SAN FRANCISQUITO CREEK
JOINT POWERS AUTHORITY

Notice of Regular Meeting of the Board of Directors

Thursday, April 25, 2024 - 3:30 P.M.

City of Menlo Park Council Chambers 751 Laurel Street Menlo Park, CA 94025

Santa Clara Valley Water District Administration Building 5700 Almaden Expressway, San Jose, CA 95118

Members of the Public may speak on any agenda item for up to three minutes

Register in advance for this webinar:

https://us02web.zoom.us/webinar/register/WN_B1AdnPuLSfyNdZLpjHcBrg

After registering, you will receive a confirmation email containing information about joining the webinar.

1. CALL TO ORDER AND ROLL CALL
2. APPROVAL OF AGENDA
3. APPROVAL OF MEETING MINUTES: Minutes of March 28, 2024, Regular Board Meeting
4. PUBLIC COMMENT: *Individuals may speak on a non-agendized topic for up to three minutes.*
5. ACTION ITEMS:
    A. Review and Consider Authorization for Executive Director to enter into Reach 2 Project Master Services Agreement (MSA) Provider and Task Order 1 with WRA Environmental Consultants.
6. INFORMATION ITEMS:
    A. Executive Director's Report
7. Board Member Announcements, Information Items, and Requests (Information only)
8. ADJOURNMENT

PLEASE NOTE: Board meeting Agenda and supporting documents can be viewed online no later than 3:30 p.m. on Monday, April 22, 2024 at sfcjpa.org -- click on the "Clerk of the

Board" tab near the top, select 2024 and the meeting of interest. The Board Meeting package will be emailed to those on our Board Meeting distribution list prior to the Board meeting date. Contact SFCJPA Board Clerk, Miyko Harris-Parker at MHParker@sfcjpa.org if you are not on this list and would like to be added.

San Francisquito Creek Joint Powers Authority
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Agenda Item 3
March 28, 2024, Regular Board Meeting Minutes
DRAFT

Director Combs called the meeting to order at 3:48 p.m., at the City of Palo Alto Council Chambers, Palo Alto, CA. This meeting was conducted as a hybrid meeting with all attending members of the Board in person and other meeting attendees participating either in person or virtually via streaming video/ teleconference call.

Public input was solicited on each item and all public comments received are noted herein.

1) **ROLL CALL**

Members Present:	Director Drew Combs, City of Menlo Park Director Ruben Abrica, City of East Palo Alto
Alternates Present:	Director Lydia Kou, City of Palo Alto Director Nai Hsueh, Santa Clara Valley Water District (Valley Water)
Members Absent:	Director Dave Pine, San Mateo County Flood and Sea Level Rise Resiliency (OneShoreline) Director Greer Stone, City of Palo Alto
SFCJPA Staff Present:	Margaret Bruce, Executive Director Miyko Harris-Parker, Staff Tess Byler, Staff
Legal Present:	Lori Liu

2) **APPROVAL OF AGENDA**
ACTION: Motion and second (Abrica/Hsueh) to approve the agenda, passed 4-0.

Roll call vote:
Director Combs Aye
Director Abrica Aye
Director Kou Aye
Director Hsueh Aye

Director Pine and Director Stone were not present.

3) **APPROVAL OF MEETING MINUTES: Minutes of January 25, 2024, Regular Board Meeting, and February 22, 2024, Special Board Meeting**
ACTION: Motion and second (Abrica/Combs) to approve the agenda, passed 3-0-1.

Roll call vote:
Director Combs Aye
Director Abrica Aye
Director Kou Aye
Director Hsueh Aye

Director Pine and Director Stone were not present.

4) **PUBLIC COMMENT**
Hamilton Hitchings commented on sediment build up on the upstream side of the 101 Bridge and requested that the Board find a way clear out the build up to reduce upstream back pressure.

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5) ACTION ITEMS

Update Board Roles – Board Vice Chair and Committee Membership
ACTION: Motion and second (Combs/Abrica) to Update Board Committee Membership – adding Director Combs to the Board Finance Committee passed 4-0.

Roll call vote:
Director Combs Aye
Director Abrica Aye
Director Kou Aye
Director Hsueh Aye

Director Pine and Director Stone were not present.

The board discussed and voted to add Director Combs to the Board Finance Committee.

ACTION: Motion and second (Kou/Stone) to Update Board Vice Chair role – voting Director Stone to be Vice Chair passed 4-0.

Roll call vote:
Director Combs Aye
Director Abrica Aye
Director Kou Aye
Director Hsueh Aye

Director Pine and Director Stone were not present.

The board discussed and voted for Director Stone to be Board Vice Chair.

Public Comment: Jeff Shore commented on Santa Clara Valley Water District Board thinking about assigning a member of the public to the fill the district seven seat and expressed support for having an elected member of the Valley Water board serve as the SFCJPA representative.

SFCJPA legal representative stated that legal will take a closer look at the SFCJPA agreement to determine if there are any legal concerns with appointing a member of the public to SFCJPA Board.

Consider adoption of updates to the Board Handbook.
ACTION: Motion and second (Hsueh/Combs) to adopt updates to the Board Handbook and correct the spelling of Director Kou's name, passed 4-0.

Roll call vote:
Director Combs Aye
Director Abrica Aye
Director Kou Aye
Director Hsueh Aye

Director Pine and Director Stone were not present.

Consider adoption of updates to the Employee Handbook.
ACTION: Motion and second (Hsueh/Abrica) to adopt updates to the Employee Handbook passed 4-0.

Roll call vote:
Director Combs Aye
Director Abrica Aye
Director Kou Aye
Director Hsueh Aye

Director Pine and Director Stone were not present.

6) **INFORMATION ITEMS:**

Executive Director's Report

Executive Director Bruce presented the Executive Director's report.

Director Abrica expressed the need to produce a summary of the Schaaf & Wheeler report for average people. Director Kou concurred with Director Abrica. Director Kou stated that there also needs to be a clear way for members of the public to have the ability to ask questions. Ms. Bruce stated that the Executive Summary within the report is a good start and that she will work with member staff from SFCJPA member agencies to produce a document that is less technical.

Public Comment: Lisa Madden commented that funding needs to be secured ASAP for the SFCJPA projects.

7) **Board Member Announcements, Information Items, and Requests (Information only)**

Director Hsueh shared that the Army Corps gave a presentation on all the Corps' projects with Valley Water that included San Francisquito Creek.
Director Hsueh commented that the Employee Handbook should not come to the Board for approval. Director Kou concurred.

8) **ADJOURNMENT**

Adjourned at 4:43 pm.

Minutes drafted by Clerk of the Board: Miyko Harris-Parker.

Agenda Item 5. A. Review and Consider Authorization for Executive Director to enter into Master Services Agreement (MSA) and Task Order 1 with WRA Environmental Consultants for Reach 2 Project

Background

The updated creek hydraulics indicates the modeled creek capacity is about 25% less than previously thought. Our original goal was 7,200cfs. Since the channel can carry less than we once thought, getting to 7,200cfs will need more work, and the plan will be to take incremental steps to get there. Some elements of the Reach 2 project are "no regrets" actions (i.e. they will not imperil anyone by their implementation and will have an independent flood risk reduction benefit). These are creek widening elements in the 2019 EIR that are continuing to move forward in tandem with the Newell Road Replacement Project.

On January 25, 2024, the SFCJPA authorized the Executive Director to seek consulting support and allocate up to $300,000 in this (FY23/24) fiscal year from agency reserves for the Reach 2 project to move the analysis and selection of augmented project alternatives forward as quickly as possible.

On February 29, 2024, the SFCJPA released a Request for Proposals for a Master Services Agreement (MSA) to support the Reach 2 Project. Four responsive proposals were received by April 5, 2024, the closing date of the solicitation.

Discussion

SFCJPA staff and representatives from our member agencies reviewed the four proposals. The group met twice to discuss and selected the proposal from WRA Environmental Consultants, Inc. (WRA).

SFCJPA staff and legal counsel met with WRA staff to negotiate the proposed contract, which is included in your board packet for review and consideration.

Recommendation

Review and consider approving Resolution 24-04-25-A authorizing the Executive Director to execute the Master Services Agreement and Task Order 1 with WRA for the Reach 2 project.

SAN FRANCISQUITO CREEK
JOINT POWERS AUTHORITY
SFCJPA.ORG

RESOLUTION NUMBER 24-04-25-A

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SAN FRANCISQUITO CREEK JOINT POWERS AUTHORITY Authorizing a Master Services Agreement for the Upstream Project and Task Order 1 Alternatives Analysis with WRA Environmental Consultants

BE IT RESOLVED by the Board of Directors of the San Francisquito Creek Joint Powers Authority that the Board of Directors hereby Authorizes the Executive Director to enter into a Master Services Agreement and Task Order 1 to conduct necessary alternatives analysis, as well as other follow-on work to plan, design, and implement Reach 2 project elements.

Approved and adopted on Thursday, April 25, 2024, the undersigned hereby certify that the foregoing Resolution was duly adopted by the Board of Directors of the San Francisquito Creek Joint Powers Authority.

INTRODUCED AND PASSED:
AYES:
NOES:
ABSENT:
ABSTAIN:
ATTEST:

APPROVED:

_____ Date: (add)
Chairperson

_____ Date: (add)
Vice Chairperson

APPROVED AS TO FORM:

_____
Legal Counsel Date: (add)

AGREEMENT FOR

Master Services Agreement and Task Order 1 for San Francisquito Creek Flood Protection, Ecosystem Restoration, and Recreation Project Upstream of Highway 101

THIS AGREEMENT is made as of April 26, 2024, by and between the San Francisquito Creek Joint Powers Authority, a body corporate and politic ("Authority"), and WRA Environmental Consultants, Inc. ("Consultant").

R E C I T A L S

A. STATEMENT OF PURPOSE

Authority requires Consultant services to advance planning, design, and implementation of the Reach 2 "Urban Reach" flood risk reduction project.

B. Authority desires to utilize the services of Consultant as an independent contractor to provide project planning, design, and implementation services as described in Exhibit A to Authority.

C. Authority is issuing Task Order 1 under the MSA for an Alternatives Evaluation using updated creek hydrology.

D. Consultant represents that it is fully qualified to perform such services by virtue of its experience and the training, education and expertise of its principals and employees.

NOW, THEREFORE, in consideration of performance by the parties of the promises, covenants, and conditions herein contained, the parties hereto agree as follows:

1. Consultant's Services.

A. Scope and Level of Services. The nature, scope, and level of the specific services to be performed by Consultant are as set forth in Exhibit A attached hereto.

B. Time of Performance. The services shall be performed on a timely, regular basis in accordance with the Schedule of Performance attached hereto as Exhibit B.

Standard of Care. As a material inducement to Authority to enter into this Agreement, Consultant hereby represents that it has the qualifications and experience necessary to undertake the services to be provided pursuant to this Agreement and will perform the services to a standard of reasonable professional care and in a manner reasonably satisfactory to Authority.

C. Compliance with Law. All services rendered hereunder by Consultant shall

be provided in accordance with all ordinances, resolutions, statutes, rules, and regulations of Authority and any federal, state or local governmental agency having jurisdiction in effect at the time service is rendered.

2. Term of Agreement.

A. This Agreement is effective on the date set forth in the initial paragraph of this Agreement and shall remain in effect until the services required hereunder have been completed satisfactorily by Consultant unless earlier terminated pursuant to Section 13.

3. Compensation. Authority agrees to compensate Consultant for its services according to the fee schedule set forth in Exhibit C. Authority also agrees to compensate Consultant for its out-of-pocket expenses to the extent authorized in Exhibit C. In no event shall the total compensation and costs payable to Consultant under this Agreement exceed the sum of $304,754.00 unless specifically approved in advance, in writing, by Authority. Any additional work authorized by Authority will be compensated in accordance with the fee schedule set forth in Exhibit C, unless otherwise approved by Authority in writing.

Consultant shall submit to Authority monthly invoices for all services rendered pursuant to this Agreement. Such invoices shall be submitted within 14 days of the end of the month during which the services were rendered and shall describe in detail the services rendered during the period, the days worked, number of hours worked, the hourly rates charged, and the services performed for each day in the period. Authority will pay Consultant all undisputed charges within 30 days of receiving Consultant's invoice. Authority will not withhold any applicable federal or state payroll and other required taxes, or other required or authorized deductions from payments made to Consultant.

4. Representatives.

A. Project Manager, Andrew Smith, P.E., is hereby designated as the representative of Consultant authorized to act on its behalf with respect to the services specified herein. It is expressly understood that the experience, knowledge, capability, and reputation of the foregoing Project Manager were a substantial inducement for Authority to enter into this Agreement. Therefore, the foregoing Project Manager shall be responsible during the term of this Agreement for directing all activities of Consultant and devoting sufficient time to personally supervise the services hereunder. The Project Manager may not be changed by Consultant without the express written approval of Authority.

B. Contract Administrator. The Contract Administrator and Authority's representative shall be Margaret Bruce, Executive Director or in his or her absence, an individual designated in writing by the Executive Director of Authority. If no Contract Administrator is so designated, the Executive Director shall be the Contract Administrator. It shall be Consultant's responsibility to assure that the Contract Administrator is kept informed of the progress of the performance of the services, and Consultant shall refer any decisions which must be made by Authority to the Contract Administrator. Unless otherwise specified herein, any approval of Authority required hereunder shall mean the approval of the Contract Administrator.

5. Standard of Performance. Consultant shall perform all services in accordance with the degree of skill and care ordinarily used by competent practitioners of the same professional discipline under similar circumstances.

6. Ownership of Work Product. All draft and final reports, documents and other written material, and any and all images, ideas, concepts, designs including without limitation, any website designs, source code, object code, electronic data and files, and/or other media whatsoever created or developed by Consultant in the performance of this Agreement (collectively, "Work Product") and all intellectual property rights arising from their creation, including, but not limited to, all copyrights and other proprietary rights, shall be and remain the property of Authority without restriction or limitation upon its use, duplication or dissemination by Authority. Consultant shall not obtain or attempt to obtain copyright protection as to any of the Work Product. Consultant hereby assigns to Authority all rights of ownership to the Work Product, including but not limited to any and all related intellectual property and proprietary rights that are not otherwise vested in the Authority pursuant to this paragraph.

A. Consultant warrants and represents that it has secured all necessary licenses, consents or approvals necessary to the production of the Work Product, and that upon final payment, Authority shall have full legal title to the Work Product, and full legal authority and the right to use and reproduce the Work Product for any purpose. Consultant shall defend, indemnify, and hold Authority, and its elected officials, officers, employees, servants, attorneys, designated volunteers, and agents serving as independent contractors in the role of city officials, harmless from any loss, claim, or liability in any way related to a claim that any use by the Authority of any of the Work Product violates federal, state, or local laws, or any contractual provisions, or any rights or laws relating to trade names, licenses, franchises, copyrights, patents, or other means of protecting intellectual property rights, and/or interests in products, ideas, or inventions. Consultant shall bear all costs arising from the use of patented, copyrighted, trade secret, or trademarked documents, materials, equipment, devices, or processes in connection with its provision of the Work Product produced under this Agreement. If any use by Authority of any of the Work Product or other deliverables is held to constitute an infringement and the use of any of the same is enjoined, Consultant, at its expense, shall: (a) secure for Authority the right to continue using such Work Product and/or other deliverables by suspension of any injunction, or by procuring a license or licenses for Authority; or (b) modify the Work Product and other deliverables so that they become non-infringing while remaining in compliance with the requirements of this Agreement.

B. Consultant's obligations under this Section 6 shall survive the expiration or termination of this Agreement.

7. Status as Independent Contractor. Consultant is, and shall at all times remain as to Authority, a wholly independent contractor and not an employee of Authority. Under no circumstances shall Consultant look to Authority as their employer, or as a partner, agent, or principal. All services provided pursuant to this Agreement shall be performed by Consultant or under Consultant's supervision. Consultant will determine the means, methods, and details of performing the services. Neither Authority nor any of its agents shall have control over the conduct of Consultant or any of Consultant's employees, except as set forth in this Agreement. Consultant shall not, at any time, or in any manner,

represent that it or any of its agents or employees are in any manner employees of Authority. Consultant shall have no power to incur any debt, obligation, or liability on behalf of Authority or otherwise act on behalf of Authority as an agent. Consultant agrees to pay all required taxes on amounts paid to Consultant under this Agreement, and to indemnify and hold Authority harmless from any and all taxes, assessments, penalties, and interest asserted against Authority by reason of the independent contractor relationship created by this Agreement. Consultant shall not be entitled to any benefits accorded to Authority's employees, including workers' compensation, disability insurance, vacation, or sick pay. Consultant shall be responsible for providing, at Consultant's expense, and in Consultant's name, workers' compensation , disability, or other insurance as well as licenses and permits required by law. In the event Consultant hires a subcontractor who has employees to perform the services or any part thereof established by this Agreement, Consultant shall either require the subcontractor to obtain Workers' Compensation Insurance Coverage, or must obtain Workers' Compensation Insurance Coverage for the subcontractor's employees. Consultant further agrees to defend, indemnify and hold Authority harmless from any failure of Consultant to comply with applicable worker's compensation laws. Authority shall have the right to offset against the amount of any fees due to Consultant under this Agreement any amount due to Authority from Consultant as a result of Consultant's failure to promptly pay to Authority any reimbursement or indemnification arising under this Section. Consultant agrees that Consultant's covenant under this section shall survive the expiration or termination of this Agreement.

8. Confidentiality. Consultant, in the course of its duties, may have access to financial, accounting, statistical, and personal data of private individuals and employees of Authority. Consultant covenants that all data, documents, discussion, or other information developed or received by Consultant or provided for performance of this Agreement are deemed confidential and shall not be disclosed by Consultant without written authorization from Authority. Authority shall grant such authorization if disclosure is required by law. Upon request, all Authority data shall be returned to Authority upon the expiration or termination of this Agreement. Consultant's covenant under this section shall survive the expiration or termination of this Agreement.

9. Conflict of Interest. Consultant covenants that it presently has no interest and shall not acquire any interest, direct or indirect, which may be affected by the services to be performed by Consultant under this Agreement, or which would conflict in any manner with the performance of its services hereunder. Consultant further covenants that, in performance of this Agreement, no person having any such interest shall be employed by it. Furthermore, Consultant shall avoid the appearance of having any interest which would conflict in any manner with the performance of its services pursuant to this Agreement. Consultant agrees not to accept any employment or representation during the term of this Agreement which is or may likely make Consultant "financially interested" (as provided in California Government Code Sections 1090 and 87100) in any decision made by Authority on any matter in connection with which Consultant has been retained pursuant to this Agreement. Nothing in this section shall, however, preclude Consultant from accepting other engagements with Authority.

10. Indemnification.

A. Consultant shall defend, hold harmless and indemnify the Authority, its Board members, officers, employees, and agents, its constituent local public entities, and its constituent members' respective officers, employees, and agents (collectively, "Indemnitees"), from any claim, demand, damage, liability, loss, cost or expense, including defense costs, for any damage whatsoever, including but not limited to death or injury to any person and injury to any property, to the extent actually resulting from willful misconduct, negligent acts, errors or omissions of Consultant or any of its officers, employees, or agents.

B. Authority does not, and shall not, waive any rights that they may possess against Consultant because of the acceptance by Authority, or the deposit with Authority, of any insurance policy or certificate required pursuant to this Agreement. This hold harmless and indemnification provision shall apply regardless of whether or not any insurance policies are determined to be applicable to the claim, demand, damage, liability, loss, cost or expense. Consultant agrees that Consultant's covenant under this section shall survive the expiration or termination of this Agreement.

C. Consultant's indemnifications and obligations in this Agreement shall survive the expiration or termination of this Agreement.

11. Insurance.

A. Liability Insurance. Consultant shall procure and maintain for the duration of this Agreement insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by Consultant, its employees, agents, representatives, or subcontractors.

B. Minimum Scope of Insurance. Coverage shall be at least as broad as:

(1) Insurance Services Office Commercial General Liability coverage (occurrence form CG 0001).

(2) Insurance Services Office form number CA 0001 (Ed. 1/87) covering Automobile Liability, code 1 (any auto).

(3) Worker's Compensation insurance as required by the State of California and Employer's Liability Insurance.

C. Minimum Limits of Insurance. Consultant shall maintain limits no less than:

(1) General Liability: $1,000,000 per occurrence for bodily injury, personal injury, and property damage. Any general aggregate limit shall apply separately to this Agreement or the general limit shall be twice the required occurrence limit.

(2) Professional Liability Insurance (Errors and Omissions).

(3) Automobile Liability: $1,000,000 per accident for bodily injury and property damage.

(4) Employer's Liability: $1,000,000 per accident for bodily injury or disease.

D. Deductibles and Self-Insured Retentions. Any deductibles or self-insured retentions must be declared to and approved by Authority. At the option of Authority's Executive Director, either the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects to Authority, its officers, officials, employees, and agents; or Consultant shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

E. Other Insurance Provisions. The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

(4) Authority is to be covered as insureds as respects: liability arising out of activities performed by or on behalf of Consultant; products and completed operations of Consultant; premises owned, occupied or used by Consultant; or automobiles owned, leased, hired or borrowed by Consultant. The coverage shall contain no special limitations on the scope of protection afforded to Authority, its officers, employees and agents.

(5) For any claims related to this Agreement, Consultant's insurance coverage shall be primary insurance as respects Authority. Any insurance or self-insurance maintained by Authority shall be excess of Consultant's insurance and shall not contribute with it.

(6) Any failure to comply with reporting or other provisions of the policies, including breaches of warranties shall not affect coverage provided to Authority, their officers, employees, and agents.

(7) Consultant's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

(8) Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, or cancelled by either party, or reduced in coverage or in limits except after 30 days prior written notice by certified mail, return receipt requested, has been given to Authority.

F. Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII unless waived by Authority's Risk Manager.

G. Verification of Coverage. Consultant shall furnish Authority with original endorsements effecting coverage required by this section. The endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. The endorsements are to be on forms provided by Authority. All endorsements are to be received and approved by Authority before work commences. As an alternative to Authority forms, Consultant's insurer may provide complete, certified copies of all required

insurance policies, including endorsements affecting the coverage required by these specifications.

H. Subcontractors. Consultant shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all requirements stated herein.

I. Waiver of Subrogation. Consultant agrees that in the event of loss due to any of the perils for which he/she has agreed to provide comprehensive general and automotive liability insurance, Consultant shall look solely to his/her/its insurance for recovery. Consultant hereby grants to Authority, on behalf of any insurer providing comprehensive general and automotive liability insurance to either Consultant or Authority with respect to the services of Consultant herein, a waiver of any right to subrogation which any such insurer of Consultant may acquire against Authority by virtue of the payment of any loss under such insurance. Consultant shall obtain any endorsement that may be necessary to affect this waiver of subrogation.

J. Failure to Secure or Maintain Insurance. If Consultant at any time during the term of this Agreement should fail to secure or maintain the foregoing insurance, Authority shall be permitted to obtain such insurance in the Consultant's name or as an agent of the Consultant and shall be compensated by the Consultant for the costs of the insurance premiums at the maximum rate permitted by law and computed from the date written notice is received that the premiums have not been paid.

12. Cooperation. In the event any claim or action is brought against Authority relating to Consultant's performance or services rendered under this Agreement, Consultant shall render any reasonable assistance and cooperation which Authority might require.

13. Termination. Authority shall have the right to terminate the services of Consultant at any time or for any reason after giving 5 calendar days written notice to Consultant. In the event this Agreement is terminated by Authority, Consultant shall be paid for any services properly performed to the last working day the Agreement is in effect. Upon expiration or termination of this Agreement, Consultant shall deliver to Authority all materials, reports, documents, notes, or other written materials compiled through the last working day this Agreement is in effect. Consultant shall have no other claim against Authority by reason of such termination, including, but not limited to, any claim for compensation.

14. Suspension. Authority may, in writing, order Consultant to suspend all or any part of the Consultant's services under this Agreement for the convenience of Authority or for work stoppages beyond the control of Authority or Consultant. Subject to the provisions of this Agreement relating to termination, a suspension of the work does not void this Agreement. In the event that work is suspended for a period exceeding 120 days, the schedule and cost for completion of the work will be adjusted by mutual consent of the parties, and all work product materials shall be delivered to Authority.

15. Notices. Any notices, bills, invoices, or reports required by this Agreement shall be

deemed received on (a) the day of delivery if delivered by hand during receiving party's regular business hours or by e-mail before or during receiving party's regular business hours; or (b) on the second business day following deposit in the United States mail, postage prepaid, to the

addresses heretofore below, or to such other addresses as the parties may, from time to time, designate in writing pursuant to the provisions of this section.

Authority:

San Francisquito Creek Joint Powers Authority 750 Menlo Ave. Suite 250
Menlo Park, CA 94025

Or by email to: billing@sfcjpa.org Attention: Accounts Payable

Consultant:

WRA Environmental Consultants, Inc.
2169-G East Francisco Blvd.
San Rafael CA 94901

Attention: Andrew Smith, P.E.

16. Non-Discrimination and Equal Employment Opportunity. In the performance of this Agreement, Consultant shall not discriminate against any employee, subcontractor, or applicant for employment because of race, color, creed, religion, sex, marital status, national origin, ancestry, age, physical or mental handicap, medical condition, or sexual orientation. Such non- discrimination includes, but is not limited to, all activities related to initial employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff, or termination. Consultant will take affirmative action to ensure that employees are treated without regard to their race, color, creed, religion, sex, marital status, national origin, ancestry, age, physical or mental handicap, medical condition, or sexual orientation.

17. Assignability. Consultant shall not assign, transfer, or sell any interest in this Agreement or the performance of any of Consultant's obligations hereunder, without the prior written consent of Authority, and any attempt by Consultant to so assign, transfer, or sell any rights, duties, or obligations arising hereunder shall be void and of no effect.

18. Subcontracting. Unless prior written consent from Authority is obtained, only those persons and subcontractors whose names are attached to this Agreement shall be used in the performance of this Agreement. Consultant agrees to include within their subcontract(s) with any and all subcontractors 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 Consultant shall agree to be bound to Consultant and Authority in the same manner and to the same extent as Consultant is bound to Authority under this Agreement. Subcontractors shall agree to include these same provisions within any sub-subcontract. Consultant shall provide a copy of the Indemnity and Insurance provisions of this Agreement to any subcontractor. Consultant shall require all subcontractors to provide valid certificates of insurance and the required endorsements prior to commencement of any work and will provide proof of compliance to Authority.

19. Compliance with Laws. Consultant shall comply with all applicable laws, ordinances, codes, and regulations of the federal, state, and local governments.

20. Non-Waiver of Terms, Rights and Remedies. Waiver by either party of any one or more of the conditions of performance under this Agreement shall not be a waiver of any other condition of performance under this Agreement. In no event shall the making by Authority of any payment to Consultant constitute or be construed as a waiver by Authority of any breach of this Agreement, or any default which may then exist on the part of Consultant, and the making of

any such payment by Authority shall in no way impair or prejudice any right or remedy available to Authority with regard to such breach or default.

