 to 120-foot depth) will be needed in areas of the new bridge, retaining walls, and overhead sign structures.

Geotechnical Design and Materials Report; A Geotechnical Design and Materials Report (GDMR) will be prepared to identify geological hazards that may impact the project, provide recommendations for embankment/cut slopes, overhead sign structures (2 locations), culverts, and for comparison of proposed alternative pavement structural sections. The study will investigate sources of pavements materials, structural section drainage, feasibility of subgrade treatment, corrosiveness of soils, culvert and storm drain materials and project specific technical specifications.

Foundation Report; A Foundation Report will be prepared to provide design parameters and recommendations for the new Hearn Avenue OC, and two (2) non-standard retaining walls proposed on the north side of the approaches to the new OC. The Foundation Report will be prepared for review and approval by Caltrans Division of Engineering Services (DES), Office of Special Funded Projects (OSFP). Foundation analysis and design will be based upon Caltrans adopted AASHTO LRFD methodology. Seismic design parameters will be established using tools consistent with the 2010 Caltrans Seismic Design Criteria version 1.7 (SDC).

3.4 Hazardous Materials Site Investigation and Reports

The Phase I Initial Site Assessment (ISA) prepared for the PA&ED phase by AECOM and publically available environmental investigation reports pertaining to the project area and the surrounding vicinity will be reviewed. There is the potential for aerially deposited lead (ADL), lead-based paint, asbestos, polychlorinated biphenyls (PCBs), and petroleum product residuals to occur in and around the Hearn Avenue Interchange area.

Based on data gathered from the background file review, AECOM will prepare a Phase II work plan and project specific Health and Safety Plan for Caltrans review and approval. In the course of the hazardous materials field investigation by AECOM, soil and groundwater, if encountered, samples will be collected for initial hazardous waste testing. AECOM will submit samples to a state certified laboratory to perform testing using the appropriate Environmental Protection Agency / State of California methods. AECOM will review laboratory analytical data, instruct the lab to perform additional analysis as needed, and prepare a Hazardous Materials Site Investigation Report summarizing field activities, analytical data, and data evaluation and recommendations for the soil and groundwater. AECOM will evaluate the soil analytical data statistically to maximize the amount of excavated soil that can be reused on and off-site and to minimize the amount of soil requiring off-site disposal as hazardous waste.

Concrete or asphalt samples from the existing bridge will be taken and analyzed for asbestos containing material. Paint samples from the existing bridge will be collected and analyzed for lead-based paint. Gasket and membrane material will be collected from the existing bridge and analyzed for PCBs. Results will be summarized and included in a Hazardous Materials Report (Asbestos Containing Materials and LBP). Appropriate specifications will be developed if hazardous material is found in the bridge material.

3.5 Drainage

AECOM will conduct a study of local drainage and overland flood flow conditions, use historic drainage information, and prepare a Drainage Report to document existing conditions, unusual and special conditions, drainage mapping, hydraulic analysis, and proposed modifications to existing drainage systems.

3.6 Water Quality

Storm Water Data Report (SWDR): AECOM will prepare a SWDR summarizing the Project impacts to water quality and recommended best management practices (BMPs). AECOM will propose the permanent stormwater treatment BMPs for the Project. The report will be based on the report from the PA&ED phase and will be updated with the development of the PS&E. AECOM will perform detailed calculations to complete the design and details of the treatment BMPs.

Storm Water Information Handout (SWIH): AECOM will prepare a SWIH to include with the Information Handout that is provided to contractors bidding on the project.

3.7 Hydromodification

Based on the PA&ED SWDR, hydromodification mitigations measures will be required for this Project. AECOM will perform detailed hydromodification design and analyses for areas that require mitigation measures. The mitigation measures will

meet the criteria set by the North Coast Regional Water Quality Control Board and San Francisco Bay Region Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit. AECOM will document the analysis, design features, and calculations in a Hydromodification Report.

3.8 Transportation Management Plan (TMP)

A Transportation Management Plan (TMP) is needed if construction work on an existing roadway already experiencing recurrent delays and construction causes a significant increase in recurrent delays over an extended period of time. A TMP review is required for the project to establish if significant traffic delays are expected beyond those experienced by existing traffic along the Highway 101 corridor. Factors involved in this assessment will include cost-effectiveness, safety, public reaction, expected delays, availability of detours and alternate routes, and duration of construction activities. AECOM will prepare a TMP Report summarizing the key findings of the TMP review and will include the work by other corridor projects in construction or planned for construction that will overlap with the construction of the Project.

