BOS AGREEMENT NO. _____
DOT AGREEMENT NO. 240006

AMENDMENT **1**

Original Agreement No.	**24-057**
Amendment 1	_____

FIRST AMENDMENT TO COUNTY OF MENDOCINO AGREEMENT NO. 24-057/ DEPARTMENT OF TRANSPORTATION AGREEMENT NO. 240006 FOR PROFESSIONAL ENGINEERING CONSULTANT SERVICES FOR THE REDEMEYER ROAD EXTENSION PROJECT, COUNTY ROAD 215A

This first Amendment to Agreement No. Board of Supervisors (BOS) Agreement No. 24-057/Department of Transportation (DOT) agreement No. 240006 is entered into by and between the **COUNTY OF MENDOCINO**, a political subdivision of the State of California, hereinafter referred to as "COUNTY," and GHD, Inc.;, hereinafter referred to as "CONSULTANT," the date this Amendment is fully executed by all parties.

WHEREAS, BOS Agreement No. 24-057/DOT Agreement No. 240006 was entered into on April 23, 2024 (the "Initial Agreement"); and

WHEREAS, upon execution of this document by COUNTY and CONSULTANT, this first Amendment will become part of the Agreement and shall be incorporated therein; and

WHEREAS, Caltrans has required an Extended Phase 1 study for buried cultural resources; and

WHEREAS, CONSULTANT has prepared the attached "Revised Scope of Work" attached hereto as Exhibit A and incorporated herein by this reference, including additional or expanded tasks as compared to the original scope of work; and

WHEREAS, it is the desire of COUNTY and CONSULTANT to increase the total amount payable by $246,000 from $4,916,000 to $5,162,000.

NOW, THEREFORE, we agree as follows:

1. The total contracted amount set out in the Agreement is hereby increased by $246,000 from $4,916,00 to $5,162,000.
2. The Exhibit A, Definition of Services, set out in the Agreement is hereby altered to include additional or expanded tasks outlined in Exhibit A, attached herein.

All other terms and conditions of the Agreement shall remain in full force and effect.

//

//

//

IN WITNESS WHEREOF

DEPARTMENT FISCAL REVIEW:

By: _____
HOWARD N. DASHIELL, Director
TRANSPORTATION

Date: June 11, 2025

Budgeted: ☒ Yes ☐ No

Budget Unit: 3041

Line Item: 2184

Grant: ☒ Yes ☐ No

Grant No.: LTCAP-5910(143)

COUNTY OF MENDOCINO

By: _____
JOHN HASCHAK, Chair
BOARD OF SUPERVISORS

Date: _____

ATTEST:
DARCIE ANTLE, Clerk of said Board

By: _____
Deputy

I hereby certify that according to the provisions of Government Code section 25103, delivery of this document has been made.

DARCIE ANTLE, Clerk of said Board

By: _____
Deputy

INSURANCE REVIEW:

By: _____
Risk Management

Date: 06/20/2025

CONSULTANT/COMPANY NAME

By: _____
SIGNATURE

Date: June 27, 2024

NAME AND ADDRESS OF CONSULTANT:

GHD, Inc.

2200 21st Street

Sacramento, CA 95678

By signing above, signatory warrants and represents that he/she executed this Agreement in his/her authorized capacity and that by his/her signature on this Agreement, he/she or the entity upon behalf of which he/she acted, executed this Agreement

COUNTY COUNSEL REVIEW:

APPROVED AS TO FORM:

By: _____
COUNTY COUNSEL

Date: 06/20/2025

EXECUTIVE OFFICE/FISCAL REVIEW:

By: _____
Deputy CEO or Designee

Date: 06/20/2025

Signatory Authority: $0-25,000 Department; $25,001- 50,000 Purchasing Agent, $50,001+ Board of Supervisors
Exception to Bid Process Required/Completed ☐ _____
Mendocino County Business License: Valid ☐
Exempt Pursuant to MCC Section: _____

Amendment No. 1 – Exhibit A

Revised Scope of Work for the Redemeyer Road Extension Project

Updated: 4/29/2025

At this time the preferred alignment has been selected, and our Preliminary Environmental Study (PES) has been approved by Caltrans. Therefore, this scope of work amends the original scope to be consistent with the requirements of completing the PA/ED Phase of the project and includes additional studies not originally anticipated but required by Caltrans based on the PES findings.

As noted in the Request for Proposal (RFP), the County intends to award this contract for both Allocation 1 (PA/ED) and Allocation 2 (PS&E). However, the County will issue two Notice-to-Proceeds (NTP) for this work: the first for Allocation 1 (PA/ED) after contract execution, and the second for Allocation 2 (PS&E) once the PA/ED has been finalized. The scope of work, schedule and fee for PS&E will be negotiated and finalized once a preferred alignment has been selected. Once the scope, schedule, and fee has been finalized, the County will provide an NTP for Allocation 2.

The following scope of work is for Allocation 1 only and includes the anticipated work required to complete the Project Approval and Environmental Document (PA/ED) phase, including documents and studies required to satisfy the NEPA and CEQA processes and those required for preliminary engineering plans, 35% complete. The Allocation 1 scope includes advancement of the 65% PS&E to help ensure the design for long lead permitting related to the flood plain (FEMA) and the rail corridor crossing (CPUC). Allocation 2 of this Scope of Work will be prepared to reflect the work required to complete the Plans, Specifications, and Estimate (PS&E) phase, including complete plans, specifications and detailed cost estimate; all required project permits; and construction assistance as needed. It is anticipated that the fee for Allocation 2 will range from $3M - $5M in fees, depending on engineering and support services required for the selected preferred alignment.

It should be noted that the use of "CONSULTANT" in the scope is assumed to be the consultant team, which will be led by GHD and supported by our teaming partners.

Allocation 1 – PA/ED Scope of Work

1. Task 1 - Project Management and Coordination

Project Management and Coordination will include the following subtasks:

1.1 Project Initiation

1.1.1 Kick-off Meeting

Includes a meeting at the MCDOT offices followed by a site visit. Attendees will include COUNTY project manager, CONSULTANT project manager and point of contact, design engineer, environmental lead, as well as structures lead, and staff from Caltrans District 1. CONSULTANT will prepare agenda and other relevant materials for the meeting to discuss scope, schedule, and alternatives for consideration. Meeting notes will be taken and distributed to all attendees.

1.1.2 Preliminary Research

Includes research and review of various historic documents including: as-built plans for the existing roadway, right of way, geology, Lake Mendocino Inundation Study, maintenance information, etc. COUNTY will assist in this effort to the limit of COUNTY records.

1.1.3 Field Investigation

Includes data gathering on the part of COUNTY and CONSULTANT leading to the completion of the various reports and forms required for the funding, permitting, right of way acquisition, and construction of the project. The field investigation will be conducted over one day and include key team members.

Deliverables

- *Kick-off meeting agenda, notes, and related materials (electronic PDF)*

1.2 Coordination

All coordination efforts are assumed to be conducted for the duration of the PA/ED Phase, which is estimated at 16 months.

1.2.1 Project Coordination with County

CONSULTANT will coordinate with COUNTY through phone conversations, emails, written memorandum, fax etc.

1.2.2 Project Work Plan

CONSULTANT will develop, maintain, and implement a detailed work plan that includes project goals and objectives, roles and responsibilities, a communication plan, project controls, scope and deliverables, schedule and budget, and the CONSULTANT'S quality control plan.

1.2.3 Project Schedule

CONSULTANT will develop a project schedule outlining tasks and subtasks to be performed. The project schedule will include CONSULTANT'S internal quality control process and designated COUNTY review of submitted documents. CONSULTANT shall update the project schedule as necessary, but by the third week of March, June, September, and December at a minimum. COUNTY will be included in the distribution of all schedule updates. These may be included with monthly billing.

1.2.4 Budget Management

CONSULTANT will maintain and manage CONSULTANT team's schedule and budget and sub-consultant contracts.

1.2.5 Monthly Reports and Invoices

CONSULTANT shall submit monthly progress reports. Progress reports will include status of services by task breakdown, problems encountered, percent of services complete as of the date of the progress report, and discussion of schedule changes, work products, issues currently being addressed, and other items of interest as applicable. CONSULTANT will prepare monthly invoices in accordance with Exhibit B, Payment Terms, of this agreement.

Deliverables

- *Draft and Final Project Work Plan (electronic PDF)*
- *Project schedule with updates as necessary, but at least each quarter (electronic PDF)*
- *Three month Look Ahead Schedule (electronic PDF)*
- *Project LAPM/LAPG Exhibits, as needed for State-only funding (electronic PDF)*
- *Monthly invoices and progress reports (electronic PDF)*
- *Communication documents (emails, memos, etc.) (electronic)*

1.3 Project Team Meetings

CONSULTANT will schedule, prepare for, and attend monthly project team status meetings with COUNTY to review the scope of work, project goals, schedule, tasks progress, and issues to be addressed. Key team members will be present at each team meeting depending on items to be discussed in person as a conference call (via Microsoft Teams). CONSULTANT shall assume two project team meetings at the MCDOT offices. Additional meetings may be requested by COUNTY on a time and travel basis for

CONSULTANT. Additional meetings requested by the CONSULTANT shall be considered included as a part of this agreement.

Team meetings may be held as conference calls through a service established by CONSULTANT.

Deliverables

- *Meeting agendas*
- *Meeting materials (graphics, visual aids, and other presentation items)*
- *Updated Issue/Action Item/Decision Log*
- *Updated Project Schedule*
- *Meeting Minutes within one week of meeting*

Services to be Provided by the County

- *COUNTY will make appropriate staff available for meetings and site visits.*

1.4 Quality Control Review

The CONSULTANT will provide QA/QC review of each design and document submittal before submitting to the COUNTY. QA/QC will be performed by senior staff and utilize CONSULTANT's internal resources.

