

**ATTACHMENT A**

THIRD AMENDMENT

**THIRD AMENDMENT TO AGREEMENT NO. 21-23  
(BOS AGREEMENT NO \_\_\_\_ - \_\_\_\_)**

This Third Amendment to Agreement No. 21-23 is made and entered into as of the last date signed below, by and between the County of Yolo, a political subdivision of the State of California (“County”), and MBK Engineers (“Contractor”), jointly referred to as the “Parties” herein and who agree as follows.

**WHEREAS**, on January 26, 2021, the Parties entered into Agreement No. 21-23 (“Agreement”) for Contractor to provide preliminary engineering and design services for the Knights Landing Flood Risk Reduction and Multi-Benefits Project (“Project”);

**WHEREAS**, on February 28, 2022, the Parties amended the Agreement, via Amendment #1, to modify the scope of work to add Task 7 and reallocate \$572,750 from Task 2 to the new Task 7; and

**WHEREAS**, on October 19, 2022, the Parties amended the Agreement, via Amendment #2, to reallocate funding between tasks to align the respective task budgets with anticipated project expenses; and

**WHEREAS**, the Parties wish to amend the Agreement, as previously amended, to:

1. Revise **Paragraph III.A.** to reallocate funding between tasks to align the respective budgets with current and anticipated project expenses; and
2. Revise **Paragraph IX.A.** to extend the agreement term by three years to June 30, 2026, consistent with the extended term of the County’s California Department of Water Resources Small Communities Flood Risk Reduction Funding Agreement (4600013795) for the Project; and
3. Revise **Section XIII** to reflect the new County insurance requirements; and
4. Revise **Paragraph XV** to update contact information for the Parties; and
5. Revise **Exhibit A-2: Scope of Work** to update the budgets for each task, as well as project sub-subconsultants.

**NOW, THEREFORE, IT IS HEREBY AGREED AS FOLLOWS:**

1. **Paragraph III.A.** of the Agreement is hereby amended to read as follows:

**III. COMPENSATION AND REIMBURSEMENT OF EXPENSES**

**A.** For the services described in Paragraph I above, and subject to the condition that the services have been completed in a manner satisfactory to the Director, or their designee, County

shall compensate Contractor for each task, on a time-and-material basis, in the amount up to the maximum amounts set both below:

Task 1: Geotechnical Investigation (DWR-1) .....	\$2,300,000
Task 2: Design Plans, Specifications, and Estimates (DWR-2) .....	\$4,513,719
Task 3: Environmental Documentation (DWR-3) .....	\$1,021,167
Task 4: Permitting and Cultural Resources Compliance (DWR-4) .....	\$1,300,000
Task 5: Real Estate (DWR-5) .....	\$290,367
Task 6: Program and Project Management (DWR-7) .....	\$1,347,000
Task 7: Construction Management (DWR-6) .....	\$2,406,340

2. **Paragraph IX.A.** of the Agreement is hereby amended to read as follows:

**IX. TERM AND TERMINATION**

**A.** The term of this Agreement shall be from January 1, 2021, through June 30, 2026, unless sooner terminated as hereinafter provided.

3. **Section XIII** of the Agreement is hereby amended to read as follows:

**XIII. INSURANCE**

**A.** During the term of this Agreement, Contractor shall at all times maintain, at its expense, the following coverages and requirements:

1. Minimum Scope of Insurance – coverage shall be at least as broad as the latest version of the following:

a. Commercial General Liability: Insurance Services Office form CG 000. The policy shall not contain any exclusions contrary to the Agreement, including but not limited to endorsements or provisions limiting coverage for 1) Contractual liability such as ISO CG 24 26 or 21 29; or 2) cross liability or suits by one insured against another.

b. Automobile Liability: Insurance Services Office form CA 00 01, code 1- Any Auto or including Hired and Non-Owned vehicles.

c. Workers’ Compensation and Employers’ Liability: Workers’ Compensation insurance as required by the State of California and Employers’ Liability.

d. Professional Liability (Errors and Omissions) (If applicable, see below)

2. Minimum Limits (as applicable) – Insurance coverage shall be with limits not less than the following:

- a. Commercial General Liability – \$2,000,000/occurrence and \$4,000,000 annual aggregate or an aggregate of \$2,000,000 that applies separately to this project (ISO CG 25 03 or 25 04).
  - b. Automobile Liability – \$1,000,000 per accident for bodily injury and property damage.
  - c. Professional Liability/Malpractice/Errors and Omissions – \$2,000,000 per occurrence and annual aggregate (If any engineer, architect, attorney, accountant, medical professional, psychologist, or other licensed professional performs work under a contract, or other professional contractors, such as computer and software designers, the contractor must provide this insurance. If not, then this requirement automatically does not apply.)
  - d. Workers' Compensation – Statutory Limits/Employers' Liability – \$1,000,000/accident for bodily injury or disease (If no employees, this requirement automatically does not apply.)
3. It shall be a requirement under this Agreement that any available insurance proceeds broader than or in excess of the specified minimum Insurance coverage requirements and/or limits shall be available to the Additional Insured. Furthermore, the requirements for coverage and limits shall be (1) the minimum coverage and limits specified in this Agreement; or (2) the broader coverage and maximum limits of coverage of any Insurance policy or proceeds available to the named Insured; whichever is greater.
4. Other Insurance Provisions
- a. **Additional Insured Status** – The County, its officers, agents, employees, and volunteers shall be named as additional insured on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the Contractor including, materials, parts, or equipment furnished in connection with such work or operations. Coverage can be provided in the form of an endorsement to the Contractor's insurance (at least as broad as CG 20 10 11 85 or if not available, through the addition of both CG 20 37 and one of the following: CG 20 10, CG 20 26, or CG 20 33). [NOTE: Evidence of additional insured is needed as a separate endorsement or comparable policy language due to wording on the certificate negating any additional coverage listed writing in the description box.]
  - b. **Primary Coverage** – The Contractor's policy shall be "primary and non-contributory" and will not seek contribution from the County's insurance or self-insurance and shall be at least as broad as CG 20 01 04 13.
  - c. **Notice of Cancellation** – Each insurance policy required above shall provide that coverage shall not be cancelled, except with notice to the County.

- d. **Waiver of Subrogation** – Contractor hereby grants to the County a waiver of any right to subrogation which any insurer of said Contractors may acquire against the County by virtue of the payment or any loss under such insurance. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the County has received a waiver of subrogation endorsement from the insurer.
5. The limits of Insurance required in this Agreement may be satisfied by a combination of primary and umbrella or excess Insurance. Any umbrella or excess Insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and non-contributory basis for the benefit of the County of Yolo (if agreed to in a written contract or agreement) before the County's own Insurance or self-insurance shall be called upon to protect it as a named insured.
6. Said policies shall remain in force through the life of this Agreement and, with the exception of professional liability coverage, shall be payable on a "per occurrence" basis unless the County Risk Manager specifically consents in writing to a "claims made" basis. For all "claims made" coverage, in the event that the Contractor changes insurance carriers, Contractor shall purchase "tail" coverage covering the term of this Agreement and not less than three years thereafter. Proof of such "tail" coverage shall be required at any time that the Contractor changes to a new carrier prior to receipt of any payments due.
7. The Contractor shall declare all aggregate limits on the coverage before commencing performance of this Agreement, and the County's Risk Manager reserves the right to require higher aggregate limits to ensure that the coverage limits required for this Agreement as set forth above are available throughout the performance of the Agreement.
8. Any deductibles or self-insured retentions must be declared to and are subject to the approval of the County Risk Manager. All self-insured retentions (SIR) must be disclosed to Risk Management for approval and shall not reduce the limits of liability. Policies containing any SIR provision shall provide or be endorsed to provide that the SIR may be satisfied either by the named Insured or Yolo County.
9. Insurance is to be placed with insurers with current A.M. Best's rating of no less than A:VII, unless otherwise approved by the County Risk Manager.
10. The policies shall cover all activities of Contractor, its officers, employees, agents and volunteers arising out of or in connect with this Agreement.
11. For any claims relating to this Agreement, the Contractor's insurance coverage shall be primary, including as respects the County, its officers, agents, employees and volunteers. Any insurance maintained by the County shall apply in excess of, and not contribute with, insurance provided by Contractor's liability insurance policy.