3.9 Lane Closure Report (LCR)

A Lane Closure Report (LCR) will be prepared by AECOM to determine the duration of freeway, local streets and ramp lane closures during construction of the Project. AECOM will evaluate existing 7 day 24 hour traffic counts collected for the traffic analysis during the PA&ED phase. AECOM will perform lane closure calculations per Caltrans standard methodology and submit a LCR to Caltrans for review and approval. This will also include Late Lane Closure Pickup calculations.

3.10 Utility Coordination

AECOM will interface the utility design coordination with the Caltrans Right of Way Utility Coordinator and Caltrans Right of Way Project Coordinator. AECOM will perform utility surveys to accurately map the existing utilities in the project area, positively locating underground utilities that potentially conflict with the proposed improvements, and developing relocation plans for conflicting utilities that will be coordinated with the utility owners. This level of effort will minimize construction costs and ensure the correct placement of the proposed improvements. AECOM will:

- Review and update as-built utility information for the project area that was obtained during the PA&ED phase
- Review and update existing utility mapping
- After the 35% PS&E, prepare Pothole Request Maps identifying locations where positive location (horizontally and vertically) of existing underground utilities is needed
- After the 35% PS&E, arrange for underground utility locations to be positively located in the field by potholing or other acceptable method approved by Caltrans
- Confirm potential utility conflicts based upon positive location data collected from the field and revise the preliminary utility relocation plans. Develop preliminary utility conflict maps.
- Support Caltrans in the ABC utility process to request the most recent utility company record maps (“A” letters), identify potential utility conflicts and request supporting documentation from the utility companies to establish responsibilities for costs to relocate / abandon / remove utilities (“B” letters) and finally formally request utility companies to relocate / abandon / remove the conflicting utilities (“C” letters)
- Support Caltrans in the development of Utility Agreements to be executed between Caltrans and the affected utility company
- Communicate with the Caltrans Right of Way Utility Coordinator and the Caltrans Right of Way Project Coordinator to ensure inclusion of the proper utility permit requirements and other utility data for ROW certification and design
- Prepare the final utility Encroachment Policy Variance Request (EPVR) Memorandum to document any existing utility encroachments proposed to remain within the state right of way that are not in compliance with Caltrans policy.
- For the Final PS&E submittal, prepare a PE Certification of Utility Facilities
- Attend up to ten (10) coordination meetings with utility companies

AECOM assumes that all needed utility relocation plans will be prepared by the owner of the utility requiring relocation and that the utility owners will undertake the work to relocate their facilities with their own forces.

Task 3 – Deliverables:

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| ● GDMR (65%, 95% and 100%) | ● SWDR (65%, 95% and 100%) |
| ● Foundation Report (65%, 95% and 100%) | ● SWIH (95% and 100%) |

- Hazardous Materials Site Investigation Report (65%, 95% and 100%)
- Hazardous Materials Report (ACM and LBP) (65%, 95% and 100%)
- Drainage Report (65%, 95% and 100%)
- TMP Report (65%, 95% and 100%)
- Lane Closure Report (65%, 95% and 100%)
- EPVR Memorandum (Draft / Final)
- PE Certification of Utility Facilities (Draft / Final)

AECOM assumes that five (5) hardcopies and “pdf” copy on CD will be provided to Caltrans for each technical report for each submittal (65%, 95% and 100%).

TASK 4 35% PS&E (BASE MAPS AND PLAN SHEETS)

The purpose of Task 4 is to prepare the preliminary highway and structures design building upon the preliminary engineering from the PA&ED phase. Task 4 also includes the Structure Type Selection process with Caltrans where the bridge and retaining wall types will be finalized. The 35% PS&E submittal will include the following:

4.1 Preliminary Highway Base Maps and Plan Sheets

AECOM will prepare, coordinate and submit preliminary highway plan sheets in English units for all highway design. The drawings are to be in MicroStation CADD format and must be in compliance with Caltrans current CADD Users Manual and current Drafting and Plans Manuals.

AECOM will be fully responsible for preparing and submitting an adequate number and type of plans at the 35% PS&E milestone in order to receive Caltrans, and other agencies' comments early in the design phase to minimize change in subsequent tasks. Other plan sets, such as stage construction, traffic handling, signal, and electrical will be deferred to the 65% PS&E submittal.

