



# TOWN OF FAIRFAX

## STAFF REPORT

### December 6, 2017

**TO:** Mayor and Town Council

**FROM:** Garrett Toy, Town Manager *GT*

**SUBJECT:** Approve contract amendment No. 1 with the California Infrastructure Consultancy for Phase II preliminary engineering, community outreach, environmental, and design work for the replacement of the Azalea Avenue Bridge.

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#### **RECOMMENDATION**

- 1) Authorize the Town Manager to execute Amendment No. 1 to the agreement with California Infrastructure Consultancy (CIC) to increase the contract amount by \$431,458 for a total not to exceed amount of \$860,678 for Phase II services for Azalea Bridge.
- 2) Appropriate \$431,458 to Fund 51-843.

#### **DISCUSSION**

In September 2016, the Town awarded a contract to CIC for Phase I services for Azalea bridge. Similar to the other Town bridge projects funded by federal funds, the agreement includes the Phase I scope of work as well as the complete scope of services for the entire preliminary engineering (PE) phase of the project. However, as we noted in September 2016, the Council was approving the scope of work for only Phase I and additional Council approval would be needed for Phase II. Phase II completes the PE phase of the project which includes all the environmental and design services necessary to bid the project out. The PE phase will take upwards of 2 years to complete.

As part of the Phase I scope of work, CIC worked to demonstrate to Caltrans the need for additional dollars to complete the entire PE phase of the project. Caltrans has approved the additional funding request.

#### **FISCAL IMPACT**

The project is included in the Town's FY 17-18 CIP Budget. The project costs are 100% funded by Federal Highway Bridge Program (HBP) administered by Caltrans and the County of Marin. In October 2015, the Council approved an agreement with County of Marin Flood District 9 for the Town to be reimbursed up to \$65,000 for "out of-pocket" environmental (CEQA) and project management costs not eligible for HBP funding.

#### **ATTACHMENT**

- A. Amendment No. 1
- B. Complete scope of work from the original contract

**AMENDMENT NO. 1 TO AGREEMENT FOR CONSULTING SERVICES**

This Amendment No. 1 to Agreement for Consulting Services (this "Amendment No. 1") is made and entered into as of December \_\_\_\_\_, 2017, by and between the TOWN OF FAIRFAX (hereinafter "TOWN"), and CALIFORNIA INFRASTRUCTURE CONSULTANCY, INC., a California corporation (hereinafter "CONSULTANT").

**RECITALS**

**WHEREAS**, TOWN and CONSULTANT previously entered into that certain Agreement for Consulting Services dated as of September 15, 2016 (the "Contract"). Capitalized terms used in this Amendment No. 1 shall have the meanings assigned to them in the Contract; and

**WHEREAS**, the parties wish to modify the Contract as provided more particularly below.

**AGREEMENT**

**NOW THEREFORE**, in consideration of the foregoing Recitals, which are incorporated herein by this reference, TOWN and CONSULTANT hereby agree as follows:

1. CONSULTANT shall complete Phase II of the work for the Azalea Avenue Bridge per the Contract and the maximum amount payable under the Contract shall be increased by \$431,458 for a total not to exceed amount of \$860,678.
2. Except as specifically modified herein, all of the other remaining provisions of the Contract shall remain unchanged and in full force and effect.

**IN WITNESS WHEREOF**, the parties have executed this Amendment No. 1 as of the day, month and year first above written.

**TOWN OF FAIRFAX**

**CONSULTANT**

\_\_\_\_\_  
Garrett Toy, Town Manager

By: \_\_\_\_\_  
Name: Nader Tamannaie, PE  
Title: President

ATTEST:

\_\_\_\_\_  
Michele Gardner, Town Clerk

**ATTACHMENT A**



**PHASE 1 SCOPE OF SERVICES**

The Project Phase 1 will start with a limited scope and budget relative to those needed for the full Preliminary Engineering (PE) phase. A detailed project cost will be submitted to accompany the current Phase 1 scope. The goal in Phase 1 will be to conclude the Bridge Type Selection process and accomplish additional project tasks, described below, as allowed by the initial budget. During this phase, CIC will demonstrate to Caltrans the need for additional dollars and apply for them as soon as possible to continue seamlessly and complete the entire PE phase of the project.

The complete scope of services for the entire PE phase of the project begins on the following page (Page 2). For Phase 1, the scope of services will be limited, according to the premise noted above, as follows:

**Task 1 – Project Management and Organization**

The project will be managed as described on page 2 through the Bridge Type Selection process. Additionally, project management will apply to other project tasks described below.

**Task 2 – Environmental Studies and Permits**

All environmental studies shown on pages 2 – 6, including those by the second tier subconsultants for air, noise, cultural resources and historic resources, will be conducted. However, the CEQA Traffic Memo and permit applications will not be started and the environmental subconsultant’s management of its portion will be commensurate with the studies implied above.

**Task 3 – Public Outreach**

The scope shown on pages 6 and 7 apply except only one public workshop will be held and efforts such as press releases, internal coordination, etc., will be limited to those needed for the first workshop. Updates will continue to be posted on the project web site.

**Task 4 - Topographic Mapping, Aerial Photogrammetry, Surveys and ROW Base Mapping**

The scope for this task will remain exactly as shown

on pages 7 and 8.

**TASK 5 - GEOTECHNICAL INVESTIGATION AND PAVEMENT DESIGN**

The scope of services will be as shown on pages 8 and 9, except that submittal of the final Geotechnical Report will be deferred until Phase 2.

**Task 6 – Utility Investigations and Coordination**

The task will proceed as described on pages 9 and 10, except that utility relocation designs will not be started until Phase 2.

**Task 7 - Stream Hydrologic and Hydraulic Analysis**

The scope shown on pages 10 and 11 will be implemented except the Location Hydraulic Study Report will be deferred until Phase 2.

**Task 8 - Stream Geomorphology**

The scope of this task will be limited to consultations needed in Phase 1 and commensurate with the subconsultant’s budget allocated for this phase.

**Task 9 - Traffic Analysis**

The subconsultant’s scope is as shown on pages 11 and 12, except the CEQA Traffic Memo consultations will be deferred until Phase 2.

**Task 10 - Civil and Structural Design**

This task will be limited to the work noted on pages 12 and 13 for “Subtask 10.1 - 30% Design Submittal.” However, the architectural deliverables will be those needed for the first public workshop only.

**Task 11 - Bidding Assistance**

**Task 12 – Services During Construction**

These two tasks are deferred until Phase 2 and the subsequent construction period, respectively

**Deliverables**

The deliverables will be according to the table shown on pages 16 and 17, except as needed for the Phase 1 tasks noted above.