**B.** Prior to commencing services pursuant to this Agreement, Contractor shall furnish the County with original policies or endorsements reflecting coverage required by this Agreement. The endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. All endorsements are to be received by, and are subject to the approval of, the County Risk Manager before work commences. Upon County's request, Contractor shall provide complete, certified copies of all required insurance policies, including endorsements reflecting the coverage required by the specifications.

**C.** During the term of this Agreement, Contractor shall furnish the County with original endorsements reflecting renewals, changes in insurance companies and any other documents reflecting the maintenance of the required coverage throughout the entire term of this Agreement. The endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. Upon County's request, Contractor shall provide complete, certified copies of all required insurance policies, including endorsements reflecting the coverage required by these specifications. Yolo County reserves the right to obtain a full certified copy of any Insurance policy and endorsements. Failure to exercise this right shall not constitute a waiver of right to exercise later.

**D.** Contractor agrees to include with all Subcontractors in their subcontract the same requirements and provisions of this Agreement including the indemnity and Insurance requirements to the extent they apply to the scope of the Subcontractor's work. Subcontractors hired by Contractor agree to be bound to Contractor and the County of Yolo in the same manner and to the same extent as Contractor is bound to the County of Yolo under the Contract Documents. Subcontractor further agrees to include these same provisions with any Sub-subcontractor. A copy of the Owner Contract Document Indemnity and Insurance provisions will be furnished to the Subcontractor upon request. The General Contractor/and or Contractor shall require all Subcontractors to provide a valid certificate of insurance and the required endorsements included in the Agreement prior to commencement of any work and General Contractor/and or Contractor will provide proof of compliance to the County of Yolo. (Coverage can be provided in the form or an endorsement to the Contractor's insurance at least as broad as CG 20 38 for operations and CG 20 40 for completed operations).

**E.** Contractor shall maintain insurance as required by this Agreement to the fullest amount allowed by law and shall maintain insurance for a minimum of five years following the completion of this project. In the event Contractor fails to obtain or maintain completed operations coverage as required by this Agreement, the County at its sole discretion may purchase the coverage required and the cost will be paid by Contractor.

4. **Paragraph XV.A.** of the Agreement is hereby amended to read as follows:

#### **XV. NOTICE**

**A.** All notices shall be deemed to have been given when made in writing and delivered or mailed to the respective representatives of County and Contractor at their respective addresses as follows:

**Contractor:**

MBK Engineers  
Attn: Nicole Ortega-Jewell  
455 University Avenue, Suite 100  
Sacramento, CA 95825

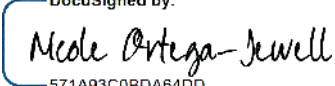
**County:**

County of Yolo  
Department of Community Services  
Attn: Manager of Natural Resources  
292 West Beamer Street  
Woodland, CA 95695

- 5. **Exhibit A-2** to the Agreement regarding the Scope of Work is hereby replaced with the attached.
- 6. Except as specifically amended hereinabove, the Agreement shall remain in full force and effect according to its terms.

**IN WITNESS WHEREOF**, the Parties hereto have executed this Third Amendment as of the last date signed below.

**CONTRACTOR**

DocuSigned by:  
  
 By: \_\_\_\_\_  
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 Nicole Ortega-Jewell, Principal  
 MBK Engineers

Date: 5/24/2023

**COUNTY**

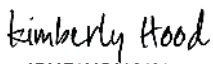
By: \_\_\_\_\_  
 Oscar E. Villegas, Chair  
 Yolo County Board of Supervisors

Date: \_\_\_\_\_

Attest:  
Julie Dachtler, Senior Deputy Clerk  
Board of Supervisors

By: \_\_\_\_\_  
Deputy (Seal)

Approved as to Form:  
Philip J. Pogledich, County Counsel

DocuSigned by:  
  
 By: \_\_\_\_\_  
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 Kimberly E. Hood, Assistant County Counsel

## EXHIBIT A-2: SCOPE OF WORK

### PRELIMINARY ENGINEERING AND DESIGN SERVICES FOR THE KNIGHTS LANDING FLOOD RISK REDUCTION AND MULTI-BENEFITS PROJECT

The County of Yolo received a grant (DWR Funding Agreement 46000013795) under the California Department of Water Resources (DWR) Small Community Flood Risk Reduction Program (SCFRRP) to design and implement a portion of the recommended Knights Landing Flood Management Project (Project) described in the Knights Landing Small Community Flood Risk Reduction Feasibility Study Report (July 2019), as detailed in the following sections of this Scope of Work (SOW).

The Project area is in the Knights Landing Basin, at the northern boundary of Yolo County, at the Sacramento River and northwest end of the Yolo Bypass. It is bounded by the Knights Landing Levee System (KLLS) with approximately 15.2 miles of levee that provide protection from flows in the Sacramento River on the East; the Knights Landing Ridge Cut (KLRC) on the West; the Colusa Basin Drain, through the Sycamore Slough, in the North; and the Yolo Bypass in the South. These levees are associated with the State Plan of Flood Control (SPFC), in Yolo and Sutter County.

This SOW describes the scope and deliverables for the design of the following features of the Project (Figure 1) as it relates to the DWR funding agreement, and the associated budget and schedule.

1. Levee Improvements
  - Sacramento River, right bank between LM 2.7 to LM 2.9, LM 3.0 to LM 3.2 and LM 4.3 to LM 5.4) and Widened Parking area on Sacramento River near Wild Irishman Bend;
  - Sacramento River, Adjacent to Town (right bank between LM 0.13 to LM 0.9) and New Cross Levee Loop Trail;
  - Sacramento River, right bank between LM 0.9 to LM 5.0; and
  - Knights Landing Ridge Cut (KLRC) (left bank between LM 4.9 to LM 5.3) and New Cross Levee Loop Trail.
2. Portuguese Bend and Grays Bend Habitat Enhancement,
3. Drainage Infrastructure Improvements, and
4. New Cross Levee (6,800 linear feet across the Knights Landing Basin from Sacramento River LM 4.9 to the KLRC LM 0.9) and New Cross Levee Loop Trail.

MBK Engineers will assist Yolo County with the program and project management, including the grant management, and lead the consultant team. The organization chart for the consultant team is in Figure 2.

### **Task 1: Geotechnical Investigation (DWR-1)**

Task 1 will include geotechnical investigation and exploration to determine the subsurface conditions along the right bank of the Sacramento River levee, Adjacent to Town, the left bank of the KLRC levee and the New Cross Levee.

GEI Consultants, Inc will be leading the design effort for the Sacramento River levee, Adjacent to Town and the New Cross Levee. Gregg Drilling and/or Tabor Drilling will be assisting GEI Consultants on this task.

KSN will be leading the design effort for the KLRC levee. Shannon and Wilson (formerly Hultgren & Tillis) will be assisting KSN on this task, along with Gregg Drilling.

Wood Rodgers will be leading the design effort for the Sacramento River levee improvements below the proposed New Cross Levee to LM 4.0 and Shannon and Wilson (formerly Hultgren & Tillis) is assisting on this task along with Gregg Drilling.