4.2 Bridge Site Data Submittal

AECOM will prepare a BSDS package to establish all the parameters that will govern the design of the bridges. The BSDS is reviewed and approved by Caltrans before beginning the Structure Type Selection process.

4.3 Structure Type Selection

The following describes the locations of the proposed structure sites for the project (1 bridge, 2 non-standard retaining walls):

- Hearn Avenue OC (Replace)
- Retaining Wall No. 201 – Type 1 on piles (North of Hearn Avenue / West of Highway 101)
- Retaining Wall No. 202 – Type 1 on piles (North of Hearn Avenue / East of Highway 101)

AECOM will undertake a type selection study in accordance with the requirements of the Caltrans Memo to Designers (MTD) 1-29 and Office of Special Funded Projects (OSFP) Information and Procedures Guide 4-2. Advance planning studies were previously performed during the PA&ED phase. The report will be submitted to Caltrans and other appropriate agencies for review and approval. The results of the Type Selection Report will be presented in a meeting at Caltrans Division of Engineering Services in Sacramento. No further design will be conducted prior to the written approval of the Structure Type Selection.

4.4 Preliminary Construction Cost Estimate

AECOM will prepare a list of all construction work items required for the Project and a quantity estimate for each and prepare a preliminary construction cost estimate. Codes for work items will be based upon Caltrans Standard Items of Work Codes.

4.5 Preliminary Construction Schedule

AECOM will prepare a Preliminary Construction Schedule for the Project. The schedule will be prepared using Microsoft Project.

4.6 Landscape and Aesthetic Concepts

AECOM will prepare a landscape concept for the Project in coordination with the City, Caltrans, and affected stakeholders. Proposed trees will be located individually and identified. Proposed shrubs will be shown in massed formations, and ground

covers will be identified with textured pattern. A plant list will be provided listing possible materials from which the final selection will be made.

The landscape concept will be developed based upon goals determined through meetings with the stakeholders, and knowledge of Caltrans design criteria, and upon previously approved concepts in the project area. Proposed development along the corridor will be coordinated with the landscape concept. The draft concept will be presented in graphic format and colored and submitted to the Project stakeholders for review and comment with the 35% PS&E.

AECOM will develop conceptual aesthetics for project features including bridges (eg. corbels, railings, historic lighting), retaining walls (eg. surface finishes), concrete barriers (eg. inlay features), and intersections (eg. hardscape enhancements).

Task 4 – Deliverables:

- 35% Highway Plans
- 35% Structure Plans (General Plans only)
- Bridge Site Data Submittal (Draft / Final)
- Structure Type Selection Report (Draft / Final)
- Preliminary Construction Cost Estimate
- Preliminary Construction Schedule
- Landscape and Aesthetic Concepts

AECOM assumes that twenty five (25) hardcopies (11” x 17” for plans) and “pdf” copy on CD will be provided to Caltrans for the 35% plans and construction cost estimate. The Structure Type Selection Submittal will follow the requirements of the Caltrans DES OSFP.

TASK 5 65% PS&E (UNCHECKED DESIGN)

This task develops draft plans, specifications and quantities for the 65% submittal and includes responding to comments received from the agencies reviewing previous submittals and identifying and resolving conflicts. AECOM will provide written responses to review comments received for all documents from the previous submittal and provide justification for each comment, which is not incorporated. AECOM will hold focused meetings with Caltrans, and other agencies to resolve any outstanding issues. The 65% PS&E submittal will include the following:

5.1 Design Plans

AECOM will prepare the necessary design plan sheets for the 65% PS&E submittal including:

5.1.1 Highway Design Plans

A set of highway design plans will contain some or all of the following sheets. AECOM will use the following code letters and sheet names and arrange sheets in the order shown.

-	Title Sheet	SC	Stage Construction Plans
X	Typical Cross Sections	TH	Traffic Handling Plans, Details, and Quantities
K	Key Map and Line Index	MI	Motorist Information Plans
PC	Project Control	PD	Pavement Delineation Plans, Details, and Quantities
L	Layouts	S	Sign Plans, Details, Special Design Signs, and Quantities
PS	Profile and Superelevation Diagram	Q	Summary of Quantities
C	Construction Details	EC	Erosion Control Details, and Quantities
WPC	Temp. Water Pollution Control Plans and Details	E	Signals Plans, and Details
WPCQ	Temp. Water Pollution Control Quantities	E	Lighting Plans, and Details
G	Contour Grading/Pavement Elevations	E	TOS Plans, and Details
D	Drainage Plans, Profiles, Details, and Quantities	-	Bridge Plans (One new bridge)
U	Utility Plans	-	Nonstandard Retaining Wall Plans (Two walls)
CS	Construction Area Signs	-	Log of Test Borings

5.1.2 Structure Analysis and Design

AECOM will proceed with analysis and design of the new bridge and nonstandard retaining walls creating design calculations, details and construction documents according to Caltrans procedures and the design criteria decided upon at the project onset. Coordination with other disciplines will be required to assure project continuity. The plans, specifications and estimate will be prepared in accordance with the current edition of the Caltrans manuals.