2. Task 2 – Environmental Studies and Documentation

This task is for the identification of the project environmental impacts and descriptions of mitigation measures to be utilized to minimize those impacts in accordance with the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), and Chapter 6 of the Caltrans Local Assistance Procedures Manual and completion of the Environmental Documents.

CONSULTANT will prepare and complete documents for COUNTY to satisfy State and Federal environmental regulations. Tasks to be completed by CONSULTANT during PA/ED include preparation of a NEPA Preliminary Environmental Study (PES), CEQA and NEPA technical studies, joint CEQA/NEPA environmental documentation, and coordination and mediation of public meetings. All documents submitted to COUNTY shall include a written description of the proposed project, design alternatives (if any), as well as a demonstrated purpose and need of the project.

CONSULTANT will use previous studies and reports as a basis for completing the environmental documents, to the extent that such studies and reports are adequate.

Deliverables

- *Draft submittals: one e-mailed PDF and one Word DOCX file.*
- *Final reports: if requested, one printed bound copy will be submitted to COUNTY. All will have original signatures. The number required by the approving agency will be submitted by COUNTY.*
- *Upon approval of any report, one copy shall be submitted to COUNTY as a complete, uniformly bound, approved document and a duplicate PDF.*
- *Any report submitted to the approving agency for final approval shall be complete, including the results of all communications with the approving agency.*

2.1 Environmental Project Management and Coordination

This task is included as a billing item only. The duties performed within this task are defined in Task 1 but will be focused on the environmental coordination.

2.2 NEPA Preliminary Environmental Study

CONSULTANT will complete a Caltrans NEPA Preliminary Environmental Study (PES) and Field Review Form describing the project, answering each PES Form question, and providing required supporting documentation. A draft PES and Field Review Form will be submitted for COUNTY review. CONSULTANT

will address COUNTY comments and provide revised versions for the COUNTY to submit to Caltrans for review.

2.3 CEQA/NEPA Environmental Documentation

Following Caltrans approval of the PES, CONSULTANT will complete Caltrans requested Technical Studies and a combined CEQA/NEPA environmental document, which is assumed to be a joint Initial Study/Environmental Assessment (IS/EA) using the Caltrans annotated outline.

2.3.1 CEQA/NEPA Technical Studies

CONSULTANT will prepare required Technical Studies to ensure compliance with both State and Federal requirements, and for compliance with Caltrans LAPM and Standard Environmental Reference, where applicable. Prior to initiating the environmental Technical Studies, CONSULTANT will prepare a technical memorandum describing the proposed methods of analysis, data sources, and assumptions to be used in the analysis, including proposed software, modelling techniques, and significance thresholds. Following COUNTY review and approval, CONSULTANT will complete the technical studies. Each technical study will undergo an internal QA/QC process prior to being submitted to the COUNTY for review. This scope of work also assumes up to two rounds of agency review for each technical study, summarized below.

- **Biological Resources Report/Natural Environment Study**. CONSULTANT will review available information as it pertains to potential project activities that may occur along the road extensions, and biological resources that may occur in the project vicinity. CONSULTANT will conduct a single reconnaissance-level field survey of the project areas to document existing biological conditions where the project could have a direct or indirect impact on biological resources. CONSULTANT will assess the potential of occurrence of special-status animal and plant species and map locations of any sensitive or regulated habitats that may be present along and adjacent to the project corridor. A Biological Resources Report/Natural Environment Study will be prepared to be sufficient for CEQA and NEPA review of biological resources associated with the project.
- **Biological Assessment**. Formal or informal Endagered Species Act (ESA) Section 7 consultation with the National Marine and Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) is anticipated for the project. Federally-listed anadromous salmonid species that occur in the Russian River are under the jurisdiction of NMFS and the federally proposed threatened northwestern pond turtle (*Actinemys marmorata*) is under the jurisdiction of USFWS. – CONSULTANT will prepare two Biological Assessments (BA). For NMFS regulated species, the BA will identify the occurrence of the federally endangered coho salmon (*Oncorhynchus kisutch*; Central California Coast ESU pop. 4), the federally threatened Chinook salmon (*Oncorhynchus tshawytscha*; California Coastal ESU pop. 17), the federally threatened steelhead (*Oncorhynchus mykiss irideus*; Central California Coast DPS pop. 8), and their designated critical habitats that are located in the proposed project area. The NMFS BA will assess the potential direct, indirect, and cumulative impacts of the project on the federally-listed salmonid species and their habitats. A second BA will be prepared for the USFWS regulated northwestern pond turtle, which is anticipated to be formally listed in 2025 prior to project implementation. This BA will assess the potential direct, indirect, and cumulative impacts of the project on the northwestern pond turtle and its habitats.
- **Special Status Plant and Sensitive Natural Community Surveys**: GHD will complete two seasons of surveys for special status plants known or suspected to occur in the project vicinity. One survey will be conducted each season to cover the flowering period for special status plants. During floristic surveys, natural community assemblages will be assessed to determine if they align with Sensitive Natural Community (SNC) alliance definitions. Results from protocol-level special status plant and SNC surveys will be incorporated into the project BRR/NES, including mapping for any recorded occurrences of special status plants and/or potential SNC.
- **Wetland Delineation**. CONSULTANT will investigate the proposed road extension project areas to delineate and map wetlands and other waters of the U.S./State (e.g., the Russian River), where present. Delineation methods will follow the USACE Wetlands Delineation Manual (USACE 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West (Version 2.0) (USACE 2008), in addition to USACE criteria from the National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams (Interim Version) (USACE 2022) .. The Russian River and other potential watercourses will be delineated using the Ordinary High-Water Mark (OHWM) of the stream channel. Wetland boundaries and stream channels will be delineated using a high-accuracy (sub-meter) GPS device running on ESRI GIS software.
- **Hydroacoustic Assessment**. CONSULTANT will prepare a hydroacoustic assessment for the project. It is anticipated that the vibratory hammer installation of pilings for the bridge will be located outside of

the low flow channel of the Russian River, but still close enough to the main channel of the river to warrant conducting a hydro-acoustic study. The hydroacoustic analysis will show the predicted sound levels that would be generated in the water at distances commencing at the likely closest edge of the water and will additionally analyze the likely sound levels at incrementally increasing distances radiating in all pertinent directions from the pile driving. Analysis will be based on the specific location, substrate, water depth, pile material, timing, duration of the vibratory driving and any other project specific design details that may be contributing factors. The analysis will include an estimate of the rate at which anticipated noise levels fall off, and to what degree, over what distance. If the hydro-acoustic study identifies potential impacts of vibratory pile installation on fish species, appropriate mitigation measures can be developed and implemented to minimize these impacts. For example, timing pile installation activities to avoid critical periods for spawning or migration or implementing noise reduction measures.

- **Tree Inventory Survey**. CONSULTANT will conduct an inventory survey of all trees within the permanent impact footprint of the Project site, that have been identified for removal. A report will be prepared after the survey which include the following information for each tree surveyed: 1) a Figure showing the location of each tree surveyed, 2) species, 3) diameter at breast height (DBH), 4) estimated height, 5) health assessment score, and 6) photograph. The report will also include information on whether the surveyed trees are protected by any City or County tree ordinance regulations.
- **Noise and Vibration Assessment**. CONSULTANT will prepare a noise and vibration assessment for the project. The noise assessment will quantify existing ambient noise levels at locations representative of the nearest noise-sensitive receivers and along truck haul routes during the daytime, evening, and nighttime. The noise from sources associated with the proposed project will be estimated and then projected to adjacent noise sensitive uses with appropriate acoustic modelling techniques. The analysis will assess suture noise exposure contours, construction noise and vibration levels, potential impacts, and recommended mitigation measures, if required. The noise assessment will address noise as a NEPA/23 CFR 772 issue, as well as a CEQA issue.
- **Transportation Assessment.** CONSULTANT will prepare a transportation Assessment of the project addressing CEQA and NEPA evaluation criteria. This includes identifying if the project (1) conflicts with a program, plan, ordinance, or policy addressing the circulation system; (2) conflicts or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b) (vehicle miles travelled); (3) substantially increase hazards due to a geometric design feature; and (4) result in inadequate emergency access. As part of the vehicle miles travelled (VMT) analysis, CONSULTANT will identify if the project can be screened out based on Mendocino Council of Governments (MCOG) SB 743 VMT Regional Baseline Study (2020), which utilizes recommendations in OPR's Technical Advisory (2018). OPR's Technical Advisory provides an extensive list of projects which are unlikely to lead to induced travel, including addition of roadway capacity on local or collector streets provided the project also substantially improves multimodal conditions (OPR Technical Advisory, pp. 20-21). CONSULTANT will document the screening criteria. In addition, and to provide substantial evidence in support of the screening criteria, CONSULTANT will utilize the MCOG regional travel demand model to estimate total VMT with and without the new roadway connection, for up to two-year scenarios (existing and future years). The project is anticipated to reduce VMT and reduce travel distance since Redemeyer Road does not currently connect north to any roads, providing a shorter route west and north, and the project would provide crucial access for emergency access and evacuation routes. CONSULTANT is familiar with the MCOG model and has utilized it to develop an updated land use and network base year scenario for the City of Ukiah General Plan Update. Since the proposed project is within the City of Ukiah's Sphere of Influence, the COUNTY may want to utilize this version of the model to estimate VMT for the Redemeyer Road project. CONSULTANT assumes only one model will be utilized and can work with the COUNTY in determining which model would be preferred for estimating VMT. The VMT analysis and evaluations pertaining to the remaining CEQA questions will be documented in technical memorandum.
- **Tribal Coordination & Cultural Resources Study**. CONSULTANT will assist the COUNTY in notifying applicable California Native American tribes pursuant to Assembly Bill (AB) 52 and Public Resources Code sections 21080.3.1 and 21080.3.2. This will include preparation of an AB5 52 notification letter and up to one coordination meeting. CONSULTANT will also complete a cultural resources study for the project consistent with both CEQA and Section 106 of the National Historic Preservation Act. CONSULTANT will develop an Area of Potential Effect (APE) Map for COUNTY and Caltrans approval. CONSULTANT will prepare an Archaeological Survey Report (ASR) and Historic Property Survey Report (HPSR). The study will include a review of records on file at the Northwest Information Center, coordination with the Native American Heritage Commission for a review of the Sacred Lands File, coordination with appropriate tribal communities, a field survey of the project area, and coordination with the State Office of Historic Preservation. The results of the study will be

documented in Caltrans template reports that provides an impact analysis and mitigation measures, as necessary.

