RECORD WITHOUT FEE UNDER CALIFORNIA GOVERNMENT CODE SECTION 6103

AFTER RECORDING RETURN TO:

LAND TRUST OF SANTA CLARA VALLEY
ATTN: KEVIN O'DAY, PRESIDENT
605 TENNANT AVENUE
MORGAN HILL, CA 95037

SPACE ABOVE THIS LINE FOR RECORDER'S USE

APN: 779-06-030

Grantee is exempt under section 11922 Revenue and Taxation Code of the state of California. Declarant or Agent Determining Tax:

_____
Name, Title

DOCUMENT NO.: 5010-229.1

CONSERVATION EASEMENT DEED
Lake Silveira Compensatory Mitigation Preserve for Upper Llagas Creek Flood Protection Project

THIS CONSERVATION EASEMENT DEED ("Conservation Easement") is made as of the _____ day of _____, 2019, by the Santa Clara Valley Water District ("Grantor"), a Special District, created by the California Legislature, in favor of the Land Trust of Santa Clara Valley ("Grantee"), a California non-profit corporation, with reference to the following facts:

RECITALS

A. Grantor is the sole owner in fee simple of certain real property containing approximately 15.993 acres, located in the City of Morgan Hill, County of Santa Clara, State of California, and designated as a portion of Assessor's Parcel Number 779-06-030 (the "Easement Property"). The Easement Property is legally described and depicted in **Exhibit A** attached to this Conservation Easement and incorporated in it by this reference.

As a condition of the Grantor's fee purchase of the Property from the County of Santa Clara (County), approximately 52.9± acres as legally described and depicted in **Appendix A** of the Management Plan (**Exhibit B**), encompassing the entire Easement Property, the Grantor shall separately grant an open space easement to the County and the City of Morgan Hill (City) for park purposes of trail connectivity through linkage of the site to the regional system of trails within the geographic boundary of Santa Clara County, scenic viewshed protection, habitat conservation and open space preservation consistent with the 1995 Countywide Trails Master Plan, as amended from time to time (Open Space Easement). However, this Open Space Easement shall be subordinate to the Conservation Easement granted herewith.

B. The Easement Property possesses wildlife and habitat values of great importance to Grantee, the people of the State of California and the people of the United States. The Easement Property will provide high quality natural, restored and/or enhanced habitat for listed or special-status plant and/or animal species including but not limited to Western pond turtle, steelhead trout (South-Central Distinct Population Segment); and contain native and/or non-native habitats including riparian forest, oak woodlands and forests, sycamore woodland, and grassland; approximately 5 acres of created wetlands; and restored approximately 2,000 linear feet of Llagas Creek, created, enhanced and/or preserved jurisdictional waters of the United States and Waters of the State. Individually and collectively, these wildlife and habitat values comprise the "Conservation Values" of the Easement Property.

C. This Conservation Easement provides partial mitigation for impacts of the Grantor's Upper Llagas Creek Flood Protection Project (Project) to wetlands and other waters of the United States/State. The Easement Property consists of approximately 15.993 acres of stream and watershed Protection, restores approximately 2,000 linear feet of Llagas Creek and creates approximately 5 acres of freshwater wetlands. Mitigation requirements for the Project are described in the U.S. Army Corps of Engineers ("USACE") Permit No. 2014-00086S, Central Coast Regional Water Quality Control Board ("CCRWQCB") Waste Discharge Requirements and Water Quality Certification (Order No. 34316WQ03 (July 27, 2017), and California Department of Fish and Wildlife ("CDFW") 1600 Streambed Alteration Agreement No. 1600-2015-0356-R3 (January 11, 2017).

D. The CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants and the habitat necessary for biologically sustainable populations of these species pursuant to California Fish and Game Code Section 1802. CDFW is authorized to hold easements for these purposes pursuant to California Civil Code Section 815.3, Fish and Wildlife Game Section 1348, and other provisions of California law.

E. The National Marine Fisheries Service (the "NMFS"), an agency within the United States Department of Commerce, has jurisdiction over the nation's ocean recourses including habitat, protection, restoration and management of fish, necessary for biologically sustainable populations of these species within the United States pursuant to the federal Endangered Species Act, 16 U.S.C. Section 1531, *et seq.*, the Fish and Wildlife Coordination Act, 16 U.S.C. Sections 661-666c, the Fish and Wildlife Act of 1956, 16 U.S.C. Section 742(f), *et seq.*, and other provisions of federal law.

F. The USACE has jurisdiction over waters of the United States pursuant to the federal Clean Water Act, 33 U.S.C. Section 1251, *et seq.*

G. The CCRWQCB provides regulatory authority over "waters of the state," which are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code Section 13050), pursuant to the California Porter-Cologne Water Quality Control Act and, together with the federal Clean Water Act. More specifically, the State Water Resources Control Board and its nine Regional Water Quality Control Boards have jurisdiction over the bed and banks of a stream channel, its riparian corridor, and its beneficial uses.

H. Grantee is authorized to hold this conservation easement pursuant to California Civil Code Section 815.3, Government Code Section 65965, and Government Code Section 65967. Specifically, Grantee is (i) a tax-exempt nonprofit organization qualified under section 501(c) (3) of the Internal Revenue Code of 1986, as amended, and qualified to do business in California; (ii) a "qualified organization" as defined in section 170(h) (3) of the Internal Revenue Code; and (iii) an organization which has as its primary and principal purpose and activity the protection and preservation of natural lands or resources in its natural, scenic, agricultural, forested, or open space condition or use.

I. The agencies that require mitigation associated with this Conservation Easement are the CDFW, NMFS, CCRWQCB, and USACE. These agencies are together referred to in this Conservation Easement as the "Permitting Agencies".

J. A final, approved copy of the Management Plan, and any amendments thereto approved by the USACE, shall be kept on file at the respective offices of the USACE and Grantor. Grantee's approval of any amendments to the Management Plan shall not be unreasonable withheld. If Grantor, or any successor or assign, requires an official copy of the Management Plan, it should request a copy from the USACE at its address for notices listed in Section 12 of this Conservation Easement.

K. The Management Plan is included as **Exhibit B** and is incorporated by this reference into this Conservation Easement as if fully set forth herein. The Management Plan includes any amendments to the Management Plan approved by the USACE.

L. A Memorandum of Understanding (MOU) between the USACE and the Santa Clara Valley Water District is included as **Exhibit C** and is incorporated by this reference into this Conservation Easemetn as if fully set forth herein.

M. All section numbers referred to in this Conservation Easement are references to sections within this Conservation Easement, unless otherwise indicated.

COVENANTS, TERMS, CONDITIONS AND RESTRICTIONS

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and pursuant to the laws of the United States and the State of California, including California Civil Code Section 815, *et seq.*, Grantor hereby voluntarily grants and conveys to Grantee a conservation easement in perpetuity over the Easement Property.

1. Purposes.

The purposes of this Conservation Easement are to ensure that the Easement Property will be retained forever in its natural, restored, or enhanced condition as contemplated by the Management Plan, and to prevent any use of the Easement Property that will impair or interfere with the Conservation Values of the Easement Property ("Purposes"). Grantor intends that this Conservation Easement will confine the use of the Easement Property to activities that are consistent with such Purposes, including, without limitation, those involving the preservation, restoration and enhancement of the Conservation Values, as listed in the Recitals, native species and their habitats implemented in accordance with the Management Plan.

2. Grantee's Rights.

To accomplish the Purposes of this Conservation Easement, Grantor hereby grants and conveys the following rights to Grantee:

(a) To preserve and protect the Conservation Values of the Easement Property.

(b) To enter the Easement Property at reasonable times, in order to monitor compliance with and otherwise enforce the terms of this Conservation Easement, the Management Plan and to implement at Grantee's sole discretion Management Plan activities that have not been implemented, provided that Grantee shall not unreasonably interfere with Grantor's authorized use and quiet enjoyment of the Easement Property.

(c) To prevent any activity on or use of the Easement Property that is inconsistent with the Purposes of this Conservation Easement and to require the restoration of such areas or features of the Easement Property that may be damaged by any act, failure to act, or any use or activity that is inconsistent with the Purposes of this Conservation Easement.

(d) To require that all mineral, air and water rights as Grantee deems necessary to preserve and protect and sustain the biological resources and Easement Property Conservation Values shall remain a part of and be put to beneficial use upon the Easement Property, consistent with the Purposes of this Conservation Easement.

(e) All present and future development rights appurtenant to, allocated, implied, reserved or inherent in the Easement Property; such rights are hereby terminated and extinguished, and may not be used on or transferred to any portion of the Easement Property, nor any other property adjacent or otherwise.

3. Third Party Beneficiary.

Grantor and Grantee acknowledge that the USACE is the third party beneficiary of this Conservation Easement with the right of access to the Easement Property and the right to enforce all of its provisions and all other rights and remedies of the Grantee under this Conservation Easement.

4. Prohibited Uses.

Any activity on or use of the Easement Property that is inconsistent with the Purposes of this Conservation Easement is prohibited. Without limiting the generality of the foregoing, the following uses and activities by Grantor, Grantor's agents, and third parties are expressly prohibited:

(a) Unseasonable watering; use of fertilizers, pesticides, biocides, herbicides, rodenticides, fungicides or other agricultural chemicals; weed abatement activities; incompatible fire protection activities; and any and all other activities and uses which may may adversely affect the Conservation Values of the Conservation Easement or otherwise interefere with the Purposes of this Conservation Easement, except for non-native invasive plant species management as specifically provided in the Management Plan.

(b) Use of off-road vehicles and use of any other motorized vehicles except on existing roadways and trails identified in **Appendix E** of the Management Plan (Roads/Trails), is incorporated by this reference into this Conservation Easement as if fully set forth herein, and

except as specifically provided in the Management Plan. Where the use of such off-road vehicles is solely for site management or monitoring activities, Grantee's use of the Easement Property shall not be limited to existing roadways and trails so long as such use is consistent with the Management Plan.

(c) Agricultural activity of any kind, except grazing for vegetation management as specifically provided in the Management Plan.

(d) Recreational activities, including, but not limited to, hunting or fishing are prohibited. However, walking, jogging, running, hiking, and horseback riding are permitted for public, non-commercial, recreational activities of the Grantor and its invitees, so long as such activities are consistent with the Purposes of this Conservation Easement as specifically shown in **Appendix E** of the Management Plan. Walking, jogging, running, hiking, and horseback riding use by the public shall be limited to the roads and anticipated or existing trails as depicted in **Appendix E** of the Management Plan. Any future recreational use, as described herein, shall be consistent with the Purposes of this Conservation Easement and governed by a duly executed joint use and management agreement between the Grantor and Grantee. Furthermore, receipt of all necessary permits and satisfaction of all regulatory requirements shall be conditions precedent for use of the Easement Property for such recreation. The USACE's written approval shall be required for any agreement not already incorporated in the Management Plan. This approval must be obtained prior to use of the Easement Property for recreational activities.

(e) Commercial, industrial, residential, or institutional uses.

(f) Any legal or de facto division, subdivision or partitioning of the Easement Property including a request for a certificate of compliance pursuant to the California Subdivision Map Act (California Government Code Section 66499.35).

(g) Construction, reconstruction, erecting or placement of any building, billboard or sign, or any other structure or improvement of any kind, except for rehabilitation, repair, and maintenance of existing roads and trails identified in **Appendix E** of the Management Plan, creek crossing construction/rehabilitation, wetland side weir maintenance, wetland outlet control maintenance installation and repair of signage (i.e., trespassing, informational, mitigation, and open space interpretive signs), and habitat enhancement and management activities as specifically provided in the Management Plan. Permits such as a Streambed Alteration Agreement with the CDFW, Clean Water Act section 404 permit from the USACE, and Clean Water Act section 401 certification from the CCRWQCB must be obtained, if required.

(h) Depositing or accumulation of soil, trash, ashes, refuse, waste, bio-solids or any other materials except where construction materials may be temporarily stored in support of Easement Property management and maintenance activities as specifically provided in the Management Plan.

(i) Planting, introduction or dispersal of non-native or exotic plant or animal species except as approved by the California Department of Food and Agriculture's Biological Control Program for control of invasive species as specifically provided in the Management Plan.

(j) Filling, dumping, excavating, draining, dredging, mining, drilling, removing or exploring for or extracting minerals, loam, soil, sand, gravel, rock or other material on or below the surface of the Easement Property, or granting or authorizing surface entry for any of these purposes, except for infrastructure and facilities management and habitat enhancement of the Easement Property as specifically provided in the Management Plan.

(k) Altering the surface or general topography of the Easement Property, including but not limited to any alterations to habitat, building roads or trails, paving or otherwise covering the Easement Property with concrete, asphalt or any other impervious material except for (i) rehabilitation, repair and maintenance of existing roads and trails identified on **Appendix E** of the Management Plan, (ii) construction of roads and trails as generally depicted on **Appendix E** of the Management Plan, (iii) creek crossing construction/rehabilitation, and (iv) those other habitat management activities specified in the Management Plan.

(l) Removing, destroying, or cutting of trees, shrubs or other vegetation, except as required by law for (i) fire breaks, (ii) maintenance of existing foot trails or roads, or (iii) prevention or treatment of disease, (iv) for rehabilitation, repair and maintenance of existing roads and trails identified on **Appendix E** of the Management Plan, (v) construction of roads and trails as generally depicted on **Appendix E** of the Management Plan**,** (vi) for creek crossing construction/rehabilitation, and (vii) for other tasks as specifically provided in the Management Plan.

(m) Manipulating, impounding or altering any natural water course, body of water or water circulation on the Easement Property, and any activities or uses detrimental to water quality, including but not limited to degradation or pollution of any surface or groundwater. To the extent any of these activities are required for construction, rehabilitation, repair and maintenance of roads and trails identified on **Appendix E** of the Management Plan, creek crossing construction/rehabilitation, or other tasks as specifically provided in the Management Plan, the Grantor or its designated Grantee will obtain proper authorizations including permits such as a Streambed Alteration Agreement with the CDFW, Clean Water Act 404 permit from the USACE, and Clean Water Act Section 401 certification from the CCRWQCB, if required.

(n) Without the prior written consent of Grantee, which Grantee may withhold, transferring, encumbering, selling, leasing, or otherwise separating the mineral, air or water rights for the Easement Property; changing the place or purpose of use of the water rights; abandoning or allowing the abandonment of, by action or inaction, any water or water rights, ditch or ditch rights, spring rights, reservoir or storage rights, wells, ground water rights, or other rights in and to the use of water historically used on or otherwise appurtenant to the Easement Property, including but not limited to: (i) riparian water rights; (ii) appropriative water rights; (iii) rights to waters which are secured under contract with any irrigation or water district, to the extent such waters are customarily applied to the Easement Property; and (iv) any water from wells that are in existence or may be constructed in the future on the Easement Property.

(o) Engaging in any use or activity that may violate, or may fail to comply with, relevant federal, state, or local laws, regulations, or policies applicable to Grantor, the Easement Property, or the use or activity in question.

5. Grantee's Duties.

(a) To ensure that the Purposes of this Conservation Easement as described in Section 1 are being accomplished, Grantee and its successors and assigns shall:

(1) Perform, at a minimum on an annual basis, compliance monitoring inspections of the Easement Property as described in the Management Plan to identify and prohibit uses as set forth in Section 3 above; and

(2) Prepare reports on the results of the compliance monitoring inspections, and provide these reports to the Grantor who will submit these reports to the USACE on an annual basis in accordance with Section 5. Grantor's Duties.

(b) In the event the Grantee's interest in this Conservation Easement reverts to or is transferred to the State of California, CDFW will carry out the tasks specified in Section 5(a) to the extent that funds and staff are available for that purpose. If CDFW determines that it cannot carry out the specified tasks, the USACE may identify a replacement Grantee, acceptable to all, and CDFW, subject to obtaining all necessary approvals, will transfer this Conservation Easement to the identified replacement Grantee in compliance with Section 20(a) of this Conservation Easement.

6. Grantor's Duties.

Grantor shall undertake all reasonable actions to prevent the unlawful entry and trespass by persons whose activities may degrade or harm the Conservation Values of the Easement Property or that are otherwise inconsistent with this Conservation Easement. In addition, Grantor shall undertake all necessary actions to perfect and defend Grantee's rights under Section 2 of this Conservation Easement, and to observe and carry out the obligations of Grantor under the Management Plan. Where Grantee has provided Grantor with reports on the results of the compliance monitoring inspections as set forth in Section 4(a)(2), above, Grantor shall provide these reports to the USACE on an annual basis.

7. Reserved Rights.

Grantor reserves to itself, and to its personal representatives, heirs, successors, and assigns, all rights accruing from Grantor's ownership of the Easement Property, including the right to engage in or permit or invite others to engage in all uses of the Easement Property that are not prohibited or limited by, and are consistent with the Purposes of, this Conservation Easement.

8. Grantee's Remedies.

(a) If Grantee determines that a violation of this Conservation Easement has occurred or is threatened, Grantee shall give written notice to Grantor of such violation and demand in writing the cure of such violation ("Notice of Violation"). Notice shall be provided according to Section 20 of this Conservation Easement.

(b) If Grantor fails to cure the violation within thirty (30) days after receipt of a Notice of Violation, or if the cure reasonably requires more than thirty (30) days to complete and Grantor fails to begin the cure within the thirty (30)-day period or fails to continue diligently to complete the cure, Grantee may bring an action at law or in equity in a court of competent jurisdiction for any or all of the following: to recover any damages to which Grantee may be entitled for violation of the terms of this Conservation Easement or for any injury to the Easement

Property Conservation Values; to enjoin the violation, *ex parte* as necessary, by temporary or permanent injunction without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies; to pursue any other legal or equitable relief, including but not limited to, the restoration of the Easement Property to the condition in which it existed prior to any violation or injury; or to otherwise enforce this Conservation Easement. Without limiting the liability of Grantor, Grantee may apply any damages recovered to the cost of undertaking any corrective action on the Easement Property.

(c) If Grantee, in its sole discretion, determines that circumstances require immediate action to prevent or mitigate injury to the Easement Property Conservation Values, Grantee may pursue its remedies under this Conservation Easement without prior notice to Grantor or without waiting for the period provided for cure to expire. Grantee's rights under this section apply equally to actual or threatened violations of this Conservation Easement. Grantee shall notify the Grantor and USACE within 30 days of such an occurrence.

(d) Grantor agrees that Grantee's remedies at law for any violation of this Conservation Easement are inadequate and that Grantee shall be entitled to the injunctive relief described in this section, both prohibitive and mandatory, in addition to such other relief to which Grantee may be entitled, including specific performance of this Conservation Easement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies. Grantee's remedies described in this section shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity, including but not limited to the remedies set forth in California Civil Code Section 815, *et seq.* The failure of Grantee to discover a violation or to take immediate legal action shall not bar Grantee from taking such action at a later time.

(e) If Grantor receives a Notice of Violation from Grantee or the USACE with which it is impossible for Grantor to comply consistent with any prior uncured Notice(s) of Violation, Grantor shall give written notice of the conflict (hereinafter "Notice of Conflict") to the Grantee and the USACE. In order to be a valid, a Notice of Conflict shall be given within fifteen (15) days of the date Grantor receives a conflicting Notice of Violation, shall include copies of the conflicting Notices of Violation, and shall describe the conflict with specificity, including how the conflict makes compliance with the uncured Notice(s) of Violation impossible. Upon issuing a valid Notice of Conflict, Grantor shall not be required to comply with the conflicting Notices of Violation until such time as the entity or entities issuing said conflicting Notices of Violation issue(s) revised Notice(s) of Violation that resolve the conflict. Upon receipt of a revised Notice of Violation, Grantor shall comply with such notice within the time period(s) described in the first grammatical paragraph of this Section. The failure of Grantor to issue a valid Notice of Conflict within fifteen (15) days of receipt of a conflicting Notice of Violation shall constitute a waiver of Grantor's ability to claim a conflict.

9. Costs of Enforcement.

All costs incurred by Grantee, where Grantee is the prevailing party, in enforcingthe terms of this Conservation Easement against Grantor, including, but not limited to, costs of suit and attorneys' and experts' fees, and any costs of restoration necessitated by negligence or breach of this Conservation Easement, shall be borne by Grantor.

10. Grantee's Discretion.

Enforcement of the terms of this Conservation Easement by Grantee shall be at the discretion of Grantee, and any forbearance by Grantee to exercise its rights under this Conservation Easement in the event of any breach of any term of this Conservation Easement shall not be deemed or construed to be a waiver of such term or of any subsequent breach of the same or any other term of this Conservation Easement or of any rights of Grantee under this Conservation Easement. No delay or omission by Grantee in the exercise of any right or remedy shall impair such right or remedy or be construed as a waiver.

11. Acts Beyond Grantor's Control.

Nothing contained in this Conservation Easement shall be construed to entitle Grantee to bring any action against Grantor for any injury to or change in the Easement Property resulting from (i) any natural cause beyond Grantor's control, including, without limitation, fire not caused by Grantor, flood, storm, and earth movement, or any prudent action taken by Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Easement Property resulting from such causes; or (ii) acts by Grantee or its employees.

12. Enforcement; Standing.

All rights and remedies conveyed to Grantee under this Conservation Easement shall extend to and are enforceable by the USACE. These enforcement rights are in addition to, and do not limit, the rights of enforcement under the Management Plan. If at any time in the future Grantor or any subsequent transferee uses, allows the use, or threatens to use or allow use of, the Easement Property for any purpose that is inconsistent with or in violation of this Conservation Easement then, despite the provisions of California Civil Code Section 815.7, the California Attorney General and the USACE each has standing as an interested party in any proceeding affecting this Conservation Easement.

13. Reversion.

If the USACE determine that Grantee is not holding, monitoring or managing this Conservation Easement for conservation Purposes in the manner specified in this Conservation Easement or in the Management Plan then, pursuant to California Government Code Section 65967(e), this Conservation Easement shall revert to the State of California, or to another public agency or nonprofit organization qualified pursuant to Civil Code Section 815.3 and Government Code Section 65967 (and any successor or other provision(s) then applicable) and approved by the USACE.

14. Access.

This Conservation Easement does not convey a general right of access to the public.

15. Costs and Liabilities.

Grantor retains all responsibilities and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the Easement Property. Grantor agrees that neither Grantee nor the USACE shall have any duty or responsibility for the operation, upkeep or maintenance of the Easement Property, the monitoring of hazardous conditions on it, or the protection of Grantor, the public or any third parties from risks relating to conditions on the Easement Property. Grantor remains solely responsible for obtaining any applicable governmental permits and approvals required for any activity or use permitted by this Conservation Easement,

and any activity or use shall be undertaken in accordance with all applicable federal, state, local and administrative agency laws, statutes, ordinances, rules, regulations, orders and requirements.

(a) Taxes; No Liens.

Grantor shall pay before delinquency all taxes, assessments (general and special), fees, and charges of whatever description levied on or assessed against the Easement Property by competent authority (collectively "Taxes"), including any Taxes imposed upon, or incurred as a result of, this Conservation Easement, and shall furnish Grantee with satisfactory evidence of payment upon request. Grantor shall keep the Easement Property free from any liens (other than a security interest that is expressly subordinated to this Conservation Easement, as provided in Section 22(k)), including those arising out of any obligations incurred by Grantor for any labor or materials furnished or alleged to have been furnished to or for Grantor at or for use on the Easement Property.

(b) Hold Harmless.

(1) Grantor shall hold harmless, protect and indemnify Grantee and its directors, officers, employees, agents, contractors, and representatives and the heirs, personal representatives, successors and assigns of each of them (each a "Grantee Indemnified Party" and collectively, "Grantee's Indemnified Parties") from and against any and all liabilities, penalties, costs, losses, damages, expenses (including, without limitation reasonable attorneys' fees and experts' fees), causes of action, claims, demands, orders, liens or judgments (each a "Claim" and, collectively, "Claims"), arising from or in any way connected with: (i) injury to or the death of any person, or physical damage to any property, resulting from any act, omission, condition, or other matter related to or occurring on or about the Easement Property, regardless of cause, except that this indemnification shall be inapplicable to any Claim due solely to the negligence of Grantee or any of its employees; (ii) the obligations specified in Sections 6, 15 and 15(a); and (iii) the existence or administration of this Conservation Easement. If any action or proceeding is brought against any of the Grantee's Indemnified Parties by reason of any such Claim, Grantor shall, at the election of and upon written notice from Grantee, defend such action or proceeding by counsel reasonably acceptable to the Grantee's Indemnified Party.

(2) Grantor shall hold harmless, protect and indemnify the USACE and their respective directors, officers, employees, agents, contractors, and representatives and the heirs, personal representatives, successors and assigns from and against any and all Claims arising from or in any way connected with: (i) injury to or the death of any person, or physical damage to any property, resulting from any act, omission, condition, or other matter related to or occurring on or about the Easement Property, regardless of cause and (ii) the existence or administration of this Conservation Easement. *Provided, however,* that the indemnification in this Section 15 (b) (2) shall be inapplicable to the USACE with respect to any Claim due solely to the negligence of the USACE or any of its employees. If any action or proceeding is brought against the USACE by reason of any Claim to which the indemnification in this Section 15 (b) (2) applies, then at the election of and upon written notice from the USACE, Grantor shall defend such action or proceeding by counsel reasonably acceptable to the USACE or reimburse the USACE for all charges incurred for services of t the U.S. Department of Justice in defending the action or proceeding.

16. Extinguishment.

If circumstances arise in the future that render the preservation of the Conservation Values of the Easement Property, including wetland functions and values, or other Purposes of this Conservation Easement impossible to accomplish, this Conservation Easement can only be terminated or extinguished, in whole or in part, only by judicial proceedings in a court of competent jurisdiction.

17. Condemnation.

Pursuant to Code of Civil Procedure section 1240.055, this Conservation Easement is "property appropriated to public use," as used in Article 6 (commencing with section 1240.510) and Article 7 (commencing with section 1240.610) of Chapter 3 of Title 7 of the California Code of Civil Procedure. A person authorized to acquire property for public use by eminent domain shall seek to acquire the Easement Property, if at all, *only* as provided in Code of Civil Procedure section 1240.055. If any person seeks to acquire the Easement Property for public use, Grantee shall provide notice to the USACE and comply with all obligations of the holder of a conservation easement under Code of Civil Procedure section 1240.055. If the Conservation Easement is condemned, the net proceeds from the condemnation shall be used in compliance with Government Code section 65966(j).

18. Transfer of Conservation Easement or Easement Property.

(a) Conservation Easement.

This Conservation Easement may be assigned or transferred by Grantee upon written approval of the USACE, which approval shall not be unreasonably withheld or delayed, but Grantee shall give Grantor and the USACE at least sixty (60) days prior written notice of the proposed assignment or transfer. Grantee may assign or transfer its rights under this Conservation Easement only to an entity or organization: (i) authorized to acquire and hold conservation easements pursuant to California Civil Code Section 815.3 and Government Code Section 65967 (and any successor or other provision(s) then applicable), or the laws of the United States; and (ii) otherwise reasonably acceptable to the USACE. Grantee shall require the assignee to record the assignment in the county where the Easement Property is located. The failure of Grantee to perform any act provided in this section shall not impair the validity of this Conservation Easement or limit its enforcement in any way. Any transfer under this section is subject to the requirements of Section 19.

(b) Easement Property.

Grantor agrees to incorporate the terms of this Conservation Easement by reference in any deed or other legal instrument by which Grantor divests itself of any interest in all or any portion of the Easement Property, including, without limitation, a leasehold interest. Grantor agrees that the deed or other legal instrument shall also incorporate by reference the Management Plan, this Conservation Easement and any amendment(s) to those document. Grantor further agrees to give written notice to Grantee and the USACE of the intent to transfer any interest at least sixty (60) days prior to the date of such transfer. Grantee or the USACE shall have the right to prevent any transfers in which prospective subsequent claimants or transferees are not given notice of the terms, covenants, conditions and restrictions of this Conservation Easement (including the exhibits and documents incorporated by reference in it). The failure of Grantor to perform any act provided in this section shall not impair the validity of this Conservation Easement or limit its enforceability in any way. Any transfer under this section is subject to the requirements of Section 19.

19. Merger.

The doctrine of merger shall not operate to extinguish this Conservation Easement if the Conservation Easement and the Easement Property become vested in the same party. If, despite this intent, the doctrine of merger applies to extinguish the Conservation Easement then, unless Grantor, Grantee, and the USACE otherwise agree in writing, a replacement conservation easement or restrictive covenant containing the same protections embodied in this Conservation Easement shall be recorded against the Easement Property.