## TASK 1 - PROJECT MANAGEMENT AND ORGANIZATIONAL LOGISTICS

### Task 1.1 Project Management and Organization –

The Project is replacing the existing Azalea Avenue Bridge in Fairfax. The scope of work below does not necessarily reflect the order of work. The schedule presented in this proposal will outline the chronology of the tasks. We have divided the work scope for the PE phase into 12 major Tasks, including Services During Bid and Construction, all of which are essential to running the project. The deliverables have been shown in a complete matrix at the end of this *Scope of Services*. CIC will provide a complete, turnkey handling of the project and will be available to not only fulfill its technical requirements, but to assist the Town with most of its administrative project tasks. At the outset, CIC will produce the *Project Instructions Manual (PIM)*, spelling out the details of our proactive project management plan, with activities that cover, but are not limited to, the following:

- **Project Charter Meeting.** Hold a comprehensive project kick-off meeting and invite the Town officials, the County Flood Zone 9 staff and CIC team members. Brief presentations will be made and copies of the PIM will be distributed.
- **Project Team Meetings.** To be held on a regular basis; CIC will provide agenda, to-do list, issues, actions and deadlines.
- **Project Delivery.** The team will proceed with Project Manager being the single point of contact for delivery, quality control, schedule and budget.
- **Correspondence.** Maintain organized electronic and hard-copy files for turning over to Fairfax at the end of the project.
- **External Presentations.** Strategize events with Fairfax - prepare, designate presenters and run events smoothly. CIC will coordinate with Nelson\Nygaard on the contents of the project website.
- **Change Management.** Anticipate project

change in advance, evaluate its ramifications, report impact to the Town, and adapt to it.

- **Quality Assurance and Quality Control.** Implement the independent check, Senior Review, and constructability review, as well as QA/QC by subconsultants.
- **Invoicing.** Invoice monthly, regularly and accurately so Fairfax can invoice Caltrans in a timely manner.
- **Assist Fairfax with Project Administrative Tasks.** Prepare supplemental funding applications; address Town compliance requirements; assist with Caltrans invoicing, Caltrans Status Reports and utility and ROW certifications; draft memos and letters on behalf of the Town; maintain e-mail and other electronic files; and create and maintain a project filing system for future audits.

**Task 1.2 Initial Field Activities -** Upon the Notice to Proceed, CIC will begin scheduling the initial field activities necessary to move forward, such as mapping, aerial photogrammetry, field surveys, ROW research and geotechnical investigations. These activities are described in detail in the ten tasks of this scope of services.

**Task 1.3 Site Review and Research Data –** A site review of the bridge will be an early order of business. Photos and notes will be taken. Items to be researched for use by the subconsultant are listed with the specific scope of their work in this proposal. Field observations include:

- Document the bridge through notes, sketches and photographs
- Look for private driveways and property line fences
- Document all overhead and underground utilities
- Look for construction access and storage
- Document the existing signage
- Visualize the new bridge in its location and determine any obstacles that may be in the way



- Document birds' nests and animal species found around the bridge; note schools, parks, historic sites, and residences and at the site.

### TASK 2 - ENVIRONMENTAL STUDIES AND PERMITS

In general, to maintain cost efficiency during the environmental studies, it is assumed that Technical Studies will be utilized concurrently for CEQA and NEPA. Economy of scale is reflected in the budget for Task 2 based on our experience on other recent Fairfax Bridge projects. We have included current permit application fees for the various agencies in our budget proposal submitted separately.

#### Task 2.1 Biological Studies Including Wetlands -

Kelly Biological Consulting (Kelly) and WRA will prepare a Natural Environment Study (NES) report for Azalea Bridge based on existing resource information and field studies. The NES will include a description of existing conditions and measures to avoid and minimize potential impacts to the biological resources. It will address species protected by federal and state regulation, including NEPA and CEQA. The field studies that will be conducted include Special-Status Plant Habitat Assessment, Plant Community Characterization and Mapping, Noxious Weed Survey, Wetland Delineation, Special-Status Wildlife Habitat Assessment, Fish Habitat and Biological Assessment, and Essential Fish Habitat Evaluation.

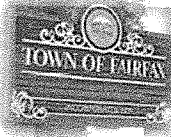
Kelly will coordinate with California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), NOAA Fisheries (NMFS), and Caltrans biologists. Kelly will prepare one draft version of the NES for the Town to review. The revised NES will then be submitted to Caltrans for review. It is assumed that Caltrans will provide one set of comments. Those comments will be addressed and a final NES submitted to the Town and Caltrans. Then a "Not Likely to Adversely Affect" (NLAA) Report or Biological Assessment (BA) Report, for federally protected fish will be prepared, provided to the Town for review, revised based on the Town's comments, and submitted to Caltrans.

**Wetland and Related Permitting** - Kelly will assist the Town with obtaining the required resources agencies permits for geotechnical drilling in the creek bed, as well as bridge construction. Permit applications will be prepared in the Joint Aquatic Resource Permit Application (JARPA) format. Kelly will prepare a draft version of the permit applications for review by the Town, then revise and finalize the draft applications based on the comments received from the Town.

**Section 404 of the Clean Water Act (CWA) Permit.** As part of the geotechnical drilling and the bridge construction JARPAs, Kelly will prepare U.S. Army Corps of Engineers (ACOE) Pre-Construction Notifications (PCN). The PCNs will include a copy of the delineation of waters of the United States. It is assumed that a nationwide permit will be sufficient, but if the ACOE determines that an individual permit is needed, an additional scope of work and budget will be necessary. The bridge permit application will likely require a conceptual mitigation plan, which will be prepared in draft version for review by the Town. It is assumed that mitigation will be standard and occur on site.

**Section 401 CWA Certification.** Kelly will prepare a Water Quality Certification application as part of the JARPAs and submit them to the San Francisco Bay Regional Water Quality Control Board (RWQCB) for the geotechnical drilling and the bridge project. Based on the assumption that there will be less than 0.02 acres of impacts for the project, the current application fee of \$1,500 is included in the budget. It is anticipated that the approved CEQA compliance document will be submitted with the RWQCB application package.

**Section 1600 Series California Fish and Wildlife Streambed Alteration Agreement.** Kelly will prepare a Streambed Alteration Agreement application as part of the JARPA. The current fee of \$5,833 (\$921 for the drilling and \$4,912 for the bridge) is included in the budget. Similar to the RWQCB, Kelly will send a copy of the approved CEQA compliance document to CDFW with the application package.



**2.2 CEQA and NEPA Studies and Permits-** The signed Caltrans Preliminary Environmental Studies (PES) form has determined that the project qualifies for a NEPA Categorical Exclusion ("CatEx" or "CE") with technical reports. Given the proposed project's potential impacts to wetlands/stream, special-status species, cultural resources, water quality and noise, a CEQA Categorical Exemption will not necessarily apply and an Initial Study/Mitigated Negative Declaration (IS/MND) will likely be required instead.

WRA will complete the following tasks to ensure CEQA/NEPA compliance:

**Project Description Development.** The project description will be developed as early in the process as possible. WRA will review the initial project description and additional relevant materials provided by the team and help refine them to coordinate the workflow for the CEQA/NEPA process.