21. Attorney's Fees. If either party to this Agreement shall commence any legal action or proceeding to enforce or interpret the provisions of this Agreement, the prevailing party in such action or proceeding shall be entitled to recover its costs of suit, including reasonable attorney's fees. The venue for any litigation shall be San Mateo County or Santa Clara County.

22. Exhibits; Precedence. All documents referenced as exhibits in this Agreement are hereby incorporated in this Agreement.

23. Entire Agreement. This Agreement, and any other documents incorporated herein by specific reference, represent the entire and integrated agreement between Authority and Consultant. This Agreement supersedes all prior oral or written negotiations, representations, or agreements. This Agreement may not be amended, nor any provision or breach hereof waived, except in a writing signed by the parties to this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

"Authority" ATTEST:

_____

By: Authority Board Chair
San Francisquito Creek Joint Powers Authority

_____

By: Margaret Bruce, Executive Director
San Francisquito Creek Joint Powers Authority

"Consultant"
WRA Environmental Consultants, Inc.

_____

By: Aaron Sutherlin, PE, Principal-in-Charge
WRA Environmental Consultants, Inc.

Exhibit A Scope of Services

TASK ORDER 1 (TO1) SCOPE OF WORK
under
Master Services Agreement
San Francisquito Creek Flood Protection, Ecosystem Restoration and Recreation Project, *Urban Reach* 2

AUGMENTED ALTERNATIVES ANALYSIS, HYDRAULIC MODELING AND PROJECT DESIGN MODIFICATIONS
February 29, 2024

This is the first Task Order (Task Order or TO1) under a Master Services Agreement (MSA) for San Francisquito Creek Flood Protection and Habitat Restoration Urban Reach 2 Project.

The purpose of this Task Order is to develop an alternative evaluation of what can be done to reduce flood risks and impacts in addition to the following actions that are moving forward:

- Removal of concrete structure in the creek along Woodland Ave and restoration of area
- Replacement of the Newell Road Bridge

This alternatives evaluation is needed to select a preferred alternative to be evaluated in a Supplemental Environmental Impact Report (SEIR). The selected alternative will be advanced to a 30% design. Work must be closely coordinated with the SFCJPA's consultant for the SEIR.

Services requested as part of TO1 will include conceptual designs, hydraulic modeling (HEC-RAS), scour analysis, feasibility and constructability analyses, and preliminary construction cost estimates for up to 5 alternatives intended to augment the proposed project analyzed in the SFCJPA's 2019 Environmental Impact Report to provide flood risk reduction in a manner that minimizes impacts, facilitates ecosystem restoration, and does not transfer risk from one area of the project area to another. The selected Consultant will be encouraged to review the scope of TO1 and make recommendations for changes or additions to improve efficiency, reduce costs, or produce a better product.

The Army Corps of Engineers (ACOE) is reviewing and certifying the updated hydrology and HEC-RAS model. This is anticipated to be completed by July 2024. For the purposes of TO1 and for time expediency, the consultant should assume that the updated hydrology and HEC-RAS model as independently reviewed and updated is the model to be used for this evaluation. The consultant should assume that additional model runs will be required after certification based on minor changes to the model that do not change model outcome.

The Consultant's work products are intended to help the SFCJPA partners evaluate and select updated alternatives to reduce flood risk in Urban Reach 2 based on the overall decrease in creek capacity as determined by Santa Clara Valley Water District, the USGS and independent review of the model completed in 2024.

Concept plans of the various options and varying levels of protection will be evaluated by the SFCJPA Board and the community for what will then become the preferred design and project alternative.

Documents about the SFCJPA's projects and organizational background, including Valley Water's draft final Technical Memorandum and SFCJPA's Independent Review of the HEC-RAS model for the Creek, can all be found on the SFCJPA website at: https://www.sfcjpa.org/reach-2-upstream-project.

The Consultant shall perform design services for project elements to be identified through meetings with public works staff from our member agencies and concurrence of project goals and preferred alternatives by the SFCJPA Board.

The preliminary scope of this MSA's Task Order 1 (TO1) has been separated into five (5) major tasks:

Task 1 – Administrative and Project Management
Task 2 – Alternatives Analysis
Task 3 – 30% Designs & Plans, Construction Estimates and Schedules for Preferred Alternative
Task 4 – Technical Requests
Task 5- Optional Task for staff support for other SFCJPA projects not related to Reach 2

The cost proposal should be separated by these five tasks. It is recognized that Tasks 4 and 5 will only consist of the rate sheet as described in the MSA.

Schedule, timeline, and activity priorities are to be developed collaboratively between the SFCJPA and selected Consultant.

These five tasks are described in detail below.

TASK 1 – PROJECT MANAGEMENT

1.1 General Project Management
1.2 Project Work Plan and Schedule
1.3 Meetings and Project Coordination

The Consultant shall meet with the SFCJPA to review the project scope of work, schedule, and general requirements for the project. The Consultant shall manage their staff and budget to ensure delivery of the project is complete, on schedule, and within budget.

1.1 GENERAL PROJECT MANAGEMENT

The Consultant shall:

- Maintain communication by being available by phone and e-mail.

- Utilize Asana, a shared project management, schedule, task-tracking tool, and a file sharing system (optimal file sharing system to be collaboratively determined post-award).
- Prepare monthly progress reports and invoices showing budgeted and actual costs versus work progress status and the projected spending versus progress.
- Project management activities (communications, documentation, reporting, etc.) as necessary to keep the project on schedule.
- Notify the SFCJPA of any anticipated or actual changes in scope or budget as soon as possible and propose actions if necessary to align changes with budgets and schedules.

1.2 Work Plan and Schedule
This task consists of the project proposal and one update to schedule based recommendations from the consultant team.

1.3 MEETINGS AND PROJECT COORDINATION

Consultant shall:

- Prepare, organize themselves for, and attend an initial kick-off meeting with SFCJPA partner staff.
- Prepare presentations for and attend up to two SFCJPA Board meetings.
- Meet with the SFCJPA to review the project scope of work, schedule, design standards, environmental mitigation measures, and PS&E requirements for the project. Prepare revisions based on comments received.
- Participate in three (2) Design Workshops to discuss the design approach, methods, and content of the alternatives evaluation.
- Prepare draft and final meeting minutes and distribute to the appropriate team members and maintain in the project file.

TASK 1 - DELIVERABLES

1. Project letters, memorandums, and other correspondence as necessary
2. Draft and final meeting minutes
3. Monthly invoices
4. Monthly status reports
5. Monthly expenditures and schedule updates
6. Implementation and utilization of shared project management and file sharing system
7. Updated schedule for all Task Order 1 (TO1) activities.

TASK 2 – ALTERNATIVES ANALYSIS

The goal of the alternatives analysis is to enable a reasonable range of alternatives for CEQA, assist the Army Corps of Engineers (ACOE) in describing “without project conditions” as part of their CAP205 program, USACE 404, and San Francisco Regional Water Quality Control Board 401 Least Environmentally Damaging Program Alternative (LEDPA) analyses.

2.1 Data gathering and project design criteria,
2.2 Review existing designs and potential alternatives,

2.3 Description of “without project conditions” for ACOE CAP205
2.4 Compile short list of alternatives
2.5 Hydraulic Modeling of Potential Alternatives
2.6 California Environmental Quality Act (CEQA) Document Coordination,
2.7 Alternatives Evaluation Technical Memorandum (draft and final).
2.8 Selection of Preferred Project Alternative

The Consultant shall review the preliminary plans and other documents relating to the project elements. The Consultant shall develop preliminary short list of alternatives, or a combination of alternatives based on this review and evaluate the alternatives compared to previous project objectives of up to 7,200 cfs and updated project objectives that will be specified by SFCJPA Board at the March 2024 Board meeting.

2.1 DATA GATHERING AND PROJECT DESIGN CRITERIA

The Consultant shall be provided with the following available information and files:

- Final EIR
- Comprehensive Plan
- Existing plans and designs, parcel maps, geotechnical reports, biological reports, geotechnical data etc.
- Draft permit applications
- Other information determined to be relevant and available.

The EIR goal was to protect people and property from creek flows up to 7,200 cubic feet per second. The independent model review indicates that the creek has about 25% less capacity than expected and that the current project design would induce flood risks downstream.

The consultant shall review and identify any critical information needs for alternative evaluation. Some of the tasks below would be performed in parallel and not in sequence. The SFCJPA Board will specify project design goals at the March Board meeting and the selected consultant will need to review and adapt as needed for this Reach 2 work.

2.2 REVIEW EXISTING DESIGNS AND POTENITAL ALTERNATIVES

The SFCJPA solicited input as part of the EIR on potential alternatives as part of a stakeholder process. The goal is to review the list of possible alternatives screened in the 2019 EIR and determine what should be looked at again due to updated hydrology. Some technologies may have evolved, or there may be new ways of applying the alternative(s), such as smaller floodwalls set back along parks or adjacent to roadways, as an alternative to placement at the top of bank. A combination of the alternatives may be useful to reduce flood risks.

The Consultant should know that there are existing design level maps and surveys based on old hydrology. The Santa Clara Valley Water District (Valley Water) has prepared 90% designs for project elements that may or may not be applicable, including replacement of Pope Chaucer Bridge and certain channel widening areas. Valley Water also has preliminary designs for top of bank work and 60% design for opening the fourth bore at East Bayshore and Highway 101.

Note that as described in the MSA, the removal of the large concrete structure along Woodland Avenue should be assumed to be implemented as part of what can be implemented at this time without increasing downstream flood risks. However, evaluation of the flood reduction benefit of potential additional widening areas for enhanced channel capacity should remain a consideration.

2.3 DESCRIPTION OF "WITHOUT PROJECT CONDITIONS"

The consultant, in collaboration with the ACOE and SFCJPA, shall provide a concise written description of the probable "without project conditions" so that the ACOE can proceed with a CAP205 project evaluation.

2.4 COMPILE SHORT LIST OF ALTERMATIVES

The consultant shall develop a list of feasible alternatives for evaluation and determine if existing survey and base maps and digital plans are adequate for the alternative evaluation.

2.5 HYDRAULIC MODELING OF POTENTIAL ALTERNATIVES

The San Francisquito Creek HEC-RAS hydraulic model has been updated based on results of Valley Water and an independent review of the model. The Consultant shall be provided with the updated version of the model for evaluating the short list of potential alternatives.

The Consultant shall evaluate up to five alternatives for their ability to meet project objectives, for up to 30 model runs. The Consultant shall recommend additional HEC-RAS model runs if deemed necessary for project alternative selection or future project element design and produce concept plans and high-quality renderings.

Visualization of what potential alternatives will look like to the community will be an important discriminator.

2.6 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) DOCUMENT COORDINATION

The Consultant shall coordinate with the SFCJPA and the SFCJPA's environmental consultant, as directed, on pertinent elements for compliance with CEQA and the Supplemental EIR. Work on the Supplemental EIR requires the design information from this to select a preferred alternative and must work in tandem. The alternative evaluation shall incorporate elements of the Least Environmentally Damaging Project Alternative (LEDPA), as defined by USACE and the Regional Water Quality Control Board, San Francisco Region as part of Section 401, and Section 404 permit applications.

2.7 PROJECT ALTERNATIVES TECHNICAL MEMORANDUM

The Consultant shall develop a draft and final alternatives evaluation. The SFCJPA will consolidate all comments from the draft. The Consultant shall provide sufficient information, including but not limited to engineering evaluations, construction cost estimates, potential construction schedules, HEC-RAS modeling, environmental impacts, restoration opportunities, and other potential community or benefits or impacts, for up to five potential alternatives or combinations of alternatives that are able to meet the project objectives. Additionally, the

consultant shall provide project footprints, probable costs, quantities of earthwork and other required items as necessary for CEQA evaluation.

2.8 SELECTION OF PREFERRED ALTERNATIVE

The project alternatives comparisons will be reviewed by SFCJPA and our member staff, presented to the community in workshops, and ultimately, recommendations for preferred alternative(s) will be presented to the SFCJPA board.

TASK 2 DELIVERABLES

1. Project Alternative Evaluation Technical Memorandum (draft and final)
2. High-quality, accurate renderings and visuals of concepts to be used for public outreach and seeking input.
3. Brief or memo describing “without project conditions”.
4. For up to five potential alternatives (or combinations of alternatives), Consultant shall provide:
    - Engineering evaluations
    - Hydraulic Modeling
    - Project footprints, quantity take off for CEQA.
    - Probable costs for selected alternatives.
    - Other information necessary for CEQA evaluation (e.g. air quality)

The SFCJPA will compile comments.

TASK 3 – PROJECT DESIGN – 30%

After the preferred alternative has been selected, the Consultant shall develop 30% designs and plans and construction estimates for preferred alternative, including any utility relocation requirements.

TASK 3 - DELIVERABLES

1. Technical memoranda – Design Criteria and Data Gaps, Basis of Design
2. Design review workshop – presentation to SFCJPA members (Shall be one of the meetings identified in Task 1)
3. Draft and Revised 30% Design Plan/Specs Set

TASK 4 – TECHNICAL REQUESTS

This task covers technical requests from SFCJPA to Consultant that cannot be anticipated at this time. The SFCJPA will review and approve the cost estimates for optional tasks and retains its sole discretion on the allocation of funding for optional tasks. Technical requests shall be focused on furthering any necessary analysis, engineering, or other evaluations necessary to make effective decisions and take timely action regarding project implementation.

OPTIONAL - TASK 5 – SFCJPA STAFF AUGMENTATION FOR OTHER SFCJPA PROJECTS

This task is to provide potential supplementary technical staff to support other SFCJPA projects. The specific scope and tasks are to be determined.

Exhibit B Schedule of Performance

Exhibit C Compensation

Task Order 1 under this Master Services Agreement shall be for an amount not to exceed $304,744.00, unless negotiated under subsequent agreement.

Proposal for San Francisquito Creek Joint Powers Authority

Master Services Agreement + San Francisquito Creek Flood Protection, Ecosystem Restoration, and Recreation Project Upstream of Highway 101

04.05.2024

wra
Environmental
Consultants

One year post construction of a crib wall that was designed by WRA for the Children's Health Council San Francisquito Creek Bank Restoration project.




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Construction Crews installing gravel filter layer over crib wall prior to placing native soil and riparian plantings for the Children's Health Council San Francisquito Creek Bank Restoration project.

April 5, 2024

San Francisquito Creek Joint Powers Authority
Margaret Bruce, Executive Director
MBruce@sfcjpa.org

SUBJECT: Proposal for Master Services Agreement + San Francisquito Creek Flood Protection, Ecosystem Restoration, and Recreation Project Upstream of Highway 101

Dear Margaret,

WRA is thrilled for the opportunity to assist the San Francisquito Creek Joint Powers Authority (SFCJPA) on the San Francisquito Creek Flood Protection, Ecosystem Restoration, and Recreation Project Upstream of Highway 101 (Project) and associated master services agreement (MSA). At WRA, our vision is to cultivate a sustainable future where people and the environment thrive. We are passionate about solving complex flood reduction projects in urban settings while incorporating ecological solutions and public access. WRA brings the following benefits to the SFCJPA for this project:

- **An interdisciplinary team of restoration experts:** This Project will be led by WRA's Riverscapes and Shorelines Team, a passionate and integrated group of licensed engineers, ecologists, landscape architects, and hydrologists dedicated to nature-based solutions for resilient designs. From WRA's inception more than 40 years ago, we have specialized in river and coastal projects. In that time, we have completed numerous projects in creek, estuary, and wetland landscapes across California establishing resilient solutions by aligning multiple project partners to invest in restoring natural processes. Whether working on a complex hydraulic model or leading a design charette with project partners, we are driven by the same desire to leave our natural spaces better than we found them. Working with a multidisciplinary team means that the SFCJPA will work with a team that understands how to implement a multi-benefit project integrating improvements for flood conveyance, bank stabilization, public access, and habitat enhancement.
- **A Project Manager who has successfully implemented urban projects:** Andrew Smith, PE was the Project Manager for the Children's Health Council San Francisquito Creek Bank Restoration project, just upstream from Reach 2 which required coordination with Valley Water, the National Marine Fisheries Service (NMFS), and the City of Palo Alto. He was also involved in a project within Reach 2 of San Francisquito Creek working to address the City of Palo Alto and Valley Water concerns by performing thorough two-dimensional hydrodynamic modeling and analysis to demonstrate bank stability at a complex intersection of a concrete wall, a naturally vegetated streambank, and sacked concrete. Andrew's background as an Engineer for the U.S. Army Corps of Engineers (USACE) San Francisco District is valuable for strong relationships with local staff and understanding the USACE process to successfully procure federal funding for projects. As a USACE employee working with Valley Water on a flood risk reduction project in San Jose, Andrew successfully managed the design and construction of two reaches of an urban river that required careful considerations for geomorphic processes, sediment transport, erosion, public meetings, and flood risk.
- **A team of ecological and permitting experts who understand issues related to San Francisquito Creek.** WRA's proposed ecological and permitting team includes Justin Semion and Bianca Clarke, who were both deeply involved with assisting the Children's Health Council (CHC) San Francisquito Creek Bank Restoration project, as well as other projects on San Francisquito Creek, through regulatory hurdles. Given the location of the project, biological resources supported within the creek and adjacent habitats, and multiple agency jurisdictions with competing interests, the CHC project required significant regulatory support. Justin and Bianca were successful in navigating each agency's request for more information which resulted in all

agency permits being obtained within the projected and necessary timeline to allow for the project to be constructed within one in-water work window. Bianca also worked in tandem with Andrew Smith on a private property within Reach 2 of San Francisquito Creek Project. She assisted the property owner in navigating Valley Water's complex requirements on a stream bank long-term stability monitoring plan. The uniqueness of the project also required considerable coordination with the City of Palo Alto's Planning Department. Bianca and Justin's involvement with the aforementioned projects and their stakeholders affords them a unique understanding of San Francisquito Creek's biological resources and the vested interests of all regulating authorities that will aid in their permitting strategy development and agency communications to ultimately result in a successfully permitted project.

We are excited about the opportunity to partner with SFCJPA on this multi-benefit project. We are happy to answer any questions you may have and are willing to discuss any aspect of this proposal.

Sincerely,

WRA, Inc.

Aaron Sutherlin
Principal-in-Charge
E: aaron.sutherlin@wra-ca.com

Andrew Smith, PE
Project Manager
E: smith@wra-ca.com

1. REQUIRED INFORMATION

Record of Compliance

WRA is in compliance with all applicable laws, regulations, policies, guidelines, and orders governing prior and existing contracts.

Conflict of Interest

WRA does not have any conflict of interest to disclose related to this contract.

Consultant Agreement & Insurance

WRA requests a modification to the draft SFCJPA agreement section titled "Standard of Performance" because WRA would prefer the professional service standard of care that is endorsed by the State of California and applied by its courts.

Litigation

No WRA projects have been the subject of lawsuits or litigation where claims or settlements were paid by the consultant or its insurers within the last three years.

Subconsultants

Crawford & Associates, Inc.

Crawford is not involved in any active, pending, or past litigation within the last three years.

Consor North America, Inc.

1. Carlisle v. City of Lake Oswego, Oregon, in which the City tendered defense of this claim to one of its contractors, who in turn tendered to Consor North America, Inc. The matter involves the trip and fall of the plaintiff on or near a sidewalk construction project. On March 15, 2024, this matter was settled via mediation among the parties with no finding of fault regarding the work Consor performed.

2. Lyda Excavating, Inc. v. City of North Plains, Oregon in which the City filed a third-party claim against Consor North America Inc. seeking contribution for a contractor claim. Consor moved to dismiss the claim, based on multiple procedural grounds. The court entered an order of dismissal without objection by the City in June 2022.

2. PROPOSED TEAM

Firm Profile

WRA is an environmental consultancy that's making a net positive impact. From our roots in wetland research and supporting our first clients following the inception of the federal Clean Water Act, we have more than 40 years of experience in California studying and restoring rivers, estuaries, and wetlands. This gives us an understanding of the unique natural processes throughout the state and the growing needs of local communities. We are proud to be an employee-owned, certified small business (SB-PW ref. #13333) with nearly 100 team members working from four offices in California, and a growing distributed workforce throughout the West.

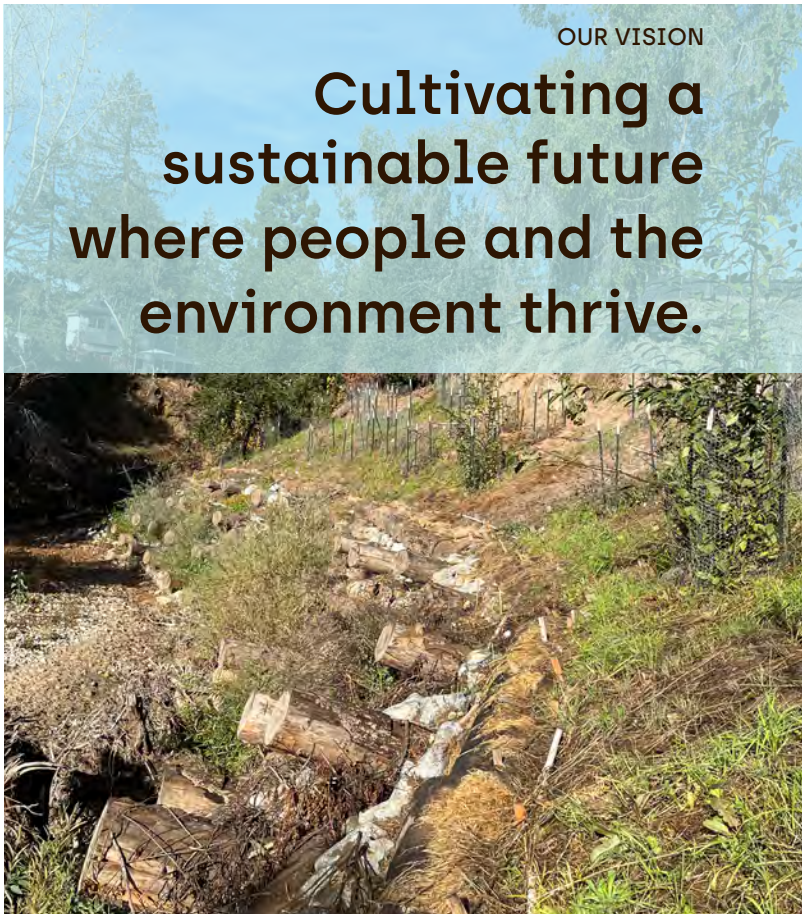
Our Professional and Technical Services Include:

- Hydrology, Hydraulics and Sediment Modeling
- Landscape Architecture
- Stream Restoration Design, Implementation and Monitoring
- Water Resource Engineering
- Public outreach and scoping
- GIS Analyses & Remote Sensing
- Certified Arborist Services
- Landscape Maintenance and Installation
- Aquatic Resources Permitting (Wetlands, Streams, Riparian, Marine Resources)
- Trail & Open Space Design
- Rare & Endangered Plant & Wildlife Surveys, Assessment & Permitting
- Vegetation Mapping & Biological Inventories
- California Coastal Zone Biological Surveys & Permitting
- CEQA/NEPA Analysis
- Conservation, Mitigation Bank Planning & Design
- Preserve Management & Conservation Planning
- Watershed Assessments & Planning
- Wetland & Endangered Species Habitat Construction & Post-Construction Monitoring
- Wetland & Stream Delineation & Functional Assessment

Riverscapes & Shorelines Team

Our interdisciplinary team of restoration professionals includes engineers, hydrologists, landscape architects, fluvial geomorphologists, ecologists, fisheries biologists, and regulatory permitting specialists who have dedicated their careers to ecological restoration. Our projects range from large-scale ecological restoration and dam removal to estuary rehabilitation, infrastructure protection, and stormwater management. By working together as an integrated team, we ensure the efficient development of ecologically functional and sustainable restoration solutions.

Our primary focus on riverine and coastal systems allows our team to apply the best available scientific and engineering practices to deliver robust, regenerative projects that meet a wide variety of objectives. Whether conducting complex hydraulic modeling or developing low-tech restoration design, we have the in-house experts to provide our clients with a variety of tools to develop solutions and meet objectives. We are always refining our techniques, incorporating new research, and utilizing advancing technology to improve outcomes.



Subconsultants

We have selected two subconsultant teaming partners based on the needs identified in the scope of work, our past work history and their relevant qualifications in the region. Our team experience working together includes the Bolinas Wye Estuary Restoration and Bridge Improvements project where WRA teamed with Crawford & Associates and delivered 100% Designs and Permitting. Consor is also involved assisting the County of Marin to provide QA/QC review of WRA's work on the Bolinas Lagoon Wye Estuary Restoration and Bridge Improvements project. WRA and Crawford & Associates also delivered 100% Designs for a bridge replacement, bank stabilization, and fish passage project for the Napa RCD. Our team experience also includes the San Mateo County, Middle Fork San Pedro Creek Bank Stabilization Project where Consor is managing and providing quality assurance, with WRA as their subconsultant delivering PS&E. Consor and Crawford & Associates are currently working together on multiple projects including the El Dorado Hills Boulevard Interchange, Evergreen Road Realignment and Bridge Replacement, Lambert Lane Bridge Replacement, and Philo-Greenwood Bridge Replacement projects. In addition, Taber Consultants (now Crawford) teamed with Quincy Engineering (now Consor) for over 25 years on over 100 projects. Because of our extensive history working together, we will operate efficiently as one team to deliver this Project.

WRA inspecting bank erosion on the Middle Fork of San Pedro Creek in a team effort with Consor to support San Mateo County Department of Public Works.

consor

Consor | Structural Engineering, Roadway Analysis

Consor specializes in the delivery of transportation projects for local agencies with a team of in-house experts recognized for their knowledge and capabilities in roadway, bridge, and transportation engineering design. Structural design services will be provided by Consor North America, while traffic studies, if needed, will be provided by Consor Engineers, LLC. Though the two firms are different entities, they are united under the same name and leadership. For more than 32 years, they have delivered transportation projects for over 100 municipal clients in California. Having worked on approximately 270 bridges, Consor's staff have gained extensive experience and in-depth knowledge of state and federal agency processes and procedures.

