CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

In the matter of:	)	
	)	
San Diego County Sanitation District	)	**Order No. R9-2019-0020**
	)	
	)	
February 2017 Sanitary Sewer Overflow, Los Coches Creek, San Diego River	)	**Settlement Agreement and Stipulation for Entry of Administrative Civil Liability Order**
	)	
	)	
	)	
Place ID: 631623	)	

I. INTRODUCTION

This Settlement Agreement and Stipulation for Entry of Administrative Civil Liability Order (Order) is entered into by and between the Assistant Executive Officer of the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) on behalf of the San Diego Water Board Prosecution Staff (Prosecution Staff), and the San Diego County Sanitation District, an independent entity formed and operating under the County Sanitation District Act, Health and Safety Code section 4700, et seq. (Sanitation District, District, or Discharger) (collectively, Parties). This Order is presented to the San Diego Water Board for adoption as an order by settlement pursuant to Government Code section 11415.60.

II. RECITALS

1. The sewer facilities are owned and operated by the Sanitation District. The Sanitation District provides sewer service to nearly 36,000 customers in the unincorporated areas of San Diego County. Wastewater from the communities of Alpine, East Otay Mesa, Lakeside, Spring Valley, and Winter Gardens are conveyed through a network of collector pipes, trunk lines, and pump stations to facilities owned by the City of San Diego for treatment and disposal. Wastewater from the rural communities of Julian, Pine Valley, and Campo is conveyed to nearby District-operated facilities for treatment and disposal. The District's sanitary sewer system is comprised of approximately 432 miles of sewer lines, 8,200 manholes, 8 pump stations, several pressurized force mains, and 3 wastewater treatment plants.

2. From February 28, 2017 to March 17, 2017 (18 days of discharge) a Sanitation District owned and operated 12-inch sewer main discharged **762,739 gallons** of untreated raw sewage into Los Coches Creek, a water of the United States, in the vicinity of Sierra Alta Way in El Cajon, CA. The sewer main was damaged as result of stream bank erosion that occurred during a 25-year, 24-hour storm event near the end of February 2017. The damaged sewer main was discovered by Sanitation District staff during a routine maintenance inspection. The starting date of the sanitary sewer overflow (SSO) was determined by information obtained from a nearby property owner who noticed the pipe break on February 28, 2017. The eyewitness failed to contact any agency to report the pipe break.

3. In September 2018, the Prosecution Team and Sanitation District entered into confidential settlement negotiations to resolve alleged violations arising from the SSO. The Discharger was notified of these violations in a Notice of Violation (R9-2018-0009) and Investigative Order (R9-2018-0010) issued by the San Diego Water Board on January 17, 2018. The Notice of Violation and Investigative Order were originally issued to the County of San Diego based on the fact that the County was the entity that obtained coverage under State Water Resources Control Board's Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (Order No. 2006-0003-DWQ, Statewide General Order). During the course of settlement negotiations, it was determined that the Sanitation District was the appropriate entity bearing responsibility for ownership and operation of the sewer facilities.

4. The Statewide General Order regulates all entities that own or operate a sanitary sewer system greater than one mile in length that collects or conveys untreated or partially treated wastewater to a publicly owned treatment facility in the State of California. Prohibition C.1 of the Statewide General Order states that "[a]ny SSO that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited." Prohibition C.2 states "[a]ny SSO that results in a discharge of untreated or partially treated wastewater that creates a nuisance as defined in California Water Code Section 13050(m) is prohibited."

5. In addition, and prior to the adoption of the Statewide General Order, the San Diego Water Board adopted Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region (Order No. R9-2007-0005) (Regional General Order) establishing additional requirements beyond the minimum requirements established in the Statewide General Order. Prohibition B.1 of the Regional General Order states "[t]he discharge of sewage from a sanitary sewer system at any point upstream of a sewage treatment plant is prohibited."

6. The discharge of raw sewage lasting from February 28, 2017 to March 17, 2017 was in alleged violation of Clean Water Act section 301 and Water Code section 13376 which prohibits the discharge of pollutants except in compliance with a National Pollutant Discharge Elimination System (NPDES) permit and the Water Quality Control Plan for the San Diego Basin (Basin Plan) which states "the discharge of waste into waters of the State in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in California Water Code Section 13050, is prohibited." In addition, the discharge of raw sewage by the Sanitation District was in alleged violation of the Statewide General Order and the Regional General Order.

7. These alleged violations constitute violations of the California Water Code section 13385 for which discretionary penalties may be assessed pursuant to California Water Code section 13385, subdivisions (a) and (c).

8. The Parties have engaged in settlement negotiations and agree to settle this matter without administrative or civil litigation by presenting this Order to the San Diego Water Board for adoption as an order pursuant to Government Code section 11415.60.

9. Prosecution Staff asserts that the resolution of the alleged violations is fair, reasonable, and fulfills its enforcement objectives, that no further action is warranted concerning the specific violations alleged in Attachment A except as provided in this Order, and that this Order is in the best interest of the public.

III. STIPULATIONS

The Parties stipulate to the following:

10. **Administrative Civil Liability**: The Discharger hereby agrees to administrative civil liability totaling **SIX HUNDRED SIXTY TWO THOUSAND FOUR HUNDRED AND FOURTEEN DOLLARS ($662,414)**. Within thirty (30) days of the effective date of this Order, Discharger agrees to remit, by check, **$331,207**, payable to *State Water Pollution Cleanup and Abatement Account*, and shall indicate on the check the number of this Order. The Discharger shall send the original signed check referencing this Order number (R9-2019-0020) to the following address:

    Division of Administrative Services
    ATTN: Accounting, State Water Resources Control Board
    1001 I Street 18th Floor
    Sacramento, California 95814

    and shall send a copy to the Prosecution Staff Party Contact at the address listed in Paragraph 12. The remaining **$331,207** in administrative civil liability will be satisfied through the implementation of an Enhanced Compliance Action (hereinafter "ECA" or "Project").

    The total cost associated with the ECA will be referred to as the "ECA Amount" and the **$331,207** not paid as above will be referred to as the "Suspended Liability" of the total administrative civil liability.

11. **Compliance with Applicable Laws**: The Discharger understands that the payment of administrative civil liability in accordance with the terms of this Order does not relieve the Discharger of its need to comply with applicable laws and that new violations of the type alleged in Attachment A may subject it to further enforcement, including additional administrative civil liability.

12. **Party Contacts for Communications related to the Order**:

    For the Prosecution Staff:
    Chiara Clemente
    California Regional Water Quality Control Board, San Diego Region
    2375 Northside Drive, Suite 100
    San Diego, California 92108
    Chiara.Clemente@waterboards.ca.gov
    (619) 521-3371

    For the Discharger:
    Daniel S. Brogadir
    San Diego County Sanitation District
    5500 Overland Avenue, Suite 315
    San Diego, California 92123
    Daniel.Brogadir@sdcounty.ca.gov
    (858) 694-2714

13. **Enhanced Compliance Action**: The Parties agree that the Suspended Liability specified in Paragraph 10 is for an ECA. The amount associated with the Project shall be treated as a suspended administrative civil liability at the time of Project completion for purposes of this Order. The San Diego Water Board is entitled to recover any funds that are not expended in accordance with this Order. A detailed project description, including milestones, budgets, and performance measures are attached hereto as Attachment C and incorporated herein by reference.

    a. **Project Description**: Los Coches Sewer Lining and Pilot Exfiltration Quantification Study: The Sanitation District proposes to undertake a structural lining of approximately 7,505 feet of the Los Coches Sanitary Sewer thus enhancing protection of the sewer during wet weather events and reducing a potential source of pollution to the watershed. In addition, the Sanitation District will conduct a pilot study of sanitary sewer exfiltration rates before and after lining, to develop analytical methods to quantify rates of exfiltration for public sewers.
        i. **Agreement for the Discharger to Fund, Report, and Guarantee Implementation of the Project**: The Sanitation District represents that:

1. The Project is unrelated in scope to the actions completed to remedy the issues identified in this Order, goes above and beyond the requirements in tentative Investigative Order No. R9-2019-0014 (formerly No. R9-2018-0021),[1] and is not otherwise required by law;
2. It will fund the Project in the amount described in this Order;
3. It will provide certifications and written quarterly reports detailing Project implementation, consistent with the terms of this Order; and
4. It will guarantee payment by remaining liable for the Suspended Liability until the Project is completed and accepted by the San Diego Water Board.

b. **Representation of the Discharger**: As a material consideration for the San Diego Water Board's acceptance of this Order, the Discharger represents that it will utilize the Suspended Liability outlined in Paragraph 10 to implement the Project in accordance with the Project proposal as described in Attachment C. The Discharger understands that its promise to implement the Project in accordance with the schedule for implementation is a material condition of this settlement of liability between the Parties.

c. **Request for Extension of Completion Date**: If the Discharger cannot complete the Project within 36 months following adoption of the Order, due to circumstances beyond the Discharger's anticipation or control, the Discharger shall notify the Executive Officer in writing within thirty (30) days of the date the Discharger first knew of the event or circumstance that caused or could cause a violation of this Order. The notice shall describe the reason for the nonperformance and specifically refer to this Paragraph. The notice shall describe the anticipated length of time the delay may persist, the cause or causes of the delay, an updated schedule for implementation, and the anticipated date of compliance. The Discharger shall adopt all reasonable measures to avoid and minimize such delays.

[1] Tentative Order R9-2019-0014 (formerly R9-2018-0021) directs multiple entities, including the Sanitation District, to identify and quantify the sources and transport pathways (including exfiltration) of human fecal material to the San Diego River watershed. Although the Project herein can inform those efforts by piloting methodology useful for the Tentative Order, it would not satisfy conditions in Tentative Order R9-2019-0014. In addition, the Sanitation District has not been directed to conduct studies related to measuring the effectiveness of using Cured in Place Pipe (CIPP) sewer line protection.

The determination as to whether circumstances were beyond the reasonable control of the Discharger and its agents will be made by the Executive Officer. Where the Executive Officer concurs that compliance was or is impossible, despite the timely good faith efforts of the Discharger, due to circumstances beyond the control of the Discharger that could not have been reasonably foreseen and prevented by the exercise of reasonable diligence by the Discharger, a new Completion Date shall be established and this Order will be revised accordingly. The Executive Officer will endeavor to grant a reasonable extension of time if warranted up to but not exceeding one year.

d. **Project Oversight**: The Discharger agrees to oversee implementation of the Project. Additional oversight of the Project will be provided by the San Diego Water Board. Pursuant to Section VIII.G of the State Water Resources Control Board, Policy on Supplemental Environmental Projects (SEP Policy), the Discharger is solely responsible for paying all reasonable oversight costs incurred by the San Diego Water Board to oversee the Project. The oversight costs are in addition to the total administrative civil liability and are not credited towards the Discharger's obligation to fund the Project. Reasonable oversight tasks to be performed by the San Diego Water Board include, but are not limited to, updating CIWQS and SMARTS, reviewing and evaluating progress, conducting site inspections, reviewing the final completion report, verifying completion of the Project with a site inspection, and auditing appropriate expenditure of funds. The Discharger agrees to pay $4,000 in Oversight Costs for the life of the Project. Similar to the administrative civil liability, this payment is due within 30 days of the entry of this Order by the San Diego Water Board, and under the terms articulated in paragraph 10. If the Discharger elects to send one check to cover the administrative civil liability and the Project oversight costs for a total of **$335,207**, the Discharger will submit a cover letter with the check explaining the combined amounts and identifying the number of this Order.

e. **Publicity**: If the Discharger publicizes the Project or results of the Project, it will state in a prominent manner that the Project is being undertaken as part of a stipulated settlement of a San Diego Water Board enforcement action.

f. **Submission of Reports:** The Discharger agrees to submit quarterly reports to the San Diego Water Board. Quarterly monitoring reports will be due on the 15th day of each of the months of April, July, October, and January, starting with the first full quarter after the adoption date of this Order, and will include information relating to the implementation progress of the Project, including photo-documentation, and any relevant deliverables. The reports shall be provided in electronic copy to sandiego@waterboards.ca.gov with **CMeans:PIN#631623** included in the subject line.

g. **Audits and Certification of Completion of Project**

Certification of Completion:

1. Within thirty (30) days of completion of the Project, the Discharger shall submit a certified statement of completion (Certification of Completion). The Discharger's authorized representative shall submit the Certification of Completion under penalty of perjury to the Party Contact listed in Paragraph 12 above.

2. The certification shall include the following:
   a. **Certification of Expenditures**: Certification documenting all expenditures by the Discharger. The expenditures may include external payments to outside vendors or contractors implementing the Project. If applicable, the expenditures may include the costs of internal management resources, provided that such expenditures are directly related to the development and implementation of the Project. In making such verification, the official may rely upon normal company and project tracking systems that capture employee time expenditures and external payments to outside vendors such as environmental or information technology contractors or consultants. The Discharger shall provide any additional information requested by the San Diego Water Board staff which is reasonably necessary to verify Project expenditures. The certification need not address any costs incurred by the San Diego Water Board for oversight.

   b. **Certification of Performance of Work**: Certification that the Project has been completed in accordance with terms of this Order. Such documentation may include photographs, invoices, receipts, certifications, and other material reasonably necessary for the San Diego Water Board to evaluate the completion of the Project and costs incurred by the Discharger.

c. **Certification that Work Performed Met or Exceeded Requirements of CEQA and other Environmental Laws (where applicable)**: Certification that the Project meets or exceeds the requirements of CEQA and/or other environmental laws. Unless the Discharger is exempt from compliance with CEQA, the Discharger shall, before initiating construction, consult with other interested State Agencies regarding potential impacts of the Project. Other interested State Agencies include, but are not limited to, the California Department of Fish and Wildlife. To ensure compliance with CEQA where necessary, the Discharger shall provide the San Diego Water Board with the following documents:

   i. Categorical or statutory exemptions;
   ii. Negative Declaration if there are no "significant" impacts;
   iii. Mitigated Negative Declaration if there are potential "significant" impacts but revisions to the Project have been made or may be made to avoid or mitigate those potential significant impacts;
   iv. Environmental Impact Report if there are "significant" impacts.

3. **Third Party Audit**: If the San Diego Water Board Assistant Executive Officer obtains information that reasonably suggests that the Discharger has not expended money in the amounts claimed by the Discharger, or has not adequately completed any of the work in the agreed upon Project, the San Diego Water Board Assistant Executive Officer may require, and the Discharger shall submit, at the Discharger's sole cost, a report prepared by an independent third party or parties acceptable to the Assistant Executive Officer, stating that in its professional opinion the Discharger has expended money in the amounts claimed by the Discharger. In the event of such an audit, the Discharger agrees that it will provide the third party auditor with access to all documents which the auditor reasonably requests. Such information shall be provided to the San Diego Water Board Assistant Executive Officer within three months of the completion of the Discharger's Project obligations. The audit need not address any costs incurred by the San Diego Water Board for oversight.

4. **San Diego Water Board Acceptance of Completed Project**: Upon the Discharger's satisfaction of its obligations under this Order, the completion of the Project and any audit, the Designated Sanitation District Representative shall request that the San Diego Water Board, or the Board's delegee, issue a statement indicating that the Project has been completed in satisfaction of the terms of this Order and that any remaining Suspended Liability is permanently suspended. The issuance of the statement shall terminate any further obligation of the Discharger under this Order.

5. **Failure to Expend All Suspended Administrative Civil Liability Funds on the Approved Project**: In the event that the Discharger is not able to demonstrate to the reasonable satisfaction of the Designated San Diego Water Board Representative that the Suspended Liability amount listed in Paragraph 10 has been spent for the completed Project, the Discharger shall pay, as an administrative civil liability the positive difference, if any, between the Suspended Liability amount and the amount the Discharger can demonstrate was actually spent on the Project.

6. **Failure to Complete the Project**: If the Project is not fully implemented as described in Attachment C and required by this Order by the agreed upon Completion Date, the Designated San Diego Water Board Representative shall issue a Notice of Violation. As a consequence, the Discharger shall be liable to pay the entire Suspended Liability or, some portion thereof.

h. **Reporting Dates:** The following is a list of required reports and respective due dates for activities presented in the preceding stipulations:

Stipulated Order Reporting Dates

Activity	Due Date
1st Project status report	July 15, 2019
Remaining Project Status Reports	15th day of April, July, October, and January until the final Project certification report
Certified Final Project Completion Report	No later than June 13, 2022

i. **San Diego Water Board Not Liable**: Neither the San Diego Water Board members nor the San Diego Water Board staff, attorneys, or representatives shall be liable for any injury or damage to person or property resulting from acts or omissions by the Discharger, its directors, officers, employees, agents, representatives, or contractors in carrying out activities pursuant to this Order, nor shall the San Diego Water Board, its members or staff be held as parties to or guarantors of any contract entered into by the Discharger, its directors, officers, employees, agents, representatives, or contractors in carrying out activates pursuant to this Order.

The Discharger covenants not to sue or pursue any administrative or civil claim or claims against any State Agency or the State of California, or their officers, employees, representatives, agents, or attorneys arising out of or relating to any matter expressly addressed by this Agreement, this Order, or the Project.

14. **Attorney's Fees and Costs**: As between the parties, Discharger shall bear its own attorneys' fees and costs arising from its own counsel in connection with the matters set forth herein. The San Diego Water Board shall not seek and shall bear its own fees and costs beyond the amounts paid pursuant to the Order. No staff costs calculated herein, either for prosecution of this matter or for Project oversight, represent attorneys' fees.

15. **Matters Addressed by Order**: Upon the San Diego Water Board's adoption of this Order, this Order presents a final and binding resolution and settlement of alleged violations of the Basin Plan Prohibitions, and Statewide and Regional General Orders (Violation Nos. 1-4, and 7 as identified in NOV No. R9-2018-0009).