**NEPA Categorical Exclusion (CatEx) and Technical Studies.** Based on the signed PES form, a CatEx shall be prepared for the project. WRA will assist in the preparation of the required CatEx technical reports in accordance with the format and content requirements mandated by the PES form recently completed by WRA and Caltrans.

On behalf of the Town, WRA will forward technical reports to Caltrans District Local Assistance Engineer (DLAE) for review and comment. When completed and sufficient, District Senior Environmental Planner (SEP) will initiate informal/formal consultations with appropriate resource and regulatory agencies. Upon completion of informal/formal consultations, the SEP will complete a CatEx for the project.

**CEQA Initial Study/Mitigated Negative Declaration Kickoff.** WRA will kick off the environmental review process for the Project Charter Meeting with the team by:

- Collecting all relevant reports and drawings
- Discussing the desired format of the IS/MND
- Discussing the proposed project

- Resolving issues regarding overall assumptions
- Identifying other key town contacts
- Discussing overall communication protocols

WRA will attend up to three meetings for the project. WRA staff will review all available project-related documentation, including, but not limited to: site plans, applicable similar reports, and the Town's environmental review requirements.

**Administrative Draft Initial Study/Mitigated Negative Declaration.** WRA will prepare an Administrative Draft Initial Study for the project utilizing the current version of the State CEQA Guidelines, as well as any Town-approved Thresholds of Significance.

The Initial Study will evaluate the potentially significant impacts as the project relates to the Environmental Checklist Form of the State CEQA Guidelines. The analysis in the Initial Study will consider information contained in existing technical reports, as well as the PES and associated technical studies, relevant regulations and policies, and other applicable information obtained by WRA staff. This includes all of the technical studies to be prepared for the project, including, but not limited to: Air Quality, Biological Resources, Cultural Resources, Geotechnical, Geomorphology, Greenhouse Gas Emissions, Hydrology, Noise, and Traffic. WRA will address all of the Town's comments on the Administrative Draft IS/MND. It is assumed that the Town will only require one round of comments on the revised Administrative Draft IS/MND.

Upon approval of the Screencheck Draft IS/MND, WRA will reproduce up to fifteen hardcopies of the Draft IS/MND and Appendices for the public review circulation period and will assume responsibility for circulating the documents to applicable agencies and interested parties. Fifteen copies of the Summary Form, fifteen CDs of the entire IS/MND package, the Notice of Intent (NOI), as well as the Notice of Completion (NOC), will be sent to the State Clearinghouse. If required, the Town will be posting the NOI in the Marin Independent Journal. Additionally, WRA will coordinate with the Town in providing web-ready documents for publication on



the Town's website, if needed.

Following completion of the 30-day public review period, WRA will respond to any agency and/or public comments submitted on the Draft IS/MND and prepare the Final IS/MND. The extent of work necessary to complete the Final IS/MND is contingent upon the number and nature of public comments received. WRA will circulate the Final IS/MND to all agencies that commented on the Draft IS/MND. WRA will also be responsible for the preparation and filing of the Notification of Determination (NOD) with the Marin County Clerk within five days of project approval. This proposal also includes costs for all required filing fees, including the CDFW filing fee of \$2,210.50 and the \$50 filing fee with the County Clerk. In addition, this scope includes the preparation of Mitigation Monitoring and Reporting Program (MMRP) for the IS/MND.

**Air Quality and Greenhouse Gas (GHG) Emissions Reporting.** Illingworth and Rodkin (I&R) will take the lead on completing documentation for air quality and greenhouse gas emissions. The project site is located in the San Francisco Bay Air Basin and is under the jurisdiction of the Bay Area Air Quality Management District. These types of projects are exempt from the requirement of an air quality conformity determination. Neither an air quality technical study nor a mobile source air toxics analysis is required. The following tasks will be completed:

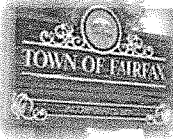
- *Construction Air Quality Impacts* - This will be addressed qualitatively, focusing on identifying appropriate control measures to reduce PM<sub>10</sub> from dust generation. Where necessary, the Roadway Construction model developed by the Sacramento Metropolitan Air Quality Management District will be utilized to predict exhaust emissions.
- *Climate Change* - Following the Caltrans Guidelines, I&R will provide a discussion of the effects of the project's operational and construction impacts on climate change.

- *Prepare Air Quality Report* - An air quality technical report would not be required. A memo will be prepared using appropriate Caltrans format and will address the FHWA/Caltrans requirements, as well as local CEQA criteria. WRA will incorporate this information into the environmental documents.

**Cultural Resources Document Completion.** WRA will create an Area of Potential Effects (APE) map in consultation with JRP Historical (JRP) and Far Western. JRP and Far Western will complete documentation for historic and archaeological resources. Compliance with Section 106 is being carried out with Caltrans's regulatory responsibilities. Cultural documents will be prepared following Caltrans guidelines as outlined in the Standard Environmental Reference (Volume 2). The project is not anticipated to be a screened (exempt) undertaking per the Caltrans Section 106 Programmatic Agreement (PA). Project efforts will be used to support CEQA compliance and Section 106 documentation will be submitted to Caltrans.

JRP will send letters regarding the project to, and collect responses from, parties interested in historic architectural resources. Far Western will conduct all necessary initial consultation with the Native American Heritage Commission and all Native American groups/interested parties identified by the Commission, plus facilitate government-to-government communication between federally recognized Native American tribes, Caltrans, and the Town.

Far Western will prepare an Archaeological Survey Report (ASR) and, if necessary, an Extended Phase I plan and Extended Phase I report (this latter effort would require additional budget). These reports will develop environmental and cultural contexts for the region; document records search findings (including previous cultural resource identification and evaluation efforts within the project area); consultation efforts with the Heritage Commission and local Native American groups/individuals; and field methods and results. Far Western will share the results of the Information Center records search with JRP.



JRP will prepare a Historical Resources Evaluation Report (HRER) and will include appropriate Department of Parks and Recreation (DPR) 523 forms to survey and evaluate properties adjacent to the subject bridge. The bridge was previously determined not eligible for listing in the National Register of Historic Places (NRHP) and does not require re-evaluation. It is anticipated that up to three properties adjacent to the bridge will be included in the APE and will require evaluation. Far Western will prepare the Historic Property Survey Report (HPSR) with JRP's assistance, summarizing the overall study findings.

If the project is in a high sensitivity area, a coring program should be implemented to ensure that buried archaeological deposits will not be affected by the project. JRP and Far Western will visually inspect and photograph the resources in the APE. Surveys will cover all safely accessible sides of the bridge, the bridge approaches, construction lay-down areas, any potential roadway realignments, road detour areas, and all other areas which may encounter ground-disturbing activities. The crew will record any undocumented resources; revisit and, if necessary, update any previously recorded resources in the project area; and use GPS equipment for precise locational mapping.

