



Mecham Road Mitigation Bank BEI, Permitting, and Implementation Support

Scope of Work and Estimated Cost

Prepared for:

Sonoma County Public Infrastructure
2300 County Center Drive
Suite B-100 Santa Rosa, CA 95403

3/6/23

WRA PROJECT NO. 30082

PURPOSE

WRA will work with SCPI to entitle the Bank and preparation of 100% plans, specifications and estimates that will allow SCPI to put the construction work out to bid. The next phase towards Bank approval is completing and submitting a draft Bank Enabling Instrument (BEI) package to the Interagency Review Team (IRT). This package will include the necessary information, plans, and documents detailed in the May 2021 Draft Bank Enabling Instrument Checklist (2021 Checklist) released by USACE and CDFW. The package will also respond to and incorporate IRT comments on the Final Prospectus previously submitted. Once the IRT reviews the draft BEI package and provides comments, WRA will prepare a final BEI package for IRT review and approval. Permits will be required as part of a finalized BEI and preparing the permit package during entitlement will save time once the Draft BEI is submitted to the IRT. We understand that SCPI will prepare and submit the permit applications for the Bank, and WRA will assist SCPI with permit preparation as needed. Based on the permit conditions, WRA will prepare 100% plans, specifications, and engineers' estimates (PS&Es) for construction of the Bank.

WRA offers optional tasks to support a smooth and timely transition to the implementation phase, including coordination regarding seed and plant procurement, irrigation planning, and assistance with contractor selection and communication. The intent is to support SCPI in completing all work necessary for Bank approval and preparing for construction bids.



While not included in this Scope of Work, WRA recommends SCPI consider additional tasks that will need to occur shortly after construction through the first year of the Bank. Those tasks include recording the conservation easement; establishing the Bank credit ledger and planning for ledger management; submission of as-built drawings to the IRT after construction; invasive species management and other Year 1 land management actions; and preparation and submission of the Year 1 annual report.

WORK PRODUCTS

- Draft BEI package
 - 60% restoration plans
 - HEC-RAS 2D hydraulic model
 - Basis of Design Report
 - Additional topographic survey data
 - Financial Securities Analysis and Schedule
 - Development and Interim Management Plan
 - Long-term Management Plan and Endowment Analysis and Schedule
 - Credit Evaluation
 - Service Area Narratives and Figures
 - Draft BEI and Additional BEI Exhibits
- Permitting Assistance
- Construction Bid Package
 - Draft 100% Plans, Specifications, and Estimates (PS&Es)
 - Final 100% Plans, Specifications, and Estimates (PS&Es)
- Implementation Support Services
 - Irrigation Design Guidance
 - Plant Procurement Coordination
 - Contractor Selection Support

SCOPE OF WORK

The following tasks:

Phase 1: Draft Bank Enabling Instrument Tasks

The Draft BEI is a legal document that defines how the Bank will be established and managed. In addition, this document will lay out the schedules for endowment funding and credit releases, how the Bank's performance will be reported, the responsibilities of the IRT and Bank sponsor, and any other legal provisions. The final document will be based on the IRT approved template (updated 2021).

The BEI also includes several other exhibits that are required components of the BEI package as outlined in the BEI checklist, including but not limited to the Development and Interim Management Plan, Long-term Management Plan, Conservation Easement, Credit Evaluation Document, Endowment Analysis, and Property Assessment and Warranty.

Task 1.1: Client and IRT Communication

WRA will work closely with SCPI through bank entitlement and permitting to ensure the strategy and approach continues to match SCPI's goals and is supported by the data collected during any technical studies or site visits, and input from regulators and key stakeholders during the process. WRA will meet with the SCPI monthly and provide status updates more frequently, as needed.