20. Notices.

Any notice, demand, request, consent, approval, or other communication that Grantor or Grantee desires or is required to give to the other shall be in writing, with a copy to each the USACE, and served personally or sent by recognized overnight courier that guarantees next-day delivery or by first class United States mail, postage fully prepaid, addressed as follows:

To Grantor: Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118-3614
Attn: Clerk of the Board

To Grantee: Land Trust of Santa Clara Valley
605 Tennant Avenue
Morgan Hill, CA 95037
Attn: Kevin O'day, President

To USACE: U.S. Army Corps of Engineers
San Francisco District
450 Golden Gate Avenue, 4th Floor
San Francisco, CA 94103
Attn: Chief, Regulatory Branch

or to such other address a party shall designate by written notice to Grantor, Grantee, and the USACE. Notice shall be deemed effective upon delivery in the case of personal delivery or delivery by overnight courier or, in the case of delivery by first class mail, three (3) days after deposit into the United States mail.

21. Amendment.

This Conservation Easement may be amended only by mutual written agreement of Grantor and Grantee and written approval of the USACE, which approval shall not be unreasonably withheld or delayed. Any such amendment shall be consistent with the Purposes of this Conservation Easement and California law governing conservation easements, and shall not affect its perpetual duration. Any such amendment shall be recorded in the official records of the county in which the Easement Property is located, and Grantee shall promptly provide a conformed copy of the recorded amendment to the Grantor and the USACE.

22. Additional Provisions.

(a) Controlling Law.

The interpretation and performance of this Conservation Easement shall be governed by the laws of the United States and the State of California, disregarding the conflicts of law principles of such state.

(b) Liberal Construction.

Despite any general rule of construction to the contrary, this Conservation Easement shall be liberally construed to effect the Purposes of this Conservation Easement and the policy and purpose of California Civil Code Section 815, *et seq.* If any provision in this instrument is found to be ambiguous, an interpretation consistent with the Purposes of this Conservation Easement that would render the provision valid shall be favored over any interpretation that would render it invalid.

(c) Severability.

If a court of competent jurisdiction voids or invalidates on its face any provision of this Conservation Easement, such action shall not affect the remainder of this Conservation Easement. If a court of competent jurisdiction voids or invalidates the application of any provision of this Conservation Easement to a person or circumstance, such action shall not affect the application of the provision to any other persons or circumstances.

(d) Entire Agreement.

This document (including its exhibits and the Management Plan incorporated by reference in this document) sets forth the entire agreement of the parties and the USACE with respect to the Conservation Easement and supersedes all prior discussions, negotiations, understandings, or agreements of the parties relating to the Conservation Easement. No alteration or variation of this Conservation Easement shall be valid or binding unless contained in an amendment in accordance with Section 21.

(e) No Forfeiture.

Without limiting the provisions of Section 13, nothing contained in this Conservation Easement will result in a forfeiture or reversion of Grantor's title in any respect.

(f) Successors.

The covenants, terms, conditions, and restrictions of this Conservation Easement shall be binding upon, and inure to the benefit of, the parties and their respective personal representatives, heirs, successors, and assigns, and shall constitute a servitude running in perpetuity with the Easement Property.

(g) Termination of Rights and Obligations.

A party's rights and obligations under this Conservation Easement terminate upon transfer of the party's interest in the Conservation Easement or Easement Property, except that liability for acts, omissions or breaches occurring prior to transfer shall survive transfer.

(h) Captions.

The captions in this instrument have been inserted solely for convenience of reference and are not a part of this instrument and shall have no effect upon its construction or interpretation.

(i) No Hazardous Materials Liability.

(1) Grantor represents and warrants that it has no knowledge or notice of any Hazardous Materials (defined below) or underground storage tanks existing, generated, treated, stored, used, released, disposed of, deposited or abandoned in, on, under, or from the Easement Property, or transported to or from or affecting the Easement Property.

(2) Without limiting the obligations of Grantor under Section 15 (b), Grantor hereby releases and agrees to indemnify, protect and hold harmless the Grantee's Indemnified Parties (defined in Section 15(b)) from and against any and all Claims arising from or connected with any Hazardous Materials or underground storage tanks present, alleged to be present, released in, from or about, or otherwise associated with the Easement Property at any time, except any Hazardous Materials placed, disposed or released by Grantee or any of its employees. This release and indemnification includes, without limitation, Claims for (A) injury to or death of any person or physical damage to any property; and (B) the violation or alleged violation of, or other failure to comply with, any Environmental Laws (defined below). If any action or proceeding is brought against any of the Grantee's Indemnified Parties by reason of any such Claim, Grantor shall, at the election of and upon written notice from the applicable Grantee Indemnified Party, defend such action or proceeding by counsel reasonably acceptable to the Grantee Indemnified Party.

(3) Without limiting the obligations of Grantor under Section 15 (b), Grantor hereby releases and agrees to indemnify, protect and hold harmless the USACE from and against any and all Claims arising from or connected with any Hazardous Materials or underground storage tanks present, alleged to be present, released in, from or about, or otherwise associated with the Easement Property at any time, except that this release and indemnification shall be inapplicable to the USACE with respect to any Hazardous Materials placed, disposed or released by the USACE or any of its employees. This release and indemnification includes, without limitation, Claims for (A) injury to or death of any person or physical damage to any property; and (B) the violation of alleged violation of, or other failure to comply with, any Environmental Laws. If any action or proceeding is brought against the USACE by reason of any such Claim, Grantor shall, at the election or and upon written notice from the USACE, defend such action or proceeding by counsel reasonably acceptable to the USACE for all charges incurred for services the U.S. Department of Justice in defending the action or proceeding.

(4) Despite any contrary provision of this Conservation Easement, the parties do not intend this Conservation Easement to be, and this Conservation Easement shall not be, construed such that it creates in or gives to Grantee or the USACE any of the following:

(A) The obligations or liability of an "owner" or "operator," as those terms are defined and used in Environmental Laws (defined below), including, without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. § 9601, *et seq.*; hereinafter, "CERCLA"); or

(B) The obligations or liabilities of a person described in 42 U.S.C. § 9607(a)(3) or (4); or

(C) The obligations of a responsible person under any applicable Environmental Laws; or

(D) The right to investigate and remediate any Hazardous Materials associated with the Easement Property; or

(E) Any control over Grantor's ability to investigate, remove, remediate or otherwise clean up any Hazardous Materials associated with the Easement Property.

(5) The term "Hazardous Materials" includes, without limitation, (a) material that is flammable, explosive or radioactive; (b) petroleum products, including by-products and fractions thereof; and (c) hazardous materials, hazardous wastes, hazardous or toxic substances, or related materials defined in CERCLA, the Resource Conservation and Recovery Act of 1976 (42 U.S.C. § 6901, *et seq.*; hereinafter, "RCRA"); the Hazardous Materials Transportation Act (49 U.S.C. §5101, *et seq.*; hereinafter, "HTA"); the Hazardous Waste Control Law (California Health & Safety Code § 25100, *et seq.*; hereinafter, "HCL"); the Carpenter-Presley-Tanner Hazardous Substance Account Act (California Health & Safety Code § 25300, *et seq.*; hereinafter "HSA"), and in the regulations adopted and publications promulgated pursuant to them, or any other applicable Environmental Laws now in effect or enacted after the date of this Conservation Easement.

(6) The term "Environmental Laws" includes, without limitation, CERCLA, RCRA, HTA, HCL, HSA, and any other federal, state, local or administrative agency statute, ordinance, rule, regulation, order or requirement relating to pollution, protection of human health or safety, the environment or Hazardous Materials. Grantor represents, warrants and covenants to Grantee and the USACE that activities upon and use of the Easement Property by Grantor, its agents, employees, invitees and contractors will comply with all Environmental Laws.

(j) Warranty.

Grantor represents and warrants that Grantor is the sole owner of fee simple title to the Easement Property. Grantor also represents and warrants that, except as specifically disclosed to and approved by the USACE pursuant to the Easement Property Assessment and Warranty signed by Grantor and attached as an exhibit to this Conservation Easement (**Exhibit D**), there are no outstanding mortgages, liens, encumbrances or other interests in the Easement Property (including, without limitation, mineral interests) which may conflict or are inconsistent with this Conservation Easement and which have not been expressly subordinated to this Conservation Easement by a recorded Subordination Agreement approved by Grantee and the USACE.

(k) Additional Interests.

Grantor shall not grant any additional easements, rights of way or other interests in the Easement Property (other than a security interest that is expressly subordinated to this Conservation Easement), nor shall Grantor grant, transfer, abandon or relinquish (each a "Transfer") any mineral, air, or water right or any water associated with the Easement Property, without first obtaining the written consent of Grantee and the USACE. Such consent may be withheld if Grantee or the USACE determine(s) that the proposed interest or Transfer is inconsistent with the Purposes of this Conservation Easement or may impair or interfere with the Conservation Values of the Easement Property. This Section 22(k) shall not limit the provisions of Section 2(d) or 4(n), nor prohibit transfer of a fee or leasehold interest in the Easement Property that is subject to this Conservation Easement and complies with Section 18. Grantor shall provide a

certified copy of any recorded or unrecorded grant or Transfer document to the Grantee and the USACE.

(l) Recording.

Grantee shall record this Conservation Easement in the Official Records of the County in which the Easement Property is located, and may re-record it at any time as Grantee deems necessary to preserve its rights in this Conservation Easement.

(m) Funding.

Endowment funding for the perpetual management, maintenance and monitoring of the Easement Property is specified in and governed by the Management Plan (**Exhibit B**).

23. Exhibits.

The following Exhibits referenced in this Conservation Easement are attached to and incorporated by reference herein:

Exhibit A - Legal Description and Surveyed Plat of Conservation Easement Property
Exhibit B - Lake Silveria Compensatory Mitigaiton Preserve Management Plan
Exhibit C – MOU between USACE and the Santa Clara Valley Water District
Exhibit D - Easement Property Assessment and Warranty

IN WITNESS WHEREOF Grantor has executed this Conservation Easement Deed the day and year first above written.

GRANTOR:
Santa Clara Valley Water District

Approved as to form:

General Counsel

BY:_____
Norma J. Camacho
Chief Executive Officer

BY:_____
Brian C. Hopper
Senior Assistant District Counsel

DATE: _____

GRANTEE:
Land Trust of Santa Clara Valley

Approved as to form:

BY:_____
Kevin O'Day, President

BY: _____
Karin Troedsson, Land Trust Counsel

BY:_____
Greg Leonard, Executive Director

DATE: _____

ALL-PURPOSE ACKNOWLEDGMENT

CIVIL CODE §1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF SANTA CLARA } SS

On this ____ day of_____, in the year 20__, before me_____,

Notary Public, personally appeared

_____
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____
Notary Public in and for said County and State

CAPACITY CLAIMED BY SIGNER

Though statute does not require the Notary to fill in the data below, doing so may prove invaluable to persons relying on the document.

☐ Individual
☐ Corporate Officer(s): _____
☐ Partner(s) ☐ Limited ☐ General
☐ Attorney-In-Fact: _____
☐ Trustee(s)
☐ Guardian/Conservator
☐ Other: _____

Signer is Representing (Name of Person(s) or Entity(ies)

_____ _____

[Insert Certificate of Acceptance by Grantee]

Exhibit A

Legal Description and Surveyed Plat of the Conservation Easement

SANTA CLARA VALLEY WATER DISTRICT
San Jose, California

PROJECT: LLAGAS CREEK RESU File No.: 5010-229.1

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF MORGAN HILL, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, BEING A PORTION OF PARCEL 1 AND PARCEL 3 AS SHOWN ON THAT CERTAIN PARCEL MAP FILED IN BOOK 432 AT PAGE 29 IN THE OFFICE OF THE RECORDER, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE INTERSECTION OF THE CENTERLINE OF OLIVE AVENUE (60.00 FEET WIDE) WITH THE NORTHWESTERLY LINE OF PARCEL 3 AS SHOWN ON SAID MAP;

THENCE ALONG SAID NORTHWESTERLY LINE, NORTH 61°50'14" EAST, 1,712.76 FEET TO A POINT ON THE NORTHEASTERLY LINE OF SAID PARCEL 3;

THENCE ALONG SAID NORTHEASTERLY LINE, SOUTH 70°23'40" EAST, 86.99 FEET TO THE **POINT OF BEGINNING**;

THENCE CONTINUING ALONG SAID NORTHEASTERLY LINE OF SAID PARCEL 3 AND ALONG THE NORHTWESTERLY LINE OF PARCEL 1 AS SHOWN ON SAID MAP, SOUTH 70°23'40" EAST, 132.15 FEET;

THENCE LEAVING SAID NORTHWESTERLY LINE OF SAID PARCEL 1, SOUTH 55°08'06" EAST, 189.44 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 180.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 36°35'24", AN ARC LENGTH OF 114.95 FEET;

THENCE SOUTH 18°32'42" EAST, 134.07 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 360.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 43°53'06", AN ARC LENGTH OF 275.74 FEET;

THENCE SOUTH 24°34'39" WEST, 40.66 FEET;

THENCE SOUTH 77°04'33" WEST, 552.38 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 26.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 47°08'34", AN ARC LENGTH OF 21.39 FEET;

THENCE NORTH 55°46'53" WEST, 148.90 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 180.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 94°40'37", AN ARC LENGTH OF 297.44 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT, HAVING A RADIUS OF 122.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 59°46'11", AN ARC LENGTH OF 127.27 FEET;

THENCE SOUTH 89°18'41" WEST, 13.69 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 60.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 55°22'46", AN ARC LENGTH OF 57.99 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT, HAVING A RADIUS OF 220.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 65°38'00", AN ARC LENGTH OF 252.01 FEET;

THENCE NORTH 80°26'05" WEST, 187.51 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 140.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 65°48'22", AN ARC LENGTH OF 160.79 FEET;

THENCE NORTH 14°37'42" WEST, 55.16 FEET;

THENCE NORTH 79°47'32" EAST, 69.49 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 500.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 29°02'53", AN ARC LENGTH OF 253.49 FEET;

THENCE NORTH 50°44'39" EAST, 210.95 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 1,000.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 09°37'57", AN ARC LENGTH OF 168.12 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT HAVING A RADIUS OF 1,490.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 16°04'40", AN ARC LENGTH OF 418.11 FEET TO THE BEGINNING OF A COMPOUND CURVE TO THE RIGHT, HAVING A RADIUS OF 400.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 29°31'24", AN ARC LENGTH OF 206.11 FEET TO A POINT ON THE NORTHEASTERLY LINE OF SAID PARCEL 3 TO WHICH A RADIAL BEARS NORTH 03°17'14" WEST, SAID POINT ALSO BEING THE **POINT OF BEGINNING.**

CONTAINING 15.993 ACRES OF LAND, MORE OR LESS.

BASIS OF BEARINGS:

BEARINGS ARE BASED ON AND IDENTICAL TO THAT CERTAIN PARCEL MAP FILED IN BOOK 432 OF MAPS AT PAGE 29, IN THE OFFICE OF THE RECORDER, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA.

SURVEYOR'S STATEMENT:

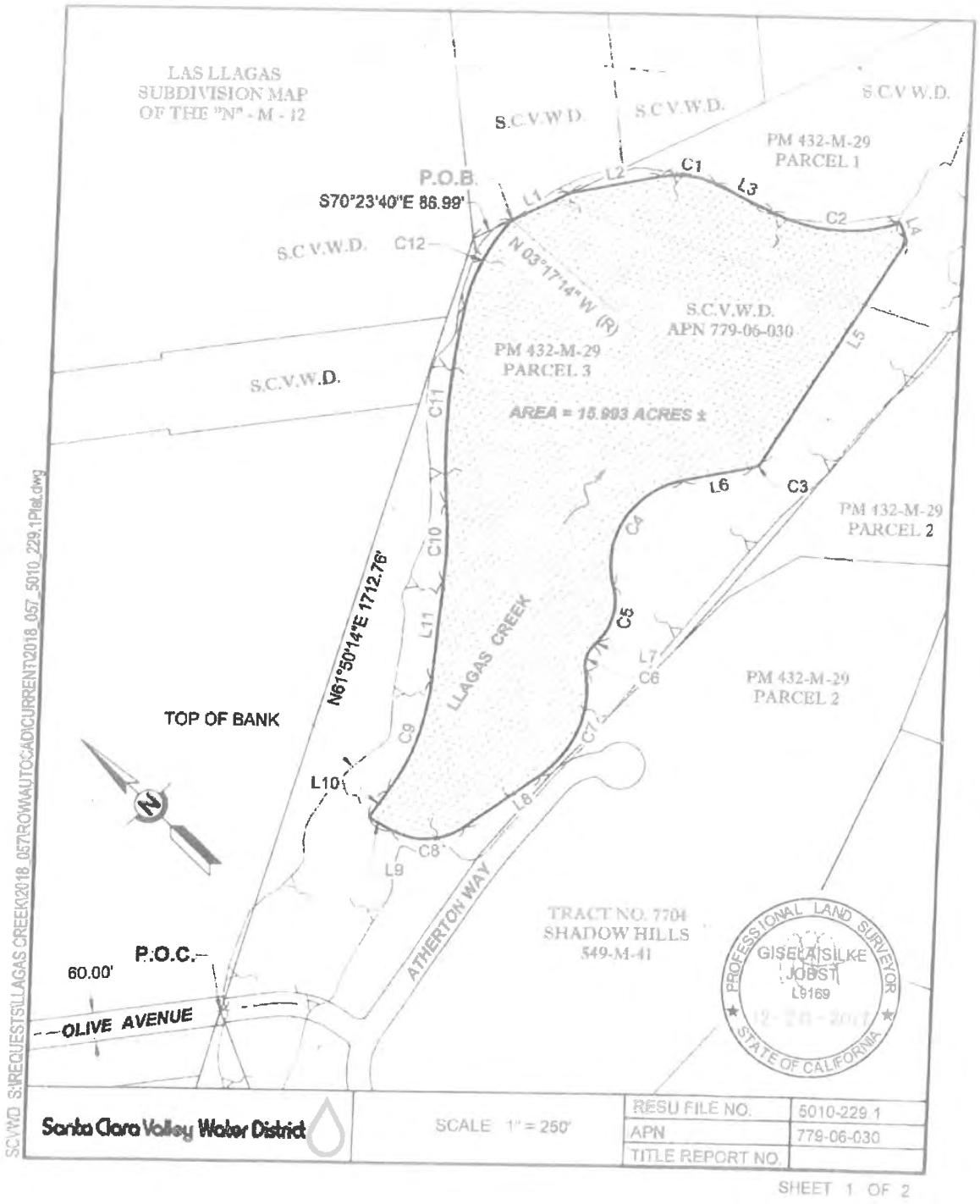
THE DESCRIPTION WAS PREPARED BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE LAND SURVEYOR'S ACT.

GISELA SILKE JOBST, L9169

12-20-2017
Date



S:\REQUESTS\LLAGAS CREEK\2018_057\ROW\AUTOCAD\CURRENT\2018_057_5010_229.1Legal.docx


LAS LLAGAS
SUBDIVISION MAP
OF THE "N" - M - 12
S.C.V.W.D.
S.C.V.W.D.
S.C.V.W.D.
PM 432-M-29
PARCEL 1
P.O.B.
S70°23'40"E 86.99'
C1
L1
L2
L3
C2
L4
S.C.V.W.D.
C12
N 03°17'14" W (R)
S.C.V.W.D.
APN 779-06-030
PM 432-M-29
PARCEL 3
L5
S.C.V.W.D.
C11
AREA = 15.993 ACRES ±
L6
C3
PM 432-M-29
PARCEL 2
C4
C10
N61°50'14"E 1712.76'
L11
LLAGAS CREEK
C5
L7
C6
PM 432-M-29
PARCEL 2
TOP OF BANK
C9
C7
L10
L8
C8
L9
ATHERTON WAY
TRACT NO. 7704
SHADOW HILLS
549-M-41
P.O.C.
60.00'
OLIVE AVENUE
PROFESSIONAL LAND SURVEYOR
GISELA SILKE
JOOST
L9169
STATE OF CALIFORNIA
SCVWD S:\REQUESTS\LLAGAS CREEK\2018_057\ROW\AUTOCAD\CURRENT\2018_057_5010_229.1Plat.dwg
Santa Clara Valley Water District
SCALE 1" = 250'
RESU FILE NO. 5010-229.1
APN 779-06-030
TITLE REPORT NO.
SHEET 1 OF 2

Line Table		
Line #	Direction	Length
L1	S70°23'40"E	132.15'
L2	S55°08'06"E	189.44'
L3	S18°32'42"E	134.07'
L4	S24°34'39"W	40.66'
L5	S77°04'33"W	552.38'
L6	N55°46'53"W	148.90'
L7	S89°18'41"W	13.69'
L8	N80°26'05"W	187.51'
L9	N14°37'42"W	55.16'
L10	N79°47'32"E	69.49'
L11	N50°44'39"E	210.95'

Curve Table			
Curve #	Radius	Delta	Length
C1	180.00'	36°35'24"	114.95'
C2	360.00'	43°53'06"	275.74'
C3	26.00'	47°08'34"	21.39'
C4	180.00'	94°40'37"	297.44'
C5	122.00'	59°46'11"	127.27'
C6	60.00'	55°22'46"	57.99'
C7	220.00'	65°38'00"	252.01'
C8	140.00'	65°48'22"	160.79'
C9	500.00'	29°02'53"	253.49'
C10	1000.00'	9°37'57"	168.12'
C11	1490.00'	16°04'40"	418.11'
C12	400.00'	29°31'24"	206.11'

SCVWD S:\REQUESTS\LLAGAS CREEK\2018_057\ROW\AUTOCAD\CURRENT\2018_057_5010_229.1Plat.dwg

Santa Clara Valley Water District

SCALE: N.T.S.

RESU FILE NO.	5010-229.1
APN	779-06-030
TITLE REPORT NO.	

SHEET 2 OF 2

Exhibit B

Lake Silveira Compensatory Mitigation Preserve Management Plan

LAKE SILVEIRA COMPENSATORY MITIGATION PRESERVE MANAGEMENT PLAN



Prepared by

Ms. Melissa Moore, Senior Water Resources Specialist
Santa Clara Valley Water District

With

Ms. Sunshine Julian, Associate Civil Engineer
Mr. Thomas Mykytyn, Assistant Water Resources Specialist II
Mr. Stephen M. Ferranti, Engineering Unit Manager
Santa Clara Valley Water District

In Consultation, With

Mr. Greg Leonard, Executive Director
Land Trust of Santa Clara Valley

Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

MAY 2019

DISTRICT BOARD OF DIRECTORS

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R14288

EXECUTIVE SUMMARY

The United States Army Corps of Engineers (USACE), San Francisco District Civil Works, and the local sponsor, Santa Clara Valley Water District (SCVWD) are constructing flood protection improvements to approximately 13.9 miles of stream within Llagas Creek and its tributaries, West Little Llagas Creek and East Little Llagas Creek. Llagas Creek is a tributary of the Pajaro River in south Santa Clara County within the communities of Morgan Hill, San Martin and Gilroy. As the result of the loss of aquatic resources for impacts incurred through implementation of the flood protection project, 15.99 acres of compensatory mitigation will be established to protect the created wetlands and restored Llagas Creek. To comply with CWA regulations 33 CFR 332.7 (d)(2), this Management Plan, includes a detailed description of long-term management needs, annual cost estimates of those needs, and identifies a funding mechanism to meet those long-term needs. The purpose of this Management Plan (MP) is to ensure the Conservation Easement (CE) area is monitored, maintained, and managed in a manner that preserves its conservation values in perpetuity and is consistent with the Permitting Agencies and the SCVWD's mitigation goals.

To provide sufficient site protection for the CE, the SCVWD has identified a third party (i.e. non-profit resource management agency) CE Holder, Land Trust of Santa Clara Valley (LTSCV), to monitor the Property and enforce site protections as appropriate. The LTSCV will conduct biannual routine site inspections and land management of the CE. The Property owner of the 52.9 acres' parcel (Property) and the designated land manager (Land Manager) is the Santa Clara Valley Water District. The Land Manager is responsible to work with and coordinate with the CE holder to implement this MP, managing and monitoring the CE boundaries in perpetuity to preserve its habitat and conservation values. The Land Manager is responsible for maintaining CE in a condition at least as good as its current condition consistent with the CE and consistent with the performance standards identified in the final Mitigation and Monitoring Plan (MMP), although it is anticipated that the initial site improvements and MP implementation will result in improved environmental conditions. The final MMP (December 2018) is included in this MP as **Appendix F**.

The Property site, referred to commonly as Lake Silveira, is 52.9 acres of unimproved land bordering Llagas Creek from 185 feet upstream of Olive Avenue to Monterey Road within the southern limits of the City of Morgan Hill. The Conservation Easement (CE) for the Lake Silveira Compensatory Mitigation Preserve is 15.99 acres (all within the 52.9-acre Property) which includes a portion of the Lake and the approximately 2,000 linear feet of the historic channel to be restored. The pre-Project habitats within the CE include 6.55 acres of upland habitat; 6.28 acres of pond; 2.63 acres of seasonal wetlands; 0.32 acres of perennial marsh; and 0.21 acres of perennial waters. However, after the initial site improvements are complete, the CE area will include 2,000 linear feet of restored perennial stream channel. The initial site improvements include: restoration of approximately 2,000 linear feet of Llagas Creek, a wetland creation (~4.02 acres) within the former abandoned quarry, turtle basking habitat installation, instream complexity installation, upland log piles installation, native riparian plantings, invasive plant management and permanent fence installation. After construction of the initial site improvements is complete, a 10-year Mitigation and Monitoring Plan (MMP) will be implemented at the Property site with requisite criteria established for success. A wetland delineation of the CE area will be conducted at year 5 of the MMP to verify the quantity of wetlands created. Once the 10-year MMP is completed post-Project, this MP will take effect.

Objectives developed for the MP for the CE area are as follows: preserve, and allow for the improvement of, the conservation values of Lake and existing Llagas Creek within the CE; provide coordinated and unified management for the Lake; provide feasible, quantifiable, and effective conservation guidelines, standards, and priorities for monitoring, and adaptive management; be compatible with and promote cooperation among the various land owners/managers within the Property and Llagas watersheds (e.g., with respect to recreation and trail use within and adjacent to the CE) and to help ensure the survival of viable populations of special status species and healthy biotic communities in the area as a whole, and; provide flexibility as needed to adapt management practices in response to monitoring and field observations. To meet these objectives a series of monitoring tasks have been developed for the CE area.

The LTSCV will conduct biannual site inspections which will include monitoring and documenting stream bank stability and the structural diversity of riparian vegetation in the restored Llagas Creek channel. The LTSCV will also document and map the presence of invasive plant species within the CE area biannually. Other tasks include: monitor and document the structural integrity and functional capabilities of the inlet weir and outlet structure for the created wetlands; monitor the CE area for anthropogenic trash and debris; monitor the structural integrity of the 10 turtle perches for functionality; monitor the size and shape of the constructed wetlands annually. The LTSCV will also be biannually documenting issues that relate to site security as follows; monitor and document the condition of existing signage (i.e. Habitat restoration), fencing, and gates; monitor and document security issues including, but not limited to, signs and acts of vandalism and trespassing within the CE area; monitor and document any public access issues that are observed.

The Land Manager will be responsible for all regulatory permits and costs for implementation of corrective actions to ameliorate deficiencies noted during LTSCV biannual monitoring. If streambank erosion is deemed moderate to completely unstable and the source of the erosion is unknown, the Land Manager will investigate the cause of erosion and propose remedial measures in the annual report as warranted. If riparian vegetation structure and cover is compromised within the restored channel, the Land Manager will first investigate the cause of the degradation and propose remedial measures if warranted. If invasive plants are found within the restored channel or created wetlands, an assessment of the treatment method with success criteria for removal will be proposed in the annual monitoring report. The Land Manager is responsible for maintenance of the inlet side weir and outlet structures for functional integrity, repairs to established fencing, gates and signs, removal of trash and debris in CE area, adaptive management processes and annual reporting to the Permitting Agencies. The SCVWD will initiate a bullfrog population monitoring program prior to the restoration project construction at Lake Silveira and include three sets of day and night surveys to be conducted in spring or early summer (i.e. the bullfrog breeding season). The three sets of day/night surveys will be repeated every three years. If significant increases in the bullfrog population are observed, the SCVWD, in consultation with CDFW and USFWS, will undertake control measures, to reduce the population. Additionally, the SCVWD and/or Land Manager will ensure proposed development is in accordance with existing easements within the Property and do not compromise the CE by preserving its conservation values.