**Noise Report.** I&R will take the lead on completing documentation for potential noise-related impacts. The proposed bridge replacement project does not meet the definition of a Type I project, and a Noise Study Report would not be required. It is assumed that noise and vibration from project construction will need to be evaluated. The following scope of work is proposed to complete the NEPA and CEQA noise analysis. I&R will identify sensitive receptors; quantify noise and vibration from major construction activities, including pile driving; establish appropriate significance thresholds and assess noise and vibration impacts; and recommend measures to mitigate the impacts.

The key component of the study will be an assessment of the noise and vibration resulting from pile driving or drilled piers and other noise generating activities during construction.

Hydroacoustic sound levels will be submitted to Kelly Biological Consulting and WRA wildlife biologists to assess impacts to any protected biological resources potentially affected by noise. The impacts of vibration will be assessed against appropriate criteria for construction vibration established by Caltrans and other agencies. If significant noise or vibration impacts are identified, mitigation will be recommended.

### TASK 3 - PUBLIC OUTREACH

**Task 3.1 Targeted Communications** - The replacement of the Azalea Avenue Bridge will especially be of interest to adjacent residential neighbors on Azalea Avenue between Arroyo Road and Spruce Road, for whom this bridge is a primary point of access and a familiar local fixture. Residents close to the bridge, and local pedestrian and bicycle advocates alike, will appreciate being informed of the nature of the work and construction impacts.

Our project team will visit the area surrounding Azalea Avenue Bridge, to note potentially affected residences and identify key stakeholders. Fact sheets, discussed in more detail below, will be delivered to all residences and businesses within a half-mile radius of the bridge at each project phase. We will develop lists of key stakeholders in partnership with the Town, maintain contact with individuals, and have smaller group meetings.

**Personalized Public Outreach.** Direct contact between the project management team and key neighborhood stakeholders is the most effective way to address community concerns and build a coalition of support. Our project team will connect with individuals and groups in the neighborhood via e-mail early in the project timeline. This informal approach identifies key questions and concerns prior to discussion in a public forum, allowing for issues to be resolved as they arise. We will keep a log of stakeholders' interests and develop targeted materials to address their concerns. An active and responsive outreach approach works best when the outreach and technical teams are fully integrated. Stakeholder questions at every stage of the project will be addressed by the outreach team and





members of the engineering team, as necessary.

**Task 3.2 Public Information** - Information for the general public will be developed in a number of formats and made readily accessible to everyone in Fairfax, including Town staff. Our plan to reach the public will include:

**Web Site Development.** We will build on the existing Fairfax Bridges website, which will frame the Azalea Bridge work as consistent with ongoing efforts for other local bridge replacements. Fact sheets and other information will be available for each project milestone, along with project team phone and e-mail contact information. Visitors to the website will be able to register for the project mailing list, access copies of all public documents, make comments, and interact with the project team. We will add historic photographs and other images relevant to the bridge projects. We will develop and maintain the website and supporting materials ongoing, to minimize the impact on Fairfax IT staff and allow us to make updates in real time.

**Project Fact Sheets and Newsletters.** Early in the process, we will prepare a project fact sheet for the Azalea Avenue Bridge, to be shared with all neighbors within a set radius of the project. The fact sheet will describe the bridge, its current condition, reasons for the required replacement, project funding, and an outline of the bridge replacement schedule. Fact sheets will be updated at each stage of the project to keep neighbors and interested public informed of progress. These will be sent to the project mailing list, made available at all project meetings and posted on the website. We will also identify public sites, such as libraries, local businesses, and community posting bulletin boards, where we can post fact sheets.

**Press Management.** Our Outreach Coordinator will be the primary press contact for all comments on the project, and will work closely with the project manager and the Town to ensure that the project message is correctly portrayed. We will prepare press releases and press oriented fact sheets at critical points in the project. The project website will also be a resource for press interested in

project background and additional materials. We will ensure that all visual materials are developed with the level of clarity that can be presented in newspaper stories.

**Public Open Houses.** The public open house meetings will be interactive and provide the public with direct access to the technical team. Each meeting may include a presentation with clear visual materials, either on boards or Power Point. Meeting formats will be developed for interaction, making it easy for the public to voice opinions and access the best person to address their questions. Public input will be gathered from comment cards at the meetings, e-mails, phone calls, and other contact with stakeholders. After each meeting, we will compile a list of "Frequently Asked Questions" along with responses to be posted on the website.

We anticipate two public open house meetings, timed in coordination with the engineering team to provide the best input on their work. The first meeting will take place early in the project timeline, to introduce the Azalea Bridge replacement to the public, define the project needs, and provide an overview of construction and associated impacts. High-level bridge replacement design concepts will be presented to inspire public comment. This meeting will emphasize to neighbors the real benefits of the project, including structural safety, reliability, and creek stability. A second meeting will take place when more advanced design alternatives have been developed. This meeting will provide an update on project status and schedule, inform residents of possible construction impacts and planned mitigation measures, and present a preferred design alternative. Nelson Nygaard will be available for an optional third outreach meeting, if needed.

#### **TASK 4 - TOPOGRAPHIC MAPPING, AERIAL PHOTOGRAMMETRY, SURVEYS AND ROW BASE MAPPING**

Oberkamper & Associates will support the design team by providing aerial mapping, ortho-rectified aerial photos, supplemental field surveys and right of way engineering. All work will be performed in accordance with the Caltrans Survey Manual, Code



of Safe Surveys, Safety Manual, and Manual of Uniform Traffic Control Devices.

**Task 4.1 Field and Aerial Topographic Surveys and Mapping** - The project site will be mapped using photogrammetric methods for the base map. The control will be referenced to the North American Datum (NAD) 83 for horizontal coordinates and to the North American Vertical Datum (NAVD) 88 for vertical values. A minimum of three control points will be clearly located outside the assumed construction area and field-tied to allow for ease of use during construction. Topographic mapping will be prepared at a scale of 1" = 20' with a one-foot contour interval and spot grades meeting National Mapping Accuracy Standards. The estimated limits of the aerial mapping are 200' each side of the bridge along the road, and 200' upstream and downstream of the bridge along the channel.

Due to tree and brush coverage and areas obscured by the existing bridge structure, supplemental field topographic surveys will be necessary to support the design process. These surveys will include a survey of the creek channel and Arroyo Road 100 feet upstream and downstream of the bridge, and Azalea Avenue 200 feet either side of the bridge. These topographic surveys will include existing visible surface utilities, USA utility markings and, for trees within 50' of the existing bridge, tree trunks over 6" in diameter. Storm drain, sanitary sewer structures and inverts, all visible fire hydrants, water valves, and PG&E vaults within the right-of-way (ROW) will be located. The field topographic information will complement the aerial mapping and be merged with it to provide one complete homogenous mapping base file for the site.

