

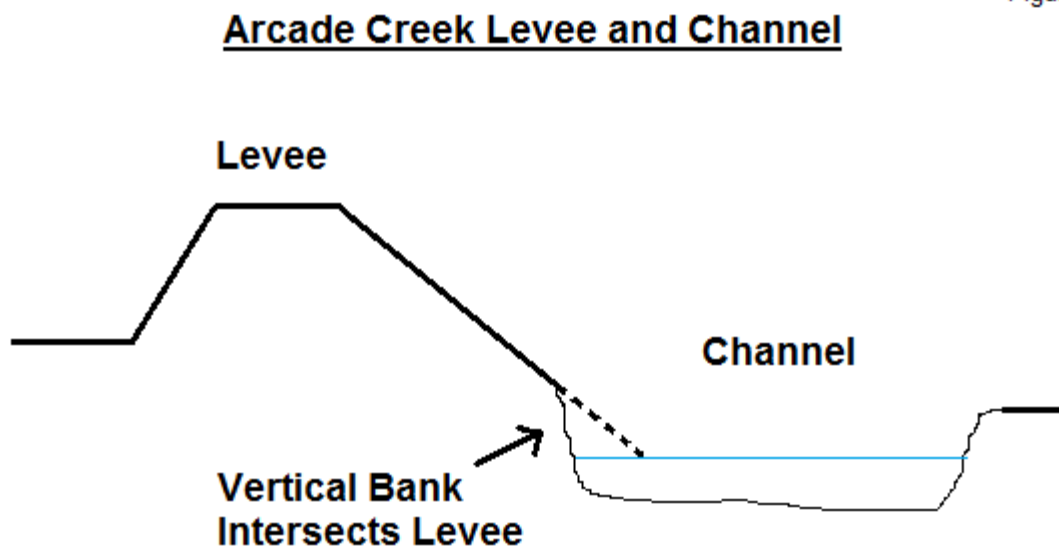
**American River Flood Control District
Arcade Creek Erosion Repair – MBK Engineers Scope of Work
Staff Report**

Discussion:

The channel bottom and banks of Arcade Creek experience routine degradation due to high flow velocities seen at frequent storm intervals. These frequent storms cause swift water to flow down Arcade Creek to Steelhead Creek and then the flows quickly subside when the event is over. Over time, this causes continued erosion of the banks along the channel and the channel bottom has lowered causing a vertical bank in some locations.

In areas where the channel has meandered close to the levee, it is likely that the vertical bank could cut into the projection of the levee prism. See Figure 1 below.

Figure 1



District staff worked with SAFCA and MBK Engineers to examine the extent of the erosion and determined that the bank has encroached into the levee prism at four locations. MBK performed a preliminary assessment of the sites and provided the attached Scope of Work to develop designs and obtain the necessary permitting for the repairs. The District and SAFCA would split the costs of the MBK work and would be billed separately.

In a later phase of the project, the District would seek to obtain State grant funding under the Flood Maintenance Assistance Program for the cost of construction to

repair the sites. Depending on the amount of available grants funds, some or all of the cost of construction would be covered by the grant.

Recommendation:

The General Manager recommends that the Board approve the Scope of Work from MBK.



Water Resources ♦ Flood Control ♦ Water Rights

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CONSULTANTS:
JOSEPH I. BURNS, P.E.
DONALD E. KIENLEN, P.E.

March 11, 2019

Mr. Tim Kerr
American River Flood Control District
185 Commerce Circle
Sacramento, CA 95815

Subject: Proposal for Engineering Services and Support Arcade Creek Erosion Sites

Dear Mr. Kerr:

MBK Engineers (MBK) is submitting this proposal to provide engineering services for the design, environmental documentation, and permitting, of maintenance erosion repair sites along the north and south banks of Arcade Creek. These sites exist where the recently constructed waterside seepage cutoff wall is located, within proximity to the existing eroding channel bank.

There are three tasks associated with this proposal:

Task 1 – A Field Visit to Assess the Constructability of the Erosion Sites

Due to the location of the erosion within the seasonally dry channel, and due to the barrier presented by bridges, the levee and flood walls site access and construction methods need to be given special consideration during design. The field visit will also confirm the previously established site locations and lengths shown in Table 1.

Task 2 – Preparing Preliminary Design Documents (30 percent), including Plans, Project Description, and Cost Estimates

Work performed as part of Task 2 will be used to begin the environmental documentation. As part of Task 2, a letter will be prepared which outlines both the environmental documentation and the permits required for construction.