Cost estimates have been prepared for annual monitoring of the elements detailed in this MP (Table 5). The SCVWD will ensure adequate funding for the long-term management of the Conservation Easement by providing the following three measures of financial assurance: the SCVWD's Board of Directors will adopt a Resolution which details its current and projected financial state. The SCVWD will execute a Memorandum of Agreement with the USACE which

requires the SCVWD to provide the financial analysis to calculate the annual management costs, requires the SCVWD to revise the annual management costs at least every five years to account for the CPI, requires the SCVWD to provide sufficient revenue annually to cover the entire annual management costs, and requires the SCVWD to establish a standby fund. Lastly, the SCVWD will establish a standby fund in the amount equal to five years of annual management costs as estimated in the MP in the form of a letter of credit. This standby fund would be utilized in any year when the annual appropriations are insufficient to cover annual management costs, and the letter of credit would auto-renew after five years.

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ACRONYMS AND ABBREVIATIONS ..... Error! Bookmark not defined.

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ACRONYMS AND ABBREVIATIONS

CAR	Coordination Act Report
CCRWQCB	Central California Coast Regional Water Quality Control Board
CDFW	California Department of Fish and Wildlife
CE	Conservation Easement
CE Holder	Land Trust of Santa Clara Valley, at time of publishing
City	The City of Morgan Hill, CA 95037
cfs	cubic feet per second, a unit representing discharge
County	Santa Clara County
CPI	Consumer Price Index
CWA	Clean Water Act
District	Santa Clara Valley Water District (see also: SCVWD)
EIR -	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
ESA	Federal Endangered Species Act
ESU	Evolutionary Significant Unit
JUA	Joint use agreement
Lake	Pre-Project Lake Silveira
Land Manager	Santa Clara Valley Water District, at time of publishing
LPSCD	Loma Prieta Soils Conservation District
LTSCV	Land Trust of Santa Clara Valley
MMP	Final Upper Llagas Creek Flood Protection Project Mitigation and Monitoring Plan
MP	Management Plan
NMFS	National Marine Fisheries

NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
Permitting Agencies	At the time of publication, these include: San Francisco District of the U.S. Army Corps of Engineers (USACE), Region 9 of the U.S. Environmental Protection Agency, the National Marine Fisheries Service (NMFS), the Central Coast Regional Water Quality Control Board (CCRWQCB), and the California Department of Fish and Wildlife (CDFW) Bay Delta Region 3
Project	Upper Llagas Creek Flood Protection Project
Property	A 52.9-acre parcel encompassing Lake Silveira and the Conservation Easement
PSA	Purchase and Sale Agreement
S-CCC Steelhead DPS	South-Central California Coast Steelhead Distinct Population Segment
SCC Vector Control	Santa Clara County Vector Control
SCVWD	Valley Water (see also: District)
SFEI	San Francisco Estuary Institute
SMP	Santa Clara Valley Water District's Stream Maintenance Program
SSCVWCD	South Santa Clara Valley Water Conservation District
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service

I. INTRODUCTION

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States. Under the Final Rule, Compensatory Mitigation for Losses of Aquatic Resources, 33 CFR part 332/40 CFR part 230, Subpart J ("Mitigation Rule"), all compensatory mitigation plans required for Department of the Army permits are required to address fundamental components. One of these components is the "site protection instrument" (see 33 CFR 332.4(c)). In accordance with the Mitigation Rule, the long-term site protection required for compensatory mitigation sites must be provided through real estate instruments or other available mechanisms, as appropriate considering relevant legal constraints, 33 CFR 332.7(a)(1). The site protection instrument described in this document for the permittee-responsible mitigation is a Conservation Easement, hereinafter referred to as the "CE". To further comply with CWA regulations 33 CFR 332.7 (d)(2), this Management Plan, includes a detailed description of long-term management needs, annual cost estimates of those needs, and identifies a funding mechanism to meet those long-term needs.

1.0 PROJECT BACKGROUND

The United States Army Corps of Engineers (USACE), San Francisco District Civil Works, and the local sponsor, Santa Clara Valley Water District (SCVWD) are constructing flood protection improvements to approximately 13.9 miles of stream within Llagas Creek and its tributaries, West Little Llagas Creek and East Little Llagas Creek. Llagas Creek is a tributary of the Pajaro River in south Santa Clara County within the communities of Morgan Hill, San Martin and Gilroy (Figure 1). See **Appendix E** for the Project map. The Upper Llagas Creek Flood Protection Project (Project) has the following protracted history:

- The first Final Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) was prepared by the Natural Resources Conservation Service, United States Department of Agriculture, and the SCVWD in 1982.

- The USACE, San Francisco District Civil Works was authorized under the Water Resources Development Act (WRDA) of 1999 and again in 2007 to construct the remaining reaches of the Project.

- In 2001, a draft Supplemental EIS/Supplemental EIR was prepared by the USACE and the SCVWD. At that time, under the authority of the Fish and Wildlife Coordination Act, the United States Fish and Wildlife Service (USFWS) assessed fish and wildlife impacts and mitigation needs for the proposed project.

- A Coordination Act Report (CAR) was prepared by USFWS in 2001 and revised in 2003 (USFWS, 2003). As a major mitigation element for the proposed flood protection improvements within the Llagas Creek watershed, USFWS recommended an onsite, in-kind restoration (permittee-responsible mitigation) of at least 1,980 linear feet of an abandoned section of Llagas Creek and conversion of the pre-Project Lake Silveira, hereinafter referred to as "Lake", to emergent marsh habitat (USFWS, 2003).

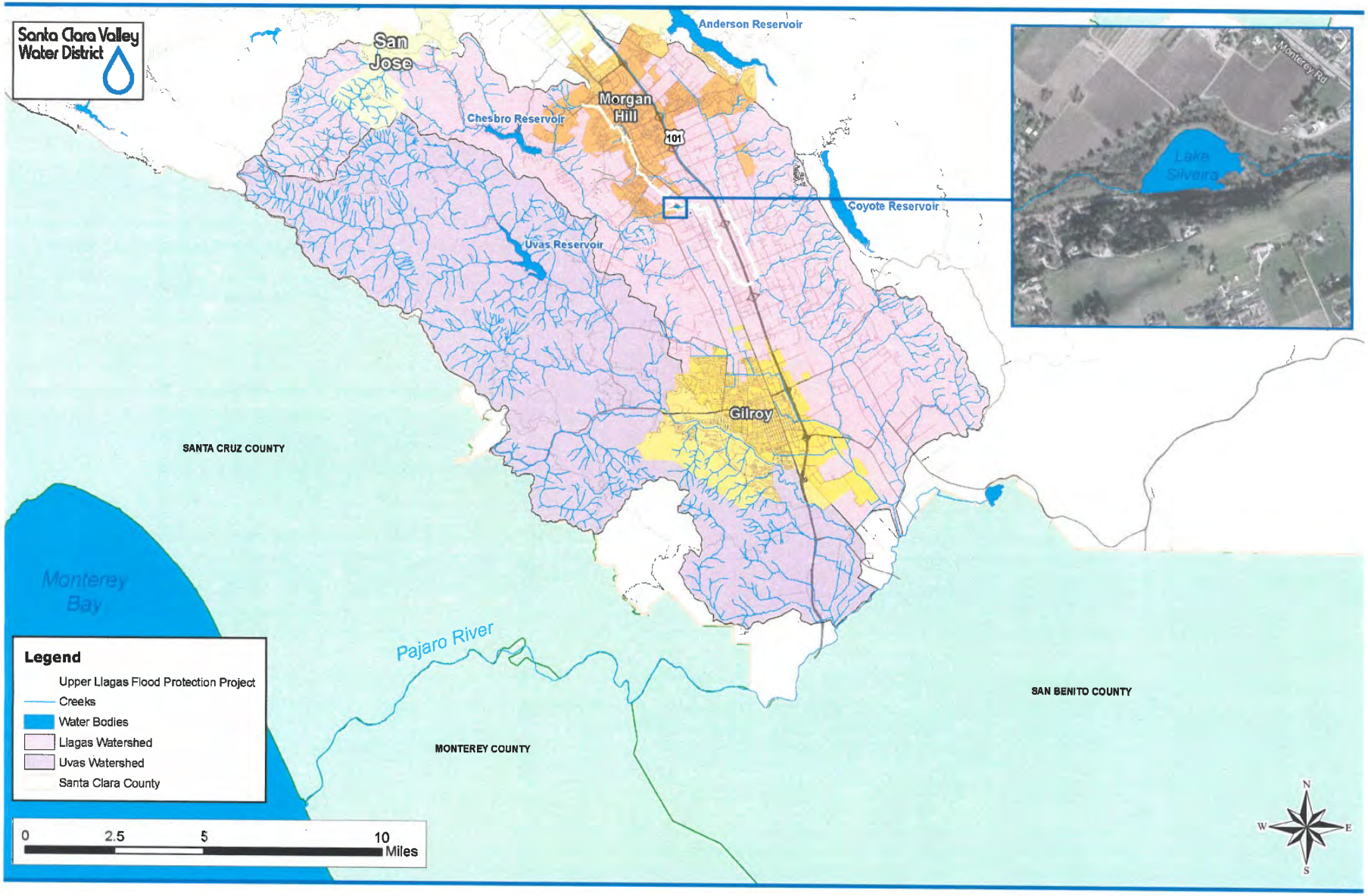


Figure 1. Regional Map Depicting the Property in the Context of the Larger Llagas and Pajaro Watersheds

Based on the use of historical aerial photographs and recorded documents, a quarry operation began circa 1973 at the Lake's present-day site, which included creating a levee between existing Llagas Creek and the quarry. The Lake was artificially created circa 1980 when unknown parties breached this portion of the levee forcing stream flows into the abandoned quarry pit. The breach subsequently bypassed and dewatered an approximate 1,980 linear foot portion of the higher quality riparian habitat of Llagas Creek (Figure 2) with creek flows traveling through the Lake. The artificial 8.2-acre Lake is entirely within the 52.9-acre parcel (Property), purchased by Santa Clara County (County) on July 1, 1982, (Deed #7403031). See **Appendix A** for the legal Plat and Description of the Property.

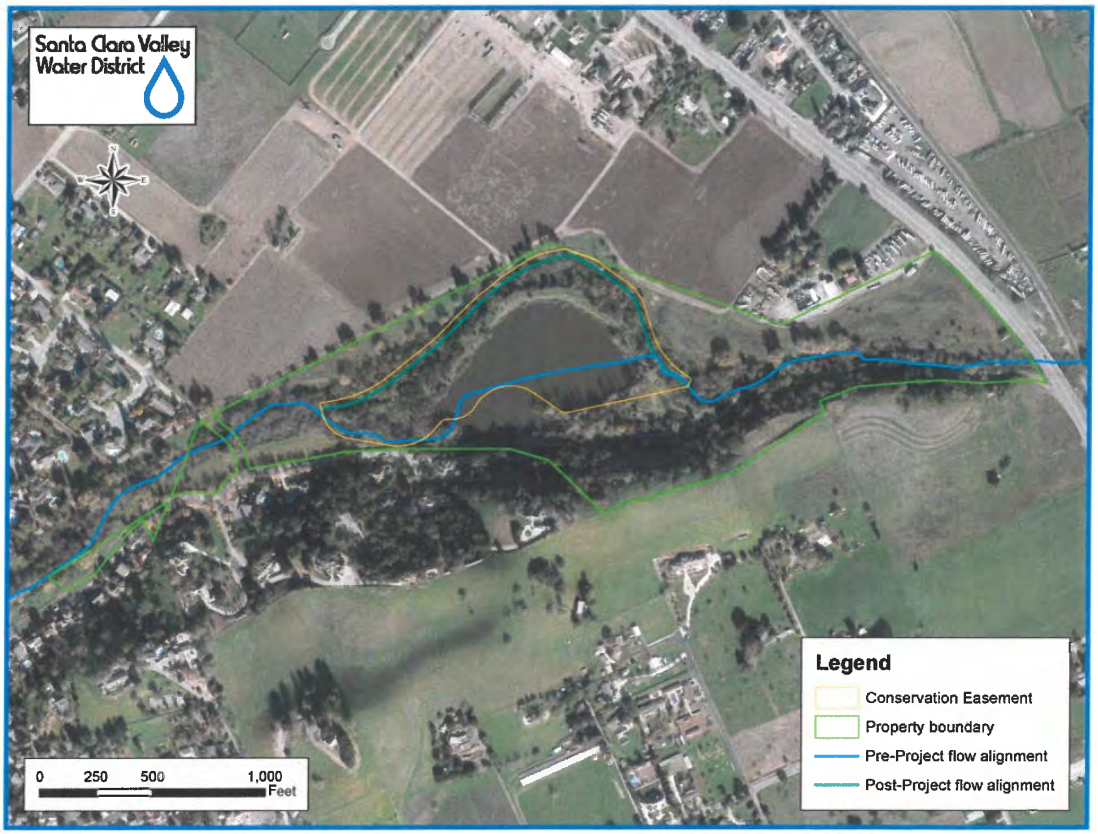


Figure 2. Aerial Image of the Property Illustrating Pre-Project Flow Alignment Through the Lake, the Property Boundary, Post-Project Flow Alignment, and the Conservation Easement Boundary

In 2006, USACE again prepared a revised Draft EIS/EIR for the Project which the USACE subsequently deemed insufficient due to changed environmental conditions, prompting the USACE to hire an environmental consultant in 2009 to prepare an environmentally comprehensive EIS/EIR. Due to lack of federal funding to complete the contract in 2011, the SCVWD, as the local sponsor, assumed the USACE environmental contract to keep the project moving forward. After the SCVWD assumed the contractual responsibility for the environmental

work related to the flood protection project, the SCVWD began holding regular meetings with the resource agencies (i.e. Central Coast Regional Water Quality Control Board, California Department of Fish and Wildlife, National Marine Fisheries Service, United States Fish and Wildlife Service) to work through issues of flood protection design and compensatory mitigation.

The United States Fish & Wildlife Service prepared and revised a CAR (USFWS, 2003), which had identified a portion of the Property as a compensatory mitigation recommendation for the Project, was one of the first issues in 2011 which the SCVWD Project team informally consulted on with the various resource agency's staff. At the time, the SCVWD did not own fee or possess an easement on the 52.9-acre County property (Property). Therefore, if this mitigation recommendation, as proposed under USFWS's CAR was still viable, the SCVWD would have to enter negotiations for the purchase of the Property from the existing land owner, the County. The SCVWD's Project team held meetings (4-28-2011 and 8-2-2012) with USACE-Civil staff (Ms. Terry Marks, Mr. Chris Eng) and resource agency staff from the USFWS, National Marine Fisheries Service (NMFS), Environmental Protection Agency (EPA), California Department of Fish and Wildlife (CDFW), and the Central Coast Regional Water Quality Control Board (CCRWQCB) to; 1) obtain concurrence from both state and federal agencies that this onsite, in-kind compensatory mitigation was still a viable mitigation recommendation for impacts to Llagas Creek and tributaries for permanent, unavoidable impacts as described in the CAR, and; 2) determine how best to maximize onsite ecological value for both the wetlands and creek restoration component of the mitigation recommendation for the Property.

During the April 28, 2011, interagency meeting, SCVWD staff discussed the benefits of removing the artificial impoundment from the fluvial system for water quality, sediment transport, and ecosystem function. The resource agencies requested SCVWD staff compile water quality information to demonstrate that the Lake degrades aquatic conditions for the local flora and fauna downstream of the impoundment. In response, the SCVWD conducted a seasonal water quality monitoring study at the Lake. The results of that study indicated that the artificial impoundment elevates stream temperatures and turbidity beyond acceptable limits as established in the Central Coast Regional Water Quality Control Board's Water Quality Control Plan Basin Plan for the Llagas Creek Watershed (Moore, 2012). Additional studies were conducted to evaluate baseline conditions and included: *Bathymetry, Hydrography, and Channel Geometry of the Lake, Morgan Hill Area, Santa Clara County, California (Balance Hydrologics, 2012); Baseline Biological Survey of the Lake (Condor Consulting, 2012); the Lake Special Study, Focused Surveys for Detection of California Red-Legged Frog and California Tiger Salamander Report (Moore, 2012).* The results of these studies were presented to the resource agencies on August 2, 2012, at which time the SCVWD received concurrence from the various resource agency staff that the CAR recommendation for on-site in-kind mitigation within the Property would remain the same as described in the USFWS's 2003 CAR.

SCVWD negotiated planning, design, and land rights acquisition with the County for the proposed compensatory mitigation Property site. The design criteria outlined in the CAR formed the foundation for the restoration recommendation. Specifically, "*the project will restore at least 1,980 linear feet of historic creek channel; portions of Lake Silveira will be filled with soil generated from excavation of the Project (Reach 7a) to create an emergent wetland mosaic cattails and bulrushes and shallow open water*" (CAR, 2003). The CAR also prescribes enhancing the wetland with at least 25 pieces of large woody debris.

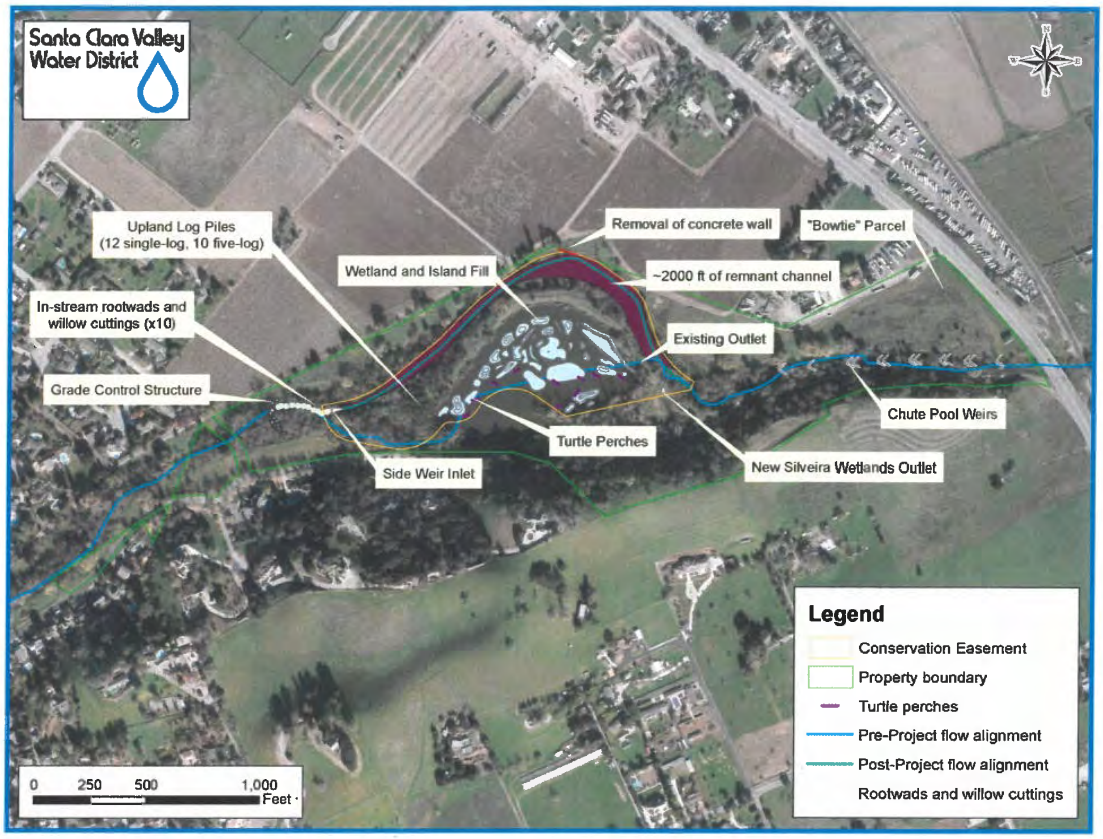


Figure 3. Proposed Improvements to the Property to Meet Project Objectives

A series of design objectives for the Property site (Figure 3) were developed with input received from the various resource agency staff during collaboration meetings on June 25, 2013 and June 28, 2013 and are as follows:

1. Maximize mitigation value for the Upper Llagas Creek Flood Protection Project (Project) and provide for overall increased ecological functions and values;

2. Provide improved habitat for steelhead, turtles, and other special status wildlife species known to occur at the site;

3. Reduce suitable habitat for non-native predatory fish;

4. Provide riparian habitat in Reach 7a to provide connectivity to existing high quality riparian habitat in reach 6 (downstream of Monterey Road) and upstream of the Lake to Chesbro Reservoir; improve or protect upstream and downstream functions and resources, hydraulic conveyance, groundwater recharge, ecological resources;

5. Contribute to improved sediment supply to downstream reaches; ensure geomorphic stability for the Lake, the historic channel, and downstream reaches;

6. Provide a stable, adjustable low-maintenance inlet to the Lake where primary low flows remain along the historic Llagas Creek channel downstream to the Reach 7a and Reach 6 confluence created by the Project;

7. Improve the Lake's water quality, including turbidity, temperature, and circulation/flushing;

8. Provide for public access opportunities while respecting neighboring communities, thus, this Project is planning the mitigation such that if the County or City of Morgan Hill (City) develops passive recreation in the area in the future the mitigation will be adequately buffered; and

9. Minimize design, permitting, construction, monitoring, and maintenance costs.

The Lake Silveira Restoration Design Development Report (HTH, 2013), documenting the previously stated objectives and the basis for the restoration design, was prepared for and disseminated to resource agency staff. Design refinements, including reviews by the City and County for the restoration of the Lake occurred from 2013 through 2017 and were included in the 100% design documents submittal received by the SCVWD Project team in January 2018. In 2013, SCVWD staff concurrently entered negotiations with the County for the fee purchase of the Property, which contains the entire existing Lake footprint.

The impact analysis for the Project's footprint was also completed based on final design plan (Table 1).

Table 1. Impacts, Mitigation Ratios, and Required Mitigation

Habitat Type	Impact Acreage	Impact Type	Mitigation Ratio	Required Mitigation (ac)	Mitigation Designed (ac)	Excess/ <Shortage> (ac)
Native Riparian	22.22	Permanent	3:1	66.66	105.62	—
	N/A	Temporary	N/A	N/A	N/A	—
Nonnative Riparian	10.44	Permanent	2:1	20.88	N/A	—
	N/A	Temporary	N/A	N/A	N/A	—
Riparian Total	**32.66**	—	—	—	**114.07**	**26.53**
Grassland	3.53	Permanent	1:1	3.53	—	—
	39.75	Temporary	1:1	39.75	—	—
Grassland Total	**43.28**	—	—	**43.28**	**60.43**	**17.15**
Wetland	1.05	Permanent	2:1	2.1	4.09	1.99
	5.04	Temporary	1:1	5.04	—	—
Wetland Total	**6.09**	—	—	**7.14**	**4.09**	**TBD**
Aquatic	2.78	Permanent	1:1	2.78	—	—
	39.4	Temporary	1:1	39.4	—	—
Aquatic Total	**42.18**	—	—	**42.18**	**64.8**	**TBD**

Notes:
ac = acres
N/A = not applicable
TBD = to be determined
1 = 105.62 acres + 2.25 acres + 6.2 acres as described in previous paragraph

The planned mitigation elements (i.e. channel restoration, wetland creation, invasive blackberry control, revegetation, turtle perch construction, concrete removal) within the Property and subsequent Conservation Easement (CE) provide partial mitigation for flood protection impacts. The complete mitigation package for the approximately 13.9 mile-long, 400-acre Project footprint is summarized below for ease of reference. This Management Plan addresses the CE area only.

- Revegetation of 105.62 acres (on-site in-kind);
- A California Sycamore Genetic and Propagation Study;
- Aquatic habitat enhancements (464 instream complexities) within Reaches 4, 5, 6, 7A and the Lake. Instream habitat enhancement features including a sinuous low-flow creek channel, pools, large woody debris placements, boulder placements, root wad structures, and wing log deflectors, are to be installed in Reaches 4, 5, 6, and 7A;
- A drainage swale/filter strip to collect surface runoff from surrounding agricultural land in Reach 7a and within areas of Reach 4;
- Construction of turtle basking perches and islands within the Lake;
- Installation of a stream gage within Reach 6 to accurately assess flows downstream of wetland creation and stream restoration site post-Project construction;
- Installation of a fish screen within Reach 6 at the SCVWD Church Ave. Groundwater Recharge Facility;
- Girdling of non-native trees (i.e. tree of heaven) for bat habitat;
- Installation of log piles for upland habitat;
- Removal of invasive vegetation (i.e., Himalayan Blackberry and *Arundo donax*);
- Remediation of sites outside of the flood protection project footprint where concrete rubble, trash, and debris or steep slopes has otherwise limited native vegetation colonization;
- Installation of bat boxes;
- Infill plantings on areas of the creek where the project will not disturb soil but where the riparian corridor could benefit from the addition of riparian vegetation to improve the vertical and horizontal complexity of the riparian corridor, and;
- Steelhead lifecycle monitoring.

1.1 Purpose for Establishment of a Conservation Easement

The Conservation Easement (CE) was established to conserve, protect, and compensate for unavoidable impacts to waters of the U.S. and critical habitat for the ESA listed steelhead trout. The CE area is comprised of 15.99 acres of land and water which includes 6.28 acres of pond (i.e. open water), 2.63 acres of seasonal wetlands, 0.32 acres of perennial marsh, and

0.21 acres of perennial water. Additionally, the CE area has 6.55 acres of upland habitat between the stream restoration site and the wetland creation in the existing condition. Once flow is restored, the CE will include approximately 2,000 linear feet of perennial stream in Llagas Creek which is critical habitat for South Central California Coast Steelhead Distinct Population Segment (S-CCC steelhead DPS). The Permitting Agencies are the San Francisco District of the U.S. Army Corps of Engineers (USACE), Region 9 of the U.S. Environmental Protection Agency, the National Marine Fisheries Service (NMFS), the Central Coast Regional Water Quality Control Board (CCRWQCB), and the California Department of Fish and Wildlife (CDFW) Bay Delta Region 3 (hereinafter referred to as the "Permitting Agencies").

1.2 Purpose of the Management Plan

The purpose of this Management Plan (MP) is to ensure the Conservation Easement (CE) area is monitored, maintained, and managed in a manner that preserves its conservation values in perpetuity and is consistent with the Permitting Agencies and the SCVWD's mitigation goals. This MP is a binding and enforceable instrument, implemented by the CE covering 15.99 acres as describe herein (See Figure 4 and **Appendix B**).

Objectives of the MP for the CE area are as follows:

- Preserve, and allow for the improvement of, the conservation values of Lake and existing Llagas Creek within the CE;
- Provide coordinated and unified management for the Lake;
- Provide feasible and effective conservation guidelines, standards, and priorities for monitoring, and adaptive management;
- Be compatible with and promote cooperation among the various land owners/managers within the Property and Llagas watersheds (e.g., with respect to recreation and trail use within and adjacent to the CE) and to help ensure the survival of viable populations of sensitive species and healthy biotic communities in the area ; and
- Provide flexibility as needed to adapt management practices in response to monitoring and field observations.

1.3 Conservation Easement Holder and Responsibilities

To provide sufficient site protection for the CE, the SCVWD has identified a third party (i.e. non-profit resource management agency) CE Holder, Land Trust of Santa Clara Valley (LTSCV), to monitor the property and enforce site protections as appropriate. The LTSCV is a 501(c)3 non-profit corporation with a mission to protect and preserve natural habitats and agriculture within Santa Clara Valley. The LTSCV has acquired, maintained, and preserved over 1,400 acres within the County, since its inception in 1998.

Implementation of the MP will begin after the 10-year Mitigation and Monitoring Plan is complete for the Project. Adaptive management actions may extend this 10-year time frame; however, the anticipation is that this MP will begin in year 11 post-Project construction. During this initial 10-year time frame, resource management routines will become established (i.e. Operations and Maintenance Plan for side weir and outlet structure) reducing the amount of speculation as to the frequency of routine maintenance at this facility. The site will be monitored annually and

reports prepared and disseminated to the Permitting Agencies. The SCVWD will be responsible for meeting the established objectives for habitat creation and stream restoration as outlined in the Final Upper Llagas Creek Mitigation and Monitoring Plan (December 2018) attached as **Appendix F**.

In accordance with this Management Plan (MP), the LTSCV will conduct biannual routine site inspections and land management of the CE. Please refer to Section 8 of this MP for Reporting details. The CE property will be visited twice a year by staff to visually inspect site conditions. These inspections will be conducted in the spring (on or about May 1st), after creek waters recede, and in the fall (on or about November 1st), prior to the onset of the rainy season. Conditions checked during inspections will include: presence of trash and debris or dumping, signs of erosion or sedimentation, evidence of trespass, fencing integrity, disturbance of vegetation or presence of new exotic/invasive vegetation within the CE area. After the inspections, any issues identified within the CE area which are not consistent with the terms of the CE, will be described in a detailed report to the Land Manager.

