

EXHIBIT 4-A



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June 2, 2017

Mr. Thomas Christensen
Riparian Projects Coordinator
Monterey Peninsula Water Management District
P.O. Box 85
Monterey, California 93942

RE: Streambank restoration design on the Carmel River downstream of the Rancho San Carlos Road Bridge, Monterey County, California

Dear Mr. Christensen:

Thank you again for extending Balance Hydrologics the opportunity to provide a scope of work for the streambank restoration design on the Carmel River just downstream of the Rancho San Carlos Road Bridge in Monterey County, California. We understand that high flow events during the winter of 2017 caused a significant failure of the left bank, and that there is an immediate need to prevent further property loss and possible channel avulsion during future high flow events. We also understand that ongoing erosion of the right bank is of concern to you. As you know, Balance staff have extensive experience in the Carmel River watershed, including both restoration planning and design and FEMA floodplain modeling; we believe we can leverage that past work to contribute meaningfully to a prompt assessment and design solution in an expedited manner.

We fully understand the need for the work to progress efficiently, with the initial objective of a bid package by early July of this year so construction might proceed in the fall. This requires a focused work plan to address a range of design issues. This letter discusses our proposed scope of services beginning with the technical approach and specifics of the work plan, followed by the associated budget and timeline.

Technical Approach

Our technical approach will be to provide focused geomorphic and hydraulic assessments with the goal of identifying the dimensions and configurations of a bank stabilization treatment that maximizes the functions and values of the creek corridor at the site. This strategy will help secure the support of regulatory agencies, thereby minimizing the potential for schedule delays.

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The geomorphic assessment will be based on limited stream reconnaissance at the site, our past experience in this watershed, established geomorphic relationships, and District staff's understanding of river behavior. The overarching goal will be to identify the key geomorphic processes leading to the bank failures, so the design may acknowledge these processes to the extent possible.

Hydraulic engineering support will be largely based on the effective FEMA model for the Carmel River, which we currently have on file. We anticipate demonstrating that the design will not adversely affect flood hydraulics by not reducing the cross sectional area beyond what is documented by the effective FEMA model. The hydraulic model will also be used to extract parameters to inform other design calculations, for instance, ultimate depth of bend scour and log/boulder stability.

The geomorphic and hydraulic analyses will ultimately inform the design for the bank stabilization treatments. The treatments will address erosion along roughly 400 feet of the left bank and 75 feet of the right bank of the Carmel River just downstream of the Rancho San Carlos Road Bridge. The goals of the treatments are to:

- Provide long-term stability of the banks to withstand fluvial forces up to the 50-year event;
- Acknowledge the geomorphic setting and dominant geomorphic processes;
- Maintain the prevailing flood patterns and hydraulics;
- Facilitate smooth agency review and bidding with a straightforward design; and
- Provide an aesthetically-pleasing and fish-friendly solution.

A bid package will be prepared to convey the final design, and will be accompanied by a design basis memo to provide technical documentation on how the project meets the above goals.

Work Plan

Task 1. Backgrounding and Field Reconnaissance. We will review the available background information for the site to begin forming our understanding of the project site. Balance staff will then conduct a one-day field reconnaissance to address gaps in the background information, and begin formulating design concepts.

Task 2. Design Development. We understand that you presented rock vanes as the bank stabilization treatment in your project description letter to the USACE, but are open to other means of stabilizing the banks. Following Task 1, Balance will prepare up to three design alternatives to present to MPWMD staff. Given the fast-paced project schedule, we will forego a formal alternatives analysis, and instead will present the alternatives during a conference call, utilizing standard details we have on file and rough sketches as necessary. This task assumes a consensus on how to proceed with the design will be reached within one day of the call so we may move forward with subsequent tasks.