Task 3 – Design, Environmental Documentation, and Permitting

Task 3 includes preparation of the 90 percent and final design plans and specifications. Environmental documentation is expected to include a categorical exemption; however, if endangered species are encountered, an initial study may be required. Permits are expected to

include a U.S. Army Corps of Engineers (USACE) Section 404 permit, a Regional Water Quality Control Board (RWQCB) Section 401 permit, and a California Department of Fish and Wildlife (CDFW) Section 1602 permit. A Central Valley Flood Protection Board (CVFPB) maintenance notification is required, but it is not anticipated that a USACE Section 408 permit will be required. However, there is a risk that the CVFPB and/or USACE will require a permit and 408 approval. We have included these permits in the budget, as a conservative estimate of the work.

Table 1. Erosion Sites

Site No.	Start Station	End Station	Length (ft)
1	5075+50	5077+50	200
2	5076+50	5077+50	100
3	5078+75	5079+25	50
4	5079+50	5081+00	150
5	5094+00	5096+00	200
6	5097+25	5098+50	125

MBK anticipates that the overall budget needed to complete the aforementioned tasks will be approximately, \$130,000. The period of service is anticipated to last through November 2020, primarily due to the time required to obtain permits. MBKs estimate of the necessary work hours to complete the tasks mentioned in this scope of work is included in Attachment 1, and a proposal from an environmental sub-consultant is included as Attachment 3. MBKs efforts are charged on an actual time-and-expense basis, in accordance with our fee schedule, included as Attachment 2.

We appreciate the opportunity to assist you with this project. If you have any questions, please contact Michael Kynett at (916) 456-4400.

Sincerely,
MBK ENGINEERS



Ric Reinhardt, P.E.

MK/rr/oh

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Attachments: Attachment 1 – Estimate of Probable Costs (MBK and Subs)
Attachment 2 – 2019 MBK Schedule of Fees
Attachment 3 – Subconsultant Proposal

ATTACHMENT 1**Estimate of Probable Costs**

	Rodman	Survey Chief	Asst Engr	Senior Engr	Senior PM	Principal Engr	Tech Writer	Total Hours	ODC	Subs (\$)	Subtotals (\$)
Wage Rates:	\$166/hr	\$180/hr	\$145/hr	\$206/hr	\$175/hr	\$245/hr	\$100/hr				
Task 1 – Field Visit											\$2,700
1.1 Perform Field Visit			4	4		2		10	\$23		\$1,917
1.2 Update Site Extents			2	2				4			\$702
Task 2 – Preliminary Design											\$18,200
2.1 Perform Site Survey	8	8	8	4		2		30	\$73		\$5,315
2.2 Prepare 30% Plans			20	28	14	6	2	70			\$12,788
Task 3 – Design, Environmental Documentation, and Permitting											\$109,100
3.1 CEQA Documentation					16			16	\$150	\$28,376	\$31,326
3.2 Section 1602 Permit			8		10			18	\$5,400	\$6,602	\$14,912
3.3 Section 404 Permit			8		8			16		\$9,236	\$11,796
3.4 Section 401 Permit			8		8			16	\$7,245	\$8,419	\$18,224
3.5 CVFPB Maintenance Notification			6	30			4	40			\$7,450
3.6 Prepare 90% Plans and Specs			32	30		6	4	72			\$12,690
3.7 100% Design and Bid Package			32	30		6	4	72			\$12,690
Totals:	\$1,328	\$1,440	\$18,560	\$26,368	\$9,800	\$5,390	\$1,400	114 hrs	\$12,891	\$52,633	\$130,000

SCHEDULE OF FEES**ATTACHMENT 2**

1. Standard Fees:

	<u>Per Hour</u>
Principal	\$220–290
Supervising Engineer	180–260
Senior Project Manager	190–260
Project Manager	160–220
Senior Engineer	160–230
Engineer/Hydrologist	130–190
GIS Professional	120–190
Water Resources Associate	110–180
Assistant Engineer	100–160
Prevailing Rate Surveyor, Chief of Party	180
Prevailing Rate Surveyor, Rodman/Chainman	166
GIS Specialist	80–150
Technician/Drafter	80–150
Junior Engineer	75–120
Engineering Aide	50–90
Technical Editor	50–125
3-Man Survey Crew	285
2-Man Survey Crew	250