The LTSCV will inspect the Lake's inlet side weir and outlet structures designed for the regulated flow of water to the wetlands and restoration of approximately 2,000 linear feet of Llagas Creek. See Figure 3 for a brief description of the proposed initial Property site improvements. The LTSCV will inspect the inlet side weir and outlet structure for signs of excessive deposition/erosion which could render the structures inoperable. Additionally, the inspection will note any vegetation encroachment concerns as it pertains to function of both the inlet side weir and outlet structure. Any blockages to either the Lake's inlet and outlet structures will be noted as well as any structural deficiency in the inlet or outlet (i.e. structural issues or displacement of materials such as stop logs) or any vandalism of either structure, including graffiti. Any deficiencies for these facilities will be noted in the biannual inspection reports to the Land Manager.

The LTSCV will inspect site fencing as detailed in Figure 4. The fencing will be inspected for signs of degradation and trespass and all deficiencies will be noted in the biannual report to the Land Manager. The LTSCV will perform ocular surveys within the restored stream channel and wetlands for the presence of exotic or invasive vegetation which may attempt to re-colonize the site. This invasive vegetation will be identified to species and spatially referenced (i.e. GPS points or polygons) in the biannual reports. The LTSCV will note any anomalies to water quality (i.e. excessive turbidity, odor, sheen) within the created wetlands and restored stream channel. Sources of the water quality degradation will also be noted if known or suspected. If illegal dumping is suspected or water quality issues are pervasive and severe, LTSCV will contact the SCVWD's Pollution Prevention Hotline at 888-510-5151 for immediate assistance. For all other minor water quality issues, the LTSCV will note these issues in the biannual report to the Land Manager. The LTSCV will note the presence of trash and debris within the wetlands and Llagas Creek within the CE boundaries (15.99 acres) and spatially reference (i.e. GPS points or polygons) the location in the biannual reports. Please refer to Figure 4 for CE boundaries and **Appendix B** for the CE plat and legal description.

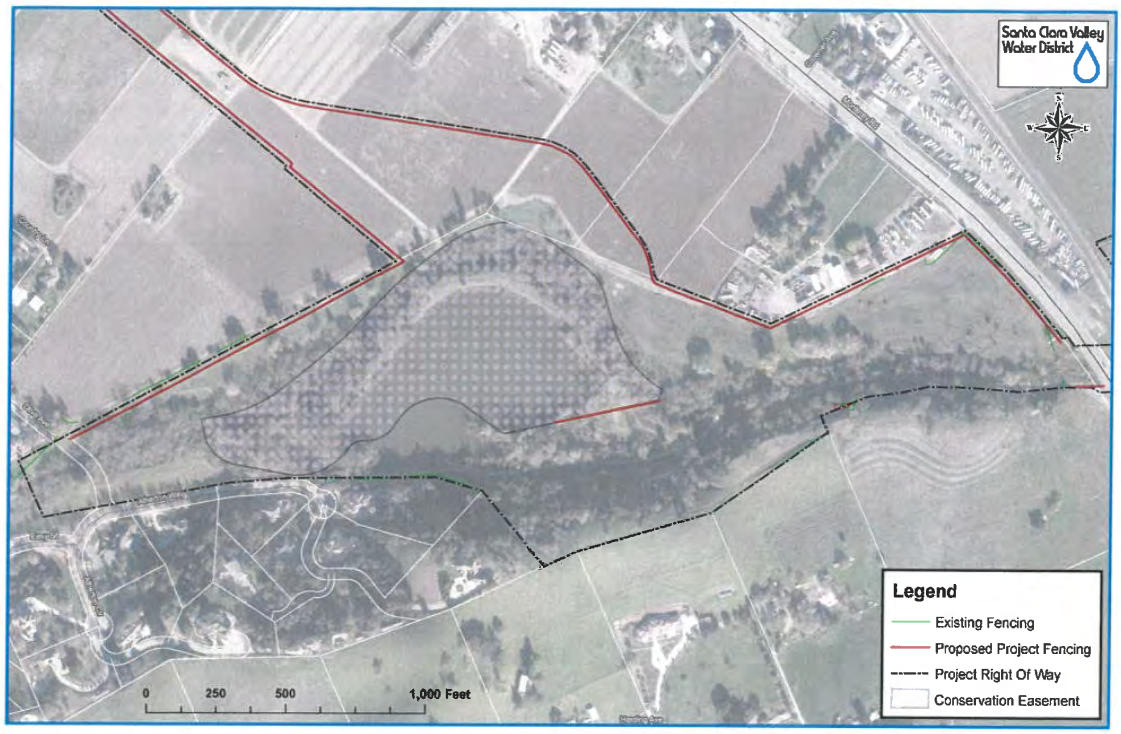


Figure 4. Existing and Proposed Property Fencing

1.4 Land Manager and Responsibilities

The Property owner of the 52.9 acres' parcel (Property) and the designated land manager (Land Manager) will be the SCVWD prior to the start of construction of the Project. Land Manager responsibilities may be transferred to another party in accordance with Section 9 of this MP. The Land Manager is responsible to work and coordinate with the CE Holder to implement this MP, managing and monitoring the CE boundaries in perpetuity to preserve its habitat and conservation values. The Land Manager is responsible for maintaining CE in a condition at least as good as its current condition consistent with the CE, although it is anticipated that MP implementation will result in improved environmental conditions. The Land Manager is responsible to secure all future permits related to work described under this MP. At present, it is presumed that all maintenance for the CE, including the Project will be conducted under the countywide regional general permit, referred to as the SCVWD's Stream Maintenance Program (SMP). The continued routine maintenance of this facility is covered under the future (2024) SMP permits for incorporation of the Project's maintenance and the site maintenance related to the CE. The activities described in this MP are like routine countywide maintenance work, which occurs under the existing SMP permit (i.e. sediment removal, vegetation management, and minor maintenance).

The Land Manager is responsible for operations and maintenance of the constructed water management features (i.e. inlet side weir and outlet structure) at the site. To comply with CWA 40 CFR 230.96 (a)(1), the SCVWD has proposed performance standards for the wetland creation and stream restoration as described in the Final Upper Llagas Creek Flood Protection Project Mitigation and Monitoring Plan (December 2018) attached as **Appendix F**. It is

anticipated that water operations and maintenance frequency will be elucidated during the 10-year mitigation and monitoring plan period for the inlet side weir and outlet structure, before implementation of this Management Plan. Adjustment of the inlet side weir to allow for a minimum of 3 CFS (typical summer flow rate) to the restored channel and excess overflow to the wetlands will likely take several different hydrologic regimes (i.e. different water years) to refine the water operations practices. By the end of the 10-year mitigation and monitoring plan period, if performance standards have been met, the water operations regime will then be a standard operating procedure. Since these facilities are not yet constructed, it is difficult to anticipate specific operations and maintenance guidelines. However, the SCVWD is a water agency that owns and operates dams and other water infrastructure within the County for water supply purposes, so some basic procedures for operations can be anticipated.

The Land Manager is responsible for maintenance of the inlet side weir and outlet structure as deficiencies are noted in the biannual reports submitted by LTSCV. The routine inspections and subsequent biannual monitoring will identify the need for remedial action and the Land Manager will implement the remedial measures to correct the deficiency. There are several items that can compromise the integrity and function of the inlet side weir and outlet structure. These items include but may not be limited to: sediment, vegetation, and other debris blocking the entrance or outlet of the structure, cracks or other performance issues, displacement of constructed materials (i.e. stop logs for side weir), and damage due to vandalism. Minor maintenance for sediment removal (i.e. 2-3 cubic yards (cy)) and minor vegetation management activities (i.e. pruning) are presumed to be required periodically for functionality of both the inlet side weir and outlet structure. The frequency of these activities will be refined within the performance monitoring period, the first 10 years, post-Project construction. This description of minor maintenance does not refer to catastrophic events such as wildfires and mass-wasting which cannot be anticipated.

The Land Manager is responsible for repairs to established fencing that has degraded over time or has been vandalized. The routine inspections conducted by the LTSCV will identify fencing deficiency and the Land Manager will remediate those deficiencies as appropriate.

If invasive or non-native plants are identified during the LTSCV biannual ocular surveys as attempting to re-colonize within existing Llagas Creek or wetlands within the CE, the SCVWD will formulate a plan for removal or control of the invasive/non-native vegetation to be submitted with the annual Notice of Proposed Work for the SCVWD's SMP for resource agency approval. Work will commence after all request approvals are obtained through the SMP process.

The SCVWD will initiate a bullfrog population monitoring program prior to the restoration project construction at Lake Silveira and include three sets of day and night surveys to be conducted in spring or early summer (i.e. the bullfrog breeding season). The three sets of day/night surveys will be repeated every three years. If significant increases in the bullfrog population are observed, the SCVWD, in consultation with CDFW and USFWS, will undertake control measures, to reduce the population.

The Land Manager will work with Santa Clara County Vector Control (SCC Vector Control) during the 10-year mitigation and monitoring plan period post-Project construction for the created wetlands and restored stream with the intent to manage vector control proliferation with operational modifications to the wetlands. If operational modifications are not sufficient to prevent abatement of mosquito populations then other methodologies will be employed (i.e. emergent vegetation management, Integrated Pest Management cultural/physical control). During the 10-year mitigation and monitoring plan period, the CE area will be monitored by a

designated SCC Vector Control Technician via dipping for immature mosquitoes at various access points (i.e., surveillance) monthly throughout the year. SCC Vector Control will then evaluate the conditions within the wetlands and restored channel for mosquito abatement issues. Results of this analysis will be obtained by the Land Manager and disseminated to LTSCV.

2.0 PROPERTY DESCRIPTION

2.1 Geographic, Geologic, and Hydrologic Settings

The Pajaro River Watershed covers approximately 1,300 square miles and is bounded by the Santa Cruz Mountains to the north and west and the Gabilan Range to the south. The main tributaries are Corralitos, Uvas, Llagas, San Benito, Pacheco and Santa Ana Creeks. These tributaries converge and provide water to the Pajaro River, which drains to Monterey Bay. The Llagas Creek Watershed lies within the southern extension of Santa Clara County and drains an area of approximately 102 square miles.

Surface Water

The Llagas Watershed has a typical Mediterranean climate; warm, dry summers and cool, wet winters. The mean annual precipitation varies from 21 inches on the valley floor to roughly 40 inches in the headwaters. Llagas Creek headwaters originate in the Santa Cruz Mountains at an elevation of 3,562 feet. The creek flows from the headwaters to almost 11 miles downstream to Chesbro Reservoir (LPSCD, 1967). This reservoir was constructed by the South Santa Clara Valley Water Conservation District (SSCVWCD) in 1955 to alleviate issues associated with excessive groundwater pumping for irrigation of agricultural crops. The reservoir has a rated capacity of 7,945 acre-feet and drains approximately 19.5 square miles of the watershed (SCVWD, 2005). Llagas Creek continues about six miles downstream of Chesbro before it is interrupted by the Lake. Stream flows to the Lake are largely controlled by releases from Chesbro Reservoir, which is managed for recharging the underground aquifers (SCVWD, 2005). Because of reservoir operations, the Llagas Creek flow above the Lake is perennial. Downstream of the Lake, Llagas Creek continues to flow southerly for 13.4 miles into the Pajaro River where the river traverses an additional 27.9 miles before discharging into Monterey Bay (Pacific Ocean). Llagas Creek downstream of the Lake to approximately San Martin Avenue is ephemeral and flows only after precipitation.

Groundwater

The Gilroy-Hollister Valley Groundwater Basin is nestled between the northwest-trending Santa Cruz Mountains and the San Andreas Fault to the west and the Diablo Range and the Hayward and Calaveras faults to the east. The basin includes, in part, the floor of the Llagas Subbasin, a large structural trough that has been filled by sediment eroded from the adjacent mountain ranges, and the smaller valleys of tributary streams. The Lake is situated at the junction of one of the largest of these tributary valleys (Llagas Creek) and the main Llagas Valley trough. Groundwater beneath this confluence is retained in deposits of both the Llagas Subbasin and the alluvium beneath Llagas Creek. Two aquifers composed of unconsolidated alluvium are present under the valley floor near the Lake Silveira and Llagas Creek's historic channel complex (Balance Hydrologics, Inc. 2013b). A shallow aquifer composed of younger alluvium occurs 8 to 12 feet below the valley floor east of Lake Silveira. A deeper aquifer composed of older alluvium is present 20 to 30 feet below the valley floor. The two aquifers are separated by a 12 to 20 feet thick unit composed of cohesive gravelly clays of lacustrine origin. Results of an

aquifer pump test conducted during site investigations indicate that these aquifers are fundamentally unconfined and that the gravelly clay layer, which acts as an aquitard, is not continuous (Balance Hydrologics, Inc. 2013b). Pumping, draining, or other influencing groundwater potentially affects water levels north and east of the confluence in the tributary aquifer system beneath the valley floor along Llagas Creek, and within the main valley trough.

2.2 History of the Property

Prior to Euro-American modifications to the watershed, the habitats in the region of the Property were predominately Oak woodland, Oak Savanna, and grasslands which were interspersed with wet meadows (SFEI, 2008). Later, intensive ranching and agricultural practice, particularly prune and walnut orchards, dominated the valley floor in this region until population expansion brought more intensive urban/suburban land use changes (LPSCD, 1967).

The Property, prior to County ownership, was privately owned and the landowners operated a quarry within the Property under use permits issued by the County on July 22, 1973 (Permit Nos. 173.2005 and 22P60.6). The Landowners entered an agreement, Document #5376499, with the SSCVWCD, a public corporation created in 1938 under the grant of authority of a general act, recorded on August 11, 1976. See **Conservation Easement, Exhibit C - Property Assessment and Waranty, Attachment 2** for a copy of this document. The SSCVWCD, as part of its water preservation program, determined that there was a public need and necessity for a groundwater recharge facility on Llagas Creek and that a portion of the Property was suitable for such need. The gravel extraction County use permit provided for gravel excavation limited to a certain area of the property and not lower than the elevation of the bottom of the creek channel. However, there was a provision that these conditions could be waived to permit further excavation, if the excavated area were to be converted for use as a groundwater recharge facility upon completion of excavation. The SSCVWCD entered the agreement with the landowners to allow them to continue to excavate gravels, which specified an excavated area with side slopes of 3:1 and generally 10-40 feet deep and an area of a minimum of 4 acres and a maximum of 7 acres. The current Lake dimensions reflect this early direction to construct the quarry percolation pond to the specific parameters.

It is unclear from the historical documents why the SSCVWCD did not purchase the percolation pond after the quarry operations were completed to fulfill the 1976 agreement. The land owners sold the property to the County on July 1, 1982 (Deed #7403031). At this time, the northern levee separating Llagas Creek and the quarry pit had already been breached, which bypassed approximately 1,980 feet of Llagas Creek and directed all creek flows through the quarry pit. The County entered an agreement with the City of Morgan Hill, where the City would lease the Property from the County for the purposes of developing a future public park. The City prepared and adopted a Master Plan for the Property in 1989 which was approved by the County's Board of Supervisors on September 11, 1990. However, the City did not have enough funding to carry the master plan through to implementation, planning, design, and construction. Thus, the Property remains in its existing condition. The site is not a publicly sanctioned recreation facility although recreation is a prevalent activity at the site: Hiking, biking, and horseback riding have been observed throughout the course of Project planning and design.

In 2001, the United States Fish and Wildlife Service, in preparation of their CAR for impacts incurred from the proposed Upper Llagas Flood Protection Project (Project), recommended channel restoration and wetland creation at the flooded quarry pit to increase the functions and values of the site for fish and wildlife. The SCVWD, as previously described in Project Background, obtained concurrence from the resource agency staff before entering negotiations

with the County for purchase of the Property for use as compensatory mitigation for unavoidable impacts eventually resulting from the construction of the proposed Project. The County Board of Supervisors approved the sale of the Property to the SCVWD on June 5, 2018. The SCVWD Project team began the planning and design of the proposed Property improvements (i.e. channel restoration and wetland creation at the existing Lake) in 2014, after the County had assured the SCVWD Project team they were willing to sell the Property to the SCVWD as required for the Project. The proposed Project improvements for the Property were included in the 100% construction documents submittal received by the SCVWD Project team in January 2018.

2.3 Pre-Project Conditions

The Property site is 52.9 acres of unimproved land bordering Llagas Creek from 185 feet upstream of Olive Avenue to Monterey Road within the southern limits of the City of Morgan Hill (Figure 2). The Property is bordered to the northwest by an established mobile home park and residential housing while the area directly north and northeast is bordered by fallow and active farmlands. To the southwest the Property is bordered by large, luxury single-family dwellings. Directly south of the Property is a mix of agricultural/rangeland parcels and single-family dwellings. Notable land surface features in the 52.9-acre Property are as follows; an approximate 8.2-acre Lake; approximately 1,980 linear feet of abandoned Llagas Creek; 3,055 linear feet of active Llagas Creek channel; a paved access easement road belonging to the City along their underground sewer system alignment to the southern portion of the Property; several large expanses of flat ruderal grasslands; and a wooded, north-facing hillside is included in the Property site boundary to the southeast.

The Property site is comprised of four major plant communities; mixed riparian woodland, fresh water marsh, ruderal grasslands, and oak woodland. The following text characterizes the vegetation community in existing condition by section: the north bank of the Lake, the south bank of the Lake, the approximate 1,980 linear feet of Llagas Creek dewatered channel section, the upstream riparian corridor, and the downstream riparian corridor. Most notable within all sections is the presence of invasive Himalayan blackberry (*Rubus armeniacus*), which covers approximately 11.99 acres of the Property site, mostly in the riparian areas. The blackberry has homogenized the understory of the riparian forest and is a dominate feature of the Property site.

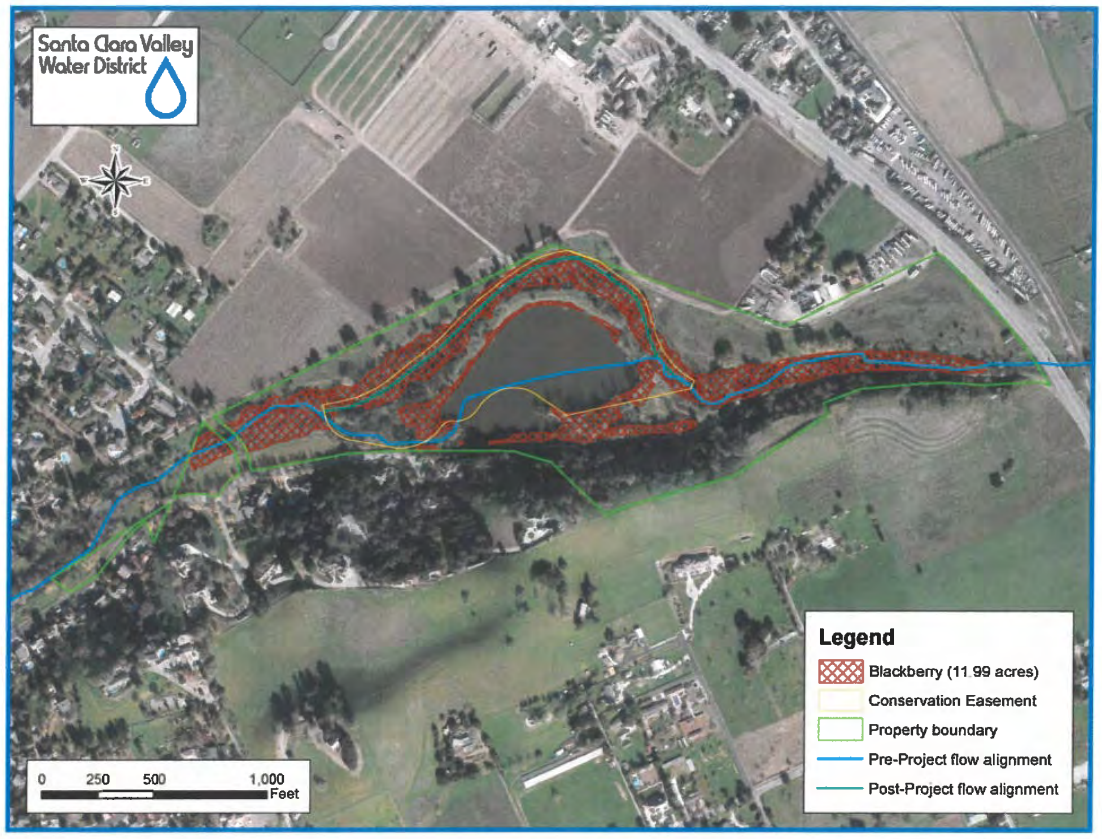


Figure 5. Extent of Invasive Himalayan Blackberry Within the Property (Data from 2013 HT Harvey survey)

North Bank of the Lake

This section on the north shore of the Lake runs between the entrance of Llagas Creek on the west end of the Lake to the outfall of Llagas Creek at the east end of the Lake. The northern margin of the Lake is bounded by an approximate 15-foot wide berm, presumably constructed from on-site material to isolate Llagas Creek from the previously active quarry. The base of the bank contains a narrow band of mixed willow (*Salix* spp.) and Himalayan blackberry. The upland portion of the bank is composed of non-native annual grassland species. The north and west facing banks support a stand of coast live oaks (*Quercus agrifolia*).

South Bank of the Lake

The south bank of the Lake runs between the inflow of Llagas Creek on the west end of the Lake to the outfall of Llagas Creek at the east end of the Lake. Several shallow portions (0–2 ft. depth) along the edge of the bank contain broad-leaved cattail (*Typha latifolia*). The predominant vegetation along the shore, above the Lake's ordinary high water mark (OHWM), is a mixed willow and Himalayan blackberry vegetation alliance. The upland areas contain scattered coast live oaks, Fremont cottonwood (*Populus fremontii*), and planted non-native

trees. A triangular patch of land southeast of the Lake contains non-native annual grassland species and a few small successional encroachments of coyote brush (*Baccharis pilularis*).

Llagas Creek—Dewatered Northern Channel

This approximate 1,980 linear foot portion of abandoned Llagas Creek channel is a curved, concave-south section north of the Lake. Most of the channel contains an overstory of willow and a thick understory of Himalayan Blackberry, though there are several 500 to 1,500 square foot understory sections dominated by broadleaved cattail. An existing tall and wide berm separates the Llagas Creek bed from the Lake and contains non-native annual grasslands on the south facing slopes. The north-facing slope on this berm contains coast live oak and valley oaks, Northern California black walnut, western sycamore, and non-native trees. Agricultural fields are adjacent to the northern riparian edge of this abandoned section of the Llagas Creek channel.

Upstream Riparian Corridor

The upstream riparian corridor describes the area from the western edge of the Lake to 500 feet west of the Santa Teresa Boulevard boundary. The abandoned section of the Llagas Creek channel continues to support a riparian vegetation community, dominated by an overstory of willow, and an understory of Himalayan blackberry. The predominant tree canopy is willow with a thick understory of Himalayan blackberry, except for one 500-foot corridor devoid of blackberry. The upland portion along the northern edge of the riparian corridor was a mixture of coast live oak, valley oak, and western sycamore. The riparian understory was dominated by non-native annual grasses. The northern most portion of this section had the most ecologically intact riparian habitat of the entire Property site, with very little blackberry cover, and diverse native shrub and tree habitat.

Downstream Riparian Corridor

The downstream riparian corridor section begins at the east end of the Lake and exists approximately 500 feet downstream and easterly of the Monterey Road crossing. Llagas Creek, a perennial stream, flows in an easterly direction downstream of Monterey Road. The riparian corridor averages 80 feet wide and is composed of a shrubby tree overstory of mixed willow species and a dense understory of Himalayan blackberry. On the upland edge of this riparian corridor, there are a few scattered coast live oaks, valley oaks, and western sycamores. The upper 350-foot portion of the Llagas Creek channel contains broadleaved cattail. South of the City's existing paved access road, is a north-facing bank, populated by mixed woodland species, dominated by coast live oaks, valley oaks, California buckeyes (*Aesculus californica*), and poison oak (*Toxicondendron diversilobum*).

Pond

The pre-Project Lake (i.e. pond) morphology reflects the origin as previously described as a gravel quarry/proposed percolation facility as the Lake is steep sided, particularly on the north shoreline and deep with gravels and sand comprising the visible substrate. Streamflow rates in Llagas Creek above the Lake are dependent upon operational releases from upstream Chesbro Reservoir and a pipeline connection from Uvas Reservoir- the Uvas-Llagas pipeline. The Lake is characterized as a palustrine feature based on its size: The Lake is smaller (8.2 acres) than the 20 acres used to define most lacustrine features (Cowardin 1979). Water from Llagas Creek enters the Lake from the west and flows approximately 965 feet across the Lake in an easterly

direction before re-entering existing Llagas Creek. The surface area of the Lake is approximately 8.2 acres with a maximum depth of 10.4 feet. However, most of the Lake has a depth greater than 7 feet and the littoral margin lacks flourishing flora (Balance Hydrologics Inc., 2012). The minimal emergent shoreline vegetation comprises less than 15 percent of the Lake perimeter and is predominately Common bulrush (*Typha latifolia)* and Yellow flag iris (*Iris pseudacorus)*. Other predominate vegetation around the Lake perimeter includes willows (*Salix* spp.), Himalayan blackberries (*Rubus armeniacus),* Coast live oaks *(Quercus agrifolia),* and Cottonwoods (*Populus fremontii)*. The dewatered section of Llagas Creek may still receive some fresh water inflow when Chesbro Reservoir flows over the spillway or from groundwater seepage into the stream bed. Standing water was noted in some portions of the dewatered section during the Project planning surveys.

Conservation Easement-Present Condition

The Conservation Easement (CE) for the Lake Silveira Compensatory Mitigation Preserve is 15.99 acres which includes a portion of the Lake and the approximately 2,000 linear feet of the historic channel to be restored. The pre-Project habitats within the CE include 6.55 acres of upland habitat; 6.28 acres of pond; 2.63 acres of seasonal wetlands; 0.32 acres of perennial marsh; and 0.21 acres of perennial waters (Table 2; Figure 6).

Table 2. USACE Jurisdictional Habitats Within the Conservation Easement Prior to the Project

Habitat	Area (acres)s
Perennial Marsh	0.32
Perennial Waters	0.21
Pond	6.28
Seasonal Wetland	2.63
Upland (remainder)	6.55
TOTAL	**= 15.99**

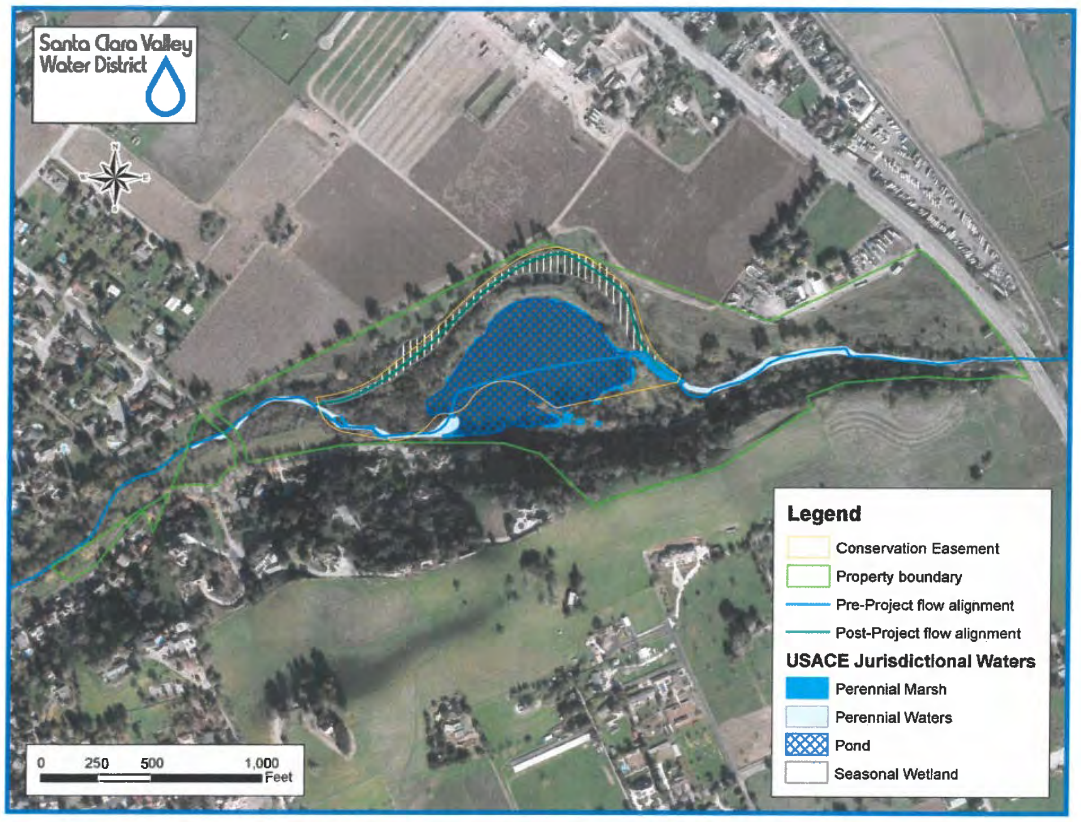


Figure 6. Pre-Project Conditions Within the Conservation Easement Area (15.99 acres) Which Includes Perennial Marsh, Perennial Waters, Pond, and Seasonal Wetland

2.4 Pre-Project Existing Infrastructure

Existing Fencing

The perimeter of the Property is currently partially fenced. Much of the southerly portion of the Property is secured with fencing while only a portion of the northerly side of the Property is fenced. Please refer to previous Figure 4 for the location of existing Property fencing.