5.1.3 Electrical Design Plans

AECOM will verify as-built plans in the field. Based on the obtained information, AECOM will prepare electrical plans for the Project including:

- Existing signal layout plans will be prepared at a scale of 1"=20' (3 locations)
- Proposed signal layout plans will be prepared at a scale of 1"=20' (3 locations)
- Temporary signal layout plans will be prepared at a scale of 1"=20' (3 locations)
- Proposed lighting/sign illumination plans will be prepared at a scale of 1"=50'
- Temporary lighting/sign illumination plans will be prepared at a scale of 1"=50'
- Traffic Operations System (TOS) plans will be prepared at a scale of 1"=50'

5.1.4 Landscape Design Plans

AECOM will prepare the necessary Highway Planting Plans.

5.2 Unedited Special Provisions

AECOM will review Caltrans Standard Specifications, latest edition, and Caltrans Standard Special Provisions applicable thereto. For all work items necessary for construction of the Project, AECOM will assemble data and prepare drafts (unedited) of (1) necessary modifications to the Standard Special Provisions, and (2) additional specifications which may be necessary. It is assumed Caltrans will advertise, award and administer (AAA) the construction contract for the City.

5.3 Revised Construction Cost Estimate

AECOM will prepare a revised construction cost estimate

5.4 Revised Construction Schedule

AECOM will prepare a revised construction schedule.

5.5 Constructability Review of the 65% PS&E

AECOM will participate in a constructability review after the 65% PS&E submittal. It is assumed that the City and Caltrans will provide representatives for the constructability review. AECOM will adequately address the comments generated by the review including providing explanation for comments not incorporated into the design.

Task 5 – Deliverables:

- 65% Design Plans
- Unedited Special Provisions
- Revised Construction Cost Estimate
- Revised Construction Schedule

AECOM assumes that twenty five (25) hardcopies (11" x 17" for plans) and "pdf" copy on CD will be provided to Caltrans for the 65% plans, Special Provisions, and construction cost estimate.

TASK 6 95% PS&E (CHECKED DESIGN)

This task develops checked plans, specifications and quantities for the 95% submittal and includes responding to comments received from the agencies reviewing previous submittals and identifying and resolving conflicts. AECOM will provide written responses to review comments received for all documents from the previous submittal and provide justification for each comment, which is not incorporated. AECOM will hold focused meetings with Caltrans, and other agencies to resolve any outstanding issues. The 95% PS&E submittal will include the following:

6.1 Design Plans

AECOM will incorporate all agreed upon comments received from City, Caltrans, and other agencies into the design plans (Highway, Structure, Electrical and Landscape).

6.2 Structure Independent Check

AECOM will perform an independent check of all structure drawings and prepare an independent set of calculations per Caltrans Standard procedures. AECOM will prepare independent quantity calculations and review the special provisions independently.

6.3 Edited Special Provisions

AECOM will incorporate all agreed upon comments into edited Special Provisions.

6.4 Revised Construction Cost Estimate

AECOM will prepare a revised construction cost estimate

6.5 Revised Construction Schedule

AECOM will prepare a revised construction schedule.

Task 6 – Deliverables:

- 95% Design Plans
- Structure Calculations
- Structure Independent Check Calculations
- Edited Special Provisions
- Revised Construction Cost Estimate
- Revised Construction Schedule

AECOM assumes that twenty five (25) hardcopies (11" x 17" for plans) and "pdf" copy on CD will be provided to Caltrans for the 95% plans, Special Provisions, and construction cost estimate. The Structure Submittal will follow the requirements of the Caltrans DES OSFP.

TASK 7 100% PS&E (PRE-FINAL BID DOCUMENTS)

This task prepares Pre-Final Bid Documents (100% PS&E) ready for Caltrans final review and project advertisement. AECOM will provide written responses to review comments received for all documents from the previous submittal and provide justification for each comment, which is not incorporated. AECOM will hold focused meetings with Caltrans, and other agencies to resolve any outstanding issues. The 100% PS&E submittal will include the following:

7.1 Design Plans

AECOM will incorporate all agreed upon comments received from City, Caltrans, and other agencies into the pre-final design plans.