– **Extended Phase I Subsurface Testing for Cultural Resources**. CONSULTANT will assist the COUNTY in completing the Caltrans-requested Extended Phase I subsurface testing for cultural resources. The rationale for the proposed subsurface testing is that the project area has been determined to be highly archaeologically sensitive for pre-contact or Native American cultural resources, and the Native American Heritage Commission has indicated a positive finding in their search of the Sacred Lands Files. Proposed subsurface testing will consist of mechanically excavated trenches and shovel test pits within the area of proposed ground disturbance for the construction of the road, bridge, and related improvements. The results of the Extended Phase I subsurface testing will be documented in a Caltrans template report that will be combined with the ASR and HPSR. CONSULTANT will conduct the XPI in phases including pedestrian survey, and subsurface testing methods of mechanical trench excavations and shovel test pits (STPs). Subsurface testing is expected to be completed over approximately eight weeks; two weeks for STPs and six weeks for trenching. Trenching: This XPI will include up to approximately 450 feet of mechanically excavated trenches placed throughout the APE including two on each side of the Russian River where the proposed bridge abutments will be constructed. Proposed trenches will be between 5 and 10 feet below ground surface and approximately 3 feet wide. An archaeologist will monitor the excavation and document the geoarchaeology and soil profile of each trench. A 5 percent sample of the excavated soils will be screened through a ¼-inch screen. If culturally sensitive soil or archaeological material is observed, trenches may need to be stepped to a one-to-one ratio to comply with OSHA regulations so that an archaeologist may enter the trench to document the resource. All soil will be backfilled into the trench. A Staff Archaeologist familiar with geoarchaeological processes will analyze the soils in the trench or review the findings. Shovel Test Pits: Approximately 70 to 75 STPs will be dug within the APE. The STPs will be 50 x 50 centimeters, dug every approximately 20 meters along a transect line. The depth of the STPs varies based on proposed ground disturbance along the road alignment. If needed, a manual auger will be used to excavate the full depth of the STP. STPs will be documented in informal 10 cm levels and material sifted through a ¼-inch mesh screen. If cultural constituents are identified in an STP, additional STP units in 10-meter intervals radiating from the positive unit will be dug to determine the boundaries of the subsurface resource. Archaeological resources will be recorded only if at least three artifacts are identified within a 100-square meter area. No cultural material will be collected; any identifiable cultural material will be redeposited in the unit from which it was excavated. The vertical ADI is expected to be between five and eight feet deep below current ground surface based on proposed project activity location and slope. Positive STUs will be excavated to sterile soil. Following the XPI testing, a combined XPIR/ASR report will be completed detailing the methods and findings of the study. If a site is determined to be present within the APE, further consultation with Caltrans will be required for an additional scope and fee. If, in consultation with Caltrans, it is determined that the proposed project activities will not affect the site within the APE, an Environmentally Sensitive Area-Action Plan (ESA-AP) will be developed by ASC and approved by Caltrans for use during construction activities. The in-progress Historic Properties Survey Report (HPSR) will be finalized following the XPIR review, as well as the Finding of No Adverse Effects (FONAE) letter for this project. If the site is determined to be present within the APE and will likely be affected by proposed project activities, Caltrans may require additional work outside of this scope. That the XPI study will not evaluate either the National Register of Historic Places (NRHP), nor the California Register of Historic Places (CRHR) eligibility or significance for any cultural resources that may be identified. As part of this scope additional Tribal Consultation efforts are required. CONSULTANT will contact the NAHC and appropriate tribal communities in coordination with Caltrans for the additional XPI scope of work. The following assumptions were made while putting this scope together:

  - A record search was conducted under the initial contract for this project (PO# 380-004243).
  - CONSULTANT will contact Native American individuals and organizations in coordination with the Caltrans Local Assistance Archaeologist.
  - One review and final approval of the Extended Phase I Proposal by GHD, County of Mendocino, and Caltrans.
  - One review of the ASR/XPI Report by GHD, County of Mendocino, and Caltrans.
  - One review of the ESA (if needed) by GHD, County of Mendocino, and Caltrans.
  - Cultural resources will be recorded at an additional cost of $650/per resource.
  - Compensation for Tribal representatives is included in the cost of the study. Tribal representatives require compensation for monitoring of the XPI fieldwork. CONSULTANT will contract directly with

the Tribal organization. Estimated cost of a local backhoe operator is $240/hour plus transport cost of $185/hr.

- **Historical Resource and Section 106 Compliance**. CONSULTANT will prepare historic resource compliance documentation that addresses historic architectural / built environment resources for both CEQA and Section 106 compliance. This will include establishing an APE for built resources and preparing a Finding of Effect to assess project impacts to the NWPRR segment in the APE that Caltrans will consider NRHP eligible for this project. It is assumed that this report will be a Finding of No Adverse Effect (FNAE). A Historical Resources Evaluation Report (HRER) to inventory and evaluate built resources in the APE is not included in this scope of services but could be provided if needed.
- **Air Quality**/**GHG Analysis**. Mendocino County is in attainment or is unclassified for all National Ambient Air Quality Standards. Therefore, a regional level or project level conformity analysis is not anticipated to be needed for the project since federal non-attainment and maintenance areas are not applicable to the project area. CONSULTANT will prepare air quality and GHG analysis for the project to support the joint IS/EA. CalEEMod will be used to predict construction period emissions. Emfac2021 will be used to predict traffic emissions. Potential air quality impacts from criteria air pollutants will be evaluated by comparing net new emissions to appropriate thresholds. To assess impacts to climate change, project GHG emissions will be computed and compared to recommended significance thresholds. An Air Quality Technical Report will be prepared summarizing the results of the analysis as well as any required mitigation measures to reduce impacts to a less-than-significant level. The report will contain a regional air conformity statement and a project level conformity statement, if applicable
- **Visual Impact Analysis**. CONSULTANT will determine the appropriate level of visual impact analysis by first conducting a VIA Scoping Questionnaire as developed by the FHWA Guidelines for the Visual Impact Assessment of Highway Projects. The results of this analysis and rating chart will determine the appropriate VIA Level. As it is unknown at this point what level of VIA will be required, CONSULTANT has assumed that the project will result in an Abbreviated VIA Level or Memorandum level. As part of the assessment, CONSULTANT will create a 3D model for up to three unique locations that can then be used to generate still images showing the proposed conditions from key viewpoints. The images will be developed by combining georeferenced base plans, architectural models, existing aerial maps, and site photos to create a model of the design within the existing environment. The extent of the model will be limited to the immediate vicinity of the unique locations selected. If unique site photos and viewsheds are desired for the creation of still images, CONSULTANT will provide one photoshopped image per location. The images will provide a before and after picture of the site showing the visual impacts associated with the development. Additionally, the visualizations will be developed using rendering software that can provide different material options to assist the aesthetics analysis. Image views for each location will be set up to highlight the advantages of each option, as well as their visual impact from selected viewpoints. **(***Updated 3/17/2025)* CONSULTANT has determined the appropriate level of visual impact analysis by conducting a VIA Scoping Questionnaire as developed by the FHWA Guidelines for the Visual Impact Assessment of Highway Projects. The results of this analysis and rating chart determined the appropriate VIA Level required is a Standard VIA Report. As part of the assessment, CONSULTANT created a 3D model of the project and provided still images showing the proposed conditions from key viewpoints. The images were developed by combining georeferenced base plans, architectural models, existing aerial maps, and site photos to create a model of the design within the existing environment.
- **Community Impact Assessment Report**. CONSULTANT will prepare a community impact assessment technical report that includes an analysis of potential relocation impacts on businesses and/or residences for the project. CONSULTANT will collaborate with Caltrans Right-of-Way Program staff, as appropriate, for the analysis. CONSULTANT will prepare a relocation impact memorandum for the project following the format found in Chapter 10, Section 10.02 of the Caltrans Right-of-Way Manual.

Deliverables

- 1 electronic copy of draft and final technical reports
- For the XPI the following will be provided:
  - Prepare an Extended Phase I Proposal (XPIP) prior to subsurface testing.
  - Prepare an Archaeological Survey/Extended Phase I Report (ASR/XPIR) following subsurface testing.
  - Prepare an Environmentally Sensitive Area- Action Plan (ESA-AP), if needed.
  - Finalize the Historic Property Survey Report (HPSR).
  - Finding of No Adverse Effect (FONAE) letter.

2.3.2 CEQA/NEPA Initial Study/Environmental Assessment

CONSULTANT will prepare a joint Initial Study/Environmental Assessment (IS/EA) using the Caltrans annotated outline. CONSULTANT will prepare a project description that allows an adequate analysis of potential environmental impacts. This will include figures, a description of the project location, environmental setting, project characteristics, purpose/need, construction methods, schedule, and required permits/ approvals. An administrative draft IS/EA will be submitted to COUNTY and Caltrans for review and comment.

Once COUNTY and Caltrans comments are incorporated, CONSULTANT will be responsible for preparation of a Notice of Availability and Notice of Intent to Adopt the NEPA/CEQA document and Notice of Completion. CONSULTANT will coordinate with the COUNTY to develop a mailing list of addresses and agencies that will receive a copy of the notices. CONSULTANT will coordinate publication of a notice in a newspaper of local circulation and provide the COUNTY with an electronic version of the IS/EA for posting on its website, as well as hardcopies to be kept on file.

At the conclusion of the 30-day public review, CONSULTANT will incorporate public and agency comments (if any) and responses (approved by COUNTY and Caltrans) into a Final Draft IS/EA document as an appendix. The number and type of comments cannot be determined at this time, therefore, a total of 60 hours of technical time has been set aside in this scope for review and responses to comments.