Existing Utilities

Per the Title Report, dated March 14, 2018 obtained for the Property, APN's 779-03-114, 779-06-030, and 779-49-014, on August 12, 1953 Madrone Vineyard sold a portion of the Property to Western United Company (Easement Deed #906098) and reserved an easement for the purposes of a water line and ingress-egress. It is unknown if this waterline was ever installed or if it was installed whether the waterline is now abandoned. Based on the legal description, it is believed this easement is outside of the Conservation Easement footprint (15.99 acres).

The City of Morgan Hill purchased a 20-foot wide public utility easement along the southern portion of the Property on February 9, 1976 (Easement Deed #5210138). The City installed an underground 12-inch sanitary sewer facility, including access manholes at various locations. The City constructed a paved access road along the alignment of their underground sanitary sewer facility for operation and maintenance purposes. Based on the legal description, this easement is outside of the Conservation Easement footprint (15.993 acres).

The SCVWD Project team has identified one existing storm drain outfall within the Property that drains into the south-westerly location of the Property, outside of the CE area, near the terminus of Atherton Way. The Project design includes the construction of a drainage swale from this existing outfall to the inlet channel to the Lake.

2.5 Pre-Project Existing Easements and Agreements

Based on Title Report number 0621010141-RR, dated March 14, 2019 obtained for the Conservation Easement (15.993 acres), within a portion of APN 779-06-030 there are no existing easements within the Conservation Easement. See **Conservation Easement, Exhibit C - Property Assessment and Waranty, Attachment 1** for copy of Title Report number 0621010141-RR.

Based on Title Report number 0621010141-RR, dated March 14, 2019 obtained for the Conservation Easement, within a portion of APN 779-06-030. there is currently one exception on title, an agreement with the SCVWD (formerly the Santa Clara Valley Conservation District. See **Conservation Easement, Exhibit C - Property Assessment and Waranty, Attachment 1** for a copy of the Title Supplemental Report where this exception to title will be removed as a merger of title upon acquisition of the Property by the SCVWD.

The SCVWD, County, and City executed a Purchase and Sale Agreement (PSA) for the SCVWD's purchase of the Property. The City Council approved the PSA on March 7, 2018. The SCVWD Board of Directors approved the PSA on March 13, 2018. The County Board of Supervisors approved the PSA on June 5, 2018. See **Conservation Easement, Exhibit C - Property Assessment and Waranty, Attachment 2** for a copy of this PSA. Subsequently, in accordance with this PSA for the SCVWD's fee title acquisition of the Property, this PSA included the following provisions:

- SCVWD will grant the conservation easement (15.99 acres) for the Lake Silveira Compensatory Mitigation Preserve to the Land Trust of Santa Clara Valley (referred to as Mitigation Easement in the PSA), and then;

- As a condition of the SCVWD's fee purchase of the Property, approximately 52.9 acres, encompassing the entire CE area, the SCVWD shall separately grant an open space easement (referred to as a Conservation Easement in the PSA) to the County and the City for park purposes of trail connectivity for linkage of the site to the regional system of trails, scenic view watershed protection, habitat conservation, and open space preservation consistent with the 1995 Countywide Trails Master Plan, as amended periodically (Open Space Easement). However, this Open Space Easement shall be subordinate to the CE (Mitigation Easement) required for the Project's compensatory mitigation. The PSA states the following:

    - PSA, 6. (b)(vii) states: "Seller (County) acknowledges and agrees that the Conservation Easement (Open Space Easement) shall be subordinate and

subject to the terms and conditions of the Mitigation Easement (CE) over the Mitigation Easement Area as described in the Mitigation Easement and defined in the Conservation Easement (Exhibit G-Open Space Easement)."

- PSA, Exhibit G, Conservation Easement Agreement (Open Space Easement), page 2, Mitigation Easement:, states: "The mitigation easement area covered by the Mitigation Easement shall be comprised of not more than 16 acres within the Property as reflected in Attachment 3-1 (the "Mitigation Easement Area") as more fully set out in exhibits and/or attachments to the final executed Mitigation Easement (CE), and, with respect to the Mitigation Easement Area, the Conservation Easement (Open Space Easement) shall be subordinate to the Mitigation Easement."

On August 28, 2018, the SCVWD Board of Directors approved the execution of a Joint Use Agreement (JUA) #A4201M between the City and the SCVWD for West Little Llagas Creek between Monterey Road and Ciolino Avenue in association with the Upper Llagas Creek Flood Protection Project. See **Conservation Easement, Exhibit C - Property Assessment and Waranty, Attachment 2** for an executed copy of this JUA.

This JUA states the following:

"1) Scope of the License Grant to City. Subject to the terms and conditions of this Agreement, and contingent upon SCVWD's grant of a conservation easement to City as set forth above, SCVWD hereby grants to City a non-exclusive license to access and do any or all the following on the Premises:

a. To construct, operate, maintain, repair, replace, and remove City Improvements for recreational purposes on the Premises including, but not limited to, asphalt concrete surfaced pedestrian and bicycle trails, pedestrian bridges, fencing, fixture (trash receptacles, benches etc.) and signage. The construction of such City Improvements shall require prior review and approval by SCVWD as signified by issuance of a Water Resources Protection Ordinance Encroachment Permit ("SCVWD Permit"), and shall be compliant with all applicable legal and permitting requirements. It is fully understood and agreed the SCVWD in its reasonable discretion may approve or disapprove a request for any permit to construct any City Improvement on the Premises.

b. To provide non-motorized bicycling, walking, jogging and hiking activities in accordance with all applicable legal and permitting requirements to the extent such activities do not interfere with the SCVWD's mission of flood protection, water resource management, and stream stewardship.

c. To host special recreational events (e.g., races) that may include an otherwise restricted component such as allowing private vehicular access for safety purposes, so long as City first receives a SCVWD Permit to host that event.

2) Subordination to Conservation Easement and Mitigation Easement. To the extent this Joint Use Agreement conflicts with any provisions of the Mitigation Easement, the terms of the Mitigation Easement shall prevail. To the extent this

Joint Use Agreement conflicts with any provision of the Conservation Easement, the terms of the Conservation Easement shall prevail. To the extent this Joint Use Agreement conflicts with any provisions of the MMP, the terms of the MMP shall prevail."

3.0 SPECIAL STATUS SPECIES (PROPERTY)

Special Status Species include species that are designated under the ESA as rare, threatened, or endangered, as well as candidate species listing by the CDFW. Through extensive biological and ecological pre-Project evaluations there are two special status animal species documented to utilize the Property, South-Central California Coast (S-CCC) steelhead trout (*Oncorhynchus mykiss)* and the Western Pond Turtle (*Emys marmorata*).

Steelhead

The steelhead population in the Llagas Creek watershed is part of the S-CCC Steelhead Distinct Population Segment (DPS), which includes all naturally-spawned anadromous *O. mykiss* populations in streams extending from the Pajaro River system in Santa Cruz County south to, but not including, the Santa Maria River in San Luis Obispo County (71 FR 834) (NMFS 2005b). Under the ESA of 1973, this DPS qualifies for protection as a separate species. In 1997, the S-CCC steelhead DPS was listed as a "threatened" species—a species that is likely to become in danger of extinction within the foreseeable future throughout all or a significant portion of its range. In 2011, a 5-year review, as required by the ESA Section 4(c)(2), was conducted by National Oceanic and Atmospheric Administration (NOAA) Fisheries Southwest Regional Staff and Southwest Fisheries Science Center personnel. This review recommended that the current ESA classification as threatened, and the current DPS boundary be retained (NMFS, 2011).

The final critical habitat designation for the S-CCC Steelhead DPS was issued on September 2, 2005.

(70 FR 52488). Critical habitat is defined as stream channels within designated streams, laterally bound by the ordinary high-water line or by bankfull elevation. Critical habitat for S-CCC steelhead is present in the Project Area from Reach 4 (Llagas Creek downstream of Buena Vista Avenue) through Reach 6 (Llagas Creek at Monterey Road), and upstream of Reach 6 (Llagas Creek from Monterey Road to Chesbro Dam) which includes the Property since Llagas Creek flows is currently routed through the Lake (70 FR52488) (Please reference **Appendix E** for Project Map). Llagas Creek is part of the Pajaro River Subbasin Hydrologic Unit (HU) 3305 and within the South Santa Clara Valley Hydrologic Subarea (HSA) 330530 (NMFS, 2005c).

Restoring the historic, dewatered creek channel within the Property will improve steelhead rearing habitat within these 2,000 linear feet of restored creek channel. In addition, the Project will also improve critical habitat downstream of the Property by improving sediment transport and water quality by re-establishing creek flows through this restored creek channel and by converting a portion of the pre-Project artificial river impoundment into a created wetland.

Western Pond Turtle

The western pond turtle, *Emys marmorata,* is the only remaining freshwater turtle species native to California. The species formerly ranged from western Washington and British Columbia to

northern Baja, California, with a few isolated populations along the Carson and Truckee rivers in Nevada and the Mojave River (Ernst et al., 1994).

Populations are declining in California with habitat destruction cited as the major cause of its decline (Brattstrom and Messer, 1988) and the species is listed as a Species of Special Concern by the CDFW. A proposal to list the species as threatened or endangered under ESA is under review by the USFWS.

Western Pond turtles have been observed at the Lake during pre-Project evaluations. The wetland creation, with the islands and sloughs within the marsh, are expected to promote enhanced foraging habitat for the turtle. In addition, the project improvements include 10 basking sites for the turtle (section 4.3 Turtle Basking Habitat).

II. PROJECT IMPROVEMENTS TO THE PROPERTY

4.0 PROJECT IMPROVEMENTS

In the Lake's current state, degradation of water quality exists within the Lake and downstream of the Lake within Llagas Creek. Therefore, in accordance with the U.S. Fish & Wildlife Service's Coordination Act Report (USFWS, 2003), the following improvements are planned and further explained in their respective sections:

1. Llagas Creek Restoration (Section 4.1);
2. Wetland Creation (Section 4.2);
3. Turtle basking habitat (Section 4.3);
4. Instream complexity (Section 4.4);
5. Upland Log Piles (Section 4.5);
6. Native Plantings (Section 4.6);
7. Non-native Invasive Plant Species Management (Section 4.7); and
8. Permanent Fence Installation (Section 4.8)

4.1 Llagas Creek Restoration

Based on the use of historical aerial photographs and recorded documents, a quarry operation began circa 1973 at the Lake's present-day site, which included creating a levee between existing Llagas Creek and the quarry. The Lake was artificially created circa 1980 when unknown parties breached this portion of the levee forcing stream flows into the abandoned quarry pit. The breach subsequently bypassed and dewatered an approximate 1,980 linear foot portion of the higher quality riparian habitat of Llagas Creek (Figure 2) with creek flows traveling through the Lake. The Project will re-establish the historic creek channel to provide mitigation for impacts to critical habitat for the threatened S-CCC steelhead, resulting from construction of the Project (Figure 3). Once the inlet side weir structure is complete and flows are re-established through this natural section of Llagas Creek, there will be improved passage conditions for adult and juvenile fish as they will have unimpeded passage to upstream and downstream habitats. This mitigation element would also add rearing habitat back to the watershed while improving rearing habitat downstream by ameliorating most deleterious water quality effects (i.e. increased temperature and turbidity) created by the impounded water, pre-Project.

To reestablish the remnant channel, a pilot channel will be excavated from the upstream end of the dewatered section to approximately 550 feet downstream of the Project's split flow (i.e. side weir) inlet structure (Figure 3). The pilot channel is intended to guide flows, and encourage downstream channel formation via natural hydraulic "mining." Given the nature of the silty sediments in the historic channel, it is expected that flows will scour out a more substantial low flow channel relatively quickly. Excavation of this pilot channel within the historic channel will be minimized to avoid unnecessary impacts to the existing native riparian vegetation.

The longitudinal profile created during the planning phase illustrates a drop between upstream Olive Avenue (abandoned concrete low water crossing) and the Lake inlet. This condition is likely the result of the adjustment of Llagas Creek to the new, lower base level of the Lake when the quarry was breached. Because the Lake is a large sediment sink, the routing of flows and sediment into the Lake generated incision that migrated upstream to the Olive Avenue crossing (Balance Hydrologics, 2013). While Olive Avenue is functioning as a grade control structure for

the Llagas Creek invert elevation in the pre-Project condition, an additional grade control structure will be installed downstream of Olive Avenue to ensure long-term stability of the inlet and restored channel.

The re-established historic remnant channel will receive base low flows originating from upstream Chesbro Reservoir. When base flows in Llagas Creek upstream of the Lake are very low (less than 3 cfs), those flows will remain within Llagas Creek, the approximately 2,000 linear foot re-established natural section. During periods of higher flows, flow will be split to allow some water to the created wetlands within the Lake via the inlet side weir structure consisting of stop logs that will provide elevational control. Water operations for Llagas Creek and created wetlands will be delineated during the 10-year, post-Project mitigation and monitoring plan (MMP). The planned operation of Llagas Creek and the created wetlands will be adaptively managed post-Project to ensure maximum ecological value for both (see Article 7.0).

4.2 Wetland Creation

In conjunction with restoring the historic channel (Section 4.1), portions of the existing 8.2-acre Lake will be filled to create wetlands to mitigate for permanent impacts to waters of the U.S. for implementation of the Project. The wetlands within the Lake will be created by partially filling the Lake with approximately 275,000 cubic yards of surplus soils excavated from Reach 7a as a part of the Project. The marsh plain was designed to be partially inundated by the Lake, with an undulating surface that will vary from some deeper ponding areas to areas slightly elevated above the water surface. The Project's intent is to create a habitat mosaic of open water and vegetated marsh with the use of islands within the open water (Figure 3). From a wildlife perspective, there were several design considerations relative to the position and height of the islands. First, keeping most of the islands close to deeper water areas will benefit turtles and help reduce mammalian predator access to the islands. Second, diverse island heights will provide different habitat types for a variety of species, and will also provide some refuge under higher water events. Thus, varying island heights (1-4 feet) with some lower to the marsh plain surface and some several feet higher were incorporated into the final design plan (H.T. Harvey, 2013).

The Lake level is expected to remain relatively stable throughout the year at an assumed elevation of approximately 304 feet (NAVD88), with some slight decreases (approximately 0.5 feet) on hot days and temporary increases when flooding occurs. The Lake's outlet structure will control the Lake elevations so that if there is settlement of the wetland surface after construction, the water elevation can be adjusted to optimize the wetland viability and functionality. Water operations for the Lake will be delineated during the 10-year, post-Project MMP period. However, it is expected that over the long-term, this outlet structure will not need to be adjusted and that the seasonal water surface elevation in the wetland will only fluctuate within a range of ±0.5 feet.

The conversion of open water area to vegetated marsh will result in up to 5.3 acres of filled Lake and 2.9 acres of open water. The 5.3-acre Lake fill area will support both wetland marsh and a fill slope on which riparian and oak woodland habitats will be established (See Section 4.6 Native Plantings). It is presumed that at a minimum the wetland marsh complex will create approximately 4.02 acres of wetland. This area will be verified with a post-Project construction wetland delineation in Year 5 of the MMP (SCVWD, 2018).

4.3 Turtle Basking Habitat

The Lake currently provides habitat for the western pond turtle. However, basking habitat for this species is limited at the Lake due to the relative scarcity of woody debris. The Project includes the installation of ten basking logs along the edge of the wetland plain in the open water portion of the Lake wetland mitigation area (Figure 3). The basking logs, coupled with the enhanced foraging habitat associated with the sloughs within the marsh habitat, are expected to promote an increase in western pond turtle use of Lake Silveira (H.T. Harvey, 2013).

The turtle perches will consist of two logs positioned at the water surface elevation and will be supported by logs that have been driven into the Lake substrate. The perch logs will be angled slightly to ensure that at least a portion of the logs will be above the water surface and therefore will provide sufficient turtle basking habitat throughout the full range of potential water level elevations. The perches will be positioned to maximize sun exposure.

4.4 In-Stream Complexity

The Project will install 10 large rootwads and willow cuttings upstream of the side weir to improve steelhead rearing habitat by providing habitat structure and complexity (i.e. mosaic of habitat patches), shelter, and increased food resources. (Figure 3). The instream complexity will be monitored during the post-Project mitigation and monitoring period and will not be monitored beyond the 10-year establishment period.

4.5 Upland Log Piles

Log piles will be installed throughout the riparian mitigation areas above the top-of-bank as a habitat enhancement measure. Downed woody material provides wildlife habitat and, as it decomposes, facilitates the recovery of vegetation and soil nutrient cycling and improves nutrient holding capacity and soil water content. Single- and five-log piles will be installed above the top-of-bank throughout the riparian mitigation areas after the Project's earthwork has been completed. Logs will be obtained during construction and will range from 10 to 24 inches in diameter and from 8 to 10 feet long. Twelve single-log piles and ten five-log piles will be installed in upland habitat within the Property boundaries (Figure 3). There is no monitoring associated with this floodplain enhancement activity.

4.6 Native Plantings

The Property site (52.9 acres) supports riparian and upland habitats, pre-Project. The intent of the native planting plan and the invasive plant management mitigation elements for the Lake (Section 4.7 Invasive Plant Management) are to improve the quantity and quality (i.e. vertical and horizontal complexity) of the existing riparian corridor and associated upland habitat. The planting plan varies depending on location within the Property since growing conditions (i.e. soils, hydrology, shading etc.) determine sustainability. Additionally, the presence of high-quality vegetation precludes the need for new planting in some areas. The planting plan includes California native plant palettes that were specifically selected for the soil and hydrology conditions within the Project footprint. A total of 10.59 acres of active planting will occur within the Property (Figure 7, Table 3). Please see **Appendix C** for Project's planting and irrigation construction drawings, including planting palettes.

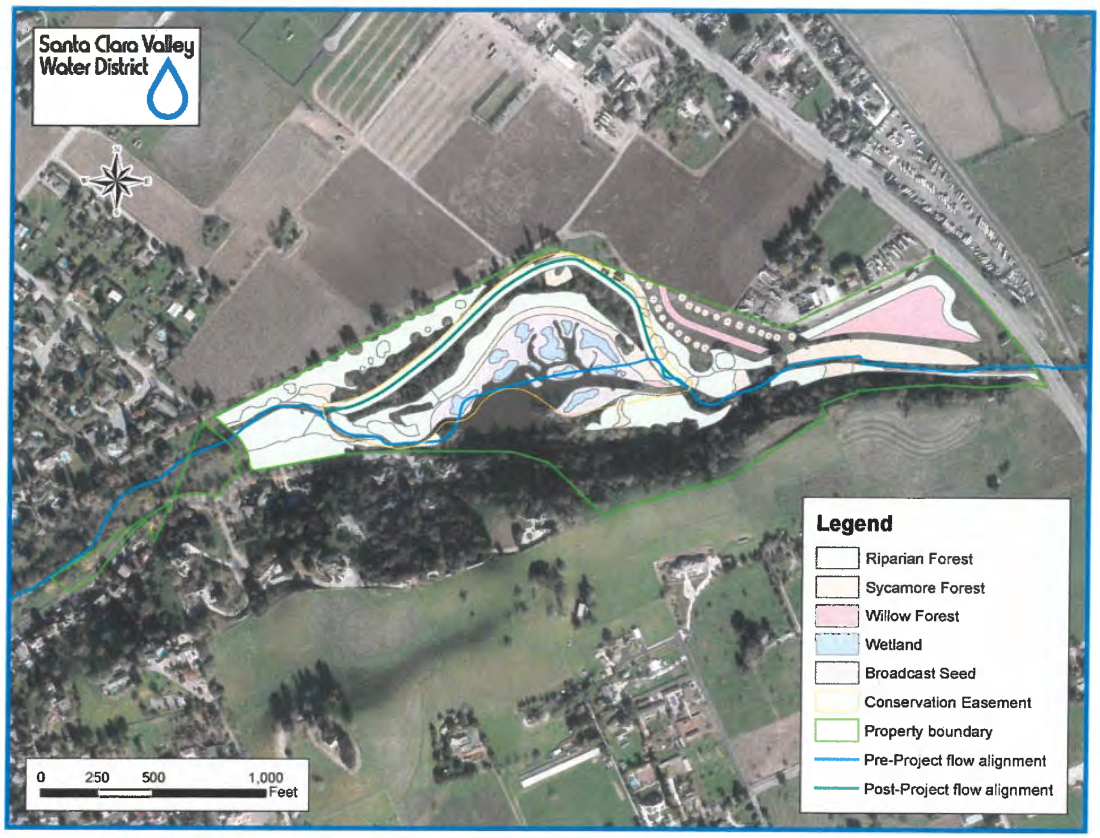


Figure 7. Native Riparian Planting Palettes and Planting Locations Within the Property

Table 3. Plant Palette's and Associated Area for Active Planting Within the Property

Plant Palette	Area (acres)
Riparian Forest	3.67
Sycamore Forest	1.36
Willow Forest	0.30
Forest Understory	0.26
Riparian Forest Infill	4.26
Sycamore Forest Infill	0.74
Total acres of active planting:	**10.59**

Historic Channel

The historic Llagas Creek's native overstory is very well developed, and thus shades the ground surface and channel. This shading, combined with high groundwater and the reestablished channel flows, is expected to maintain soil moisture and microclimate conditions amenable to native plant recruitment. This natural recruitment will be supplemented with plantings of native understory consisting of container stock shrubs of 3 by species, on 20-foot centers. The species to be planted are mugwort (*Artemisia douglasiana*), California blackberry (*Rubus ursinus*), and

snowberry (*Symphoricarpos albus*). Willow cuttings will also be installed in gaps within existing trees canopies. Due to the expected high soil moisture and shade, no irrigation for plant establishment is proposed within this area. This area's understory is heavily overgrown with non-native blackberry, which will be removed and controlled over a 3–4 year period prior to planting native understory species (See Section 4.7 Invasive Plant Management) Areas left bare after non-native plant removal along this reach will be seeded with an understory seed mix comprising mugwort (*Artemisia douglasiana*), blue wildrye (*Elymus glaucus*), and creeping wildrye (*Elymus triticoides*) (H.T. Harvey and Associates, 2013).

Upland Terraces (On North Side of Historic Channel)

The upland terraces north of the historic channel are level with the adjacent agricultural fields to the north, and elevated approximately 8-10 feet above the historic channel. Historically this area was likely an active floodplain, as evidenced by the presence of scattered, large native California sycamores (*Platanus racemosa*). At the northwest corner of the upper terrace adjacent to the maintenance road, the Project will remove an existing concrete wall where the slope graded to create a stable, plantable surface. The plant palette for the westernmost upper terrace areas will be the forest palettes, with some sycamores interspersed. The slope where the concrete wall is to be removed provides better sycamore establishment conditions, so a sycamore forest plant palette will be used within this area.

Existing Riparian Corridor from the Project's Proposed Side Weir Inlet Structure to the Lake

This area is almost fully vegetated by existing native willow tree canopy, but the understory is denuded from past mechanical and chemical blackberry control by unknown individuals. Very little grading will occur in this area, except to stabilize the low flow channel to the Lake downstream of the flow-split side weir inlet structure. The understory of the existing willows will be restored by planting with container stock of mugwort, California blackberry, and snowberry; and seeding with mugwort, blue wildrye, and creeping wildrye.

Riparian and Oak Woodland on Fill Slope North of Wetland Marsh

A large wedge of fill will be placed north of the wetland marsh plain and against the existing berm separating the Lake from the historic channel. The slope of the fill was designed at 3:1 to allow a plantable surface for which forest palette will be planted.

Wetlands and Islands

The wetlands and islands will be planted and seeded with emergent wetland species around their lower perimeter and willow and cottonwood on their upper elevations.

Lake Outlet Channel and Southeast Planting Area

The Project will install a new Lake outlet structure consisting of an adjustable weir gate, allowing for minor adjustments to the Lake's water surface elevation. This outlet structure will re-connect Lake flows downstream into existing Llagas Creek. The perimeter of this Lake area adjacent to the outlet structure will be planted with sycamore forest and the upper areas planted with the forest plant palette.

Bowtie Parcel

The Project will construct a new channel, Reach 7a, for West Little Llagas Creek flows to confluence with the mainstem of Llagas Creek immediately upstream of Monterey Road. This new channel is adjacent to the area within the Property commonly referred to as the "bowtie" parcel. The bowtie parcel consists of lowered terraced floodplains where the parcel will be planted with sycamore forest and the slopes above these floodplains will be planted with a forest planting palette (Figure 3, Figure 7).

4.7 Invasive Plant Species Management

There are currently extensive areas vegetated with non-native Himalayan blackberry at the Property, especially along the historic channel (Figure 5). The removal of this invasive plant will restore the area to a more natural condition, allow for active planting and natural recruitment of native plants, and improve overall habitat values. Approximately 11.99 acres of Himalayan blackberry removal will commence upon construction of the restoration site within the Property. Herbicide treatment (3-4 years) will follow the mechanical removal until the success criteria outlined in the mitigation and monitoring plan are met.

4.8 Permanent Fence and Gate Installation

The Project will install permanent fencing and gates nearly around the entire perimeter of the Property to aid in the prevention of trespassing within the Compensatory Easement, and will therefore prevent trampling of biota and compaction of soils. In addition to the existing fencing that is to remain, the placement of proposed new permanent fencing of the Property is illustrated in Figure 4 (Section 1.3).

5.0 PROJECT MITIGATION AND MONITORING PLAN (10-YEAR POST-PROJECT CONSTRUCTION)

The objective of Project's Mitigation and Monitoring Plan (MMP) is to offset losses of the aquatic resource functions and values due to implementation of the flood protection project in the Llagas watershed. The Projects MMP has well defined and realistic targets which was developed in coordination with resource agencies through the lengthy planning process. The MMP will be implemented during year 1 of restoration planting. However, because the Project is phased, MMP implementation will also be staggered. This MP will focus on implementation of MMP tasks for the CE area only (15.99 acres), not the Property (52.9 acres).

Construction of the proposed Lake improvements will require approximately one year to complete, taking place during year one the Project's 2–3 year Phase 1 construction duration. Concurrent with construction of the wetland and restored channel, the 11.99 acres of Himalayan Blackberry within the Property will undergo mechanical removal and 3-4 years of follow up herbicide treatment (Figure 5). Following completion of construction, the revegetation mitigation areas will be planted in the fall, except for the forest understory (i.e. Riparian Forest) in the restored section of Llagas Creek (Figure 7) (See Section 4.6).

Elements of the MMP specific to the vegetation in the CE area includes success criteria for invasive plants, woody plant percent survival, woody plant percent cover, California sycamore percent survival, Instream complexity, and percent cover of wetland vegetation.

At year 10, the mitigation element for invasive plants will be deemed complete if there is ≤0.5 acres of Himalayan Blackberry remaining within the CE footprint. At Year 10 riparian and wetland vegetation should be well established and meeting specified success criteria. It should be noted that ecological success criteria (i.e. functions and values) will also be assessed for the CE site utilizing the California Rapid Assessment Methodology (CRAM). The objective of this evaluation is to ascertain if the created wetlands and stream restoration are improving the ecological value of the site.

Elements of the MMP related to creation of sustained wetland habitats and a stable stream channel in the restored section of Llagas Creek are as follows: qualitative hydrologic success; Lake wetland marsh monitoring creek walks; Channel and Bank Stability and Bed Material Observations; Annual Profile and Cross-sections Survey; Lake Flow Monitoring, Wetland Water Level Monitoring, and Basic Water Quality.

After the post-Project construction 10-year mitigation and monitoring period, a monitoring report will be assembled summarizing key monitoring data and observations. The 10 years of monitoring data is expected to establish a new baseline for longer term CE management and success of the Lake wetland marsh restoration. The SCVWD monitoring team will issue an addendum to the Project's Operations and Maintenance Manual (Upper Llagas Creek Maintenance Guidelines Manual-2018), utilizing data collected during the 10-year monitoring and maintenance plan, which will be used to improve operations and maintenance practices of the CE management, including the Lake's wetland marsh. These new operations and maintenance guidelines will detail the side weir and outlet controls as well as routine maintenance activities to keep the created wetlands and stream restoration viable and functioning to provide the maximum ecological value. Maintenance activities (e.g. minor sediment removal at inlet) associated with the Lake will also be included in the updated operations and maintenance guidelines.