Task 3. Technical Analyses. A number of technical analyses will be needed to test the design against the project goals. This includes applying the effective FEMA HEC-RAS model to assess how the design will affect hydraulics, estimate bend scour, and evaluate shear stress along the bank treatments. We will convert the existing one-dimensional HEC-RAS model into a two-dimensional model (for the project

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reach only) if we find that more detailed output would better serve the design. Under this task we will also complete geomorphic analyses to estimate bankfull stage and width, sediment entrainment thresholds, and channel evolution trajectories.

Task 4. 100% Bid Package. Balance will prepare construction drawings for the preferred bank stabilization treatment in accordance with local, state, or federal standards applicable to the project site. The drawings will be prepared at an appropriate scale to communicate the physical relationships of the various features. We expect to locate the features and other improvements by way of a continuous baseline and station point system. The construction drawings will be prepared using AutoCAD on Arch D size (22" x 34") sheets in English units. The 100% design plans will be finalized and stamped by a California-registered Professional Civil Engineer. When completed, the plans will be of sufficient detail for bidding and construction, and are anticipated to include the following:

- Cover sheet with sheet index and location map (1 sheet);
- General notes and legend of symbols and abbreviations (1 sheet);
- Site access, staging, erosion control, and dewatering plan (1 sheet);
- Site plan views with staking information (up to 2 sheets at 1" = 40' or finer scale);
- Detail, cross section, profile, and elevation views as needed; detailed notes on material specifications and installation procedures will be provided on the sheets in lieu of separate technical specifications (up to 2 sheets); and
- Summary of materials quantities.

Budget has been allotted for two submittals: draft and final bid package. The draft bid package will be submitted to you for review and comment no later than four (4) business days prior to the final bid package delivery date (early July, precise date to be determined). We ask that you respond to Balance with your comments on within 48 hours of receipt of the draft package.

As a component of all design submittals, Balance staff will perform our standard Quality Assurance / Quality Control process (QA/QC) on all documents submitted. This involves a Level 1 Review where a Checker (who is not associated with the project) reviews the plans and cost estimate, and then discusses potential design issues with the Designer and Stamping Registered Civil Engineer. After changes are discussed and implemented, the Checker performs a Level 1 Back Check to verify that the identified issues are addressed, and that the submittal satisfies Balance's quality standards. The entire review process is documented and archived.

Task 5. Design Basis Memo. Balance will prepare a focused Design Basis Memo (DBM) summarizing the geomorphic metrics and basis for hydraulic design of the bank stabilization treatment. The results of technical analyses conducted under Task 3 will be summarized in the DBM. We have found that a comprehensive DBM is the most efficient way to convey to the design team, regulatory agency staff, and other pertinent stakeholders the work that was completed and the findings and recommendations that frame the design. The DBM will be delivered within one week of the 100% bid package.

Task 6. Project Management and Meetings. A modest amount of time is reserved for internal project management tasks, and regular email and phone coordination with MPWMD staff on project updates. We have also allotted time to participate in up to two conference calls with agency staff (to be scheduled

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at your direction), and to assist you with up to three requests for information (RFIs) during the bidding period.

Assumptions

In addition to the assumptions mentioned throughout the work plan, this scope of work and budget assumes the following:

- Topographic survey will be completed by Whitson Engineers, and delivered in CAD format to Balance in State Plane grid coordinates no later than June 16, 2017. The survey will be of suitable quality for use as the design basemap.
- Planimetric data for the basemap (e.g. property lines, roads, utility locations)—if not provided by Whitson—will be provided by MPWMD.
- No permitting assistance (e.g. quantities or application preparation) beyond the two budgeted conference calls.
- Construction assistance and oversight is not included; Balance is available to provide this service under a separate scope should you wish.
- Disturbed areas requiring revegetation will be identified with polygons in the bid package, and MPWMD will develop the technical specification for the revegetation treatment.
- Machinery will be allowed in the active channel during construction.
- No quantitative analysis of impacts to aquatic habitat.
- A Stormwater Pollution Protection Plan (SWPPP) is not required.
- Technical specifications will not be included. Implementation and General Notes will be provided on the plan sheets.