Geotechnical investigation for the levee improvements will be limited to the right bank along the Sacramento River, Adjacent to Town from LM 0.13 and LM 0.9, to the left bank of the KLRC levee from LM 4.9 and LM 5.3, to the New Cross Levee alignment through the Knights Landing Basin between the Sacramento River and KLRC levees, and proposed internal drainage facilities, as shown in Figure 1. Preliminary profile sheets and plan sheets will be prepared to include historic explorations, DWR Non-Urban Levee Evaluation (NULE) Phase 2 explorations for Knights Landing, waterside and landside toes, and the updated 100-year water surface elevation (WSE) (on the profile sheets only). Available data will be reviewed to identify the areas requiring additional subsurface data for the design level evaluation of existing conditions and remedial repairs.

The explorations within the footprint of the existing Sacramento River levee and the KLRC levee will be planned and described in a Drilling Program Plan (DPP), as required by the Central Valley Flood Protection Board (CVFPB) and the United States Army Corps of Engineers (USACE). The DPP will outline the proposed exploration locations, methods, depths, types of sampling, and laboratory tests of collected samples. DPP will be updated based on the comments received and submitted for approval. DPP will be submitted to the CVFPB with review from USACE. Prior to performing geotechnical explorations along the alignment of the New Cross Levee, a Subsurface

Exploration Workplan will be prepared outlining the proposed exploration locations, methods, depths, types of sampling, and laboratory tests of collected samples.

Geotechnical explorations will be performed through the existing levee and foundation along the levee crown and/or the landside of the levee to characterize the subsurface conditions for geotechnical analysis, meet USACE design level spacing and depth requirements, and provide information to appropriate depths for design purposes. For the Sacramento River Levee, Adjacent to Town it is assumed that there will be at least 15 but no more than 25 explorations and there will be between 20 and 40 explorations for the New Cross Levee. Based on the data gaps identified through the data review process described above, the explorations may include a combination of cone penetration tests (CPTs) and geotechnical borings (e.g. hollow stem auger and mud-rotary). Exploration depths will also consider specific data needs at the location which may include characterization of the shallow foundation (on the order of 30 feet) and/or deep foundation (up to 150 feet) materials.

Site conditions will be explored along the existing levee alignment along the KLRC at about 1,000 feet spacing in both the levee crest and the levee toe at 5 locations, two additional borings will be drilled to the landside of the levee where access is available, for a total of 12 borings. The crest borings will extend to depths up to 65 feet below the crest and the landside borings will extend up to 50 feet deep. Exploration of the existing landside slope to shallow depth will be done using a backhoe or portable drilling equipment. The borings will be drilled with truck mounted drilling equipment.

For the investigation of the proposed drainage facilities, six boreholes will be advanced with a truck-mounted drill to a depth of 50 feet below the existing ground surface. Subsurface conditions encountered during drilling will be logged by a geologist or engineer and monitored by a cultural resource monitor, with locations documented by the Global Positioning System (GPS).

Geotechnical laboratory testing will be performed on selected soil samples collected during the subsurface exploration program to aid in soil classification and development of engineering parameters for levee design. Sampling and laboratory testing to evaluate material properties for the existing levee and foundation soils will be performed. Soil testing may include gradation, unit weight, in-situ moisture, Atterberg limits, compaction, permeability, consolidation, and shear strength.

A Geotechnical Data Report (GDR) will be prepared that will present available geotechnical data and data collected during the investigation phase of this project. Information in this report will include:

- Updated Profile sheets and Plan sheets, including new explorations completed under this scope
- Summary of current geotechnical field investigations and laboratory testing
- Borehole and CPT logs
- Laboratory testing results

#### Potential Borrow Site for Project

As needed, GEI Consultants and Gregg Drilling and/or Tabor Drilling will be leading the investigation of borrow material for the Project. Borrow material will be required for the levee improvements and the New Cross Levee. To identify suitable material, geotechnical investigation and evaluation will be performed to inform the plans, specifications and estimate portion of the Project design. The geotechnical investigation will be limited to test pit exploration of the potential borrow site identified by the consultant team. Investigation is limited to approximately 50-acres of test pits, with an average of one test pit per acre. Subsurface conditions encountered during investigation will be logged by geologist or engineer, monitored by a cultural resource monitor, and locations documented by GPS.

A Subsurface Exploration Workplan will be prepared outlining the proposed exploration locations, methods, depths, types of sampling, and laboratory tests of collected samples.

Geotechnical laboratory testing will be performed on selected bulk soil samples collected from the test pit exploration to aid in soil classification and identification of material meeting design requirements for the new levee fill. Anticipated soil testing may include the following: gradation, moisture content, Atterberg limits, compaction, permeability, consolidation, and shear strength. A Borrow Site Technical Memorandum will be prepared. The memorandum will present the data collected through the borrow site investigation program.

Information in this report will include:

- Summary of test pit investigations and laboratory testing
- Test pit logs
- Laboratory testing results
- Conclusions on material suitability

### Task 1 Deliverables

- Geotechnical Exploration DPP (Sacramento River, Adjacent to Town and KLRC)
- Subsurface Exploration Workplan (New Cross Levee and Borrow Sites)
- Draft and Final GDR (including results from borings and a geophysical survey)
- Draft and Final Borrow Site Technical Memorandum

Third Amendment – increase of budget by \$70,725 to perform additional geotechnical investigation along the Sacramento River downstream of the New Cross Levee; added Tabor Drilling as possible sub-sub consultant.

**Task 1 Budget = \$2,300,000**

### **Task 2: Design Plans, Specifications, and Estimates (DWR-2)**

The results and conclusions from the geotechnical explorations, the hydrology and hydraulic modeling will be used to account for climate change, and the surveying and utilities identification for the Project. This task includes, but not limited to performing and preparing: all related field investigations (surveying/biological/cultural), the Basis of Design, hydraulic modeling, geotechnical engineering, and the 65%, 95% and Final (100%) design plans, except where described otherwise, technical specifications and construction cost estimates (PS&E) for the Project and Bid documents. At a minimum, the review of the plans will be reviewed by DWR, the CVFPB and USACE for the levee improvements and New Cross Levee. All final Project documents for bidding and contracting will be prepared based on Yolo County standard documents. The technical specifications will follow the Construction Specification Institute (CSI) Master Format 2016 Format.

If required by USACE, the County will comply with the Engineering Circular (EC) 1165-2-220, for Safety Assurance Reviews (SARs) for the Project levee designs. The SAR process is described separately below.

The levee designs for the Sacramento River, Adjacent to Town, the KLRC, and the New Cross Levee will be in accordance with the Code of Federal Regulations (CFR), Title 44 Section 65.10 to meet the Federal Emergency Management Agency's (FEMA's) 100-year accreditation. The completed civil engineering and geotechnical engineering design and analyses will be compiled into an appendix for submittal for the Knights Landing FEMA package.

### Hydrology and Hydraulic Modeling

MBK Engineers will be performing the hydrology and hydraulic modeling for the project. ESA may assist MBK Engineers. MBK Engineers will verify 100-year water surface profiles for the Knights Landing Basin along the Sacramento River right levee, along the KLRC left levee, the right bank of the Sycamore Slough levee and internal to the Basin for the New Cross Levee. MBK Engineers will use the two recently completed USACE Central Valley Hydrology Study (CVHS) event selection for this region 1) USACE, Sacramento District American River Common Features 2016 and 2) MBK Engineers event selection for the Sacramento River General Reevaluation Report study for DWR and the Sacramento Area Flood Control Agency. These will be used for the levee designs. The Project's hydrodynamic modeling will use the climate change assumptions developed during preparation of the 2017 Update to the Central Valley Flood Protection Plan (CVFPP) to assess how larger storm events would affect project design. In addition, the consultant team will consult recent resources on climate change in California during the Project design process, including the following: California Natural Resources Agency's Safeguarding California Plan: 2018 Update, Cal-Adapt, the California Climate Commons, and DWR's 2016 Draft Technical Memorandum: Climate Change Analysis – Phase IIB, Point Blue Conservation Science's Climate-Smart Restoration Toolkit.