CONSULTANT will prepare a Mitigation Monitoring and Reporting Program (MMRP) for any mitigation measures identified in the IS/MND, which will identify assignments of responsibility and time-frames for implementation to be adopted with the project. CONSULTANT will also assist the COUNTY in developing a Staff Report and Resolution to be used for adoption of the CEQA document and approval of the project.

CONSULTANT will be available to attend and assist with presenting at the Board of Supervisor meeting at which the IS/EA is considered for adoption. Following COUNTY adoption of the document and project approval, CONSULTANT will prepare a Notice of Determination (NOD) and Finding of No Significant Impact (FONSI). CONSULTANT will assist the COUNTY to ensure that the NOD is filed at the County Clerk's office within five working days of the project approval. CONSULTANT will rely on the COUNTY to provide a check payment for the County Clerk and California Department of Fish and Wildlife (CDFW) filing fees. CONSULTANT will ensure that the NOD is uploaded to the State Clearinghouse following signature.

Deliverables

- *1 electronic copy of the administrative and revised draft CEQA/NEPA document*
- *1 electronic copy of the public review version of the CEQA/NEPA document to the State Clearinghouse for circulation*
- *3 bound hardcopies of the CEQA/NEPA document shall be delivered to COUNTY for local circulation*
- *1 electronic copy of draft and final CEQA/NEPA notices*

2.4 Supplemental Activities

If any studies require special equipment, labor, or other resources, all arrangements will be made and implemented by CONSULTANT. Depending on scope, a contract amendment shall be issued.

Activities in the Right of Way – Any work performed in the COUNTY right of way will require an Encroachment Permit prior to work. Arrangements may be made with the Land Improvement Division to perform final inspection on the last day of work. Any invoice for the work performed will not be paid until the permitted work is inspected and the permit closed.

Activities Outside the Right of Way – This work will require a Permission to Enter Agreement form completed by the COUNTY. Any excavation on private property will require additional notice to the property owner. An erosion control plan will be required and the property left in a condition suitable to the property owner and COUNTY.

Services to be Provided by the County

- COUNTY will file any completed CEQA notices with the Mendocino County Clerk's Office and pay any required administrative fee for filing the notice

- COUNTY will make appropriate staff available for meetings and site visits
- COUNTY will review all reports for approval, either as the approving agency or prior to submittal to an approving agency
- COUNTY will prepare the agenda packet for any required Board of Supervisors meeting and schedule public hearings if required
- COUNTY will prepare any needed Permission to Enter documents for access to private property
- COUNTY will submit the permit applications and any fees to the regulatory agencies for project permits

3. Basis of Design

3.1 Alignment Review and Selection

CONSULTANT to review and evaluate up to two alignment alternatives. The approximate length of new roadway is 4,200 linear feet. CONSULTANT to prepare an alignment analysis memorandum to share with project stakeholders. The evaluation may consider important design features like sensitive environmental resources, planned and proposed purpose, need, synergies and overlap, connections to key locations, access, and other considerations in coordination with the COUNTY. The ratings matrix completed from earlier study work will be updated and rescored.

For budgeting purposes, it is assumed that this analysis will result in the elimination of various alternatives and that only a no-build and one alignment alternative will be considered to be moved forward for further consideration and environmental evaluation. It is assumed that while one alignment will be considered there will be alternatives analyzed in that alignment. Some of those alternatives would be assessing an at grade crossing and a grade separated crossing at the railroad tracks, as well as looking at designing part of the roadway in fill or as a causeway over the floodway.

The alternatives will be summarized in a brief technical memorandum that uses tables and narrative description of the recommended alternative.

Deliverables

- Draft and Final Alternatives Analysis Memorandum (electronic PDF)

3.2 Intersection Control Evaluation

CONSULTANT will obtain and review new and/or existing traffic data and revalidate forecasted build-year and design–year study area traffic data at each intersection/roadway extension connection to existing roads. A technical memorandum that documents this review and revalidation will be prepared and submitted for review and comment to the COUNTY.

The most recent three years of available collision data for local facilities will be obtained using Statewide Integrated Traffic Records System (SWITRS) data from California Highway Patrol, TASAS Table B, and other Accident Reports as appropriate.

1. Provide description of collision history on all study roadways and intersections
2. Figure showing collision history by accident type

Operational analysis for up to two intersections will be completed for both existing and with-project scenarios.

Existing Conditions/With Project Intersection Level of Service

1. Perform HCM 7th Edition Operational Method LOS and 95th percentile queue calculations for existing a.m. and p.m. peak hour conditions at study intersections
2. Table – Showing a.m. and p.m. peak hour delay, LOS and 95th percentile queues for existing conditions for study intersections
3. Identify any existing condition operational or safety deficiencies.

Existing Conditions/With project Intersection Signal Warrants

1. Per the latest CA MUTCD, perform peak hour (Warrant 3) and accident (Warrant 7) signal warrant calculations for existing a.m. and p.m. peak hour conditions at non- signalized study intersections
2. Identify intersections that meet Warrant 3 or 7

Caltrans' Intersection Control Evaluation (ICE) traffic policy directive became effective on August 30, 2013. One of the criteria included in the ICE process is that all intersection types should be considered as a viable intersection improvement. This evaluation will include traffic signal alternatives, roundabouts and other viable options.

The ICE will consider key stakeholder input, among others, including but not limited to the following:

– Right of Way Constraints
– Environmental Constraints
– Traffic Operations
– Geometrics

Draft ICE Report

A Draft Technical Memorandum will be prepared and first submitted to the COUNTY for review. Conclusions, recommendations, assumptions, and methodologies developed will be documented and presented.

Supporting calculations and exhibits will also be provided as attachments to the Technical Memorandum. The final ICE Report will then be prepared and submitted following resolution to all comments on the Draft Technical Memorandum.

Final ICE Report

After resolving all COUNTY provided comments, the final ICE Report will then be prepared and submitted following resolution to all comments on the Draft ICE Report Memorandum.

Deliverables

– Draft and Final ICE Reports (electronic PDF)

3.3 Concept Design

From the selected alignment alternative, the CONSULTANT will prepare concept level plans (equivalent to 10 percent) using Autodesk Civil 3D 2022 and utilizing GHD CAD standards. This package will include a typical section to document geometric layout of new roadway for basis of design and for confirmation of design cross section. Plans will be developed at a scale of 1:20 and utilizing design standards discussed under the subsequent Final Design (PS&E) task.

Deliverables

– Draft and Final Concept Level Plan and Cross Section (electronic PDF)

3.4 Storm Water Low Impact Development Submittal

This project will need to comply with the stormwater management requirements of the County of Mendocino Low Impact Development Manual (LID Manual).

To meet the LID Manual, CONSULTANT will:

– Evaluate the impacts of the project footprint, quantifying the area, the slopes, and the changed land cover
– Determine permanent water quality treatment requirement
– Evaluate options for water quality treatment/ hydromodification and select preferred alternative with COUNTY input
– Prepare a Stormwater Low Impact Development Submittal (Storm Water Control Plan); draft and final plans will be prepared and submitted to the COUNTY for review and approval

– Incorporate the final Stormwater Control Plan into the project plans, specifications and estimates for the necessary storm water treatment facilities, erosion control facilities, and temporary construction control measures

Deliverables

– *Draft and Final Storm Water Control Plan (electronic PDF)*

3.5 Basis of Design Memorandum

CONSULTANT will prepare a Design Basis Memorandum for the project to document which design standards that are to be used and summarize the concept design. The Design Basis Memorandum will be provided to the COUNTY for review and approval. It is assumed that one round of comments on the initial draft will be provided.

CONSULTANT will address the comments and submit the final working Basis of Design to the COUNTY for signature and approval prior to the start of the final design. This memo will be updated as needed and provided to the COUNTY for approval of any revisions.

Deliverables

– *Draft and Final Basis of Design Memorandum (electronic PDF)*

3.6 Task 3.6 – Stakeholder Outreach

3.6.1 Board of Supervisors (BOS) Meetings

The CONSULTANT will provide assistance at up to two BOS meetings. The CONSULTANT shall present the design alternatives and findings of the environmental analysis to the BOS and record feedback during two meetings. It is anticipated that the first BOS meeting will occur during the public circulation period of the environmental document.

The second BOS meeting would occur only if needed to provide updates on the project after the first BOS meeting. It is also anticipated that the public will be provided the opportunity to comment during the BOS Meetings. The CONSULTANT will collect and address public comments as appropriate.

3.6.2 Technical Advisory Committee (TAC) Meetings (Optional)

The CONSULTANT will provide assistance at up to two TAC meetings, the CONSULTANT shall present the design concepts and solicit feedback from public agency and utility representatives, including but not limited to PG&E, AT&T, Comcast, City of Ukiah, GRTA, Fire, Police, and Emergency Services.

In collaboration with COUNTY Staff, CONSULTANT shall prepare meeting agenda and presentation materials (printed boards or PowerPoint presentation as appropriate). CONSULTANT shall prepare meeting notes to record outcomes.

It is assumed that COUNTY staff will identify and reach out to the appropriate representatives of each public agency and utility and shall notify them of the meeting dates and locations.

The timing of these TAC meetings shall be determined by the CONSULTANT and COUNTY staff according to the project schedule. TAC input is generally most useful prior to the public meetings listed below so that the proposed design solutions are vetted by the agencies and utilities.

Deliverables

– Meeting materials for each meeting, such as slide presentations, graphics, sign-in, and other materials
– Documentation of meeting findings with notes and comments

3.6.1 Coordination with Property Owners

CONSULTANT will aid in coordination on project impacts for needed exploration efforts within private property. CONSULTANT will inform the County of exploration needs and aid with up to 48 hours of supplemental exhibits. COUNTY will procure all rights of entry permits needed and provide to CONSULTANT.