Violations Nos. 5-6 and 8 in NOV No. R9-2018-0009 addressed the placement of fill into Los Coches Creek by the District as part of the emergency response to repair the broken sewer line. After investigation, it was determined that the District obtained an emergency Clean Water Act Section 401 certification for RGP 63 as more fully detailed in Attachment A hereto, but did not complete associated mitigation requirements. Concurrent with settlement negotiations, the District has developed a mitigation plan (Plan) that is satisfactory to San Diego Water Board staff that addresses the placement of the fill. This Plan is attached hereto as Exhibit D. The San Diego Water Board will suspend any enforcement of Violation Nos. 5-6 and 8 in NOV No. R9-2018-0009 for nine months in order to allow the District to implement the Plan. Upon the District's completion of required mitigation construction by November 1, 2019, as outlined in the Plan, and upon the provision of a Certificate of Completion consistent with Section 13.g.1 above, Violation Nos. 5-6 and 8 shall be deemed to be finally and conclusively resolved.

Other than the aforementioned violations, there are no other violations identified in NOV No. R9-2018-0009 and Investigative Order No. R9-2018-0010 and no other violations shall be alleged, asserted, or prosecuted in connection with the discharge event covered by this Order (the aforementioned matters are referred to collectively as the "Covered Matters"). The provisions of this Paragraph are expressly conditioned on the payment of the administrative civil liability, the successful completion of the Project, and timely competition of the mitigation work as outlined in the attached Plan and provided above.

16. **Public Notice**: The Discharger understands that the San Diego Water Board will conduct a thirty (30) day public review and comment period prior to consideration and adoption of the Order. If significant new information is received that reasonably affects the propriety of presenting this Order to the San Diego Water Board for adoption, the Assistant Executive Officer may unilaterally declare this Order void and decide not to present it to the San Diego Water Board. The Discharger agrees that it may not rescind or otherwise withdraw its approval of this proposed Order.

17. **No Waiver of Right to Enforce**: The failure of the Prosecution Staff or the San Diego Water Board to enforce any provision of this Order shall in no way be deemed a waiver of such provision, or in any way affect the validity of the Order. The failure of the Prosecution Staff or San Diego Water board to enforce any such provision shall not preclude it from later enforcing the same or any other provision of this Order.

18. **Procedural Objections**: The Parties agree that the procedure contemplated for adopting the Order by the San Diego Water Board and review of this Order by the public is lawful and adequate. In the event procedural objections are raised prior to the Order becoming effective, the Parties agree to meet and confer concerning any such objections, and may agree to revise or adjust the procedure as necessary and advisable.

19. **Interpretation**: This Order shall be construed as if the parties prepared it jointly. Any uncertainty or ambiguity shall not be interpreted against any one Party. Notwithstanding anything to the contrary in this Agreement, if there are disputes between the Parties over the interpretation of this Agreement, the Parties first will meet and confer in good faith to resolve the dispute. If the Parties are unable to reach a resolution in thirty days, the Parties will inform the Executive Officer of the Regional Board who will make a finding on the interpretation of this Agreement. If after the Executive Officer's decision, the Parties are still unable to agree to the interpretation of this Agreement, the Parties may bring an action in a Superior Court for the State of California located in San Diego County.

20. **Modification**: This Order shall not be modified by any of the Parties by oral representation made before or after its execution. With the exception of Paragraph 13.c above, all modifications must be in writing, signed by all Parties, and approved by the San Diego Water Board.

21. **If Order Does Not Take Effect**: In the event that this Order does not take effect because it is not approved by the San Diego Water Board or is vacated in whole or in part by the State Water Board or a court, the Parties acknowledge that they expect to proceed to a contested evidentiary hearing before the San Diego Water Board, on a future date after reasonable notice and opportunity for preparation, to determine whether to assess administrative civil liability for the underlying alleged violations, unless the Parties agree otherwise. The Parties agree that all oral and written statements and agreements made during the course of the settlement discussions or as set forth in this Agreement are not admissions of fault or guilt and will not be admissible as evidence in such a hearing. The Parties agree to waive any and all objections based on settlement communications in this matter, including, but not limited to:

    a. Objections related to prejudice or bias of any of the San Diego Water Board members or their advisors and any other objections that are premised in whole or in part on the fact that the San Diego Water Board members or their advisors were exposed to some of the material facts and the Parties' settlement positions as a consequence of reviewing this Order, and therefore may have formed impressions or conclusions prior to any contested evidentiary hearing on a Complaint in this matter; or,

    b. Laches or delay or other equitable defenses based on the time period for administrative or judicial review to the extent this period has been extended by these settlement proceedings.

22. **Waiver of Hearing**: The Discharger has been informed of the rights provided by California Water Code section 13323(b), and subject to this Paragraph hereby waives its right to a hearing before the San Diego Water Board prior to the adoption of this Order. This waiver will not apply if the Order does not take effect.

23. **Waiver of Right to Petition**: The Discharger hereby waives its right to petition the San Diego Water Board's adoption of the Order as written for review by the State Water Board, and further waives its right, if any, to appeal the same to a California Superior Court and/or any California appellate level court. The waiver will not apply if the Order does not take effect.

24. **Covenant Not to Sue**: Upon adoption of the Order, the Discharger covenants not to sue or pursue any administrative civil claim(s) against any State Agency or the State of California, its officers, board members, employees, representatives, agents or attorneys arising out of or relating to any Covered Matters, and the San Diego Water Board covenants not to sue or pursue any administrative civil claims against the Discharger for the Covered Matters.

25. **San Diego Water Board is Not Liable**: Neither the San Diego Water Board members nor the San Diego Water Board staff, attorneys, or representatives shall be liable for any injury or damage to persons or property resulting from the acts or omissions by the Discharger, its directors, officers, employees, agents, representatives or contractors in carrying out activities pursuant to this Order.

26. **Authority to Bind**: Each person executing this Order in a representative capacity represents and warrants that he or she is authorized to execute this Order on behalf of and to bind the entity on whose behalf he or she executes the Order.

27. **No Third Party Beneficiaries**: Except as described in this Order, the Order is not intended to confer any rights or obligations on any third party or parties, and no third party or parties shall have any right of action under this Order for any cause whatsoever.

28. **Effective Date**: This Order shall be effective and binding on the Parties on the date that the San Diego Water Board enters the Order.

29. **Counterpart Signatures**: This Order may be executed and delivered in any number of counterparts, each of which when executed and delivered shall be deemed to be an original, but such counterpart shall together constitute one document.

30. **Severability**: The provisions of this Order are severable, and should any provision be found invalid, the remainder shall remain in full force and effect.

IT IS SO STIPULATED.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN DEIGO REGION
PROSECUTION STAFF

By: _____

James G. Smith, Assistant Executive Officer

Date: 1 Feb 2019

SAN DIEGO COUNTY SANITATION DISTRICT

By: _____

Thomas E. Montgomery, County Counsel

Date: 2/1/18

APPROVED AS TO FORM AND LEGALITY:

By: Thomas L. Bosworth

Thomas L. Bosworth, Sr. Deputy County Counsel

IV. FINDINGS OF THE SAN DIEGO WATER BOARD[2]

31. The San Diego Water Board incorporates Paragraphs 1 through 30 by reference as it set forth fully herein.

32. In accepting this settlement, the San Diego Water Board has considered, where applicable, each of the factors prescribed in California Water Code section 13385. The San Diego Water Board's consideration of these factors is based upon information obtained by the San Diego Water Board's staff in investigating the violations alleged herein or otherwise provided to the San Diego Water Board.

33. This is an action to enforce the laws and regulations administered by the San Diego Water Board. The San Diego Water Board finds that issuance of this Order is exempt from the provisions of the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 et seq.), in accordance with section 15321(a)(2), Title 14, of the California Code of Regulations.

34. The San Diego Water Board's Executive Officer is hereby authorized to refer this matter directly to the Attorney General for enforcement if the Discharger fails to perform any of its obligations under this Order.

35. Fulfillment of the Discharger's obligations under the Order constitutes full and final satisfaction of any and all liability for Covered Matters in accordance with the terms of the Order.

36. The attached Agreement between the Assistant Executive Officer and the San Diego County Sanitation District is approved pursuant to Government Code section 11415.60 and is incorporated by reference into this Order.

I, David W. Gibson, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region.

DAVID. W. GIBSON
Executive Officer

Date: 13 March 2019

[2] These findings by the San Diego Water Board may be modified prior to the adoption of this Order without requiring amendment of the settlement agreement between the Parties.

ATTACHMENT A: Penalty Methodology
ATTACHMENT B: Staff Costs
ATTACHMENT C: ECA Proposal
ATTACHMENT D: Mitigation Plan

Penalty Calculation Factor Summary for Los Coches Creek SSO February 2017

INTRODUCTION:

From February 28, 2017 to March 17, 2017 (18 days of discharge) a San Diego County Sanitation District (District) owned and operated sewer main discharged **762,739 gallons** of untreated raw sewage into Los Coches Creek, a water of the United States, in the vicinity of Sierra Alta Way in El Cajon, CA. The sewer main was damaged as result of stream bank erosion that occurred during a 25-year, 24-hour storm event near then end of February 2017 (see Photo 1). The damaged sewer main was discovered by District Staff during a routine maintenance inspection on March 17, 2017. The starting date of the SSO was determined by information obtained from a nearby property owner who noticed the pipe break on February 28, 2017. The eyewitness failed to contact any agency to report the pipe break.

PHOTO 1: Damaged 12-inch PVC sewer line in Los Coches Creek. (photo by SD Sanitation District)

Upon discovery of the damaged pipe, the District set up a bypass of the line, ceasing the discharge within 2 hours of their arrival on the scene. On March 18, 2017, the District hired an outside contractor to repair the line. The County of San Diego acting on behalf of the District applied for and received an emergency Clean Water Act Section 404 permit under Regional General Permit 63 (RGP 63) to conduct repair work in the creek. The repair activities resulted in permanent impacts to 0.05 acre (234 linear feet) within the channel of Los Coches Creek through the discharge of riprap to protect the repaired line, which remains in the creek, and temporary impacts to 0.1 acre (60 linear feet) (see Photo 2).

PHOTO 2: Rip rap protection installed in Los Coches Creek channel.

The San Diego Water Board issued an emergency Clean Water Act Section 401 certification for RGP 63. This certification required the District to submit a Final Report (Attachment E, Notice of Completion (NOC)) outlining the actions undertaken to resolve the emergency situation within 45 days of completing emergency activities. Failure to submit the NOC within 45 days of completion of activities may result in the imposition of administrative civil liability pursuant to Water Code section 13385.

The District failed to submit this report for 264 days, until prompted to do so by the San Diego Water Board. When the NOC was submitted, it did not provide a required plan for compensatory mitigation for permanent and temporary impacts to Los Coches Creek. Subsequently, the District has been in negotiations with 401 staff to come up with an adequate mitigation proposal. Negotiations are ongoing with 401 staff at this time.

The following penalty calculation is based solely on the discharge of raw sewage to Los Coches Creek, and does not address the violations of the emergency 401 certification. As a result of settlement discussions with the District, and the District's ongoing negotiations with 401 staff, the San Diego Water Board Prosecution Team is willing to forgo any potential liability associated with the 401 violations, predicated on the completion of appropriate mitigation for the permanent and temporary impacts to Los Coches Creek.

VIOLATION 1: DISCHARGE OF RAW SEWAGE

STEP 1 - Potential for Harm for Discharge Violations

Potential for Harm for Discharge Violations – Calculate Potential for Harm considering: (1) the potential for harm to beneficial uses; (2) the physical, chemical, and biological characteristics of the discharge; and (3) the discharge's susceptibility to cleanup or abatement.

Factor 1: Harm or Potential Harm to Beneficial Uses

Factor 1 was scored a **4 (Above Moderate).** Above Moderate is defined by the 2010 State Water Board Water Quality Enforcement Policy (Policy) as:

> "Above moderate – more than moderate threat to beneficial uses (i.e., impacts are observed or likely substantial, temporary restrictions on beneficial uses (e.g., less than 5 days), and human or ecological health concerns)."

- The Basin Plan designates the following Beneficial Uses (BU's) for Los Coches Creek: Potential Municipal and Domestic Supply **(Mun)**, Industrial Process Supply **(Ind)**, Contact Water Recreation **(Rec-1)**, Non-Contact Water Recreation **(Rec-2)**, Warm Freshwater Habitat **(Warm)** and Wildlife Habitat **(Wild)**.
- A high-volume discharge of raw sewage occurring for over 18 days could reasonably be expected to negatively impact beneficial uses, and naturally occurring biota within the stream. SSOs contain high levels of suspended solids, pathogenic organisms, toxic pollutants, excess nutrients and oxygen-demanding substances that have the potential to impact Warm and Wild BUs.
- High Volume SSOs may cause a public nuisance when sewage is discharged into surface waters used for fishing or recreation, potentially negatively impacting Rec-1 and Rec-2 BU's.
- The District's investigation into potential long and short-term impacts to the environment was inconclusive and relied largely on bacteriological monitoring data that was collected after the SSO had been identified. The District's evaluation found that there was insufficient data to assess long term impact of increased eutrophication risk. No Bioassessment or CRAM evaluation of upstream versus downstream conditions of the creek was conducted to assess potential impacts to ecosystem health from the spill.
- The District did find that "Fecal indicator bacteria results do suggest that elevated public health risks were present during the discharge, so a short-term impact to human health was possible if recreational exposure occurred during this period."

Factor 2: Degree of Toxicity of the Discharge

Factor 2 was scored a **3 (Above Moderate).** Above Moderate is defined in the Policy as:

> "Discharged material poses an above-moderate risk or a direct threat to potential receptors (i.e., the chemical and/or physical characteristics of the discharged material exceed known risk factors and /or there is substantial concern regarding receptor protection)."

In general, untreated sewage contains high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen-demanding organic compounds, oil and grease and other pollutants. These pollutants exert varying levels of impacts to beneficial uses of receiving waters. The high degree of toxicity in untreated sewage poses a direct threat to human and ecological receptors which supports a score of **3.**

Factor 3: Susceptibility to Cleanup or Abatement

A score of 0 is assigned for this factor if 50% or more of the discharge is susceptible to cleanup or abatement. A score of 1 is assigned for this factor if less than 50% of the discharge is susceptible to cleanup or abatement. This factor is evaluated regardless of whether the discharge was actually cleaned up or abated by the violator. Because this discharge occurred for 18 days without the District knowing, less than 50% of the discharge was susceptible to clean up. This factor was scored a **1**.

TOTAL HARM OR POTENTIAL HARM TO BENFICIAL USES SCORE STEP 1 = 8

STEP 2 - Assessments for Discharge Violations

Deviation from Requirement

The Deviation from Requirement reflects the extent to which the violation deviates from the specific requirement (effluent limitation, prohibition, monitoring requirement, construction deadline, etc.) that was violated. A designation of **Major** has been applied to the penalty calculation methodology.

The Enforcement Policy defines a **major** deviation as follows:

> *"*The requirement has been rendered ineffective (e.g., discharger disregards the requirement, and/or the requirement is rendered ineffective in its essential functions).*"*

The discharge of 762,739 gallons of untreated sewage to surface waters is a major deviation from required standards (Discharge Prohibitions) and is expressly prohibited under the Clean Water Act and Water Code.

Per Gallon Assessment

- Based on Table 1 of the 2009 Enforcement Policy, the Per Gallon Factor is calculated to be **0.6**
- Per the 2009 Enforcement Policy, a $2.00/gallon factor is appropriate because this is considered a high-volume discharge.
- Total per gallon assessment (with first 1,000 gallons deducted per Water Code):

  (761,739 gallons) X (0.6) X ($2/gal) = **$914,087**

Per Day Assessment

- Based on Table 2 of the 2009 Enforcement Policy the per day factor is calculated to be **0.6**
- Total per day assessment: (18 days) X (0.6) X ($10,000/day) = **$108,000**

Initial Liability for Violation 1

- Adding the per gallon and per day liabilities for this violation, the initial liability is **$1,022,087**

STEP 3 – Not Applicable for Discharge Violations

STEP 4 – Violator's Conduct Factors

Culpability: Culpability is scored at **0.8**

Circumstances beyond the District's control contributed to bank erosion, including a prior invasive species removal program (by a third party) with no subsequent revegetation activities to stabilize the creek bank, and an improperly designed culverted crossing (on a private road). These activities likely contributed to the pipe's failure. Additionally, the District had the foresight to construct a parallel relief line along Highway 80, increasing the capacity of the line, and thus reducing the potential spill volume of the SSO. Based on these circumstances the Prosecution Team feels a downward adjustment in this adjustment factor is appropriate.

History of Violations: History of Violations is scored at **1.** Based on SSO reporting for the last five years, the District has had no reported high volume SSOs.

Cleanup and Cooperation: Cleanup and Cooperation is scored as **1** because the County took reasonable measures to return to compliance and correct environmental damage. Upon discovering the pipe failure, the discharger responded timely and appropriately in ceasing the discharge. If the District had been able to develop a plan to relocate the sewer line outside the creek channel, additional reduction in this adjustment factor would have been applied.

STEP 5 – Total Base Liability

Total base liability is calculated on a per gallon and per day basis by multiplying the initial amount of the ACL by the adjustment factors:

(1,022,087) X (0.8) X (1.0) X (1.0) = **$817,669**

STEP 6 – Ability to Pay and Continue In Business

The District is a public entity with the ability to leverage fees and/or taxes. The San Diego Water Board is not aware of, and the District has not provided, any evidence of inability to pay.

STEP 7- Other Factors as Justice May Require

If the Water Board believes that the amount determined using the above factors is inappropriate, the amount may be adjusted under the provision for "other factors as justice may require," but only if express finding are made to justify this. Examples of circumstances warranting an adjustment under this step are:

a. The discharger has provided, or Water Board staff has identified, other pertinent information not previously considered that indicates a higher or lower amount is justified.

b. A consideration of issues of environmental justice indicates that the amount would have a disproportionate impact on a particular disadvantaged group.

c. The calculated amount is entirely disproportionate to assessments for similar conduct made in the recent past using the same Enforcement Policy.