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

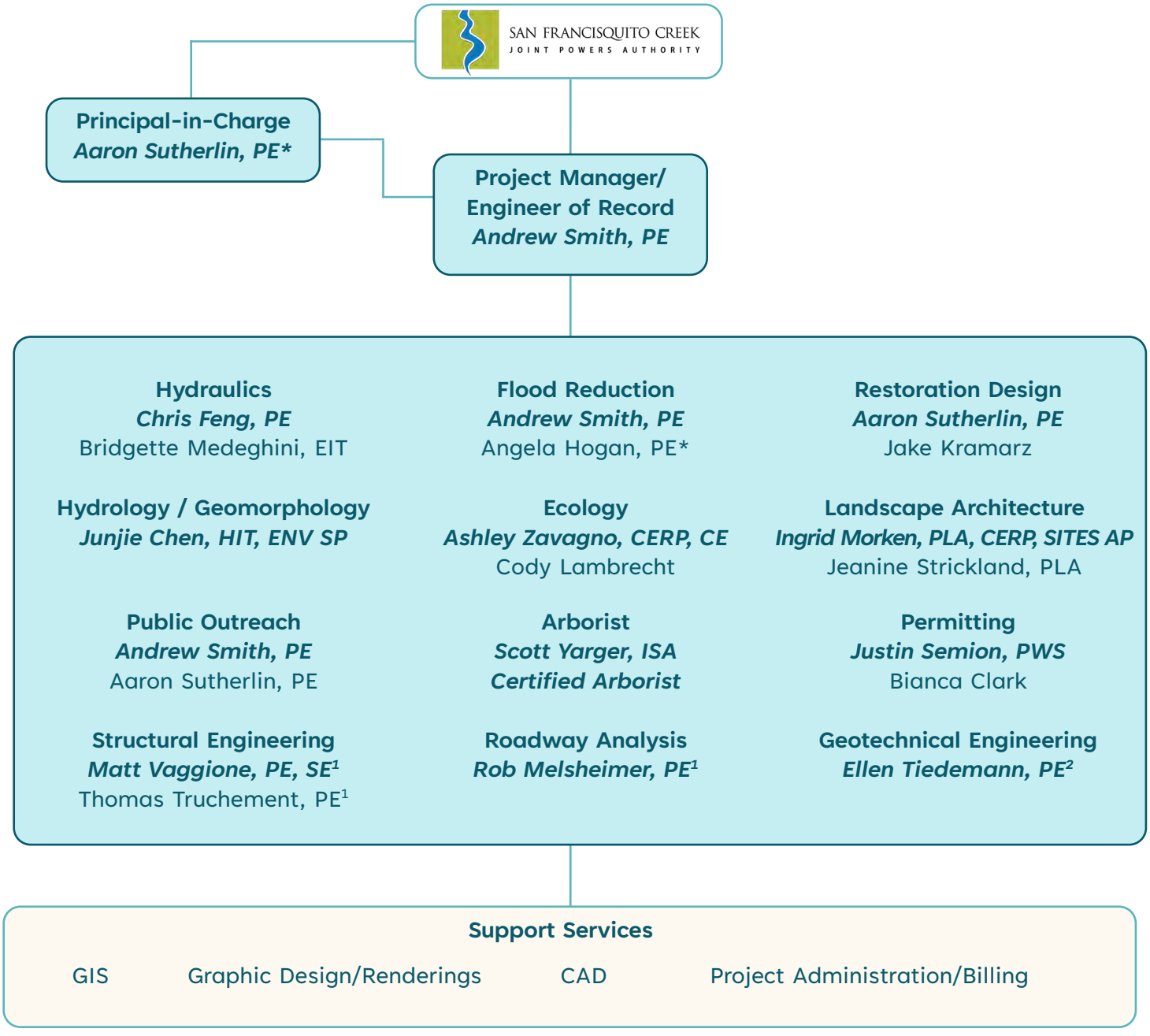
Crawford & Associates, Inc. | Geotechnical Engineering

Crawford & Associates, Inc. (Crawford) was established in 2012 and is a registered Small Business Geotechnical Engineering firm (Certification ID: 1744908) that specializes in large-scale public works projects. In 2016, Crawford merged with Taber Consultants, one of the nation's oldest geotechnical engineering companies. Their staff of 45 includes professional civil engineers, geotechnical engineers, professional geologists, and certified engineering geologists. Crawford has geotechnical exploration and engineering experience on a wide variety of civil works projects that require a similar approach and analysis to this Project including stream restoration, channel improvements, bridges, and culverts.

Team Organization

The WRA team was compiled based on the technical needs outlined in the scope of work and response to questions, relevant staff experience, and their understanding of SFCJPA's needs. Our team will be led by **Principal-in-Charge, Aaron Sutherlin, PE***, and **Project Manager, Andrew Smith, PE.** Our team organization chart is presented in Figure 2-1 below which summarizes team member roles, task leadership, and the technical specialties of our key team members. Table 2-1 that follows, includes information regarding our key personnel education and relevant experience. Detailed resumes for key personnel are included in the Appendix.

Figure 2-1: Organization Chart



SUBCONSULTANTS

1. Consor Consor North America, Inc.
2. Crawford & Associates, Inc.

LEGEND

* Currently licensed as a civil engineer in other states, with California licensure pending

Bold Italics denotes Key Personnel

Table 2-1: Key Personnel Qualifications Summary

	Name, Role	Education, Certifications, Permits, & Licenses	Related Experience, Knowledge, & Technical Expertise
	**Aaron Sutherlin, PE*** *Principal-in-Charge, Restoration Design Lead, Public Outreach Support*	• B.S., Biological Systems Engineering, Texas A&M University • M.Eng., Engineering Management, University of Colorado (May 2025) • Graduate Certificate in Stream Restoration, University of Washington at Seattle • *Professional Engineer (CA pending; CO, ID, OK, OR,, NM, MT, TX, UTWA)	• Leads WRA's integrated, multidisciplined Riverscapes & Shorelines team. • Water resources engineer with more than 20 years of experience managing complex restoration, flood control, and watershed projects. • Successful delivery of complex projects with diverse group of stakeholders including municipalities, regulatory agencies and private landowners.
	**Andrew Smith, PE** *Project Manager, Engineer of Record, Flood Control Lead, Public Outreach Lead*	• B.S., Civil Engineering, Santa Clara University • Professional Civil Engineer CA #C82643	• Registered civil engineer with 14 years of experience in restoration assessment, design, hydraulic modeling, and construction. • Nearly 10 years of experience as a Project Engineer for USACE. • Engineer of Record for the Children's Health Council School, San Francisquito Creek Bank Stabilization project upstream of this Project. • Highly competent in presenting complex information at public meetings.
	**Chris Feng, PE** Hydraulics Lead	• M.S., Civil and Environmental Engineering, Carnegie Mellon University • B.S., Chemical Engineering, Washington University • Professional Civil Engineer CA #C94524	• Registered civil engineer with four years of experience in restoration design, hydrology and hydraulic modeling, and stormwater management. • Provided support during construction for the CHC San Francisquito Creek Bank Stabilization project and the Sandra Hayne Storm Drain Replacement and Creek Daylighting project. • Performed design work on a variety of creek, bank biostabilization, and fish passage improvements through vehicular bridge replacement, and hydrodynamic models in California.
	**Ashley Zavagno, CERP, CE** Ecology Lead	• MESM, Environmental Science and Management, University of California Santa Barbara • B.S., Ecology and Evolution, University of California Santa Barbara • Certified Ecological Restoration Practitioner (CERP) #0235, Society of Ecological Restoration • Certified Ecologist (CE), Ecological Society of America • Certified River Restoration Professional, Portland State University	• Certified Ecological Restoration Practitioner and Certified Ecologist with 10 years of experience in ecological restoration. • Currently serves on the Board of Directors for the Society of Ecological Restoration California Chapter (SERCAL), which advances the science and practice of restoring California native habitats.
	**Junjie Chen, HIT, ENV SP** Hydrology / Geomorphology Lead	• M.S., Physical Geography, Portland State University • B.S., Environmental Science, University of Portland • Hydrologist-In-Training #4588, American Institute of Hydrology • Envision Sustainability Professional (ENV SP), Institute for Sustainable Infrastructure	• Seven years of experience conducting hydrologic and hydraulic modeling for various applications, including flood management, sediment transport, and climate change vulnerability assessments. • Prior to joining WRA, served as a Water Resources Specialist at Sonoma Water where he participated in flood forecast modeling analysis and statistical analysis of historical hydrological data to calculate river reach loss and partition local flow from water reservoir releases, diversions, and precipitation.
	**Ingrid Morken, PLA, CERP, SITES AP** Landscape Architecture Lead	• Master of Landscape Architecture, University of California, Berkeley • B.A., Environmental Studies, Gustavus Adolphus College • California Licensed Landscape Architect #5472 • Certified Ecological Restoration Practitioner #0128, Society of Ecological Restoration • SITES Accredited Professional	• Registered landscape architect, certified ecological restoration practitioner with over 20 years of experience in the design of ecological restoration projects. • Utilizes site design and construction methods which maximize ecological function and minimize impacts to adjacent lands and sensitive habitats. • SITES Accredited Professional and Bay-Friendly Qualified Landscape Design Professional with understanding of green landscape design strategies and implementation.
	**Scott Yarger, ISA Certified Arborist** Lead Arborist	• B.S., Conservation and Resource Studies, Minor in Forestry and Natural Resources, University of California, Berkeley • ISA Certified Arborist #WE-9300A	• Biologist/arborist with 14 years of experience primarily focusing in the greater San Francisco Bay Area. • Arborist for the Children's Health Council School, San Francisquito Creek Bank Stabilization project.
	**Justin Semion, PWS** Permitting Lead	• M.B.A., Sustainable Management, Presidio Graduate School • B.S., Resource Ecology and Management, University of Michigan • Professional Wetland Scientist (#2072)	• Principal Aquatic Ecologist with 20 years of experience specializing in the San Francisco Bay Area. • Led WRA's design and permitting teams for the Children's Health Council School, San Francisquito Creek Bank Stabilization project

Table 2-1: Subconsultant Key Personnel Qualifications Summary

	Name, Role (Subconsultant)	Education, Certifications, Permits, & Licenses	Related Experience, Knowledge, & Technical Expertise
	**Matt Vaggione, PE, SE** Structural Engineering Lead (Consor)	• M.S., Structural Engineering, University of California, Berkeley • B.S., Civil Engineering, University of California, Berkeley • Professional Civil Engineer CA #75751 • Structural Engineer CA #6953	• Professional Structural Engineer with experience performing structural design on bridge projects of various sizes and complexities as part of a multidisciplinary team. • Project experience has included alternatives analysis for structural design on various projects as well as design, plan development and construction support.
	**Rob Melsheimer, PE** Roadway Analysis Lead (Consor)	• M.S., Transportation Engineering, Purdue University • B.S., Civil Engineering, University of Missouri-Rolla • Professional Civil Engineer CA #83040	• Professional Civil Engineer with 17 years of experience in roadway engineering, traffic, planning, and site development. • Technical skills include horizontal and vertical alignment design, superelevation design, sight distance calculations, typical sections, quantity and cost estimates, and utility design. • Experienced in drafting in both AutoCAD and Microstation, designing with Civil3D and InRoads, and using several other transportation and traffic engineering software programs.
	**Ellen Tiedemann, PE** Geotechnical Engineering Lead (Crawford)	• B.S. Civil Engineering, University of the Pacific, Stockton • Professional Civil Engineer CA #91681	• Professional Civil Engineer with seven years of experience. • Experience working with WRA on two restoration projects in the past five years including Bolinas Lagoon Wye Wetlands and Sulphur Creek Fish Passage Improvements.

3. STATEMENT OF QUALIFICATIONS

Familiarity with the San Francisquito Creek Watershed

WRA has provided multidisciplinary environmental services for over 300 projects in both San Mateo and Santa Clara counties in the last 20 years, including 14 projects within the San Francisquito Creek watershed which has educated WRA on the local circumstances. It is important to recognize that, contrary to most other streams with erosion issues, the human development of the watershed is not the initial cause to the creek's erosion issues. Per a previous study: "Prior to human intervention, shifts in geomorphic processes in the watershed led to channel incision (deepening) into alluvial deposits, and to subsequent formation of high, steep stream banks" (PWA, 1999). It is interesting that in the 5,000 years of Ohlone Villages thriving along the creek that the banks remained steep and have not eroded to flatter slopes. One theory that should be explored is if the large tree population that was flourishing prior to urbanization provided large woody debris creating a "forced morphology" stabilizing the streambanks and impounding sediment (Montgomery & Buffington, 1997). As the community developed, hydrologic changes due to deforestation and urbanization started to exacerbate streambank stability issues and flooding issues. The Searsville Dam, Felt Lake, and other human-made infrastructure temporarily reduced floods and reduced sediment loads and large woody debris from travelling downstream to the flat lands of San Francisco Bay. Today, the reservoir capacity is diminished due to sediment deposition and the communities of Palo Alto, Menlo Park, and East Palo Alto have been experiencing routine flooding since the 1950s. Tensions are high as local communities organize to address problems along the creek, align with federal funding requirements, conduct studies and develop designs. As the community finally succeeds in developing a design compliant with state and federal requirements, they experience unanticipated flooding and severe erosion at a much lower flow rate than expected.

Recently on San Francisquito Creek, WRA served as the lead designer for the Children's Health Council addressing severe streambank erosion. We were exposed to the issues in the watershed and the cultural significance of the Ohlone villages dated more than 5,000 years old and Leland Stanford's home built in 1863, located in the vicinity of our project site. Given the constraints of these important archeological resources and high risk of erosion and flooding on San Francisquito Creek, WRA was tasked to stabilize the streambank without approval to excavate the streambank. As a solution, we installed a feature to protect the streambank but were forced to reduce the channel width to stabilize the streambank without increasing flood risk or further erosion of neighboring properties. It was a difficult and challenging problem to overcome. WRA conducted thorough hydrodynamic modeling, geomorphic analysis, and critical shear stress calculations to demonstrate that the project would comply with Valley Water and City of Palo Alto requirements. The project was completed just prior to the New Year's Eve 2022 storm and despite not having any established vegetation, the project survived the storm with minimal damage.

Project Manager Andrew Smith joined SFCJPA staff on a site walk through WRA's project on San Francisquito Creek for the Children's Health Council in September 2022, then joined them to inspect other areas of bank erosion.

Partner Relationships

WRA and our team members have built strong, positive relationships with many of the partner organizations and agencies that the Project team will need to coordinate with to move the Project forward. Our connections to key partners will help us execute the Project efficiently. This gives us the ability to assist SFCJPA strategically and face any challenges by leveraging our understanding of how to productively communicate with partners based on previous experience. Table 3-1 summarizes our team's collective relationships with the project partners (listed alphabetically).

Table 3-1: WRA Relationships with Project Parnters

Project Partner	WRA Relationship
City of Palo Alto	• Matadero Creek with Claire Raybould – developed hydraulic model and feasibility study and presented at public meetings. • Arastradero Creek with Aaron Perkins – designed, permitted, and supported construction for an emergency stream erosion repair on the creek to protect an active gas utility line. • Children's Health Council with Claire Raybould – coordinated with City for Grading Permit, Building Permit, and Tree Technical Manual. • Private Landowner on Reach 2 with Claire Raybould – performed hydrodynamic modeling, secured permitting, and reported on construction.
California Department of Fish & Wildlife (CDFW)	• Sulphur Creek with Matt Erickson and Kristine Pepper – met biweekly to design fish passage project in Napa County which included a bridge replacement and bank stabilization.
National Marine Fisheries Service (NMFS)	• Coordinated with Brian Meux for Children's Health Council School, San Francisquito Creek Bank Stabilization project. • Coordinated with Dan Logan on the York Creek Fish Passage and Dam Removal project design to support and comply with Section 7 Biological Opinion for a dam removal and creek restoration project in Napa County.
San Francisco Regional Water Quality Control Board (RWQCB)	• Coordinated with Brian Wines on the 401 Permit for the Children's Health Council School, San Francisquito Creek Bank Stabilization project.
Stanford University	• Coordinated with Dr. Laura Jones on important archaeological issues for the Children's Health Council San Francisquito Creek Bank Stabilization project. • Coordinated with Mimi Dunkle for public outreach on the Children's Health San Francisquito Creek Bank Stabilization project.
Santa Clara Valley Water District (Valley Water)	• Coordinated with Yvonne Arroyo and Benjamin Hwang on erosion concerns for a private landowner on San Francisquito Creek in Reach 2. • Coordinated with Yvonne Arroyo on concept designs for Matadero Creek. • Coordinated with Emily Zedler and Yvonne Arroyo on streambank stability for the Children's Health Council San Francisquito Creek Bank Stabilization. • As an USACE employee, Andrew co-presented with Ngoc Nguyen on the Upper Guadalupe River (prior to joining WRA). • As a USACE employee, Andrew's projects primarily involved flood risk management in urban streams within Valley Water's area of responsibility including but not limited to the Guadalupe River and Berryessa Creek.
U.S. Army Corps of Engineers (USACE)	• Prior to WRA, Andrew spent 10 years working with Tommy Williams, Janice Lera-Chen, Patrick Sing, Joel Flannery, Trevor Green, Neil Hedgecock, Son Ha, and many others as a USACE employee. WRA has a long history of working with USACE permitting staff at the San Francisco District for stream bank repairs, creek restoration, and developments.

Master Services Agreement (MSA)

The following section is In response to the overall scope of work listed as Tasks 1-8 in Exhibit A. WRA can provide SFCJPA with all services necessary to implement the Project through construction. We are also happy to respond to technical requests associated with the Project, or other projects as needed by SFCJPA.

Approach to On-Call Services

WRA has a 40-year history and broad experience working with various Bay Area cities and counties. Our on-call agreements in the region include the towns of Hillsborough, and Colma; the cities of South San Francisco, East Palo Alto, Burlingame, Redwood City, and San Mateo; the County of Santa Clara; and Caltrans District 4.

We understand that providing quality service to our public agency clients goes beyond checking the appropriate boxes and writing reports. We continually look out for the best interests of our clients to help ensure the long-term viability of project and program goals. With our capacity and experience, our team can provide the SFCJPA with quick response times to task order requests, short lead times for mobilizing and completing field work, and strict schedules for completing necessary reports, while ensuring that the actions taken to meet these goals don't impede progress on future projects and programs.

Project Management

WRA believes that project management is an integral part of any successful project. Through our structured project management approach, we can consistently complete projects on schedule and within budget. Our projects contain an ongoing project management task that includes scheduling, budget monitoring, resource tracking and allocation, status reporting, and quality assurance/quality control (QA/QC).

Andrew Smith, PE was the Engineer-of-Record for the CHC San Francisquito Creek Bank Stabilization Project.

WRA uses Deltek VantagePoint® online time and billing software to manage project charges and budget progress tracking. Our staff enter their time each day into this system which gives our project managers real-time project budget information. Our project managers can customize the tasks as needed by the project's demand for cost control. For scheduling, our team utilizes a variety of project management software including Asana®, Microsoft Project®, and Smartsheet®. Using the preferred software, a task breakdown and corresponding Gantt chart can be provided for scheduling. These programs are shared among WRA principals, project managers, task managers, and staff who receive assignments on each project enabling managers to obtain quick snapshots of overall project status. We also use Egnyte for cloud file storage, which allows us to provide clients with download links when reports are too large for sharing via email or to create online folders for efficient data sharing among WRA, the SFCJPA, and its partners.

Communication is key to project success. Our project managers will conduct coordination meetings with the County's project manager and key team members, as needed at appropriate regular intervals. They will distribute emails summarizing coordination meetings and identifying pending action items. They will also coordinate and direct design review meetings including key County and WRA staff at key milestones. In coordination with a designated project administrator, they will track project progress against the contract scope of work, budget and schedule to maintain conformance and quickly identify deviations and direct corrective actions.

Quality Assurance/Quality Control

WRA maintains a comprehensive QA/QC program for all aspects of our work. WRA's QC Plan is a comprehensive, well-defined, written set of procedures and activities aimed at delivering products and services that meet or exceed a client's expectations through all phases of the project. The QC Plan identifies individuals responsible for quality control and the specific procedures used to ensure delivery of a quality product.

The Project Manager assumes overall responsibility for product content and quality. The following procedures would be implemented by the Task Manager to make certain the project team is accountable for QC:

- Assign appropriately qualified staff to perform project tasks
- Incorporate the sensitive species observation windows and other seasonal events to be incompliance with agency timelines and project deadlines.
- Host a kick-off meeting to clearly communicate the scope and intent of the overall project and inform staff of client's goals, schedule requirements and budget
- Instill a sense of ownership and personal concern for the quality of the work and the project
- Set up and maintain organized project documentation and administrative records
- Organize workflow and critical path deadlines as well as final completion dates
- Create a project contact list with contact information for all of the key project personnel
- Provide planning, coordination, supervision, and technical direction to support staff
- Review and monitor work activities with senior staff and qualified individuals who are not necessarily directly responsible for performing the work.

WRA maintains the highest scientific standards by collaborating with researchers at renowned academic institutions, such as U.C. Berkeley, U.C. Santa Barbara, and U.C. Davis, as well as other expert scientists. Our QC protocol requires rigorous peer review processes for our products, drawing on the expertise of internal senior staff and outside experts. Our reputation for objective, peer-reviewed work has earned respect from a wide range of groups with divergent interests.

Full Project Delivery

We help our clients realize their vision from initial project planning through long-term management. Because of our interdisciplinary team of experts, we can support clients through each stage of their project. We have the capability of drafting designs to achieve multiple benefits, navigating complex permitting processes, collaborating with contractors to improve successful outcomes, and adaptively managing and monitoring projects post-restoration. We also partner with clients to source funding for projects, manage timelines and budgets, and conduct public outreach. Our goal is to develop both lasting project solutions and relationships.

Engineering

WRA's engineers work collaboratively with our landscape architects, fluvial geomorphologists, and restoration ecologists to prepare sustainable restoration projects for a wide range of clients. We supplement the team as needed with in-house expertise including biologists, botanists, arborists, wetland scientists, regulatory permitting specialists, and GIS professionals.

We prioritize data collection of topographic, geomorphic, and hydrologic site characteristics, watershed history, and model calibration to develop informed, efficient, and effective solutions. We validate design recommendations using 1- and 2-D hydraulic models to assess existing and proposed conditions. While our engineers are familiar with various design criteria across a broad geographic region, they have the knowledge and experience to make professional judgment decisions for custom design elements that may or may not be common practice. Our experience and collaborative approach enable us to design restoration projects that are permittable, practical, and sustainable.

Construction of the crib wall for the Children's Health Council School, San Francisquito Creek Bank Stabilization project.

Restoration Ecology

Our ecologists have advanced training and credentials in ecological restoration and wetland science including the Certified Ecological Restoration Practitioner Program and Ecological Society of America Professional Ecologist Certification Program. They collaborate across disciplines with our other restoration professionals to ensure we efficiently design, permit, and implement effective and lasting projects, and have extensive experience working in a variety of ecosystems across the Western U.S. This collaboration allows them to holistically evaluate the landscape setting, watershed conditions, historical ecology, past and current land use, site constraints, and potential changes to develop a customized restoration approach for each project that achieves the desired ecological outcomes. As the science and practice of ecological restoration develops, we are also incorporating new techniques, research, and tools.

Our approach to ecological restoration centers on restoring processes to maintain functional and resilient ecosystems. Restoring processes such as sediment transport, natural inundation regimes, wood and native vegetation recruitment, groundwater recharge, and nutrient cycling is important in sustaining restored ecosystems over time without the need for extensive future interventions. While restoring ecological processes is key to our restoration approach across all landscapes, we are experienced in balancing other objectives such as flood control and infrastructure protection for multi-benefit projects.

Geomorphology/Hydrology

WRA's Riverscapes & Shorelines Team consists of staff who have earned advanced degrees in hydrology and are trained in fluvial geomorphology . Our staff understands the implications of hydromodification within watersheds and incorporates geomorphology as well as hydrology to provide a comprehensive approach in any restoration effort. We routinely collect reference reach data including pebble counts, profile, pattern, and cross-sectional data to help inform a stable corridor design, and use sediment transport and competence as well as hydrologic modeling software to validate our recommendations.

Landscape Architecture

WRA's landscape architects have focused their careers on ecological restoration and public access to natural spaces and are cross-trained in a variety of environmental and biological sciences. From urban river parkways to rural wet meadows, they design landscapes with both people and nature in mind. Utilizing their knowledge of biological communities, native and invasive plant species, and climate resiliency, they design projects that achieve multiple outcomes. They are skilled in conceptual design and plan set preparation, planting palette development, irrigation design, trail and greenway design, green stormwater infrastructure, conceptual renderings, and interpretative panel development. Additionally, WRA landscape architects have credentials to evaluate the sustainability and resiliency of outdoor spaces, including the nationally recognized U.S. Green Building Council Sustainable SITES Initiative Accredited Professional (SITES AP) program.

Log structure at WRA's York Creek project supporting ecological function and impounding sediment.

Regulatory Permitting

WRA's regulatory permitting experts work closely with local, regional, state, and federal resource agencies every day to secure necessary authorizations for our clients. Since most of our projects are in the San Francisco Bay Area, we frequently work with the same regulatory personnel from each of the key Bay Area agency. Through our consistent communication with agency staff over the last few decades, we have fostered a high level of trust between WRA and the agencies that greatly benefits our clients in multiple ways: the agencies know they are getting accurate, high-quality data, reports, and maps from WRA and they are familiar with our methodologies and mitigation standards. This familiarity reduces time spent negotiating with agencies to obtain final permits.

Our consistent work with Bay Area resource agencies also allows our team to stay on the cutting edge of both regulatory policies and agency preferences, allowing us to provide our clients with regulatory strategy specific to each project. By taking a holistic approach to the permitting process and applying our knowledge of the latest in environmental science, we help our clients navigate the complex environmental permitting process efficiently while avoiding burdensome permit requirements whenever possible.

CEQA and NEPA

WRA's approach to environmental review for public agencies recognizes the importance of environmental compliance and resource protection, while accounting for practical aspects of projects that maintain the feasibility of project construction. We understand that ensuring compliance with the various environmental laws and regulations maintains continued public support of projects, reduces the risk of cost overruns that may result from non-compliance (and perceived non-compliance), and enhances political capital with the general public, regulatory agencies, and potential state and federal funding sources.

Because of the public nature of the CEQA and NEPA processes, the level of potential controversy associated with a project is a key input into the approach to CEQA and NEPA documentation. Identifying key issues early on for any particular project, as well as any environmental review documents previously completed for a site, are important steps to scoping and delivering environmental review documents that provide the appropriate level of coverage under CEQA and NEPA in the most efficient way possible.

In addition to more extensive environmental documentation such as Environmental Impact Reports (EIR), Environmental Impact Statements (EIS), and NEPA Environmental Assessments (EA), WRA also prepares CEQA Initial Studies (IS) and Mitigated Negative Declarations (MND), Negative Declarations (ND), and documentation to support CEQA Categorical Exemptions (CE) and NEPA Categorical Exclusions (CE) as well as specialized environmental documentation to support NEPA determinations by federal agencies such as Environmental Assessments and Finding of No Significant Impact (EA/FONSI) or Environmental Impact Statements (EISs). Whenever feasible, we tier from existing environmental documents to streamline the compliance with CEQA and NEPA.