III. CONSERVATION EASEMENT MANAGEMENT PLAN TASKS AND RESPONSIBILITIES

6.0 MANAGEMENT PLAN PURPOSE

The purpose of this Management Plan (MP) is to ensure that the CE area is monitored, maintained, and managed in a manner that preserves its conservation values in perpetuity and is consistent with the USACE-Regulatory and the SCVWD's mitigation goals. This MP is a binding and enforceable instrument, implemented by the CE covering 15.99 acres as describe herein (See Figure 4 and **Appendix B**).

Objectives of the MP for the CE area are as follows:

- Preserve, and allow for the improvement of, the conservation values of Lake and existing Llagas Creek within the CE;
- Provide coordinated and unified management for the Lake;
- Provide feasible, quantifiable, and effective conservation guidelines, standards, and priorities for monitoring, and adaptive management;
- Be compatible with and promote cooperation among the various land owners/managers within the Property and Llagas watersheds (e.g., with respect to recreation and trail use within and adjacent to the CE) and to help ensure the survival of viable populations of special status species and healthy biotic communities in the area ; and
- Provide flexibility as needed to adapt management practices in response to monitoring and field observations.

6.1 Task A— Administrative Costs and MMP Annual Monitoring Report Review

Please refer to **Appendix F** of this MP for the Final Mitigation and Monitoring Plan (December 2018). After construction of the initial site improvements are complete, a 10-year Mitigation and Monitoring Plan (MMP) will be implemented at the Property site with requisite criteria established for success. A wetland delineation of the CE area will be conducted at year 5 of the MMP)to verify the quantity of wetlands created. Once the 10-year MMP is completed post-Project, this MP will take effect.

Sub-Task A1

*Prepare Annual Monitoring Report in accordance with the Final MMP: Quantitative, data, and information will be summarized in an annual monitoring report based on the schedule outlined in Table 28 of the approved final MMP (December 2018) attached as **Appendix F**. These yearly reports will access the criteria established for success as described in the Final MMP and will be submitted to the USACE and the CE Holder by January 31st for each given year of the 10-year MMP.*

Sub-Task A2

Administrative and legal cost one time lump sum reimbursement to review, comment, and approve the terms and conditions of this MP.

Sub-Task A3

Review of the Annual Monitoring Report that assesses and evaluates the criteria established for success as described in the Final MMP (December 2018) attached as ***Appendix F****.*

Sub-Task A4

Conduct an annual site visit to confirm the assessments and findings of the Annual Monitoring Report.

Sub-Task A5

Provide any relevant written comments on the Annual Monitoring Report to the SCVWD, if applicable.

CE Holder Responsibilities

Sub-Task A2 is the CE Holder's responsibility to submit an invoice for payment to the SCVWD within 30 days of the execution of this MP. SCVWD will have 60 days upon receipt of the CE Holder's invoice to review, process, and pay this invoice for this one time lump sum administrative and legal cost reimbursements to review, comment, and approve the terms and conditions of this MP and the SCVWD/CE Holder separate funding agreement.

Sub-Tasks A3, A4, and A5 are the CE Holder's responsibility which will include review of the Annual Monitoring Report, an annual site visit, and providing any relevant written comments by May 1st for each given year of the 10-year MMP.

Property Owner (SCVWD) Responsibilities

Sub-Task A1 is the SCVWD's responsibility to complete and submit to USACE and the CE Holder by January 31st for each given year of the 10-year MMP.

Please refer to Section 8 of this MP for reporting responsibilities for the CE Holder and the Land Manager.

6.2 Task B—Llagas Creek Restoration

Please refer to Section 4.1 of this MP for a description of the initial Project improvement to re-establish Llagas Creek's channel north of Lake Silveira. The 2,000 linear feet of restored and re-established Llagas Creek channel will be monitored for signs of ecological degradation and the conditions documented. The restored areas will be monitored and the results will be documented using the CE Holder Monitoring Checklist (**Appendix D**). The CE Holder will attach the completed checklists to the biannual report submitted to the Land Manager.

Sub-Task B1

*Streambank Stability: Stable streambanks are indicative of intact hydrological and sediment regimes; therefore, the banks will be visually surveyed biannually for stability. The streambanks will be evaluated and categorized as follows: a **stable** streambank is defined as having perennial vegetation to waterline; no raw or undercut banks; no recently exposed tree roots. A **slightly stable** streambank is defined as perennial vegetation to waterline in most places; minor erosion. A **moderately unstable** streambank is defined as perennial vegetation to waterline sparse (scoured or removed by erosion); streambank held in place by tree roots and boulders; extensive erosion. A **completely unstable** streambank is defined as no perennial vegetation to waterline; streambanks only held in place by roots and boulders; severe erosion. If there are indications of streambank instability (**moderately unstable** to **completely unstable**), photographs and a georeferenced map identifying location of any unstable streambanks will accompany the checklist with an explanation as to the source of erosion, if known. If unknown, the CE Holder will indicate the cause is unknown on the checklist.*

Sub-Task B2

*Vegetation Diversity and Coverage: Monitor and document existing riparian vegetation within the 2,000 linear feet of restored Llagas Creek channel. Existing riparian vegetation will be evaluated for structural diversity and cover as an intact riparian corridor generally indicates healthy and productive plant communities. This sub-task will monitor and evaluate two riparian indicators for vegetation in the restored stream channel. Habitat continuity and extent (**HABITAT**) indicates that the length, height and width of the riparian corridor in the restored stream channel has not been compromised and remains in stable condition. Are there unnatural gaps in the riparian corridor such as those created by opportunistic trail foraging or off-road vehicle use? Are there indicators of plant die-off or disease which may leave large gaps in the existing riparian vegetation? Is there any other condition that has compromised the width, length or height of the existing riparian corridor? Vegetation cover and structural complexity (**COVER**) is the second indicator for riparian vegetation. Is there a dominant tree canopy? Is there established understory (i.e. herbs, reeds, shrubs), groundcover (i.e. lichens, mosses, grasses, herbs, reeds and sedges) and native leaf litter?*

Please Note: Monitoring and documenting the presence of invasive vegetation which may attempt to re-colonize within the 2,000 linear feet of restored Llagas Creek or within the wetlands within the CE area will be addressed in Section 6.4 Task D-Non-Native Invasive Plant Species Management.

Sub-Task B3

If the streambanks within the restored 2,000 linear feet of Llagas Creek are determined to be unstable, the source of instability will be investigated and reported. The possible source of instability will be documented in the annual monitoring report. If warranted and remedial actions are necessary to ameliorate the condition, recommendations for remediation will be submitted in the annual monitoring report to permitting agencies. If the riparian vegetation monitoring provides indication of degradation of ecological integrity (i.e. unauthorized trail use, plant/tree disease, other condition that has compromised the width, length or height of the native riparian plantings, gaps within the riparian corridor, etc.) remedial actions as appropriate will be recommended in the annual monitoring report.

CE Holder Responsibilities

Sub-Task B1 and Sub-Task B2 are the CE Holder's responsibility which will include biannual monitoring for tasks described in these sub-tasks. Issues regarding Llagas Creek restoration will be monitored using the CE Monitoring Checklist (**Appendix D**).

Land Manager Responsibilities

Sub-Task B3 is the Land Manager's responsibility. The Land Manager will consider the information and recommendation(s) provided by the CE Holder in their biannual reports and will include the information in the Land Manager's Annual Report to the Permitting Agencies, including whether the Land Manager plans to or has taken any action to remedy the issue(s).

Please refer to Section 8 of this MP for reporting responsibilities for the CE Holder and the Land Manager.

6.3 Task C—Inspection of Lake's Side Weir Inlet Structure and Outlet Structure

Sub-Task C1

Monitor and document the structural integrity and functional capabilities of the inlet weir and outlet structure for the created wetlands. The ecological integrity of the created wetlands will depend on freshwater inflows from the side inlet weir, therefore, the structural integrity and operational functionality is imperative to the sustainability of the wetlands. The inlet weir will be inspected biannually by the CE Holder for deposition of sediment or debris which would impede the functionality of the stop logs (4 inch x 6 inch redwood boards) for elevation control of water into the Lake. The inlet weir will be inspected by observing the structural integrity of the foundation materials for signs of degradation or deformity. The structural condition of the stop logs will also be evaluated. If vegetation encroachment from nearby riparian vegetation is impeding the functionality of the stop logs, then the vegetation should be identified to species and reported on the checklist.

The outlet structure will be inspected for the presence of sediment deposition, vegetation encroachment or debris which would render the outlet inoperable. If vegetation encroachment is impacting the structure, the vegetation should be identified to species and reported on the checklist. The structural integrity of the outlet should also be evaluated by noting any cracks or deformities in the concrete. Any signs of vandalism (i.e. graffiti) for both the inlet and outlet structure should also be noted.

Sub-Task C2

Remove vegetation, debris, sediment, and perform routine minor maintenance to the side weir inlet structure or outlet structure to maintain functionality for the CE area. Additionally, minor maintenance may include annual lubrication of the operating gate mechanisms, so the structure may properly function.

CE Holder Responsibilities

Sub-Task C1 is the CE Holder's responsibility which will include biannual monitoring as described in Task C1; identification of the vegetation, debris, and sediment that may compromising functionality of the inlet and outlet structures; report any vandalism of the features

and provide photos; and georeferenced maps of issues identified for the inlet and outlet structures. Issues with the Lake's inlet and outlet structures will be monitored using the CE Monitoring Checklist (**Appendix D**). This checklist will be attached to the biannual report.

Land Manager Responsibilities

Sub-Task C2 is the Land Manager's responsibility. The Land Manager will consider the information and recommendation(s) provided by the CE Holder in their biannual reports and will include the information in the Land Manager's Annual Report to the Permitting Agencies, including whether the Land Manager plans to or has taken any action to remedy the issue(s).

Please refer to Section 8 of this MP for reporting responsibilities for the CE Holder and the Land Manager.

6.4 Task D—Non-Native Invasive Plant Species Management

Please refer to Section 4.7 of this MP for a description of this Project improvements regarding non-native invasive plant species management.

Sub-Task D1

Ocular surveys to document the presence of invasive vegetation which may attempt to colonize or re-colonize the CE area, within the restored 2,000 linear feet of Llagas Creek and the created wetlands. Ocular surveys will be conducted of the islands and littoral lake margins of the created wetlands, within the CE area for the presence of invasive plant species. If invasive species are found, they will be identified to species and mapped. The presence of invasive vegetation within the riparian CE limits will be documented and mapped (georeferenced). Invasive plant mapping should include identification of the plant to the species, and a determination as to if it is deemed invasive in California. The assessment will include a description of the degree of threat to native plants based on the California Invasive Plant County (Cal-IPC) inventory. Cal-IPC maintains a comprehensive list of invasive plants based on ecological impacts and categorizes plants that threaten California's natural areas. The inventory includes plants that currently cause damage in California (invasive plants) as well as "Watch" plants that are a high risk of becoming invasive in the future (designated with an asterisk). Please indicate if the species is deemed invasive or on the watch list and to what degree is the plant deemed invasive (i.e. high, moderate, limited). Polygons will be used to map each invasive species however, individuals can be grouped together, if they are the same species. Data should be post-processed using Trimble Pathfinder Office. Geographic Information System (GIS) layers will be developed from the GPS data for long-term tracking.

Sub-Task D2

If invasive plants are found within the 2,000 linear feet of restored Llagas Creek or within the created wetlands or within waters of the U.S. within the CE area, then an assessment of the treatment method with success criteria for removal will be proposed in the annual monitoring report to be submitted to the Permitting Agencies. The invasive removal sites will be assessed annually following initial removal until success criteria are achieved. Treatment areas, will be mapped with Global Positioning System (GPS) devices at the time of treatment. Annual assessments will be used to determine if additional control work or follow-up control work is necessary at treatment sites. Results of control activities including success or remediation will be reported annually to the Permitting Agencies.

CE Holder Responsibilities

Sub-Task D1 is the CE Holder's responsibility which will include, at a minimum, identification of the presence of invasive vegetation which is attempting to re-colonize or colonize within the CE area. Issues with invasive plant species will be monitored using the CE Monitoring Checklist (**Appendix D**).

Land Manager Responsibilities

Sub-Task D2 is the Land Manager's responsibility. The Land Manager will consider the information and recommendation(s) provided by the CE Holder in their biannual reports and will include the information in the Land Manager's Annual Report to the Permitting Agencies, including whether the Land Manager plans to or has taken any action to remedy the issue(s).

Please refer to Section 8 of this MP for reporting responsibilities for the CE Holder and the Land Manager.

6.5 Task E—Trash/Debris and Water Quality

Sub-Task E1

Monitor and document the presence of anthropogenic trash and debris within the CE area. Large woody debris (i.e. downed trees and snags) plays an integral role in the ecology of the restored stream and wetlands and will not be removed within the CE area unless this large woody debris compromises the functionality of the CE area (i.e. inlet and outlet structures operations (Section 6.3)). Anthropogenic trash and debris within the CE area will be described within the Checklist and mapped to location using georeferenced data.

Monitor Llagas Creek (restored channel) and the created wetlands within the CE area for indicators of degradation of water quality (i.e. excessive turbidity, odor, sheen, water quality within the created wetlands and restored channel will be observed biannually for signs of degradation. If illegal dumping or water quality issues are an immediate concern, the SCVWD Pollution Hotline (1-888-510-5151) shall be notified immediately to report the incident and location. For all other minor water quality issues, a brief description of the potential issue will be included in the biannual report, documentation shall utilize photos and GPS points or polygons, along with a recommendation on how to address the potential issue.

Sub-Task E2

Remove anthropogenic trash and debris within the CE area. Investigate to determine the source of the water quality issues and take corrective action(s) as necessary within the CE area.

CE Holder Responsibilities

Sub-Task E1 is the CE Holder's responsibility which will include, noting any trash/debris and any anomalies to water quality (i.e. excessive turbidity, odor, sheen) within the CE area. Sources of the water quality degradation will also be noted if known or suspected. Issues regarding trash/debris and water quality will be monitored using the CE Monitoring Checklist (**Appendix D**). This checklist will be included with the biannual report as an attachment. If illegal dumping is suspected or water quality issues are pervasive and severe, the CE Holder will contact the SCVWD's Pollution Prevention Hotline at 888-510-5151 for immediate assistance.

Land Manager Responsibilities

Sub-Task E2 is the Land Manager's responsibility. The Land Manager will consider the information and recommendation(s) provided by the CE Holder in their biannual reports and will include the information in the Land Manager's Annual Report to the Permitting Agencies, including whether the Land Manager plans to or has taken any action to remedy the issue(s).

Please refer to Section 8 of this MP for reporting responsibilities for the CE Holder and the Land Manager.

6.6 Task F—Wetland Creation

Please refer to Section 4.2 and Section 4.3 of this MP for a description of Project improvements regarding wetland creation and turtle basking habitat, respectively. Please note: Monitoring and documenting the presence of invasive vegetation which may attempt to re-colonize or colonize within the created wetlands will be addressed in Section 6.4 Task D-Non-Native Invasive Plant Species Management.

Sub-Task F1

Prepare and submit to the Permitting Agencies a finalized Lake Operations Plan by the end of the post-Project 10-year mitigation and monitoring plan period to be incorporated into this Management Plan as ***Appendix G****. Monitor and adjust the Lake's operational procedures, including using adaptive management protocols regarding the split flow of water at the side-weir inlet structure and maintaining the Lake's water surface elevation at outlet structure to optimize the ecological and biological functions and habitat values to the CE area.*

Subtask F2

The created wetlands will be qualitatively monitored to provide a general indication that the geomorphic and hydrologic conditions are stable and continues to support the created habitats. Flows into the Lake's wetland marsh, via surface water, direct precipitation, or through groundwater movement, should maintain water levels to a degree that sustains wetland vegetation during normal hydrologic conditions. A wetland delineation will be conducted, mapped and verified in year 5 of the Mitigation and Monitoring Plan post-Project construction for the created wetlands. This wetlands delineation map will form the foundation (i.e. size and shape) for evaluation in this qualitative analysis. This wetland delineation map will be used to verify that the size and shape of the created wetlands within the CE area to ensure it has not decreased beyond normal hydrologic variations. This evaluation will be conducted by November 1st (fall report) in each given year. Each fall report in each year will include taking a GPS polygon of the created wetlands which shall be overlaid with the year 5 wetland delineation map created during the Mitigation and Monitoring Plan post-Project construction. Any differences in the created wetlands overlaid with the year 5 wetland delineation map will be described in the fall report for a given year with an explanation why conditions are believed to have changed, if this information is known.

Subtask F3

The structural integrity of the existing 10 turtle perches will be monitored for functionality. Any anomalies or issues with the turtle perches will be monitored, photographed, and mapped.

Subtask F4

*If the created wetlands have significant deviation from the as-built condition, then the biannual report will indicate why the conditions are different if that information is known. This annual assessment will be used to determine if there may be revisions needed to the Lake's Operations Plan. Any suggested remediation efforts or revisions to the Lake's Operations Plan (Sub-Task F1-**Appendix G**) will be reported annually to the Permitting Agencies.*

Sub-Task F5

Implementation of a bullfrog population monitoring program prior to the restoration project construction at Lake Silveira and include three sets of day and night surveys to be conducted in spring or early summer (i.e. the bullfrog breeding season). The three sets of day/night surveys will be repeated every three years. If significant increases in the bullfrog population are observed, the SCVWD, in consultation with CDFW and USFWS, will undertake control measures, to reduce the population.

Property Owner (SCVWD) Responsibilities

Sub-Task F1 and Sub-Task F5 are the SCVWD's responsibility.

CE Holder Responsibilities

Sub-Task F2 and Sub-Task F3 is the CE Holder's responsibility which will include annual mapping of the created wetlands (fall report only for each given year) for comparison to the as-built condition of the created wetlands and monitoring of the structural integrity and functionality of the turtle perches. Issues with the created wetlands or the turtle perches will be monitored using the CE Monitoring Checklist (**Appendix D**).

Land Manager Responsibilities

Sub-Task F4 is the Land Manager's responsibility. The Land Manager will consider the information and recommendation(s) provided by the CE Holder in their biannual reports and will include the information in the Land Manager's Annual Report to the Permitting Agencies, including whether the Land Manager plans to or has taken any action to remedy the issue(s).

Please refer to Section 8 of this MP for reporting responsibilities for the CE Holder and the Land Manager.

6.7 Task G—Security: Vandalism and Trespass

Sub-Task G1

Monitor and document security issues including, but not limited to, signs and acts of vandalism and trespassing within the CE area.

Sub-Task G2

Perform the necessary corrective actions to address the security issue(s). Determine if adaptive management actions are needed to address this issue if repairs become prevalent.

CE Holder Responsibilities

Sub-Task G1 is the CE Holder's responsibility which will include, at a minimum, identification of security issues, including signs and acts of vandalism and trespassing within the CE area. Security issues will be monitored using the CE Monitoring Checklist (**Appendix D**). This checklist will be attached to the biannual report as an attachment. The CE Holder shall utilize photos and GPS points or polygons, a brief description of the potential issue, a recommendation on how to address the potential issue, all included in the biannual reports.

Land Manager Responsibilities

Sub-Task G2 is the Land Manager's responsibility. The Land Manager will consider the information and recommendation(s) provided by the CE Holder in their biannual reports and will include the information in the Land Manager's Annual Report to the Permitting Agencies, including whether the Land Manager plans to or has taken any action to remedy the issue(s).

Please refer to Section 8 of this MP for reporting responsibilities for the CE Holder and the Land Manager.

6.8 Task H—Signage, Fencing, and Gates

Please refer to Section 4.8 of this MP for a description of Project improvements regarding permanent fence and gate installation. Please refer to Figure 4 (Section 1.3) of this MP for the Project's fencing.

Sub-Task H1

Monitor and document the condition of existing signage (i.e. Habitat restoration), fencing, and gates, specifically where repairs may need to be made within the CE area.

Sub-Task H2

Perform the necessary corrective actions to address restoration and repairs to signage, fencing, and gates. New signage, fencing, and gates will be installed as needed by adaptive management.

CE Holder Responsibilities

Sub-Task H1 is the CE Holder's responsibility to monitor and document the condition of existing signage (e.g. habitat restoration), fencing, and gates, specifically where repairs may need to be made within the CE area. Existing signage, fencing, and gate issues will be monitored using the CE Monitoring Checklist (**Appendix D**). This checklist will be attached to the biannual report as an attachment. The CE Holder shall utilize photos and GPS points or polygons with a brief description of the potential issues with signage, fencing, and gates, all included in the biannual reports.

Land Manager Responsibilities

Sub-Task H2 is the Land Manager's responsibility. The Land Manager will consider the information and recommendation(s) provided by the CE Holder in their biannual reports and will

include the information in the Land Manager's Annual Report to the Permitting Agencies, including whether the Land Manager plans to or has taken any action to remedy the issue(s).

Please refer to Section 8 of this MP for reporting responsibilities for the CE Holder and the Land Manager.

6.9 Task I—Public Access

Public Access is not a Project objective within the CE area. The SCVWD, County, and City executed a Purchase and Sale Agreement (PSA) for the SCVWD's fee purchase of the Property. As a condition of the PSA, approximately 52.9 acres, encompassing the entire CE area, the SCVWD shall separately grant an open space easement to the County and the City for park purposes of trail connectivity for linkage of the site to the regional system of trails, scenic view watershed protection, habitat conservation, and open space preservation consistent with the 1995 Countywide Trails Master Plan, as amended periodically (Open Space Easement). However, this Open Space Easement shall be subordinate to the CE for the Project's required compensatory mitigation (see Section 2.5f or details and See **Conservation Easement, Exhibit C - Property Assessment and Waranty, Attachment 2** for a copy of this PSA).

On August 28, 2018, the SCVWD Board of Directors approved the execution of a Joint Use Agreement (JUA) between the City and the SCVWD for West Little Llagas Creek between Monterey Road and Ciolino Avenue in association with the Upper Llagas Creek Flood Protection Project. See Section 2.5 for details and See **Conservation Easement, Exhibit C - Property Assessment and Waranty, Attachment 2** for an executed copy of this JUA. City of Morgan Hill is solely responsible for all costs for planning, design, construction, operation and maintenance associated with their said easement upon the Property. See **Appendix E** for the anticipated Public Access trail alignments within the Property.

Sub-Task I1

Review and comment on any proposed planning, design, construction, or operation and maintenance for a park purpose of trail connectivity, scenic protection, habitat conservation and open space preservation within the Property.

Sub-Task I2

Verify the City or County has completed CEQA/NEPA for any proposed improvements within the CE and has received the proper approvals for proposed improvements within the CE area from all the permitting agencies.

Sub-Task I3

Monitor and document any public access issues that are observed when the City or County or other party develops the Property for a park purpose of trail connectivity, scenic protection, habitat conservation and open space preservation.

Sub-Task I4

Request and require the agency (City or County or other party) responsible for the development of public access to perform the necessary corrective actions to address Public Access issues.

Determine if adaptive management actions are needed to address this issue if the issue becomes prevalent.

Property Owner (SCVWD) Responsibilities

Sub-Task I1 and Sub-Task I2 are the SCVWD responsibilities as the Property Owner to ensure proposed development in accordance with existing easements within the Property do not compromise the CE by preserving its conservation values in perpetuity and for consistency with the Permitting Agencies and the SCVWD's mitigation goals and responsibilities.

CE Holder Responsibilities

CE Holder is responsible for Sub-Task I3, since it is assumed public access will be developed within the Property by the City, County, or other authorized party sometime during the post-Project 10-year mitigation and monitoring plan period. Public Access issues will be monitored using the CE Monitoring Checklist (**Appendix D**). This checklist will be attached to the biannual report as an attachment.

Land Manager Responsibilities

Sub-Task I4 is the Land Manager's responsibility. The Land Manager will consider the information and recommendation(s) provided by the CE Holder in their biannual reports and will include the information in the Land Manager's Annual Report to the Permitting Agencies, including whether the Land Manager plans to or has taken any action to remedy the issue(s).

7.0 ADAPTIVE MANAGEMENT

While it is not anticipated that major additional management actions will be needed, one of the MP's objectives is to identify any issues that arise, and use an adaptive management approach to determine what follow-up actions might be appropriate. Adaptive management is an approach to natural resource management which incorporates effectiveness monitoring and changes to management practices over time, including corrective actions when needed, to support the Preserve's conservation values.

The management objectives and approaches described in this MP were established based on existing information on the pre-Project Property's condition and resources, the effects of past management activities, and the experience of natural resource professionals in designing resource management approaches. The management of the Property has been minimal since the County acquired the Property in 1982 as a potential future urban open-space recreational facility. Agreements between the County and City never resulted in the development of this urban recreational facility. Therefore, the Conservation Easement area (15.99 acres) within the Property is now focusing on the management of maximizing the ecological and habitat values on the existing wetlands, created wetlands, and channel restoration of approximately 2,000 linear feet of perennial stream-Llagas Creek as critical habitat for South-Central California Coast Steelhead DPS. The MP of the Conservation Easement is fully expected to significantly improve biological resource conditions. Nevertheless, there is some uncertainty involved in prescribing a management approach. Thus, the management approach described in this MP will be adapted as necessary to maintain and improve biological resource values based on monitoring results.

In addition, adaptive management is expected to involve implementation of new measures to protect natural resource values as new problems are noted, new research and techniques become available, or as problems are noted in new areas. For each of the resource issues described in this MP, specific criteria will be monitored. These monitoring results will be reviewed for potential management problems, but also analyzed to identify trends in resource management issues. Persistent problems or adverse trends will trigger an adaptive management decision-making process. First, based on the type and severity of the problem, and an assessment of whether the issue is within the SCVWD's control, experienced land management staff will determine whether corrective action is necessary, or whether further monitoring (perhaps at an increased frequency) is appropriate to characterize the problem. Second, if corrective action is needed, those staff will identify the most appropriate adaptive management response. Those staff chosen to accomplish monitoring and adaptive management decision-making responsibilities will have the knowledge, training, and experience to accomplish these responsibilities. Permitting Agencies will be consulted for approval of any such adaptive management changes or corrective actions. A reporting process with the permitting agencies is included into the annual reporting structure for the CE management (See Section 8.0 Task J-Reporting).

IV. CONSERVATION EASEMENT ADMINISTRATION PROCEDURES AND FUNDING

8.0 TASK J—REPORTING

During the post-Project, initial 10-year mitigation and monitoring plan, quantitative, data, and information will be summarized in an annual monitoring report based on the schedule outlined in Table 28 of the approved final MMP (December 2018) attached as **Appendix F** and will include adaptive management recommendations as warranted. This report will be submitted to the USACE by January 31 of each year for 10 years, four months following completion of hydrologic monitoring by September 30. After this post-Project 10-year mitigation and monitoring plan, the CE Holder will then assume the responsibility of preparing and submitting biannual reports to the Land Manager, who will in-turn prepare the annual report to be submitted to the U.S. Army Corps of Engineers – Regulatory Branch, San Francisco District (USACE).

The Land Manager Monitoring Reporting Template for the annual report to be prepared and submitted by the Land Manager to the USACE is included in **Appendix D**. The CE Reporting Template for the biannual reports to be prepared by the CE Holder and submitted to the Land Manager is included in **Appendix D**. The CE Monitoring Checklist is also included in **Appendix D**.

Sub-Task J1

Prepare biannual reports by May 1st (spring report) and November 1st (fall report) in each given year. This biannual report will include a summary of the results of monitoring tasks conducted, make recommendations regarding (1) any habitat enhancement measures deemed necessary, (2) any problems that need attention and (3) any changes in the monitoring or management program that appear to be warranted. The biannual report will only cover the area included within the CE area.

Sub-Task J2

Prepare and provide the USACE an annual report of management tasks conducted and general site conditions within the CE.

Sub-Task J3

Provide an opportunity to the USACE to request a check-in to discuss any changes or other issues regarding CE management.

CE Holder Responsibilities

CE Holder is responsible for Sub-Task J1 and will prepare biannual reports for submittal to the Land Manager and the Property Owner (if different) by May 1st (spring report) and November 1st (fall report) in each given year. The CE Holder Monitoring Report Template is provided in **Appendix D**.

Land Manager Responsibilities

The Land Manager is responsible for Sub-Task J2 and will prepare an annual report for submission to the Permitting Agencies by December 31st of each given year after completion of the CE Holder's spring and fall monitoring reports for the given year. The Land Manager Monitoring Report Template is provided in **Appendix D**. This annual report will include a summary of the results of monitoring tasks conducted and management actions taken, make recommendations regarding (1) any habitat enhancement measures deemed necessary, (2) any problems that need attention and (3) any changes in the monitoring or management program that appear to be warranted. The report will cover the area included within the CE area, but may include incidental information pertaining to the entire Property, although this information is not required and the areas outside the CE are not subject to agency review for mitigation purposes.