The Prosecution Team has identified other pertinent information that warrants a reduction in the total liability amount. These include efforts by the District that were subsequent and not directly related to the discharge violation. A reduction in the "Other Factors" multiplier from a neutral score of **1.0 to 0.8** has been given to the District for the voluntary development and implementation of a Stream Crossing Vulnerability Assessment program. The District made efforts to identify and include all sewer crossings that could be impacted by stream erosion and/or high flows, and hopes that this study will help inform subsequent assessments of any high risk sewers that may be identified through their system-wide inspection and maintenance programs. Additionally, the District is participating and contributing to the human pathogens source identification efforts in the watershed to identify and quantify the sources and transport pathways of human fecal material to the watershed.

$817,669 X (0.8) = $654,136

Cost of Investigation

San Diego Water Board expended **$8,278** in staff costs in investigation, and negotiation of settlement with the District.

STEP 8 – Economic Benefit

It is estimated that the District benefitted from the avoided cost of not treating 762,739 gallons of Sewage. According to the District, the last audited costs for treatment of sewage is $3.51/1000 gallons. Thus the economic benefit is:

762,739 gallons X ($3.51/1000 gallons) = $2,677

STEP 9 – Maximum and Minimum Penalties

For all violations, the statute sets a maximum liability amount that may be assessed for each violation. For some violations, the statute also requires the assessment of a liability at no less than a specified amount. The maximum and minimum amounts for each violation must be determined for comparison to the amounts being proposed, and shall be described in any ACL complaint and in any order imposing liability.

The proposed liability is greater than the minimum liability and less than the maximum liability.

Minimum Liability = $2,945

Proposed Liability = $662,414;

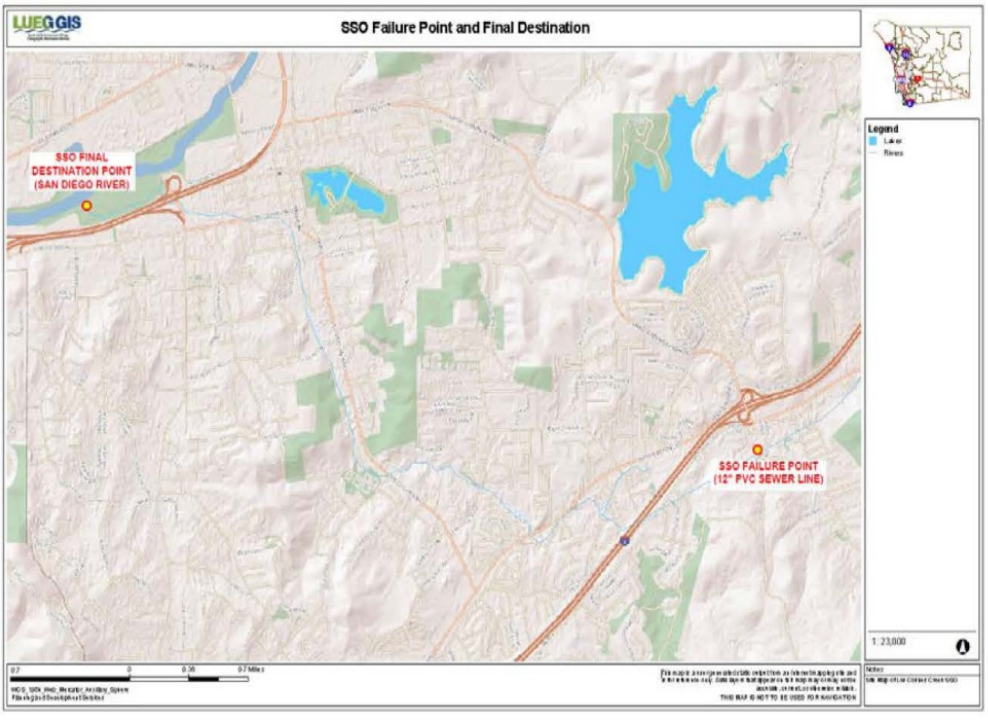
Maximum Liability = $7,797,390

Step 10: Final Liability Amount

Discharge Violation = **$662,414**

Vicinity Map – Los Coches Creek SSO

Site Map – SSO Failure Point to SSO Final Destination Point



Enforcement Case Timesheet

Enforcement Case	Staff Name	Date	Number of Hours	Description of Work	Staff Costs *
Los Coches SSO					
	Chris Means	11/2/2017	3.00	Inspection of SSO site	$226.54
	Chris Means	11/3/2017	8.00	Prepare/review draft enforcement	$604.11
	Chris Means	11/6/2017	8.00	Prepare/review draft enforcement	$604.11
	Chris Means	11/7/2017	6.00	Prepare/review draft enforcement	$453.09
	Chris Means	11/9/2017	8.00	Prepare/review draft enforcement	$604.11
	Chris Means	11/15/2017	0.30	Internal communication	$22.65
	Chris Means	11/20/2017	0.30	Internal communication	$22.65
	Chris Means	12/19/2017	4.00	Prepare/review draft enforcement	$302.06
	Jeremy Haas	12/21/2017	3.00	Prepare/review draft enforcement	$492.64
	Chiara Clemente	1/9/2018	1.00	Prepare/review draft enforcement	$102.98
	Chiara Clemente	1/10/2018	1.50	Discharger document review	$154.47

* Staff costs are calculated based on the monthly salary of each classification, plus benefits, plus overhead. This result is then divided by 173 hours per month to find the cost per hour.

Enforcement Case	Staff Name	Date	Number of Hours	Description of Work	Staff Costs *
	Chris Means	1/17/2018	0.25	Internal communication	$18.88
	Chiara Clemente	1/26/2018	1.00	Communication with discharger	$102.98
	Chris Means	2/14/2018	4.00	Discharger document review	$302.06
	Chiara Clemente	3/26/2018	1.00	Internal communication	$102.98
	Jeremy Haas	3/26/2018	1.00	Internal communication	$164.21
	Chiara Clemente	4/27/2018	0.50	Communication with discharger	$51.49

* Staff costs are calculated based on the monthly salary of each classification, plus benefits, plus overhead. This result is then divided by 173 hours per month to find the cost per hour.

Enforcement Case	Staff Name	Date	Number of Hours	Description of Work	Staff Costs *
	Chris Means	8/7/2018	4.00	Prepare/review draft enforcement	$302.06
	Chiara Clemente	8/22/2018	2.00	Communication with discharger	$205.96
	Chiara Clemente	9/10/2018	1.00	Communication with discharger	$102.98
	Chiara Clemente	10/15/2018	3.00	Communication with discharger	$308.95
	Jeremy Haas	10/15/2018	1.50	Communication with discharger	$246.32
	Chris Means	10/30/2018	2.00	Prepare/review draft enforcement	$151.03
	Chiara Clemente	11/1/2018	1.25	Prepare/review draft enforcement	$128.73
	Jeremy Haas	11/27/2018	1.00	Communication with discharger	$164.21

* Staff costs are calculated based on the monthly salary of each classification, plus benefits, plus overhead. This result is then divided by 173 hours per month to find the cost per hour.

Enforcement Case	Staff Name	Date	Number of Hours	Description of Work	Staff Costs *
	Chiara Clemente	12/5/2018	0.50	Communication with discharger	$51.49
	Chris Means	12/5/2018	1.50	Communication with discharger	$113.27
	Chris Means	12/10/2018	5.00	Prepare/review draft enforcement	$377.57

96.35	$8,278.10
Number of Hours for Enforcement Case	Staff Costs for Enforcement Case

* Staff costs are calculated based on the monthly salary of each classification, plus benefits, plus overhead. This result is then divided by 173 hours per month to find the cost per hour.

Enforcement Case	Staff Name	Date	Number of Hours	Description of Work	Staff Costs *

Below is a short summary showing the total time and staff costs associated with the enforcement cases.

Total Number of Hours	Total Staff Costs
96.35	$8,278.10

* Staff costs are calculated based on the monthly salary of each classification, plus benefits, plus overhead. This result is then divided by 173 hours per month to find the cost per hour.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN DIEGO REGION

PROJECT APPLICATION FORM

Name of Project:	Los Coches Sewer Lining and Pilot Exfiltration Quantification Study
Project Applicant:	San Diego County Sanitation District
Applicant Contact Person:	Daniel Brogadir, Program Manager
Applicant Phone Number:	(858) 694-2714
Applicant Email Address:	Daniel.Brogadir@sdcounty.ca.gov

REQUIRED INFORMATION

Applications that do not contain a discussion regarding each of the following items will not be considered for inclusion. If the item is included in a detailed supplemental report, please include the report and indicate where the information is located.

Problem Statement:
The Proposed Supplemental Environmental Project (SEP) consists of structural improvements to existing sanitary sewer infrastructure and a pilot study to assist in the identification and quantification of exfiltration from sanitary sewers. These projects are applicable to SEP Category B - Pollution Prevention and Category E - Assessments and Audits, as defined in the *State Water Resources Control Board 2017 Policy on Supplemental Environmental Projects*. Furthermore, both projects have a direct nexus to the location and nature of the violation (i.e. protection of the Los Coches Creek watershed from future sanitary sewer overflows and contamination).

The Los Coches Sanitary Sewer (LCSS) is an 8-inch to 15-inch diameter collector sewer that serves low lying residential areas south of Old Highway 80 in the unincorporated community of Flinn Springs in the County of San Diego. The sewer line was constructed in 1968 and experienced a sanitary sewer overflow (SSO) in March 2017 due to flooding of Los Coches Creek. The majority of the sewer alignment is located within the Los Coches Creek floodplain, including several segments constructed within or adjacent to the creek channel. The San Diego County Sanitation District (District) performed a condition assessment of the sewer in 2017 and 2018 using closed-circuit television inspection in accordance with the National Association of Sewer Service Contractors (NASSCO) guidelines for classification of pipe defects and assessment of the structural condition of the sewer. Pipe condition ratings for the 28 reaches of sewer inspected ranged from 0 to 3 on a scale of 0 (best) to 5 (worst).

Based on the assessment, the LCSS is considered structurally sound and thus it is not included in the District's prioritized capital improvement program for rehabilitation or replacement. Therefore, this project is above and beyond the typical maintenance the District would perform to comply with the General Waste Discharge Requirements.

While the District considers the LCSS to be structurally sound, the location of the sewer alignment within the Los Coches Creek floodplain increases the likelihood and consequence of failure due to wet weather events. To reduce risks to the water course, the District constructed a parallel relief sewer system in 1994 and enlarged a diversion structure in 2016 that effectively bypasses all upstream regional sewer flows away from the LCSS. These bypass improvements significantly reduced the volume of wastewater conveyed in the LCSS to only those flows collected from adjacent local neighborhoods. These projects were constructed by the District at a cost of approximately $3 million and divert in excess of 1.2 million gallons per day of sewer away from the sewer segments within Los Coches Creek. The District has evaluated the feasibility of relocating the LCSS alignment out of the floodplain, however, due to topographic constraints and the need to maintain service to existing development a series of lift stations and pressurized force mains would be required, which would increase the operational risk associated with the LCSS. To further minimize the risk of structural failure and potential of infiltration or exfiltration to/from the sewer the District proposes to line approximately 7,505 ft. of the LCSS with a cured-in-place pipe (CIPP) liner. The CIPP process utilizes a resin impregnated polyester or fiberglass cloth tube to form a joint-less, seamless and corrosion resistant pipe within the existing sewer. Private lateral connections to the sewer will be restored utilizing a fused "top-hat" insert to ensure a water-tight connection is achieved. Extent of the proposed lining is shown in Figure 1.

The proposed structural lining will provide enhanced protection of the sewer from future wet weather events and reduce a potential source of pollution to the watershed, directly contributing to increased protection of public health and the environment.

The sewer lining project is coupled with a study to develop analytical methods to quantify rates of exfiltration from existing sanitary sewers and assess the effectiveness of CIPP lining in mitigating exfiltration rates. Exfiltration may occur through small cracks or porous materials in otherwise structurally sound pipes and joints downstream. These small cracks may not be detected during routine maintenance operations such as CCTV inspections but may be large enough for water with bacteria and viruses to escape.

The goal of the pilot study is to develop a measurement system for quantifying exfiltration from publicly-owned sewer systems before and after CIPP lining. The study will develop measurement techniques which will be evaluated for accuracy, precision, and reproducibility. Once completed, the measurement system may be useful elsewhere to quantify if public sewer collection systems are a major contributor to storm water pollution, and to what extent CIPP can minimize exfiltration

Since very few studies have been conducted to quantify exfiltration from public sewers this project is clearly above and beyond minimum activities expected as part of existing

permits and regulations.

Work Plan containing tasks and deliverables compartmentalized into partial funding opportunities, if applicable:

1. CIPP Lining:

   Task 1.1 – Design: prepare plans, specifications, and cost estimate; advertise and award construction contract. Deliverables: required permits; design plans, specifications and engineer's cost estimate; executed construction contract.

   Task 1.2 – Construction: install approximately 7,505 ft. in the LCSS with a cured-in-place pipe (CIPP) liner, sewer lateral connections, and manhole coating of manholes where structural degradation and/or infiltration is observed. Deliverables: quarterly progress and expenditure reports; notification of completion.

2. Pilot Exfiltration Quantification Study:

   Task 2.1 – Design/Construct Measurement System. Deliverable: proposed study workplan to develop analytical methods to quantify rates of exfiltration from existing sanitary sewers and assess the effectiveness of CIPP lining in mitigating exfiltration rates.

   Task 2.2 – Initial Testing: conduct initial tests with the measurement system, assess performance.

   Task 2.3 – Refine Measurement System: identify and design refinements in measurement system to improve performance.

   Task 2.4 – Final Measurement System Tests: apply the measurement system across a variety of pipe sizes, materials, structural conditions, and/or flow conditions to ensure performance of the measurement system prior to CIPP lining. Some pipe sections may be measured more than once to assess reproducibility.

   Task 2.5 – Addition of Tracers: utilize the addition of tracers prior to and after CIPP-lining as a method to verify if exfiltration is reaching nearby storm drains or receiving waters. Potassium bromide (KBr), a simple, non-toxic and cost effective compound that is easily measured in receiving waters, has been identified as a suitable tracer for use in the test measurement system. Collection of bottle samples for laboratory analysis will help confirm tracer signal in receiving waters.

   Task 2.6 – Post Lining Measurement: repeat measurements for selected sewer segments after CIPP lining is completed to assess effect of lining on exfiltration rates.

Task 2.7 – Reporting: prepare quarterly progress reports, and final project report that will include Standard Operating Procedures for the measurement system. The final project report will include documentation required for certification of completion; results of tracer work, exfiltration measurements before and after CIPP lining; assessment of success criteria, and recommendations for follow-up analysis, if applicable. Deliverables: quarterly progress reports due on the 15th day of each of the months of April, July, October, and January, starting the first full quarter after the date of the final SEP approval; draft final report; and final report within 120 days of project completion and no later than 36 months after final SEP approval.

Timeline (from funding approval) with milestones and end dates:

1. CIPP Lining:
   - Task 1.1 – Design: 12 months
   - Task 1.2 – Construction: 36 months

2. Pilot Exfiltration Quantification Study (**Requires coordination with CIPP lining, schedule subject to change**):
   - Task 2.1 – Design/Construct Measurement System: 6 months
   - Task 2.2 – Initial Testing: 9 months
   - Task 2.3 – Refine Measurement System: 12 months
   - Task 2.4 – Final Measurement System Tests: 18 months
   - Task 2.5 – Addition of Tracers: 18 months
   - Task 2.6 – Post Lining Measurement: 30 months
   - Task 2.7 – Reporting: 36 months

Budget broken down into tasks:

1. CIPP Lining:
   - Task 1.1 – Design: $400,000
   - Task 1.2 – Construction: $2,200,000

   Subtotal - $2,600,000

2. Pilot Exfiltration Quantification Study:
   - Task 2.1 – Design/Construct Measurement System: $37,000

Task 2.2 – Initial Testing: $26,000

Task 2.3 – Refine Measurement System: $14,000

Task 2.4 – Final Measurement System Tests: $47,000

Task 2.5 – Addition of Tracers: $6,000

Task 2.6 – Post Lining Measurement: $47,000

Task 2.7 – Reporting: $21,000

Subtotal - $198,000

TOTAL - $2,798,000

Discuss all permitting requirements, including CEQA, and their status. If exempt, cite applicable statute:

The project is subject to the California Environmental Quality Act (CEQA). The level of CEQA documentation will be determined after design plans are developed. Waters of the United States and State of California exist within the Los Coches Creek floodplain which are under the jurisdiction of the United States Army Corps of Engineers pursuant to Section 404 of the Federal Clean Water Act, the Regional Water Quality control Board under Section 401 of the Federal Clean Water Act, and the California Department of Fish and Wildlife under Section 1600 of the California Fish and Game Code. The project will be reviewed during the design phase to determine if any regulated activities are necessary within Los Coches Creek. If so, then Section 401, 404, and 1600 permits will be obtained. In addition, a review will be undertaken to ensure conformance with the Federal and State Endangered Species Act. Compensatory mitigation, if any, will be conducted within the project area or Los Coches Creek floodplain.

Watershed(s) affected:
San Diego River Watershed

Describe if this project can be a basis for additional funding from other sources:
No additional funding for this project is anticipated.

Monitoring, success criteria, and other tools to track long-term success:

CIPP Lining – success criteria for the CIPP lining project will be determined by the installation of the CIPP in accordance with design plans and specifications. Anticipated long term benefits include improved operation of the sewer, elimination of infiltration and

root intrusion, and enhanced structural integrity of the pipeline and manholes. Monitoring will include annual maintenance of the sewer including visual inspections and hydraulic cleaning, remote monitoring of flow conditions via smart cover monitors, and periodic CCTV inspection of the sewer and manholes. Should exfiltration from the lined sewer segments be detected, the District will investigate to determine the cause and take appropriate actions to attempt to limit the exfiltration.