WRA will communicate closely with members of the IRT, permitting agencies, potential conservation easement holders and other project stakeholders. WRA will specifically prepare responses to comments, concerns, or questions raised by the IRT. WRA will attend and prepare presentation materials for four meetings with the IRT and attend one site visit with the IRT members, if requested. This scope also includes responding to two rounds of comments from the IRT on the draft BEI package, with the assumption that comments are relatively minor in nature and do not require large changes to design or other key elements of the Bank.

Task 1.2: 60% Restoration Plans

WRA will expand upon existing 30% conceptual restoration plans for the Bank to prepare 60% restoration plans that will include sufficient detail to support Draft BEI package submittal and permit applications. The 60% restoration design will consist of grading plans, cross sections, revegetation plans, planting palettes, an erosion control plan, and typical details and notes sufficient to convey the proposed implementation actions and intent of the project to the regulatory agencies. WRA will coordinate with SCPI and other County of Sonoma departments on culvert sizing and details, as needed. WRA will extract quantities and materials information from the 60% plans and provide SCPI with refined construction cost estimates. WRA will incorporate input from SCPI on unit cost information into the cost estimates. These estimates will be used to inform SCPI about construction costs and to inform the Construction Security Analysis and Schedule, a required part of the draft BEI package.

The 60% restoration plans will consider additional treatment measures and mitigation features within the Bank Property beyond those identified in the March 2022 Final Prospectus. The March 2022 Final Prospectus Restoration Plan (30%) focused on two main areas: the intermittent stream parallel Mecham Road in the Wilson West area and an existing artificial (i.e., stock) pond and its associated intermittent stream in the Wilson East area. WRA will examine potential rehabilitation of additional features based on agency feedback including: degraded drainages on the south side of the Bank Property; siting an additional pond that can support CTS breeding; and consideration of off-site connectivity for CTS. Each of these new components and footprint areas require preliminary analysis related to design feasibility to support developing designs to the 60% level.

WRA restoration designers will walk the site to examine these new areas and make geomorphic observations about specific design opportunities or challenges. WRA will review and analyze the hydrologic monitoring data gathered onsite over the past 1.5 years and evaluate mapped soils data, soil pit profiles and boring logs collected by SCPI, historic aerials, soil infiltration rates, and updated topographic, geomorphic and biologic observations in relation to both the original and additional design elements. Updated restoration design plans will be developed for the two current restoration areas as well as for each of the new areas.

Task 1.3 Additional Topographic Survey (External)

A topographic survey was completed for the Bank Property by Hogan Land Services using LiDAR during the Final Prospectus phase of bank entitlement. To support hydraulic modeling (Task 1.4) and 60% restoration designs (Task 1.2), additional survey work will be needed in key locations to ensure a greater level of accuracy. Additional survey work would include, but not be limited to, more detailed topographic and bathymetric elevation data, culverts beneath Mecham Road that drain onto the Bank Property, the existing pond dam, and other features deemed critical to design. Topographic data would be compiled with the previous survey to establish a continuous DEM. The survey would also need to establish project control points for construction quality assurance and quality control and future topographic monitoring. The cost for this task was provided by Hogan Land Services utilizing prevailing wages per specifications in the request for proposals.

Task 1.3a Topographic Survey Support

WRA will coordinate with Hogan Land Services to obtain topographic and bathymetric data in key locations within the Bank Property to support hydraulic modeling and 60% restoration designs. The surveyor will need to collect topographic and bathymetric elevation data of the Bank Property using conventional methods that would then be combined with previously prepared LiDAR to establish a continuous digital elevation model (DEM). WRA will work with the Hogan survey team to confirm their proposed scope, assess their cost proposal for value and accuracy, and meet the survey team at the Bank Property to discuss the scope and extent of the survey. WRA will receive and review the survey deliverable for quality and completeness.