The annual report will be prepared for each of the first five years after the conclusion of the 10-year mitigation and monitoring plan period (i.e. total 15 consecutive years). Five years after the conclusion of the 10-year mitigation and monitoring plan period, the report frequency may be reduced to once every five years, after consultation with and written concurrence by all the Permitting Agencies.

Permitting Agencies

Sub-Task J3 is the Permitting Agencies' opportunity to discuss management of the CE. Each year following submittal of the annual report, each of the Permitting Agencies accepting compensatory mitigation within the CE area will be given the opportunity to request a check-in to discuss any changes or other issues regarding site management. The request for a check-in would be made by the Permitting Agencies within one month of receiving the annual report. Depending on the issue(s) to be discussed, the check-in would be scheduled as a phone conference call or sit-down meeting with the SCVWD. Each of the Permitting Agencies identified in Section 9.4 of this MP would have the option of participating.

8.1 Tasks, Responsible Party, Frequency, and Timing

Table 4. Management Plan Tasks, Responsible Party, Frequency, and Timing

Task	Task Description	Sub-Task #	Responsible Party	Frequency	Timing
A	Prepare MMP Annual Monitoring Report (AMR), Initial Administration Costs, Review/comment on AMR, annual site visit	A1	SCVWD	Annual	December 31st
		A2	CE Holder	One Time	30 days after MP execution
		A3	CE Holder	Annual	By May 1st
		A4	CE Holder	Annual	By May 1st
		A5	CE Holder	Annual	By May 1st
B	Llagas Creek Restoration	B1	CE Holder	Biannual	By May 1st & Nov. 1st
		B2	CE Holder	Annual	By May 1st & Nov. 1st
		B3	Land Manager	Annual	By Dec. 31st
C	Inspection of Lake's Side Weir Inlet Structure and Outlet Structure	C1	CE Holder	Biannual	By May 1st & Nov. 1st
		C2	Land Manager	Annual	By Dec. 31st
D	Non-Native Invasive Plant Species Management	D1	CE Holder	Biannual	By May 1st & Nov. 1st
		D2	Land Manager	Annual	By Dec. 31st

Task	Task Description	Sub-Task #	Responsible Party	Frequency	Timing
E	Trash/Debris, Water Quality	E1	CE Holder	Biannual	By May 1st & Nov. 1st
		E2	Land Manager	Annual	By Dec. 31st
F	Wetland Creation	F1	SCVWD	Post-Project	10 years post-Project
		F2	CE Holder	Annual	Fall Report by Nov. 1st
		F3	CE Holder	Biannual	By May 1st & Nov. 1st
		F4	Land Manager	Annual	By Dec. 31st
		F5	SCVWD	Annual	By Dec. 31st
G	Security: Vandalism and Trespass	G1	CE Holder	Biannual	By May 1st & Nov. 1st
		G2	Land Manager	Annual	By Dec. 31st
H	Signage, Fencing, and Gates	H1	CE Holder	Biannual	By May 1st & Nov. 1st
		H2	Land Manager	Annual	By Dec. 31st
I	Public Access	I1	SCVWD	N/A	N/A
		I2	SCVWD	N/A	N/A
		I3	CE Holder	Biannual	By May 1st & Nov. 1st
		I4	Land Manager	Annual	By Dec. 31st (when applicable)
J	Reporting, including completion of the Monitoring Report and Monitoring Checklist (**Appendix D**)	J1	CE Holder	Biannual	By May 1st & Nov. 1st
		J2	Land Manager	Annual	By Dec. 31st
		J3	Permitting Agencies	N/A	Within 30 days after receipt of Annual Report

9.0 TRANSFER, REPLACEMENTS, AMENDMENTS, AND NOTICES

9.1 Transfer

Any subsequent transfer of responsibilities under this MP to a different Land Manager shall be requested by the Land Manager in writing to the agencies overseeing the required mitigation in the subject area (Permitting Agencies), shall require written approval by the Permitting Agencies, and shall be incorporated into this MP by amendment. Any subsequent Property Owner will assume Land Manager responsibilities described in this MP and as required in the CE, unless otherwise amended in writing by the Permitting Agencies.

9.2 Replacement

If the Land Manager fails to implement the tasks described in this MP and is notified of such failure in writing by any of the Permitting Agencies or the CE Holder, Land Manager shall have 90 days to cure such failure. If failure is not cured within 90 days, Land Manager may request a meeting with the Permitting Agencies and the CE Holder to resolve the failure. Such meeting shall occur within 30 days or a longer period if approved by the Permitting Agencies. Based on the outcome of the meeting, or if no meeting is requested, the Permitting Agencies may designate a replacement Land Manager in writing by amendment of this MP. If Land Manager fails to designate a replacement Land Manager, then such public or private land or resource management organization acceptable to and as directed by the Permitting Agencies may enter onto the CE Preserve to fulfill the purposes of this MP.

9.3 Amendments

The Land Manager, Property Owner, CE Holder, and the Permitting Agencies may elect to meet and confer, upon the request of any one of them, to revise the MP to better meet management objectives and preserve the habitat and conservation values. There shall be no amendments to the components of this MP as these serve as a baseline from which to compare future conditions of the CE. However, future amendments to this MP may include supplements to these components. Any proposed substantive changes to the MP shall be discussed with the Land Manager, Property Owner, CE Holder, and Permitting Agencies and will be designed with input from all parties. Any amendments to the MP shall be approved by the Permitting Agencies, the CE Holder, Land Manager, and Property Owner in writing. Such amendments will be considered required management components and shall be implemented by the Land Manager. Amendments to the MP are not expected to trigger the need to amend the CE. Any amendments that result in a change in management costs will trigger an amendment to the costs table (Table 5).

9.4 Notices

Any notices regarding this MP shall be directed as follows:

Land Manager and Property Owner:

Santa Clara Valley Water District (SCVWD)
Ms. Norma Camacho
Chief Executive Officer
5750 Almaden Expressway
San Jose, CA 95118
Phone: (408) 630-2084
ncamacho@valleywater.org

Permitting Agencies:

U.S. Army Corps of Engineers
Ms. Katerina Galacatos
Regulatory Project Manager
Regulatory Division
U.S. Army Corps of Engineers
1455 Market Street, 16th Floor
San Francisco, CA 94103-1398
Phone: (415) 503-6763
Katerina.Galacatos@usace.army.mil

California Department of Fish and Wildlife
Ms. Brenda Blinn
7329 Silverado Trail
Napa, CA 94558
Phone: (707) 944-5541
Brenda.blinn@wildlife.ca.gov

Central Coast Regional Water Quality Control Board
Mr. Mark Cassady
Environmental Specialist
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401-7906
Phone: (805) 549-3689
Mark.Cassady@Waterboards.ca.gov

Lake Silveira Compensatory Mitigation Preserve Management Plan CE Holder:

Land Trust of Santa Clara Valley
Mr. Greg Leonard
Executive Director
605 Tennant Avenue, Suite H
Morgan Hill, CA 95037
Phone: (650) 799-9618

10.0 CONSERVATION EASEMENT MANAGEMENT PLAN FUNDING AND COST ESTIMATES

10.1 Funding

The Santa Clara Valley Water District will ensure adequate funding for the long-term management of the Conservation Easement by providing the following three measures of financial assurance:

1. The SCVWD's Board of Directors will adopt a Resolution which details its current and projected financial state, includes a finding regarding financial analysis conducted on the annual management costs of the Management Plan, and includes an annual pledge of revenue to cover 100% of the annual management costs estimated for the Management Plan which will be revised at least every five years to reflect the San Francisco-Oakland-San Jose Consumer Price Index (CPI) for the preceding five years;

2. The SCVWD will execute a Memorandum of Agreement with the USACE which requires the SCVWD to provide the financial analysis to calculate the annual management costs, requires the SCVWD to revise the annual management costs at least every five years to account for the CPI, requires the SCVWD to provide sufficient revenue annually to cover the entire annual management costs, and requires the SCVWD to establish a standby fund; and

3. The SCVWD will establish a standby fund in the amount equal to five years of annual management costs as estimated in the Management Plan in the form of a letter of credit. This standby fund would be utilized in any year when the annual appropriations are insufficient to cover annual management costs, and the letter of credit would auto-renew after five years. A decrease in the CPI would not require a change in the letter of credit.

The estimated costs of the MP tasks are presented in Section 10.2 Cost Estimate.

10.2 Cost Estimate

Table 5. CE Holder Management Plan Cost Estimates

SCVWD MMP: YEAR 1 - YEAR 10 AFTER COMPLETION OF CE SITE IMPROVEMENTS (YR 2022 ±)					
Task	**Task Description**	**Sub-Task #**	**Annual Labor Hours**	**Labor Cost/Hour**	**Cost Estimate/Year**
A	Initial administration costs, Review Annual Monitoring Report (AMR), Conduct annual site visit, Comment on AMR, if applicable (Year 1 – Year 10)	A2	One Time Lump Sum Initial Cost	N/A	$24,500[1]
		A3	3	$200	$600
		A4	6	$200	$1,200
		A5	3	$200	$600
Sub-Total (Task A) Year 1 – Year 10			6	$200	$2,400
ANNUAL COST ESTIMATE TOTAL (Task A) Year 1 – Year 10					**$2,400**

BEGIN IN YEAR 11 AFTER COMPLETION OF SCVWD MMP (YR 2032 ±): TASK B THRU TASK J					
Task	**Task Description**	**Sub-Task #**	**Annual Labor Hours**	**Labor Cost/Hour**	**Cost Estimate/Year**
B	Llagas Creek Restoration	B1	4	$200	$800
		B2	4	$200	$800
C	Inspection of Lake's Side Weir Inlet and Outlet Structures	C1	4	$200	$800
D	Non-native Invasive Plant Species Management	D1	8	$200	$1,600
E	Trash/Debris and Water Quality	E1	5	$200	$1,000
F	Wetland Creation	F2	8 (Fall only)	$200	$1,600
		F3	2	$200	$400
G	Security: Vandalism and Trespass	G1	4	$200	$800
H	Signage, Fencing, and Gates	H1	4	$200	$800
I	Public Access	I3	4	$200	$800
J	Reporting, including CE Holder Monitoring Report and Monitoring Checklist (Appendix D)	J1	18	$200	$3,600
Sub-Total (Task B through Task J) beginning Year 11			65	$200	$13,000
				Contingency (10%)	$1,300
ANNUAL COST ESTIMATE TOTAL (Tasks B through J) beginning Year 11					**$14,300**

[1] This one time lump sump initial payment is not included in the Annual Cost Estimate Total

REFERENCES CITED

Balance Hydrologics Inc. 2013. Draft Lake Silveira Habitat Restoration Project, Design Basis Memorandum. Memorandum prepared for RMC Water and Environment and H.T. Harvey. June 21, 2013.

Balance Hydrologics, Santa Clara Valley Water District, and Condor Country Consulting, Inc., 2012. Hydrography, Hydrology, Water Quality, and Plant Communities of Lake Silveira, Morgan Hill area, Santa Clara County. Prepared for Cardno ENTRIX. July 23, 2012.

Brattstrom, B.H. and D.F. Messer. 1988. Current Status of the Southwestern Pond Turtle, *Clemmys marmorata pallida*, in Southern California. Final Report for the California Department of Fish and Game, Contract C-2044.

Cardno Entrix. 2014. Biological Assessment for the Upper Llagas Creek Project. Prepared for Santa Clara Valley Water District. Revised January 28, 2017.

Ernst, C.E., J.E. Lovich, and R.W. Barbour. 1994. Turtles of the United States and Canada. Smithsonian Institute Press, Washington and London.

Federal Register. 2005b. Endangered and Threatened Species: Designation of Critical Habitat for Seven Evolutionary Significant Units of Pacific Salmon and Steelhead in California. 70 FR 52488.National Marine Fisheries Service; September 2, 2005.

Federal Register. 2006. Endangered and threatened species; final listing determination for 10 Distinct Population Segments of West Coast Steelhead. 71 FR 834. National Marine Fisheries Service; January 5, 2006.

H.T. Harvey and Associates. 2013. Lake Silveira Restoration Project Design Development Report. Prepared for RMC Water and Environment. November 2013.

H.T. Harvey and Associates. 2014. Upper Llagas Creek Flood Protection Project Preliminary Delineation of Wetlands and Other Waters, Santa Clara County, California. Prepared for Santa Clara Valley Water District. May 30, 2014.

Katzel, Mitchell; Cardno Entrix. 2014. Upper Llagas Creek Project Environmental Impact Report; State Clearinghouse No. 201202032. Prepared for Santa Clara Valley Water District. May 2014.

Loma Prieta Soils Conservation District (LPSCD). 1967. Watershed Work Plan. Upper Llagas Creek Watershed, Santa Clara County. Prepared under the Authority of the Watershed Protection and Flood Prevention Act (PL566, 83rd Congress).

Lyons, Kathleen B.; Rigney, Michael; Smith, Jerry; Stanley, John; Harvey and Stanley Associates. 1988. Biotic Resources Report for Silveira Lake Park Master Plan, Morgan Hill, California. 1988.

Moore, M. 2012. Title. Lake Silveira Special Study—Water Quality. Report Prepared for the Upper Llagas Creek Project, Santa Clara County Valley Water District.

National Marine Fisheries Service (NMFS). 2005a. Memo re: Destruction and Adverse Modification of Critical habitat.

National Marine Fisheries Service (NMFS). 2005b. South-Central California Coast Steelhead Distribution. Vector digital data. Retrieved from http://swr.nmfs.noaa.gov/salmon/layers/finalgis.htm.

National Marine Fisheries Service (NMFS). 2005c. Steelhead Critical Habitat, Coast—NOAA [ds122].

CalFish. Vector digital data. Retrieved from http://swr.nmfs.noaa.gov/salmon/layers/finalgis.htm.

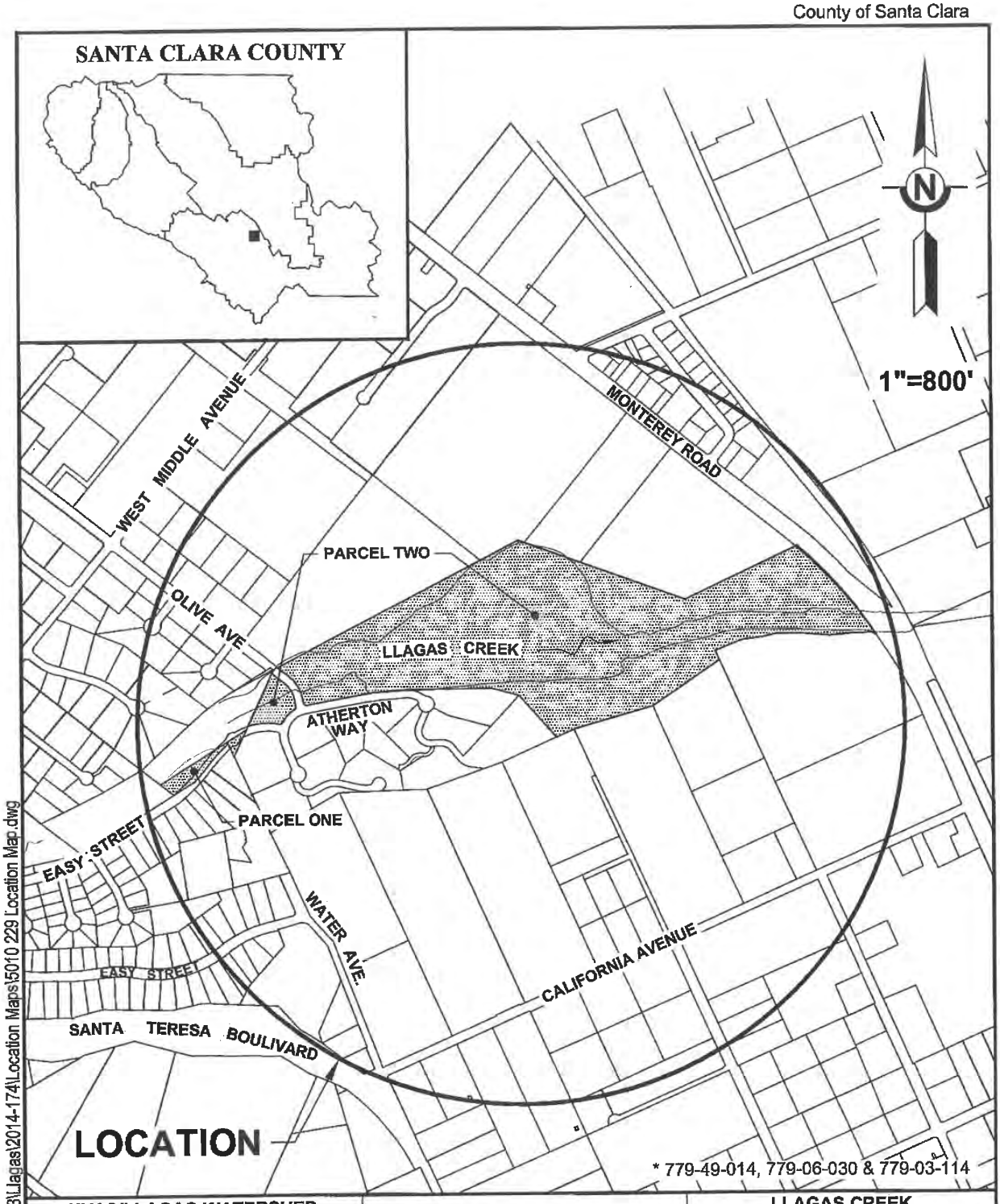
Santa Clara Valley Water District. 2014. Impacts to South Central California Coast Steelhead Upper Llagas Creek Flood Protection Project Mitigation and Monitoring Plan. April 30, 2014.

Santa Clara Valley Water District Environmental Services Unit. 2013. Santa Clara Valley Water District Endangered Species Act Recovery Permit No. TE-005878-6, 2012 Annual Report. January 14, 2013.

APPENDIX A

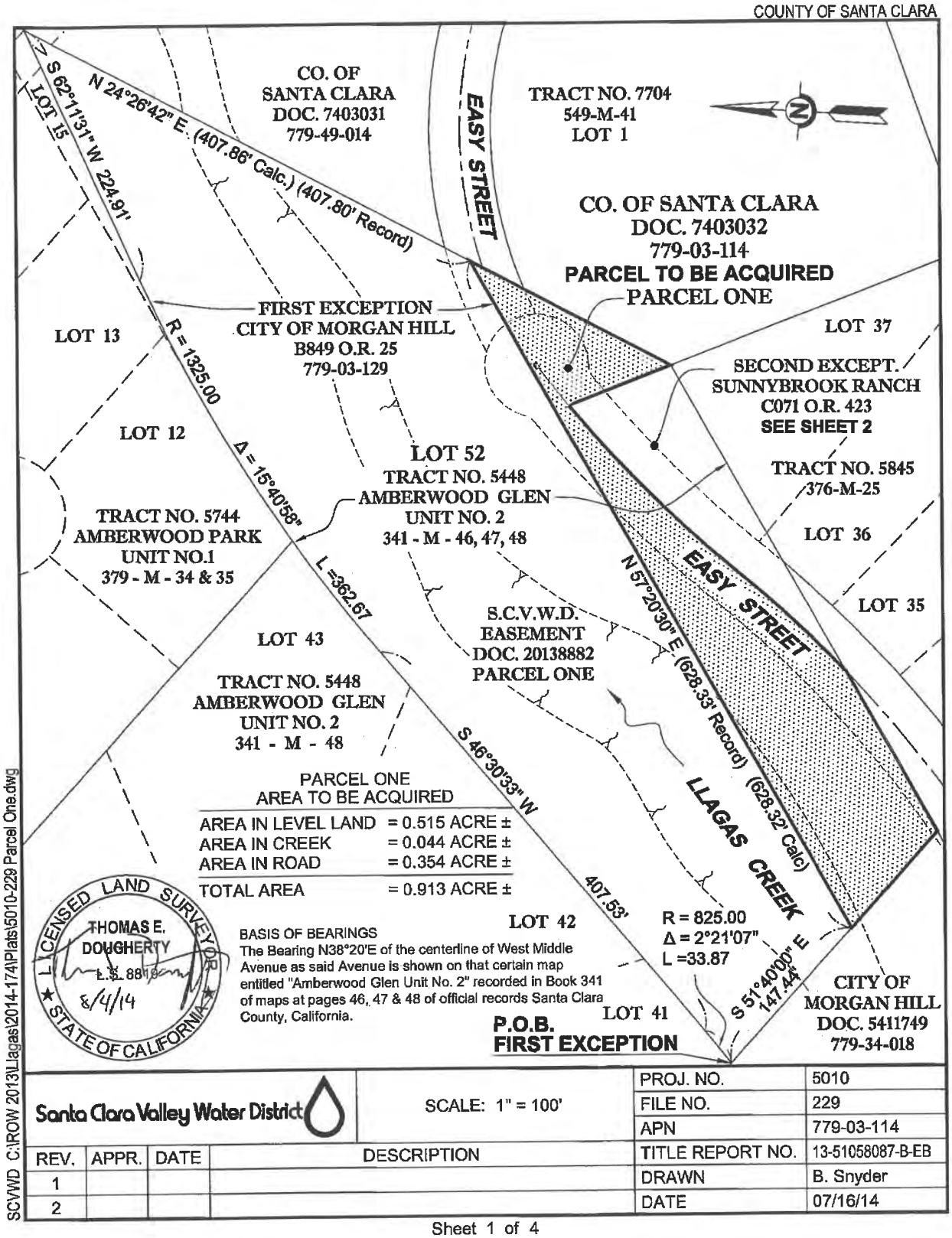
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County of Santa Clara



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UVAS/LLAGAS WATERSHED		LLAGAS CREEK	
Santa Clara Valley Water District	County of Santa Clara Easy St., Olive Ave. and Atherton Way MORGAN HILL, CA. 95037	PROJ. NO.	5010
		FILE NO.	229
		APN	*
		DRAWN	B. Snyder
		DATE	07/17/14



Santa Clara Valley Water District

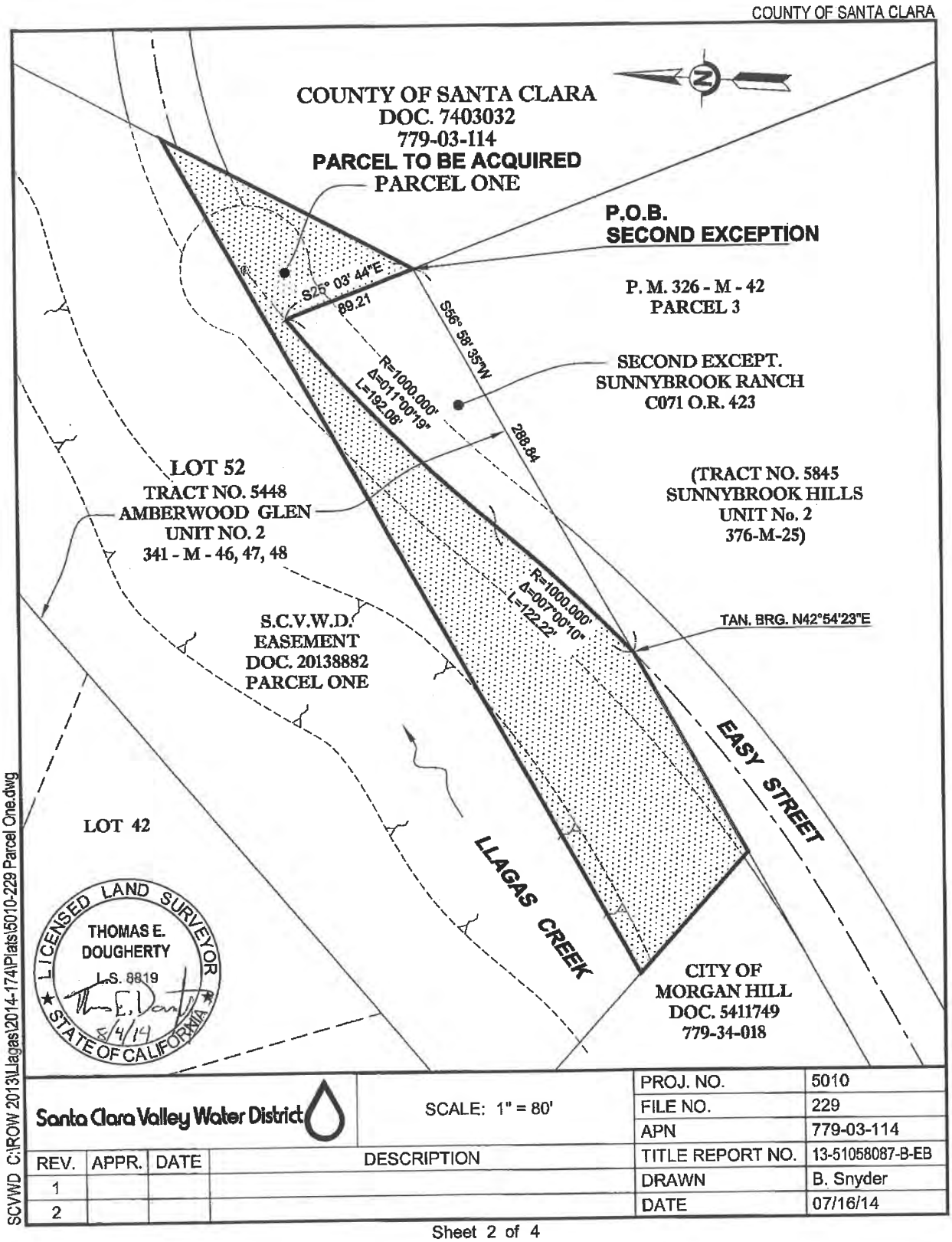
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REV.	APPR.	DATE	DESCRIPTION
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2			

PROJ. NO.	5010
FILE NO.	229
APN	779-03-114
TITLE REPORT NO.	13-51058087-B-EB
DRAWN	B. Snyder
DATE	07/16/14

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Sheet 1 of 4



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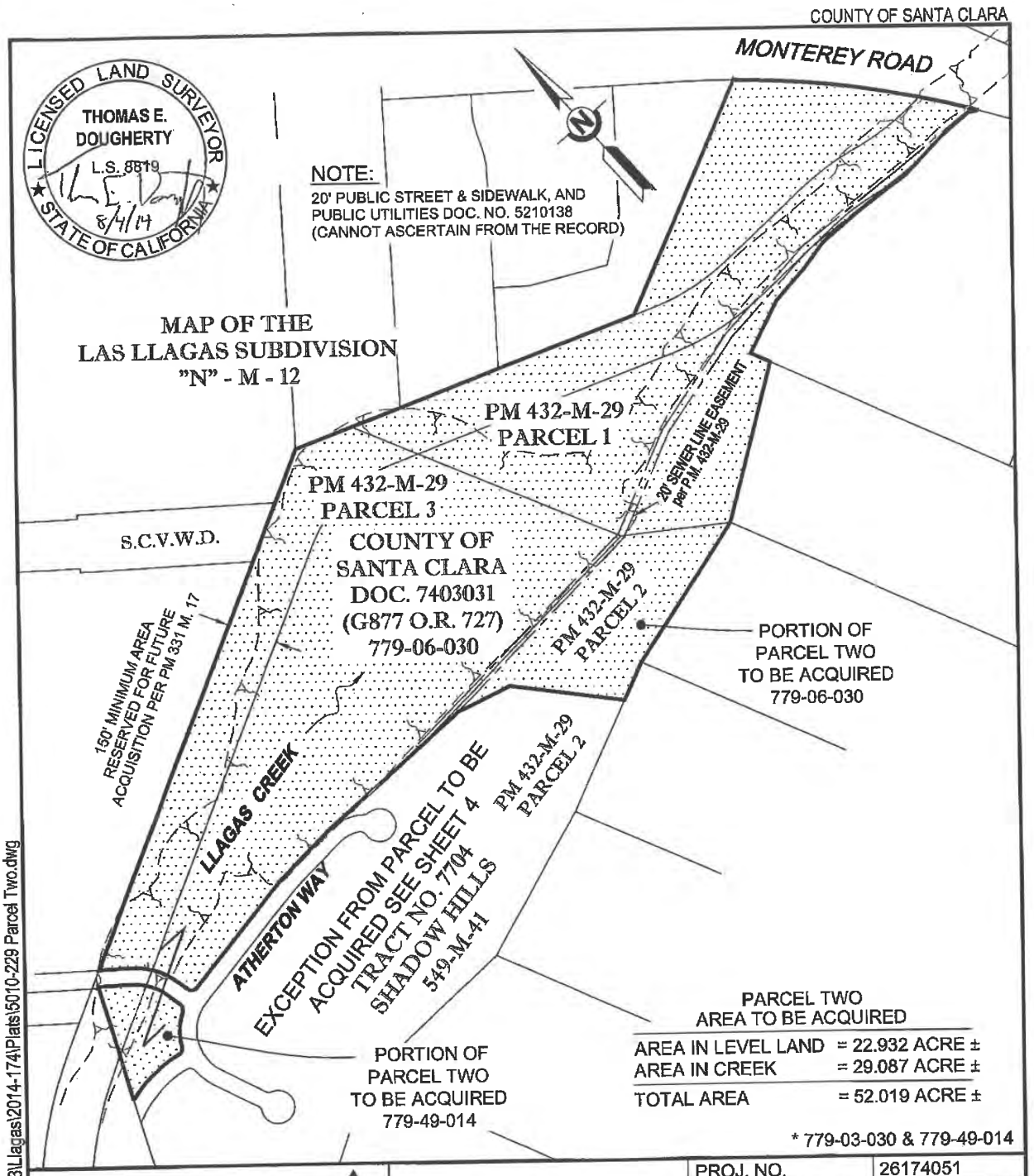
Santa Clara Valley Water District