7.2 Edited Special Provisions

AECOM will incorporate all agreed upon comments into the Special Provisions and prepare pre-final Special Provisions that are specific to the project for use with Caltrans Standard Specifications, latest edition.

7.3 Revised Construction Cost Estimate

AECOM will prepare a revised construction cost estimate. The submittal will include drafts of the Cost Certification Memorandum/Form, Supplemental Work Items Justification Memorandum and the PS&E Submittal Memorandum.

7.4 Revised Construction Schedule

AECOM will prepare a revised construction schedule.

Task 7 – Deliverables:

- 100% Design Plans
- Edited Special Provisions
- Revised Construction Cost Estimate
- Draft Cost Certification Memorandum/Form
- Draft Supplemental Work Items Justification Memorandum
- Draft PS&E Submittal Memorandum
- Revised Construction Schedule

AECOM assumes that twenty five (25) hardcopies (11" x 17" for plans) and "pdf" copy on CD will be provided to Caltrans for the 100% plans, Special Provisions, and construction cost estimate.

TASK 8 FINAL PS&E (FINAL BID DOCUMENTS)

This task consists of incorporating comments received from Caltrans final review of the Pre-Final bid documents and preparing the necessary documents ready for project advertisement. The Final PS&E submittal will include the following:

8.1 Bid Documents

AECOM will incorporate into the Pre-Final Bid Documents submitted in the previous task, the comments received from the City and Caltrans final review. Any environmental permit conditions will also be incorporated into the Bid Documents.

8.2 Resident Engineer's (RE) File

AECOM will prepare and submit a Resident Engineer's file and include all project relevant items identified in the Caltrans Resident Engineer's file check-off list. The following items, as a minimum, will be included:

- Bridge deck contours (formerly 4-scale) plans
- Final Foundation Report
- Joint Movement Rating Calculations
- Copies of final permits and agreements
- Design cross sections / Slope staking notes
- Final Geotechnical Design and Materials Report / Final Drainage Report
- R/W Appraisal Maps including information on Temporary Construction Easements and Permits to Enter
- Utility correspondence including contact information, record maps, and relocation plans (if available)

8.3 Survey File

AECOM will prepare a survey file and submit it to Caltrans.

8.4 Information Handout

AECOM will prepare the Information Handout and submit it to Caltrans.

8.5 Caltrans CAD Submittal

AECOM will prepare the CAD submittal and submit it to Caltrans.

Task 8 – Deliverables:

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| ● Final Bid Documents (Electronic Submittal – No Hardcopies) | ● RE File |
| ● Final Cost Certification Memorandum/Form | ● Survey File |
| ● Final Supplemental Work Items Justification Memorandum | ● Information Handout |
| ● Final PS&E Submittal Memorandum | ● Caltrans CAD Submittal |

TASK 9 RIGHT OF WAY ENGINEERING

Caltrans will be responsible for preparing existing and proposed right of way mapping, Right of Way Hard Copy Maps, appraisal maps, plats and legal descriptions, and appraisals and acquisition services for the Project. AECOM will provide support to Caltrans that will include:

- Establish preliminary right of way requirements for partial property acquisition and TCEs and prepare right of way transmittals for Caltrans who will then undertake the right of way engineering to accurately establish the right of way needs for the Project
- Coordinate with Caltrans to have Caltrans survey staff stake new property lines in the field on affected properties so that property owners can visually see the impacts to their property

Task 9 – Deliverables:

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| ● Right of Way Transmittals | ● Supplemental Survey Requests |
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TASK 10 OBTAINING PERMITS AND AGREEMENTS

10.1 Environmental Permits

AECOM will prepare applications for the 401 and 404 permits and coordinate with Caltrans for agency review. The 65% PS&E submittal will be used in preparing necessary environmental assessments and/or conceptual re-vegetation plans to

accompany draft permit applications. Draft permit applications will be submitted just after the 65% submittal to Caltrans who will coordinate agency review to obtain these permits. AECOM will also prepare tree removal permit applications for the City and, if necessary, the County. Caltrans does not review or process local permits; therefore, these applications will be submitted directly to the local jurisdictions.