The detailed hydraulic modeling will identify WSE's over a range of flood frequencies (2-year through 100-year). Conducting this modeling of the Sacramento River and using the climate change projections will allow the consultant team to assess anticipated climate change impacts and to identify how project components can be adapted to minimize adverse effects.

To provide the level of protection with and without project implementation, additional seepage and stability analyses will be performed under Task 1 at several WSEs. Based on the results of these additional analyses the WSEs will correlate to a percent annual flood chance.

#### Task 2 (Hydrology and Hydraulic Modeling) Deliverables

- Draft and Final Modeling Reports (H&H models, GIS shape files, data spreadsheets)
- Draft and Final Hydraulic Impact Analysis

### Surveying, Mapping, and Utility Investigations

Wood Rodgers, KSN and PSOMAS will providing the team with professional surveying services that will include establishing the horizontal and vertical survey control at the Project site. Horizontal survey control will be referenced to the California Coordinate System of 1983, Zone 3, U.S. Survey Foot units (CA83IIIF). Vertical control will be referenced to the North American Vertical Datum of 1988 (NAVD88). Digital orthophotos will be acquired using a Small Unmanned Aerial System (sUAS), to be used as background imagery for design sheet layouts. Ground based

surveys utilizing conventional and Global Positioning System/Global Navigation Satellite System (GPS/GNSS) surveying techniques to develop an existing topographic survey of the Project site.

In addition, utility research will be performed to include a desktop study, site reconnaissance, non-destructive utility locating and potholing, mapping, and coordination within the Project limits. Utility providers will be identified and provided a Utility Request Letter to utility companies.

Task 2 (Surveying and Utility) Deliverables:

- Electronic AutoCAD Civil 3D drawing file of base mapping/surveying.
- Text file of all surveyed points (P, N, E, Z, D format).
- Orthophotos in TIF format
- Digital files of utility contact summary in Excel format
- Electronic Mapping and Property Boundaries in AutoCAD 2018.

Safety Assurance Review (SAR) (if required)

If required by USACE, MBK Engineers will assist Yolo County to comply with USACE guidelines for U.S. Code title 33, section 408, outlined in (EC 1165-2-220, where the levee design portion of the Project would need a Type II Independent External Peer Review or SAR (as set out under Section 2035 of the Water Resources Development Act (WRDA) 2007) as part of the submission of the 408 request for approval to the USACE. As necessary, MBK engineers will assist Yolo County in hiring (under a separate contract) a panel of experts in design and construction of levee projects to provide the required SAR for the Project levee designs. As a part of this contract, MBK Engineers will provide a SAR Plan for Yolo County to submit to the CVFPB and USACE for review.

Geotechnical Engineering

The results of the field exploration and laboratory testing from Task 1 will be used to develop conclusions and recommendations for design the levee remediation. Geotechnical engineering analyses will include slope stability including static and seismic loading, settlement, and a seepage evaluation. Freeboard screening will also be performed for the updated WSE between LM 0.13 and LM 0.9. The Geotechnical Engineering Design Recommendations Report will include documentation of the geotechnical analyses performed for existing conditions and remedial alternatives. It will also include a conceptual level design dimensions of selected remedial alternatives.

Task 2 (Geotechnical Engineering) Deliverables

- Draft and Final Geotechnical Design Recommendations Report
- If needed, SAR Plan and SOW for separate Yolo County procurement

## PS&E

MGE Engineering, Inc. will be updating the 2012 USACE completed design for the levee improvements to remediate underseepage for the USACE Authorized Sacramento Flood Control Project System Evaluation (SRFCP), Mid-Valley Levee Reconstruction Area 3, Sites 9, 10, and 11 (Mid-Valley). The USACE and CVFPB have an active Project Cooperation Agreement for this area, therefore a Section 408 permission should not be required. These areas are located along the Sacramento River, right bank between LM 2.7 to LM 2.9, LM 3.0 to LM 3.2 and LM 4.3 to LM 5.4 respectively.

KSN will be leading the design for the levee improvements along the KLRC will be for a landside stability improvement and waterside rock slope protection from LM 4.9 to LM 5.8. GEI Consultants, Inc. will lead the design along the right bank of the Sacramento River, Adjacent to Town, the design will include a combination berm and ditch fill from LM 0.86 to LM 0.9; drained stability berm from LM 0.67 to LM 0.86 and a deep cutoff wall from LM 0.13 to LM 0.67. A New Cross levee will be designed by GEI Consultants to reduce the potential for floodwaters to back up into the town of Knights Landing, and to provide up to 100-year level of protection. The design includes the New Cross Levee Loop Trail.

Wood Rodgers design the drainage improvements that will include an expanded channel along the east side of Railroad Street south to the southeast corner of the town, then other drainage improvements necessary to convey the increased flow south and east to the existing pump station located approximately 2.25 miles downstream of the KLRC and Colusa Basin Drain confluence at the KLRC Canal left bank. New pipelines to convey flow beneath Railroad Street are anticipated at 2nd Street through 6th Street. The pipe will extend west towards Mill Street and be equipped with a drop inlet structure at each of these pipe crossings of Railroad Street. The addition of an additional pump and motor unit is anticipated for the pump station. The consultant team will provide four design submittals, as described below.

Wood Rodgers is designing the levee improvements between the New Cross Levee downstream to Site 9 for freeboard, seepage and stability and between Site 9 to LM 4.0 for freeboard and between Site 10 and 11 for freeboard and seepage mitigation.

35% Plan Submittal - The plans will be developed to clearly convey the project's proposed design at a concept level. For LM 2.7 to LM 2.9 and LM 3.0 to LM 3.2 and about 2,400 feet starting at LM 4.3 (shallow cutoff wall), the 2012 USACE Mid-Valley plans will be compared to current levee standards. Any deviations from current standards will be revised to comply with current USACE standards. This plan submittal will include degrade limits and depth, width of working platform, landside and waterside slopes (if applicable), and configuration of the clay cap. Proposed patrol

roads and staging area locations will also be shown. Outline specifications will be prepared to identify the relevant specification sections that correspond to the work shown on the plans.

During this phase of design, the consultant team will initiate contact with the utility companies that have facilities adjacent to and crossing the levee to ascertain the presence of utilities that could be affected.

65% Plan Submittal - The 35% plans will be revised to incorporate the 35% review comments and developed to a 65% design completion level. This submittal will also have complete details and profiles for the preferred levee remediation (i.e., cutoff wall, seepage/stability berm), and patrol roads. The 65% design level technical specifications will be prepared based on the outline specifications from the 35% submittal. Complete quantities will be prepared to support the 65% design level cost estimate.

At the 65% stage of design, the consultant team will provide the support necessary to facilitate the acquisition of the temporary and permanent easements required for the Project. This effort will include the preparation of real estate take mapping and a real estate take register (if required). The consultant team will provide the utility companies with copies of the plans of facilities impacted by the Project to facilitate the utility design necessary to clear the obstructions.

95% Plan Submittal - The 65% plans, specifications, quantities, and real estate mapping will be revised based on the 65% review comments and developed to the 95% design level. At 95% stage, the plans, specifications, and quantities will be fully developed. The real estate take maps and register will be considered final.

100% (Final) Plan Submittal - The 95% plans, specifications and quantities will be revised based on the 95% review comments. The resulting 100% deliverable will be considered final and ready for construction contract bid advertising.