Mendocino Redwood Company (MRC)- CONSULTANT will work with MRC on on-going development at parcel #169-150-02. After geometric alignment has been chosen GHD will incorporate plans provided by

MRC, and provide access if requested by MRC and concurred by COUNTY. CONSULTANT will provide up to 48 hours of additional assistance.

4. Task 4 – Project Design

4.1 Preliminary Project Design – 35% Plans

Once preferred alternative is decided CONSULTANT will perform an expedited review of the concept plans and use these as the basis for the preliminary engineering design. Alignments and roadway design will be reviewed against applicable Standard Plans and Specifications for Public Improvements. This includes standard AASHTO Green Book, Caltrans Highway Design Manual, and other design permitting requirements for geometric design, safety, pavement design, drainage, and lighting. The appropriate design Traffic Index will be confirmed with the COUNTY including proposed roadway designation. CONSULTANT will also confirm intersection traffic control for the project. The preliminary design will include work to be completed including temporary facilities, abandonment and demolition of existing facilities, plan and profile drawings, proposed R/W take areas, utility conflict mapping, road and pedestrian facility extension, LID, street lighting, and construction details. Drawings will be prepared using CONSULTANT CAD standards and COUNTY title block in AutoCAD C3D Version 2022 software. Please see items described below for additional detail.

The submittal should include right of way and utility research as well as an updated preliminary engineering cost estimate.

2 strip maps will be provided in a Geometric Approval Drawing format. The first will have the layout, typical sections, profiles, superelevation diagrams, and show pavement delineation for the length project. The second will showcase the drainage inlet locations, cross culverts, swale location, inset flood plain. In addition, two APS level drawings will be provided for the Russian River Bridge, and overflow structure.

Deliverables

- *Draft 35% Exhibits and Bridge APS Drawings*
- *Final 35% Exhibits, Bridge APS Drawings & Preliminary Estimate*

4.2 Structure Type Selection

Once the preferred alignment alternative has been selected by the COUNTY, CONSULTANT will proceed with bridge type selection.

4.2.1 Draft Bridge Type Selection Reports – River Crossing and East Overflow Structure

CONSULTANT will complete a Draft Bridge Type Selection Report to present design and construction considerations and bridge alternatives, with construction costs, to facilitate selection of a preferred project for design and construction. The draft Bridge Type Selection Report will include, as applicable:

- Location and Site Map
- General description of the project
- Design criteria summary
- Hydraulics requirements and scour analysis
- Geotechnical requirements
- Environmental requirements
- Bridge railing options
- Bridge and alignment alternatives and associated advantages/disadvantages and costs
- Method of construction
- Aesthetics
- Summary of roadway design parameters, geometry, and approach roadway
- Design exceptions required (if applicable)

– Appendices will include bridge General Plan, alternative cost estimates, photographs, draft Preliminary Foundation Report, and draft Hydraulic Report

The following assumptions were made in developing the scope for the structures:

– The new bridge over the Russian River is assumed to be a multi-span bridge up to 800 feet in length. It is assumed the bridge will be founded on deep foundations.
– Retaining walls are assumed to be required at each corner of the Russian River bridge to contain structural and roadway fill at the bridge ends. These retaining walls are assumed to be Caltrans standard plan concrete retaining walls.
– The overflow structure east of the Russian River is assumed to be a multi-span bridge up to 800 feet in length. It is assumed the bridge will be founded on deep foundations.
– Potential bridge aesthetics will be limited to architectural treatments in the form of concrete formliners and/or staining of the faces of abutments, wingwalls, concrete barrier, and retaining wall faces.

The Draft Report will also include an analysis of the programmed funding in comparison to the anticipated costs of the project and, if necessary, provide a discussion of means to justify the need for and to request additional funding from Caltrans.

CONSULTANT will submit the Draft Bridge Type Selection Report to COUNTY for review and selection of the preferred alternative.

4.2.2 Type Selection Meetings

CONSULTANT will conduct a meeting at COUNTY's office to discuss the alternatives presented in the Draft Bridge Type Selection Report and to assist COUNTY in selecting a preferred alternative for final design.

4.2.3 Final Bridge Type Selection Reports

CONSULTANT will prepare a Final Bridge Type Selection Report (Final Report) that includes the incorporation and resolution of all COUNTY comments on the Draft Bridge Type Selection Report, as well as its inclusions.

An updated draft general plan and layout plan and profile for the preferred alternative will be incorporated into the Final Report. The Final Report will serve as the basis of completion of the environmental documentation and final design for the project.

Deliverables

– 3 bound copies of the Final Bridge Type Selection Report for review and submittal
– 1 copy of the Final Bridge Type Selection Report accepted by COUNTY as bound print and as PDF
– List of unusual design issues confronted in the design process, with solutions, and any design exceptions included in the plans
– 1 bound copy of the Draft Bridge Type Selection Report for review and submittal

4.3 35% Design and Estimate Advancement

The CONSULTANT will advance the 35% design and estimate. The purpose of the advancement of the design and estimate is to help support long lead permitting required for the river crossing in the FEMA floodplain and the railroad crossing where the CPUC will be an approving agency. This effort will be to advance the design of these elements closer to 65%.

4.4 Preliminary Right of Way

The CONSULTANT will prepare preliminary right of way needs mapping identifying for alternatives analyzed in the environmental document. This will include identifying permanent and temporary right of way needs, as well as providing the assumed acreage needed for each type of take (permanent, relocation, and temporary). It is assumed that individual property owner maps will not be required at this phase of the project.

The CONSULTANT will prepare preliminary cost estimates for each of the needed acquisitions.

No site visits or meetings with property owners are included in this scope of work.

Deliverables

- *Electronic copies of the right of way maps*
- *Electronic copies of the right of way cost estimates*

5. Task 5 – Surveying and Mapping

CONSULTANT will provide all surveying and mapping as required to complete the PA&ED and PS&E phases. Tasks may include, but are not limited to:

- The topographic survey will be at a drawing scale of 1 inch = 20 feet, unless otherwise requested, with one foot contour intervals. The topographic survey will also include overhead and underground utilities.
- Prior to the field survey Consultant shall perform a records search and will call Underground Service Alert to provide utility markings in the project area.

5.1 Control

Survey vertical control shall be NAVD 88.

Survey horizontal control shall be parallel to the California Coordinate System of 1983, Zone 2. For CAD files, the southwest extent of the project area will be set at 5000, 10000. A line will be drawn from a point to that point's corresponding location on the California Coordinate System so the CAD line work can be correctly positioned after construction.

5.2 Boundary Survey

COUNTY may request surveys to determine the accurate locations of rights of way and boundary lines for property acquisition. This may include:

- Right of way and property research
- Property and right of way mapping
- Preparation of right of way plats
- Completion of legal descriptions for property acquisition
- Completion of records of surveys
- Other boundary survey support for individual project needs

The section containing the project shall be surveyed to include the section corners, quarter corners and any other monumented points that may affect the alignment of section lines. Be the project on a section line, the lines of the adjacent section shall be included.

5.3 Topographic Mapping

Topographic survey coverage area will include the area of the project.

Topographic survey will include all necessary work to produce a topographic map, including features such as, but not limited to: pavement, utility markings, utility poles, driveway, trees four inches and larger, headwalls, retaining walls, decorative walls, curbs, gutters, sidewalks, and any other pertinent information that could apply to the project during design.

5.4 Surveying and Mapping for Roads

All road features, culture, utilities, other surface features, and certain sub-surface features must be located to allow proper design of the project and others that might affect project design. Amongst these are:

- Existing right of way center lines and margins.
- Beginnings and endings of curbs, gutters, flow lines, edges of travelled way, fences, gates, guard rails, and other linear features, with intermediate shots as required.
- For all driveways: driveway centerline stations and widths. With curb and gutter, top and bottom of curb transition, and the back of the ramp portion of the driveway.

- Other: signs, building corners, trees (with diameter at breast height (DBH=54") noted if greater than 4 inches), parking lot corners, areas outside of the right of way and any other points pertinent to the project.
- Utilities: manhole covers, access shaft diameter and offset to manhole, manhole diameter and material, all pipe locations, sizes, materials, and inverts; water valve covers and tops of operating nuts; fire hydrants; pad mounted boxes and transformers; power poles; painted locations of underground utilities; overhead lights and the lowest elevation of the lowest wires crossing street.
- Drainage: drop inlet location, grate dimensions and all pipe sizes, materials, and inverts; catch basin location, grate dimensions, local depression dimensions, surface dimensions and all pipe sizes, materials, and inverts; manhole covers, access shaft diameter, and offset to manhole, manhole diameter and material; culvert locations and dimensions and limits of any surrounding riprap; any other drainage features.
- Cross sections shall be taken at all stations ending in +00 and +50, at either end of the project and 50 feet beyond both project limits. Cross sections shall extend to the right of way margin at a minimum. Be the margin on a slope, the top or toe of slope will be included.
    - At all BCs and ECs.
    - At all BCRs or ECRs of any cross street.
- Grid of intersections with lines at fifteen-foot maximum spacing from MCR to MCR with a minimum of four lines in each direction.
- Geotechnical boring sites.
- Sketches showing the arrangement of things with occasional point numbers for orientation.

5.5 Permitting Right of Way Investigations

Any work performed in the COUNTY right of way will require an Encroachment Permit prior to work. Arrangements may be made with the Land Improvement Division to perform final inspection on the last day of work. Any invoice for the work performed will not be paid until the permitted work is inspected and closed.

Services to be Provided by the County

- COUNTY will make appropriate staff available for meetings and site visits.
- COUNTY shall allow CONSULTANT to review all public- accessible data and information (in its Department of Transportation files) that relate to the project.

6. Task 6 – Geotechnical Investigations

CONSULTANT will complete the following tasks as part of the geotechnical scope of services:

6.1 Geotechnical Project Management and Design Team Meetings

CONSULTANT will provide project management and allowance for a principal and/or senior project manager to attend the kick-off meeting and up to five project design team meetings (via video conference or telephone) to address geotechnical design elements of the project.