Environmental Permitting Expertise	
U.S. Army Corps of Engineers (USACE)	• CWA Section 404 and RHA Section 10 • NWPs, Regional General Permits, and Individual Permits • NHPA Section 106 consultations with SHPO • ESA Section 7 consultations with USFWS and NMFS
San Francisco Bay Regional Water Quality Control Board (RWQCB)	• CWA Section 401 Water Quality Certifications • Porter-Cologne Waste Discharge Requirements • Use of State and Regional General Orders to expedite permitting process
California Department of Fish and Wildlife (CDFW)	• Section 1600 Lake or Streambed Alteration Agreements • Incidental Take Permits
Bay Conservation and Development Commission (BCDC)	• Major and Minor Permits • Abbreviated and Regionwide Permits • Meetings with Engineering Criteria Review Board and Design Review Board
National Marine Fisheries Service (NMFS) & U.S. Dept. of Fish and Wildlife (USFWS)	• Effects Analyses and Biological Assessments for Section 7 consultations
State Lands Commission	• Land Use Lease Agreements

Relevant Experience - Task Order 1

Table 3-1 below summarizes WRA's experience relevant to Task Order 1 and providing flood reduction in urban settings via multi-benefit solutions while improving infrastructure. Descriptions and references for the projects in ***bold*** are included at the end of this section.

Table 3-1: Relevant Experience Summary

Client Name, Project, Location	Urban Flood Control	Hydraulic Modeling	Regulatory Permitting	Restoration Design Alternatives Evaluation	Public Outreach / Meetings	Restoration Design	Construction PS&E	Bridge / Structure Design	Habitat Improvements for Species of Concern	Improved Hydrologic Connectivity	Arborist Services	Geomorphic Assessment
Children's Health Council School, San Francisquito Creek Bank Stabilization, Palo Alto	✓	✓	✓			✓	✓		✓		✓	✓
City of Palo Alto, Matadero Creek Renaturalization Study, Palo Alto	✓	✓			✓							✓
City of St. Helena, Upper York Creek Ecosystem Restoration and Aquatic Habitat Enhancement Project, St. Helena			✓	✓		✓	✓		✓	✓	✓	✓
City of Palo Alto, Arastradero Pipeline Erosion Control, Palo Alto			✓	✓		✓	✓					✓
Private Client, Galindo Creek Restoration, Concord	✓		✓		✓	✓	✓					✓
Private Client, Palo Alto Streambank Assessment, Palo Alto												✓
Town of Hillsborough, Sandra Hayne Storm Drain Replacement and Creek Daylighting, Hillsborough	✓	✓	✓			✓	✓		✓			✓
Marin County Open Space District, Bolinas Lagoon Wye Estuary Restoration and Bridge Replacement, Marin County		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
North Marin Water District, Gallagher Ranch Streambank Stabilization, Marin County			✓			✓	✓		✓			✓
California Department of Water Resources, Lookout Slough Tidal Habitat Restoration and Flood Improvement Project, Solano County				✓					✓	✓		
Napa County Resource Conservation District, Sulphur Creek Fish Passage Improvement Project, Napa County				✓				✓	✓	✓		✓
East Bay Regional Park District, Encinal Beach Dune Restoration and Shoreline Stabilization, Alameda County				✓				✓				
City of South San Francisco, Oak Ave Pedestrian Bridge Replacement Study, South San Francisco (Consor)	✓	✓						✓				
San Mateo County, Task Order 3, Walnut and Southfork Bridge Study, Pacifica (Consor)		✓						✓				
San Mateo County, Task Order 4, Middle Fork San Pedro Creek Bank Stabilization, Pacifica (Consor)		✓	✓			✓	✓	✓	✓			✓
Santa Clara County, Little Uvas Road Bridge, Morgan Hill (Consor)		✓	✓				✓	✓		✓		
Monterey County, Arroyo Seco Rd MP 2.4, Greenfield (Consor)		✓			✓		✓	✓		✓		
Morgan Ter-ritory Road Bridge Re-pairs MP 5.0 Contra Cos-ta County (Crawford)								✓		✓		
San Lorenzo Way Bridge Over San Lorenzo River, Santa Cruz County (Crawford)								✓		✓		
Freestone Flat Road Bridge over Salmon Creek , Sonoma County (Crawford)								✓		✓		

Children's Health Council School | Palo Alto, California

San Francisquito Creek Bank Stabilization

Biotechnical approach for stabilizing steep stream bank in a hot spot for important cultural resources.




WRA was retained to restore a failed bank bordering San Francisquito Creek that forced the Children's Health Council (CHC) to temporarily close its playground and outdoor learning area due to the loss of over 25 feet of property and the resulting unstable, near vertical, 30-foot-high banks. Located off Sand Hill Road in Palo Alto on Stanford University property, the project site is vegetated by non-native grasses and herbs, as well as coast live oaks, bay laurels, and buckeyes. The portion of the creek that runs through the project site is designated as critical habitat for steelhead, a state and federally listed species, therefore in-channel work required special provisions to minimize potential impacts to the fish.

WRA worked with CHC to secure grant funding for the project, evaluate and select design alternatives, and integrate bioengineering approaches. The conceptual drawings helped communicate the project design to project partners including adjacent landowners and local, state, and federal agencies to help gain consensus for the project. Other pre-design studies included a tree survey and biological resources assessment.

WRA prepared design plans and a basis of design memorandum for the project with hydraulic modeling of the creek informing the design. The design calls for a living crib wall to stabilize the failed bank without disturbing the existing channel banks to minimize the potential for impacting extensive cultural resources known to exist on the property. Additional plans include a planting plan, erosion control plan, soil anchor layout, and tree removal and protection plan. WRA worked to secure Stanford University's approval of the design, and also worked collaboratively with the client's contractor Hanford ARC.

Our design team coordinated with regulatory agencies to complete permitting for the restoration project including the USACE, RWQCB, CDFW, NMFS, Valley Water, and the SFCJPA. Permits were acquired in 2021.

WRA performed pre-construction wildlife surveys, biological monitoring during construction, construction observations, submittal reviews, responses to requests for information (RFIs) and preparation of change orders. Stanford provided archaeological inspections and all the parties participated in weekly progress meetings. WRA performed post-construction geomorphic and vegetation monitoring and reporting to the regulatory agencies and prepared record drawings. The project was completed just prior to the New Year's Eve 2022 storm and despite not having any established vegetation, the project survived the storm with minimal damage.

A video by Hanford ARC showing the construction of this project can be viewed by clicking here and entering the password "safety."

Reference

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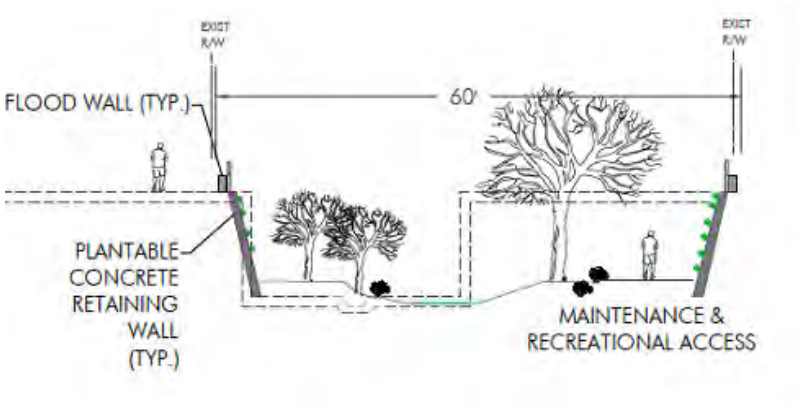
City of Palo Alto | Palo Alto, California

Matadero Creek Renaturalization Study

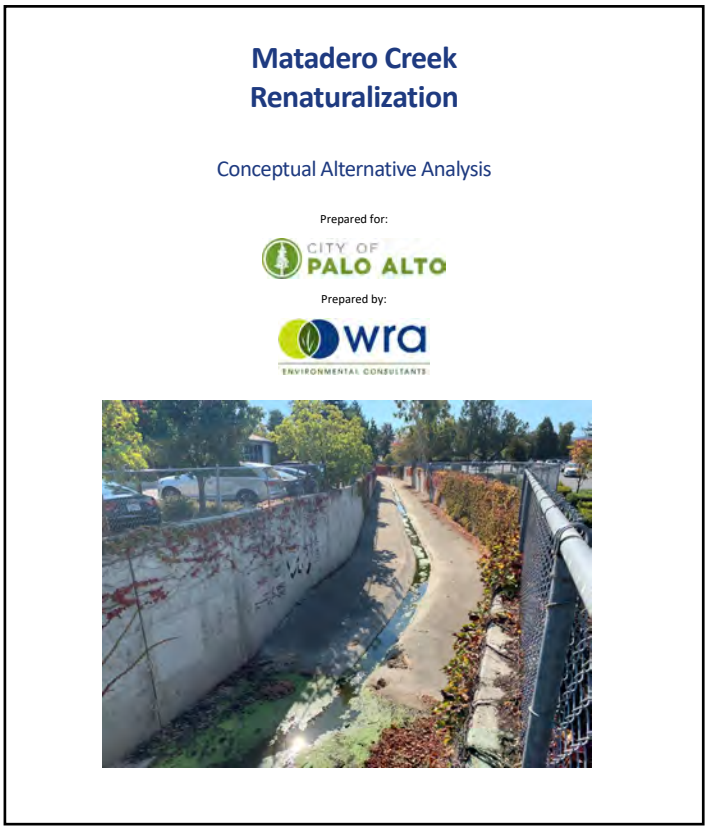
Renaturalization the creek south of San Francisquito Creek by replacing concrete walls with vegetated walls and adding public access



The City of Palo Alto sought conceptual improvement designs for Matadero Creek as part of the North Ventura Coordinated Area Plan. The study focused on converting an existing concrete box flood control channel into a public amenity and natural riparian habitat while maintaining or improving current flood capacity.

WRA performed a site walk to assess current conditions and identify opportunities and constraints. Three draft concepts were developed reflecting low, medium, and high levels of renaturalization of the creek. Options included the installation of planted block walls, sloped back vegetated creek banks, and vegetated creek beds with a low flow channel. The public could enjoy the creek by walking down into it. Vegetated areas with paths in the creek bed would be flooded during high flows but dry for most of the dry season. The design concepts were refined in workshops including project partner Valley Water.

WRA developed a hydraulic model of the creek in HEC-RAS including bridges and culverts to assess the performance of the alternatives under storm scenarios. The concept designs were modified when they did not pass the criteria of not increasing flooding. All concepts included replacing a bridge to widen the area beneath it to improve flood capacity. The presence of a nearby contaminant plume in groundwater was discussed as a possible constraint. A technical memorandum was prepared with cost estimates for the three alternatives. The alternatives and associated costs were presented by WRA at a City Council meeting.



Reference

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City of St. Helena | St. Helena, California

Upper York Creek Ecosystem Restoration and Aquatic Habitat Enhancement Project

Engineering with Nature®: Dam Removal and installation of large wood structures to prevent reservoir sediment from flowing into St. Helena.




The Upper York Creek Dam was a 50-foot earthen dam that was built circa 1900 that became filled with sediment and needed to be removed. WRA prepared a design that called for a process-based approach, in which the dam was removed and a pilot channel was excavated through the sediment to allow the remaining sediment to wash downstream during flood events. Log structures were designed for the channel below the dam to capture sediment and restore habitat for threatened central California coast steelhead. WRA prepared plans, specifications, and estimates, as well as a Basis of Design Report. WRA also assisted with bid and construction-phase services, pre-construction biological surveys, biological monitoring during construction, fish rescue, and directing the contractor on log structure placement. The project, constructed in 2020, restored access for steelhead to 1.5 miles of stream for spawning above the dam.

WRA worked closely with the City's team to gain consensus on the design and permitting approaches with regulatory agencies and landowners. The project involved consultations with NMFS, RWQCB, and the USFWS to ensure that the project would not negatively affect northern spotted owl, California red-legged frog, or steelhead. WRA secured permits from USACE, CDFW, and the local RWQCB. The RWQCB permit required preparation of a long-term Geomorphic Monitoring and Adaptive Management plan, which WRA prepared in collaboration with the Napa County RCD, as well as a Hazard Monitoring Plan. WRA worked with the City's archeological consultant to protect historic native artifacts on the site.

In 2020 the project site was burned in the Glass Fire. WRA helped the City apply for insurance funds for the repairs and has assisted the City in preparing final reports to the granting agencies. We are currently coordinating the 10-year post-construction monitoring program, annual reporting, and quarterly invasive species treatments for the City. WRA biologists perform the annual GMAMP vegetation monitoring as a subcontractor to the Napa County RCD. In July 2023, WRA's project team attended the City's official ribbon-cutting ceremony for the project.

WRA developed a storymap for the project can be viewed here.

Erica Ahmann Smithies (L) and Andrew Smith (R) at the ribbon cutting ceremony in June 2023.

Reference

Erica Ahmann Smithies

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4. PROJECT APPROACH AND SCOPE OF WORK

Project Understanding

The San Francisquito Creek watershed drains approximately 45 square miles from its headlands along Skyline Boulevard to San Francisco Bay. The creek originates at the confluence of Bear Creek and Corte Madera Creek in the Santa Cruz Mountains. It then flows east and combines with Los Trancos Creek near I-280 along the Stanford University Golf Course and into the urban areas of Menlo Park and Palo Alto before draining into the San Francisco Bay. The watershed is reported to have been severely incised prior to human intervention based on a diary kept during the Portola Expedition (Costanso, 1992). Hydromodifications such as deforestation for cattle grazing have removed native vegetation, subsequently increasing peak runoff and sediment load.

In the late 1800s, the Searsville Dam was built on Corte Madea Creek which has the highest sediment load of all the tributaries. The dam and other water control structures such as Felt Lake on Los Trancos Creek are reducing sediment load into the creek. With watershed scale changes in hydrology and sedimentation in the system, the creek is unable to achieve quasi-equilibrium. There is evidence that the creek was continually degrading up to 1969 and since then, has shown signs of aggradation downstream of Middlefield Road, reducing channel depth and capacity (PWA, 1999).

The imbalance of hydrology and sediment load is also impacting the United States Geological Survey and other experts in estimating the peak flow rates for significant storms as mentioned in the recent HEC-RAS Model Third-Party Peer Review by Schaaf and Wheeler. The results of the New Year's Eve 2022 storm demonstrate the variability of flow capacity due to flow characteristics with high sediment loads versus low sediment loads. Based on reports from FEMA and the SFCJPA, flooding has occurred from the Creek in 1943, 1950, 1955, 1958, 1983, 1998, 2004, 2012, and 2022 (FEMA, 2014). Additionally, much of the commercial and residential private property adjacent to the Project area are within Zones A and AH of regulatory FEMA flood hazard areas.

The San Francisquito Creek Reach 2 corridor is severely incised, actively eroding, and has limited flood capacity. Key issues include:

- Residential and commercial property flooding;
- Unstable and actively eroding steep channel banks; and
- 5 bridges with a variety hydraulic limitations and geomorphic impacts.
- The Project borders three cities and two counties with competing interests and is confined laterally by many residential properties. There are special status species within the Project that need to be accounted for in project planning, design, and permitting.

The community desires to restore the creek and increase access to trails and parks along the riparian corridor. The SFCJPA is partnering as the local sponsor with the U.S. Army Corps of Engineers (USACE) to develop a flood reduction project from Pope Chaucer to Highway 101 as part of the Continuing Authorities Program (CAP) 205. The plan authorized for design utilizes the Channel Widening Alternative which is described in the Environmental Impact Report certified by the SFCJPA in 2019. In addition to channel widening, the alternative's major elements include replacing the Pope-Chaucer Bridge, enhancing habitat, and creating new recreational opportunities while connecting the creek corridor to existing bike and pedestrian paths.

WRA will collaborate with the SFCJPA to assess alternatives and develop a design informed by ongoing agency and partner feedback. The WRA team is also aware of the cultural resource identified in Site 5 as described in the EIR and will develop a plan to account for the resource. WRA had a similar experience recently while completing a project in Fall 2022 upstream of El Camino Real for the Children's Health Council.

WRA continues to work extensively throughout the San Francisquito Creek watershed and surrounding areas. Our technical staff are uniquely familiar with local hydrology, geomorphology, and resource agency requirements, allowing us to hit the ground running in an efficient and informed manner. We understand the vast complexities associated with delivering large-scale stormwater conveyance projects within highly urbanized areas and look forward to working in a constructive, cooperative manner with SFCJPA to implement a successful project.

Project Approach

To develop a project that will address a wide range of constraints along the creek, the WRA team will leverage several strategies that integrate multi-beneficial solutions. For example, the existing condition HEC-RAS model includes 379 cross sections and 23 bridges from San Francisco Bay to I-280 and we consider each one to be an opportunity to evaluate the corridor for potential improvements for flow detention and sedimentation while also delivering on the community's desire for increased public access. We have identified several key items that will be considered during the project development that the SFCJPA can advance as part of future improvements in collaboration with specific existing plans such as the City of Palo Alto Comprehensive Plan 2030 and the East Palo Alto General Plan 2035.

The key strategies we have identified and will address include:

- Encouragement of natural processes in opportunistic locations (i.e., rootwads, overbank engagement, floodplain terrace) to enhance sediment transport, provide bank stability, and create habitat.
- Identification of opportunities to re-naturalize the upper watershed near I-280 to reduce peak flows and sediment loads as runoff concentrates into the creek.
- Development of flow detention locations to relieve other more critical flood-prone areas.
- Identification of areas for increasing trails and open space along the creek corridor based on existing plans.

The WRA team will leverage our experience to evaluate and develop solutions that meet regulatory requirements and incorporate their previous feedback regarding this resource, enhancing public safety, and integrating community benefits. We understand the complexities associated with flood reduction in urban areas; therefore we will develop strategies that maximize flood conveyance while balancing environmental impacts through adaptive solutions that reflect the uncertainty associated with climate change. We also understand the importance of engaging with project partners and integrating their review and feedback through development of alternatives that do not solely rely on structural enhancements to the creek, but balance opportunities to enhance the community's access to a key resource and promote environmental stewardship.

The WRA team will implement a goals-based risk assessment for successful solutions developed in cooperation with the SFCJPA and its project partners that address current flooding risks, consider long-term climate change risks, construction and maintenance costs, and enhance community access.

For each goal below, potential risks will be identified for use in evaluating each alternative, including, but not limited to:

Existing 2D hydraulic model illustrating New Year's Eve 2022 runoff.

- Reduce flood risk based on existing conditions, current FEMA mapped conditions, and potential future conditions such as sea-level rise;
- Comply with regulatory requirements, including USACE, RWQCB, CDFW, and USFWS and NMFS for Section 7 consultation for special status species;
- Integrate ongoing visioning efforts and expectations by each community;
- Enhance pedestrian and bicycle access to promote community benefits and amenities;
- Evaluate land ownership to document potential improvement restrictions but also identify potential multi-agency collaboration opportunities; and
- Develop prioritized near-term and long-term solutions to allow the SFCJPA to begin addressing real-time flood impacts while promoting environmental stewardship.

Each alternative will be reviewed and evaluated based on risk factors and the consequence each would have on achieving the Project goals. In this context, risk is defined as the potential for an event to occur within the project's lifetime, and the consequence is defined as the potential effect an event might have on the project goal (flood risk reduction, streambank stabilization, sea level rise adaptation, engineering vs. native solutions, etc.). Evaluating both the risk and consequence provides a wholistic assessment of how well each alternative achieves each project goal. Additionally, as part of his graduate curriculum in Engineering Management our Principal in Charge, Aaron Sutherlin recently completed a masters level course in risk management. His skills and education will provide additional support for the risk assessment.

Task Order 1

Task 1. Administrative and Project Management

1.1 General Project Management

WRA's Project Manager Andrew Smith, PE will be responsible for all coordination efforts between the WRA team and SFCJPA. Aaron Sutherlin will be Principal-in-Charge. Key staff will attend the kick-off site visit and kick-off meeting as appropriate. The WRA team believes in efficient and effective communication utilizing phone, email, and meetings in appropriate situations. The meetings will include key members of the SFCJPA and other representatives as requested and will be used to present design and plan updates, present information critical to design and implementation, review relevant studies, prepare for public meetings and make critical decisions.

When progress meetings occur, Andrew will be responsible providing meeting outlines, taking minutes, and providing schedule updates. The WRA team uses of the project management software Asana®.

Project Manager Andrew Smith and members of the Team conducting a site visit at Reach 2.

Project Work Plan and Schedule

The preliminary project schedule shown in Figure 4-1 depicts our projected timeline based on our understanding of the Project. At the kick-off meeting, we will discuss the schedule with SFCJPA to ensure that it meets the Project needs and make any necessary adjustments. As project manager, Andrew Smith will bring his proactive and collaborative management style and experience with large-scale design projects to keep the project on schedule. Throughout the Project, should any issues arise that require action, Andrew will consult with the appropriate technical specialist from the project team to develop a plan and report back to SFCJPA with recommendations. In addition, Andrew will provide regular project updates related to major milestones and task deliverables. As this is a high visibility project, the WRA team will work proactively with SFCJPA to communicate and build consensus with project partners including, but not limited to the cities of Palo Alto, Menlo Park, and East Palo Alto; Valley Water, Caltrans, regulatory agency staff, and community members.

Figure 4-1: Proposed Project Schedule

1.2 Meetings and Project Coordination

We understand the high-profile nature of the Project, and will work with SFCJPA to mitigate any potential negative sentiment by preparing for a wide range of comments. Strategies will include providing set time limits for comments, gathering information on potential conflicts prior to meetings, and arranging for subject-matter experts to attend as needed.

The following meetings are anticipated:

- Project kick-off site visit and meeting.
- Bi-Monthly progress meetings.
- Presentations (2 total) for SFCJPA Board Meetings.
- Design Work Shops (3 total) to discuss design approach, methods, and context of alternatives.

Task 2. Alternatives Analysis

The WRA team understands the goal to comply with CEQA processes, assist the USACE for their CAP205 program, USACE 404, and RWQCB LEDPA. ***Andrew's ten years of experience working at the USACE San Francisco District will help streamline federal and state project development timelines capitalizing on healthy long-term relationships with federal and state staff.*** We also realize Valley Water will be involved in the review process and have navigated their requirements and review processes on other projects on this creek.

2.1. Data Gathering and Project Design Criteria

The WRA team recognizes that an extraordinary amount of effort has already been expended by many of the region's most capable scientists, planners, and engineers in laying the groundwork for the Project. Subject-matter experts from the WRA team will be assigned to conduct a thorough review of all of the studies provided by SFCJPA, and distill the primary findings into easily digestible summaries. We will identify any additional studies required to support design, permitting, and implementation of the Project. Our expertise and experience with engineering with nature and using natural processes projects will be invaluable in anticipating questions and requests for information from resource agencies, project partners, and contractors. If needed, we will provide SFCJPA with clear scopes of work and objectives for any additional studies not included under our contract.

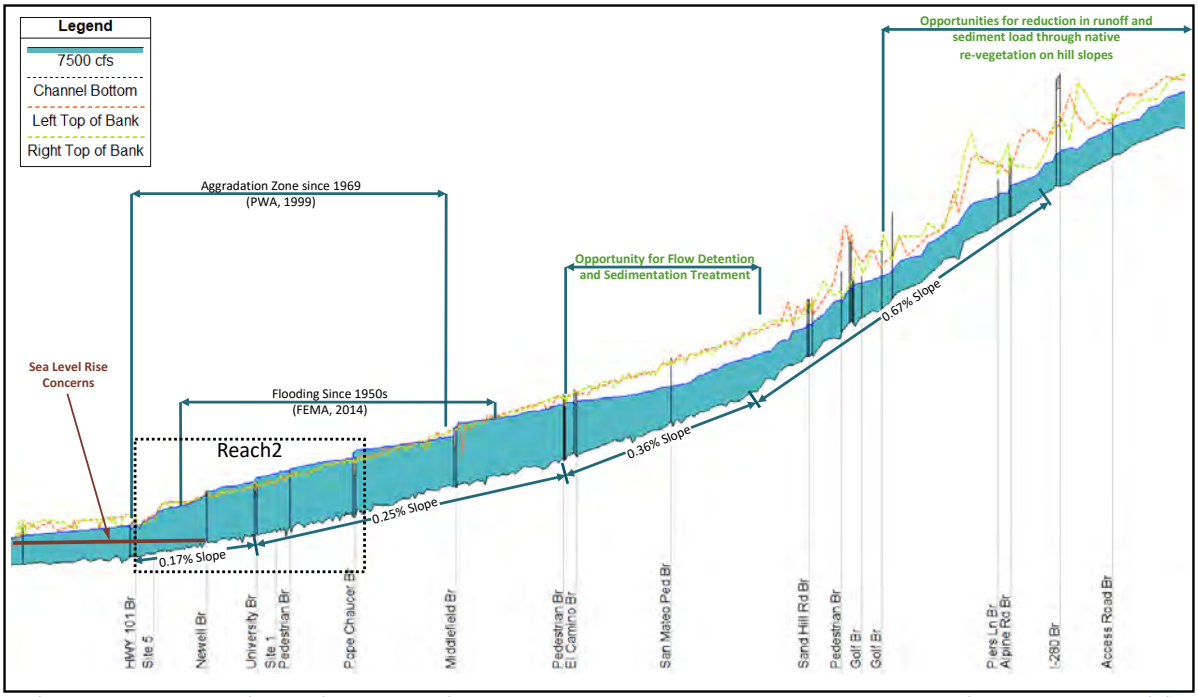
2.2. Review existing designs and potential alternatives

2.2.a. Channel Design

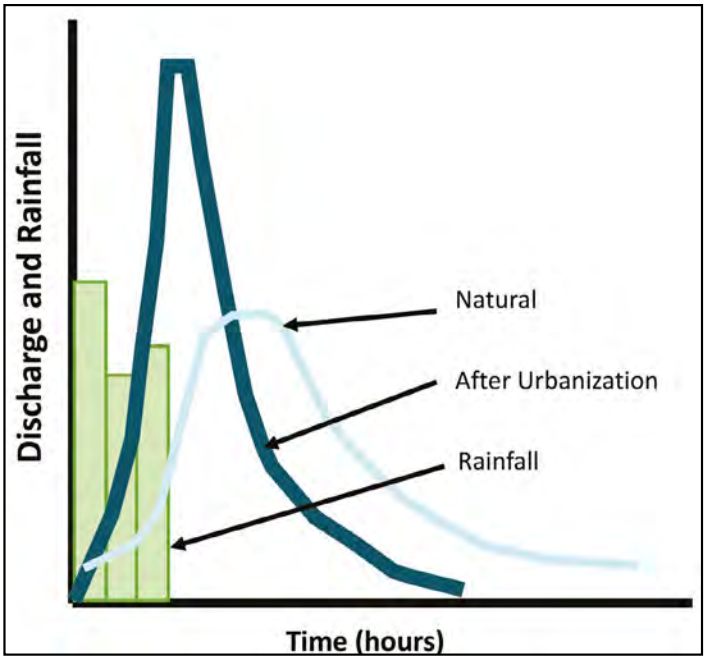
The WRA team excels at using hydraulic modeling, in tandem with CAD and GIS, to design effective projects. We are encouraged by our background review that the existing analysis was done using HEC-RAS, as we are intimately familiar with the program and use it on many other similar projects. We expect that it will be seamless for WRA to advance the hydraulic modeling performed by Schaaf & Wheeler and apply it to our design tasks. The channel design intends to use the following tactics to achieve the Project goals:

Reduce Peak Flow and Sediment Load

Per our standard process, we will begin with a quality control review of the existing model files and assumptions. While the hydraulic modeling and documentation developed for existing conditions in the creek appears to be robust, the report does not address the implications of sedimentation processes throughout the watershed. This is not entirely uncommon, given the lack of sediment data collection performed by USGS at the Stanford Gage Location. We recognize the previous reports from NHC on the Sediment Reduction Plan, 2004 and PWA's Bank Stabilization and Re-vegetation Plan, 1999. We believe there are opportunities using a natural process-based approach to reducing peak flow and sediment load through the system. For example, replacing non-native annual grasses in the vicinity of I-280 could reduce the sediment yield from these



Vertical profile of creek showing bridge locations, 7,500 cfs water surface, bank elevations, opportunities, aggradation and flooding zones



The effect of urbanization on stormflow timing and volume.

areas to one-third its current yield rate (USDA, 1997). Also, adding large wood structures between El Camino Real and Sand Hill Road where there is sufficient flood capacity could trap sediment that is causing aggradation and therefore flooding issues in Reach 2. The creek between El Camino Real and Sand Hill Road also has some undeveloped land that could be used as a floodplain terrace for reducing peak flows and reducing sediment load in Reach 2. When evaluating natural processes in a creek, a preliminary examination of the shear stress along the creek and comparing to permissible thresholds for various grain sizes can be an initial indicator where sediment load is being added to the creek discharge due to expected bank erosion and where sediment load is being reduced due to fall velocity and lack of transport capacity.