Task 1.4 Hydrology and Hydraulics Modeling

Hydrology and hydraulics (H&H) modeling is needed to inform and support the design for habitat functions, channel stability, culvert sizing, and flow conveyance. In this setting, the behavior of rainfall events is first understood and then used as inputs to the hydraulic model. WRA will compile and evaluate the site-specific hydrologic monitoring data that have been collected by instrumentation installed and managed by SCPI staff. WRA will analyze relevant weather data as input to wetlands water budget and pond hydrology models. One or two different hydrology models (the NRCS Method using Curve Numbers [using HEC-RAS] and the Sonoma Water Guidance: Incremental Rational Method [IRM]) will be used to assess typical rainfall runoff into the design features. The model will be selected based on input from SCPI about their design standards and permit requirements.

A 2D HEC-RAS hydraulic model will be created of the Bank Property, plus additional areas as needed to develop appropriate boundary conditions. The initial model will represent existing conditions including the DEM and LiDAR topography, existing vegetation, and other model inputs. The model will be calibrated to the hydrologic measurements collected by SCPI and available related weather data.

The HEC-RAS model will demonstrate changes in water surface elevations, inundation extent and duration, as well as sediment aggradation and degradation based on permissible velocity and shear stress thresholds. Various rainfall event scenarios can be run depending on the design element under consideration; culvert design may require modeling a 25- or 100-year rain event; restoration areas may require modeling a common rainfall event such as a 1- or 2-year rain event. Observed storm events from 2021 and 2022 may also be utilized.

Once the existing conditions model is calibrated and validated, it will be used to inform and analyze the proposed 60% restoration designs. The model with the proposed grading plan (imported from the CAD developed in Task 1.8) will be run under iterative scenarios to assess the proposed restoration plan for swale regrading, vegetation changes, culvert sizing, stormwater attenuating features and pond improvements. Modeling will also be used to confirm that road flooding is not increased under the proposed Bank design. Model outputs include plots of water depth, velocity, and shear stress across the Bank Property with a focus on the restoration areas. The H&H modeling work will be documented with a H&H Analysis Memorandum. The report will explain the model inputs and model results of the existing and proposed conditions, including hydraulic design criteria. The H&H memo will be included in an appendix of the Basis of Design (BOD) report (Task 1.5).

Task 1.5 Basis of Design Report

A BOD Report will be provided that describes the design process and compares the existing conditions to the projected conditions, post-restoration. The report will include a synthesis of the site observations, hydrologic studies, topographic surveys, HEC-RAS modeling, and how those factors were analyzed to inform the restoration design. Where groundwater data are available, WRA will analyze groundwater patterns to assess the degree of support for seasonal wetlands and the relationship of groundwater levels to the swales, channels, and pond. Sediment transport and erosion will also be considered. The BOD report will also summarize the ecological uplift from proposed restoration, both qualitatively and quantitatively, which will be included as an appendix to the Development and Interim Management Plan (Task 1.7).

Task 1.6 Financial Securities Analysis and Schedule

As part of the draft BEI package WRA will calculate the amounts for the three financial securities required for the Bank – performance security, construction security, and interim management security. Each of these security amounts will be presented along with the funding schedules in a separate exhibit. Per requirements in the BEI template, the construction security will equal 100% of construction costs, the performance security will equal 20% of the construction security amount, and the interim management security will equal three years of estimated interim management costs.

Task 1.7 Development and Interim Management Plan

WRA will prepare a Bank Development and Interim Management Plan detailing the existing and proposed conditions of the Bank, restoration design and approach, performance standards and monitoring methods, and interim management actions. This plan will summarize all the direct actions that will take place to establish the Bank's habitats and infrastructure that are detailed in the BOD Report (Task 1.5) and 60% restoration design plan set (Task 1.2) and include detailed figures depicting the location, property, crediting opportunities, restoration actions, historical context, and wildlife values of the Bank. The content of this document will be largely dependent on the designs developed in the restoration design task (Task 1.2) and the hydraulic modeling and hydrologic studies results (Task 1.4), as well as work previously completed during the final prospectus phase. The BOD report (including H&H analyses) and 60% restoration design plan set will be included as appendices to this Plan.