#### Task 2 (PS&E) Deliverables

- 35%, 65%, 95% and final design documentation (design plans, bid documentation including specifications and quantities)

#### Grays Bend and Portuguese Bend Habitat Enhancement

Douglas Environmental and River Partners will evaluate and design the restoration opportunities for two of the recommended habitat enhancement concepts for the Project at Portuguese Bend and Grays Bend. At Grays Bend, the design will include lowering the elevation of the interior

perimeter of the Grays Bend oxbow to expand the width of vegetated riparian area surrounding the oxbow channel. The excavated soil will be evaluated under Task 1 to be used as source material for the construction of berms for improvements along the Sacramento River or for the construction of the New Cross Levee.

Douglas Environmental shall prepare an environmental constraints analysis to identify the restoration opportunities on the two sites and to ensure the restoration concepts are feasible and practicable, in association with the Project levee improvements, and that they will specifically achieve measurable objectives included in the CVFPP Conservation Strategy. The consultant team will ensure that the restoration concepts are acceptable to stakeholders, to include local maintaining agencies, residents, business owners in Knights Landing, neighboring agricultural landowners, Sutter County, the California Department of Fish and Wildlife and USACE, as expressed during outreach meetings. River Partners will prepare a Design Report that includes a detailed description of the project characteristics including the habitat improvements, operational constraints, long-term operations and maintenance requirements, water rights, and adaptive management components. This will also include a detailed description of the project's contributions to the Conservation Strategy metrics in the Lower Sacramento River Conservation Planning Area (CPA). It will also include the key steps necessary to implement the project including permitting, construction schedules, required construction equipment, areas of responsibility, required funding, and expected annual budgets.

#### Task 2 (Portuguese Bend and Grays Bend) Deliverables

- Draft and Final Preliminary Design Report (65% design package and cost estimate)
- Memorandum documenting stakeholder input
- Modeling and outputs from salmon habitat quantification tool

Third Amendment – reduction of budget by \$1,903,824 to cover the Emergency Levee Rebuild at Sites 9 and 10 and cover County expenses for the SAR Panel and PG&E.

**Task 2 Budget = \$4,513,719**

#### **Task 3: Environmental Documentation (DWR-3)**

Construction of the Project will require California Environmental Quality Act (CEQA) environmental review process to be completed. For the levee improvements the National Environmental Protection Act (NEPA) process will be required. Yolo County is the lead agency for

the CEQA process. USACE is the lead agency for the NEPA process; however, USACE may rely upon the Yolo County to complete NEPA documentation for them.

HDR, Inc will conduct CEQA compliance as well as necessary project information and assessments necessary to support NEPA documentation for federal actions (Sections 404, 408, etc.). The CEQA documentation will include all statutorily required notices and postings and preliminary CEQA support documentation. On behalf of Yolo County, HDR, Inc will coordinate with the USACE as the lead federal agency for required NEPA documentation.

#### Task 3 Deliverables

- Notices and postings of a Notice of Availability and a Notice of Determination
- Draft and Final CEQA documentation

**Task 3 Budget = \$1,021,167**

#### **Task 4: Permitting and Cultural Resources Compliance (DWR-4)**

HDR, Inc. will perform the necessary surveys to support any application for obtain the necessary local, State and Federal permits for implementation of the Project. The Feasibility Report identified the regulations and ordinances listed as a preliminary assessment which will be refined through project design and a detailed project description.

HDR, Inc will assist Yolo County in consulting with California Native American Tribes as required pursuant to CEQA. This will include performing technical studies and cultural monitoring during Task 1 and Task 6 efforts.

#### Task 4 Deliverables

- Permit application packages
- Administrative record (consultation letters, summary of tribal meetings, review comments on the pertinent sections of CEQA documentation)

Third Amendment – increase of budget by \$36,620 to cover bird surveys and biological monitoring during construction and/or geotechnical investigation.

**Task 4 Budget = \$1,300,000**

**Task 5: Real Estate (DWR-5)**

Monument, Inc. will assist Yolo County by preparing Phase 1 Environmental Site Assessments (ESAs) for all properties to be acquired and will also complete Phase 2 ESAs for any parcels with the potential for hazardous materials. This will include a survey of existing titles and prepare site assessment.

For the Sacramento River, right bank between LM 2.7 to LM 2.9 and LM 3.0 to LM 3.2 and LM 4.3 to LM 5.4 and the KLRC, Monument, Inc. will prepare a right-of-way acquisition package to include legal descriptions, exhibit plats, and closure reports for each permanent right-of way acquisition, each temporary construction easement, each lease, each maintenance easement, and each utility easement. The legal descriptions will be prepared in metes and bounds format. The Monument, Inc will work closely with the County and the DWR team and adhere to DWR's Land Acquisition Process and requirements.

After CEQA compliance is completed and 95% design is the Monument, Inc. will assist the County to obtain appraisals, plat and legal descriptions, title support, and legal support for land acquisition and securing easements. For the KLRC it's estimated that seven parcels will be acquired.

The appraisal reports for the right of way need to accommodate the new construction area. The reports will be prepared in conformance with and subject to the requirements of the Uniform Standards of Professional Practice (USPAP) of the Appraisal Foundation to arrive at estimates of just compensation.

Monument, Inc. will assist Yolo County in performing acquisition and making contact with the property owners for the purpose of negotiating the acquisition of the real property interests. All offers will be made to property owners will include a written notice indicating they are eligible to receive reimbursement of up to \$5,000 for reasonable costs of an independent appraisal of the property the County intends to purchase.

Once negotiations with the property owner are complete and acquisition documents are signed, the closing (escrow) process will begin, which involves coordinating the following activities with the designated title company. Monument, Inc. will assist Yolo County to work with the property owners, and the title company to obtain any other documents required for closing.

Monument, Inc. assist the County in preparing the Final Accounting Package for the individual real property acquisition for review and approval by DWR.

### Task 5 Deliverables

- Phase 1 Environmental Site Assessments (ESAs) for all properties to be acquired
- Phase 2 ESAs for any parcels with the potential for hazardous materials. This will include a survey of existing titles and prepare site assessment.
- Obtain appraisals, plat and legal descriptions, title support, and legal support for land acquisition (for Sacramento River, right bank between LMs 2.7 to 2.9, LMs 3.0 to 3.2 and LM 4.3 to 5.4 and for the KLRC).
- Rights of Way Acquired per Approved Real Estate Plan and Property transferred to the Sacramento-San Joaquin Drainage District (SSJDD)
- Final Accounting Package

Third Amendment – increase of budget by \$22,935 to cover the Temporary Construction Easement Right-of-Way that MBK Engineers paid on behalf of the County.

**Task 5 Budget = \$290,367**

### **Task 6: Program and Project Management (DWR-7)**

This task involves Yolo County staff and MBK Engineers time and effort for day-to-day managing and coordination of Project tasks and activities, including preparation of necessary reports, meetings, presentations to the Board of Supervisors (BOS) on the status and progress of the project, minimum of three meetings with DWR team to present Project plans and progress (for 35%, 65% and 95% design completion level) and stakeholder engagement. This task will also include grant management to include processing consultant invoices; preparing monthly progress reports to DWR; preparing Statement of Costs and DWR reimbursement; and maintaining and tracking the project scope, budget, and schedule.

### Task 6 Deliverables

- Staff reports, presentations to the BOS
- Grant management, processing invoices, preparing monthly progress reports and Statement of Costs
- Meeting agendas and summaries
- Updated schedule
- General contract management

Third Amendment – increase of budget by \$14,604 to cover additional Project Management services.

**Task 6 Budget = \$1,347,000****Task 7: Construction Management (DWR-6)****Task 7.1 – Pre-Construction Services*****Task 7.1.1 – Biddability & Constructability Review***

KSN will review the project 90% construction documents to identify constructability, work sequencing and/or permitting constraints, identify potential risk items in the design drawings and specifications (Contract Documents), and will offer suggestions to help mitigate project implementation risks. During the biddability and constructability review, KSN will work with the Design Team to develop a full list of required submittals so it is clear to the Contract what is required.