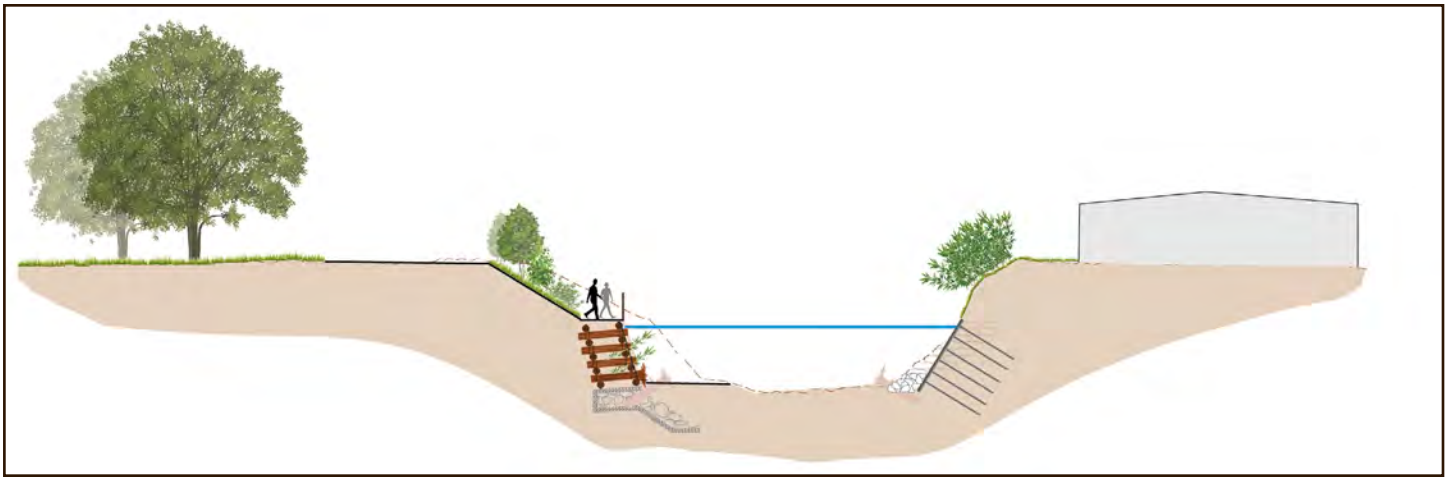
Enhance Stream Banks

A more focused evaluation of Reach 2 features will include a thorough review of on-going design efforts for the Newell Bridge and Channel Widening at Sites 2, 3, and 4. The WRA team will consider augmented alternatives to previous studies, including floodwalls set back along parks and roadways, vegetated crib walls, and engineered log jams. As mentioned in previous studies, sheet pile walls and soil nails walls will also be considered.

Site 1

It is our understanding that Site 1, located near the intersection of Euclid Ave and Woodland Avenue, has an area where the creek overtops and floods with conceptual design work developed to-date. The WRA team identified multiple potential options that include a combination of biotechnical and structural elements. If a hardscape wall is selected for the Palo Alto side of Site 1, rootwads could be installed at the toe of the wall to enhance aquatic habitat and improve sedimentation processes.

If more capacity is needed at this site, one feature the WRA Team intends to investigate is adding a public trail that is 5 -to-10 feet below the existing Woodland Avenue to create some space between trail users and vehicular traffic. This lowered path will likely be inundated during extreme storm events and used a floodplain terrace. Adding a retaining wall system adjacent to Woodland Avenue and lowering the creekside face will increase the hydraulic capacity of the channel. With a vertical retaining wall system, extending the top of wall elevation above the roadway original grade, the Project will have the added benefit of a flood wall. With the sheet pile wall, there is no need for additional excavation for construction as the

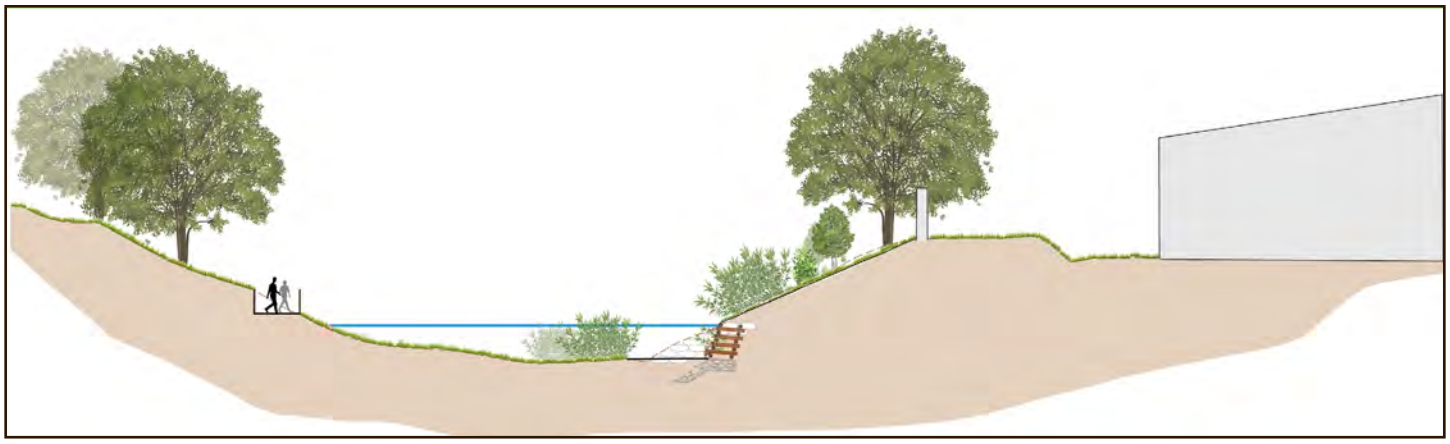


Section Rendering of Site 1 showing Proposed feature on right bank and auxiliary alternatives of a trail and crib wall on left bank.

sheets are pounded or vibrated vertically in place. This reduces traffic impacts on the community as well as a faster construction timeline for the Project. With this sheet pile wall, vertical excavation on the creek side of 10' are easily achievable, and this type of wall is frequently used for flood protection. Where feasible, silent piling techniques will be used to press in the sheets in lieu of vibratory or hammer driven sheets. Construction noise will be a concern given the proximity to residents. Resource agencies may also have concerns but can be addressed with appropriate mitigation measures.

Site 5

It is also our understanding that Site 5, located just upstream of Highway 101 and West Bayshore Road, has enough capacity under existing conditions but will require additional capacity to account for future sea level rise. A culvert bridge cell was constructed on the south side of the creek is being blocked by a revetment made of sacked concrete. The Project intends to replace the sacked concrete with a sheet pile wall to allow the creek to use the fourth bridge span currently blocked. The tidal flow at this location will require the sheet piling to be oversized to consider corrosion and ensure proper performance during the structures designed lifespan. A site review noted scour starting at the bridge location due to the high-velocity flows around the outside of the bend. Widening the channel should decrease the flow velocity of the creek, however, scour mitigation techniques will be analyzed during the analysis procedure to ensure this does not become a recuring maintenance issue at this location. The existing condition model at site indicates that a hydraulic jump might occur likely due to the abrupt change in channel width from upstream of Site 5 to Reach 1. Over time, this may be resolved naturally by sea-level rise and could be addressed by establishing woody vegetation until increases in salinity from sea level rise will naturally remove the wood vegetation. Another consideration is that the majority of Site 5 could feature a vegetated crib wall with rootwad and rock toe.



(Above) Section Rendering of Site 5 showing auxiliary alternatives of a trail on left bank and crib wall on right bank.

(Right) Rendering of Site 5 showing Sheet Pile wall for bridge entry and crib wall on right bank.

Re-Establish Native Vegetation

In addition to specific site features to reduce flood risk in Reach 2, the WRA team will investigate opportunities and communicate benefits and costs to revegetate the entire channel from Highway 101 to Sand Hill Road. Strategic ordinances along the creek to enforce tree limbing and allow more sunlight into the creek could enhance the aquatic and riparian habitat, reduce erosion and sediment load during flood events, and allow the community to connect with the San Francisquito Creek as a resource for health and prosperity.

2.2.b. Structural Review & Alternatives

The process for reviewing structural features of the Project begins with the team engaging in discussions to explore various options, where we will evaluate the opportunities and constraints and approximate costs of each. The aim is to conduct a thorough comparison of these alternatives. This approach ensures that we select an optimal structure that aligns with the Project's requirements and budget constraints. The team understands there is a need to analyze structural improvement alternatives at several locations along Reach 2 of the San Francisquito creek. These sites include the Pope Chaucer Bridge, Site 1, and Site 5. Sites 2, 3, and 4 will be reviewed if necessary but it is not a primary focus from a structural perspective.

The Pope Chaucer Bridge (a concrete arch culvert) is a substantial impediment for flood conveyance for the creek. The existing condition modeling shows that the bridge has a capacity of 5,820 cfs assuming clear water without sediment, which is undercapacity by approximately 23% of the 7,500 cfs target. There are several options to increase capacity at this location, each with various benefits and drawbacks. Several of these options are discussed below.

Replacing the culvert with a bridge as proposed will greatly increase the hydraulic capacity at this location. While the planned design calls for a 3-span bridge, the WRA team believes a single span bridge would suffice to meet the target hydraulic capacity. Currently, there is roughly 4' of cover between the soffit (top of the culvert) and the roadway whereas a voided slab bridge, one potential structure type, could reduce the thickness from 4 feet to 2 feet. Additionally, a rectangular channel opening would allow for a greater area for water pass through, with more design flexibility based on the clear span length. This greater capacity comes at the expense of the natural environment, however. Any bridge alternative would impact the downstream side of the bridge, where there currently exists a triangular green space park with a pedestrian path and multiple trees. A sidewalk can be incorporated into the bridge to allow for continued pedestrian access, but the trees at this location would be removed and the replacement structure would most likely not support trees.

Modeling shows that an additional culvert roughly half the size of the existing culvert would be adequate to allow the design flows to pass from the upstream side to the downstream side. A site visit revealed that there is adequate space in the existing culverts wingwall on the south side to install this through culvert. The invert elevation provides flexibility in design as this culvert would only be required to pass high flow events, so there are added saving in reducing the depth of excavation as well as not impacting the riverbed with concrete lining. Preliminary analysis shows the additional culverts alignment should not interfere with the intersection of Palo Alto Avenue and Chaucer Street with the use of shoring. The secondary culvert would need to avoid direct impacts to the existing arch and any utilities currently supported by the bridge. The current culvert appears to be in good condition with a long structure life remaining. Adding a secondary culvert option would have a reduced construction cost, as compared to bridge replacement, and fewer impacts to traffic and the environment but the creek crossing's overall design life would be governed by that of the existing bridge.

2.3. Description of "Without Project Conditions" For ACOE CAP205

We understand that the USACE is in the process of evaluating the Project for CAP205 funding and that the WRA team could serve as a technical intermediary between the SFCJPA and the USACE. The WRA team will leverage Andrew's 10 years of prior experience at as an employee of the USACE San Francisco District to increase effective communication and accountability. We think it is important that all project partners understand all characteristics of the Project, including sediment load characteristics per Schaaf & Wheeler Independent Review, urban storm drain system characteristics, and additional studies by WRA and our project partners. We will capitalize on the team's prior experience with USACE to streamline development of the CAP study.

2.4. Compile Short List of Alternatives

The WRA team will prepare a list of conceptual alternatives for design options to enhance flood conveyance within the Reach 2 corridor. Alternatives will include structural elements such as bridge and culvert configurations. Channel bed and bank stabilization design elements will be included as well as considerations for various channel geometries. Although we anticipate limited variability in the channel planform and longitudinal profile, alternatives for these elements may be considered where feasible.

2.5. Hydraulic Modeling of Potential Alternatives

We understand that the Project has already considered many new alternatives or a combination of alternatives to meet Project goals. Therefore, the team will perform high-level, one-dimensional, steady flow simulations to effectively and efficiently evaluate numerous alternatives. A thorough analysis and hypothesis will be established prior to each model run following the scientific method: formulation, testing, modification of hypotheses.

We will document our modeling and engineering analyses in the form of a technical memorandum. The reader will be able to interpret the evolution of the design, from early stages to the final geometry shown in the drawings. The document will include:

- performance objectives and maintenance strategies for all Project features;
- full descriptions and discussions of the various configurations that were evaluated;
- modeling results (water surface elevations, depths, velocities, and shear stresses) various engineering analyses used to evaluate the designs;
- and how the designs will likely affect them.

2.6. California Environmental Quality Act (CEQA) Document Coordination

It is important that the design and engineering work completed be integrated into the updated Environmental Impact Report currently being prepared by EMC Planning Group. The WRA team will coordinate with EMC Planning Group, regarding the CEQA Project Description and other SEIR needs. We anticipate that the following information will be required to be responsive to the needs of CEQA documentation:

- Review of the Mitigation, Monitoring and Reporting Plan for impacts and mitigation previously considered under the EIR
- Information regarding the potential construction equipment required for the preferred alternative and number of hours of operation for each piece of equipment
- Written description of the approach to construction for the preferred project alternative
- Written description of other alternatives considered, or variants on previously considered alternatives which were previously considered under the existing certified EIR

This task also includes time for WRA environmental staff to support and facilitate the needs of EMC internally to ensure the smooth implementation of this task.

2.7. Alternatives Evaluation Technical Memorandum (Draft and Final).

The WRA team will develop an analysis of alternatives based on those identified in Task 2.4. The WRA team will develop and document the alternative evaluation criteria and the decision-making process for determining the preferred alternative. A Draft Memorandum will be developed and submitted to the SFCJPA for comments. A Final Memorandum will be developed including incorporation of comments from the SFCJPA. The Final Memorandum will include the recommendation of a preferred design concept to carry forward into design.

Task 3. 30% Designs & Plans, Construction Estimates and Schedules for Preferred Alternative

The WRA team will provide 30% Design Plan Sets, Opinion of Probable Construction Costs (OPCC), and schedules for the preferred design alternative.

The plan set will include the following, at minimum:

- Title
- General Notes
- Existing Conditions
  - Site Plan
  - Grading Plan
  - Plan & Profile
  - Sections
  - Details
  - Revegetation
  - Erosion Control

A 30% OPCC will be developed consistent with the Association for the Advancement of Cost Engineering (AACE) Class 3 Cost Estimate Classification.

For scheduling, a task breakdown and corresponding Gantt chart will be provided showing estimated durations and predecessors for design, permitting, CEQA, Construction Contract Solicitation, long lead items, construction activities, estimated environmental work windows, and post-construction monitoring.

Task 4. Technical Requests

The WRA team is prepared to support SFJCPA as needed on the Master Services Agreement with all items listed in Exhibit A of the RFP. Our staff work in an integrated manner between disciplines and have a depth of resources to meet the Project's future needs. We will be available to expand on the 30% design and deliverable milestones consistent with 60%, 90%, and 100% design plans, specifications, and estimates. We are available to support permitting at the 60% permit level, as well as construction contractor procurement at the 60% or later design milestones. Our staff regularly support construction to ensure implementation meets design intent and to represent the SFJPA at all steps from bid solicitation to as-built record drawings.

Task 5. Optional Task for Staff Support For Other SFCJPA Projects Not Related To Reach 2

For most public infrastructure projects, WRA works with our municipal clients and our design engineers through a typical series of steps to achieve environmental compliance before and during construction. The basic steps for environmental compliance are summarized below and also depicted in the Figure 4-3 below.

Technical Studies, 30% Design and Project Description

Our team will consult with the SFCJPA and our design engineers to identify which baseline technical studies are necessary. Typical technical studies might include: aquatic resources delineation, biological resources desktop or field assessment, cultural and historic resources desktop or field survey, tree surveys, and/or rare plant surveys. Based on the results of the technical studies, we will advise our design engineers regarding any biological constraints that need to be considered during the design process. Our environmental planners will advise on the probable level of CEQA documentation or categorical exemption. Once the SFCJPA and our design team have settled on a 30% design, we will help develop a written project description that is suitable for CEQA compliance and/or resource agency permit applications, including the proposed construction schedule.

Impacts and Mitigation Analysis

WRA's permitting experts along with GIS specialists will then work with our project engineers to analyze and quantify project disturbances to potentially jurisdictional aquatic features (streams, wetlands, riparian habitat). Based on this analysis, WRA will determine which federal and state agency permits are needed to authorize the project. As part of this analysis, WRA will work with the design team to determine if the project design can be considered self-mitigating or if it can incorporate elements that could satisfy any compensatory mitigation needs to off-set permanent or temporary impacts. Off-site mitigation options will be explored if the design cannot accommodate sufficient mitigation requirements. Once the 30% designs are completed and agreed upon by all parties, the impacts analysis can be completed within two to four weeks of receiving the design in a georeferenced format such as CAD or GIS.

Early Coordination with Regulatory Agencies

Early coordination with state and federal permitting agencies can help streamline the CEQA and permit application review processes. If the SFCJPA wishes to engage with resource agencies in advance of releasing a public draft CEQA document or submitting permit applications, WRA can schedule and facilitate one or more virtual or on-site pre-application interagency or technical assistance meetings. This process typically involves sharing a basic project description and high-level summary of potential alternatives, likely impacts, and options for compensatory mitigation if known.

Figure 4-3: Typical Steps to Achieve Environmental Complance Before and During Construction

CEQA Documentation

Because of the public nature of the CEQA processes, the level of potential controversy associated with a project is a key input into the approach to CEQA documentation. Identifying key issues early on and considering environmental review documents previously completed for a site are important steps to scoping and delivering CEQA documents that provide the appropriate level of coverage in the most efficient way possible. Before the 30% design is completed, WRA's environmental planners will have a sense of the appropriate level of CEQA documentation and of the SFCJPA's preferences and precedent. We have the in-house capabilities to prepare EIRs, IS/MNDs, Negative Declarations (ND), and documentation to support CEQA Categorical Exemptions (CE). Whenever feasible, we will tier from existing environmental documents. WRA will bring on technical subconsultants only as needed. WRA will manage the CEQA process on the SFCJPA's behalf from project description, through public outreach, response to comments, and adopted final document.

60% Design

If federal or state permits are required, WRA will rely on our engineers to provide an advanced design of approximately 60%. Our planners will work with our design team and the SFCJPA to update the project description accordingly.

Permit Applications

WRA biologists and regulatory permitting specialists will collaborate to prepare and submit all necessary permit applications on SFCJPA's behalf. We typically combine the USACE and RWQCB (Section 404/401) applications into one consolidated package. We prepare the "Notification" of Lake or Streambed Alteration separately for submittal to the California Department of Fish and Wildlife via their online portal, EPIMS. WRA staff stay current on the ever-changing regulations and procedures and will provide detailed instructions to the SFCJPA regarding fees, signatures, and timing. WRA's restoration designers can prepare on-site or off-site stream, riparian, and wetland mitigation plans and specifications to support permit applications. WRA will serve as the liaison between the regulatory agencies and the SFCJPA throughout the consultation process and will provide project clarifications when requested. WRA will also review and negotiate the terms of the agency permits to result in the most favorable project requirements feasible. Depending on the complexity of the project and impacts, and availability of mitigation, the permitting process can typically be completed in approximately nine months to 14 months.

100% Design and Construction Compliance

Once the environmental permits are obtained and 100% design is completed, WRA can provide construction monitors to ensure compliance with permit conditions pertaining to biological and cultural resources. Our construction compliance team leader will work with the SFCJPA and the contractor to ensure adequate staffing and timely reporting. Our team will be prepared and available to negotiate with the agencies regarding approval of monitors and work window extensions.

REFERENCES

Costanso, M. (1992). *The Discovery of San Francisco Bay: The Portola Expedition of 1769-1770.* Lafayette, California: Great West Books.

FEMA. (2014). *Flood Insurance Study Santa Clara, California and Incorporated Areas.* FEMA.

PWA. (1999). *San Francisquito Creek Bank Stabilization and Revegetation Master Plan Section 3 - Hydrologic and Geomorphic Conditions.* Menlo Park: Menlo Park.

USDA. (1997). *Sediment Production and Runoff from Forest Road Sideslopes.* Minneapolis: ASAE.

5. BUDGET

WRA has a long history of partnering with and working for a wide range of special districts throughout California. We bring a work ethic that eschews the traditional consultant model by developing cooperative relationships that result in partnerships rather than transactional associations, often collaborating to develop innovative teaming arrangements to bring projects to fruition.

Table 5-1 below summarizes the cost per task for our proposed scope of work. Table 5-2 includes costs for itemized services requested in the RFP. A detailed breakdown of hours by task and team member is included in Appendix A. At the end of this section, we have included our hourly rate sheet for any additional tasks that are requested by SFCJPA under the MSA.

All direct expenses shown in the budget below reflect the costs of travel and equipment required for the work, such as data loggers for hydrologic monitoring, described in the scope of work.

Table 5-1: Cost Per Task

Task Order 1	Cost
Task 1. Administrative and Project Management	$41,600
Task 2. Alternatives Analysis	$174,350
Task 3. 30% Designs & Plans, Construction Estimates and Schedules for Preferred Alternative	$88,800
Total	$304,750

Table 5-2: Itemized Services

Item	Cost
HEC-RAS mModel Run(s)	$7,500
Visualizations/Renderings	$6,500
Workshop Support	$3,750
Meeting/Workshop	$1,500

Assumptions

- It is assumed that progress meetings will be up to one hour long, occur twice each month, and require additional time per meeting for coordination, preparation, and drafting of minutes. Generally, one to four WRA team members will attend, as needed.
- Any previous correspondence between the Client and government agencies that relate to biological issues for the project will be provided to WRA.
- This Scope of Work is prepared with the understanding that agency requirements cannot always be reasonably predicted. WRA's experience and expertise will reduce the risk of unforeseen requirements but cannot completely eliminate the potential that the agencies will require work that is beyond this Scope. Should additional work be needed to address comments, WRA will advise the Client immediately to determine the best course of action.
- WRA cannot guarantee schedules or costs for actions taken by regulatory and other third-party entities with authority to approve project activities, as these actions are outside of WRA's control. WRA may modify the proposed grading plan based on agency review and design analyses.

RATE SCHEDULE

Effective: January 1, 2024

wra Environmental Consultants

Director/Principal	$301
Senior Associate	$262
Associate	$221
Senior Scientist	$201
Scientist	$184
Senior Technician	$165
Technician	$136

Rates shown are per hour and subject to an annual adjustment each January 1st.

Necessary project expenses and subconsultants are billed at cost plus ten percent.