**Task 4.2 Right of Way Engineering** – Record map research, field boundary surveys, landnet analysis and right of way mapping will be conducted in conformance with Chapter 10 of the Caltrans Survey Manual. Title reports will be necessary for all parcels adjacent to the project area. A minimum of three parcels may have easement or right of way impacts at the bridge location. Street right of way and adjacent property lines (landnet) will be shown on the base map based on available public records

and boundary resolution. The base map will contain names of adjacent property owners, as well as Assessor's Parcel Numbers (APN). Existing survey monuments within, or adjacent to, the ROW will be located, to be preserved during construction.

**Task 4.3 Map Preparation** - Oberkamper & Associates will prepare a hybrid map for the bridge, consistent with Federal and Caltrans Local Assistance Manual requirements for meeting the certification of right of way and use by the right of way agent. It will include base mapping, recorded boundary lines, control points, and easement information.

A Record of Survey will most likely be required and will be prepared in accordance with State law. If requested, plats and legal descriptions for temporary construction easements, utility easements, drainage easements, or right of takes will be prepared as needed in support of the design process. These are optional tasks and are not budgeted for until the extent of this work is known, typically during the 65%-90% phase of design.

**Task 4.4 Surveys for the Hydraulic Analysis** - Stetson will review the existing HEC-RAS model developed for the Ross Valley CIP study and identify the needs for more detailed topo survey at the vicinity of Azalea Avenue Bridge. Stetson will conduct the surveys, which will include top of banks, additional cross sections, and check surveys for some existing cross sections.

### **TASK 5 - GEOTECHNICAL INVESTIGATION AND PAVEMENT DESIGN**

Geotechnical services will include subsurface exploration, laboratory testing and preparation of a Geotechnical Report geared to the project design. We will notify USA to mark utilities and obtain drilling permits from Marin County. We will obtain an encroachment permit from the Town and anticipate permit fees will be waived.

**Task 5.1 Geotechnical Investigation and Laboratory Testing** – The services will include subsurface exploration and laboratory testing. We will notify USA to mark utilities and obtain



necessary drilling permits from Marin County. Permits for drilling in the channel will be provided by Kelly, although we will assist with a description of our planned work and a site plan showing the locations. We will obtain an encroachment permit from the Town (if needed) although we anticipate those permit fees will be waived.

We will explore subsurface conditions at the approximate location of each bridge abutment with augered borings (one at each abutment) to depths of about 50 feet, or refusal if hard rock is encountered. These borings will be performed with a truck rig in the street so signage and traffic control will be provided. We expect to keep at least one traffic lane open during our work. We will also drill four borings in the creek using portable drilling equipment as a basis for our foundation recommendations for the new wing walls. These borings will extend to depths of about 25 feet, or refusal in hard rock, if encountered. All borings will be grouted shut or backfilled according to permit requirements in the creek.

During the drilling, we will obtain representative samples for laboratory testing. We will measure water levels and backfill the borings upon completion. Laboratory testing will include moisture density, strength, R-value, corrosion and other pertinent tests.

**Task 5.2 Geotechnical Investigation Report** - Based on the subsurface exploration and laboratory testing, we will develop preliminary geotechnical design criteria for foundations, including recommendations for cast-in-drilled-hole (CIDH) piles, which are judged the most likely alternative at this time. We will select an acceleration response curve and other criteria based on Caltrans' Seismic Design Criteria (SDC) Version 1.7.

We will prepare a brief design memo with preliminary foundation recommendations for the bridge and retaining walls/abutment walls in the creek upon completion of our subsurface exploration and laboratory testing. As project design becomes further advanced, we will prepare a detailed design report (our Task 5.3) including Caltrans-format boring logs, our laboratory test

data, and recommendations for the items described above.

The services in this Task will include preparation of a Geotechnical Design Report that will be used by others on the team for final structural and civil design. We will prepare geotechnical design criteria for foundations with recommendations for CIDH piles, although we can also provide criteria for other foundation options the project's Structural Engineer wishes to evaluate, such as torque-down and driven piles. We will discuss seismicity and provide response criteria based on Caltrans' SDC Version 1.7.

For the bridge abutments and roadways, we will discuss site grading, retaining wall lateral pressures, material qualities, backfill methods and compaction and paving thicknesses for various Traffic Indexes (Tis). We will specifically discuss lime treatment as a method to "winterize" the site (if needed) and to decrease the pavement section.

For the bridge wingwalls, we will prepare design criteria for foundations, lateral active and passive pressures, geotechnical drainage requirements and other details.

**Task 5.3 Consultation and Plan Review** - As project plans are nearing completion, we should review them to confirm that the intent of our recommendations has been incorporated. We will also be available for consultation if the project design changes or if additional geotechnical items are required.

As an optional task, Miller Pacific will be prepared to provide geotechnical services during construction.

### TASK 6 - UTILITY INVESTIGATIONS AND COORDINATION

**Task 6.1 Utility Surveys, Notification and Coordination** - A field review will be conducted to document all utilities in the area that are either attached to the bridge or located in the anticipated construction zone. Project plans will be provided to utility agencies for identifying and marking locations of their existing facilities or new ones to be installed in the future bridge. Once existing



utilities have been located and marked, Oberkamper & Associates will survey the marked alignments and incorporate this information into the project base topographic mapping.

**Task 6.2 Utility Relocations** - Coordination with the utility agencies for the relocation and/or protection of conflicting utilities, and preparation of utility agreements will, be continued. It is anticipated that during the course of the project a total of three meetings will be held with each of the various utility agencies.

### TASK 7 - STREAM HYDROLOGIC AND HYDRAULIC ANALYSIS

The hydrologic and hydraulic analysis will consider the following six scenarios to assist in the design of the replacement bridge:

- I. Existing condition
- II. Proposed replacement bridge only condition
- III. Proposed replacement bridge under the 10-Year Work Plan condition
- IV. Proposed replacement bridge under the CIP condition
- V. Proposed replacement bridge under the 10-Year Work Plan without the detention basins condition
- VI. Proposed replacement bridge under the CIP without the detention basins condition

Accordingly, the following hydrologic, hydraulic, and scour analyses will be conducted for the above scenarios.

**Task 7.1 Hydrologic Analysis** – The recently installed stream stage gage in Fairfax Creek (installed in 2007) does not have a long enough period of recording annual peak flows to perform a reliable flood frequency/probability analysis. Stetson will use the HEC-HMS hydrologic modeling method to determine flood frequency/probability for various return intervals (e.g., 50-year, 100-year flood). Stetson will compare its HEC-HMS model results with those of FEMA's model and use the most appropriate results to estimate the peak flows at the bridge site for various return intervals. The

following approach will be used to estimate the peak flows for different return intervals:

- Using the calibrated HEC-HMS model, calculate the flow ratio at the bridge site by dividing the peak flows at the bridge site by the peak flow at the Ross stream flow gage.
- Multiply the Flood Frequency Analysis peak discharges at the Ross stream flow gage by the flow ratio at the bridge site to obtain the peak flows for the different recurrence intervals.
- Conduct HEC-HMS modeling to determine the peak flows at the bridge site for the scenarios with detention basins.