Pilot Exfiltration Quantification Study – the study will be considered successful if the measurement system can quantify volumetric exfiltration losses at levels sensitive enough to detect alterations in receiving water concentrations. If sewer exfiltration does occur, then long-term success will be evaluated by the use of the system in other locations to estimate watershed-wide loadings from exfiltration and the potential use of the measurements to inform development of capital improvement programs for sanitary sewer collection systems.

Description of how the project is resilient to climate change:

Climate change is expected to result in more intense storm events that may increase the risk of structural failure of sewer infrastructure located within floodplains as well as creating higher volumes of wet weather flows due to infiltration and inflows to sewers and manholes. Strengthening and sealing of the LCSS through CIPP lining will help mitigate this increased risk.

Applicant's ability/authority to receive and distribute funds:

The project will be fully funded by available District funds and executed through the District's capital improvement and maintenance programs.

Is the project to conduct work that is required by any entity/agency? (e.g. cleanup or mitigation):

The proposed project is not part of a mitigation project or other required action. The CIPP lining project is not included in the District's current Capital Improvement Program and is proposed to protect public health and prevent pollution within the San Diego River watershed.

CONCEPTUAL MITIGATION PLAN
SIERRA ALTA WAY WASTEWATER EMERGENCY PIPE REPLACEMENT PROJECT
LAKESIDE, SAN DIEGO COUNTY, CALIFORNIA

Prepared by:
San Diego County Sanitation District
5500 Overland Avenue Suite 315
San Diego, California 92123

August 2018

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ACRONYMS AND ABBREVIATIONS

CDFW	California Department of Fish and Wildlife
DPR	Department of Parks
RECON	RECON Environmental, Inc.
RMP	Resource Management Plan
RWQCB	Regional Water Quality Control Board
USACE	U.S. Army Corps of Engineers
project	Sierra Alta Way Wastewater Emergency Pipe Replacement Project

1.0 INTRODUCTION

This Conceptual Mitigation Plan (CMP) provides guidelines for mitigation of approximately 702 linear feet (0.15 acre) of southern willow scrub and coast live oak riparian woodland as mitigation for permanent impacts associated with the Sierra Alta Way Wastewater Emergency Pipe Replacement Project (project). Permanent impacts to 234 linear feet (0.05 acre) of U.S. Army Corps of Engineers (USACE) and Regional Water Quality Control Board (RWQCB) non-wetland waters of the United States/California Department of Fish and Wildlife (CDFW) streambed will be mitigated at a 3:1 ratio through the on-site re-establishment of 702 linear feet (0.15 acre) of wetland and riparian habitat.

2.0 PROJECT LOCATION AND DESCRIPTION

The project site is located south and west of East Sierra Alta Way in the unincorporated community of Lakeside, CA (Figure 1). From the site, Los Coches Creek flows west and northwest through Lakeside until it empties into the San Diego River.

The project involved the emergency repair of a sewer line within Los Coches Creek that broke as a result of heavy flooding and erosion. Specifically, the southern bank of the creek just west of Sierra Alta Way eroded during a major flood event, which exposed and undercut the sewer line. Further flooding and erosion resulted in damage to the sewer line.

The broken section of sewer line was replaced and a total of 174 cubic yards of crushed rock (riprap) was installed on top of the replacement pipe to prevent future erosion and pipe failure. Overall, emergency maintenance activities were completed in compliance with avoidance and minimization measures, guidelines, and conditions of Regional General Permit No. 63, and the verification letter for the Sierra Alta Way Wastewater Emergency Pipe Replacement Project (File No. SPL-2017-00194-WSZ) issued April 3, 2017.

FIGURE 1
Regional Location

RECON

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2.1 Existing Conditions

Within the project area, Los Coches Creek occurs as a non-vegetated channel with scattered individuals of giant reed (*Arundo donax*; also known as arundo), mule fat (*Baccharis salicifolia*), and castor bean (*Ricinus communis*). Just west of Sierra Alta Way, the creek shows signs of having undergone substantial erosion as a result of flooding. The banks are between 4 and 7 feet high. The bed contains a combination of sediment, rock, exposed bedrock, and debris. The debris includes plastic piping, bricks, tires, and metal scraps, as well as vegetative material.

Disturbed habitat occurs along both the northern and southern terrace adjacent to the banks of Los Coches Creek and surrounding the project area. These terraces are dominated by weedy annuals such as horseweed (*Erigeron* sp.), as well as arundo and other non-natives. Most of these areas appear to have undergone vegetation management/removal, leaving mostly thatch and dead arundo stalks. Some portions of disturbed habitat contain mulch, likely as a result of this prior on-site weed maintenance. Scattered patches of coast live oak woodland and developed areas occur beyond the disturbed habitat.

Prior to the project, the project area was subject to an arundo eradication effort conducted by the San Diego River Conservancy between 2013 and 2014. Research of previous aerial photographs from 2013 through 2017 (Google 2018) shows that, prior to eradication, this portion of Los Coches Creek appeared to consist of a narrow non-vegetated channel surrounded by dense cover of arundo. Much of the bed and bank structure that historically occurred appears to have eroded away during a flood event in winter 2015-2016, as historical aerials show the channel between 5 and 10 feet in width in September of 2014 and between 15 and 25 feet in width in July of 2016 which is consistent with the existing conditions today.

It is likely that the eradication effort, by substantially reducing the amount of stabilizing vegetation along the banks, resulted in the bank erosion and undercutting that ultimately led to the damage caused to the sewer line.

2.2 Project Impacts

A wetland delineation was conducted for the Sierra Alta Way Wastewater Emergency Pipe Replacement Project (RECON 2018; Attachment 1). Permanent impacts occurred as a result of sewer pipe replacement and riprap installation (Photograph 1). Permanent impacts to USACE/RWQCB non-wetland waters of the U.S./CDFW streambed total 0.05 acre and 234 linear feet (Table 1; Figure 2). These permanent impacts only occurred to the unvegetated channel; no natural vegetation communities were impacted.

Image source: NearMaps (flown Nov 2017)

Permanent Impacts

OHWM Sample Points

100-foot Buffer

Jurisdictional Waters

ACOE/RWQCB Non-wetland Waters/CDFW Streambed

RECON

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FIGURE 2

Jurisdictional Resources and Project Impacts

Photograph 1: Riprap Installed within Los Coches Creek. Facing West.

Table 1
Project Impacts to Jurisdictional Resources

Jurisdictional Areas	Permanent Impacts acres (linear feet)
USACE Jurisdictional Areas	
Non-wetland Waters of the U.S.	0.05 (234)
USACE Total Jurisdiction (404)	**0.05 (234)**
RWQCB	
Non-wetland Waters of the U.S.	0.05 (234)
RWQCB Total Jurisdiction (401)	**0.05 (234)**
CDFW	
Streambed	0.05 (234)
CDFW Total Jurisdictional Areas (1602)*	**0.05 (234)**
*CDFW area of jurisdiction includes all USACE/RWQCB jurisdictional waters.	

3.0 MITIGATION

3.1 Overview

A total of 702 linear feet (0.15 acre) of on-site wetland and riparian vegetation re-establishment is proposed as mitigation for the 234 linear feet (0.05 acre) of permanent impacts to non-wetland waters described above. Mitigation would occur along the banks of Los Coches Creek in areas that historically contained wetland vegetation (Figure 3). Figure 4 depicts the proposed mitigation areas on an aerial photograph taken during 2012 when the project site contained arundo-dominated wetland vegetation. The re-establishment of wetland and riparian vegetation

is proposed for areas along a portion of Los Coches Creek within and adjacent to the project site. The installation of native wetland and riparian vegetation is expected to provide increased wetland and riparian functional values in comparison to the previously present arundo-dominated vegetation. Compared to the current conditions that support little to no vegetation, the proposed mitigation would provide a gain in functional values that are mostly lacking on-site. Among these gains would be stream bank stabilization, structural diversity, and plant species diversity.

3.2 Mitigation Site Description and Benefits

The proposed mitigation areas, Area 1 and Area 2, occur along the southern and northern banks of a portion of Los Coches Creek, respectively (see Figure 3). The mitigation will involve the re-establishment of wetland and riparian vegetation through the removal of arundo thatch, the removal of any non-native plant species, and the installation of native wetland and riparian plant species within the proposed mitigation areas.

Within the mitigation area, the currently unvegetated condition of the banks of the creek and adjacent terraces leave them vulnerable to further scouring. The proposed mitigation would stabilize the banks and terraces using bioengineering techniques which would reduce the potential for future scouring.

The re-establishment will be conducted in areas formerly occupied by dense stands of arundo. Arundo is a highly invasive plant species that replaces native wetland vegetation. It substantially impacts the function of natural wetlands and also reduces habitat available for riparian wildlife species where it is present in large populations. Re-establishment of native wetland and riparian vegetation will reduce the potential for future invasions of arundo.

Additional benefits of this on-site mitigation would include re-establishment of native wetland and riparian vegetation in an area that currently contains little to no vegetation (native or non-native). The resulting wetland and riparian vegetation would improve water quality and provide wildlife habitat and movement opportunities. The vegetation would also provide an aesthetic amenity to the surrounding area and discourage encroachment into the creek. A summary of the expected increase in functional values of the mitigation site as a result of the proposed mitigation is provided in Table 2 below.


Figure 3
Proposed Mitigation Areas with Current Conditions
Legend
Proposed Mitigation Area
Google Earth
N
200 ft

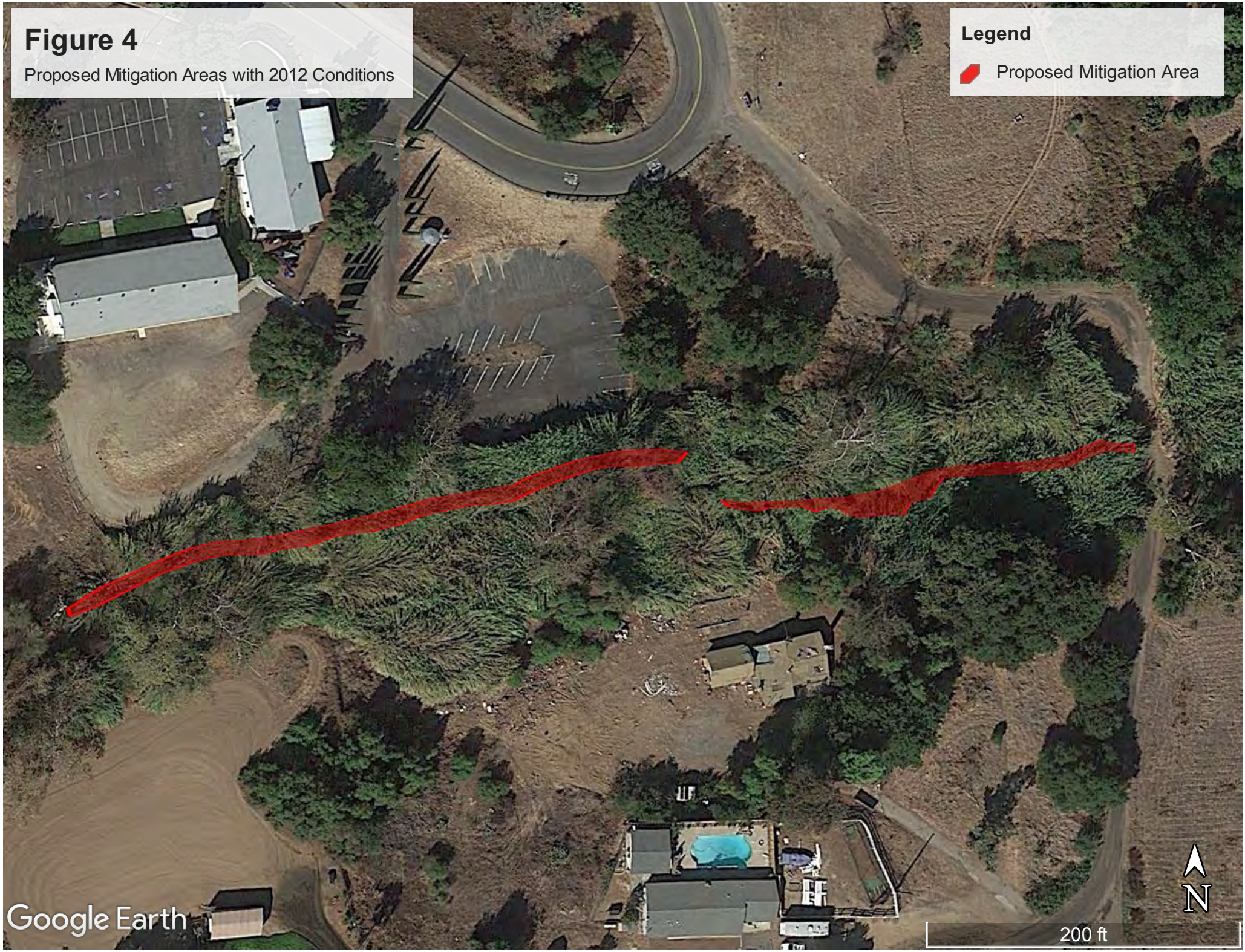
Figure 4
Proposed Mitigation Areas with 2012 Conditions
Legend
Proposed Mitigation Area
Google Earth
N
200 ft

Table 2 Functional Gain of Re-establishment at the Mitigation Site		
Wetland Functions	Current Functional Value	Expected Functional Value
Hydrology		
Bank Stabilization	0	+++
Groundwater Infiltration	+	++
Dissipation of Energy (floodwaters)	+	++
Water Quality		
Cycling of Nutrients	+	++
Pollutant Removal	+	++
Carbon Sequestration	+	++
Habitat Quality		
Structural Richness	0	+++
Temperature Buffering	+	++
Plant Species Diversity	0	+++
Wildlife Species Diversity	+	+++
0 = none, + = low, ++ = moderate, +++ = high		

3.3 Restoration Actions Proposed

The activities proposed for this mitigation activity focus on stream bank stabilization and habitat re-establishment. The riprap installed as part of the emergency repair generally occurs along the southern bank of Los Coches Creek. Along much of the bank, the riprap forms a sloped bank of unvegetated rock leading approximately 5 feet down to the creek bed from the top of the southern bank. This rock stabilizes the southern bank. However, toward the eastern end of the riprap, the southern bank widens away from the riprap which continues to follow the sewer line within the creek bed. Here, the riprap no longer forms the southern bank as a gap occurs between the riprap and the natural bank.

Proposed mitigation in Area 1 would include the installation of wetland and riparian vegetation from the Arizona crossing at Sierra Alta Way west along the southern bank of Los Coches Creek to just beyond the end of the emergency repair. The length of Area 1 would total approximately 275 feet. Also, mitigation activities within Area 1 would include the addition of soil within the gap mentioned above to continue the southern bank along the riprap to the eastern terminus of the riprap. This would result in a more stable southern bank in this area (Photograph 2; see Figure 3). Additionally, the soil added would create a terrace within which native wetland vegetation would be planted. Native plant species would include deep-rooting perennials, such as willows (*Salix* sp.) and mule fat (*Baccharis salicifolia*), that provide bank stabilization and naturally occupy streamside terraces such as this. Therefore, the bank would be protected through the implementation of these bioengineering techniques (plantings and existing riprap).

Area 2 occurs directly downstream of the project and currently contains a northern bank leading approximately three feet up to a terrace which gradually slopes up and north to the parking lot of a nearby church (Photograph 3; see Figure 3). Using bioengineering techniques, proposed mitigation would include the installation of native wetland and riparian vegetation on this bank and terrace, including deep-rooting species, which is expected to stabilize this bank along the northern side of the creek. The length of Area 2 would total approximately 427 feet.

In conjunction with bank stabilization efforts, restoration activities would include wetland and riparian vegetation re-establishment by means of installing native plants/seed and controlling weeds within mitigation Areas 1 and 2. Native plant establishment will include installing native container plants and pole cuttings, as well as applying a native seed mix, in order to establish two vegetation communities, southern willow scrub and southern coast live oak riparian woodland. Southern willow scrub will be established through the majority of the mitigation areas, including on the banks and adjacent terraces. Southern coast live oak riparian woodland would be established by planting a coast live oak (*Quercus agrifolia*) trees, along with Fremont cottonwood (*Populus fremontii*) and western sycamore (*Platanus racemosa*), in select locations within the mitigation areas.

The installed container plants and cuttings will be irrigated, either using a drip irrigation system or a water truck, to allow better establishment and ensure long-term sustainability. The focus of irrigation would be to allow installed plants to develop a root system deep enough to tap into the water table before the irrigation is removed at the end of a three-year establishment period**.** Seeds would germinate using natural rainfall.

Weed control will occur within both mitigation areas. In addition, in order to reduce the potential for non-native species invasion, weed control will occur within a buffer surrounding the mitigation areas. This buffer will vary in width as appropriate depending on surrounding land-use. Initial weed control will include herbicide applications and/or mechanical weed control. Physical treatment may involve cutting, hand pulling, or grinding the non-native vegetation. Selected herbicides will be used against invasive species, either alone or in combination with mechanical methods. Herbicide preparations that are approved by the U.S. Environmental Protection Agency for use in riparian and aquatic settings will be used.

At approximately 275 linear feet (0.06 acre) and 427 linear feet (0.09 acre) respectively, on-site re-establishment within Area 1 and Area 2 would mitigate permanent project impacts of 234 linear feet (0.05 acre) at a 3:1 ratio. Prior to the commencement of restoration activities, the boundaries of mitigation area will be field-verified to ensure that at least 702 linear feet of wetland and riparian habitat will be re-established along Los Coches Creek on-site.

Photograph 2: Mitigation Area 1 along Southern Bank with Installed Riprap. Facing East.