In addition, AECOM will prepare a NEPA/CEQA revalidation, which is required to confirm that the environmental document remains valid before the project proceeds to the next approval (RTL). The revalidation will document any changes in the project design, right of way needs/acreages, and/or environmental setting, impacts, and commitments. As part of the revalidation, AECOM will review and refine the Environmental Commitment Record (ECR) developed during the PA&ED phase, also required for RTL. It is assumed that no additional technical analyses will be needed to complete the revalidation.

After receipt of permits from permitting agencies, AECOM will review conditions of all project permits and update the ECR and bid documents accordingly prior to RTL, if necessary. AECOM will coordinate all needed environmental mitigation agreements for the Project.

10.2 Maintenance Agreement

AECOM will provide support to the City to develop and finalize the Maintenance Agreement to be executed between the City and Caltrans.

10.3 Cooperative Agreement

AECOM will provide support to the City to develop and finalize the Cooperative Agreement for the construction phase of the Project to be executed between the City and Caltrans.

Task 10 – Deliverables:

- Environmental Permit Applications (Draft / Final)
- Environmental Document Revalidation (Draft/Final)
- Support to City for Maintenance Agreement
- Support to City for Construction Cooperative Agreement
- Updates to Environmental Commitment Record

TASK 11 DESIGN SUPPORT SERVICES DURING CONSTRUCTION

11.1 Bid Support

It is assumed that construction contract advertisement will be the responsibility of Caltrans. AECOM will provide design support services to support the bidding phase of the Project. The following types of services are anticipated under this task:

- Attend Pre-Bid meeting
- Assist Caltrans with written responses to bidder inquiries
- Assist Caltrans to prepare bid addendums
- Assist Caltrans to evaluate bids received

11.2 Design Services During Construction

It is assumed that construction administration will be undertaken by Caltrans. AECOM will provide design support services during the construction phase of the Project. The following types of services are anticipated under this task:

- Attend Pre-Construction meeting
- Provide technical support and design advice to Caltrans
- Assist Caltrans with written responses to contractor requests for information (RFI)
- Review and comment on construction change orders (CCO's) prepared by Caltrans
- Participate in weekly construction meetings scheduled by Caltrans by conference call
- Attend site visits requested by Caltrans (Up to 10 site visits assumed)
- Prepare as-built plans in conformance with Caltrans standards based on redlined marked up plans provided by Caltrans

AECOM will perform a review of the bridge/retaining wall working drawings in accordance with the Caltrans Office of Special Funded Projects Information and Procedures Guide Chapter 5 and provide comments to the Caltrans Documents

Unit (or Caltrans OSFP Liaison Engineer) after coordinating comments with Caltrans field and office personnel. Anticipated bridge/retaining wall working drawings to review include:

- Precast concrete bridge superstructure elements
- Prestressing systems
- Joint seal assemblies

AECOM assumes that Caltrans will review and approve all contractor submittals except those listed for review of bridge/retaining wall working drawings.

11.3 Project Closeout

After construction acceptance by City and Caltrans of the Project, AECOM will perform project closeout activities that include:

- Provide project files on CD in accordance with Chapter 7 of the Caltrans Project Development Procedures Manual
- Review post-construction monument surveys performed by Caltrans for the Project right of way
- Provide assistance to Caltrans for project closeout audit per the Caltrans Local Assistance Procedures Manual

Task 11 – Deliverables:

- As-Built Plans
- Project Files

ASSUMPTIONS

We based our cost and scope proposal on our understanding of the project, our experience on recently completed similar projects, and the following major assumptions:

- Final PS&E phase duration from contract execution to the Ready-To-List (RTL) milestone is 25 months
- Construction phase duration is 18 months
- Caltrans will provide current topographic mapping, current right of way mapping, undertake supplemental field survey, and will be the lead for utility and right of way coordination including negotiations and acquisitions
- Caltrans will be the lead for Right of Way Engineering and will prepare all Right of Way Hard Copy Maps, Appraisal Maps and Plats and Legal Descriptions
- No fee Access Encroachment Permit will be secured from Caltrans to allow AECOM to conduct field work and studies within Caltrans right of way
- If analytical results indicate that the geotechnical soil cuttings from the field work cannot be disposed of at a nearby Class 2 landfill, further testing and analysis may be required to dispose of the container of soil at an appropriate facility. This would be beyond the scope of services for this Project.
- Soil cuttings from the geotechnical field work can be stored within Caltrans right of way in the Hearn Avenue interchange area until testing and analysis is complete to determine appropriate disposal site
- Geotechnical work within areas with hazardous levels of contamination is beyond the scope of services for this Project
- Pavement Life Cycle Cost Analysis (LCCA) was completed in the PA&ED phase and will not be required for the design phase
- No new traffic counts are needed for the project
- Fact Sheet documenting exceptions to the Caltrans Traffic Safety System Standards not needed for the Project
- Project deliverables will be prepared in accordance with Caltrans 2015 Standard Plans and Specifications
- Interchange improvements will be based upon the preferred alternative selected from the PA&ED phase
- Structure design involves new Hearn Avenue Overcrossing and two nonstandard retaining walls. Structure design is based upon the approved Advance Planning Studies (APS) from the PA&ED phase.
- Two proposed standard overhead sign structures on southbound Highway 101
- No new sound walls are required for the Project. No existing sound walls are impacted by the Project
- No modifications to existing City water and sanitary sewer facilities are required for the Project