Task 1.8 Long-Term Management Plan and Endowment Fund Analysis and Schedule

The Long-term Management Plan (LTMP) identifies any habitat or land management activities needed for the Bank's continued performance and the endowment necessary to carry out such management activities in perpetuity. The details of the LTMP would include items such as a property description, description of on-site biological resources, vegetation map, identification of activities allowed and prohibited within Bank Property, identification of biological goals and objectives for the Bank, and management activities to occur within the Bank. This plan will also include a grazing management plan that includes assessment of appropriate residual dry matter levels for the Bank Property to maintain the restored habitat conditions. The contents of this LTMP will determine the upfront costs that must be contributed to a non-wasting endowment fund once the Bank is approved. WRA will prepare a Property Analysis Record (PAR)-like analysis to determine the total funding required for the endowment. The total cost of funding an endowment can vary by capitalization rates utilized by third parties and the management needs of a specific property as negotiated during the approval process.

Task 1.9 Credit Evaluation

WRA will prepare a credit evaluation for the Bank that details the location, types, and amounts of credits for each of the IRT agencies. This exhibit will describe how the various credit types are classified and defined relative to agency statutes and guidelines and quantify in acres the amount of each credit type. Credits will be mapped within the Bank boundary. This exhibit will also show how stacked credits overlap and how these stacked credits will be tracked in a ledger. WRA will prepare sample ledgers for all credits and include a sample credit sales agreement. Credit types and locations will largely be determined by the restoration designs and the projected functional uplift resulting from habitat improvements.

Task 1.10 Service Area Narratives and Figures

WRA will prepare a service area narrative for the Bank that describes the geographic extent and justification for each of the Bank's service areas. This will build upon the work prepared in the Final Prospectus and incorporate comments made by the IRT. Separate services areas will be described for aquatic resources and special-status species credits. Service area justification for aquatic resource credits will utilize the Corps South Pacific Division 2015 Mitigation and Monitoring Guidelines, and justification for species will utilize available recovery plans, management units, distinct population segments/evolutionary significant units, and species ranges.

Task 1.11 Draft BEI and Additional BEI Exhibits

In addition to the BEI exhibits described in the tasks above, WRA will prepare all other necessary exhibits required for a complete draft BEI package including, but not limited to, the Draft BEI template, conservation easement agreement, property assessment and warranty, and endowment agreement. Other tasks that will be included in this task are a legal description for the conservation easement, an updated Phase I environmental site assessment (must be current within 6 months of the draft BEI submittal per the 2021 Checklist), an updated title report (must be current within 1 year of the draft BEI submittal per the 2021 Checklist), and any coordination with potential easement/endowment holders. The draft BEI package is assumed to be submitted digitally to the IRT and thus no hard copies are included within this task or other Phase I tasks.

Task 1.12 Permitting Assistance

The anticipated permits and environmental review include Corps Section 404 Nationwide Permit 27, North Coast Regional Water Quality Control Board (RWQCB) Section 401 Certification, Lake and Streambed Alteration Agreement from CDFW, Biological Opinion from United States Fish and Wildlife Service (USFWS), Consistency Determination or Incidental Take Permit from CDFW, and Initial Study/Mitigation Negative Declaration through the CEQA process or CEQA Statutory Exception for Restoration Projects.

SCPI has expressed the intent to perform the majority of work associated with permitting the Bank but has set aside funds for a consultant to assist them with obtaining the necessary permits and California Environmental Quality Act (CEQA) approvals. WRA will assist SCPI with permit application preparation, agency negotiations, and the CEQA review process upon request.

Task 1.13: Directed Services

The need for additional tasks (not anticipated in the RFP or the normal scope above) may arise during the course of preparing the draft BEI package. WRA recommends that a 'directed services' task be included to cover any such additional tasks and additional responses to IRT comments above the two rounds scoped in Task 1.1. WRA will not utilize this task unless explicitly directed by SCPI.