Photograph 3: Mitigation Area 2 along Northern Bank. Facing West.

3.4 Rationale for Expecting Implementation Success

The mitigation activities will involve the re-establishment of wetland/riparian vegetation within the mitigation site through the removal of non-native invasive plant species and installation of wetland/riparian vegetation in areas currently mostly lacking vegetation and formerly occupied by dense stands of arundo. This will result in an overall improvement of water quality, hydrologic stability, riparian resource functions, and wildlife habitat within the site.

As described above, this portion of Los Coches Creek has undergone substantial scouring, likely due to the recent loss of vegetation along the creek banks and terraces. While the stream channel is now wide enough to accommodate large flows, the banks are vulnerable to scouring which would likely occur during any future moderate- or high-intensity flow event. Through bioengineering methods, such as the utilization of existing riprap and installation of key native plant species, the banks within the mitigation area are expected to become more stabilized, reducing the risk of future scouring.

By removing and controlling the invasive species and installing native plant species specific to southern willow scrub and southern coast live oak riparian woodland; it is expected that the mitigation site can be re-established to a natural and historical condition containing native habitat. Southern willow scrub is commonly found in channels of this magnitude and hydrologic regime, and patches of southern coast live oak riparian woodland occur adjacent to the mitigation area along Los Coches Creek. Therefore, the re-establishment of these habitat types is expected to naturally persist indefinitely within the mitigation area after all mitigation activities have stopped.

3.5 Schedule

The implementation of the mitigation will begin during the first season after the mitigation plan is approved. The weed control activities will be implemented at times appropriate for control of the target species. Annual species should be treated before they reach reproductive maturity, which varies for different weed species. The treatments for these species should continue for at least 5 years in order to exhaust the seed bank for annual weed species, and long enough to assure that any potentially present perennial weed species have, in fact, been killed.

4.0 IMPLEMENTATION PLAN

The purpose of this implementation program is to provide guidelines for mitigation, which will include 3:1 on-site mitigation for permanent impacts to non-wetland waters of the U.S. On-site implementation of restoration techniques will follow the guidelines described below.

4.1 Site Preparation

Site preparation will consist installing soil behind the riprap to establish the southern bank in Area 1 as described above. Additionally, arundo thatch will be removed and the boundaries of active restoration areas, Area 1 and Area 2, will be marked using flagging or by other appropriate means.

4.2 Planting and Seeding

The restoration or re-establishment areas will be seeded with locally collected native species. Seed mixes should be applied by hydroseed or by hand and lightly raked in the restoration areas following initial planting. The best time to apply seed is early in the rainy season (October to December).

Standard planting procedures for containerized native plants will be followed for this project. This involves digging a hole approximately twice the size (width and depth) of the root ball of the plant. The hole is then filled with water and allowed to drain. Plants are then positioned so that the surface of the soil in the container is at ground level, with backfill from the excavation of the hole added carefully beneath and around the installed plant's root ball. The soil is then firmly tamped in around the plant. A small berm, only two to three inches high, should surround the edge of the planting hole to hold irrigation water. The plant should be watered thoroughly immediately after installation.

For the re-establishment activities, species applied/installed via the seed mix and container plants/cuttings will be appropriate to the setting. The same seed mix will be used in both the southern willow scrub and southern coast live oak riparian woodland areas. However, native plant species installed as container plants/cuttings will be specific to either southern willow scrub or coast live oak riparian woodland. Primarily, willows and mule fat will be installed in the southern willow scrub areas, while coast live oak trees will be installed in the southern coast live oak riparian woodland. Table 3 shows the proposed seed mix and container plants/cuttings and the proposed application/installation density for each species.

Poles are an inexpensive and effective way of establishing selected tree species close to the water. All species of willow as well as mule fat can be established from poles. Poles should be planted at double the density of container plants. Poles should be cut form second-year wood to a length of at least four feet (48 inches), and installed in augered holes to a depth that is ¾ the total length of the pole. Re-establishment areas on the steep banks immediately adjacent to the stream should be planted with poles.

Table 3
Proposed Seed Mix and Container Plants/Cuttings

Species	Common Name	Lbs/acre (seed)	Lbs/0.15 acre (seed)	Container Plants/Acre (# cuttings)	Container Plants/0.15 acre (# cuttings)
Ambrosia psilostachya	Western ragweed	3.0	0.45	-	-
Artemisia douglasiana	California mugwort	-	-	233	35
Baccharis salicifolia	Mule fat	-	-	267 (534*)	40 (80*)
Baccharis sarothroides	Broom baccharis	1.0	0.15	133	20
Elymus glaucus	Blue wildrye	3.0	0.45	-	-
Festuca microstachys	Small fescue	2.5	0.38	-	-
Isocoma menzesii	Goldenbush	1.0	0.15	-	-
Muhlenbergia rigens	Deergrass	1.0	0.15	133	20
Oenothera elata	Marsh evening primrose	3.0	0.45	-	-
Platanus racemosa	Western sycamore	-	-	33	5
Populus fremontii	Fremont cottonwood	-	-	33	5
Quercus agrifolia	Coast live oak	-	-	133	20
Salix exigua	Narrow-leaf willow	-	-	100 (240*)	15 (30*)
Salix goodingii	Black willow	-	-	67 (200*)	10 (20*)
Salix lasiolepis	Arroyo willow	-	-	100 (240*)	15 (30*)
	Total	**14.5**	**2.18**	**1,232**	**185**

*Option of installing cuttings instead of container plants for the given species

5.0 MAINTENANCE PLAN

5.1 Maintenance Activities

Maintenance will be performed at the time of monitoring, which will occur once monthly for the first six months (including the 120-day plant establishment period [PEP]) and twice per year for the remainder of the five-year monitoring period. Maintenance activities that are critical during the first six months will include removal of non-native vegetation from the restoration areas, trash removal, replanting of container plants as required based on mortality estimates, and the installation of protective measures to address problems with herbivory, if needed.

Maintenance activities may also include adaptive management implementation, as necessary. The finalized monitoring plan will identify situations where adaptive management may be required in order to assure success. Adaptive management measures may include activities such as more aggressive removal of non-native invasive plants to improve survivorship and growth of native plants.

5.1.1 Weed Control

Non-native species will be removed from the re-establishment areas and associated weed-control buffers by hand, mechanical weed cutters, or herbicide applications (under direction of a Qualified Applicator) by maintenance personnel familiar with and trained to distinguish weeds from native species. Weeding will be performed as needed to control weed competition during the establishment period of native plants. Appropriate weed-control measures will be implemented under the direction of the restoration biologist.

5.1.2 Vegetation Clearing and Trash Removal

Pruning of any native vegetation or removal of deadwood and leaf litter shall not be allowed in the re-establishment areas, unless the area is within a fuel management zone and brush control is required by fire department regulations. Trash will be removed from the sites by hand as necessary. Within the context of restoration, trash consists of all man-made materials, equipment, or debris left within the re-establishment areas that is not serving a function related to habitat restoration.

5.1.3 Replacement Plantings and Seeding

The habitat quality of the re-establishment area is expected to improve each year of the mitigation and monitoring period. The mitigation site may be replanted or seeded with appropriate species or species that did not produce adequate seed during the implementation year, if necessary. This process will be repeated as needed to meet success criteria, and to improve long-term plant community stability. Additional seeds will be hand broadcast early in the rainy season (October to December). Plants which may have died will be replaced with appropriate container-sized plants, and slow-growing species that were not prepared in time for the initial planting will be installed from containers.

5.1.4 Irrigation Maintenance

Irrigation will be applied as needed, based on climatic conduction (i.e., rainfall) and soil moisture for the first three maintenance and monitoring years. Irrigation requirements will be under the direction of the restoration biologist; supplemental irrigation will be discontinued when the plants have become established.

5.2 Maintenance Schedule

The maintenance period will begin upon installation of mitigation and will last for five years or until performance standards criteria are achieved, whichever is less, except in the instance of catastrophic events, in which case maintenance shall not extend beyond the original term of five years.

6.0 MONITORING PLAN

Monitoring methods are designed to identify any issues that may arise that would necessitate implementation of management options designed to improve mitigation success. The performance standards, monitoring methods, and adaptive management options are discussed in the following sections.

6.1 Performance Standards

Performance standards for southern willow scrub and southern coast live oak riparian woodland within the mitigation area are summarized in Table 4. All standards will be measured as absolute values.

Table 4
Performance Standards

Year	Percent Native Cover	Percent Container Survival	Percent Non-native Cover	Percent Bare Ground
1	35	80	<5	<50
2	50	100	<5	<35
3	70	100	<5	<25
4	80	100	<5	<15
5	90	100	<10	<10

If performance criteria are not achieved at the end of the fifth year, the County will consult with the RWQCB to determine whether the mitigation effort is acceptable. The project proponent understands that failure of any significant portion of the mitigation area may result in a requirement to replace or revegetate that portion of the site. Catastrophic events such as fire, flood, or drought will not result in additional restoration responsibilities or extend monitoring responsibilities.

6.2 Monitoring Methods

6.2.1 Qualitative Monitoring

Evaluation of plant health and identifying and correcting problems as they arise are necessary for ensuring successful vegetation establishment. At a minimum, qualitative monitoring will be conducted once monthly for the first six months and twice per year through Year 5. Qualitative monitoring involves the restoration biologist reviewing the restoration areas to examine container plant health, seed germination, and non-native plant encroachment and control, as well as any other issues that may arise.

6.2.2 Quantitative Monitoring

Quantitative monitoring will be performed to measure development of vegetation of the on-site mitigation areas and to document that they have achieved the success criteria as defined by the performance standards.

Quantitative sampling will be carried out during the late spring or early summer to ensure the best representation of species diversity. Quantitative monitoring should follow the California Native Plant Society (CNPS) Relevé Protocol. This method is a simple quantitative sampling technique applicable to many vegetation types in California. Investigators use an ocular estimation technique called relevé to classify and map large areas in a limited amount of time (CNPS 2004). Due to the small size of the proposed mitigation (0.15 acre), the entire mitigation area will be assessed to determine percent cover of native species, non-native species, and bare ground. Representative photographs will be taken each time the site is monitored to record the progress of mitigation over the monitoring period.

6.2.3 Adaptive Management

Maintenance activities may include adaptive management implementation as necessary. Adaptive management measures may include activities such as: more aggressive removal of non-native invasive plants to improve survivorship and growth of native plants; minor

modification of upstream topography to better connect available stream water to the re-establishment sites; modifications to the irrigation regime; or other activities developed as the site is implemented and monitored.

6.2.4 Monitoring Schedule

Monitoring will occur monthly for the first 6 months of implementation, and then will be done twice a year for the remainder of the 5-year monitoring period. The monitoring period may be shortened if Year 5 success criteria are achieved along with resource agency approval "sign-off" of the site.

6.2.5 Party Responsible

Monitoring will be the responsibility of the San Diego County Sanitation District, or its designees or contractors.

6.2.6 Monitoring Reports

The first report will be an "as-built" summary of the activities that took place in order to implement the establishment and re-establishment, including the monitoring efforts for the first 120 days. This report will include methods and a full discussion of the weed control, plant installation, seeding, and irrigation activities. Subsequent monitoring reports will summarize the condition of the site based on both the qualitative and quantitative monitoring data that were collected during the reporting interval. Photographs will be included in the monitoring reports. An evaluation of the general site condition will be made, and recommendations for future activities and adaptive management strategies will be discussed.

During the first year, an as-built report, which will include the 120-day monitoring, and an annual report will be submitted to the resource agencies. Reports will be submitted annually thereafter. Reports will come to the resource agencies directly from the San Diego County Sanitation District staff.

7.0 COMPLETION AND CONFIRMATION

Once the site has achieved success criteria, the San Diego County Sanitation District shall submit a notification of completion to the RWQCB. The RWQCB may request a site visit to review the site prior to submitting a confirmation of final approval for mitigation. Upon confirmation of approval, the County shall be released of all obligations.

REFERENCES CITED

California Native Plant Society (CNPS) Vegetation Committee
2004 California Native Plant Society Relevé Protocol. October 20, 2000. Revised April 2.

Google
2018 “Lakeside” 32.842191, -116.880256. Google Earth. Historical Imagery. Accessed February 2.

RECON Environmental, Inc. (RECON).
2018 Post-Construction Jurisdictional Waters/Wetland Delineation Report for the Sierra Alta Way Wastewater Emergency Pipe Replacement Project, San Diego County, California. Prepared for County of San Diego, Department of Public Works. February 15.

ATTACHMENT 1:

JURISDICTIONAL WATERS/WETLAND DELINEATION REPORT FOR THE SIERRA ALTA WAY WASTEWATER EMERGENCY PIPE REPLACEMENT PROJECT, SAN DIEGO COUNTY, CALIFORNIA

Post-Construction Jurisdictional Waters/Wetland Delineation Report for the Sierra Alta Way Wastewater Emergency Pipe Replacement Project San Diego County, California

Prepared for
County of San Diego
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Contact: Thomas Duffy

Prepared by
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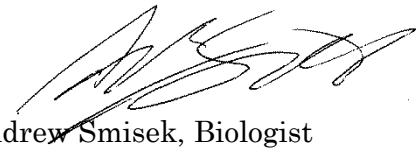
RECON Number 9045
February 15, 2018



Andrew Smisek, Biologist

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Acronyms and Abbreviations

ACOE	U.S. Army Corps of Engineers
Arid Supplement	ACOE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
County	County of San Diego
CWA	Clean Water Act
EPA	Environmental Protection Agency
FAC	Facultative indicator
FACU	Facultative upland
FACW	Facultative-Wet indicator
IS/MND	Initial Study and Mitigated Negative Declaration
NI	Not indicated
OBL	Obligate
OHWM	Ordinary High Water Mark
project	Sierra Alta Way Wastewater Emergency Pipe Replacement Project
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
UPL	Upland
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey

1.0 Summary of Findings

RECON Environmental, Inc. (RECON) conducted a routine jurisdictional waters/wetland delineation in the 2.49-acre Sierra Alta Way Wastewater Emergency Pipe Replacement Project (project) survey area on January 30, 2018. Methods for delineating wetlands followed guidelines set forth by the U.S. Army Corps of Engineers (ACOE), including the 1987 *Corps of Engineers Wetlands Delineation Manual* (ACOE 1987) and the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid Supplement; ACOE 2008a).

A total of 0.35 acre (633 linear feet) of non-wetland waters of the U.S. were delineated on-site; these non-wetland waters were delineated by an observable ordinary high water mark. No wetland waters of the U.S. occur on-site.

The California Department of Fish and Wildlife (CDFW) jurisdictional area consists of 0.35 acre (633 linear feet) of streambed.

Regional Water Quality Control Board (RWQCB) jurisdiction totals 0.35 acre (633 linear feet) of streambed.

Permanent impacts to ACOE non-wetland waters of the U.S. and CDFW/RWQCB non-wetland waters of the state total 0.05 acre and 234 linear feet and temporary impacts to these jurisdictional resources total 0.10 acre and 64 linear feet.

2.0 Introduction

The Sierra Alta Way Wastewater Emergency Pipe Replacement Project (project) involved the emergency repair of a sewer line that broke as a result of heavy flooding and erosion. A significant rain event at the end of February 2017 created erosion, exposure, and an eventual split of a 12-inch sewer line which crosses underneath Los Coches Creek to the west of East Sierra Alta Way in the unincorporated community of Lakeside in central San Diego County, California (Figure 1). The extensive erosion resulted in: widening of the channel, loss of the embankment within which the sewer main had been constructed, lowering the channel by four feet, and full exposure of the 12-inch sewer pipe within the flow line of the newly widened channel. High water caused a section of the exposed pipe to float, and transported debris became lodged beneath the floating pipe, which then broke. The purpose of the emergency maintenance work was to replace and cover the exposed 12-inch pipe to prevent future breaks. The repair was designed to be the minimum necessary to eliminate the emergency.

The emergency sewer line repair work was started on March 18, 2017 and completed on March 21, 2017. The work area consisted of an area approximately 300 feet long within the banks of the creek. In this area, emergency maintenance work consisted of the removal and replacement of the damaged section of 12-inch pipe crossing underneath and along the bank of Los Coches Creek. Once the replacement pipe was in place, 174 cubic yards of crushed rock was installed on top of the pipe to prevent future erosion and pipe failure. Equipment used during this work included an excavator and loader. When not in use, equipment was staged along the shoulder of Sierra Alta Way east of the work area and away from the creek.

The project site lies within the El Cajon Landgrant on the U.S. Geological Survey (USGS) 7.5-minute topographic map series, Alpine and El Cajon quadrangle (USGS 1996 and 1997; Figure 2). It is situated south and west of East Sierra Alta Way (Figure 3). Los Coches Creek is a tributary to the San Diego River. The site is disturbed and is classified as unvegetated channel. A review of online databases and site reviews by County biologists determined that the site and surrounding areas do not support sensitive species and that there are no known occurrences in the project vicinity. No Critical Habitat for federally listed species is present at the site or the surrounding areas.

Overall, emergency maintenance activities were completed in compliance with avoidance and minimization measures, guidelines, and conditions of Regional General Permit No. 63, and the verification letter for the Sierra Alta Way Wastewater Emergency Pipe Replacement Project (File No. SPL-2017-00194-WSZ) issued April 3, 2017.

The purpose of this report was to identify and map the location of any potential areas under the jurisdiction of ACOE, CDFW, RWQCB, and/or San Diego County. This report also quantifies the impacts of the project as they occurred to jurisdictional resources.