KSN will provide review comments in a tabular form to the Client. A meeting to review these comments will be held with the Client and Design Team, the outcome of which may be revision of the drawings and specifications to incorporate the review comments.

**Task 7.1.1 Deliverables**

- Constructability review comments in tabular format referencing sheet and/or specification section number.

***Task 7.1.2 – Project Management Plan***

The KSN team, with input from Client and Design Team, will create a Project Management Plan (PMP). The PMP will describe the processes to be applied in managing major portions of the work, from routing and review of submittals and requests for information (RFIs), Quality Assurance Testing, identifying points of contact for local and permitting agencies, utilities, and designers, to outline field procedures that provide confidence in the quality of materials in workmanship employed by the Contractor.

**Task 7.1.2 Deliverables**

- Draft and Final Project Management Plan

***Task 7.1.3 – Pre-Bid Site Visit***

This task assumes that the Client will handle bid advertising and processing, including preparing and issuing any addenda to the bid documents. The task also assumes that the Client will conduct a voluntary pre-bid site visit for prospective bidders to ensure that prospective bidders have an opportunity to see the project site first-hand to gauge the project constraints, complexities, access, and scale. KSN will assist the Client and Design Team in preparing for the pre-bid site

visit. KSN will attend the pre-bid site visit and take notes of key questions asked so the Design Team can update the construction bid documents as appropriate.

#### Task 7.1.3 Deliverables

- Meeting notes summarizing key questions asked and any follow-up items identified.

#### Task 7.2 – Construction Management Services

KSN will act as a liaison between the Client, the Contractor, the Design Team, and utility companies to ensure effective and timely communications, as well as resolution of construction questions and issues. Proposed services include project construction management (CM), and inspection/observation, Quality Assurance testing services, and monitoring of cutoff well embedment.

##### *Task 7.2.1 – Construction Management and Administration*

KSN will administer the construction contract on behalf of the Client. This contract administration will include:

- Preparing for and conducting project meetings.
- Tracking Contractor progress.
- Managing, tracking, and conducting initial review of Contractor submittals.
- Coordinating with the County and Design Team on submittal reviews.
- Reviewing and processing request for information on contract change order requests.
- Preparing weekly statements of working days.
- Reviewing and processing Contractor pay requests.
- Monitoring certified payrolls by preparing daily reports and performing spot checks of labor compliance.
- Reviewing Contractor's compliance with workplace safety and health standards.
- Reviewing and managing Contractor change orders and potential claims.
- Preparing cost estimates for potential contract changes.
- Compiling and maintaining documentation necessary for project monthly documentation or final documentation and closeout.
- Preparing reports documenting the progress of construction.

#### Task 7.2.1 Deliverables

- Weekly meeting agendas.
- Weekly meeting notes.
- Weekly statements of working days.

- Contractor pay requests.
- Potential change cost estimates.
- A complete set of project construction management files to be provided to the County upon project completion.

#### *Task 7.2.2 – Construction Inspection/Observation*

KSN will provide construction inspection/observation for the duration of the project. The KSN team will perform field inspection and observation activities of the contractor and its subcontractors to confirm that the work follows contract drawings and specifications. For a total construction period of four (4) consecutive months, KSN has assumed the following:

- Construction observation by one staff person to cover the expected construction activities.
- Daily observation of Contractor progress and performance under the technical terms of the contract.
- Monitoring the Contractor's conformance with provisions of approval submittals.
- Coordination on project process, scheduling, required environmental/cultural resource monitoring.
- Collection of detailed construction progress documentation.
- Preparing daily and weekly field reports to document the work performed including photographs as necessary to depict job progress and/or address potential claims and verify the as-built drawings are complete.
- Documenting and coordinating with the Contractor corrective actions needed to bring work in compliance with the Contract Documents.
- Bringing potential safety issues to the attention of the Contractor who is responsible for jobsite safety.
- Coordinating with utility companies and the Contractor as necessary to facilitate utility relocation work, if required.
- Coordinating with the Client, Design Team, and Environmental Compliance Team.
- Conducting QA inspection in accordance with Contract Documents.

#### Task 7.2.2 Deliverables

- Daily reports.
- Weekly construction reports.
- Monthly reports.
- QA Documentation.

### *Task 7.2.3 – Testing & Inspection Services*

KSN subconsultant Shannon and Wilson (SW), formerly Hultgren-Tillis Engineers, will provide Quality Assurance (QA) observation and testing for the project. Construction activities that will require observation and/or testing by HT include:

- Degrading of the existing levee to the working surface and excavation for the initial clay cap.
- Placement and compaction of the initial clay cap.
- Excavation of the cutoff wall trench and bentonite slurry replacement.
- Placement of the soil-bentonite cutoff wall backfill.
- Placement and compaction of the clay cap.
- General fill and aggregate base placement and compaction.

SW will perform QA materials testing of the bentonite slurry, soil-bentonite cutoff wall back-fill, and other materials at the frequency specified in Contract Document. SW will utilize the Contractor's on-site laboratory to perform viscosity, density, filtrate loss, and pH of the bentonite slurry and soil-bentonite cutoff wall backfill materials. SW will utilize an off-site USACE-accredited laboratory to perform permeability testing of the soil-bentonite cutoff wall backfill. HT will also use this off-site laboratory to perform other materials testing including sieve analysis, Atterberg limits, and compaction curves.

SW will provide a full-time technician during earthwork, cutoff wall, and aggregate base operations to observe and check materials properties.

- Observation of cutoff wall excavation to confirm embedment into a low permeability soil.
- Compaction testing of the levee embankment fill as required in the Contract Documents.
- Checking the in-place dry density and moisture content of compacted material with a nuclear probe.
- Laboratory testing of materials to evaluate the materials maximum dry density and optimum moisture content.
- Comparison of laboratory results with the dry density measured in the field to calculate relative compaction.
- Preparing required reports and letters.

#### Task 7.2.3 Deliverables

- Daily reports.
- Materials testing reports.
- QA summary report in conformance with funding requirements.

### Task 7.3 – Post-Construction Services

The KSN team will provide post-construction services for the project, including construction administration closeout activities, preparation of the final construction project report, complete construction administration documentation, and final payment recommendations. The Contractor's as-built drawings will be monitoring to ensure that changes are tracked, logged, and red-lined indicating that the project was built according to the Contract Documents, approved addenda and change orders, and revisions. The Client will be provided with all construction administration documents.

Activities under this task will include:

- Preparing a final construction project report.
- Providing as-built drawings to the County for preparation of the record drawings.
- Preparing recommendations for final progress payment.
- Prepare and coordinate with Contractor on contract closeout documentation.

#### Task 7.3 Deliverables

- As-built drawings and field notes.
- Final construction report.
- Final pay recommendation.

### Task 7 – Assumptions, Limitations, and Understandings

In addition to the above details, the proposed task is based on, and is limited to, the following assumptions, limitations, and understandings:

- The construction schedule is estimated to last four (4) consecutive months, until approximately September 2022.
- KSN has assumed staffing the project with one inspector under prevailing wage compensation requirements.
- Environment and Archaeological monitoring and permit compliance will be by others.
- Survey control, staking, surveys to determined progress payments, QA surveys, and the final 'line and grade' certification surveys will be by others.

Third Amendment – increase of budget by \$1,758,940 for Contingency if FEMA does not cover the Emergency Levee Build at Site 9 & 10; updated Hultgren-Tillis Engineers name to Shannon and Wilson.