6.2 Preliminary Foundation Report

CONSULTANT will prepare a Preliminary Foundation Report (PFR) to evaluate bridge and overflow structure foundation alternatives to assist with structure type-selection. The PFR will be based on existing subsurface data, published geologic mapping and seismicity data, aerial photographs, preliminary project data and a site review.

The PFR will summarize anticipated earth materials and conditions based on reference data and site exposures; provide preliminary seismic input parameters (based on Acceleration Response Spectrum curve); discuss preliminary foundation types (e.g., spread footings, driven piling and cast-in-drilled-hole piling); provide preliminary foundation recommendations for bridge and overflow structure foundations; retaining walls, discuss liquefaction potential; and discuss road embankment approaches.

Deliverables

– Preliminary Foundation Report (electronic PDF)

6.3 Foundation Report

6.3.1 Coordination, Permits and USA North 811

For this task CONSULTANT will:

– Review the site and mark the proposed boring locations for USA North 811
– Obtain a Mendocino County Department of Environmental Health Boring Permit
– Coordinate the proposed subsurface exploration (Task 6.3.2)

6.3.2 Subsurface Coordination

CONSULTANT will conduct a subsurface exploration to characterize the subsurface conditions for the bridge structure. CONSULTANT will drill, log, conduct the following borings:

– 5-span main bridge: Four borings to 100 to 120 feet deep

– Eastern Causeway: Nine Borings to 70 to 80 feet deep

The borings will be advanced by a subcontractor with truck or track-mounted drilling equipment (as appropriate) using rotary drilling methods. Alternatively, Cone Penetrometer Tests (CPT) could be advanced with a 25-ton CPT rig in some of the exploration locations to collect subsurface data.

Standard Penetration Test (2-inch O.D.) and Modified California (3-inch O.D.) sampling will be performed within the borings to obtain samples and blow count information. Thin-walled tube (i.e., Shelby Tube) sampling will be performed to obtain undisturbed samples for consolidation and/or strength testing, if appropriate. CONSULTANT engineer/geologist will log the borings and direct the sampling, with samples generally collected at approximate intervals of two-and-a-half to five feet for laboratory testing and reference. Groundwater levels will be recorded during and immediately after drilling.

Alternatively, CPTs could be advanced in some of the exploration locations with a 25-ton CPT rig with a 15 cm^2 piezocone to collect continuous soil and groundwater data, as allowed by refusal. Shear wave velocity would also be measured every 10 vertical feet to establish a shear wave velocity profile for use in the seismic analysis.

Seismic profiling using down-hole suspension logging will be performed in two borings (one on each side of the river) to obtain shear wave velocity measurements to further support the seismic analysis.

Two borings (one on each side of the river) will be converted to a piezometer to monitor groundwater levels over time. A vibrating wire piezometer with datalogger will be grouted into the boring for continuous monitoring through the design period.

After completion, the borings will be backfilled and surface sealed according to project permit and/or COUNTY requirements. Drill cuttings/fluids will be contained in steel drums and off hauled by the drilling subcontractor to an appropriate disposal location.

6.3.3 Laboratory Testing

CONSULTANT will complete the following laboratory tests on bulk and relatively undisturbed samples obtained from the exploratory borings (as appropriate):

– Moisture Content and Unit Weight for bearing capacity and settlement
– Sieve Analysis and Plasticity Index for classification and engineering properties
– Unconfined Compression, Triaxial Compression, and/or Direct Shear testing for strength parameters
– One-Dimensional Consolidation testing for long-term settlement analysis
– Resistivity, pH, Sulfate Content, and Chloride Content for subsurface material corrosion potential

6.3.4 Engineering Evaluation and Analysis

CONSULTANT will perform engineering evaluation and analysis for the following, as appropriate – bearing resistance; lateral capacity; pile drivability analysis; embankment settlement and downdrag; site seismicity

to determine the site acceleration response spectrum; liquefaction potential; lateral earth pressure and coefficient of friction to resist sliding; and soil corrosivity.

As required by AASHTO, a site-specific ground motion hazards analysis is required when a bridge site is within six miles of an active fault, which this site is. Also, if the site is classified as a Site Class F (considered likely), a dynamic site response with earthquake time histories and scaling is required. Both seismic analyses are included, along with the AASHTO-required peer review. Two sets of seismic analysis will be completed due to the length of project and potential changes in geology and ground motions; one for the west side of the bridge and one for the eastern causeway.

6.3.5 Foundation Report

CONSULTANT will prepare a Foundation Report (FR) for the bridge and overflow structure for review and comment by the design team. The report will provide a site/project description, summarize site geology and geologic reconnaissance, subsurface exploration and field and laboratory soil tests, discuss scour considerations as applicable (based on a Hydraulics Report prepared by others), and include a Log of Test Borings (LOTB) drawing.

Subsurface materials and foundation conditions will be discussed including seismic criteria and the design acceleration response spectrum curve. The report will discuss structure foundation conditions/constraints, recommended type, loading of bridge foundation elements, and include construction considerations. The report will also include/address liquefaction, seismic ground motions, retaining wall recommendations and approach roadway site preparation and grading. One FR will be prepared for all structures in the project.

Following receipt of all Draft FR review comments from the design team, CONSULTANT will prepare and submit a Final Report incorporating the comments as necessary. The Final Report will be submitted electronically as a PDF file.

– ***Deliverables***
– *Draft and Final Foundation Report (electronic PDF)*

6.4 Geotechnical Design Report

In conjunction with the bridge foundation study, CONSULTANT will perform a study of the proposed new elevated roadway embankment section (west of the Russian River Structure) and roadway areas beyond the floodplain/structures to evaluate the subsurface conditions and provide design recommendations for road embankments, retaining walls (if needed), drainage structures, and pavements.

6.4.1 Task 6.4.1 – Coordination, Permits and USA North 811 –

For this task CONSULTANT will:

– Review the site and mark the proposed boring locations for USA North 811
– Obtain a Mendocino County Department of Environmental Health Boring Permit
– Obtain a Mendocino County Encroachment Permit
– Obtain permits from the California Department of Fish and Wildlife and the Regional Water Quality Control Board for field work within the Russian River riparian corridor and below top of the riverbank.
– Coordinate the proposed subsurface exploration (Task 6.4.2)

These tasks will be completed in conjunction with Task 6.3.1.

6.4.2 Subsurface Exploration

CONSULTANT will conduct a subsurface exploration to characterize the subsurface conditions for the new elevated roadway embankment and roadway areas. CONSULTANT will drill, log, and sample the following borings:

– Western Overflow Structure: Nine borings to 70 to 80 feet deep
–

The borings will be advanced by a subcontractor with truck or track-mounted drilling equipment (as appropriate) using 6 to 8-inch-diameter solid, stem auger, hollow-stem augers and/or rotary drilling methods.

Standard Penetration Test (2-inch O.D.) and Modified California (3-inch O.D.) sampling will be performed within the borings to obtain samples and blow count information. Thin-walled tube (i.e., Shelby Tube) sampling will be performed to obtain undisturbed samples for consolidation and/or strength testing, if appropriate. A Crawford engineer/geologist will log the borings and direct the sampling, with samples generally collected at approximate intervals of 2.5 to 5 feet for laboratory testing and reference. Groundwater levels will be recorded during and immediately after drilling.

After completion, the borings will be backfilled and surface sealed according to project permit and/or Owner requirements. Drill cuttings/fluids will be contained in steel drums and off hauled by the drilling subcontractor to an appropriate disposal location.

6.4.3 Laboratory Testing

CONSULTANT will complete the following laboratory tests on bulk and relatively undisturbed samples obtained from the exploratory borings (as appropriate):

- Moisture Content and Unit Weight for bearing capacity and settlement
- Sieve Analysis and Plasticity Index for classification and engineering properties
- Unconfined Compression, Triaxial Compression, and/or Direct Shear testing for strength parameters
- One-Dimensional Consolidation testing for long-term settlement analysis
- Resistivity, pH, Sulfate Content, Chloride Content, and redox potential for subsurface material corrosion potential
- Resistance Value (R-value) for structural pavement section design

6.4.4 Engineering Evaluation and Analysis

CONSULTANT will perform engineering evaluation and analysis (using computer software where applicable) for the following, as appropriate – bearing resistance; embankment settlement; liquefaction potential; lateral earth pressure and coefficient of friction to resist sliding; pavements; and soil corrosivity.

6.4.5 Geotechnical Design Report

CONSULTANT will prepare a Geotechnical Design Report (GDR) for the new roadway embankments and drainage structures for review and comment by the design team. The report will provide a site/project description, summarize site geology and geologic reconnaissance, subsurface exploration and field and laboratory soil tests. Subsurface materials and conditions will be discussed, as well as groundwater conditions. The report will provide recommendations for road embankment, grading, fill slope stability, minor retaining structures (if needed), drainage structures, and pavements. Construction considerations will be provided as well.

Following receipt of all Draft GDR review comments from design team, CONSULTANT will prepare and submit a Final GDR incorporating the comments as necessary. The GDMR will be submitted electronically as a PDF file.

Deliverables

- *Draft and Final Geotechnical Design Report (electronic PDF)*

6.5 Initial Site Assessment

Due to the site history, CONSULTANT will prepare an Initial Site Assessment (ISA) Report and performed screening- level sampling and analytical testing of likely hazardous materials: aerially deposited lead (ADL) from the historical use of leaded gasoline, lead and cadmium concentrations in thermoplastic traffic markings, naturally occurring asbestos (NOA), organochlorine pesticides (OCPs), and arsenic.

6.5.1 Coordination and Records Search

For this task CONSULTANT will review:

- Historical aerial photographs and topographic maps for indications of past uses of the properties that will be impacted by the proposed Alignment AC; (city directories and fire insurance maps, if available)
- Reasonably ascertainable Federal, State, local, and tribal environmental agency databases (as applicable) for information pertaining to the proposed alignment and properties within about one mile,

in accordance with the ASTM standard. This data will be obtained from a vendor specializing in retrieval of environmental information

– Coordinate site reconnaissance and sampling (*Task 6.5.2*).

