



November 17, 2021

Roger Leventhal  
Marin County Flood Control and Water Conservation District  
350 In Civic Center Drive, Room 304  
San Rafael, CA 94930

**Subject:** Deer Island Basin Tidal Wetland Restoration Project– Additional Services

Dear Mr. Leventhal:

Environmental Science Associates (ESA), in coordination with our geotechnical engineering sub-consultant GEI, are pleased to present this proposal for additional services to support the development of the Deer Island Basin Tidal Wetland Restoration Project. We are proposing additional efforts under Tasks 2, 6, 7, 8.2 and 9 as described below and in Table 1.

In addition to the scope and budget presented below, the RWQCB has also confirmed that the project will need to contribute to the regional methylmercury monitoring program in the amount of \$30,000. This fee will be due prior to the start of construction. As the project is still in preliminary design and the beginning stages of CEQA and permitting, we have not included this fee in the cost estimate and believe that funding for this effort could be combined with grant applications for construction funds.

## **Scope of Services**

### ***Task 2: Geotechnical – Preliminary Stability/Settlement Analysis and Report***

The original scope of work for Task 2 Geotechnical – Preliminary Stability/Settlement Analysis and Report focused on limited analysis and concept level recommendations for the setback berm in Deer Island Basin developed based on prior subsurface explorations in the area. The project team assumed that analysis of the Novato Creek and Lynwood levees completed under the separate DWR local levee evaluation (LOLE) grant would be sufficient to inform and support design related to the Lynwood Levee portion of the Bird Ponds design. During development of preliminary design, it was determined that the LOLE analysis was based on incorrect assumptions for water management in the Lynwood Basin and did not reflect the habitat goals of the project (i.e. recommending rip-rap slope protection vs. the use of flatter, vegetated habitat slopes that are currently preferred by the restoration community and regulating agencies. Therefore, the LOLE study was not sufficient to support design and further analysis of the Lynwood Basin levee was needed. A revised scope and budget was approved under contract reallocation 1 and \$10,397 was allocated from the as-needed budget to Task 2 to perform additional analyses of the Lynwood levee.

The results of additional Lynwood levee analysis indicated issues with seepage and stability of the levee, even with placement of material along the Bird Pond side of the levee to create an improved ecotone slope. However, the analysis was based on limited boring data and as such was conservative in the nature of the recommendations. To refine the recommendations, additional boring data will be collected along Lynwood levee and the data used

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to update and finalize the design recommendations. This task also includes scope for ESA for additional review of draft GEI reports and coordination with the project team

*Deliverables:*

- Draft and final field data collection work plan
- Draft and final lab testing plan
- Draft and final data collection memorandum
- Draft and final analysis and design recommendation memorandum

***Task 6: Preparation of Draft and Final Design Report***

Additional budget is being requested to support refinement and finalization of the 30% PSE and design report. As indicated under the proposed work for Task 2 above, the project team assumed that the previously completed LOLE evaluation of the Lynwood levee would be adequate to support design of the Bird Ponds. Additional design effort is required to complete this element of the project, including documentation of basis of design, preparation of plans and detail sheets, quantification of volumes, and analysis of construction methods and sequencing.

The design of both the Bird Ponds and the Deer Island Basin concepts have also required an additional level of effort to develop concepts that maximize not only the restoration potential of the site, but also the flood protection & conveyance along Novato Creek. For the Bird Ponds, several options for generation of material to support sustainable flood protection and habitat creation were explored, including dredging the ponds, variations of lowering the Novato Creek levee, and excavating from the interior of Novato Creek along the Novato Creek levees. These efforts have provided multiple options for construction, which will allow flexibility (and cost savings) for both the permitting and construction phases of the project. For Deer Island, additional effort was needed for development of stormwater management elements for Olive Avenue and Lea Drive and for the protection of the West and Farmer's basins.

To better define the project costs, schedule, and potential impacts, ESA is also requesting additional budget to bring on BK Cooper (as an independent contractor to ESA) to provide a constructability review to the project.