FIGURE 1
Regional Location

RECON

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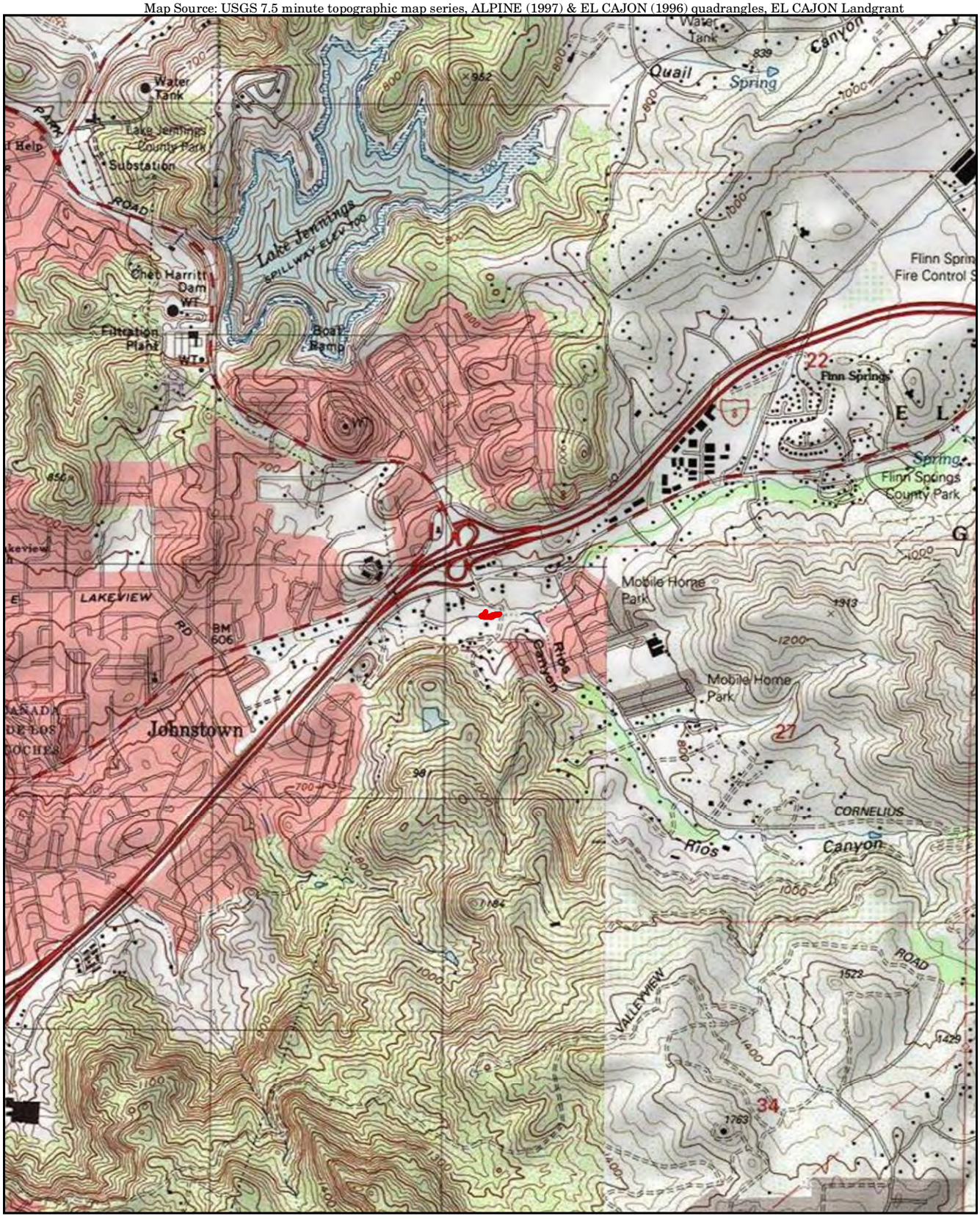
Map Source: USGS 7.5 minute topographic map series, ALPINE (1997) & EL CAJON (1996) quadrangles, EL CAJON Landgrant



0 Feet 2,000

Project Boundary

RECON

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FIGURE 2

Project Location on USGS Map

Image Source: NearMaps (flown Nov 2017)

Project Boundary

FIGURE 3

Project Location on Aerial Photograph

RECON

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3.0 Survey Methods

A routine jurisdictional waters/wetland delineation, following the guidelines set forth by the ACOE (1987, 2008a, 2008b), was performed to gather field data at potential jurisdictional waters within the survey area. Because this survey was conducted after construction, the "project area" is defined in this report as including all areas impacted during project construction activities. The area surveyed for this report includes the project area and a 50- to 100-foot buffer extending from the project area. The combined limits of the project area are shown on Figure 3 as "project boundary." RECON biologist Andrew Smisek conducted the routine delineation fieldwork on January 30, 2018. Prior to conducting the delineation, aerial photographs taken prior to construction and USGS topographic maps of the project vicinity were examined. Once on-site, areas with potential to support federal or state wetlands or waters were examined to determine the presence and extent of any jurisdictional waters. As this project involves the repair of an essential public facility, a broken sewer line, it is exempt from the County's Resource Protection Ordinance (County of San Diego 2007).

3.1 Regulatory Definitions

In accordance with Section 404 of the Clean Water Act (CWA), the ACOE regulates the discharge of dredged or fill material into waters of the U.S. The term "waters of the U.S." is defined as:

- All waters currently used, or used in the past, or which may be susceptible to be used in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds; the use, degradation, or destruction of which could affect foreign commerce including any such waters:
  (1) which could be used by interstate or foreign travelers for recreational or other purposes; or
  (2) from which fish or shellfish are, or could be, taken and sold in interstate or foreign commerce; or
  (3) which are used or could be used for industries in interstate commerce;
- All other impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified above;
- The territorial seas; and

- Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in the paragraphs above [33 CFR Part 328.3(a)].

3.2 Wetland Parameters

As stated in the federal regulations for the CWA, wetlands are defined as:

> . . . those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions (Environmental Protection Agency [EPA], 40 CFR 230.3 and, 33 CFR 328.3).

Wetlands are delineated using three parameters: hydrophytic vegetation, wetland hydrology, and hydric soils. According to the ACOE, indicators for all three parameters must be present to qualify an area as a wetland.

3.2.1 Hydrophytic Vegetation

Hydrophytic vegetation is defined as "the sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content" (ACOE 1987).

The hydrophytic status of each plant species is determined based on the National Wetland Plant List (Lichvar 2016), which breaks down the indicator status of each species as follows:

- **Obligate (OBL)**: plants that have a 99 percent probability of occurring in wetlands under natural conditions.
- **Facultative-Wet (FACW)**: plants that occur in wetlands (67 to 99 percent probability) but are occasionally found in non-wetlands.
- **Facultative (FAC)**: plants that are equally likely to occur in wetlands and non-wetlands (estimated probability 34 to 66 percent).
- **Facultative Upland (FACU)**: plants that are more often found in upland sites.
- **Upland (UPL)**: plants that have a 99 percent probability of occurring in upland sites.
- **Not Indicated (NI)**: species that have insufficient data currently available to determine an indicator status for the local region.

Dominant species with an indicator status of Not Indicated (NI) or not listed in the ACOE National List of Vascular Plant Species that Occur in Wetlands (Lichvar 2016) were evaluated as either wetland or upland indicator species based on local professional

knowledge of where the species are most often observed in habitats that are characteristic in southern California.

Hydrophytic vegetation is determined based on three indicators or tests: the dominance test, prevalence index, and morphological adaptations.

The dominance test is a repeatable and objective procedure for selecting dominant plant species and is recommended when data are available for all species in the community (ACOE 2008a). Dominant species are those plants that individually or collectively contribute more than 50 percent of the total vegetative cover plus those species that, individually, comprise 20 percent or more of the total cover (the 50/20 rule).

If the vegetation at a particular site passes the dominance test (using the 50/20 rule), the hydrophytic vegetation criterion is considered fulfilled. If it fails the dominance test and positive indicators of hydric soils and/or wetland hydrology are present, it is necessary to apply the prevalence index. The prevalence index is a weighted-average wetland indicator status of all plant species at a test site where each indicator status category is given a numeric code and weighting by percent cover (ACOE 2008a). If a prevalence index is 3.0 or less, the hydrophytic vegetation criterion is considered fulfilled.

If a site fails the prevalence index and positive indicators of hydric soils and/or wetland hydrology are present, it is necessary to assess the presence or absence of morphological adaptations. To apply this indicator, morphological features must be observed on more than 50 percent of the individuals of a FACU species living in an area where indicators of hydric soil and wetland hydrology are present (ACOE 2008a). Once this indicator is applied, the dominance test and/or the prevalence index are/is recalculated using a FAC indicator status of this species (ACOE 2008a).

3.2.2 Hydric Soils

A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation (ACOE 1987). Hydric soil indicators are formed predominantly by the accumulation or loss of iron, manganese, sulfur, or carbon compounds (ACOE 2008a). The hydric soil criterion is considered fulfilled at a location if soils in the area can be inferred to have a high groundwater table, evidence of prolonged soil saturation, or any indicators suggesting a long-term reducing environment in the upper 18 inches of the soil profile.

Hydric soil indicators are presented in three groups in the Arid Supplement (ACOE 2008a): all soils, sandy soils, and loamy and clayey soils. Indicators applicable to all soil textures are indicated as A1 through A10 on the datasheet and include histosols, histic epipedon, stratified layers, and muck, among others. Indicators in sandy soils are noted as S1 through S6 and include sandy gleyed matrix, sandy redox, and stripped matrix. F1 (loamy mucky mineral) through F9 (vernal pools) are indicators of hydric conditions within loamy and

clayey soils. A complete description of each of the hydric soil indicators is provided in the 2008 Arid Supplement and was referenced during the delineation.

3.2.3 Wetland Hydrology

The presence of wetland hydrology indicators confirm that inundation or saturation has occurred on a site but may not provide information about the timing, duration, or frequency of the event. Hydrology features are generally the most ephemeral of the three wetland parameters (ACOE 2008a).

In the 2008 Arid Supplement, wetland hydrology indicators are divided into four groups. Those that are determined based on direct observation are in Group A; these include the presence of surface water, a high water table, and saturation. Water marks, drift deposits, surface soil cracks, and other indicators of flooding or ponding fall within Group B. Group C consists of indicators that provide indirect evidence that a site was saturated recently, such as the presence of sulfidic odors or oxidized rhizospheres along living roots. Finally, Group D consists of vegetation and soil features that indicate recent wet conditions such as the FAC neutral test or a shallow aquitard (ACOE 2008a). These indicators are further classified as primary or secondary indicators.

The wetland hydrology criterion was considered fulfilled at a location if, based upon the conclusions inferred from the field observations, an area had a high probability of being periodically inundated or had soils saturated to the surface at some time during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (ACOE 1987). If at least one primary indicator or at least two secondary indicators were found at a sample point, the wetland hydrology criterion was considered fulfilled.

3.3 Non-wetland Jurisdictional Waters

The ACOE also requires the delineation of non-wetland jurisdictional waters. These waters must have strong hydrology indicators such as the presence of seasonal flows and an ordinary high water mark. An ordinary high water mark is defined as:

> . . . that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR Part 328.3).

Areas delineated as non-wetland jurisdictional waters may lack wetland vegetation or hydric soil characteristics. Hydric soil indicators may be missing, because topographic position precludes ponding and subsequent development of hydric soils. Absence of wetland vegetation can result from frequent scouring due to rapid water flow. These types of jurisdictional waters are delineated by the lateral and upstream/downstream extent of the

ordinary high water mark of the particular drainage or depression. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (ACOE 2008b) has clear definitions of the OHWM indicators.

3.4 Atypical Situations

The definition of a wetland includes the phrase "under normal circumstances," because there are situations in which the vegetation of a wetland has been removed or altered because of recent natural events or human activities (ACOE 1987).

To describe these conditions, the ACOE uses definitions for atypical situations and problem areas. They are as follows:

> Atypical situation: . . . refers to areas in which one or more parameters (vegetation, soil, and/or hydrology) have been sufficiently altered by recent human activities or natural events to preclude the presence of wetland indicators of the parameter (ACOE 1987).
>
> Problem areas: . . . wetland types in which wetland indicators of one or more parameters may be periodically lacking due to normal seasonal or annual variations in environmental conditions that result from causes other than human activities or catastrophic natural events. Representative examples of problem areas include seasonal wetlands, wetlands on drumlins, prairie potholes, and vegetated flats (ACOE 1987).

Atypical situations and problem areas may lack one or more of the three wetland parameters and may still be considered wetlands if background information on the previous condition of the area and field observations indicate that the missing wetland criteria were present before the disturbance and would occur at the site under normal circumstances. Additional delineation procedures would be employed if normal circumstances do not occur on a site.

3.5 ACOE Jurisdictional Areas

Under Section 404 of the CWA, the ACOE regulates the dredging or discharge of fill material into waters of the U.S. including wetland and non-wetland waters as defined above.

3.6 CDFW Jurisdictional Areas

Under sections 1600–1607 of the California Fish and Game Code, the CDFW regulates activities that would divert or obstruct the natural flow or would substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. The CDFW has jurisdiction over riparian habitats associated with watercourses. Riparian vegetation is not defined in statute (Title 14, Section 1.72) but refers to vegetation associated with a

stream channel. Jurisdictional areas are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider.

3.7 RWQCB Jurisdictional Areas

The RWQCB is the regional agency responsible for protecting water quality in California. The jurisdiction of this agency includes hydrophytic vegetation and all waters of the United States as mandated by Section 401 in the CWA and the California Porter-Cologne Water Quality Control Act. State waters are all waters that meet one of three criteria (hydrology, hydric soils, or wetland vegetation) and generally include but are not limited to, all waters under the jurisdiction of the ACOE.

3.8 Survey Methods

The potential wetland areas were surveyed by walking throughout the survey area and making observations of those areas exhibiting characteristics of jurisdictional waters or wetlands. Hydrologic information for the site was obtained by reviewing USGS topographic maps and by directly observing hydrology indicators in the field. No portions of the site appeared to contain conditions necessary for ponding that would allow the formation of wetlands, so no soil pit sample locations were established and no Wetland Determination Data Forms were completed during this survey. However, the project occurred in an ephemeral stream, so data were recorded on the Ephemeral and Intermittent Streams OHWM Datasheet provided in the 2010 Updated Datasheet for the Identification of the OHWM in the Arid West Region (ACOE 2010). A total of four OHWM sample point locations were chosen, including locations within the impact area as well as one location upstream of the project area that was not impacted. Plant species within the channel, on the adjacent terraces, and within the surrounding land were recorded and vegetation communities were mapped within the survey area. Plant species nomenclature follows The Jepson Online Interchange (University of California 2018).

Temporary and permanent project impacts were recorded using a sub-meter accuracy global positioning system (GPS) unit based on on-site observations in conjunction with project photos, pre-impact aerial photographs, and construction plans, including the quantities of materials used, provided by the County. The limits of the temporary impact area were delineated within areas used for site access and staging. Because the replacement pipe and gravel are contained beneath the rip-rap, the limits of the permanent impacts were delineated at the limits of the rip-rap installed.

4.0 Results of Field Data

A description of the on-site conditions, including the potential for hydrophytic vegetation, hydric soil, and the local hydrology in the survey area is presented below. A copy of the field data forms used during the survey is provided in Attachment 1.

4.1 Vegetation

At the time of the survey, vegetation and land cover types observed within the survey area include non-vegetated channel, coast live oak woodland, disturbed habitat, and urban/developed land. These are described in more detail below and summarized in Table 1. None of the land cover types recorded during this survey were dominated by hydrophytic vegetation. Portions of the disturbed habitat along Los Coches Creek contained hydrophytic vegetation in the form of Arundo-dominated riparian as recently as 2014.

Los Coches Creek occurs mostly as a non-vegetated channel with scattered individuals of giant reed, mule fat (*Baccharis salicifolia*, FAC), and castor bean (*Ricinus communis*, FACU). A small tributary flows south from near Ridge Hill Road to the north, and connects with Los Coches Creek within the survey area. This tributary is also a non-vegetated channel, although a portion flows beneath the canopy of a patch of coast live oak woodland in the northwestern portion of the survey area. Additional patches of coast live oak woodland occur in the southern and eastern portions of the survey area and are dominated by mature coast live oaks (*Quercus agrifolia*, NI) with an open understory containing sparse cover of non-native upland annuals (Figure 4).