–

6.5.2 Reconnaissance, Sampling and Testing

For this task CONSULTANT will perform the following:

– Site Reconnaissance
  - Identify current uses and evidence of past uses of adjacent properties.
  - Identify potential areas of concern such as above or below ground fuel storage tanks, vehicle maintenance areas, past oil and gas operations, dump sites, discolored soils or stressed vegetation, discharges, odors, transformers, wells, standing water, hazardous substance containers or unidentified containers, etc.

– – Environmental Sampling and Testing
  - Soil samples for ADL analysis will be collected at three locations at both terminal intersections. Three soil samples will be collected from each boring location (total 18 samples). Samples with concentrations exceeding threshold limits will be further analyzed for soluble lead (WET and TCLP methods).
  - Up to four samples of thermoplastic striping material will be collected at the intersections and tested for lead and cadmium.
  - Up to 10 soil samples for NOA analysis will be collected during the Task 4.2 subsurface exploration. Samples will be tested/analyzed as described above.
  - Up to eight soil samples to be analyzed for organochlorine pesticides (OCPs) and arsenic.

6.5.3 Research and Interviews

If warranted by the records search or site reconnaissance, reasonable attempts will be made to interview persons identified as knowledgeable about potentially contaminated locations within or adjacent to the site to obtain information regarding their potential impacts to the project. Interviews may be conducted in person, by telephone, or in writing. Individuals interviewed might include property owners, tenants, local government officials, or others.

6.5.4 ISA Report

An ISA report will include, but not necessarily be limited to, the following:

– Description of the project alignment and vicinity
– Summary of the local geologic and hydrogeologic conditions
– Summary of the historical record review
– Findings from the environmental records review
– Site reconnaissance observations including pertinent photos
– Interview results
– Findings and Conclusions: a summary of potential impacts of recognized environmental conditions with potential to impact the project alignment
– Recommendations: As warranted by the findings

Analytical results for the ADL, lead and cadmium, NOA, OCP, and arsenic soil samples will be reported separately in a memorandum following completion of Task 4.2. The memorandum will include, but not necessarily be limited to, the following:`

– Sample collection methodology
– Tabulated analytical results for the asbestos analyses
– Findings and Conclusions
– Recommendations, as warranted by the findings

Deliverables

– *Draft and Final Initial Site Assessment Report*
– *Draft and Final Hazardous Materials Memorandum*

– *Draft submittals: e-mailed PDF and Word files.*

Assumptions for Task 6

– *If another alignment besides Alignment AC is ultimately selected, this scope may not be appropriate and would need to be revisited. Additional costs may apply.*
– *A private utility locater is not needed; utility locations will be based on USA North 811 member and/or COUNTY markings only. If desired, a private utility locator may be added to this scope for an additional fee of approximately $5,000.*
– *The COUNTY encroachment permit will be a no-fee permit.*
– *Access and Right-of-Entries will be provided to/ through private properties, as needed, to complete site reconnaissance and the subsurface exploration.*
– *Permits, other than those listed, will be obtained by others, if needed.*
– *The proposed supports and centreline alignment will be staked by others prior to the start of Task 6.3.2 and 6.4.2.*
– *Drill cuttings will be non-hazardous.*
– *Completed boring locations will be marked by CONSULTANT after completion of Task 6.3.2 and 6.4.2 for others to survey.*
– *No infiltration testing is required.*
– *A borrow site evaluation is not included.*
– *No State or Federal agencies will be required to review the report associated with this project.*
– *Assessor's parcel maps, draft improvement plans showing the project alignment, stationing, and project limits (including staging areas, property takes, and proposed temporary easements) will be available for use.*
– *Chain of title research and/or review is not included.*
– *Design team and/or COUNTY will provide support/ coordination if landowner interviews are needed.*
– *The sampling plan may change depending on the ISA research and site reconnaissance.*
– *Mendocino County Department of Environmental Health boring permits will not be needed for sample collection during Task 6.5.2.*
– *Sampling during Task 6.5.2 can be completed with hand tools.*
– *The proposed Task 6.5.2 sampling and analysis is a preliminary screening level effort and is not intended to fully characterize the lateral or vertical extent of any compounds of concern identified at the site. Additional sampling may be required to fully characterize the lateral or vertical extent of any compounds of concern identified, or to classify impacted soils for on-site reuse or off-site disposal. If needed, an additional scope and fee will be provided for this work.*
– *Boring logs plotted in one or more DWG or DXF file.*
– *COUNTY will make appropriate staff available for meetings and site visits.*
– *COUNTY shall allow CONSULTANT to review all public- accessible data and information (in its Department of Transportation files) that relate to the project.*

7. Task 7 – Utility Coordination

Thorough utility research and communication are required. To this extent, initial notification of the project should be made early in project development. All work under this task shall be compliant with the Local Assistance Procedures Manual, Chapter 14 and relevant portions of the Right of Way Manual.

CONSULTANT will provide a list of the various utility companies with names of contacts and mailing addresses, in a COUNTY–provided spreadsheet. COUNTY will send Utility Letters A to the various utilities once the alignments are defined. Requested information will include as-built plans of existing facilities in the project area.

Deliverables

– Mailing list
– Utility A Letters

Services to be Provided by the County

– *COUNTY will send Utility Letters A to the various utilities.*

8. Hydrology and Hydraulics

It is understood that the proposed bridge location will cross a FEMA Regulatory Floodway along the Russian River. As such, the proposed design will be required to submit a No-Rise Certification or Conditional Letter of Map Revision (CLOMR) if the project results in an increase to the Base Flood Elevation (BFE). For this proposal, it has been assumed that a No-Rise Certification will be applicable; however, we have included optional tasks for a CLORM if it is not. The following tasks outline the necessary procedures for complying with the FEMA No-Rise Certification, along with Caltrans guidelines for a Location Hydraulic Study.

8.1 Data Gathering

The following sub-tasks outline the data gathering procedure CONSULTANT will undertake for the development of a comprehensive hydraulic model.

8.1.1 Record Data

CONSULTANT will request the existing FEMA hydrologic and HEC-RAS hydraulic model of Russian River and review the extent and identify data gaps needed to hydraulicly assess the proposed bridge hydraulics. In addition, CONSULTANT will review the existing survey data and identify additional survey data that may be needed to complete the hydraulic analysis.

8.1.2 Anecdotal Data

CONSULTANT understands the importance of gathering local anecdotal information regarding flooding along major river floodplains. The City of Ukiah and the adjacent Russian River Floodplain have several major tributaries which contribute significant stormwater runoff. Interviews with City of Ukiah and Mendocino County staff will help inform the bridge design.

8.2 Hydraulic Analysis & Inset Floodplain Analysis & Design

CONSULTANT will conduct a hydraulic evaluation of the proposed bridge crossing using FEMA's current effective hydraulic model in HEC-RAS format as the basis for the analysis. The analysis will identify base flood elevations (BFEs) in the river for the existing and proposed conditions. The following sub-tasks outline the evaluation process:

– Based on the Flood Insurance Study (FIS), a hydrologic model was developed by FEMA to establish Russian River 50-yr and 100-yr flows in the Russian River using the Environmental Protection Agency Hydrologic Simulation
– Program FORTRAN (HSPF) model. GHD will use the FEMA FIS flows to evaluate the River conditions for the following sub-tasks.

Duplicate Effective Model

CONSULTANT will obtain FEMA's current effective model and evaluate the model using the latest version of HEC- RAS. We will verify that the model data transfers correctly. This effort will result in the Duplicate Effective Model.

Corrected Effective Model

CONSULTANT will correct obvious geometry errors that occur when running the Duplicate Effective Model and update the model cross-sections using the latest publicly available USGS digital elevation model (DEM) and recently completed survey data. This effort will result in the Corrected Effective Model.

Existing Conditions Model

CONSULTANT will update the Corrected Effective Model with cross-sections at the proposed bridge location and update the model to correct conditions found to be inaccurate during the data review process. The Existing Conditions Model will be used for subsequent comparisons to the Proposed Conditions.

Proposed Conditions Model

CONSULTANT will modify the Existing Conditions Model to include the proposed bridge. This effort will result in the Proposed Conditions Model. Once the model is developed, the model will be run and water surface profiles will be compared to the Existing Conditions Model for the 50- year and 100-year flows. Up to three (3) model iterations are assumed as part of this task to accommodate minor design revisions.

Inset Floodplain Analysis & Design

CONSULTANT will conduct a comprehensive analysis to ensure the floodplain design meets regulatory and environmental standards design which includes an inset floodplain that effectively manages flood risks. We will integrate the floodplain design with the overall infrastructure improvements of the Redemeyer Rd Project. This analysis and design will be included in the overall Hydraulic Analysis and Preliminary Design tasks.

Deliverables

- *Duplicate Effective Model (electronic)*
- *Corrected Effective Model (electronic)*
- *Existing Conditions Model (electronic)*
- *Proposed Conditions Model (electronic)*

8.3 Hydrologic and Hydraulics Report

CONSULTANT will develop a Hydrologic and Hydraulic Report that summarizes the methods, assumptions, and results of the analysis performed under Task 8.2. The report will be used for the No-Rise Certification process, assuming the modelling shows that the project does not result in an increase to the BFE.

Deliverables

- *Draft Report (electronic)*
- *Final Report (electronic)*

8.4 Location Hydraulic Study

A Location Hydraulic Study shall be performed utilizing the Location Hydraulic Study Form. The form is to be completed in accordance with Volume 1, Chapter 17 of the Caltrans Standard Environmental Reference (SER). Modelling efforts associated with Task 8.2 will be used for the development of the Location Hydraulic Study.