**Task 7 Budget = \$2,406,340**

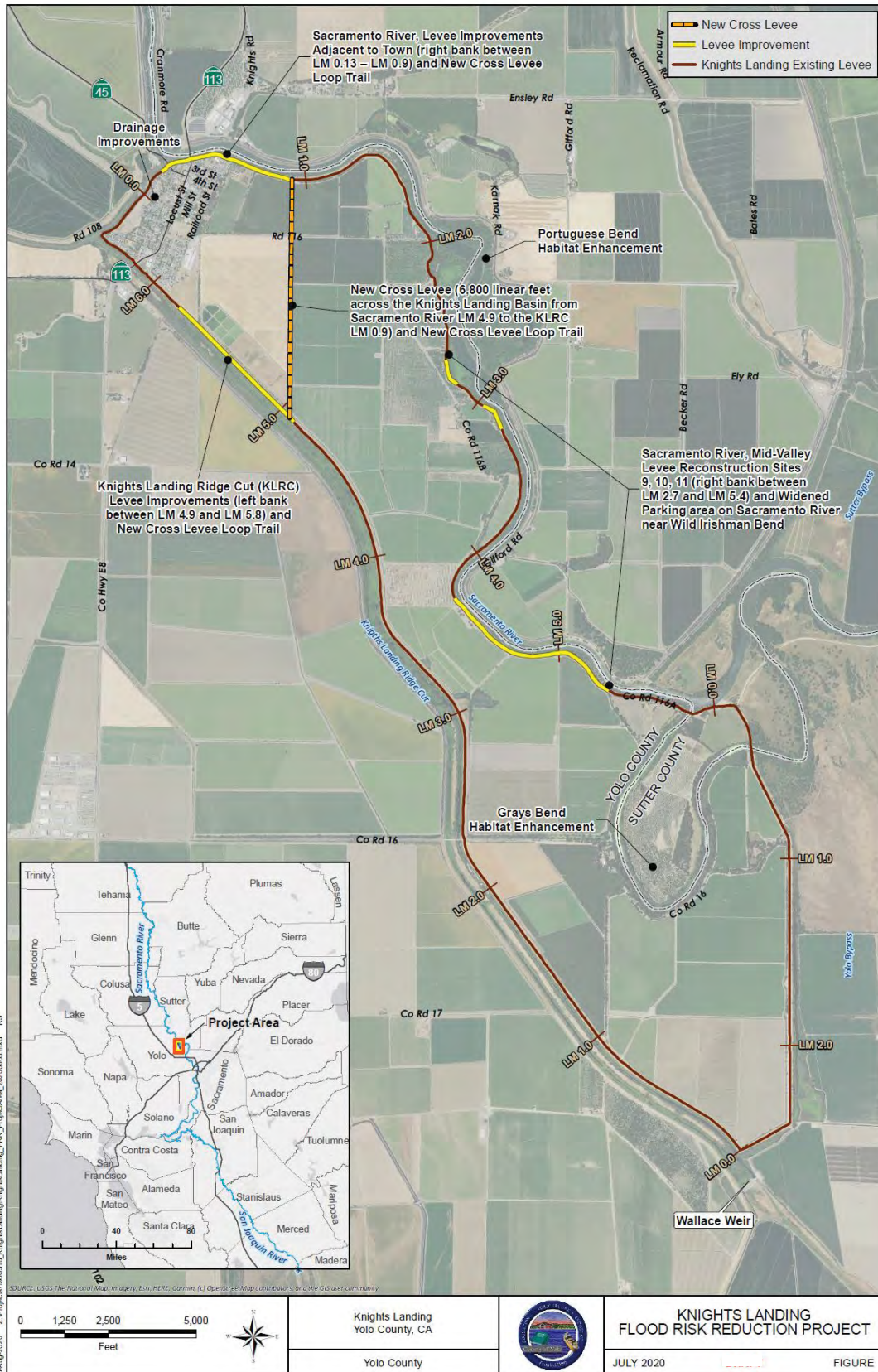
**Overall Contract Budget Breakdown\***

Task	Amount
Task 1: Geotechnical Investigation (DWR-1)	\$ 2,300,000
Task 2: Design Plans, Specifications, and Estimates (DWR-2)	\$ 4,513,719
Task 3: Environmental Documentation (DWR-3)	\$ 1,021,167
Task 4: Permitting and Cultural Resources Compliance (DWR-4)	\$ 1,300,000
Task 5: Real Estate (DWR-5)	\$ 290,367
Task 6: Program and Project Management (DWR-7)	\$ 1,347,000
Task 7: Construction Management (DWR-6)	\$ 2,406,340
<b>Total:</b>	<b>\$ 13,178,593</b>

*\*Budget was adjusted by Third Amendment to reallocate \$1,903,824 from Task 2 to Task 1 (+\$70,725), Task 4 (+\$36,620), Task 5 (+\$22,935), Task 6 (+14,604), and Task 7 (+\$1,758,940).*

*There was no change in the maximum compensation.*

**Figure 1 SCFRR Phase 2 Knights Landing Flood Reduction Project**



**Figure 2. Consultant Team Organization**

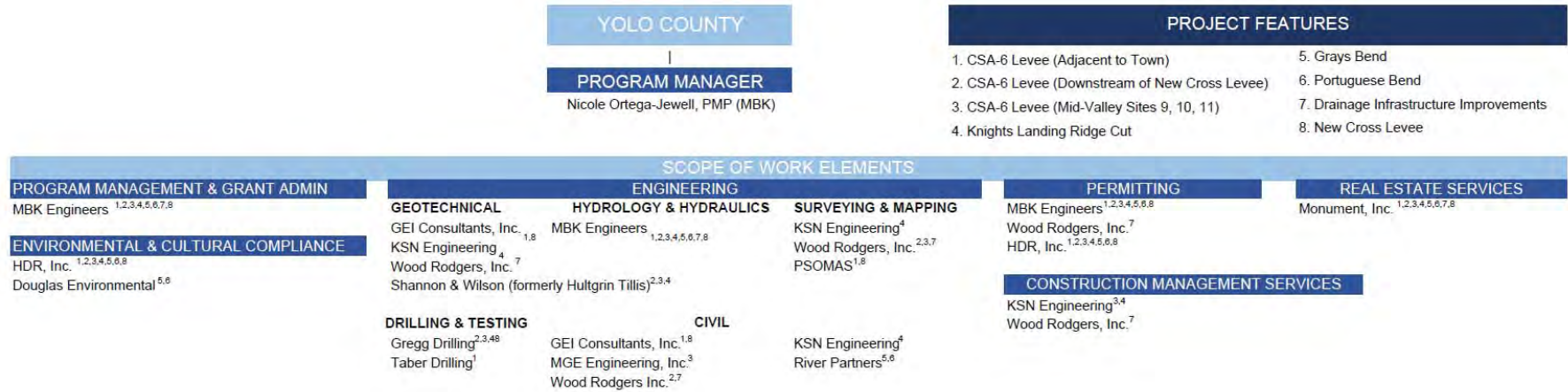


Figure 3. Cost Rates

Below are the basic hourly rate fee schedules for all current MBK employees and subcontractors who will work on this project. Comprehensive fee schedules, including special equipment and other costs are available upon request.