Estimated Budget and Timeline

The anticipated cost for completing the above work plan is summarized in the attached Tables 1 and 2. We would suggest billing on a time and materials basis not to exceed the grand total shown on Table 1 without your prior authorization. As part of this project budget, we have included a 10-percent contingency, to be used only with written authorization from MPWMD, so that we may rapidly respond to unforeseen circumstances, should they arise.

Staff schedules can be adjusted to begin work immediately upon formal authorization to proceed. We understand the expedited nature of the work to meet the aggressive schedule for the bank stabilization. The work described up to and including Task 4 can be completed by early July 2017.

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Closing

Thank you again for requesting this scope of services. The work would be very much in line with our expertise, and we truly appreciate the opportunity to contribute to this exciting project in a prompt and efficient manner.

Please do not hesitate to contact Balance if you have any questions or comments related to this scope or the work approach suggested.

Sincerely,

BALANCE HYDROLOGICS, Inc.

A handwritten signature in black ink, reading "Peter Kulchawik", written over a horizontal line.

Peter Kulchawik, P.E.
Civil Engineer/Hydrologist

A handwritten signature in blue ink, reading "Edward D. Ballman", written over a horizontal line.

Edward Ballman, P.E.
Principal Engineer

Enclosures: Tables 1 and 2

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Table 1. Anticipated Staff Hours by Task

217107 Streambank restoration design on the Carmel River downstream of the Rancho San Carlos Road Bridge

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Notes:

TOTAL LABOR \$50,760.00

Expenses from Table 2 **\$600.00**

Contingency from Table 2 **\$5,136.00**

GRAND TOTAL \$56,496.00

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Table 2. Estimated Costs

217107 Streambank restoration design on the Carmel River downstream of the Rancho San Carlos Road Bridge

Professional Fees	Rate	Hours	Allocation
Sr. Principal	\$235	0	\$0.00
Principal	\$200	70	\$14,000.00
Senior Specialist	\$185	0	\$0.00
Senior Professional	\$180	0	\$0.00
Project Professional	\$165	0	\$0.00
Senior Staff Professional	\$155	148	\$22,940.00
Staff Professional	\$130	62	\$8,060.00
Assistant Professional	\$115	0	\$0.00
Junior Professional	\$105	0	\$0.00
GIS/CADD Senior Analyst	\$125	0	\$0.00
GIS/CADD Analyst	\$110	44	\$4,840.00
GIS/CADD Assistant Analyst	\$100	0	\$0.00
Senior Project Administrator	\$95	8	\$760.00
Senior Report Specialist	\$85	0	\$0.00
Report Specialist	\$80	2	\$160.00
Hydrologic Technician	\$80	0	\$0.00
Labor Subtotal (Table 1)			\$50,760.00
Expenses			
Direct Expenses			
Mileage	500 miles @	\$0.60	\$300.00
Mileage, 4-Wheel Drive*	miles @	\$0.63	\$0.00
Vehicle Rental	@		\$0.00
Equipment Costs	@		\$0.00
Reimbursable Costs			
Other Travel, Subsistence			\$100.00
Express Mail, Deliveries			\$50.00
Maps and Aerial Photos			\$0.00
Outside Copying, Blueprint			\$0.00
Outside Consultants			\$0.00
Analytical Laboratory Fees			\$0.00
Materials and Supplies			\$50.00
Permits, Licenses or Agency Inspection fees	<i>client responsibility</i>		\$0.00
Printing ⁺			\$100.00
Other			\$0.00
Expenses Subtotal			\$600.00
ESTIMATED TOTAL			\$51,360.00
Contingency			\$5,136.00
TOTAL w/ CONTINGENCY			\$56,496.00
Notes			

* 4WD rates apply only if required by site conditions. See Balance policy re 4WD.

+Plotting costs vary according to complexity of design

Project-related expenses will be bill at cost plus 10%; including work by outside consultants and analytical or testing laboratories.