2. Time spent in appearances at courts or quasi-judicial State or Federal boards and commissions is billed at \$450 per hour for principals and supervising engineers, \$400 per hour for registered engineer staff, and \$250 per hour for other staff.
3. Automobile mileage is billed at the Federal reimbursement rate. Local mileage (less than 20 miles) will not be billed.
4. All other direct non-salary expense, including transportation and subsistence, long-distance telephone charges, commercial printing, reproduction costs, and similar out-of-pocket expenses are billed at actual cost plus a service charge of 10%. Use of GPS equipment is billed at \$50 per hour. Use of MBK owned boat will be billed at \$125/day. Use of MBK owned drones will be billed at \$135/day. Professional services provided by others billed through MBK at cost plus a service charge of 5%–15%.
5. Billings will be made monthly and payment will be due within 45 days. Accounts not paid within 90 days of presentation will bear interest at the rate of 1½% per month or fraction thereof from the billing date unless other arrangements are made in advance.
6. If accounts are not paid within 90 days of presentation, the firm may retain an attorney to obtain payment. In the event that it does so and payment of all or part of the account is thereafter obtained, reasonable attorney's fees and other costs incurred to obtain such payment shall also be paid, or if payment is obtained by Judgment, shall be awarded as part of the Judgment.

March 8, 2019

Mr. Ric Reinhardt
MBK Engineers
455 University Avenue, Suite 100
Sacramento, CA 95825

Consulting
Engineers and
Scientists

Subject: Proposal to Provide Environmental Compliance Services for the Arcade Creek Erosion Project

Dear Mr. Reinhardt:

GEI Consultants, Inc. (GEI) is pleased to assist MBK Engineers with environmental services for the Arcade Creek Erosion Repairs Project (Project) located in Sacramento County. MBK Engineers is working with the American River Flood Control District (ARFCD) to develop engineering solutions to address bed scour and bank undercutting in six locations in Arcade Creek between Rio Linda Boulevard and Marysville Boulevard. GEI understands this work is critically important to the integrity of the flood control system and to the protection of the levee remediations constructed along Arcade Creek north and south levees in 2018. Our scope of work is provided below.

Task 1: Environmental Permitting

The proposed Project may qualify as a levee maintenance action and therefore may not require Section 408 permission from the U.S. Army Corps of Engineers (USACE) or an encroachment permit from the Central Valley Flood Protection Board (CVFPB). The project would place scour protection along the bed of Arcade Creek in up to six locations to prevent the channel bed from downcutting and to prevent undercutting of channel banks. Arcade Creek is a water of the United States and placing fill material into the bed triggers the need to obtain environmental permits.

Task 1A: USACE Section 404 Permit

GEI anticipates that the Project would be eligible for Section 404 Clean Water Act coverage using Nationwide Permit (NWP) 31, *Maintenance of Existing Flood Control Facilities* and/or NWP 13, *Bank Stabilization*. A waiver may need to be requested from the District Engineer for the use of NWP 13, since permit conditions state that impacts are restricted to 500 linear feet of streambed. GEI will coordinate with MBK Engineers to obtain project-specific details, including quantities of fill material, to prepare a Pre-Construction Notification (PCN) package for submittal to USACE. GEI will prepare and submit the PCN application to MBK for review and submit to USACE once all comments have been addressed. GEI will provide additional coordination with USACE to ensure that the application is technically accurate and meets USACE needs.

Task 1B: RWQCB Section 401 Water Quality Certification

GEI will prepare an application for water quality certification (WQC) for submittal to the Central Valley Regional Water Quality Control Board (RWQCB). GEI will coordinate with MBK Engineers to obtain project specific details, including quantities of fill material and measures to protect water quality to prepare the water quality application. GEI will prepare and submit the WQC application to MBK for review and submit to Central Valley RWQCB once all comments have been addressed. GEI will provide additional coordination with RWQCB to ensure that the application is technically accurate and meets RWQCB needs. GEI assumes that MBK Engineers will pay all permit fees.

The State Water Resource Control Board has not yet adopted the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* and therefore an alternatives analysis is not included in this scope of work.

Task 1C: CDFW Streambed Alteration Agreement

GEI will prepare a notification for Streambed Alteration Agreement (SAA) for submittal to the California Department of Fish and Wildlife (CDFW), pursuant to Section 1600 of the California Fish and Game Code. GEI will coordinate with MBK Engineers to obtain project-specific details, including quantities of fill material and measures to avoid and minimize impacts to wildlife to prepare the application for SAA. GEI will prepare and submit the SAA notification to MBK for review and submit to CDFW once all comments have been addressed. GEI will provide additional coordination with CDFW to ensure that the application is technically accurate and meets CDFW needs. GEI assumes that MBK Engineers will pay all permit fees.