Phase 2: Final Bank Enabling Instrument Tasks

Task 2.1: Final Restoration Modelling

WRA will refine the 2D HEC-RAS model developed in the Draft BEI to reflect any changes made to the project design to respond to IRT and SCPI comments. The model revisions will be reflected in an updated H&H memo that is an appendix to the BOD report.

Task 2.2: Final 60% Restoration Design

Based on feedback from the IRT and SCPI, WRA will update the Draft 60% Restoration Design plans and BOD report to be included in the Final BEI. The final detailed design plans will include the same level of detail as the draft plans. Based on WRA's experience entitling mitigation banks, 60% design plans are typically sufficient for final bank approval and all permit issuances. If additional details are requested by the IRT on specific project elements, those details will be incorporated into the Final 60% Restoration Design Plans.

Task 2.3 Final BEI Package

WRA will prepare a final BEI package that incorporates all negotiated changes from the IRT draft BEI package review. This task assumes two meetings with the IRT to discuss submission of the final BEI package and any final revisions. WRA will work collaboratively with the IRT and SCPI and utilize its mitigation banking expertise to reduce IRT review timelines and minimize the need for Bank document and design revisions. WRA, however, ultimately cannot control IRT decisions and review periods. It is assumed that the final BEI package will be submitted to the IRT digitally; however, this task includes the printing of two hard copies of the final BEI package, should SCPI request them.

Phase 3: Construction Bid Package Tasks

Task 3.1: Draft 100% Plans, Specifications, and Estimates (PS&Es)

WRA will prepare Draft 100% PS&Es based on the Final 60% Restoration Design and subsequent comments received from SCPI and the IRT. The Draft 100% submittal will be used to communicate detailed design aspects of the project including site layout, grading, culvert sizing and details, final habitat acreage, earthwork volumes, erosion control BMPs, revegetation, and construction sequencing. Technical specifications and an updated construction cost estimate will also be provided with the submittal. The following sheets are anticipated in the plan set:

- Cover Sheet
- General Notes
- Demolition and Site Preparation Plans
- Grading Plans
- Grading Details and Sections
- Erosion Control Plans
- Erosion Control Details
- Revegetation Plans
- Revegetation Details

Technical specifications will include:

- Grading
- Seeding
- Planting
- Erosion Control

Based on similar projects and permitting environment we assume the sheet list would be produced with approximately 28 sheets. WRA will submit the Draft 100% PS&Es to SCPI to review and follow up with a remote meeting to discuss.

Task 3.2: Final 100% Plans, Specifications, and Estimates (PS&Es)

WRA will address comments received during the Draft 100% PS&E review meeting and subsequent SCPI review to develop Final 100% PS&Es to be used for construction bidding. Plans will be stamped and signed by a WRA Professional Civil Engineer and Licensed Landscape Architect. The Final 100% PS&Es are anticipated to be used in resubmittals of regulatory permits for approval and Sonoma County Grading Permit application submittal. WRA will prepare the AutoCAD drawings so they can be used by the contractor in creating a model to complete all grading work using GPS enabled equipment.

Phase 4: Implementation Support Services (optional)

Task 4.1: Irrigation Design Guidance

The need for a temporary irrigation system to establish vegetation will be determined during the BEI phases. If it is determined necessary, WRA will include irrigation notes and technical specifications with the 100% PS&E submittals to provide enough information to the selected contractor to design and implement a temporary irrigation system. This includes coordination with SCPI to determine a nearby water service point of connection to tie into (if feasible) or an alternate source of water.

Subtask 4.2: Plant Procurement Coordination

WRA will work with SCPI to select and manage a qualified native plant nursery and seed supplier to contract-grow the plant material specified for the project. This includes preparation of a request for proposals package to send to pre-qualified nurseries and review all bids received. WRA will provide recommendations on the nursery selection based on the nursery's proposed costs and capabilities and coordinate the contract finalization process with SCPI and nursery. During the growing period and prior to construction, WRA will perform up to three (3) site visits at the selected nursery to assess the plant material for health and development prior to delivery to the project site. Following each nursery site visit, WRA will provide SCPI with documentation of the inspection, including a summary and representative photographs of the plants. WRA will coordinate with the selected nursery throughout the growing period to ensure that the plants are developing on schedule and advise SCPI on the progress related to contract milestones.