Landscape Design

Senior Restoration Designer	$278
Sr Associate Landscape Architect	$262
Associate Landscape Architect	$221
Landscape Architect	$201
Landscape Designer III	$184
Landscape Designer II	$165
Landscape Designer I	$144

Environmental Planning

Senior Environmental Planner	$278
Senior Public Access Planner	$278
Sr Associate Environmental Planner	$262
Associate Environmental Planner	$221
Environmental Planner II	$201
Environmental Planner I	$184
Assistant Environmental Planner II	$165
Assistant Environmental Planner	$144

Conservation Strategies

Conservation Strategies Sr Project Mgr	$278
Conservation Strategies Sr Associate	$262
Conservation Strategies Associate	$236
Conservation Strategies Sr Scientist	$204
Conservation Strategies Scientist	$189
Conservation Strategies Sr Technician	$173
Conservation Strategies Technician	$151

Engineering

Senior Engineer	$278
Sr Associate Engineer	$270
Associate Engineer	$236
Engineer II	$210
Engineer I / Geomorphologist I	$189
Assistant Engineer II	$173
Assistant Engineer	$151

GIS Mapping & Analysis

GIS Manager	$262
GIS Professional II	$210
GIS Professional	$184
GIS Sr Technician	$165
GIS Technician	$144

Field Specialists

Senior Field Technician	$184
Field Technician	$144
Junior Field Technician	$119

Compliance Monitoring *(OT = Rate x 1.5)*

Senior Project Biologist	$129
Project Biologist	$108

Grant Cultivation & Administration

Community Resilience Team	$90-194

Clerical Support	$96
Expert Witness	Rate x 1.5

wra
Environmental
Consultants

Appendix A.
Detailed Budget

Table 5-2: Detailed Fee Proposal

Task #	Task Description	Personnel Hours by Task*																								WRA Cost by Task	WRA Direct Expenses	Sub-Contractor	2024 Total Costs	2025 Total Costs	
		Aaron Sutherlin	Director	**Andrew Smith**	Senior Associate Engineer	**Christopher Feng**	Engineer II	**Ingrid Morken**	Senior Associate Landscape Architect	**Angela Hogan**	Engineer II	**Bridgette Medeghini**	Engineer I	**Cody Lambrecht**	Senior Scientist	**Jake Kramarz**	Engineer II	**Jeanine Strickland**	Associate	**Junjie Chen**	Geomorphologist I	**Derell Griffin**	Landscape Designer II	**Ashley Zavagno**	Director	**Justin Semion**	Principal Ecologist	**Blanca Clarke**	Senior Associate					
		$ 266.00		$ 249.00		$ 199.00		$ 242.00		$ 199.00		$ 176.00		$ 189.00		$ 199.00		$ 214.00		$ 176.00		$ 148.00		$ 266.00		$ 266.00		$ 242.00					
Task 1	**Task 1 –Administrative and Project Management**																														**$ 41,601**
1.1	1.1 General Project Management	10		22																						$ 8,138	$ -	$ -	$ 8,138		
1.2	1.2 Project Work Plan and Schedule	2		22		12		4				4												4					$ 11,134	$ -	$ -	$ 11,134		
1.3	1.3 Meetings and Project Coordination (2 Board Meetings, 3 Design Workshops, Bi-Monthly Meetings)	10		42		42		2																					$ 21,960	$ 369	$ -	$ 22,329		
Task 2	**Task 2 –Alternatives Analysis**																														**$ 174,348**
2.1	2.1 Data gathering and project design criteria,	2		8		16		2				4								12				2					$ 9,540	$ -	$ -	$ 9,540		
2.2	2.2 Review existing designs and potential alternatives	10		20		40		4												10				4					$ 19,392	$ -	$ -	$ 19,392		
2.2a	2.2a Structural Review & Alternatives																												$ -	$ -	$ 28,732	$ 28,732		
2.2b	2.2b Geotechnical Review & Alternatives																												$ -	$ -	$ 19,279	$ 19,279		
2.3	2.3 Description of "without project conditions" for ACOE CAP205	4		12		30																							$ 10,022	$ -	$ -	$ 10,022		
2.4	2.4 Compile short list of alternatives	4		6		12																				4			$ 6,010	$ -	$ -	$ 6,010		
2.5	2.5 Hydraulic Modeling of Potential Alternatives	4		10		40				30		80								30									$ 36,844	$ -	$ -	$ 36,844		
2.6	2.6 California Environmental Quality Act (CEQA) Document Coordination	2		16		32																				10		30	$ 20,804	$ -	$ -		$ 21,636	
2.7	2.7 Alternatives Evaluation Technical Memorandum (draft and final).	4		12		24		2				24								12		4		2		2		4	$ 18,272	$ -	$ -		$ 19,003	
2.8	2.8 Selection of Preferred Project Alternative	2		4		4														2				2		2			$ 3,740	$ -	$ -		$ 3,890	
	Task 3 –30% Designs & Plans, Construction Estimates and Schedules for Preferred Alternative																														**$ 88,805**
	3.1 - Structural 30% Design																												$ -	$ -	$ 32,827		$ 32,827	
	3.2 - Geotechnical 30% Design																												$ -	$ -	$ 13,272		$ 13,272	
	3.3 - Channel 30% Design	8		24		80						80										20							$ 41,064	$ -	$ -		$ 42,707	
	Itemized Costs																														
A	HEC-RAS Model Runs (per substantial run)			2		8				6		16								6									$ 7,156	$ -	$ -		$ 7,442	
B	Visualizations/Renderings (per figure)	2		2				2						6				6				16							$ 6,300	$ -	$ -		$ 6,552	
C	Design Review Workshop Support (per workshop)			8		8																							$ 3,584	$ -	$ -		$ 3,727	
D	Meeting/Workshop Participation (per workshop)	2		2		2																							$ 1,428	$ -	$ -		$ 1,485	
	TOTAL LABOR HOURS	**66**		**212**		**350**		**16**		**36**		**208**		**6**		**0**		**6**		**72**		**40**		**14**		**18**		**34**					
	TOTAL COST	**$ 17,556**		**$ 52,788**		**$ 69,650**		**$ 3,872**		**$ 7,164**		**$ 36,608**		**$ 1,134**		**$ -**		**$ 1,284**		**$ 12,672**		**$ 5,920**		**$ 3,724**		**$ 4,788**		**$ 8,228**		$225,388	$369	$94,110	**$171,420**	**$152,541**	

*Please note: WRA may substitute similarly qualified individuals as necessary.

Escalation Mark Up = 4%

Task Order 1 Total Fee = $ 304,754

Appendix B.
Key Personnel Resumes

Aaron Sutherlin, PE

Principal-in-Charge, Restoration Design Lead, Public Outreach Support

YEARS OF EXPERIENCE
21

EDUCATION
B.S., Biological Systems Engineering, Texas A&M University

M.Eng., Engineering Management, University of Colorado – Colorado Springs (May 2025)

Graduate Certificate in Stream Restoration, University of Washington at Seattle

LICENSES / CERTIFICATIONS
Licensed Professional Engineer (CA [Pending], CO, OR, OK, NM, TX, UT, MT, WA, ID)

SPECIALIZED TRAINING
Level IV River Assessment and Monitoring, Wildland Hydrology, 2017

Level III River Assessment and Monitoring, Wildland Hydrology, 2016

Level II River Morphology and Applications, Wildland Hydrology, 2015

Level I Applied Fluvial Geomorphology, Wildland Hydrology, 2014

wra Environmental Consultants

Aaron Sutherlin leads WRA's Riverscapes & Shorelines practice. He is a licensed professional with more than 20 years of experience in water resources engineering with an extensive background in managing complex ecological restoration, flood reduction, and watershed projects from inception to completion, working with local, state, and federal agencies and nonprofit organizations. Aaron provides extensive knowledge in design and construction working in open channels, riparian corridors, and infrastructure protection. His expertise spans watershed protection, ecological restoration, and community resilience work.

RELEVANT PROJECT EXPERIENCE

City of Palo Alto | Palo Alto, California
Matadero Creek Renaturalization Study Phase 2 | Principal
Urban development and a traditional approach to flood risk management led to Matadero Creek being channelized and lined with concrete. The creek likely once supported Steelhead trout, but today provides very little value in terms of habitat and other community benefits such as recreational access and natural beauty. WRA is providing renaturalization concept designs, a feasibility study, and hydraulic modeling. Aaron provides technical review and design guidance. As PIC for the project, he is also coordinating deliverables with the team and client as needed.

County of San Mateo Parks Department | Pacifica, California
San Pedro Creek Bank Stabilization | Principal
The Middle Fork of San Pedro Creek flows through San Pedro Valley Park, a San Mateo County Park, near Pacifica, CA. The Weir Ranch Road Trail Bridge crosses the creek within the park, and during recent winter flows, the creek bank adjacent to the bridge has become significantly eroded. Under contract to Consor North America, Inc., WRA is providing hydrology and hydraulics analysis, bank stabilization design and opinion of probable cost, and construction bid support. Aaron provides technical review and design guidance. As PIC for the project, he is also coordinating deliverables with the team and client as needed.

Marin County Open Space District | Marin County, California
Bolinas Lagoon Wye Wetlands Resiliency Project | Senior Technical Review & Quality Assurance
This grant-funded project focuses on restoring Lewis Gulch Creek and the Wye Wetlands area at the northern tip of Bolinas Lagoon, a wetland of international importance. The goal involves connecting Lewis Gulch Creek to its floodplain and restoring the functions of the historic alluvial fan, enhancing fish passage for federally threatened steelhead, and improving traffic safety on SR 1 at the intersection of Olema Bolinas Road. The project also includes removal of a section of public road whose fill crosses the wetland and blocks hydrologic continuity. WRA is responsible for hydraulic modeling and analysis using HEC-RAS, creek restoration design, alternatives analysis, regulatory permitting, and CEQA documentation. Aaron provides technical review and design guidance. Aaron provides technical review and design guidance.

Napa County Resource Conservation District | St. Helena, California
Sulphur Creek Fish Passage Improvement | Principal
This project involves remediation of the fish passage barrier on Sulphur Creek that is needed to address the existing dysfunctional fishway and improve access to high-quality habitat upstream for native anadromous fish species, particularly steelhead trout. WRA is providing restoration engineering design addressing the challenging sediment and debris loads, site hydraulics as affected by natural/geologic and human infrastructure constraints (roads and the bridge structure), as well as ongoing and potential future channel instability in response to historic disturbances. The design includes coordinating with structural and geotechnical engineers on the design and modeling the creek hydraulics in HEC-RAS. WRA is also leading environmental compliance, assisting with permitting, and will provide construction support. Aaron provides technical review and design guidance. As PIC for the project, he is also coordinating with the team and client as needed to coordinate deliverables.

Private Client | Marin County, California
Novato Ignacio Streambank Restoration | Principal
The project involves correcting creek bank stabilization installed by a previous property owner without permits. WRA is providing regulatory agency coordination, preliminary restoration designs, hydraulic analysis, and baseline environmental assessments. Aaron provides technical review and design guidance. As PIC for the project, he is also coordinating deliverables with the team and client as needed.

PROJECT EXPERIENCE PRIOR TO WRA

City of Colorado Springs | Colorado Springs, Colorado
Cottonwood Creek Channel and Floodplain Rehabilitation | Project Manager
Aaron was the Project Manager for the 8,800’ project reach of Cottonwood Creek between Powers Blvd. and Austin Bluffs Pkwy along Woodmen Rd. Improvements provide bank and bed stability, roadway and utility protection, and riparian habitat enhancement. Project elements include sculpted concrete hydraulic drop structures (small and large) and reconfiguring the existing channel and adjacent floodplain. The Colorado Stream Quantification Tool was completed as part of the Project.

Fountain Creek Watershed, Flood Control and Greenway District | Pueblo, Colorado
State Highway 47 Bank Restoration | Project Manager
Aaron was Project Manager for the 4,000’ reach of Fountain Creek at SH 47 in Pueblo. The design approach included a stable meander planform, profile, and channel geometry, as well as riprap bend and scour protection. Extensive floodplain revegetation was included with the design including approximately 9 acres of erosion control fabric and riparian seeding, and planting of over 35,000 willow and cottonwood trees.

Upstream of Pikeview | Colorado Springs, Colorado
Monument Creek Stream Stabilization | Project Manager
Aaron served as Project Manager for the project reach of Monument Creek beginning on the upstream end at the approximate intersection of northbound Interstate Highway 25 and ending downstream approximately 4,450 feet at the Pikeview Diversion. Project objectives included utility infrastructure protection, aquatic and terrestrial habitat enhancements, erosion reduction and corresponding downstream sediment supply, and providing opportunities to enhance the City of Colorado Springs MS4 compliance. The design approach combined both conventional and natural channel design methods.

City of Colorado Springs | Colorado Springs, Colorado
Monument Branch Channel Restoration | Project Manager
Aaron was Project Manager for the 1,300’ project reach of Monument Branch between I-25 and Voyager Parkway. Improvements provide utility infrastructure protection, channel stabilization, and riparian habitat restoration. Project elements included sculpted concrete hydraulic drop structures, a constructed riffle, and a reconfiguration of the existing channel and adjacent floodplain.

Fountain Creek Watershed, Flood Control, and District | Pueblo, Colorado
Masciantonio Trust Bank Restoration | Project Manager
Aaron was Project Manager for the 1,500’ reach of Fountain Creek approximately 4 miles south of the El Paso County line. The design approach included placing in-channel diversion structures (bendway weirs) along an outside bend of Fountain Creek. The structures function to divert high channel velocities and associated shear stresses away from the highly eroding bank. Design elements included constructing a bank full bench along the toe of the eroding bank and implementing a robust revegetation plan.

Andrew Smith, PE

Project Manager, Engineer of Record, Flood Control Lead, Public Outreach Lead

YEARS OF EXPERIENCE
13

EDUCATION
B.S., Civil Engineering, Santa Clarc University

LICENSES / CERTIFICATIONS
Professional Engineer (Civil): CA #C82643

Qualified SWPPP Developer Certificate, CA #C82643

DAWIA, Facilities Engineering, Level 2

PROFESSIONAL AFFILIATIONS
ASCE

SAME

SPECIALIZED TRAINING
Sediment Transport in Stream Assessment and Design Short Course, Utah State University

Riparian Zone Ecology, Restoration, & Management, USACE

Streambank Erosion and Protection, USACE

SKILLS
AutoCAD Civil 3D

HEC-RAS 1D/2D

Trimble Survey Equipment

wra Environmental Consultants

Andrew Smith is a professional civil engineer specializing in hydrologic and hydraulic modeling, flooding and sedimentation analyses and cost estimating for a variety of stream, river, floodplain, and tidal marsh projects. Prior to joining WRA, Andrew spent ten years working at the USACE San Francisco District working on flood risk management projects. His expertise also includes restoration assessment, design, and construction. He has experience involving habitat mitigation, erosion prevention, design development, cost estimating, project management, flood risk management, and construction oversight. Andrew is accomplished in analyzing the data using Autodesk Civil 3D and HEC-RAS and developing qualitative and quantitative analysis to support community needs. Andrew is comfortable presenting at public meetings to disseminate complex engineering designs to clients, partners, and community members.

RELEVANT PROJECT EXPERIENCE

Children's Health Council | Palo Alto, California
San Francisquito Creek Bank Stabilization | Restoration Engineer
Erosion of San Francisquito Creek within the CHC facility has resulted in a loss of property, as well as unstable creek banks. WRA was retained to design and implement a bank stabilization design that would minimize impacts to special-status species. Given the location of bank stabilization work within jurisdictional waters and the presence of federal- and state-listed species, this effort required consultation and permits from the USACE, RWQCB, CDFW, USFWS, and NMFS. Andrew developed the terrain model and design drawings for the project, which included a living crib wall and soil bioengineering. Andrew also developed a 2D hydrodynamic model to assess the channel stability and sediment transport throughout the local area.

City of Palo Alto | Palo Alto, California
Matadero Creek Renaturalization | Water Resources Engineer
Urban development and a traditional approach to flood risk management led to Matadero Creek being channelized and lined with concrete. WRA is providing renaturalization concept designs, a feasibility study, and hydraulic modeling. Andrew developed conceptual drawings and hydraulic modeling for a range of alternatives to re-naturalize the creek and create habitat, increase aesthetic value and allow for public accessibility while improving existing flood capacity and limiting Valley Water maintenance requirements.

City of San Carlos/Freyer & Laureta | San Carlos, California
Alexandria District Development Phase 2 - Hydraulics and Creek Improvements | Water Resources Engineer
The project consists of an iterative analysis of the existing and proposed conditions to inform the project description ensuring on-site flood protection while avoiding adverse off-site impacts or degrading the creek. WRA is performing hydraulic modeling and flood hazard analysis of Pulgas Creek and the east portion of the City of San Carlos along San Francisco Bay. The team is coordinating closely with the City staff and CEQA consultants to support robust analysis of the 100-year and 10-year flooding of concern. Andrew developed the hydraulic model for the existing condition, project condition, and mitigated 100-year flood conditions of the project site and vicinity (urban watershed).

Macerich Northwestern Associates | Concord, California

Galindo Creek Restoration | Restoration Engineer

Changes in land use have led to channel incision and deterioration of aquatic and riparian habitat in Galindo Creek, which has been identified by resource agencies as a strong candidate for off-site mitigation activities. WRA provided hydraulic analysis, design, and permitting services for the project, which will improve geomorphic stability and riparian vegetation in the creek corridor while providing needed mitigation credits. Andrew developed the design drawings for the project, which will be used for permitting and construction.

Town of Hillsborough Public Works Department | San Mateo County, California

Sandra-Hayne Storm Drain Replacement and Creek Daylighting Project | Restoration Engineer

The Town needed to replace a culvert that created downstream erosion within Cherry Creek. Instead of repairing the culvert, WRA saw an opportunity for the Town to limit future erosion by daylighting a portion of a Creek. WRA is responsible for the creek design, regulatory permitting, biological resources assessment, and preparation of CEQA documentation and a Habitat Restoration and Monitoring Plan. Andrew developed the hydraulic model and design drawings and geomorphic step-pool channel design to be implemented downstream of the new culvert.

Marin County Open Space District | Marin County, California

Bolinas Wye Lagoon Wetlands Resiliency Project | Registered Engineer

This grant-funded project focuses on restoring a wetland of international importance. The goal involves connecting Lewis Gulch Creek to its floodplain and restoring the functions of the historic alluvial fan, enhancing fish passage for federally threatened steelhead, and improving traffic safety on SR 1 at the intersection of Olema Bolinas Road. The project also includes removal of a section of public road whose fill crosses the wetland and blocks hydrologic continuity. WRA is responsible for hydraulic modeling and analysis using HEC-RAS, creek restoration design, alternatives analysis, regulatory permitting, and CEQA documentation. Andrew is the lead engineer and has collected and processed topographic data using GPS and Total Station equipment. He provided hydraulic modeling and design services to evaluate ecological base flow conditions, peak flow events related to flooding and bridge scour, and creek flow response due to sea level rise.

City of St. Helena | Napa County, California

Upper York Creek Ecosystem Restoration and Aquatic Habitat Enhancement Project | Restoration Engineer

This restoration and habitat enhancement project removed a historic dam to restore natural geomorphic processes and habitat for federally threatened steelhead, while protecting a county road and preventing adverse flooding in the City. The project involves a process-based restoration design that will notch the earthen dam and cut a pilot channel through the accumulated sediment. WRA provided final engineering design and regulatory agency permitting on an accelerated schedule due to funding requirements, as well as provided design oversight, compliance surveys, and biological monitoring during construction. Andrew developed conceptual and design drawings for the project. The project site and its upstream watershed was burned in the Glass Fire only three days after completion, so Andrew assisted with post-wildfire assessments, revised force balance calculations on a few of the damaged structures and monitoring for possible secondary hazard effects.

Napa County Resource Conservation District | St. Helena, California

Sulphur Creek Fish Passage Improvement | Restoration Engineer

Remediation of the fish passage barrier is needed to address the existing dysfunctional fishway and improve access to high-quality habitat upstream for native anadromous fish species. WRA is providing restoration engineering design addressing the challenging sediment and debris loads, site hydraulics as affected by natural/geologic and human infrastructure constraints (roads and the bridge structure), as well as ongoing and potential future channel instability in response to historic disturbances. Andrew led the topographic survey effort and developed a digital terrain model of the existing conditions of the project. Andrew is also tasked with quality control of the project's hydraulic model, large wood structure stability calculations, and bridge scour analysis.

Santa Clara Valley Water District | San Jose, California

Guadalupe River Flood Risk Management Project, Technical Lead

Prior to joining WRA, while at USACE, Andrew was the technical lead for this proposed project which utilized a combination of bypass channels, floodwalls, and channel widening to achieve flood damage reduction while restoring protected salmonid species habitat. As the Technical Lead, Andrew developed the proposed terrain model and coordinated design efforts that included hydraulic analysis, planting design, and bridge design. Andrew developed the proposed terrain model using AutoCAD Civil 3D. The project deliverables included drawings, specifications, design report, and cost estimate.

Chris Feng, PE

Hydraulics Lead

YEARS OF EXPERIENCE
4

EDUCATION
M.S., Civil and Environmental Engineering, Carnegie Mellon University

B.S., Chemical Engineering, Washington University

PROFESSIONAL LICENSE
California Professional Engineer (Civil) #94524

wra Environmental Consultants

Chris Feng is a licensed civil engineer experienced in restoration design, hydrology and hydraulic modeling, and stormwater. He has performed design work on a variety of creek and water infrastructure projects such as retention basins, drainage ditches, sediment control structures, and bank protection. Chris is passionate about combating climate change, restoration, and integration of engineering principles with natural system functions. He has expertise in using Autodesk's Civil 3D and HEC-RAS to analyze and design open-water systems.

RELEVANT PROJECT EXPERIENCE

City of Palo Alto | Palo Alto, California
Arastradero Pipeline Erosion Control | Restoration Engineer
The project involves the proposed repair of the City of Palo Alto Arastradero Pipeline due to the pressurized gas line located near the Arastradero Creek Trail being exposed from stormwater erosion during the rainy season. WRA is providing an erosion repair conceptual design, 60% design work plan and repair design assessment, biological resource assessment, regulatory agency coordination support, revegetation support, and biological monitoring for potential for special-status species. Chris calculated appropriate rock sizes for the design, described the design approach in a basis of design memorandum, and performed construction observations to ensure plan conformance.

Town of Hillsborough Public Works | San Mateo County, California
Sandra-Hayne Storm Drain Replacement and Creek Daylighting Project | Restoration Engineer
The Town needed to replace a culvert that created downstream erosion within Cherry Creek. Instead of repairing the culvert, WRA saw an opportunity for the Town to limit future erosion by daylighting a portion of a Creek. WRA is responsible for regulatory permitting, surveys, biological resources assessment, wetland delineation, and preparation of California Environmental Quality Act (CEQA) documentation and a Habitat Restoration and Monitoring Plan. Chris performed field inspections during construction and assisted in guiding the implementation of soil lifts and placement of riprap in riffle and pool sequences as well as the installation of erosion control.

Napa County Resource Conservation District | St. Helena, California
Sulphur Creek Fish Passage Improvement | Restoration Engineer
This project involves remediation of the fish passage barrier on Sulphur Creek. WRA is providing restoration engineering design addressing the challenging sediment and debris loads, site hydraulics as affected by natural/geologic and human infrastructure constraints (roads and the bridge structure), as well as ongoing and potential future channel instability in response to historic disturbances. The design includes coordinating with structural and geotechnical engineers on the design and modeling the creek hydraulics in HEC-RAS. Chris performed design calculations and drafting from 30% to 100% construction drawings for the replacement of an existing undersized private concrete bridge with a wider span bridge with channel modifications to improve fish passage criteria. He provided project management support and coordination with the client and stakeholders to ensure design elements were in line with landowner and regulatory agency expectations.

California Coastal Conservancy | Novato, California

Bel Marin Keys V Restoration | Restoration Engineer

The project restores an approximately 1,600-acre parcel to a mixture of tidal marsh, seasonal wetlands, alkali meadows, and uplands. WRA is part of the construction management team, assisting with the implementation of Phase 1 construction including reviewing project plans and specifications for details, management of environmental compliance requirements, construction oversight for alkali and seasonal wetland construction, and interface with the contractor for restoration goals. Chris performed hydrology and hydraulic modeling with drainage channel design to limit the negative influence of poor quality water discharge on newly constructed alkali wetland areas.

The Nature Conservancy | Ventura County, California

SCR Parkway Feasibility Study for Stormwater Detention | Restoration Engineer

The project involves flooding due to an overgrown drainage canal and looking at the feasibility of stormwater detention and/or seasonal wetlands basin construction to accept high flows from the drainage as an alternative to drainage clearance. WRA is providing a wetland delineation, a hydrologic and hydraulic analysis, and conceptual plans/feasibility analysis. Chris performed a field and desktop assessment of existing drainage patterns through observations and hydraulic modeling to identify causes of annual flooding of a roadway and conceptual ideas for alleviating the flooding issue.

Caltrans/The Wildlands Conservancy | Sonoma County, California

Estero Americano Coast Reserve | Restoration Engineer

WRA is supporting restoration and enhancement of the biological, hydrological, and ecological functions of a section of the Reserve. This is a mitigation project for the Caltrans State Route (SR)-1 Estero Americano Bridge Replacement Project. The goal of the proposed mitigation is to restore, establish, rehabilitate, and enhance riparian willow habitat and coastal wetland habitat to fully compensate for impacts resulting from the bridge replacement project. The offsite mitigation is expected to provide equivalent or better functional values for wildlife compared to the bridge project site conditions and improve the water quality. Chris performed hillside tributary design and hydraulic modeling to restore an existing incised channel into a stable, well-vegetated channel.

City and County of San Francisco | San Francisco, California

India Basin Big Green and Shoreline Improvement Project | Restoration Project Engineer

WRA is part of a team designing a new park at India Basin. This multi-phase project includes a new elevated boardwalk Bay Trail in a large landscaped urban park and utilities to support an adjacent development. WRA's role is regulatory permitting, tidal and seasonal wetlands mitigation design, and modeling to support the design of stormwater outfalls. WRA has prepared 30% and 60% design plans for tidal wetlands and seasonal wetlands which are serving as stormwater retention ponds. Chris performed the hydraulic modeling and design of storm drain outfall aprons as well as design and drawings of the seasonal wetland weir.

Sonoma-Marin Area Rail Transit District (SMART) | Marin and Sonoma Counties, California

SMART Environmental Services On-call | Restoration Engineer

In support of SMART's implementation of capital projects and monitoring of existing migration projects, WRA is providing as-needed environmental consulting services including, but not limited to regulatory permit applications preparation/coordination, mitigation plans, jurisdictional wetland delineations, biological resource surveys, special-status plant and wildlife surveys, technical report preparation, biological compliance monitoring, and third-party review of environmental reports or studies. Chris performed hydraulic modeling to analyze the changes in tidal inundation behavior at SMART's permittee-responsible mitigation site to assess the feasibility of removal of a levee road.

Private Client | Groveland, California

Bank and Creek Stabilization Project | Staff Engineer

Prior to joining WRA, Chris was Staff Engineer for this proposed project that involved design of bank stabilization utilizing riprap and vegetated soil lifts to protect homes downstream of a dam spillway as well as development of a creek management plan for minimizing risk to existing infrastructure and sedimentation risk for a reservoir located within a homeowners association's jurisdiction. As the Staff Engineer, Chris developed the bank stabilization design and performed hydraulic modelling to evaluate velocity and shear stress limits of the design. Chris also performed field assessments of contributing creeks to the reservoir to determine sedimentation risk and evaluate potential maintenance issues that would put infrastructure near the creek at risk.

Ashley Zavagno, CERP, CE

Ecology Lead

YEARS OF EXPERIENCE
10

EDUCATION
MESM, Environmental Science and Management – Conservation Planning, Bren School of Environmental Science & Management, University of California Santa Barbara

B.S., Ecology and Evolution, University of California Santa Barbara

LICENSES / CERTIFICATIONS
Certified Ecological Restoration Practitioner (CERP) #0235, Society of Ecological Restoration

River Restoration Professional Certification, Portland State University

Certified Ecologist (CE), Ecological Society of America

California Rapid Assessment Method (CRAM) Practitioner, San Francisco Estuary Institute

PROFESSIONAL AFFILIATIONS
Board Member, SERCAL

Member, Salmonid Restoration Federation

Member, River Restoration Northwest

wra Environmental Consultants

Ashley Zavagno is WRA's Restoration Ecology Director and is a Certified Ecological Restoration Practitioner as well as a Certified Ecologist. Her expertise includes restoration ecology, river and salmonid restoration, mitigation, land management, particularly in Northern California and salmonid-bearing systems. Ashley manages large-scale restoration projects. Her work includes informing restoration design, evaluation of potential restoration sites, drafting restoration and long-term management plans, creating appropriate performance standards; and overseeing permitting and implementation. She is an active participant in river restoration and California restoration conferences including Salmonid Restoration Federation's annual conference and Coho Confab, SERCAL, and River Restoration Northwest.

RELEVANT PROJECT EXPERIENCE

Caltrans/Resource Environmental Solutions | Mendocino County, California
Coastal Mendocino Mitigation Bank, Project Manager

The Caltrans Coastal Mendocino Mitigation Bank focuses on generating wetland and waters mitigation credits for Caltrans with the coastal regions of Mendocino County. Ashley is serving as the WRA project manager and is currently helping the prime with selecting appropriate sites for restoration and mitigation credit generation, coordinating biological surveys and other site assessments, restoration design, landowner and agency coordination, performance standards, and land management. The bank currently includes restoration of the Garcia River, Ten Mile River, Navarro River – three of the primary coastal rivers in the County.