Deliverables

- *Draft Report (electronic)*
- *Final Report (electronic)*

8.5 Draft CLOMR Application Package for County Review and Submittal to FEMA for Proposed Bridge

CONSULTANT will prepare a Draft CLOMR for crossing of the Russian River and associated floodway for County review. The purpose of the CLOMR is to allow FEMA to provide comments on the bridge's impact on the creek geometry. A CLOMR outlines whether the project, if built as proposed, would change the effective floodplain and floodway. CONSULTANT will address County comments and then submit the revised draft CLOMR application to FEMA for processing.

CONSULTANT will incorporate one round of County review comments on the Draft CLOMR and finalize the deliverables package. GHD will facilitate up to three working sessions with the FEMA reviewer to address and discuss comment resolution. All meetings are assumed to be virtual.

Deliverables

- *Draft Work Maps*

- *Draft Annotated FIRM*
- *Draft Floodway Data Table*
- *Address County comments to the Draft CLOMR submittal*
- *Responses to FEMA's comments and revisions to CLOMR submittal (assume two (2) rounds of FEMA comments)*
- *Revised Draft/Final Work Maps*
- *Revised Draft/Final Annotated FIRM*
- *Revised Draft/Final Floodway Data Table*

8.6 Proposed Bridge Scour Analysis

CONSULTANT will perform a scour analysis at the proposed based on the methods presented in Federal Highway Administration Hydraulic Engineering Circular No. 18 Evaluating Scour at Bridges. The analysis will be performed using the results of the hydraulic modelling conducted as part of Task 8.2.

Deliverables

- *One Draft and one Final technical memorandum summarizing methods and results of scour analysis (electronic PDF)*

Assumptions:

This proposal is based on the following assumptions and exclusions:

- *The effective FEMA HEC-RAS model for Russian River will be provided to CONSULTANT by FEMA.*
- *The existing hydraulic and hydrologic models provided by FEMA will be suitable for this effort.*
- *The Scope of Work assumes a successful No-Rise submittal. The LOMR/CLOMR tasks are optional.*
- *Hydraulic analyses will be conducted using HEC-RAS one-dimensional modelling.*
- *Data provided will be on:*
  - Horizontal Datum: NAD83 CA State Plane Zone 2 coordinates in units of feet.
  - Vertical Datum: NAVD88 in units of feet.
- *Geotechnical data for the scour analysis will be provided to CONSULTANT and will include information sufficient to conduct the analysis, including grain size distributions for the material in the channel bed at the bridge and in the channel banks at the bridge abutments.*

9. Task 9 – GRTA and CPUC Coordination

CONSULTANT will coordinate with the Great Redwood Trail Authority (GRTA) and California Public Utilities Commission (CPUC) on the roadway crossing of the rail. As part of this work CONSULTANT will prepare an application for new railroad crossing. The work performed will be divided into tasks as described below:

- Develop grade crossing plans, narratives, and application:
  - Review conceptual roadway and crossing site plans and existing survey information.
  - Identify design standards for grade crossing and approach.
  - Develop grade crossing plans and profile.
  - Develop maps of streets, property lines, tracks, buildings, and other structures.
  - Prepare CPUC Rule 3.7 application.
  - One resubmittal of CPUC Rule 3.7 application addressing (CPUC) comments received.
- California Public Utilities Commission and Stakeholder Coordination.
  - Attend conference calls (16 total hours budgeted).
  - Attend one virtual field diagnostic meeting (eight hours budgeted for up to three CONSULTANT staff to attend).

Deliverables

- *Draft and Final Grade Crossing Plans, Narratives and Application*
- *CPUC and Stakeholder Meeting Agenda and Minutes*
- *Site Diagnostic meeting notes*

Assumptions

- Meetings other than indicated above are not required.
- Cost analysis is not required.
- Level of Service analysis for roadways and intersections is excluded.
- Discussions/negotiations with adjoining property owners other than those previously listed is excluded.
- The scope of services assumes one resubmittal of the CPUC application will be required to address comments.
- Conceptual design will be in accordance with California Manual on Uniform Traffic Control Devices (MUTCD).
- CPUC application will be prepared to comply with Rule 3.7 (Public Road Across Railroad) application requirements.
- All other items not explicitly included in the above work plan.
- CONSULTANT will work as a partner with the County and other stakeholders to obtain approval of the at-grade crossing, however no guarantee is expressed or implied in this scope of services that the CPUC will approve the proposed crossing.

10. Grant Funding Assistance

10.1 Cost Estimates

To support the COUNTY's efforts in obtaining construction grant funding, the CONSULTANT will provide the COUNTY with preliminary cost estimates based on the assumed preferred alignment at the time the grant applications are required to be submitted. These estimates will be based on available Caltrans and County recent bid results and include escalation for the anticipated construction year. The estimates will also include assumed right of way costs as well as utility costs.

10.2 Additional Grant Funding Support Services

COUNTY may require the assistance of CONSULTANT to identify grant funding options for project construction. A contract amendment shall be issued for this task, if needed.

Allocation 2 - PS&E Scope of Work

The PS&E scope of work will be developed at a later date and will be issued via a contract amendment.

Redemeyer Road Extension - Revised Fee Breakdown **Updated** **4/29/2025**

		Task Description	Original Contract Amount	Total Invoiced To Date	Total Anticipated to Complete Task	Total Amount to be Shifted	Total Revised Task Amount
1	**Project Management and Coordination**		$ 401,541	$ 128,564	$ 272,977	$ -	**$ 401,541**
			$ 401,541	$ 128,564	$ 272,977	$ -	
2	**Environmental Studies and Documentation**		$ 572,731	$ 162,299	$ 897,400	$ 486,967	**$ 1,059,698**
	2.1	Environmental Project Management and Coordination	$ 28,827	$ 17,688	$ 11,139	$ -	
	2.2	NEPA Preliminary Environmental Study	$ 20,112	$ 12,015	$ 8,097	$ -	
	2.3	CEQA / NEPA Environmental Documentation	$ 502,133	$ 132,596	$ 369,537	$ -	
	2.4	Supplemental Activities	$ 21,659	$ -	$ 21,659	$ -	
	2.5	Second Biological Assessment for Northwestern Pond Turtle (if needed)	$ -	$ -	$ 30,484	$ 30,484	
	2.6	Tree Inventory Survey	$ -	$ -	$ 11,663	$ 11,663	
	2.7	Extended Phase 1 Subsurface testing for Cultural	$ -	$ -	$ 369,435	$ 369,435	
	2.8	Historical Resource Evaluation	$ -	$ -	$ 57,219	$ 57,219	
	2.9	VIA Study	$ -	$ -	$ 18,166	$ 18,166	
3	**Basis of Design**		$ 588,710	$ 232,018	$ 356,692	$ -	**$ 588,710**
			$ 588,710	$ 232,018	$ 356,692	$ -	
4	**Project Design**		$ 1,682,160	$ 22,589	$ 1,529,673	$ (145,463)	**$ 1,552,263**
	4.1	Preliminary Project Design - 35% Plans	$ 555,945	$ 2,388	$ 469,602	$ (86,343)	
	4.2	Structure Type Selection (River and Rail Crossings)	$ 383,445	$ -	$ 383,445	$ -	
	4.3	35% Design and Estimate Advancement	$ 673,051	$ 13,178	$ 543,872	$ (129,179)	
	4.5	Inset Flood Plain	$ -	$ -	$ 70,059	$ 70,059	
	4.4	Preliminary Right-of-Way	$ 69,719	$ 7,024	$ 62,695	$ -	
5	**Surveying and Mapping**		$ 204,507	$ 34,314	$ 183,117	$ 10,884	**$ 217,430**
	5.1	Control	$ 15,487	$ 5,909	$ 16,424	$ 937	
	5.2	Boundary Survey	$ 49,264	$ 26,301	$ 22,963	$ -	
	5.3	Topographic Mapping	$ 68,202	$ 186	$ 68,016	$ 5,788	
	5.4	Surveying and Mapping for Roads	$ 50,825	$ 1,918	$ 54,985	$ 4,160	
	5.5	Right-of-Way Establishment and Legal Description	$ 20,729	$ -	$ 20,729	$ -	
6	**Geotechnical Investigations**		$ 385,525	$ 8,595	$ 373,120	$ (3,810)	**$ 381,715**
	6.1	Geotechnical Project Management and Design Team Meetings	$ 26,720	$ 5,364	$ 21,356	$ -	
	6.2	Preliminary Foundation Report	$ 32,852	$ 1,938	$ 30,914	$ -	
	6.3	Foundation Report	$ 239,324	$ -	$ 205,545	$ (33,779)	
	6.4	Geotechnical Design Report	$ 51,259	$ -	$ 52,519	$ 1,260	
	6.7	Obtain Permits from CDFW and RWQCB for Geotech borings	$ -	$ -	$ 18,708	$ 18,708	
	6.5	Initial Site Assessment	$ 26,413	$ 1,292	$ 25,121	$ -	
	6.6	Plan Review and Consultation	$ 8,957	$ -	$ 18,958	$ 10,001	
7	**Utility Coordination**		$ 43,898	$ 2,996	$ 40,902	$ -	**$ 43,898**
			$ 43,898	$ 2,996	$ 40,902	$ -	
8	**Hydrology and Hydraulics**		$ 232,418	$ 24,803	$ 207,615	$ -	**$ 232,418**
			$ 232,418	$ 24,803	$ 207,615	$ -	
9	**CPUC and GRTA Coordination**		$ 94,256	$ 651	$ 56,518	$ (37,738)	**$ 57,169**
			$ 94,256	$ 651	$ 56,518	$ (37,738)	
10	**Grant Funding Assistance**		$ 84,428	$ -	$ 84,428	$ -	**$ 84,428**
			$ 84,428	$ -	$ 84,428	$ -	
	Other Direct Costs		$ 625,492	$ 3,829	$ 556,692	$ (64,972)	**$ 560,520**
			$ 625,492	$ 3,829	$ 556,692	$ (64,972)	
			Original Contract Value			**Total Additional Extra Work**	**Revised Contract Amount**
			$4,915,666			**$245,869**	**$5,179,790**