**Task 7.2 Hydraulic Analysis** - Stetson will perform hydraulic analysis using the existing HEC-RAS hydraulic model developed for the Ross Valley CIP study to determine the design flow characteristics for the existing condition and the new bridge under different scenarios. Prior to the hydraulic analysis, Stetson will refine the existing HEC-RAS model using more detailed topo survey data in the bridge vicinity. It is anticipated that iterative hydraulic analysis will be needed to arrive at the most appropriate bridge design to achieve the best hydraulic performance under the site constraints.

**Task 7.3 Bridge Scour Analysis and Countermeasure Design** - Stetson will perform a bridge scour analysis using HEC-RAS to determine the scour potential for the replacement bridge. Stetson will coordinate with Geomorph and make design recommendations on the need for scour countermeasures at the bridge site. The results from the scour analysis will be included in the Hydrology and Bridge Hydraulics Report.

**Task 7.4 Hydrology and Bridge Hydraulics Report** - Stetson will prepare a Hydrology and Bridge Hydraulics Report for Azalea Bridge replacement. This report will present the design hydrologic and hydraulic characteristics for both the existing bridge and the proposed replacement bridge, while verifying whether the proposed replacement bridge meets bridge design hydraulic criteria. It will also present the bridge scour potential and recommend scour countermeasures. The report will include the



detailed hydraulic model output results along with appropriate hydrology information used as the model input.

**Task 7.5 Location Hydraulic Study Report** - Stetson will prepare a Location Hydraulic Study Report for Azalea Bridge replacement. The report will document the hydrologic and hydraulic information required on the Caltrans Location Hydraulic Study Form and provide the documentation necessary to support findings with regard to floodplain encroachment impacts. Per the requirements of Federal Highway Administration and Caltrans, the following items will be evaluated commensurate with the severity of the risk or environmental impact:

- The risks to life or property associated with implementation of the action
- The impacts on natural and beneficial floodplain values
- The support of probable incompatible floodplain development
- The measures to minimize floodplain impacts associated with the action
- The measures to restore and preserve the natural and beneficial floodplain values impacted by the action
- The practicability of alternatives to any significant encroachment;
- The practicability of alternatives to any longitudinal encroachment
- The consistency with existing watershed and floodplain management programs.

**Task 7.6 Meetings** - Stetson personnel will attend two meetings with the project team and one presentation meeting with the Town of Fairfax.

### **TASK 8 - STREAM GEOMORPHOLOGY**

**Task 8.1 Design, Permitting, and Implementation Support** - Geomorph will develop site-specific design recommendations for bank erosion protection and stabilization structures, and for configuring bridge foundation components for best

protecting aquatic resources at the site. If applicable, Geomorph will recommend and design aquatic habitat enhancement elements consistent with the reach-scale geomorphic design recommendations and ensuring the structures do not conflict with project hydraulic objectives. Geomorph will synthesize past geomorphic assessments with new field observations and measurements and advise the project team on bridge replacement design layout. Geomorph will:

- Field-assist topographic survey of the bed and banks and environmental features for site plan base maps by others
- Assist the project team to develop initial and final designs for scour countermeasures
- Prepare 30%, 65%, 95%, and 100% plans and specifications for certain bank stabilization, erosion protection, and habitat protection and enhancement elements

**Task 8.1 General Design, Permitting, and Implementation Support** - Geomorph will conduct preliminary field and office research and confer with project team members to steer the bridge type selection and preliminary layout. The goal will be to produce a project that can be supported by the environmental regulatory agencies for using biotechnical and habitat enhancement design features as far as practically feasible.

**Task 8.2 Geomorphology Report** - Geomorph will prepare a Geomorphology Report documenting design constraints encountered and opportunities realized for the proposed project layout shown in the 30% or later level design plans. The report will contain narrative materials suitable for incorporation in the project description and alternative analysis for NEPA/CEQA documents.

### **TASK 9 - TRAFFIC ANALYSIS**

Input from Parisi Transportation Consulting (Parisi) will relate to traffic, pedestrian, bicycle, and traffic safety related aspects. Parisi will attend the Project Chartering Meeting and up to two public outreach meetings, as well as a combined presentation to the Town Council.



**Task 9.1 CEQA Input** - Parisi will complete Section XVI of Appendix G of the CEQA Guidelines for the bridge. Parisi will conduct research and prepare draft and final written responses for the following traffic related CEQA questions:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit
- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads
- Resulting change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks
- Substantially increased hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
- Resulting inadequate emergency access
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities

**Task 9.2 Azalea Avenue Two-Way Traffic Analysis** - Upon Town direction, Parisi will consider the potential traffic effects if Azalea Avenue were converted from one-way to two-way traffic operations. Parisi will conduct weekday peak hour traffic counts at up to four intersections and estimate the traffic volume changes on up to three roadway segments. Parisi will address potential changes to intersection traffic controls, and recommend channelization changes, as

appropriate. In this task, Parisi will provide an evaluation of the applicable CEQA guidelines.

**Task 9.3 Temporary Traffic Handling** - Parisi will conduct a study to assess temporary traffic handling routes during construction of the bridge. The study will include an evaluation of alternative routings, traffic volumes, out-of-direction travel, and potential effects along the alternative route. Parisi will review the 30% design plans for items related to transportation.

## TASK 10 - CIVIL AND STRUCTURAL DESIGN

The activities defined as Tasks 1 and 2 in the RFP have been described below. Again, the specific scope of relevant environmental, public outreach, mapping and surveying, geotechnical and geomorphic services not appearing below, have been presented earlier in this scope of services.

**Task 10.1 - 30% Design Submittal** - This submittal will define the geometrics of the roadway at Azalea Avenue by developing layout plans, roadway typical sections, profile grades, Bridge Advance Planning Studies (APS), Bridge General Plan, and Bridge Type Selection Report.

The 30% Design Submittal will include conceptual drawings for the following project elements.

**APE Maps.** CIC will assist WRA with preparation of APE maps for use in conjunction with environmental and cultural resources studies. The Preliminary Environmental Scoping (PES) form will not be required since it has already been done.

**Preliminary Roadway Geometrics.** Roadway layout, typical sections and profile plans will be developed. The project will be designed using imperial units, and electronic plan preparation will be in the AutoCAD 2011 platform. The plans sheets for all design submittals will conform to the preferred Town of Fairfax border format.

**Design Exceptions.** Any design exceptions will be identified and presented to the Town and Caltrans with reasons why the exception is needed and what other alternatives were investigated.