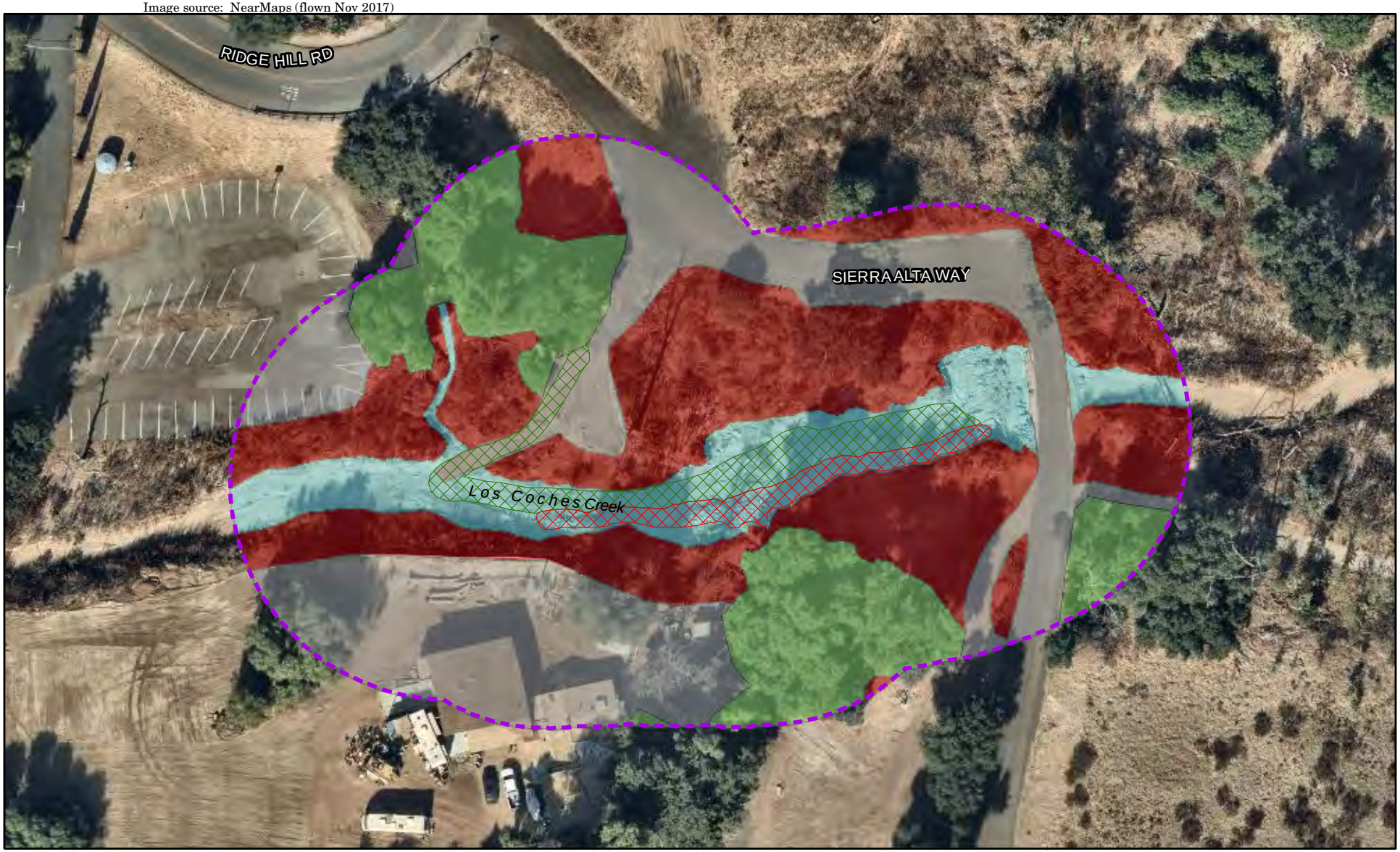
Disturbed habitat occurs along much of Los Coches Creek and the tributary drainage. These areas are dominated by weedy annuals such as horseweed (Erigeron sp., FACU), as well as giant reed (*Arundo donax*, FACW) and other non-natives. Most of these areas appear to have undergone vegetation management/removal, leaving mostly thatch and dead giant reed stalks (Photographs 1 and 2). Some portions of disturbed habitat contain mulch, likely as a result of this prior on-site weed maintenance.

Urban/developed land occurs within the survey area as gravel and dirt roads and driveways, including the graded ramp leading into the creek and used during project activities (see Figure 4).

Table 1
Vegetation Communities/Land Cover Types within the Survey Area

Biological Resources	Total within Survey Area (acres)
Non-vegetated channel	0.35
Coast live oak woodland	0.43
Disturbed habitat	0.93
Urban/developed land	0.79
Total	**2.50**

Image source: NearMaps (flown Nov 2017)



Permanent Impacts
Temporary Impacts
100-foot Buffer

Vegetation Community

Coast Live Oak Woodland
Disturbed Lands
Unvegetated Channel
Urban/Developed

0 Feet 70

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FIGURE 4

Biological Resources and Project Impacts

PHOTOGRAPH 1
View of Los Coches Creek and Disturbed Habitat within Survey Area
Facing West, January 30, 2018

PHOTOGRAPH 2
View of Dead Giant Reed and Mulch in Disturbed Habitat South of
Los Coches Creek within Survey Area, Facing West, January 30, 2018

4.2 Soils

Information on the soil types sampled in the survey area is summarized from the Soil Survey for San Diego County (U.S. Department of Agriculture [USDA] 1973), the San Diego Association of Governments' 1995 geographic information system data (SANDAG 1995), and the Hydric Soils of California list obtained from the Natural Resource Conservation Service (2015). One soil type is mapped within the survey area, Visalia sandy loam, 2 to 5 percent slopes (Figure 5). This soil type is listed as a hydric soil by the Natural Resource Conservation Service (NRCS 2015) and is described below.

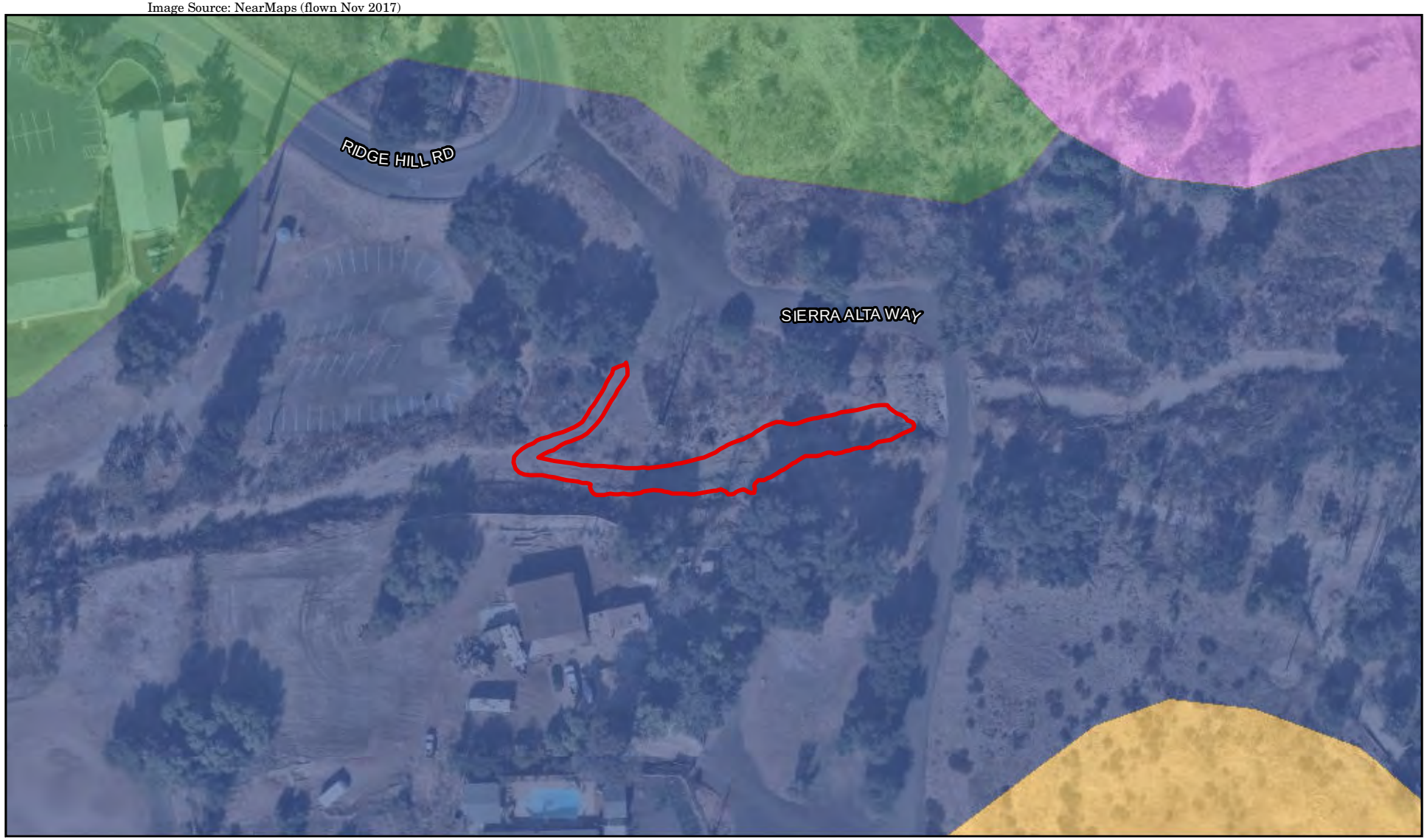
> Visalia sandy loam soils occur on alluvial fans and flood plains containing granitic alluvium. The dark grayish-brown sandy loam topsoil is up to 12 inches thick and has a weak fine granular structure. The subsoil is also dark grayish brown, but has a massive structure, and extends up to 60 inches deep, with a loam texture at depth. The soil is moderately well-drained, permeability is moderately rapid, and runoff is slow. Visalia sandy loam, 2 to 5 percent slopes, occurs on gentle slopes.

Areas outside the steep stream banks would not become inundated except during large flood events. These areas are gently sloped and do not appear to pond or become saturated long enough for anaerobic soil conditions to form, and therefore would not contain hydric soils. Within the stream channel, the substrate is composed mostly of sand that appears to have been recently deposited, likely during the recent rain event on January 9, 2018. Portions of the substrate also include boulders and bedrock. The ephemeral nature of this portion of Los Coches Creek likely prohibits the formation of hydric soils.

4.3 Hydrology

Los Coches Creek is a blue-line stream that originates in the neighborhood of Blossom Valley, approximately 3 miles northeast of the project site. A number of small and medium-sized tributaries connect with Los Coches Creek, draining the surrounding hills east and south of Lakeside, California. The creek contains a natural bottom and a patchwork of wetland and non-wetland vegetation as it flows west through the project site and continues for approximately 2 miles through the Lakeside neighborhood of Johnstown. It then turns to flow north and becomes concrete-lined as it continues approximately another 2 miles through central Lakeside paralleling Los Coches Road and crosses under State Route 67 to connect to the San Diego river. The San Diego River flows approximately 17 miles generally westward before meeting the Pacific Ocean, a Traditionally Navigable Water. Within the survey area, a small tributary connects to Los Coches Creek from the north, draining a small area south of Old Highway 80.

Image Source: NearMaps (flown Nov 2017)



Project Boundary

Soil Classification

- Escondido very fine sandy loam, 15 to 30 percent slopes, eroded
- Escondido very fine sandy loam, 5 to 9 percent slopes
- Escondido very fine sandy loam, 9 to 15 percent slopes, eroded
- Visalia sandy loam, 2 to 5 percent slopes

0 Feet 100

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FIGURE 5

Project Location on Soils Map

Both the main channel of Los Coches Creek and the small tributary meet the hydrology criterion by containing both drift and sediment deposits. The most substantial OHWM indicator observed within both the main channel of Los Coches Creek and the small tributary was a significant break in slope, with many portions of the stream banks occurring as nearly vertical and between 4 and 7 feet in height. Additional indicators include a change in sediment texture and a change (decrease) in vegetation cover (Photographs 3 and 4).

4.4 Atypical Situation

Prior to the project, the project area was subject to a giant reed eradication effort conducted by the San Diego River Conservancy between 2013 and 2014. This loss of stabilizing vegetation left the streambed and associated terraces mostly lacking of vegetation and subject to substantial bank erosion. Research of previous aerial photographs from 2013 through 2017 (Google 2018) shows that, prior to eradication, this portion of Los Coches Creek appeared to consist of a narrow non-vegetated channel surrounded by dense cover of giant reed. The banks of the channel were likely more gradual than what exists today. Much of the streambank that historically occurred appears to have eroded away during a flood event in winter 2015-2016, as historical aerials show the channel between 5 and 10 feet in width in September of 2014 and between 15 and 25 feet in width in July of 2016. Historical aerial photographs are included as Attachment 2.

Giant reed, the dominant plant species apparent in historical photographs is a FACW species, so this Arundo-dominated riparian would have been hydrophytic vegetation. The channel likely met hydrology criteria and soils surrounding the channel, especially in low areas with potential for ponding, could have met hydric soils criteria. Therefore, it is possible that jurisdictional wetlands occurred along the previous stream banks where hydrology and hydric soil indicators could have been present in addition to hydrophytic vegetation.

Although the terraces both north and south of the channel were also dominated by giant reed prior to the eradication effort and therefore would have contained hydrophytic vegetation, these areas likely did not meet hydric soils or hydrology criteria and would not have been jurisdictional wetlands.

Within the project area, Los Coches Creek has been sufficiently altered by recent human activities and natural events to preclude the presence of wetland indicators as described above. Therefore, this would be considered an atypical situation. The removal of giant reed and subsequent erosion of the streambank likely resulted in the conversion of jurisdictional wetlands to jurisdictional non-wetland waters.

PHOTOGRAPH 3
View of Los Coches Creek within Project Area, Facing West
January 30, 2018

PHOTOGRAPH 4
View of Los Coches Creek Downstream of Project Area
within Survey Area, Facing West, January 30, 2018

5.0 Location of Jurisdictional Waters

Jurisdictional waters were delineated on-site according to ACOE, CDFW, RWQCB, and County regulations. Acreages of jurisdictional waters for each of the different jurisdictions are provided in Table 2. Figure 6 shows the locations of the jurisdictional waters identified on-site for each agency.

Table 2
Existing Jurisdictional Resources

Jurisdictional Areas	Total within Survey Area acres (linear feet)
ACOE Jurisdictional Areas	
Non-wetland Waters of the U.S.	0.35 (633)
ACOE Total Jurisdiction (404)	**0.35 (633)**
CDFW	
Streambed	0.35 (633)
CDFW Total Jurisdictional Areas (1602)[1]	**0.35 (633)**
RWQCB	
Streambed	0.35 (633)
RWQCB Total Jurisdictional Areas (401)*	**0.35 (633)**
*CDFW/RWQCB area of jurisdiction includes all ACOE jurisdictional waters.	

5.1 ACOE Jurisdictional Areas

No areas within the survey area satisfied the criteria for ACOE wetlands. Although hydrophytic vegetation occurred prior to the giant reed eradication activities of 2014, none was present during project activities or during the survey for this report. Prior to giant reed eradication, portions of the site, especially in areas of low elevation adjacent to the creek, may have met hydric soils and hydrology criteria along with hydrophytic vegetation. Thus, there were likely potential ACOE wetland areas present adjacent to or within this portion of Los Coches creek prior to 2014. However, due to the giant reed eradication in 2014 and subsequent flooding in early 2016, these areas were eroded and converted to a widened non-vegetated channel which currently exists on-site.

The existing non-vegetated channel of Los Coches Creek and the small tributary are ephemeral streams. With ordinary high water marks they show evidence of sediment and drift deposits and have a connection to the San Diego River. Thus, the ACOE jurisdictional areas within these ephemeral channels are considered non-wetland waters and total 0.35 acre (633 linear feet). The lateral extent of the non-wetland waters was determined by the observable ordinary high water mark.

Image source: NearMaps (flown Nov 2017)

0 Feet 70

Permanent Impacts
Temporary Impacts
100-foot Buffer
OHWM Sample Points
Jurisdictional Waters
ACOE Non-wetland Waters, CDFW Streambed, RWQCB Waters of the State

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FIGURE 6

Jurisdictional Resources and Project Impacts

5.2 CDFW Jurisdictional Areas

A total of 0.35 acre (633 linear feet) of streambed under the jurisdiction of the CDFW (under Fish and Game Code 1600-1607) was delineated within the ephemeral channels (see Figure 6). The area was mostly unvegetated during project construction and during the survey for this report.

5.3 RWQCB Jurisdictional Areas

RWQCB jurisdictional areas (under Clean Water Act Section 401) match CDFW jurisdictional areas described above, totaling 0.35 acre (633 linear feet) of non-wetland waters of the State.

6.0 Project Impacts

Permanent impacts occurred as a result of sewer pipe replacement and riprap installation, and temporary impacts occurred as a result of vehicle and equipment access. Permanent impacts to non-wetland waters of the U.S. total 0.05 acre and 234 linear feet, and temporary impacts to non-wetland waters of the U.S. total 0.10 acre and 64 linear feet. The linear feet of Los Coches Creek that underwent temporary impacts include almost all 234 linear feet that underwent permanent impacts plus an additional 64 linear feet (see Figure 6). The impacts to these jurisdictional resources are summarized in Table 3 below.

Permanent impacts to CDFW streambed total 0.05 acre and 234 linear feet, and temporary impacts to CDFW streambed total 0.10 acre and 64 linear feet (see Table 3).

Permanent impacts to RWQCB non-wetland waters of the state total 0.05 acre and 234 linear feet, and temporary impacts to RWQCB non-wetland waters of the state total 0.10 acre and 64 linear feet (see Table 3).

Table 3
Project Impacts to Jurisdictional Resources

Jurisdictional Areas	Temporary Impacts acres (linear feet)	Permanent Impacts acres (linear feet)
ACOE Jurisdictional Areas		
Non-wetland Waters of the U.S.	0.10 (64*)	0.05 (234)
ACOE Total Jurisdiction (404)	**0.10 (64*)**	**0.05 (234)**
CDFW		
Streambed	0.10 (64*)	0.05 (234)
CDFW Total Jurisdictional Areas (1602)[1]	**0.10 (64*)**	**0.05 (234)**
RWQCB		
Streambed	0.10 (64*)	0.05 (234)
RWQCB Total Jurisdictional Areas (401)**	**0.10 (64*)**	**0.05 (234)**

*64 linear feet of temporary impacts in addition to portions of the creek that underwent both permanent and temporary impacts.
**CDFW/RWQCB area of jurisdiction includes all ACOE jurisdictional waters.

7.0 Regulatory Issues

On April 3, 2017 the County of San Diego Department of Public Works received authorization from ACOE that this project would comply with Regional General Permit (RGP) No. 63 - Repair and Protection Activities in Emergency Situations (SPL-2017-00194-WSZ). At this time, the project impacts had not been quantified and this permit was issued based on estimated permanent impacts to 0.027 acre (235 linear feet) of non-wetland waters of the U.S. This report provides a description of the jurisdictional resources that were present during the time of project construction activities and provides updated impact calculations based on actual work performed. The County of San Diego has since complied with the special conditions of this permit regarding notification requirements.

On April 25, 2017 the RWQCB approved the enrollment of the County of San Diego in the General Certification for RGP-63 for this project. This enrollment held the County of San Diego responsible for meeting all the provisions of that permit (R9-2017-0073:834686).