MBK ENGINEERS		HDR, INC.		KSN, INC.	
Principal/Principal Engineer	\$220-290	Principal-in-Charge	\$300	Principal Engineer	\$255
Supervising Engineer	\$180-260	Project Manager	\$267	Associate Engineer	\$230
Senior Project Manager	\$190-260	Senior Technical Review	\$295	Senior Engineer	\$205
Project Manager	\$160-220	Senior Policy Advisor	\$270	Engineer II	\$185
Senior Engineer	\$160-230	Senior Planner	\$240	Engineer I	\$175
Engineer/Hydrologist	\$130-190	Staff Planner	\$180	Junior Engineer	\$145
GIS Professional	\$120-190	Junior Planner	\$125	Senior Surveyor	\$210
Water Resources Associate	\$110-180	Senior Environmental Planner	\$267	Surveyor	\$180
GIS Specialist	\$80-150	Staff Environmental Planner	\$192	Assistant Surveyor	\$150
Technician/Drafter	\$80-150	Junior Environmental Planner	\$150	Field Crew-One Man & Vehicle	\$205
Technical Editor	\$50-125	Senior Civil Engineer	\$267	Field Crew-Two Man & Vehicle	\$310
<b>GEI CONSULTANTS, INC.</b>		Staff Civil Engineer	\$192	Inspector	\$162
Senior Consultant: Grade 8	\$316	Junior Civil Engineer	\$150	Inspector & Vehicle	\$190
Senior Professional: Grade 7	\$282	Senior Biologist	\$250	Senior Project Manager	\$228
Senior Professional: Grade 6	\$238	Staff Biologist	\$182	Project Manager	\$195
Senior Professional: Grade 5	\$209	Junior Biologist	\$140	Assistant Project Manager	\$175
Proj. Professional: Grade 4	\$177	Senior CADD	\$155	Grant Manager	\$150
Proj. Professional: Grade 3	\$158	Staff CADD	\$140	GIS/CAD Technician III	\$145
Staff Professional: Grade 2	\$144	GIS Tech	\$130	GIS/CAD Technician II	\$125
Staff Professional: Grade 1	\$131	Project Coordinator	\$110	GIS/CAD Technician I	\$95
Sr. CADD Drafter	\$158	Project Accountant	\$130	Project Accountant	\$136
Jr. CADD Drafter	\$131	Admin/Clerical	\$110	Administrative III	\$105
Technician, Admin	\$117	Senior Public Outreach	\$185	Administrative II	\$90
<b>MGE ENGINEERING, INC</b>		Junior Pubic Outreach	\$110	Administrative I	\$75
Principal Engineer	\$300	Technical Editor	\$135	<b>GREGG DRILLING &amp; TESTING, INC.</b>	
Project Manager	\$245	<b>WOOD RODGERS</b>		Mud Rotary Drill Rig: 2 person	\$420
Supervising Engineer	\$245	Principal PE/GE/Surveyor/Planner/GIS II	\$250	CME 75: 2 person	\$350
Geologist/GE	\$230	Principal PE/GE/Surveyor/Planner/GIS I	\$220	Direct Push Rig: 1 person	\$375
Senior Engineer	\$205	Associate PE/GE/Surveyor/Planner/GIS III	\$205	Auger Push Rig: 2 person	\$375
Resident Engineer	\$205	Associate PE/GE/Surveyor/Planner/GIS II	\$195	Development Rig: 1 person	\$195
Associate Engineer	\$175	Associate PE/GE/Surveyor/Planner/GIS I	\$185	Air Vacuum Rig: 2 person	\$280
Construction Inspector	\$190	PE/GE/Surveyor/Planner/GIS III	\$175	20 Ton CPT Rig: 2 person	\$440
Assistant Engineer	\$165	PE/GE/Surveyor/Planner/GIS II	\$165	Project Management	\$120
Junior Engineer	\$120	PE/GE/Surveyor/Planner/GIS I	\$150	Admin	\$60
CADD Technician III	\$165	Assistant PE/GE/Surveyor/Planner/GIS	\$115	<b>PSOMAS</b>	
CADD Technician II	\$130	CAD Technician III	\$150	One-person survey party	\$195
CADD Technician I	\$115	CAD Technician II	\$130	Two-person survey party	\$272
Admin Assistant	\$110	CAD Technician I	\$115	Three-person survey party	\$386
<b>DOUGLAS ENVIRONMENTAL</b>		Project Coordinator	\$130	Project/Technical Manager	\$216
Principal/Senior PM	\$210	Administrative Assistant	\$95	Admin	\$100
<b>MONUMENT RIGHT-OF-WAY</b>		1 Person Survey Crew	\$210	CADD Tech I	\$120
Program Manager / Principal	\$250	2 Person Survey Crew	\$305	CADD Tech II	\$144
Senior Project Manager	\$165	3 Person Survey Crew	\$390	<b>HULTGREN-TILLIS ENGINEERS</b>	
Project Manager	\$150	<b>RIVER PARTNERS</b>		Staff	\$145
Senior Agent/Senior Analyst	\$125	Management and Administrative Staff	\$52-136	Project	\$170
Acquisition/Relocation Analyst	\$105	Biology and Planning Staff	\$50-115	Senior	\$190
Project Analyst	\$90	Field Staff	\$30-92	Associate	\$205
Project Support Specialist	\$65	<b>ESA</b>		Principal	\$240
Administrative Assistant	\$40	Senior Associate	\$150-205	Senior Principal	\$270

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**Typical Exploration Fees**  
Prevailing Wage Charge-Out Rates by County\*

\*Counties Include: Butte, Contra Costa, Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, Nevada, Sacramento, San Joaquin, Solano, Sonoma and Yolo.

Truck-Mounted Drill (2-Man Crew + Typical Support Equipment) .....	\$375.00 / Hr
Premium Truck-Mounted Drill (Over 8 Hours Daily) .....	\$430.00 / Hr
Track-Mounted Drill (2-Man Crew + Typical Support Equipment) .....	\$410.00 / Hr
Premium Track-Mounted Drill (Over 8 Hours Daily) .....	\$465.00 / Hr
Additional Drill Helper (Any Drill) .....	\$105.00 / Hr
Premium Additional Drill Helper (Any Drill) .....	\$120.00 / Hr
Standby or Daily Travel 3-Man Drill Crew and Equipment (Any Drill) .....	\$290.00 / Hr
Operational Supervisor (Site Review, Consultation, etc.) .....	\$170.00 / Hr
CPT Testing, Electronic 20-Ton (Includes Data Report) .....	\$410.00 / Hr
Premium CPT Testing (Over 8 Hours Daily) .....	\$465.00 / Hr
CPT Seismic Testing (Supplemental, Data Processing Per Sounding) .....	\$ 60.00 / Ea
Over-Water Exploration (Float; 3-Man Crew + Support Equipment) .....	\$855.00 / Hr
PQ Triple Tube Diamond Bit Charge (Supplemental to Hourly Drill Rates) ...	\$ 21.00 / LF
HQ, NQ Triple Tube Diamond Bit Charge (Supplemental Rate) .....	\$ 18.00 / LF
Cuttings Disposal (By 55-Gallon DOT Drum; Non-Hazardous Only) .....	\$200.00 / Bbl
Cuttings Disposal (Cuttings in Tank or Bin; Non-Hazardous Only) .....	\$ 4.00 / Gal
Polaris 6X6 All-Terrain Support Vehicle (Billed Only as Used) .....	\$190.00 / Dy
Special Support Equipment (Grounding Mats, Portable Sanitary Facilities, Minuteman Drill, Water Truck, Forklift, Air Tools, etc.) .....	Quoted PER PROJECT
Per Diem Expense for Drill or CPT Crew Members (Minimum Rate) .....	\$220.00 / Dy*
SPT Energy Analysis (Site Specific, Includes Report, Not Travel) .....	\$2,750.00 / LS
Job Materials (Cement, Bentonite, Liners, Plastic Sheeting, etc.) .....	Cost + 15%
Outside Support Services (Equipment Rental, Fencing, Traffic Control, etc.) ..	Cost + 15%
Administrative Assistance (Project Labor Compliance, etc.) .....	\$110.00 / Hr

Note 1: Pay categories are based on current DIR posted rates for Water Well and Geologic Exploration Driller classification for the County where work is performed.

Note 2: Mobilization / Demobilization, Weekend Travel, Over-Water Work, Weekend Work, Portable Drill Work, Night Work and Emergency Work rates quoted PER PROJECT.

Note 3: \*Per Diem Expense is a Minimum of \$220.00 per day, per person; actual rates are based on project location, per current General Services Administration Rates.