- Any needed private utility relocation design will be undertaken by the affected utility company. Includes electrical, gas, telephone, fiber optics, oil, and cable television.
- No temporary Traffic Operations Systems (TOS) during construction are needed for the Project
- No new or modifications to existing Caltrans Closed Circuit Television (CCTV) systems are needed for the Project
- No new or modifications to existing Caltrans Changeable Message Signs (CMS) are needed for the Project
- No new or modifications to existing Caltrans Traffic Monitoring Stations (TMS) are needed for the Project
- No off-site environmental mitigation required for the Project
- Application fees for environmental permits will not exceed \$5,000
- No new Freeway Agreement is needed for the Project
- Caltrans will advertise, award and administer (AAA) the construction contract

AECOM Technical Services, Inc.
2020 L Street, Suite 400
Sacramento, CA. 95811
916.414.5800



Ramsey Hissen, PE
Principal-in-Charge



David Williams, PE
Project Manager

**City of Santa Rosa: Hearn Avenue at Highway 101 - Phase 3 Rebuild Interchange Project (PSE Phase)
COST PROPOSAL SUMMARY**



2020 L Street, Suite 400
Sacramento, CA. 95811
916.414.5800

	<u>Task 1</u> <i>Project Management / Project Coordination</i>	<u>Task 2</u> <i>Project Funding Planning</i>	<u>Task 3</u> <i>Preliminary Engineering and Technical Reports</i>	<u>Task 4</u> <i>35% PS&E (Base Maps and Plan Sheets)</i>	<u>Task 5</u> <i>65% PS&E (Unchecked Design)</i>	<u>Task 6</u> <i>95% PS&E (Checked Design)</i>	<u>Task 7</u> <i>100% PS&E (Pre-Final Bid Documents)</i>	<u>Task 8</u> <i>Final PS&E (Final Bid Documents)</i>	<u>Task 9</u> <i>R/W Engineering</i>	<u>Task 10</u> <i>Obtain Permits and Agreements</i>	<u>Task 11</u> <i>Design Support Services During Construction</i>	<u>TOTAL</u>
LABOR												
AECOM (Civil)	\$197,618	\$30,376	\$111,928	\$209,980	\$343,630	\$342,008	\$234,524	\$192,092	\$9,876	\$18,116	\$191,056	\$1,881,204
AECOM (Environmental)	\$2,394	\$0	\$58,119	\$0	\$0	\$0	\$0	\$0	\$0	\$47,080	\$0	\$107,593
AECOM (Geotech)	\$0	\$0	\$189,805	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,008	\$196,813
AECOM (Structures)	\$3,570	\$0	\$23,513	\$68,772	\$148,428	\$173,406	\$62,138	\$33,676	\$0	\$0	\$58,048	\$571,551
AECOM (Traffic)	\$0	\$0	\$40,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,800
Labor Escalation	\$6,195	\$924	\$12,906	\$8,482	\$14,972	\$15,683	\$9,027	\$6,870	\$301	\$1,984	\$7,793	\$85,135
SUBCONSULTANTS												
H&A	\$19,955	\$0	\$0	\$23,920	\$17,124	\$9,678	\$6,833	\$6,383	\$0	\$0	\$17,100	\$100,993
WRECO	\$7,574	\$0	\$153,166	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$160,740
Best Testlab	\$0	\$0	\$14,640	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,640
Sub Markup	\$1,376	\$0	\$8,390	\$1,196	\$856	\$484	\$342	\$319	\$0	\$0	\$855	\$13,819
OTHER DIRECT COST												
Environmental Drilling	\$0	\$0	\$4,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,900
Environmental Testing / Bri	\$0	\$0	\$29,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$29,700
Geotech Drilling	\$0	\$0	\$53,340	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$53,340
Geotech Testing	\$0	\$0	\$11,300	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,300
Utility Locating	\$0	\$0	\$2,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,500
Printing	\$450	\$0	\$6,400	\$3,000	\$5,000	\$5,000	\$5,000	\$5,000	\$0	\$0	\$0	\$29,850
Postage, Travel, Misc.	\$4,900	\$0	\$4,900	\$200	\$400	\$200	\$200	\$200	\$0	\$0	\$1,100	\$12,100
Permit Fees	\$0	\$0	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0	\$5,000	\$0	\$6,100
Traffic Control	\$0	\$0	\$16,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,900
Corrosion Study	\$0	\$0	\$16,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,400
TOTAL	\$244,032	\$31,300	\$760,708	\$315,550	\$530,410	\$546,459	\$318,063	\$244,540	\$10,177	\$72,180	\$282,960	\$3,356,378