Private Client | Colusa County, California
Butte Sink Mitigation Bank, Project Manager

The Butte Sink region is a several thousand-acre matrix of wetland, riverine, and riparian habitats subject to frequent flooding. The site is unique in that it receives flood flows from both Butte Creek, which borders the Bank, and the Sacramento River through the Colusa Bypass. As project manager, Ashley has crafted a process-based restoration approach for the Bank in collaboration with WRA's engineers, landscape architects, hydrologists, and biologists. This approach focuses on removing anthropogenic constraints on the site including berms, culverts, and agricultural land use practices, and reengaging normative rates of flooding, sediment deposition, biogeochemical cycling, native vegetation recruitment, and woody debris accumulation.

UC Berkeley | Alameda County, California
West Oval Glade Restoration and Stormwater Mitigation, Principal-in-Charge

The West Oval Glade is an approximately 3-acre area of open space within the UC Berkeley Campus that contains about 550 linear feet of Strawberry Creek. The area is predominantly a large lawn, and the creek is incised and dominated by non-native vegetation. At the downstream end of the reach the creek is piped underground beneath the West Circle. The university is looking to utilize the West Oval Glade to generate stormwater mitigation credits they can use to offset development on the campus, as well as restore ecological function to Strawberry Creek and increase engagement with the space. WRA is working with the prime to help evaluate current conditions of the creek and prepare conceptual restoration plans.

Ashley is the principal-in-charge on the project and overseeing all phases of work.

Sonoma County Public Infrastructure | Sonoma County, California

Mecham Road Mitigation Bank, Project Manager

The Mecham Road Mitigation Bank is located on an approximately 125-acre property in Sonoma County and is the first mitigation bank sponsored by the County of Sonoma. It is one of few entitled for public entities and is intended to facilitate mitigation for their projects across the County. WRA evaluated two County properties for their potential for mitigation generation with ultimately one selected for the Bank. As project manager, Ashley oversaw the preparation of the final prospectus for the Bank which included biological surveys and other site assessments, conceptual wetland, stream, and riparian restoration designs, hydromodeling, conservation of California red-legged frog, and potential translocation of California tiger salamander. Ashley also facilitated regulatory agency discussions and site visits, as well as managed various subconsultants for the project.

Department of Water Resources/Ecosystems Investment Partners | Solano County, California

Lookout Slough Tidal Habitat and Flood Improvement Project, Senior Restoration Ecologist

This is an expansive, multi-benefit restoration project located in the North Delta's Cache Slough Complex. The state-funded work will restore approximately 3,165 acres of subtidal channels and tidal wetlands by breaching and relocating an U.S. Army Corps of Engineers (USACE) flood control levee. Benefiting numerous threatened and endangered species, including Delta smelt, Chinook salmon and steelhead, the project will also provide important improvements for regional flood capacity. WRA is providing restoration design services, complete baseline biological reports, regulatory permitting, and preparation of the appropriate California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documents. Ashley authored the majority of the technical proposal to DWR, as well as the restoration plan and adaptive management and monitoring plan. The project is currently in the first stages of implementation.

Columbia Restoration Group | Marin County, California

North Bay Wetland Mitigation Bank, Project Manager

The North Bay Wetland Mitigation Bank is an approximately 120-acre property in northern Marin County along San Antonio Creek, which is critical habitat for California central coast steelhead. The bank property is part of a larger 1500-acre property, part of which is already an active conservation bank for California red-legged frog entitled by WRA (North Bay Highlands Conservation Bank), which was completed in 2014 and was also managed by Ashley. The property supports an array of sensitive biological resources including riparian woodlands, oak woodlands, and streams. The restoration will restore seasonal wetlands and reduce sedimentation into the surrounding waterways. Ashley served as project manager and led the project through approval by the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency in 2018. The project was constructed in 2020.

The Nature Conservancy | Mendocino County, California

Lower Navarro River Tributaries Restoration, Project Manager

The TNC was awarded a grant through the NOAA Transformational Habitat Restoration and Coastal Resilience Grant Program to restore Coho salmon (*Oncorhynchus kisutch*) habitat within lower Navarro River tributaries. WRA is evaluating three tributaries for their restoration potential by conducting baseline studies including geomorphic assessments, vegetation and aquatic resources surveys, and hydrologic monitoring. The baseline studies will inform the conceptual designs for each of the three tributaries, which will be evaluated by TNC and a technical advisory committee to determine which tributary to advance forward. WRA will prepare a hydraulic model of the selected tributary, as well as 100% construction plans and specifications and the environmental permit applications. As the Project Manager, Ashley is overseeing all phases of project work and serving as point of contact with TNC.

Golden Gate Bridge, Highway and Transportation District | Marin County, California

Corte Madera Ecological Reserve Tidal Marsh Restoration and Public Access Project, Senior Restoration Ecologist

WRA designed four acres of restored tidal marsh and a quarter acre of restored seasonal wetland located within the District's 72-acre property adjacent to the Corte Madera Ecological Reserve. The project restored tidal marsh habitat for endangered California Ridgway's rail and the salt marsh harvest mouse as well providing upland refugia and seasonal wetland habitat. The project design includes a new public trail segment adjacent to the restored tidal marsh and public amenities such as benches and interpretive panels. During the early phases of this project, Ashley helped the District evaluate the potential for entitling a mitigation bank across the entire 72-acre property which would have provided the District with mitigation for future planned District projects above and beyond the current 4 acres needed. She also authored the draft prospectus for the potential bank and led discussions with the regulatory agencies.

Junjie Chen, HIT, ENV SP

Hydrology / Geomorphology Lead

YEARS OF EXPERIENCE
7

EDUCATION
M.S., Physical Geography, Portland State University

B.S., Environmental Science, University of Portland

LICENSES / CERTIFICATIONS
Hydrologist-In-Training: HIT #4588, American Institute of Hydrology

Envision Sustainability Professional (ENV SP), Institute for Sustainable Infrastructure

PROFESSIONAL AFFILIATIONS
American Geophysical Union (AGU)

SKILLS
HEC-HMS
HEC-RAS 1D/2D
SWAT
ArcGIS Pro
Surface Water Hydrology
Climate Change Analysis
Wildfire Hydrology

wra Environmental Consultants

Junjie is a geomorphologist/hydrologist with experience conducting hydrologic and hydraulic modeling for various applications, including flood management, wildfire hydrology, sediment transport, and climate change vulnerability assessments. He has led studies analyzing the impact of climate change and landscape scenarios on watershed hydrology under future climate conditions and following disturbances such as extreme precipitation and wildfires.

Junjie possesses expertise in field data collection, topographic surveying, and software such as ArcGIS and HEC-HMS. Before joining WRA, Junjie worked for and collaborated with the U.S. Geological Survey (USGS), the U.S. Department of Agriculture Forest Service (USFS), and the Sonoma Water.

RELEVANT PROJECT EXPERIENCE

Caltrans/Resource Environmental Solutions | Mendocino, California
Coastal Mendocino Mitigation Bank | Hydrologist
This project focuses on generating wetland and waters mitigation credits for Caltrans with the coastal regions of Mendocino County. WRA was selected as a subconsultant to RES to assist in the establishment of a mitigation bank. This unique mitigation bank will incorporate multiple properties, and restore coastal riverine, floodplain, riparian, and seasonal wetland habitat. The bank will also likely benefit listed species including coho salmon, steelhead, and Point Arena mountain beaver. Junjie provided hydrologic modeling support to determine the hydrologic functions of the seasonal wetlands at the mitigation bank.

City of San Carlos / Freyer & Laureta | San Carlos, California
San Carlos Pulgas Creek Watershed Study | Hydrologist
The goals of the Pulgas Creek Watershed Study and Management Plan are to analyze the watershed and develop flood management and climate change resiliency strategies that will incorporate Pulgas Creek as a vital community amenity for open space and trail. The community has a strong desire to restore Pulgas Creek and increase access with trails and gathering spaces. During the series of storms during winter ‘22/’23, widespread flooding occurred. High tide, saturated soil, and persistent runoff caused water to pond in streets, and in some incidents, into businesses. The City is highly urbanized, with residential areas The Pulgas Creek watershed drains about 3.5 square and includes the City of San Carlos, part of the City of Belmont, and unincorporated San Mateo County. WRA, as a subconsultant to Freyer & Laureta was retained to provide hydrology and hydraulic modeling, environmental review, and permitting assessment. Junjie supported hydrologic modeling efforts in SWMM and calibrated the model with high resolution precipitation data.

EXPERIENCE PRIOR TO WRA

Sonoma Water | Sonoma County, California
Sonoma Future Climate Rainfall Geodatabase | Hydrologist
Junjie was the task manager who processed downscaled global climate model data across different emission scenarios using ArcGIS, Python, and MATLAB. He has processed various design storm depths and provided hydrologic assessment, analysis, and reporting for the Eel River watershed, Russian River Watershed, and Sonoma County.

Sonoma Water | Sonoma County, California

Sonoma Creek Hydrology and Hydraulics | Hydrologist

Junjie developed and updated hydrologic and hydraulic models for the Sonoma Creek Watershed. As part of the development process, Junjie conducted topographic cross-section surveys and calibrated model outputs to support project evaluation and prioritization in Sonoma Valley.

Pajaro Valley Water Management Agency | Santa Cruz, California

Basin Management Plan Implementation Project | Hydrologist

The Pajaro Valley Water Management Agency (PV Water) is pursuing three surface water diversion projects to balance the groundwater basin and halt seawater intrusion. Junjie updated existing conditions and project conditions for the HEC-RAS model and reported on the impacts of proposed pumping on downstream water levels under sea-level rise.

City of Santa Cruz | Santa Cruz, California

San Lorenzo River FEMA Levee Certification | Hydrologist

Junjie was responsible for developing a coupled sea level rise and climate change scenario to calibrate an existing hydraulic model in HEC-RAS. This was done to determine which future scenarios would cause levee freeboard failure to meet FEMA levee requirements in a 100-year storm.

Sonoma Water | Sonoma County, California

Sonoma Water Stream Maintenance Support | Hydrologist

Junjie supported Sonoma Water in defining stream maintenance objectives, building on prior hydrologic and hydraulic modeling conducted for the Santa Rosa Creek (SRC) watershed. He assisted in developing quantitative metrics relating water surface elevation and freeboard to channel roughness and sedimentation for a pilot reach on SRC.

City of Santa Rosa | Santa Rosa, California

Storm Drain Master Plan | Hydrologist

Junjie assisted in developing hydrologic boundary conditions for the storm drains and hydraulic boundary conditions for storm drain outlets into open channels. Additionally, he contributed to climate change scenario analysis.

Ingrid Morken, PLA, CERP, SITES AP

Landscape Architecture Lead

YEARS OF EXPERIENCE
21

EDUCATION
Master of Landscape Architecture, University of California, Berkeley

B.A., Environmental Studies, Gustavus Adolphus College, St. Peter, Minnesota

LICENSES/CERTIFICATIONS
California Licensed Landscape Architect #5472

Certified Ecological Restoration Practitioner, #0128

SITES Accredited Professional

ReScape Qualified Professional

PROFESSIONAL AFFILIATIONS
American Society of Landscape Architects

Society of Ecological Restoration

California Native Grasslands Association

wra Environmental Consultants

Ingrid Morken is a licensed landscape architect specializing in the design of ecological restoration and park and open space projects. She brings a diverse background in landscape architecture, environmental planning, and restoration ecology to her work. Ingrid has led the planning and design of a variety of ecological restoration projects throughout California, including stream and riparian, seasonal and freshwater wetland, tidal marsh, and upland habitats. In the process, she utilizes site design and construction methods which maximize ecological function and minimize impacts to adjacent lands and sensitive habitats. She also takes into consideration projected sea level rise and climate change as required. In addition, she designs park and public access projects, often with the goal of preserving and enhancing the ecological character and aesthetics of the site while providing an engaging experience for the public. As a SITES Accredited Professional and Bay-Friendly Qualified Landscape Design Professional, she understands and implements green landscape design strategies, such as low-water use plants and irrigation systems and the protection and conservation of soil and water resources.

RELEVANT PROJECT EXPERIENCE

Santa Clara Valley Water District I Milpitas, California
Lower Penitencia Creek Improvements Project, Landscape Architect
Valley Water is implementing a flood control improvement project along Lower Penitencia Creek to accommodate future increased flows from Berryessa Creek. WRA provided the wetland mitigation and landscape design components of the project. Ingrid led the preparation of the construction documents for the wetland mitigation sites and ornamental landscape improvements along the flood wall. This entailed planting plans for the wetland mitigation site and planting and irrigation plans for the ornamental landscape areas in accordance with the state's Model Water Efficiency Landscape Ordinance. The project is slated for construction in 2021.

City of Burlingame I Burlingame, California
Burlingame Stream Maintenance Program, Landscape Architect
A total of five streams are included in the Burlingame Stream Maintenance Program (SMP), and maintenance activities include sediment, vegetation, and debris removal and vegetation trimming to alleviate restricted flows and associated flooding. Ingrid led the preparation of riparian revegetation plans along a segment of Mills Creek, which included the removal of the non-native ice plant and replacement with native riparian plantings along the streambanks, to fulfil mitigation requirements associated with the SMP.

Department of Water Resources\Ecosystems Investment Partners I Solano County, California
Lookout Slough Tidal Habitat Restoration and Flood Improvement Project, Landscape Architect
This is an expansive, multi-benefit restoration project located in the North Delta's Cache Slough Complex. The state-funded work will restore approximately 3,165 acres of subtidal channels and tidal wetlands by breaching and relocating an U.S. Army Corps of Engineers (USACE) flood control levee. Benefiting numerous threatened and endangered species, including Delta smelt, Chinook salmon and steelhead, the project will also provide important improvements for regional flood capacity. WRA is providing

restoration design services, complete baseline biological reports, regulatory permitting, and preparation of the appropriate California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documents. Ingrid performed an assessment of the existing riparian vegetation within the project area and led the preparation of the riparian mitigation planting plans, which includes over 40 acres of riparian habitat adjacent to subtidal channels and wetlands.

City of Livermore I Alameda County, California

Stream Maintenance Program Compliance and Mitigation, Project Manager and Landscape Architect

WRA provides permit compliance and mitigation services to the City of Livermore for the implementation of their Stream Maintenance Program (SMP). This includes interpretation of permit requirements, biological and water quality monitoring during construction, mitigation design services, and long-range mitigation planning. Ingrid is the project manager and led the preparation of a mitigation master plan for the City, identifying potential riparian and wetland mitigation sites along creeks and waterways within the City limits. In addition, she works with the City and the Alameda Resource Conservation District on the development, design, and implementation of riparian restoration projects to fulfill the SMP mitigation requirements.

Las Gallinas Valley Sanitary District | San Rafael, California

Lower Miller Creek Channel Maintenance, Landscape Architect

The Las Gallinas Valley Sanitary District implemented channel maintenance activities within a segment of Lower Miller Creek, including sediment removal, to increase hydrologic capacity of the channel. WRA prepared a Revegetation Plan for the project, and Ingrid led the preparation of the revegetation planting and irrigation plans for the banks of the Lower Miller Creek channel and provided construction observation of the revegetation implementation. Revegetation of the channel banks was completed in December 2017, and the project is currently in the five-year monitoring period and successfully meeting long-term monitoring performance criteria.

Triad | Solano County, California

Lower Lagoon Valley Policy Plan and Implementation Project, Landscape Architect

The project site encompasses approximately 620 acres of land and includes a high-quality, mixed-use residential golf course development. The Project will establish and maintain in perpetuity 12 Conservation Easement areas, totally over 122 acres. Over 13 acres of wetlands and drainages will be created, restored and enhanced within these conservation areas, including a large 65-acre Wetland Preserve complex. The Project will also restore the alignment of the main creek channel that drains the surrounding hillsides back to its historic alignment. Ingrid led the preparation of the planting and irrigation construction drawings for riparian revegetation along the restored channels and worked with biologists to ensure the permit requirements were met.

East Bay Regional Park District | Richmond, California

Dotson Family Marsh Restoration and Public Access Plan, Landscape Architect

The goals of the Dotson (formerly Breuner) Marsh project are to create, restore, enhance, and protect 150 acres of tidal marsh, seasonal wetland, and coastal prairie habitat on the San Francisco Bay shoreline in the City of Richmond. In addition, the plan calls for an extension of the San Francisco Bay Trail and opportunities for public education. Ingrid prepared the concept plan and construction documents for the restoration of approximately 30 acres of tidal marsh and seasonal wetland habitat. Construction of the project was completed in 2017.

City of Petaluma I Petaluma, California

Denman Reach Phase 4 Flood Control Project, Landscape Architect

WRA assisted the City of Petaluma with Phase 4 of the Denman Reach Flood Control Project in all aspects of the environmental regulatory permitting process, including mitigation planning and design. This final phase consisted of sediment removal from within the Petaluma River and the creation of two flood detention basins. Ingrid worked with City engineers and WRA biologists in the planning and design of the seasonal wetland and riparian restoration sites to meet the project mitigation requirements. She led the preparation of construction documents for the restoration sites also, including detailed grading and planting plans. She also provided construction oversight to ensure that the restoration project was constructed according to the contract documents. Construction was completed in 2020, and the project is now being monitored for successful establishment.

Scott Yarger, ISA Certified Arborist

Lead Arborist

YEARS OF EXPERIENCE
14

EDUCATION
B.S., Conservation and Resource Studies, Minor in Forestry and Natural Resources, University of California, Berkeley

LICENSES / CERTIFICATIONS
ISA Certified Arborist #WE-9300A

MSHA Part 46 Certification

CDFW 2081(a) Plant Voucher Collecting Permit Holder

PROFESSIONAL AFFILIATIONS
ISA Member, Western Chapter

SPECIALIZED TRAINING
40 Hour Wetland Delineation Training, SFSU Romberg Tiburon Center, 2015

Wetland Training Institute Advanced Hydric Soils Course, 2017

Grass (Poaceae) Workshop, Jepson Herbarium, 2015

ISA Tree Risk Assessment Qualification Course, 2014

SMARA Technical Course, 2014

Rare Plant Survey Protocols Course CNPS, 2013

wra Environmental Consultants

Scott Yarger is a biologist/arborist with 14 years of experience in environmental consulting, primarily focusing in the greater San Francisco Bay Area. He is an ISA-Certified Arborist with over a decade of experience in arboriculture and vegetation management. Scott's work at WRA is primarily managing biological studies necessary to complete CEQA review and regulatory permitting from federal, state, and municipal agencies, including but not limited to the USACE, RWQCB, USFWS, and CDFW. He also manages long-term monitoring and reporting efforts.

RELEVANT PROJECT EXPERIENCE

Children's Health Council | Palo Alto, California

San Francisquito Creek Bank Stabilization | Project Arborist

Erosion of San Francisquito Creek within the Children's Health Council (CHC) facility has resulted in a loss of CHC property and outdoor learning area, as well as unstable creek banks. WRA was retained to design and implement a bank stabilization design that would minimize impacts to special-status species known to occur within this watercourse. Given the location of bank stabilization work within jurisdictional waters and the presence of federal- and state-listed species, this effort required consultation and permits from the USACE, RWQCB, CDFW, USFWS, and National Marine Fisheries (NMFS). Scott was the Project Arborist and task manager conducting the tree survey and report, assessing tree removal impacts and assisting in the tree removal permit application.

County of Santa Clara Roads and Airports Department I Santa Clara County, California

Santa Clara County Bridges Scour Project Monitoring, Project Manager

Twelve bridge locations within Santa Clara County were identified by Caltrans as having critical abutment scour necessitating repair. To complete these repairs, each bridge site was required to complete a Natural Environment Study (NES) to evaluate the potential for impacts to biological resources, and associated minimization and mitigation measures. WRA also provided Biological Assessment (BA), regulatory permitting, biological monitoring during project construction to comply with requirements of the USFWS and NMFS, and completed monitoring of riparian revegetation at each bridge site following construction. Scott is the current Project Manager overseeing mitigation monitoring and reporting, for which the project is in its final year.

City of South San Francisco I San Mateo County, California

San Bruno Channel Bridge Replacement Project, Task Manager

Caltrans proposed to replace the San Bruno Channel Bridge (Bridge #35C0044) located above San Bruno Channel on South Airport Boulevard in South San Francisco in order meet designated design loads and seismic design criteria. WRA prepared a Caltrans Natural Environment Study (NES) for the Project, which includes work within the San Bruno Channel, a flood control channel carrying water from various areas within San Mateo County to San Francisco Bay. Because the channel is a diverted former natural stream channel, and supports wetland vegetation, it is considered jurisdictional by the Corps, RWQCB, and CDFW. Scott prepared regulatory permit applications for Corps Section 404 Nationwide Permit 3, RWQCB Section 401 Water Quality Certification, and CFGC Section 1602 Streambed Alteration

Agreement for the proposed Project. The Project received all regulatory agency permits and commenced construction in 2016.

Private Client I Alameda County, California

Oak Knoll Redevelopment Project, Task Manager/Lead Arborist

SunCal is developing the approximately 200-acre former Naval Hospital site with nearly 1000 housing units as well as a retail center, a community center, and more than 60 acres of open space. The project also involves 5,000 linear feet of creek restoration, including 1,000 linear feet of creek daylighting. WRA is the Project biological consultant, responsible for California Environmental Quality Act (CEQA) biological studies and regulatory permitting. Scott has contributed to numerous field studies and technical reports, including the biological resources assessment, special-status plant survey, and tree survey to support the Environmental Impact Report (EIR) for the Project. Scott is the lead consulting arborist for the Project, and he led a team of arborists and biologists in conducting a comprehensive tree survey of the Project Area in order to comply with the City of Oakland Tree Protection Ordinance. The tree survey included an inventory and health assessment of over 7,000 trees within the Project site and surrounding areas potentially impacted by the Project. Scott prepared a tree survey report and tree removal mitigation plan as supporting documents for CEQA analysis. Scott has also prepared a protected tree removal permit and solicited bids for tree moving contractors on behalf of the Client.

Sonoma Marin Area Rail Transit (SMART) | Sonoma County, California

Windsor Extension and Non-motorized Pathway Segments, Task Manager/Lead Arborist/Lead Wetland Delineator

SMART was mandated by voters to implement rail transit service on the old Northern Pacific Railroad right-of-way which parallels U.S. Highway 101 in Marin and Sonoma counties. WRA is managing biological technical studies and surveys, permitting, and mitigation for SMART's three-mile extension from Santa Rosa to the Town of Windsor, and several non-motorized pathway segments. Scott is task manager, and technical field lead on several biological survey components of the project including leading the routine wetland delineation, and arborist survey/tree inventory and protocol-level rare plant surveys for Santa Rosa Plain listed plant species.

EXPERIENCE PRIOR TO WRA

Pacific Gas & Electric Company | Orinda, Alameda County, California

Orinda Moraga Streambed Alteration Agreement Compliance, Supervisory Consulting Utility Forester

As a contract forester for PG&E, Scott was in charge of managing an existing Streambed Alteration Agreement between PG&E and CDFW regarding utility tree work in riparian areas. Scott managed over 3,000 pending trees and directed tree crews to perform all work in compliance with the SAA. Scott conducted surveys for rare, threatened and endangered plant and animal species including California red-legged frog (CRLF). He assisted botanists in rare plant surveys for fragrant fritillary, western leatherwood, woodland woolythreads, round-leaved filaree, diablo helianthella, and bent-flowered fiddleneck. He provided biological monitoring and on-site supervision for contractors on environmental best management practices when working in sensitive habitats and provided environmental tailboard training to work crews for CRLF, Alameda whipsnake, and California tiger salamander.

Pacific Gas & Electric Company | Mt. Diablo State Park, Contra Costa County, California

Morgan Fire Emergency Hazard Tree Assessment, Supervisory Consulting Utility Forester

As a Supervisory Consulting Utility Forester for PG&E, Scott led a group of contract employees on an emergency hazard tree patrol along PG&E's high-voltage electrical lines in response to the Morgan Fire in Mt. Diablo State Park. Scott and his group assisted PG&E crews in patrolling dozens of miles of electrical lines in an active fire-fighting area to identify downed power lines and hazard trees. Scott directed tree crews to the hazard trees and prescribed tree work necessary to mitigate hazards.

Caltrans/City of Pleasanton I Alameda County, California

5 Bridges Maintenance Project NES-MI and Section 7 BA, Task Manager

Caltrans identified five bridges within the City of Pleasanton requiring maintenance. Due to the presences of sensitive resources at each bridge location, consultation and authorization is required from the natural resource regulatory agencies. Scott led the biological survey and reporting efforts in support of the project, and was the main author on the biological studies, and regulatory permit applications. Biological studies were completed and permit applications were received in the first quarter of 2019.

Justin Semion, MBA, PWS

Regulatory Permitting Lead

YEARS OF EXPERIENCE
24

EDUCATION
M.B.A. Sustainable Management, Presidio Graduate School

B.S., Resource Ecology and Management, University of Michigan

LICENSES / CERTIFICATIONS
Professional Wetland Scientist (#2072)

PROFESSIONAL AFFILIATIONS
Association of Environmental Professionals

Member, Port of San Francisco Waterfront Plan Resilience Advisory Team

Restoration Subcommittee Member, Subtidal Habitats Goals Project, California Coastal Conservancy

Member, Bay Planning Coalition (Dredging and Beneficial Reuse Committee)

SPECIALIZED TRAINING
Lead Instructor: 40-hour Delineation Training (San Francisco State University) and Overview of California Environmental Regulations (U.C. Davis Extension)

Ecosystem Services Valuation, International Society of Sustainability Professionals, January – April 2014

Section 7 Endangered Species Act Biological Assessment Workshop, U.S. Fish and Wildlife Service, June 2007

San Francisco Bay Eelgrass Workshop, November 2006

Justin Semion is a Principal at WRA with 24 years of experience in Bay Area resource ecology and environmental permitting including the complex interactions between regulatory agencies such as Bay Conservation and Development Commission (BCDC), Corps of Engineers, Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). He has also managed the completion of CEQA and NEPA documentation for federal, state, and local organizations and provides planning consultation for ecological management and land development projects undertaken by private and public organizations.

RELEVANT PROJECT EXPERIENCE

Children's Health Council | Palo Alto, California

San Francisquito Creek Bank Restoration, Children's Health Council, Principal-in-Charge

Erosion of San Francisquito Creek within the Children's Health Council (CHC) facility has resulted in a loss of CHC property and outdoor learning area, as well as unstable creek banks. WRA was retained to design and implement a bank stabilization design that would minimize impacts to special-status species known to occur within this watercourse. Given the location of bank stabilization work within jurisdictional waters and the presence of federal- and state-listed species, this effort required consultation and permits from regulatory agencies including the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW), and National Marine Fisheries Service (NMFS), as well as consultative approval by stakeholders including the San Francisquito Creek Joint Powers Authority, Santa Clara Valley Water District, and Stanford University, who leases the property to CHC. Justin led WRA's design and permitting teams in the two-phase project to address the bank failure.