***Task 7: Preparation of Plans and Specifications for Construction***

Based on the level of effort required for completion of the 30% design effort under Task 6 and the limited responses from the permitting agencies on the proposed design elements, the design team is anticipating that additional effort will be needed to complete the 50%, 90%, and Final design packages. Additional effort is anticipated to include: finalization of Lynwood levee improvements, incorporation of regulatory requirements related to constructions means and methods, and detailing and refinement of earthwork balancing.

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### ***Task 8.2: Regulatory Permitting***

Two additional efforts have been identified during initial permitting and cultural resource coordination

#### **AB 52 Consultation Support**

The County is leading the AB 52 consultation with Federated Indians of Graton Rancheria (FIGR) and the Coast Miwok Tribal Council. ESA will support the consultation process by participating in consultation calls and site visits and documentation communication for incorporation into the project Cultural Resources Survey Report

*Deliverables:* Meeting notes and correspondence

*Assumptions:* Up to two site visits with the tribes will take place

#### **Monitoring and Adaptive Management Plan for Bird Ponds**

Based on initial feedback from the BRRIT, ESA will develop a Monitoring and Adaptive Management Plan (MAMP) for submittal to the permitting agencies. The purpose of the MAMP is to document the post-construction evolution of the project and attainment of project goals through evaluation of performance criteria. Design objectives and target functions will be described for each habitat type. Schematic cross sections will be developed to convey target functions for each habitat zone across Novato Creek and the former bird pond areas. Per regulatory agency direction, the MAMP will include monitoring and evaluation methods for Bird Pond hydrology; channel adjustments in Novato Creek; elevations; vegetation establishment for the different habitat types created/restored/enhanced as a result of the project; invasive species; water quality; and levee stability/integrity. The MAMP will establish triggers for and describe potential maintenance and adaptive management actions to achieve project performance criteria. Reporting procedures will be identified as well.

The preliminary draft plan will be completed after the 50% complete project designs are available. The Preliminary draft plan will be revised once to reflect District comments. The Draft MAMP will then be submitted to the resource agencies with permit applications. The MAMP will be revised once more (Draft Final MAMP) to reflect the 100% design, regulatory agency and District comments on the Draft, and permit conditions. The Final MAMP document will be prepared once permits have been authorized to document the final conditions and permit requirements.

*Deliverables:*

- Preliminary (50% design), Draft (Agency submittal), Draft Final (100% design), and Final Monitoring and Adaptive Management Plan

### ***Task 9: Project Management***

The original scope for the project assumed monthly project coordination calls and a project duration of approximately 24 months, starting in January 2020. The project has experienced delays due to a variety of factors,

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including limitations placed on work from the COVID-19 pandemic, as well as, some of the complexities related to the geotechnical considerations and material balance/flood protection/conveyance options as described above. The project has also required more frequent coordination and project management support with biweekly team calls.

Additional budget is requested to support continued project management through the end of the project.

## **Budget**

The total budget requested for additional services is \$120,593, which accounts for reallocations from both Task 1 (existing conditions) and Task 10 (as-needed services). A high-level summary is provided below and a detailed budget, including previous reallocations, is shown in Table 1.

- Task 2 – Geotech - \$77,830
  - GEI - \$72,450
  - ESA - \$5,380
  - Funded by reallocation from Task 1 of \$6,894 plus additional budget request
  
- Task 6 – Design Report and 30% PSE - \$20,500
  - BK Cooper - \$5,250
  - ESA - \$15,250
  - Funded by reallocation of Task 10 (as-needed services)
  
- Task 7 – Final PSE - \$20,000
  - Funded by reallocation of Task 10 (as-needed services)
  
- Task 8.2 – Permitting - \$34,690
  - AB 52 Consultation - \$4,680
  - MAMP - \$30,010
  - Funded by reallocation of Task 10 (as-needed services) plus additional budget request
  
- Task 9 – Project Management - \$19,350
  - Funded by additional budget request

Please let me know if you need any additional information to support approval of this proposal.