**Structural Aesthetic Features.** MacDonald Architects will coordinate with the project's bridge engineers



in conceptualizing the design of Azalea Avenue Bridge and all of its related architectural amenities. This work will be illustrated for the Town, stakeholders and community via the following modes: computer renderings, photo montages, and sketches. After a thorough data research and analysis of the engineers' preliminary data, the bridge design team and MacDonald Architects will meet with the Town to brainstorm various design schemes. The next stage will involve generating hand drawn sketches and/or computer renderings of preliminary design alternatives. MacDonald Architects will prepare presentation materials for community group meetings as part of the public outreach program. MacDonald Architects design with a three scale system: 1) pedestrian movement; 2) bike movement; and 3) auto movement. Each movement requires details at different scales.

**Bridge Advance Planning Studies.** An Advance Planning Study (APS) will be conducted for the bridge to present the optimum bridge types. Up to three viable bridge types, minimizing disruptions and expediting construction, will be presented and the most suitable bridge recommended. The results of geotechnical investigations and hydraulic and geomorphic studies will be reflected in these studies. Conceptual design construction cost estimates will be prepared for each alternative. The APS package will be used to define the bridge work for the environmental process.

**Bridge Type Selection.** After the preferred bridge is selected, CIC will proceed with the Bridge Type Selection process. A General Plan will be prepared for the preferred structure type showing the proposed structure, foundation type and typical section. A Preliminary Type Selection Memo, including updated bridge cost, will be prepared and distributed to Town, Caltrans and others, as needed.

**Bridge Type Selections Meeting.** CIC will coordinate and schedule a Type Section Meeting with the Town and Caltrans to discuss the bridge. The goal will be to obtain the approval of the bridge type at the meeting. The meeting minutes and final General Plan sheet will be submitted to the Town of

Fairfax and Caltrans for approval.

**Task 10.2 - 65% Plans, Specifications & Estimate (Intermediate PS&E)** - This task will be completed after the environmental document has reached a certain level of completion and there is confidence that the ensuing design work will not be jeopardized by changes instigated by the environmental impacts analysis. For the purposes of this proposal, we are labeling the roadway, detour, traffic control, signing and striping, utility, drainage, street lighting, landscape architecture (revegetation) and SWPPP plans as "Civil Plans." One meeting will be held to review comments received on the 30% submittal and determine how each comment shall be addressed. The 65% submittal will further refine the 30% design and incorporate comments received from the review of the 30% Design Submittal package.

**Traffic Control Plans.** Traffic control plans will be prepared to include all temporary signing and striping, temporary railing, and other traffic control devices. A detour plan will be prepared, as required. Based on the preliminary design concept, an initial study will be prepared identifying potentially significant impacts associated with traffic operations during construction plus any increases in traffic during detours due to the anticipated street closure.

**Signing and Striping Plans.** Striping and Pavement Delineation plans will be prepared on a skeleton of the base layout plan sheets and include final and temporary traffic lines, pavement markings, channelizers, delineators, object markers, etc. Signs will be shown on the same sheets to depict new and existing signs, as well as those to be removed, relocated, salvaged or modified.

**Utility Plans.** Preliminary Utility Layout sheets based on information gathered in Task 6 above will be developed including conceptual relocation plans. Conceptual design plans will be developed for any Town-owned facilities that will require relocation.

**Drainage Facilities Plans.** An analysis will be done to determine drainage needs for the proposed Azalea Avenue Bridge improvements. Preliminary drainage plans will be developed using a 10-year



storm as design criteria. This analysis will determine catch basin locations and pipe sizing needs.

**Street Lighting Plans.** The need for street lighting at Azalea Avenue Bridge will be analyzed. Lighting, if necessary, will be serviced from existing circuits if adequate capacity is found available. Conduit and wiring will be spliced and extended from the existing service, with pull boxes included for pulling of cables and splices at new fixtures. If the existing service does not have the required ampacity, a new service from the serving electrical utility will be established. All street conduits, wiring and pull boxes will meet local standards and applicable codes. Light lamps will be an efficient LED type with daylight sensors. Light poles will be selected in consultation with the Town if a decorative pole is desired.

**Right-of-Way Plans.** The existing right-of way, as identified in Task 4, will be shown on the improvement plans. New right-of way takes are not anticipated. Construction easements will also be identified and shown.

**Revegetation Plans.** WRA will prepare schematic (30% Design) revegetation plans, cross sections and narratives for inclusion in the CEQA/NEPA documents, and permit applications such as CORPS and CDFW. The 30% design submittal will include a draft and final submission. As part of this task, WRA will prepare an estimate of the cost of construction for the 30% design. WRA's scope includes time to conduct a site assessment of the proposed revegetation site, and to prepare one sheet of restoration planting plans and one sheet of irrigation plans for the project. This task includes time to participate in two design coordination meetings with Town staff and the design team.

**Storm Water Pollution Prevention Plans (SWPPP) and Best Management Practices (BMPs).** SWPPPs will be developed based on best management practices for this type of construction work, especially for work around waterways. Details and specifications will be presented for preventive measures and erosion control devices.

**Unchecked Bridge Plans.** Plans for Azalea Avenue Bridge will be developed based on the civil layout,

staging, hydraulics, topography, and Bridge Type Selection Report recommendations. Aesthetic features for the bridge, such as treatment of concrete surfaces, railings and light fixtures, will be incorporated into the design, where applicable. Upon the completion of this phase of work, the bridge plans will be 100% designed and detailed, and ready for the Independent Check process.

**Combined Intermediate Civil & Structural PS&E (65% Design)** - Preliminary bridge and civil PS&E for the bridge will be combined and reviewed in-house for quality and consistency of the overall work. The cost estimate will be based on preliminary, unchecked quantities, with unit prices from the latest Caltrans Contract Cost Data publication. The 2015 Caltrans Standard Specifications and Plans will be our standard reference document for the bridge work. All other design work will use the Town's and County of Marin Standard Specifications as the standard reference document. The Intermediate PS&E package will be submitted to the Town for review. Project plans will include Title and Location Map; Layout; Profiles; Typical Cross Sections; Stage Construction; Construction Details; Drainage Layouts; Drainage Profiles; Signing and Pavement Delineation Layouts; Detour/Temporary Traffic Handling; Storm Water Pollution Prevention Plans (SWPPP); Utility Layouts; Revegetation Plans; Electrical Lighting Plans; and the entire set of Bridge Plans.

### **Task 10.3 - 95% Plans Specifications & Estimate (Draft PS&E)**

**Civil Plans.** One meeting will be held to review comments received on the 65% Submittal and determine how each comment shall be addressed. This submittal will fully develop the civil PS&E package based on the comments received from the 65% Submittal. All components of the design will be defined and shown on the plans. Quantity estimates and cost will be updated and independently checked as a QC measure.

**Checked Bridge Plans.** An independent check of each design will be performed as part of the QC process. CIC will also prepare two independent sets of bridge quantities take-offs. Bridge special





provisions, specifications, Marginal Estimate of construction costs and Suggested Working Day Schedule will be prepared in Caltrans format. All documents will be signed and sealed by California registered engineers.