Subtask 4.3: Contractor Selection Support

WRA will assist SCPI with solicitation and review of construction bids. This includes reviewing contractor qualifications; clarifying design drawings and specifications; preparing addendums; and review, comparison, and assessment of bids. This task includes attending up to two (2) pre-bid site walks with identified contractors to review the bid documents and answer technical questions.

SCHEDULE

Work can begin upon execution of this Scope of Work. Exhibit B below shows a detailed schedule for the tasks described in this scope.

STAFFING

Nate Bello will be the principal in charge of the project. Ashley Zavagno will be the project manager. Other staff will be assigned to the project as necessary.

Russell Prange will be a landscape architect on the project (license #6059; landscape architects are licensed by the State of California).

Andrew Smith will be a consulting engineer on the project (license # C82643; professional engineers are licensed by the State of California).

ASSUMPTIONS

The following assumptions have been made in the preparation of this Scope of Work:

- The infrastructure design in the project includes up to the three culvert replacements in a County road only.
- SCPI can arrange for site access and authorization for WRA to conduct field studies and unmanned aerial vehicle flights as described in this Scope of Work.
- Project related work conducted or products completed by non-WRA staff will be provided in native software digital format (such as AutoCAD or GIS), properly referenced to a geographic coordinate system.
- Quantitative predictions for aggradation and degradation are not included in this scope of work.

- If necessary, SCPI will obtain a grading permit for the project. Review of the Draft 100% PS&Es by SCPI will include any grading permit requirements to be included in the Final 100% PS&Es. Additional coordination and submittals required to obtain the grading permit beyond what is described in the scope of work are not part of this scope. Any supplemental documents such as geotechnical reports, easement documents, deed restrictions, etc. that may be required by plan checker as part of the grading permit are not part of this scope.
- Format template for technical specifications to be provided by SCPI. Otherwise, WRA will use standard CSI MasterFormat formatting. General specifications for bid documents to be provided separately by SCPI.
- SCPI will provide the description and location of irrigation point of connection for water and electricity.
- This scope of work is for a bank confined to the property, as identified in the submitted Final Prospectus and includes the Corps, EPA, CDFW, USFWS, and RWQCB as signatories.
- Any additional studies required by the regulatory agencies not already described in this Scope of Work, will be covered under a Change Order.
- It is anticipated that the project will be self-mitigating, no additional mitigation will be needed (i.e., no Habitat Mitigation and Monitoring Plan is required).
- This scope assumes no trees will need to be removed as part of the Bank construction, and as such, a tree survey is not required as part of the Section 1602 permitting application.
- This fee estimate does not include any of the fees payable to the agencies for review of Bank documents or permit applications or any fees due to the selected easement/endowment. SCPI will be responsible for payment of these fees directly to those entities.
- This fee estimate includes two hard copies of the Final BEI package for SCPI and up to 10 hard copies of the final 100% construction drawings. All IRT submissions are assumed to be submitted electronically.
- Any biological survey, assessment, or other reconnaissance is dependent on current conditions, and the biological data obtained may not be accurate or applicable in subsequent years.
- WRA cannot guarantee schedules or costs for actions taken by regulatory and other third party entities with authority to approve project activities, as these actions are outside of WRA's control.
- It is assumed that SCPI will have minimal requested changes to Bank template language as this would necessitate a more expansive review by the IRT and agencies' legal counsel.

ESTIMATED COST

The estimated cost for the services described in this Scope of Work is provided below. This cost is based on the assumptions above and normal working conditions. Costs may be reallocated between tasks, but the total cost will not be exceeded without authorization.