Fish and Game Code section 1610 exempts certain types of emergency work from the notification requirements of section 1602. This project qualified as exempt due to its emergency status and, therefore, no Lake or Streambed Alteration Program permit was required. In compliance with emergency notification requirements, the County of San Diego submitted a Lake or Streambed Alteration Program Notification of Emergency Work to CDFW on March 24, 2017, within 14 days after the start of work.

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1997 Alpine Quadrangle 7.5-Minute Topographic Map.

ATTACHMENTS

ATTACHMENT 1

Ephemeral and Intermittent Streams OHWM Datasheets

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sierra Alta Way Sewer
Project Number: 8762
Stream: Los Coches Creek
Investigator(s): Andrew Smisek

Date: 1/30/18 **Time:** 0945
Town: Lakeside **State:** CA
Photo begin file#: **Photo end file#:**

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: Mercator **Datum:** WGS 84
Coordinates:

Potential anthropogenic influences on the channel system:
Arundo treated and removed from creek between 2014 and 2015, leaving it mostly devoid of vegetation and subject to scour/erosion. Creek contains a substantial amount of trash and debris plus rip-rap from this project

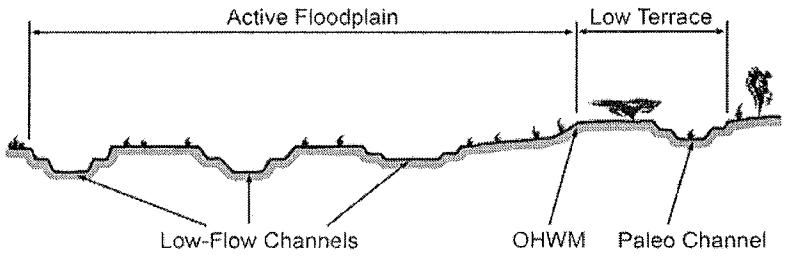
Brief site description: Currently unvegetated channel surrounded by a patchwork of developed residences and undeveloped land, including groups of oaks near creek. AZ crossing where road crosses creek.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

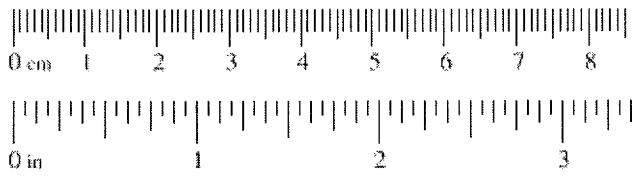


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

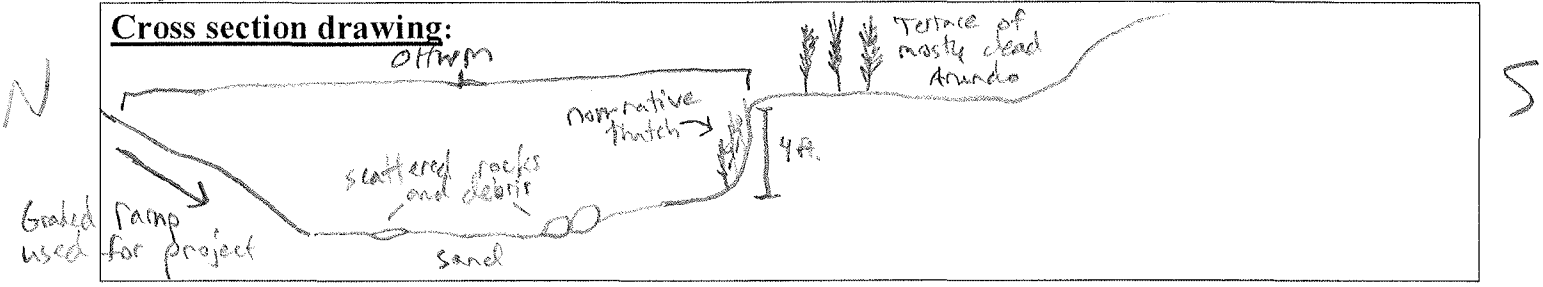
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
		Granule	Gravel
0.079	2.00		
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
		Very fine sand	Sand
1/8 0.0025	0.0625		
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
		Very fine silt	Silt
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 8762 **Cross section ID:** # 1 **Date:** 1/30/18 **Time:** 0945

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments: OHWM defined by nearly vertical bank on south side and by presumed point along graded dirt ramp on north side. With the active floodplain, vegetation cover is minimal and sandy sediment occurs

Floodplain unit:

- [ ] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sand

Total veg cover: 1 % Tree: _____ % Shrub: _____ % Herb: 1 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [x] Other: mostly lacking vegetation
- [ ] Other: _____
- [ ] Other: _____

Comments:

The active floodplain is defined by the bank on the south side and a presumed point along graded ramp on north side. It contains very little vegetation cover and has evidence of sediment and debris deposits.

Project ID: **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: loamy

Total veg cover: 10 % Tree: ____ % Shrub: ____ % Herb: 10 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

The southern terrace contains scattered non-natives, such as Arundo, that have likely been treated because they appear to mostly be dead. No signs of hydrology occur here but this area may become inundated during large flood events. To the north, the graded ramp continues up to the road.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____ % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sierra Alta Way Sewer | **Date:** 1/30/18 | **Time:** 1000
Project Number: 8762 | **Town:** Lakeside | **State:** CA
Stream: Los Coches Creek | **Photo begin file#:** | **Photo end file#:**
Investigator(s): Andrew Smisek

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: mercator **Datum:** WGS 84
Coordinates:

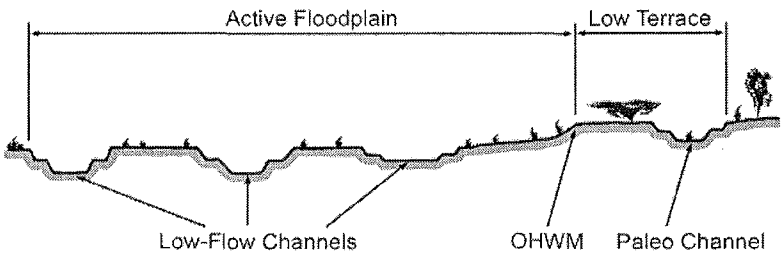
Potential anthropogenic influences on the channel system:
Arundo treated and removed from creek between 2014 and 2015 leaving it mostly devoid of vegetation. Substantial amount of trash and debris as well as rip-rap from project

Brief site description:
Currently unvegetated channel surrounded by a patchwork of developed and undeveloped land. An AZ crossing occurs where road crosses creek. Groups of coast live oaks occur near the creek

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

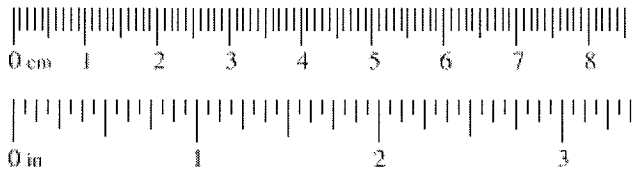


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

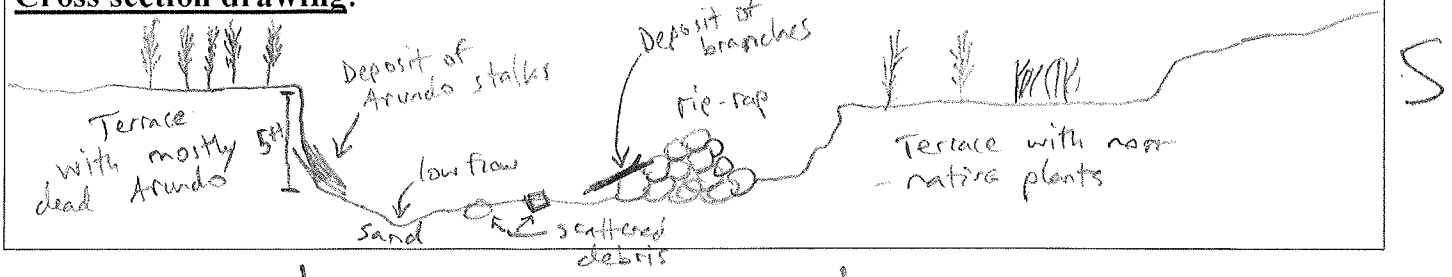
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 8762 **Cross section ID:** #2 **Date:** 1/30/18 **Time:** 1000

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

The ordinary high water mark is clearly defined by nearly vertical banks between 4 and 7 ft in height. An inconsistent low-flow channel was observed in some areas. The active floodplain contains many areas of drift and sediment deposits.

Floodplain unit:

- [x] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sand

Total veg cover: 2 % Tree: ____ % Shrub: ____ % Herb: 2 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [x] Other: mostly lacking vegetation
- [ ] Other: _____
- [ ] Other: _____

Comments:

The active floodplain is defined by the stream banks and contains very little vegetation cover and substantial amounts of drift and sediment deposits. This area also includes a portion of the rip-rap installed for this project.

Project ID: **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: loamy

Total veg cover: 10 % Tree: ____% Shrub: ____% Herb: 10 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Low cover of non-native species such as Arundo and castor bean. The terraces don't contain hydrology indicators. There area likely only become inundated during large flood events.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sierra Alta Way Sewer
Project Number: 8762
Stream: Los Coches Creek
Investigator(s): Andrew Smiseli

Date: 1/30/18 **Time:** 1030
Town: Lakeside **State:** CA
Photo begin file#: **Photo end file#:**

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: Mercator **Datum:** WGS 84
Coordinates:

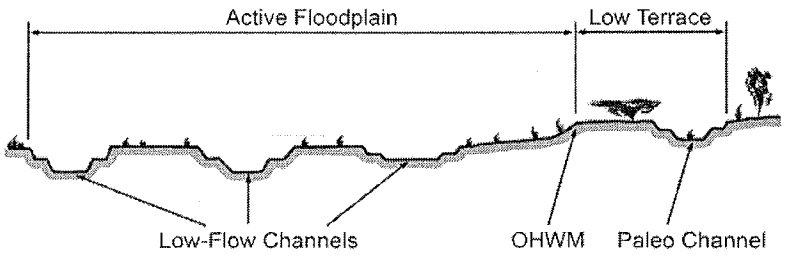
Potential anthropogenic influences on the channel system:
Arundo treated and removed between 2014 and 2015. A substantial amount of trash and debris occurs in creek, some hung up on an electrical line within channel. Rip rap occurs along south bank from this project.

Brief site description: Mostly unvegetated channel surrounded by terraces of areas where Arundo removed, and a patchwork of developed residences and undeveloped land beyond that.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

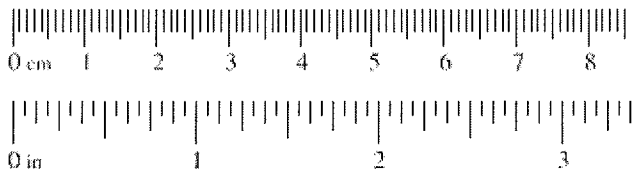


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

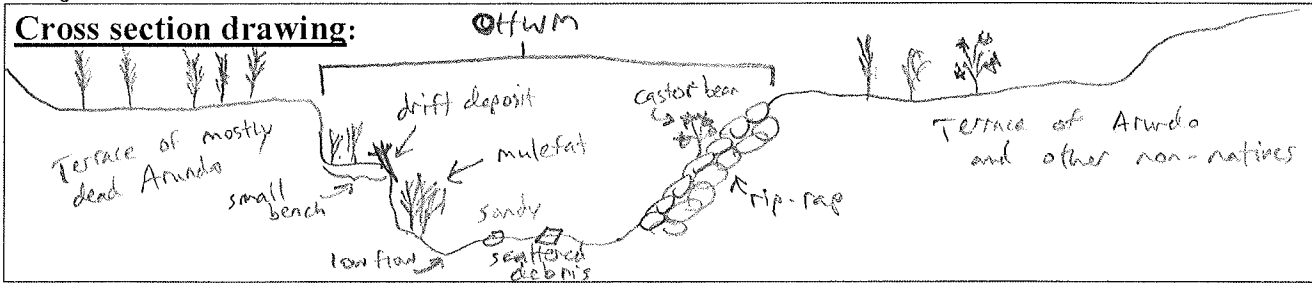
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
		Granule	Gravel
0.079	2.00		
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
		Very fine sand	Sand
1/8 0.0025	0.0625		
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
		Very fine silt	Silt
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 8762 **Cross section ID:** #3 **Date:** 1/30/18 **Time:** 1030

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments: OHWM defined by stream banks - northern contains a small bench but an obvious bank before the terrace above, southern bank developed during project by installation of rip-rap. The top of this rip-rap bank defines OHWM before the naturally occurring terrace above.

Floodplain unit:

- [x] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sand

Total veg cover: 3 % Tree: ____ % Shrub: 2 % Herb: 1 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [x] Surface relief
- [x] Other: mostly lacking vegetation
- [ ] Other: _____
- [ ] Other: _____

Comments: A low flow channel exists here but is not consistent throughout creek. Active floodplain defined by banks and includes areas of drift and sediment deposit, and almost no vegetation. Individual mulefat scattered. Sandy substrate occurs with streambed.

Project ID: **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: loamy

Total veg cover: 10 % Tree: ____ % Shrub: ____ % Herb: 10 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

The northern and southern terraces contain more vegetation, although cover is still low at ~10% with Arundo having been mostly removed. No hydrology indicators occur here but these areas may become inundated during large flood events.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____ % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sierra Alta Way
Project Number: 8762
Stream: Los Coches Creek
Investigator(s): Andrew Smisek

Date: 1/30/18 **Time:** 1100
Town: Lakeside **State:** CA
Photo begin file#: **Photo end file#:**

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: Mercator **Datum:** WGS 84
Coordinates:

Potential anthropogenic influences on the channel system:
Arundo removed between 2014 and 2015. AZ crossing where road crosses creek, creek contains a substantial amount of trash and debris.

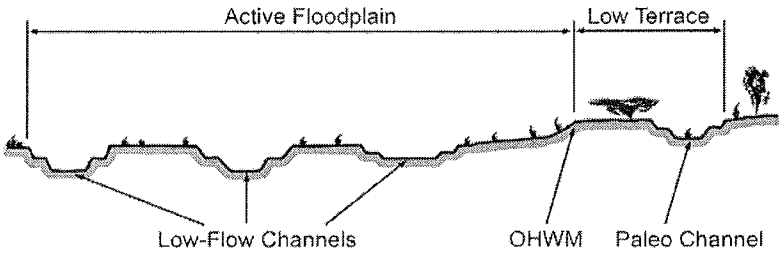
Brief site description:
This sample point occurs upstream (east) of project and AZ crossing. Again, surrounded by developed residences and undeveloped land

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

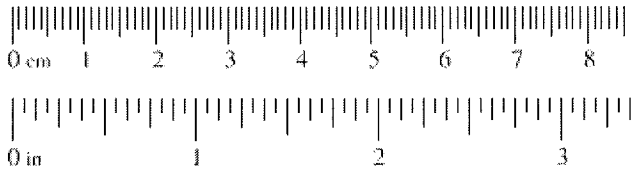


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

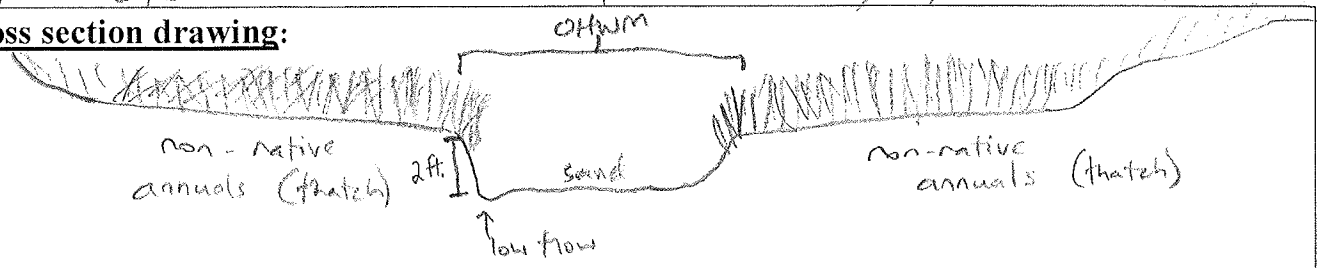
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 8762 **Cross section ID:** #4 **Date:** 1/30/18 **Time:** 1600

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments: OHWM defined by stream banks which extend ~ 2 feet above bottom of channel. Almost no vegetation cover occurs within channel compared to substantial vegetation cover on northern and southern terraces.

Floodplain unit:

- [x] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Sand

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [x] Other: mostly lacking vegetation
- [ ] Other: _____
- [ ] Other: _____

Comments: The active floodplain is defined by the stream banks and contains sand substrate that has likely built up upstream of A2 crossing during flow. This area lacks vegetation and contains small areas of low-flow channels which are inconsistent.

Project ID: **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 50 % Tree: ____ % Shrub: ____ % Herb: 50 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

The northern and southern terraces contain mostly non-native upland annuals and gradually transition to surrounding land. It is apparent that Arundo was mostly removed from these areas, they may become inundated during large flood events.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____ % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

ATTACHMENT 2

Historical Aerial Photographs

Image Source: SanGIS (flown March 2012)

0 Feet 80

Project Boundary

ATTACHMENT 2a

Project Location on Aerial Photograph - 3/2012

RECON

M:\JOBS5\9045\common_gis\Att2a.mxd 2/6/2018 sab

Image Source: NearMaps (flown Sept 2014)

0 Feet 100

Project Boundary

ATTACHMENT 2b

Project Location on Aerial Photograph - 9/15/2014

RECON

M:\JOBS5\9045\common_gis\Att2b.mxd 2/6/2018 sab

Image Source: NearMaps (flown July 2016)

0 Feet 80

Project Boundary

ATTACHMENT 2c

RECON

Project Location on Aerial Photograph -7/21/2016

M:\JOBS5\9045\common_gis\Att2c.mxd 2/6/2018 sab