**Combined 95% (Draft PS&E) Submittal.** Checked bridge and civil plans, updated specifications and quantity estimate for the entire project will be combined once again, senior-reviewed as part of our quality control plan, and submitted to the Town. The project cost estimate will be based on the final checked quantities. A meeting will be scheduled with the Town to discuss the submittal and comments.

**Task 10.4 - 100% Plans Specifications & Estimate (Final, "Camera-Ready" PS&E)** - This task includes preparing the final submittal of the construction drawings and technical specifications to the Town upon addressing the comments received on the 95% submittal. This submittal will contain the final bid documents, signed by the designers and checkers, ready for advertising. The final QA/QC will be done before this submittal. Boilerplate specifications consisting of legal sections and General Conditions will be provided by the Town for incorporation into the construction documents. A Resident Engineer's Pending File, following the Caltrans format, will also be submitted.

**TASK 11 - BIDDING ASSISTANCE**

CIC will provide assistance with Right-of-Way and Utility Certifications as well as HBP Authorization to Proceed with Construction for the project. The design team will be available to respond to construction-related questions from prospective bidders. The activities may include responding to written questions in a "General Response to Bidders Question," preparing addenda for the contract documents, if required, attending a Pre-Bid Meeting and bid evaluation (if requested).

**TASK 12 – SERVICES DURING CONSTRUCTION**

The CIC team will be available for engineering services requested by the Resident Engineer (RE) during the construction. These services will

include:

**Pre-construction conference.** CIC Project Manager will attend a meeting with the Town, the Contractor and others, once the project has been awarded and prior to the start of work.

**Review of Shop Drawings.** The CIC staff will review shop plans for prestressing and joint seals, and will list any exceptions found for the Contractor's correction and resubmittal.

**Responding to Requests for Information (RFIs).** CIC will respond to the Contractor's questions communicated through the Resident Engineer (RE) with written memos addressed to the RE. Response to Cost Reduction Incentive Proposal (CRIP), for the benefit of the Contractor, is not included in the scope.

**Field Visits.** We have scheduled three field visits during the construction period to consult with the Town and the Resident Engineer, as needed.

**As-built plans corrections.** The project plans will be revised, as necessary, for archiving at the end of the construction period with field input from the RE to reflect the changes made. The corrections can be done either manually or electronically, as desired by the Town.

**PROJECT DELIVERABLES**

A consolidated list of deliverables is presented on the following two pages based on the scope tasks. Numbers in brackets indicate hard copies submitted. Where the number is not shown, the requisite copies will be provided.



Scope Task	Deliverables
Task 1	<p><b>PROJECT MANAGEMENT AND ORGANIZATION</b></p> <ul style="list-style-type: none"> <li>• Project Instructions Manual (10)</li> <li>• CUFS Binders (1 set)</li> <li>• Minutes of various meetings (1)</li> <li>• Digital Photos (Electronic)</li> </ul>
Task 2	<p><b>ENVIRONMENTAL STUDIES AND PERMITS</b></p> <ul style="list-style-type: none"> <li>• NES Report; NLAA or BA Reports</li> <li>• JARPA applications (Wetland Delineation, Pre-Construction Notification, RWQCB Certification application, Streambed Alteration Agreement)</li> <li>• Wetland Mitigation Plans, Mitigation Monitoring and Reporting Program</li> <li>• NEPA Categorical Exclusion with Technical Studies</li> <li>• CEQA Initial Study/MND, Draft and Final Versions</li> <li>• Section 106 Documentation, including HPSR, ASR &amp; HRER</li> <li>• Visual Impact Assessment Report</li> <li>• Community Impact Assessment Reports (if needed)</li> </ul>
Task 3	<p><b>PUBLIC OUTREACH</b></p> <ul style="list-style-type: none"> <li>• Website Maintenance</li> <li>• Mailing List</li> <li>• Fact Sheets</li> <li>• Meeting Announcements and Exhibits</li> <li>• Newsletters</li> <li>• Press Releases</li> </ul>
Task 4	<p><b>MAPPING AND SURVEYING</b></p> <ul style="list-style-type: none"> <li>• AutoCAD Base Map &amp; Digital Terrain Model (DTM).</li> <li>• Updated Base Map with Design Survey Data.</li> <li>• Copies of Field Notes and Utilities Information</li> <li>• Hybrid Map (24x36) OD Aerial and Ground Surveys</li> <li>• Copies of Title Reports and Deeds</li> <li>• Plats &amp; Legal Descriptions for Easements or Right of Way Takes as-needed (optional)</li> </ul>
Task 5	<p><b>GEOTECHNICAL INVESTIGATION AND PAVEMENT DESIGN</b></p> <ul style="list-style-type: none"> <li>• Preliminary and Final Foundation Report (5)</li> <li>• Bridge Log of Test Borings (1 mylar, copies)</li> </ul>
Task 6	<p><b>UTILITY INVESTIGATION AND COORDINATION</b></p> <ul style="list-style-type: none"> <li>• Utility Markups and Updates (Utility Plans will be included in civil plans)</li> </ul>



Scope Task	Deliverables
Task 7	<b>Stream Hydrologic and Hydraulics</b> <ul style="list-style-type: none"> <li>• Preliminary &amp; Final Hydraulics Report (5)</li> <li>• Cross-section Survey Data</li> <li>• Location Hydraulic Study Report (5)</li> </ul>
Task 8	<b>STREAM GEOMORPHOLOGY</b> <ul style="list-style-type: none"> <li>• Geomorphic Assessment and Erosion</li> <li>• Erosion Protection Memo (5)</li> </ul>
Task 9	<b>TRAFFIC ANALYSIS</b> <ul style="list-style-type: none"> <li>• CEQA Traffic Studies (included in ED)</li> <li>• Traffic Detour &amp; Staging Report</li> </ul>
Task 10	<b>CIVIL AND STRUCTURAL DESIGN</b> <ul style="list-style-type: none"> <li>• Bridge Advance Planning Studies Report</li> <li>• Bridge Type Selection Report (3)</li> <li>• Bridge General Plans (3)</li> <li>• 30%, 65%, 95% and Final Plans (5 sets each)</li> <li>• Bridge Design and Check Calculations (1)</li> <li>• Bridge Independent Check Calculations (1)</li> <li>• Quantity Calculations &amp; Check (1)</li> <li>• Cost Estimates and Summary Forms (12)</li> <li>• RE Pending File (1)</li> <li>• Final Project Specifications (1)</li> <li>• Final Reproducible Plans (1)</li> </ul>
Task 11	<b>BIDDING ASSISTANCE</b> <ul style="list-style-type: none"> <li>• Contract Bid Addenda (if required)</li> <li>• Response to bidder Questions (if required)</li> </ul>
Task 12	<b>SERVICES DURING CONSTRUCTION</b> <ul style="list-style-type: none"> <li>• Site Visit Memos</li> <li>• Shop Drawings Review Comments</li> <li>• Response to RFIs</li> <li>• As-built Correction Drawings</li> </ul>