Sincerely,

*Melissa M. Carter*  
Melissa Carter

**Table 1 Budget Summary**

Task #	Task Name	Original			Previous Reallocation					Additional Effort					
		Original Budget			By Task		Reallocated Budget			By Task			Revised Budget		
		ESA	GEI	Total	ESA	GEI	ESA	GEI	Total	ESA	GEI	Total	ESA	GEI	Total
1	Review Previous Studies and Confirm Alternatives	\$ 19,640	\$ 10,500	\$ 30,140	\$ -	\$ -	\$ 19,640	\$ 10,500	\$ 30,140	\$ -	\$ (6,894)	\$ (6,894)	\$ 19,640	\$ 3,606	\$ 23,246
2	Geotechnical –Preliminary Stability/Settlement Analysis and Report	\$ 1,940	\$ 28,350	\$ 30,290	\$ -	\$ 10,397	\$ 1,940	\$ 38,747	\$ 40,687	\$ 5,380	\$ 72,450	\$ 77,830	\$ 7,320	\$ 111,197	\$ 118,517
3	Hydraulic Analysis and Modeling	\$ 85,230	\$ -	\$ 85,230	\$ -	\$ -	\$ 85,230	\$ -	\$ 85,230	\$ -	\$ -	\$ -	\$ 85,230	\$ -	\$ 85,230
4	Public Access and Trails Assessment	\$ 15,840	\$ -	\$ 15,840	\$ -	\$ -	\$ 15,840	\$ -	\$ 15,840	\$ -	\$ -	\$ -	\$ 15,840	\$ -	\$ 15,840
5	Biological Assessment and Design	\$ 49,350	\$ -	\$ 49,350	\$ -	\$ -	\$ 49,350	\$ -	\$ 49,350	\$ -	\$ -	\$ -	\$ 49,350	\$ -	\$ 49,350
6	Preparation of Draft and Final Design Report	\$ 76,640	\$ -	\$ 76,640	\$ -	\$ -	\$ 76,640	\$ -	\$ 76,640	\$ 20,500	\$ -	\$ 20,500	\$ 97,140	\$ -	\$ 97,140
7	Preparation of Plans and Specifications for Construction	\$ 74,560	\$ -	\$ 74,560	\$ -	\$ -	\$ 74,560	\$ -	\$ 74,560	\$ 20,000	\$ -	\$ 20,000	\$ 94,560	\$ -	\$ 94,560
8.1	CEQA	\$ 159,210	\$ -	\$ 159,210	\$ -	\$ -	\$ 159,210	\$ -	\$ 159,210	\$ -	\$ -	\$ -	\$ 159,210	\$ -	\$ 159,210
8.2	Permitting	\$ 103,645	\$ -	\$ 103,645	\$ -	\$ -	\$ 103,645	\$ -	\$ 103,645	\$ 34,690	\$ -	\$ 34,690	\$ 138,335	\$ -	\$ 138,335
NEW	AB 52 Consultation Support	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,680	\$ -	\$ 4,680	\$ 4,680	\$ -	\$ 4,680
NEW	Monitoring and Adaptive Management Plan	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 30,010	\$ -	\$ 30,010	\$ 30,010	\$ -	\$ 30,010
9	Project Management, Quality Management, and Meetings	\$ 49,960	\$ 3,675	\$ 53,635	\$ -	\$ -	\$ 49,960	\$ 3,675	\$ 53,635	\$ 19,350		\$ 19,350	\$ 69,310	\$ 3,675	\$ 72,985
	<b>SUBTOTAL</b>	\$ 636,015	\$ 42,525	\$ 678,540	\$ -	\$ 10,397	\$ 636,015	\$ 52,922	\$ 688,937	\$ 99,920	\$ 65,556	\$ 165,476	\$ 735,935	\$ 118,478	\$ 854,413
10	As-Needed Services	\$ 60,000	\$ -	\$ 60,000	\$ (15,117)	\$ -	\$ 44,883	\$ -	\$ 44,883	\$ (44,883)		\$ (44,883)	\$ -	\$ -	\$ -
10.1	Survey	\$ -	\$ -	\$ -	\$ 4,720	\$ -	\$ 4,720	\$ -	\$ 4,720			\$ -	\$ 4,720	\$ -	\$ 4,720
	<b>TOTAL</b>	\$ 696,015	\$ 42,525	\$ 738,540	\$ (10,397)	\$ 10,397	\$ 685,618	\$ 52,922	\$ 738,540	\$ 55,037	\$ 65,556	\$ 120,593	\$ 740,655	\$ 118,478	\$ 859,133