Contingency 4.28% \$143,622

TOTAL ESTIMATED CONTRACT FEE WITH CONTINGENCY **\$3,500,000**

<i>DBE</i>	3.1%	0.0%	22.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.2%
% budget	7.3%	0.9%	22.7%	9.4%	15.8%	16.3%	9.5%	7.3%	0.3%	2.2%	8.4%	100.0%

For purposes of the estimate, rates are estimated average for each position
 Billing rates are determined by actual salary at time of service times audited multiplier
 Annual escalation occurs each January 1, but individual merit or promotional increases may occur at any time
 Billing rate increases do not increase contract limit

**City of Santa Rosa: Hearn Avenue at Highway 101
- Phase 3 Rebuild Interchange Project (PSE Phase)
LABOR / SUBCONSULTANT / ODC COST SUMMARY**



DIRECT LABOR	Hours	Rate	Total
Project Manager	874	242.00	\$211,508
Roadway Lead / Sr. Project Engineer	1570	163.00	\$255,910
Project Engineer	3096	141.00	\$436,536
Engineer	3192	116.00	\$370,272
Staff Engineer	2784	85.00	\$236,640
CAD	2272	100.00	\$227,200
Admin / Project Controls	400	105.00	\$42,000
Geotechnical Sr. Engineer	301	213.00	\$64,113
Geotechnical Engineer	419	150.00	\$62,850
Staff Geotechnical	635	110.00	\$69,850
Structures Lead	382	255.00	\$97,410
Sr. Structural Engineer	1076	197.00	\$211,972
Structural Engineer	1348	126.00	\$169,848
Structure CAD	817	113.00	\$92,321
Sr. Traffic Engineer	80	258.00	\$20,640
Traffic Engineer	160	126.00	\$20,160
Environmental Lead	66	171.00	\$11,286
Sr. Env Professional	191	213.00	\$40,683
Env Professional	434	116.00	\$50,344
Staff Environmental	48	110.00	\$5,280
Planner	160	137.00	\$21,920
QA/QC	486	163.00	\$79,218

Total Direct Labor	20,791		\$2,797,961
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Labor Escalation (24 month sched)		3.043%	\$85,135
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Total Labor			\$2,883,096
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SUBCONSULTANTS

H&A			\$100,993
WRECO			\$160,740
Best Testlab			\$14,640
Subtotal Subconsultants			\$276,373
Subconsultant Markup		5%	\$13,819
Total Subconsultants			\$290,192

OTHER DIRECT COST (ODC)

Environmental Drilling			\$4,900
Environmental Testing / Bridge Sampling			\$29,700
Geotech Drilling			\$53,340
Geotech Testing			\$11,300
Utility Locating			\$2,500
Printing			\$29,850
Postage, Travel, Misc.			\$12,100
Permit Fees			\$6,100
Traffic Control			\$16,900
Corrosion Study			\$16,400
Total ODC			\$183,090

TOTAL ESTIMATED PROJECT COST TO COMPLETE			\$3,356,378
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Contingency		4.28%	\$143,622
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TOTAL ESTIMATED CONTRACT FEE WITH CONTINGENCY			\$3,500,000
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For purposes of the estimate, rates are estimated average for each position
Billing rates are determined by actual salary at time of service times audited multiplier
Annual escalation occurs each January 1, but individual merit or promotional increase
Billing rate increases do not increase contract limit