Port of San Francisco/Jacobs | San Francisco, California

Seawall Resiliency Project, Port of San Francisco, Principal-in-Charge

The Port of San Francisco is in the process of planning for the rehabilitation and reconstruction of approximately 7 miles of seawall that forms the backbone for the City's waterfront infrastructure, transportation, public access, and public safety. The project will ultimately address seismic safety risks, emergency management, sea level rise, public access, and aquatic resources enhancement along the reach of shoreline. The project involves a Flood Study by the U.S. Army Corps of Engineers as part of a multi-decade effort to address sea level rise flood resiliency in the City waterfront. As a subconsultant to Jacobs, Justin leads the WRA team in identifying biological and aquatic resources constraints and opportunities, assessing biological impacts, developing regulatory permitting strategy, and ultimately securing permits for project implementation.

Private Client | San Benito County, California

Strata Verde Innovation Park, Principal-in-Charge

This project is a large scale planned technology park on approximately 5,800 acres of current tilled farmland along the Pajaro River in northern San Benito County, California. The project involves the integration of many disciplines, including floodplain restoration, tribal resources, stormwater management, agricultural preservation, transportation, and water supply. Justin leads the WRA team responsible for biological studies, floodplain restoration design, and permitting strategy for the project, including integration of the habitat preservation approach with tribal resources. The proposed floodplain restoration project would enhance the valuable bird resource area known as Soap Lake.

Santa Clara Valley Water District/Wood Rodgers | Milpitas, California

Lower Penitencia Creek Flood Control Channel Improvement Project, Principal-in-Charge

The Santa Clara Valley Water District is implementing hydraulic design, plans, cost estimates, and specifications for the channel and floodwall analysis and design of Lower Penitencia Creek to reduce chronic flooding in the area. WRA provided the environmental mitigation and landscape design components of the project including riparian and wetland mitigation design and construction documents. Justin provided advice regarding the design of mitigation to enhance habitat function and values, address the needs of salt marsh harvest mouse, also provided input on permitting strategy, and oversight of project deliverables.

California Coastal Conservancy | Novato, California

Bel Marin Keys V Restoration, Principal-in-Charge

The project restores an approximately 1,600-acre parcel to a mixture of tidal marsh, seasonal wetlands, alkali meadows, and uplands. WRA is part of the construction management team, assisting with the implementation of Phase 1 construction including reviewing project plans and specifications for details, management of environmental compliance requirements, construction oversight for alkali and seasonal wetland construction, and interface with the contractor for restoration goals. Justin played a vital role in managing attainment of soil texture requirements necessary to meet the bid specifications and result in functional restored seasonal wetlands during construction.

City of Palo Alto | Santa Clara County, California

Palo Alto Water Quality Control Plant Primary Outfall Replacement, Principal-in-Charge

Justin led WRA's team in the preparation of a CEQA Initial Study/MND and regulatory permit applications (USACE 404 permit, RWQCB 401 Water Quality Certification, BCDC Permit, USFWS and NMFS Endangered Species Consultations) for the replacement of the effluent outfall pipeline for the City of Palo Alto's Water Pollution Control Plant. The new outfall pipe is designed to accommodate future sea level rise, and to prepare the WQCP for future peak wet weather events. Various technical reports were also prepared to support the CEQA and permitting process, including a biological resources assessment, revegetation plan, and assistance with CEQA Plus for a loan application to the State Revolving Fund. Key issues addressed in the Initial Study/MND and regulatory permit applications included potential construction impacts to existing seasonal wetlands, salt marsh harvest mouse, Ridgway's Rail, and Burrowing Owl.

City of Fremont/David J. Powers & Associates/Schaaf & Wheeler | Fremont, California

Old Canyon Road Bridge Scour Repair Biological Surveys and Permitting, Project Manager

WRA completed the environmental review and permitting necessary to repair scour on a bridge across Alameda Creek. Alameda Creek does not currently support federally protected steelhead, but restoration is planned to construct fish ladders and return anadromous steelhead to Alameda Creek. The Old Canyon Road Bridge currently presents a low-flow fish passage barrier due to the presence of poured concrete in the creek bed beneath the bridge. The bridge scour repair will remove the concrete and install rock protection around the bridge abutments. WRA prepared Caltrans biological resources documentation for the project and engaged with the National Marine Fisheries Service in a Technical Assistance for concurrence that the design would not be detrimental to fish passage once the downstream fish ladders had been completed. WRA worked with the project engineers to assess potential fish passage issues at the bridge and to develop plans for fish passage that meet the National Marine Fisheries Service and California Department of Fish and Wildlife standards for fish passage. Justin was the project lead for WRA including attending meetings with stakeholder groups involved in the restoration of Alameda Creek, as well as overseeing preparation of environmental documentation and resource agency permit applications.

MATT VAGGIONE, PE, SE | *Bridge and Structures Technical Advisor*

Matt has a structural background working on wall, bridge, tunnel, and light rail projects of various sizes and complexities in California, Washington, Hawaii, and Idaho. He has experience performing the structural design as well as managing multi-disciplinary teams. Matt's work has included alternatives analysis for structural design on various projects as well as design, plan development and construction support. Matt is a quick learner and strong collaborator who is looking forward to applying his technical and management skills towards challenging transportation projects.

YEARS OF EXPERIENCE

16

EDUCATION

MS, Structural Engineering, University of California, Berkeley

BS, Civil Engineering, University of California, Berkeley

REGISTRATION

Professional Civil Engineer - CA #75751

Structural Engineer - CA #6953

Civil/Structural Engineer - WA #50304

Professional Civil/Structural Engineer - ID #P-20357

Professional Structural Engineer - HI #PE-19694

KEY PROJECT EXPERIENCE

OAK AVE PEDESTRIAN BRIDGE REPLACEMENT PRELIMINARY STUDY; *City of South San Francisco, CA; Project Manager/Senior Engineer.* Project manager and senior engineer responsible for preliminary study for replacement of the Oak Ave Pedestrian Bridge over Colma Creek. The goal of this replacement is to reduce flooding. Alternatives needed to consider the current condition as well as future low-income housing developments on either side of the bridge. Key responsibilities included management of subconsultants, owner and third-party coordination, report preparation, and scope and budget management.

TICE CREEK BRIDGE; *City of Walnut Creek, CA; Project Manager.* Project manager for preliminary and final design of this bridge replacement project. This single span bridge is the sole access to a community of roughly 100 residences. Careful staging analysis is required to maintain vehicle access and operation of utilities for this community. This project also includes temporary strengthening design of the bridge to maintain legal loads until the bridge can be fully funded and replaced. This project is currently in the 65% design phase.

I-680 NORTHBOUND EXPRESS LANE/RUDGEAR ROAD WIDENING; *Contra Costa County, CA; Senior Engineer.* Senior Engineer working with HDR for the Contra Costa County Transportation Authority (CCTA) for the preliminary design of the I680 Northbound Express Lanes Project near Walnut Creek, CA. Matt is engineer of record for the widening of I-680 bridge over Rudgear Rd. This included preliminary design identifying the optimal alternative based on structural analysis and constructibility review of the existing structure which has been widened several times already. This project has required close coordination with Caltrans. The project is in the Environmental phase and the team will move forward with final design once that is complete.

QUINLEY AVENUE OVER BLACK RASCAL BRIDGE REPLACEMENT; *Merced County, CA; Senior Engineer.* Replacement of existing bridge over Black Rascal Creek with a new three-span CIP/PS concrete slab bridge. Senior engineer responsible for completion of final design. Tasks include updating plans and calculations, based on independent check comments, coordination with geotechnical and hydraulic subs, reviewing specifications, and providing oversight and direction on the development of the cost estimate.

SOUTHFORK BRIDGE AND VISITOR CENTER OUTLOOK, *San Mateo County, CA; Project Manager.* Project manager and technical oversight for two type selection memos to replace existing structures over the South fork of San Pedro Creek in the City of Pacifica, CA. Alternatives for replacing the two structures, as well as current measures to protect them were analyzed, in coordination with San Mateo County Public Works and Parks Departments, to select a preferred alternative.

ROB MELSHEIMER, PE | *Roadway Project Engineer/Engineer of Record*

YEARS OF EXPERIENCE

17

EDUCATION

MS, Transportation Engineering, Purdue University

BS, Civil Engineering, University of Missouri-Rolla

REGISTRATION

Professional Engineer - CA #83040

Rob is a civil engineer with 17 years of experience in roadway engineering, airport engineering, traffic, planning, and site development. His design experience encompasses roadway realignment, roadway widening, paving improvements, sidewalk and Americans with Disabilities Act (ADA) ramp design, signal relocation, signing and pavement marking, temporary traffic control plans, stage construction, safe routes to school, bike lanes and trails, parking lot layout, water and wastewater design, and commercial, residential, and industrial site development. Rob also has experience in developing traffic impact study reports and master circulation study reports. His technical skills further include horizontal and vertical alignment design, superelevation design, sight distance calculations, typical sections, quantity and cost estimates, and utility design. He is experienced in drafting in both AutoCAD and Microstation, designing with Civil3D and InRoads, and using several other transportation and traffic engineering software programs.

KEY PROJECT EXPERIENCE

UNIVERSITY DRIVE WIDENING; *City of Irvine, CA.* Rob was responsible for design of horizontal geometry, signing and striping, utility disposition, right-of-way acquisitions, and various construction details for a one-mile widening of University Drive from MacArthur Boulevard to Campus Drive. He also assisted with the cost estimate, utility company coordination, and Caltrans encroachment permit.

UTILITIES AND LANDSIDE ACCESS MODERNIZATION PROGRAM (LAMP) ENABLING PROJECTS (LULEP): DESIGN OF NEW A STREET TASK ORDER; *LAWA; Project Engineer*
Rob served as Project Engineer responsible for Design of New A Street Task Order issued under the $8 billion LULEP program to provide engineering, design, preconstruction, and construction services on improvements projects at Los Angeles International Airport (LAX). The LULEP program enables subsequent projects under LAMP such as the Automated People Mover (APM), Consolidated Rent-a-Car Facility (ConRAC), Integrated Transportation Facilities (ITF), and others. This Task Order was for 1,800 feet of a new 4-lane roadway between Westchester Parkway and 96th Street. Rob was responsible for design of site demolition, new roadway, sidewalks and ADA ramps, signing, striping, and two intersections. Rob helped achieve permitting with LADBS, LABOE, and LADOT.

I-80/POWELL STREET INTERCHANGE TRANSIT ACCESS IMPROVEMENTS; *Metropolitan Transportation Commission; Lead Civil Engineer.* Rob served as Lead Civil Engineer responsible for design of civil improvements. This project was for planning, engineering, and design for the I-80 interchange at Powell Street in the City of Emeryville that exists along the key Transbay/Bay Bridge transit corridor that connects housing in the East Bay with jobs in San Francisco. Operational deficiencies at this interchange have been identified as a source of increased travel time and decreased reliability for transit vehicles that enter and exit I-80 via Powell Street. The project proposes several interchange improvements aimed at addressing the identified deficiencies experienced by transit vehicles.

I-880 INNOVATION BRIDGE & TRAIL; *Alameda County Transportation Authority; Lead Civil Engineer.* Rob served as Lead Civil Engineer responsible for development and delivery of this project's civil design. This project was for the environmental clearance, preliminary engineering, and final design services for the I-880 Bicycle/Pedestrian Bridge and Trail Project (East Bay Greenway Trail – Reach 6). The project aims to be a signature multimodal gateway into Fremont's Innovation District near the Tesla campus. It will provide an essential Class I bicycle and pedestrian link between the San Francisco Bay Trail and the East Bay Greenway Trail at Fremont Blvd. The project includes a new 500-foot-long, architecturally significant bridge that crosses over I-880, connecting from Kato Road on the west side to Landing Parkway on the east side, with approximately 2,000 linear feet of Class I multiuse trail along Agua Caliente Creek.

THOMAS TRUCHEMENT, PE | *Bridge Design Engineer/Engineer of Record*

Thomas has experience in the design of bridges and other structures including drainage outlets and retaining walls. Since joining Consor, Thomas has worked on over 15 projects incorporating full bridge designs, retaining wall designs including soldier piles and MSE walls, and in service structure inspections. Thomas brings a high standard of excellence to his work, which leads to not cutting corners and doing things correctly the first time.

YEARS OF EXPERIENCE

4

EDUCATION

MS, Structural Engineering, University of Florida

BS, Civil Engineering, University of Florida

REGISTRATION

Professional Engineer
CA - #95151

KEY PROJECT EXPERIENCE

ARROYO SECO MP 2.5, *Monterey, CA; Bridge Design Engineer.* Responsible for structural design of earth retaining system. The Arroyo Seco Road MP 2.5 Storm Damage Repair Project, situated in Monterey County, California, addresses severe storm-induced damage to the roadway. Managed in collaboration with Consor North America, Inc., the project aims to restore safe access for residents, commuters, and emergency services. Three primary repair alternatives, including a Geogrid Reinforced Earth Retaining Structure, were evaluated based on cost, construction flexibility, and environmental impacts, with the geogrid option emerging as the preferred choice. Critical for securing FEMA funding for repair and hazard mitigation, this project holds significant importance in mitigating hazards and preserving roadway integrity.

ARROYO SECO MP 4.2, *Monterey, CA; Bridge Design Engineer.* Responsible for structural design of earth retaining system. The Arroyo Seco Road Storm Damage Repair Project in Monterey County, California, seeks to address extensive damage caused by 2023 winter storms near Mile Post 4.2. The project is crucial for restoring safe access to residents, emergency services, and recreational areas. It primarily involves the construction of a Reinforced Concrete Stitch Pile Wall with tiebacks, the preferred repair option due to its feasibility and minimal traffic disruption during construction. The repair project must navigate various constraints, including equipment access, emergency vehicle accessibility, and adhering to the County's right-of-way.

CHIMNEY ROCK ROAD, *San Luis Obispo, CA; Bridge Design Engineer.* Responsible for structural design of temporary bridge foundation. Accelerated timeline road reopening project (2023 winter storms aftermath)- Design of abutment foundations to support the deployment of a temporary ACROW bridge superstructure. Consor developed a comprehensive abutment plan set, incorporating roadway and creek grading to ensure the seamless and efficient execution of the project.

HUASNA TOWNSITE, *San Luis Obispo, CA; Bridge Design Engineer.* Responsible for structural design of semi temporary bridge foundation. Accelerated timeline road reopening project (2023 winter storms aftermath) - Design of abutment foundations to support the deployment of a temporary ACROW bridge superstructure. Consor developed a comprehensive abutment plan set, incorporating roadway and creek grading to ensure the seamless and efficient execution of the project.

PRADO ROAD, *San Luis Obispo, CA; Bridge Design Engineer.* Responsible for design of soldier pile retaining wall in San Luis Obispo Creek to act as protection for bridge abutments. Consor developed a comprehensive plan set to develop a retaining wall system that can handle high stream flows and contain flooding to the channel.

Ellen Tiedemann, PE

Senior Engineer

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Ellen has a Bachelor's Degree in Civil Engineering from the University of the Pacific. Her responsibilities include managing field explorations, performing engineering analysis, and preparing geotechnical reports. As a Project Manager, Ellen is responsible for overseeing report preparation, communications with clients, and managing staff. Project types include Bridges, Pavement Design, Pipelines, Pump Stations, and Water/Wastewater Treatment Facility Projects. Ellen joined the Crawford & Associates ownership team in 2021.

EDUCATION

B.S. Civil Engineering, University of the Pacific, Stockton, 2017

REGISTRATIONS

- Civil Engineer, CA #91681
- Civil Engineer, WA #23002528

ORGANIZATIONS

- American Public Works Association
- Women's Transportation Seminar
- Young Professionals in Transportation

AWARDS

- APWA Sacramento Chapter 2022 Young Leader of the Year
- APWA Emerging Leader Academy Class XVI Graduate

EXPERIENCE

At Crawford: 6.5 years

Total: 6.5 years

REPRESENTATIVE PROJECTS

Bolinas Lagoon Wye Wetlands Project, Marin County, CA

The Marin County Open Space District Bolinas Lagoon Wye Wetlands Project is aimed at providing roadway improvements to restore wetlands/streams, protect wildlife, improve safety, reduce flooding, and create climate change resiliency. The project includes roadway realignment, a new single-span bridge, and intersection removal to restore natural wetlands. As Project Engineer, Ellen reviewed existing site conditions and provided preliminary seismic data for the site. Provided preliminary recommendations for CIDH piles for the bridge foundations and use of geotextiles, wick drains, and lightweight fill for subgrade and embankment stabilization.

Sulphur Creek Fish Passage Improvement Project, Napa County, CA

Project consists of removal of an existing fish ladder and grade control downstream of a bridge and regrading of the channel to provide improved habitat. As part of the regrading, the channel will be lowered approximately 4ft below grade at an existing bridge founded on spread foundations. Ellen will coordinate and prepared a Geotechnical Design Memorandum including recommendations for new retaining walls protecting the bridge foundations and excavatability within the channel.

Blagen Road Repair Project (FEMA PW 00130), Calaveras County, CA

Winter storms in 2017 clogged an existing culvert and washed out the roadway. As Project Engineer, Ellen completed a Final Foundation Report for a new, 52 ft long, 96-inch x 50-inch metal arch culvert. The channel will be lowered several feet and regraded to transition to the natural channel. A new concrete headwall will be constructed at the inlet and the channel lined with a 2 ft thick section of rock slope protection (RSP) upstream and downstream from the culvert ends. Crawford drilled, logged, and completed laboratory testing on representative soil samples, reviewed site geology and subsurface conditions, evaluated groundwater, provided scour and corrosion evaluations, and provided seismic design information and recommendations. Recommendations were provided for the arched culvert foundations, headwall, grading, and new pavement sections.

County Road 96 Bridge over Union School Slough, Yolo County, CA

As Project Engineer, Ellen prepared a Preliminary Foundation Memorandum. The proposed bridge replacement will consist of an approximately 44-foot-long bridge structure located approximately 700 ft south of the existing bridge to allow Union School Slough to flow directly east. A culvert crossing will be provided at the existing bridge location. Based on existing soil conditions and results of exploratory borings, Crawford recommended CIDH Concrete Piles or driven piles.

Shake Ridge Road Storm Damage, Amador County, CA

Project Engineer for a Preliminary Geotechnical Memorandum. The Memo was used to evaluate alternatives toward design of a preferred option, and the goal of remedial work is to rebuild and stabilize the road through the affected area. Completed a field investigation, laboratory testing and a corrosion evaluation, and measured groundwater levels to provide recommendations for repair. Options included a stitch pile wall, soldier pile tie-back wall, and viaduct.

North County Corridor Claribel Road Extension Project, Stanislaus County, CA

The project extends SR 219 approximately 1.9 miles and included 9 total bridge structures. As Project Manager, Ellen assisted in preparation reports, including subsurface explorations, groundwater data, and as-built foundation data for existing structures. Foundation recommendations include CIDH Piles and Driven Piles for the bridge structures.

WRA, Inc.

2169-G East Francisco Blvd
San Rafael CA, 94901
P: 415.454.8868

wra-ca.com

Agenda Item 6.A. – Executive Director's Report

Project Updates

Reach 1-

Please save the date- the State of the Estuary Conference is being rescheduled for May 28-29, 2024, at the Oakland Scottish Rite Center. The SFCJPA Reach 1 project will be honored with an environmental award on May 28, 2024, at approximately 10:15-10:50.

Reach 2 -

Project Activities –

Master Services Agreement – WRA Environmental Consultants Inc. has been selected by the review group composed of staff from all five SFCJPA members entities. As a Board Action item, the WRA proposal and contract is part of your board packet.

Permitting for the Newell Road Bridge is moving forward with additional mitigation required by Resource Agencies. Staff is formulating this additional mitigation now.

The USACE is reviewing the updated HEC-RAS hydraulic model for certification, which is anticipated by about August.

We are working with the San Francisco Estuary Partnership, grant administrator for our DWR/Prop 1, Reach 2 grant, on an updated scope of work and requesting an increased grant amount. The additional requested funds, if awarded would be to replace the temporary wooden floodwall along Woodland and University Avenues. The selection committee anticipates a decision on May 7, 2024.

Sediment working group and sediment management – After discussion among our members, SFCJPA staff are considering seeking regulatory permits for sediment removal and regular maintenance at the West Bayshore and Highway 101 over-crossing on behalf of CalTrans. We will be scoping this work as part of next fiscal year's endeavors.

Reach 2 Project Schedule and Critical Path –

Once we on-board our MSA consultant we will be updating our project schedule and project critical path.

Operations and Administration–

The Executive Director was asked to attend a City of Palo Alto town hall meeting on March 28, 2024, at Duveneck Elementary School. Over 100 Palo Alto residents came to hear about public safety, traffic, and the Newell Road Bridge project.

We have interviewed several candidates for the open Project Manager position and hope to make an announcement soon.

FY24/25 Budget – Staff has prepared a proposed draft budget for the Finance Committee's input. We are working with the Finance Committee to set a meeting time.

Report on any expenditure between $30,000 and $50,000 – There are none to report.

Forward View of Board Meetings

Date	Location	Suggested Topics
May 23, 2024	City of Menlo Park Council Chambers 751 Laurel Street Menlo Park, CA 94025	Study Session - Public Finance
June	City of Palo Alto Council Chambers 250 Hamilton Ave Palo Alto, CA 94301	Reach 2
July	BOARD RECESS - NO REGULAR MEETING	

SAN FRANCISQUITO CREEK

JOINT POWERS AUTHORITY

Regular Meeting of the Board of Directors
April 25, 2024

AGENDA

Members of the Public may speak on any agenda item for up to three minutes

1. ROLL CALL
2. APPROVAL OF AGENDA: Changes or additions to the agenda.
3. Approval of Draft Minutes: Regular board meeting of 3/28/24
4. PUBLIC COMMENT: Individuals may speak on a non-agendized topic for up to three minutes on a topic within the SFCJPA's jurisdiction.

Members of the public speaking in person should submit a speaker card to the Clerk of the Board, indicating which agenda item or items they wish to speak about, in order to be recognized. When the agenda item is called, please stand at the podium and speak clearly.

Members of the public speaking via video conference should raise their hand, indicating their desire to ask a question or comment. They will be recognized by the Clerk of the Board and once unmuted and recognized, please speak clearly.

AGENDA ITEM 5 – Action Items

Agenda Item 5.A. - Recommended Master Services Agreement (MSA) Consultant and Proposed Contract with

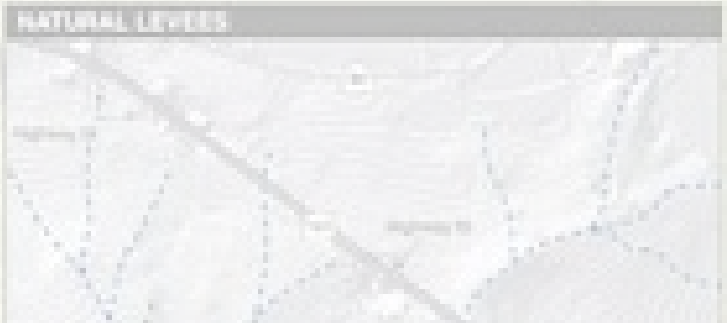
WRA Environmental Consultants

AGENDA ITEM 6 – Information Items

6.A - Executive Director's Report

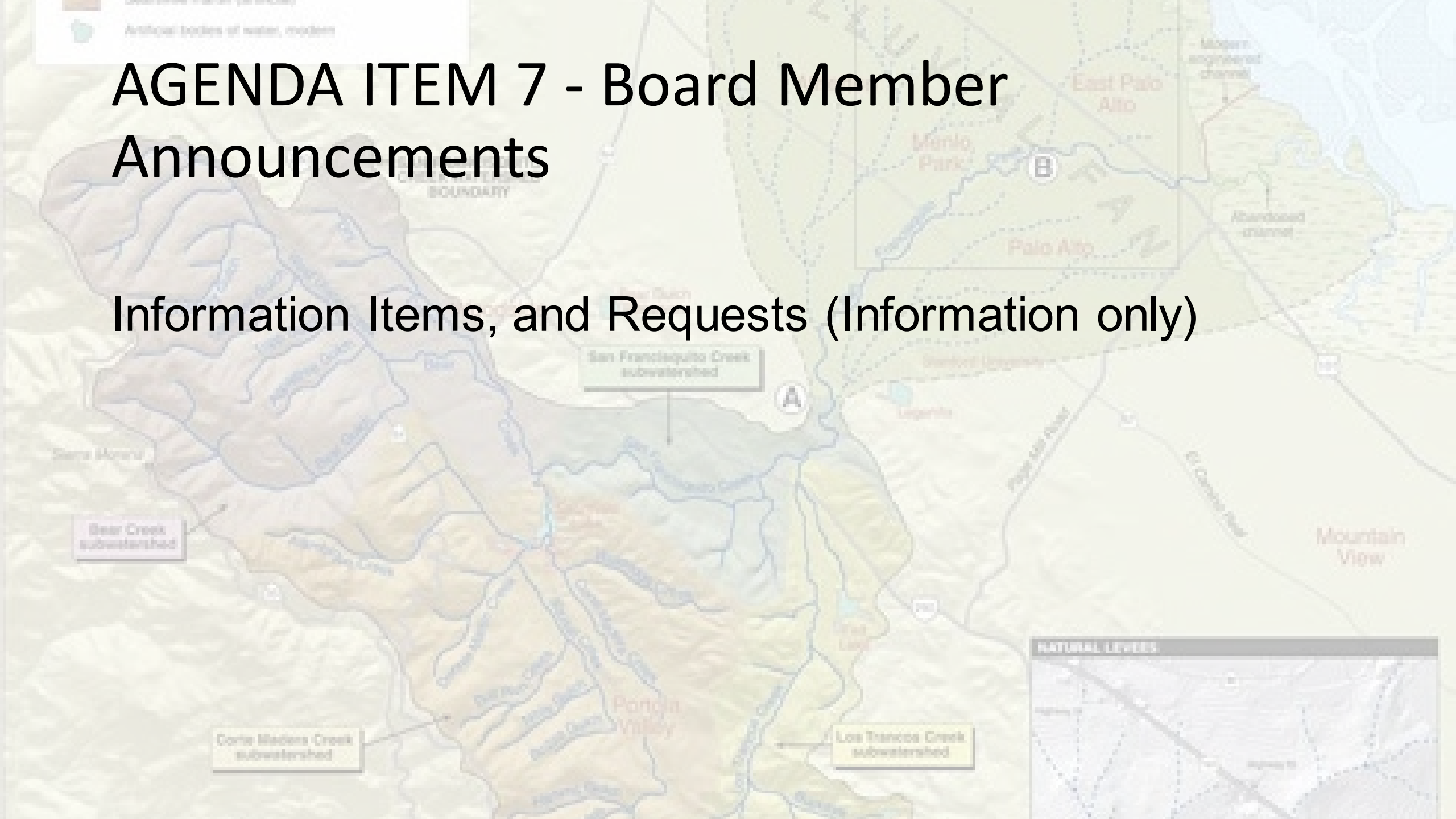
- Project Updates

- Operations and Administrative Updates



AGENDA ITEM 7 - Board Member Announcements

Information Items, and Requests (Information only)



Agenda Item 8

ADJOURNMENT

Photo Credit: Mark Dinan.
December 10, 2023