Task 1D: Endangered Species Act Compliance

Arcade Creek is tributary to Natomas East Main Drainage Canal/Steelhead Creek, which is designated as critical habitat for Central Valley steelhead and essential fish habitat for fall-/late fall-run Chinook salmon. It is anticipated that USACE will initiate consultation with the National Marine Fisheries Service (NMFS) to ensure compliance with Section 7 Endangered Species Act Compliance during the Section 404 permit review process. GEI will prepare a biological assessment to support consultation with NMFS, which will include an assessment of essential fish habitat for Pacific Coast Salmon designated under the Magnuson-Stevens Fisheries Conservation and Management Act. GEI anticipates that NMFS will make a determination of “not likely to adversely affect” conclusion under Section 7 based on the lack of suitable spawning habitat for special-status fish in Arcade Creek. GEI will use data collected during the North Sacramento Streams Levee Accreditation Project to prepare the Arcade Creek Erosion Repair biological assessment. GEI will prepare and submit the biological assessment to MBK for review and submit to USACE as part of the 404 permit application package. GEI will provide additional coordination with USACE and NMFS to ensure that the materials are technically accurate and meets USACE and NMFS needs. GEI assumes that consultation with U.S. Fish and Wildlife Service (USFWS) is not required since habitat for federally-listed species under USFWS jurisdiction is absent from the Project area.

Task 1E: Cultural Resource Compliance

GEI will use the data collected during the North Sacramento Streams Levee Accreditation Project Section 106 compliance study to prepare the Arcade Creek Erosion Repair Section 106 compliance report. Since the records search is more than 4 years old, GEI will request an updated record search at the North Central Information Center of the California Historical Resources Information System. A GEI archaeologist will also prepare letters requesting a search of the Native American Heritage Commission’s Sacred Lands Database. Two GEI archaeologists, one of whom meets the Secretary of the Interior’s Professional Qualification Standards in archaeology, will conduct a field visit of any previously unsurveyed areas in the Area of Potential Effects. GEI will prepare a technical report to support Section 106 consultation with USACE, using much of the background context and regional information presented in *Cultural Resources Inventory and Evaluation Report: North Sacramento Streams Levee Improvements Project* (GEI 2016). GEI will prepare and submit the cultural resources report to USACE as part of the 404 permit application package. GEI will provide additional coordination with USACE to ensure that the materials are technically accurate and meet USACE needs.

Task 2: CEQA Compliance

RWQCB and CDFW require proof of compliance with the California Environmental Quality Act (CEQA) prior to issuing permits. It is anticipated that the Project will qualify for a Categorical Exemption for existing facilities under CEQA Guidelines Section 15301. GEI will prepare a Notice of Exemption (NOE) to satisfy the CEQA requirement. GEI will collaborate with MBK staff to develop a project description, a statement of finding, and a statement to support the exemption. GEI assumes that MBK Engineers will pay the required CEQA filing fee.

Task 3: Task Management and Coordination

GEI will provide task management, coordination, and administrative services for all tasks under this scope of services. This task will include day-to-day task management and coordination with the overall project team to discuss various aspects of the project, both in person, through correspondence, or by email. GEI will

coordinate and manage budgeting and scheduling.

GEI will complete this scope of work on a time-and-materials basis with a not-to-exceed fee of \$50,127. We are looking forward to the opportunity to assist MBK Engineers with this important project that will contribute to the proper function of the flood control system and help protect the recent flood control investments that were recently made in the Arcade Creek Levee System.

If you have any questions or need additional information, please contact me at snorris@geiconsultants.com or (916) 912-4941.

Sincerely,



Sarah Norris
Senior Regulatory Specialist



Cindy Davis
Senior Regulatory Specialist

Arcade Creek Erosion Repair Project, Environmental Services



Task	Task Name	Grade 8 \$255	Grade 7 \$225	Grade 6 \$173	Grade 5 \$150	Grade 4 \$132	Grade 3 \$108	Total Hours	Total Dollars
1	Enviromental Permitting								\$ -
1A	USACE Section 404 Permit, NWP 31		2	42			10	54	\$ 8,796
1B	RWQCB 401 Water Quality Certification		2	40			6	48	\$ 8,018
1C	CDFW Streambed Alteration Agreement		2	30			6	38	\$ 6,288
1D	ESA Section 7		2	32	20		4	58	\$ 9,418
1E	Section 106		4		24	12	16	56	\$ 7,812
2	CEQA Compliance	1		15	6			22	\$ 3,750
3	Project Management	1		30				31	\$ 5,445
	Total Labor Hours	2	12	189	50	12	42	307	
	Total Labor Dollars	\$510	\$2,700	\$32,697	\$7,500	\$1,584	\$4,536		\$ 49,527

Other Direct Costs

Printing /Postage/Delivery	\$ 50
Mileage	\$ 50
Records Search update	\$ 500
Total Other Direct Costs	\$ 600

Total Estimated Project Cost	\$ 50,127
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