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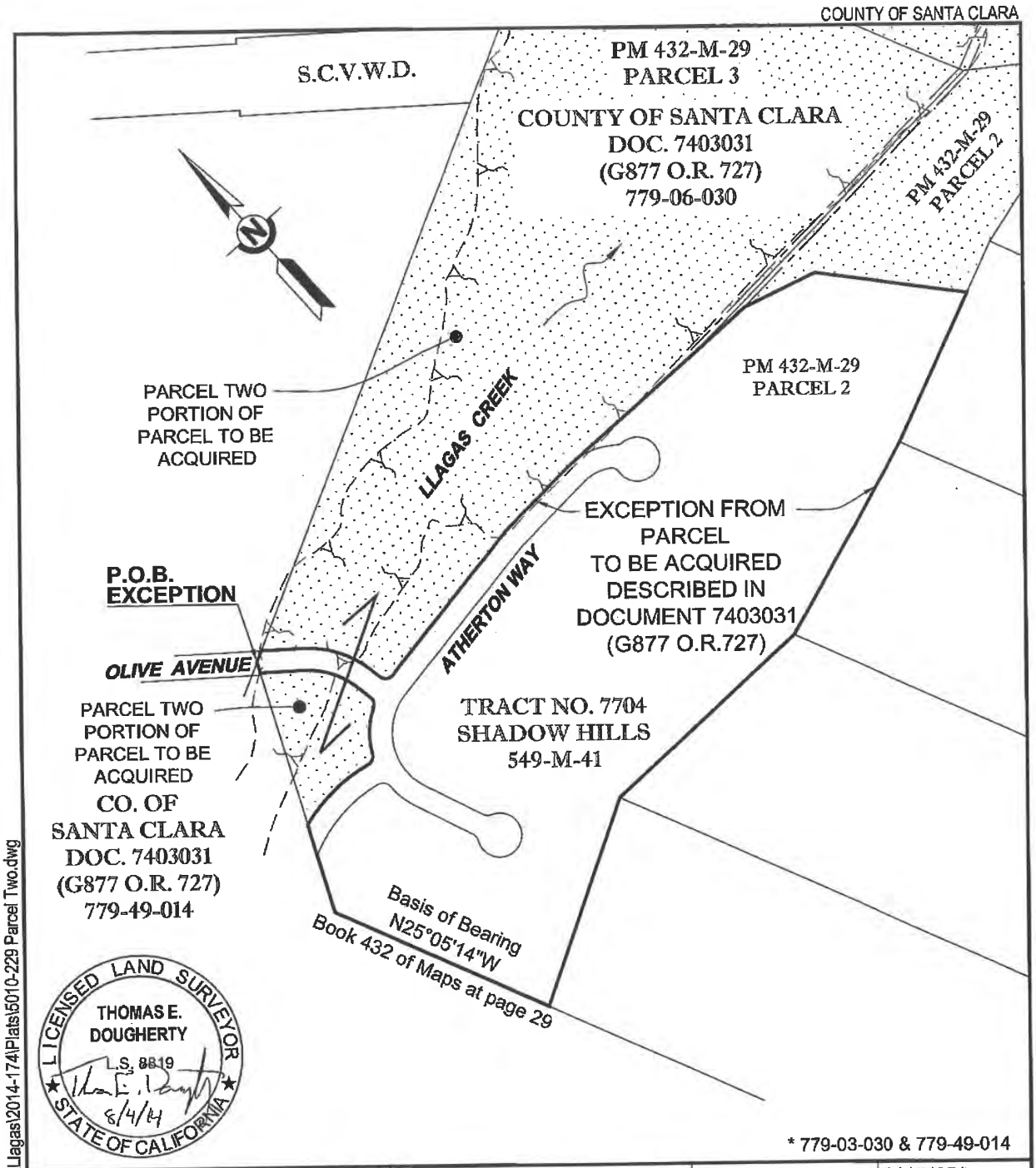
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PROJ. NO.	5010
FILE NO.	229
APN	779-03-114
TITLE REPORT NO.	13-51058087-B-EB
DRAWN	B. Snyder
DATE	07/16/14

Sheet 2 of 4


COUNTY OF SANTA CLARA
MONTEREY ROAD
LICENSED LAND SURVEYOR
THOMAS E. DOUGHERTY
L.S. 8819
8/4/14
STATE OF CALIFORNIA
NOTE:
20' PUBLIC STREET & SIDEWALK, AND PUBLIC UTILITIES DOC. NO. 5210138 (CANNOT ASCERTAIN FROM THE RECORD)
MAP OF THE LAS LLAGAS SUBDIVISION "N" - M - 12
PM 432-M-29 PARCEL 1
PM 432-M-29 PARCEL 3
COUNTY OF SANTA CLARA DOC. 7403031 (G877 O.R. 727) 779-06-030
20' SEWER LINE EASEMENT per P.M. 432-M-29
S.C.V.W.D.
150' MINIMUM AREA RESERVED FOR FUTURE ACQUISITION PER PM 331 M. 17
LLAGAS CREEK
PM 432-M-29 PARCEL 2
PORTION OF PARCEL TWO TO BE ACQUIRED 779-06-030
ATHERTON WAY
EXCEPTION FROM PARCEL TO BE ACQUIRED SEE SHEET 4 TRACT NO. 7704 SHADOW HILLS 549-M-41
PM 432-M-29 PARCEL 2
PORTION OF PARCEL TWO TO BE ACQUIRED 779-49-014
PARCEL TWO AREA TO BE ACQUIRED
AREA IN LEVEL LAND = 22.932 ACRE ±
AREA IN CREEK = 29.087 ACRE ±
TOTAL AREA = 52.019 ACRE ±
* 779-03-030 & 779-49-014
Santa Clara Valley Water District
SCALE: 1" = 400'
PROJ. NO. 26174051
FILE NO. 5010-229 TWO
APN *
TITLE REPORT NO. 13-51058087-B-EB
DRAWN K. Comerer
DATE 06/20/13
REV. | APPR. | DATE | DESCRIPTION
1 | | 1/14 | CHANGE TITLE REPORT NO.
2 | | 7/14 | Add property - update PTR (B. Snyder)
SCVWD C:\ROW 2013\Llagas\2014-174\Plats\5010-229 Parcel Two.dwg

Sheet 3 of 4



Santa Clara Valley Water District

SCALE: 1" = 300'

REV.	APPR.	DATE	DESCRIPTION
1		1/14	CHANGE TITLE REPORT NO.
2		7/14	Add Parcel - update PTR

PROJ. NO.	26174051
FILE NO.	5010-229
APN	779-06-030
TITLE REPORT NO.	13-51058087-B-EB
DRAWN	K. Comerer
DATE	06/20/13

SCVWD C:\ROW 2013\Llagas\2014-174\Plats\5010-229 Parcel Two.dwg

Sheet 4 of 4

SANTA CLARA VALLEY WATER DISTRICT
San Jose, California

By: DOC. 7403031 & DOC. 7403032

Checked by:_____ Date:_____

PROJECT: LLAGAS CREEK
PROPERTY: COUNTY OF SANTA CLARA FILE NO.: 5010-229

All that certain real property situate in the City of Morgan Hill, County of Santa Clara, State of California, described as follows:

PARCEL ONE

Being that portion of LOT 52 as conveyed from Walter Von Tagen and Verne D. Freeman and Joanne O. Freeman, his wife to the County of Santa Clara per Document 7403032, Santa Clara County Records described as follows:

LOT 52, as said lot is shown upon that certain Map entitled, "Tract No. 5448, Amberwood Glen Unit No. 2" which Map was filed for record on June 13, 1974 in Book 341 of Maps, pages 46, 47 and 48, Santa Clara County Records described as follows:

EXCEPTING THEREFROM that portion thereof described in the Deed from Walter Von Tagen, et al, to the City of Morgan Hill, recorded February 2, 1976 in Book B849 of Official Records, page 25, as follows:

BEGINNING at the most Westerly corner of Lot 52, said corner also being a common corner with Lot 41 as said Lots and corners are shown on the Map entitled "Tract No. 5448, Amberwood Glen Unit No. 2" filed in Book 341 of Maps, pages 46, 47 and 48, Santa Clara County Records; thence South 51° 40' East 147.44 feet; thence North 57° 20' 30" East 628.33 feet; thence North 24° 26' 42" East 407.80 feet; thence South 62° 11' 31" West 224.91 feet; thence tangent to the last course, along a curve to the left an arc distance of 362.67 feet, said curve having a central angle of 15° 40' 58" and a radius of 1325.00 feet; thence tangent to the last curve, South 46° 30' 33" West 407.53 feet; thence along a curve to the right an arc distance of 33.87 feet, said curve having a central angle of 2° 21' 07" and a radius of 825.00 feet to the point of beginning.

ALSO EXCEPTING THEREFROM that portion thereof described in the Deed from Walter Von Tagen, et al, to Sunnybrook Ranch, a limited partnership, recorded June 9, 1976 in Book C071 of Official Records, page 423, as follows:

BEGINNING at the most northeastern corner of Parcel 3 as said parcel is shown on the Parcel Map filed in Book 326 of Maps, at page 42, Santa Clara County Records; thence South 56° 58' 35" West, 288.84 feet; thence from a tangent which bears North 42° 54' 23" East, along a curve to the left, an arc distance of 122.22 feet; said curve having a radius of 1000.00 feet and a central angle of 7° 00' 10"; thence tangent to the last curve along a curve to the right an arc distance of 192.08 feet, said curve having a radius of 1000.00 feet and a central angle of 11° 00' 19"; thence South 25° 03' 44" East, 89.21 feet to the point of beginning.

Containing 0.913 acre of land, more or less. APN's: 779-03-114

BASIS OF BEARING: Bearings are based on and identical to that certain Tract Map No. 5448 filed in Book 341 of Maps, at pages 46, 47 and 48, filed in the office of the Recorder, County of Santa Clara, State of California.

PARCEL TWO

Being that portion of Parcels 1, 2, and 3 as conveyed from Verne D. Freeman and Joanne O. Freeman et al to the County of Santa Clara per Document 7403031 described as follows:

Being all of Parcels 1, 2, and 3 as shown on Parcel Map recorded in book 432 of Maps at page 29, Santa Clara County Records described as follows:

Excepting therefrom a parcel of land described as follows:

Beginning at an iron pipe at the Northwesterly line of Parcel 3 at the intersection with the centerline of Olive Avenue as shown on said map and running thence along said Northwesterly line North 61° 50' 14" East 27.35 feet; thence South 52° 05' 23" East 93.21; thence along a tangent curve to the right having a radius of 225.00 feet and a central angle of 41° 06' 14", a distance of 161.42 feet; thence South 10° 59' 09" East 27.83 feet; thence along a tangent curve to the left, having a radius of 20.00 feet and a central angle of 90° a distance of 31.42 feet; thence North 79° 00' 51" East 413.52 feet, and North 89° 59' 59" East 203.85 feet; thence along a tangent curve to the right, having a radius of 155 feet and a central angle of 7° 32' 32"; a distance of 20.40 feet; thence North 88° 45' 15" East 511.76 feet, South 75° 16' 02" East 174.74 feet, and South 41° 39' 22" East 346.11 feet to a point in the Southeasterly line of Parcel 2; thence along said Southeasterly line, South 64° 58' 03" West 370.00 to a 3/4" iron pipe, South 69° 49' 09" West 496.66 feet to an old 2" x 3" stake, and South 87° 47' 33" West 536.63 feet to a 3/4" iron pipe at the corner common to Parcels 2 and 3; thence along the Southeasterly line of Parcel 3, South 59° 40' 07" West 497.82 feet to 3/4 iron pipe at the most Southerly corner of Parcel 3; thence along the Southwesterly and Northwesterly line of Parcel 3, North 25° 05' 14" West 525.25 feet and North 23° 59' 11" East 207.43 feet; thence along a curve to the right from a tangent bearing of North 71° 20' 24" East, having a radius of 380.00 feet and a central angle of 29° 26' 02", a distance of 195.21 feet; thence along a tangent curve to the left, having a radius of 20.00 feet and a central angle of 75° 11' 02" a distance of 26.24 feet; thence along a tangent curve to the right, having a radius of 185.00 feet and a central angle of 33° 27' 30" a distance of 108.03 feet; thence along a tangent curve to the left, having a radius of 20.00 feet and a central angle of 70° 02' 02", a distance of 24.45 feet; thence North 10° 59' 09" West 40.15 feet; thence along a tangent curve to the left, having a radius of 175.00 feet and a central angle of 41° 06' 14" a distance of 125.55 feet; thence North 52° 05' 23" West 98.10 feet to the Northwesterly line of Parcel 3; thence along said Northwesterly line North 23° 59' 11" East 25.76 feet to the point of beginning.

Containing 52.019 acres of land, more or less. APN's: 779-06-030 and 779-49-014

BASIS OF BEARING: Bearings are based on and identical to that certain Tract Map No. 7704 filed in Book 549 of Maps, at pages 41, 42 and 43, filed in the office of the Recorder, County of Santa Clara, State of California.

SURVEYOR'S STATEMENT: The description was prepared by me or under my direction in conformance with the requirements of the Land Surveyor's Act.

Thomas E. Dougherty L. S. 8819

8/4/14
Date



APPENDIX B

Conservation Easement Plat and Legal Description

R14288

SANTA CLARA VALLEY WATER DISTRICT
San Jose, California

PROJECT: LLAGAS CREEK RESU File No.: 5010-229.1

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF MORGAN HILL, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, BEING A PORTION OF PARCEL 1 AND PARCEL 3 AS SHOWN ON THAT CERTAIN PARCEL MAP FILED IN BOOK 432 AT PAGE 29 IN THE OFFICE OF THE RECORDER, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE INTERSECTION OF THE CENTERLINE OF OLIVE AVENUE (60.00 FEET WIDE) WITH THE NORTHWESTERLY LINE OF PARCEL 3 AS SHOWN ON SAID MAP;

THENCE ALONG SAID NORTHWESTERLY LINE, NORTH 61°50'14" EAST, 1,712.76 FEET TO A POINT ON THE NORTHEASTERLY LINE OF SAID PARCEL 3;

THENCE ALONG SAID NORTHEASTERLY LINE, SOUTH 70°23'40" EAST, 86.99 FEET TO THE **POINT OF BEGINNING**;

THENCE CONTINUING ALONG SAID NORTHEASTERLY LINE OF SAID PARCEL 3 AND ALONG THE NORHTWESTERLY LINE OF PARCEL 1 AS SHOWN ON SAID MAP, SOUTH 70°23'40" EAST, 132.15 FEET;

THENCE LEAVING SAID NORTHWESTERLY LINE OF SAID PARCEL 1, SOUTH 55°08'06" EAST, 189.44 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 180.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 36°35'24", AN ARC LENGTH OF 114.95 FEET;

THENCE SOUTH 18°32'42" EAST, 134.07 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 360.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 43°53'06", AN ARC LENGTH OF 275.74 FEET;

THENCE SOUTH 24°34'39" WEST, 40.66 FEET;

THENCE SOUTH 77°04'33" WEST, 552.38 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 26.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 47°08'34", AN ARC LENGTH OF 21.39 FEET;

THENCE NORTH 55°46'53" WEST, 148.90 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 180.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 94°40'37", AN ARC LENGTH OF 297.44 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT, HAVING A RADIUS OF 122.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 59°46'11", AN ARC LENGTH OF 127.27 FEET;

THENCE SOUTH 89°18'41" WEST, 13.69 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 60.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 55°22'46", AN ARC LENGTH OF 57.99 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT, HAVING A RADIUS OF 220.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 65°38'00", AN ARC LENGTH OF 252.01 FEET;

THENCE NORTH 80°26'05" WEST, 187.51 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 140.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 65°48'22", AN ARC LENGTH OF 160.79 FEET;

THENCE NORTH 14°37'42" WEST, 55.16 FEET;

THENCE NORTH 79°47'32" EAST, 69.49 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 500.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 29°02'53", AN ARC LENGTH OF 253.49 FEET;

THENCE NORTH 50°44'39" EAST, 210.95 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 1,000.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 09°37'57", AN ARC LENGTH OF 168.12 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT HAVING A RADIUS OF 1,490.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 16°04'40", AN ARC LENGTH OF 418.11 FEET TO THE BEGINNING OF A COMPOUND CURVE TO THE RIGHT, HAVING A RADIUS OF 400.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 29°31'24", AN ARC LENGTH OF 206.11 FEET TO A POINT ON THE NORTHEASTERLY LINE OF SAID PARCEL 3 TO WHICH A RADIAL BEARS NORTH 03°17'14" WEST, SAID POINT ALSO BEING THE **POINT OF BEGINNING.**

CONTAINING 15.993 ACRES OF LAND, MORE OR LESS.

BASIS OF BEARINGS:

BEARINGS ARE BASED ON AND IDENTICAL TO THAT CERTAIN PARCEL MAP FILED IN BOOK 432 OF MAPS AT PAGE 29, IN THE OFFICE OF THE RECORDER, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA.

SURVEYOR'S STATEMENT:

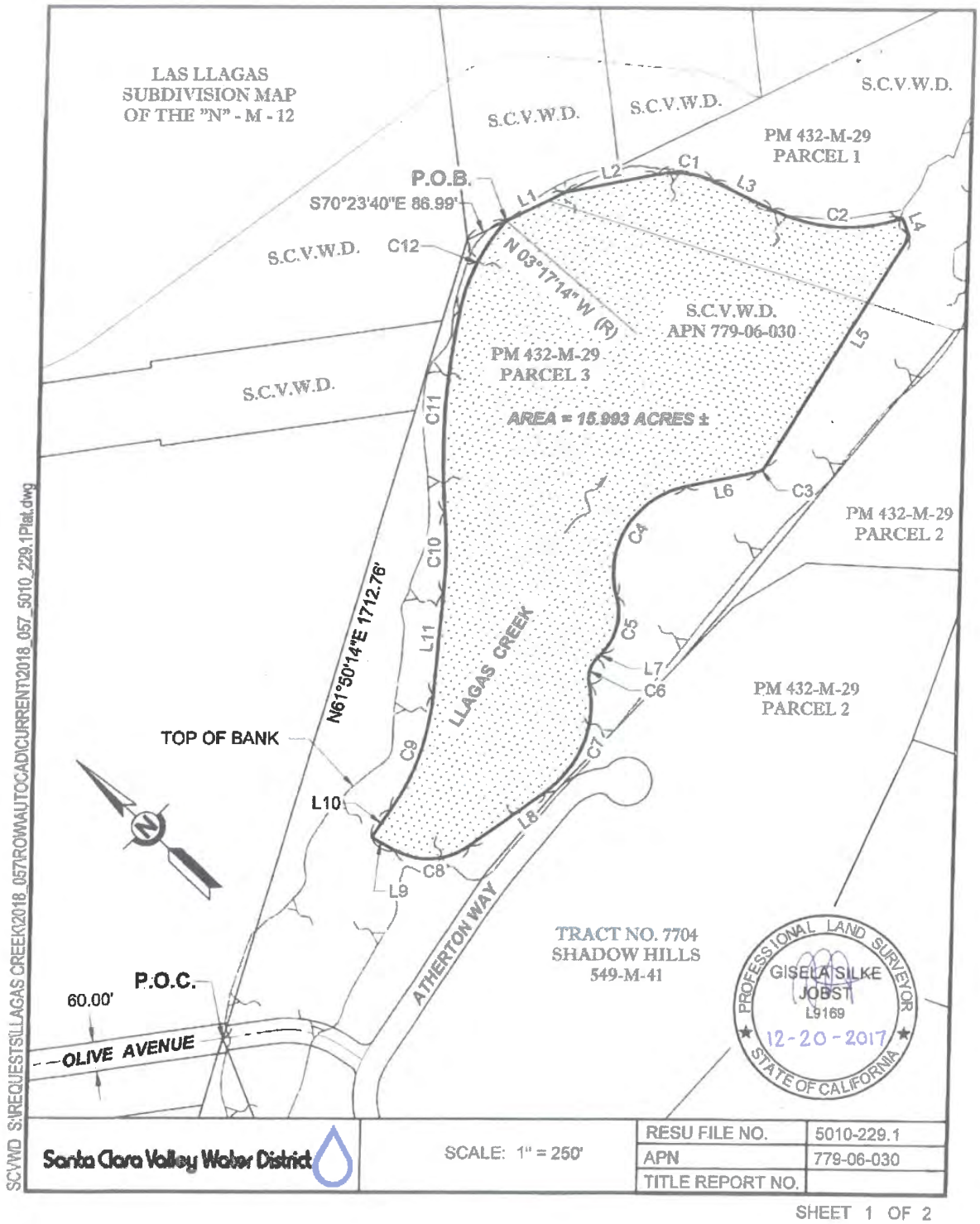
THE DESCRIPTION WAS PREPARED BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE LAND SURVEYOR'S ACT.

GISELA SILKE JOBST, L9169

12-20-2017
Date



S:\REQUESTS\LLAGAS CREEK\2018_057\ROW\AUTOCAD\CURRENT\2018_057_5010_229.1Legal.docx


LAS LLAGAS
SUBDIVISION MAP
OF THE "N" - M - 12
S.C.V.W.D.
S.C.V.W.D.
S.C.V.W.D.
S.C.V.W.D.
PM 432-M-29
PARCEL 1
P.O.B.
S70°23'40"E 86.99'
L1
L2
C1
L3
C2
L4
C12
N 03°17'14" W (R)
S.C.V.W.D.
APN 779-06-030
L5
PM 432-M-29
PARCEL 3
AREA = 15.993 ACRES ±
S.C.V.W.D.
C11
L6
C3
PM 432-M-29
PARCEL 2
C4
C10
N61°50'14"E 1712.76'
L11
LLAGAS CREEK
C5
L7
C6
PM 432-M-29
PARCEL 2
TOP OF BANK
C9
C7
L10
L8
C8
L9
ATHERTON WAY
TRACT NO. 7704
SHADOW HILLS
549-M-41
P.O.C.
60.00'
OLIVE AVENUE
PROFESSIONAL LAND SURVEYOR
GISELA SILKE JOBST
L9169
12-20-2017
STATE OF CALIFORNIA
SCVWD S:\REQUESTS\LLAGAS CREEK\2018_057\ROW\AUTOCAD\CURRENT\2018_057_5010_229.1Plat.dwg
Santa Clara Valley Water District
SCALE: 1" = 250'
RESU FILE NO. 5010-229.1
APN 779-06-030
TITLE REPORT NO.

SHEET 1 OF 2

Line Table		
Line #	Direction	Length
L1	S70°23'40"E	132.15'
L2	S55°08'06"E	189.44'
L3	S18°32'42"E	134.07'
L4	S24°34'39"W	40.66'
L5	S77°04'33"W	552.38'
L6	N55°46'53"W	148.90'
L7	S89°18'41"W	13.69'
L8	N80°26'05"W	187.51'
L9	N14°37'42"W	55.16'
L10	N79°47'32"E	69.49'
L11	N50°44'39"E	210.95'

Curve Table			
Curve #	Radius	Delta	Length
C1	180.00'	36°35'24"	114.95'
C2	360.00'	43°53'06"	275.74'
C3	26.00'	47°08'34"	21.39'
C4	180.00'	94°40'37"	297.44'
C5	122.00'	59°46'11"	127.27'
C6	60.00'	55°22'46"	57.99'
C7	220.00'	65°38'00"	252.01'
C8	140.00'	65°48'22"	160.79'
C9	500.00'	29°02'53"	253.49'
C10	1000.00'	9°37'57"	168.12'
C11	1490.00'	16°04'40"	418.11'
C12	400.00'	29°31'24"	206.11'

SCVWD S:\REQUESTS\LLAGAS CREEK\2018_057\ROW\AUTOCAD\CURRENT\2018_057_5010_229.1Plat.dwg

Santa Clara Valley Water District	SCALE: N.T.S.	RESU FILE NO.	5010-229.1
		APN	779-06-030
		TITLE REPORT NO.	

SHEET 2 OF 2

APPENDIX C

Project's Planting, Irrigation, and Planting Palettes Construction Drawings

R14288

IRRIGATION

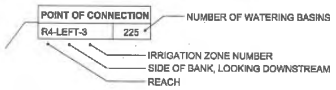
NOTES, LEGENDS, AND ABBREVIATIONS

IRRIGATION LEGEND

STANDPIPE SYSTEM

SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION
SP	PER SPECIFICATIONS	PER SPECIFICATIONS	STANDPIPE POINT OF CONNECTION (1/GL-5)
•	TORO	FB-25-PC	FLOOD BUBBLER
———	TRENCHED LATERAL TRUNK LINE (2/GL-5)		

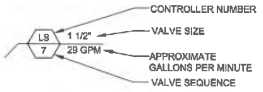
STANDPIPE POINT OF CONNECTION CALLOUT



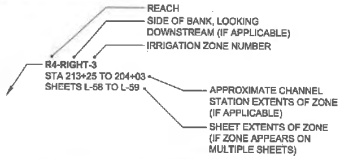
AUTOMATED SYSTEM

SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION
M	PER SPECIFICATIONS	PER SPECIFICATIONS	WATER METER
C	RAIN MASTER	RME 24SE SENTAR II	CONTROLLER ASSEMBLY (1/GL-6)
F	RAIN MASTER	FS-150	FLOW SENSOR (5/GL-6)
	FEBCO	825Y	BACKFLOW PREVENTER (2/GL-6)
	IRRITROL	2150	MASTER CONTROL VALVE (4/GL-6)
P	WILKINS	500XL	PRESSURE REGULATOR (4/GL-7)
	IRRITROL	100 SERIES, MODEL 102	REMOTE CONTROL VALVE WITH LATERAL LINE (1/GL-7)
	RAINBIRD	44-LRC	QUICK COUPLING VALVE (2/GL-7)
	TORO	LF40-PC	DRIP BUBBLER
AS	TRENCHED AUTOMATED SYSTEM MAINLINE (3/GL-6)		

REMOTE CONTROL VALVE CALLOUT



IRRIGATION ZONE CALLOUT



GENERAL

IRRIGATION ZONE

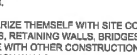
TRENCHED IRRIGATION LINE IN SLEEVE

CREEK FLOW DIRECTION

IRRIGATION NOTES

1. THE DRAWINGS HAVE BEEN DESIGNED IN COMBINATION WITH WRITTEN SPECIFICATIONS. CONTRACTOR SHALL BE FAMILIAR WITH THESE DRAWINGS AND THE ASSOCIATED SPECIFICATIONS BEFORE BEGINNING WORK.
2. THESE DRAWINGS INCLUDING THE LOCATION OF THE POINT OF CONNECTIONS, ALL PIPING, METERS, BACKFLOW PREVENTERS, CONTROLLERS, VALVES, ETC. ARE DIAGRAMMATIC. EQUIPMENT SHOWN WITHIN ROADS OR PAVED AREAS IS FOR DESIGN CLARIFICATION ONLY. AVOID ANY CONFLICT BETWEEN THE IRRIGATION SYSTEM, PLANTING, AND ENGINEERING FEATURES.
3. DUE TO THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, SLEEVES, ETC., WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL CAREFULLY INVESTIGATE THE STRUCTURAL AND FINISHED CONDITIONS AFFECTING THE WORK AND PLAN ACCORDINGLY, AND SHALL FURNISH MATERIAL REQUIRED TO MEET SUCH CONDITIONS.
4. THE IRRIGATION STANDPIPE SYSTEM DESIGN IS BASED ON A STATIC WATER PRESSURE OF 60 PSI AT THE STANDPIPE POINTS OF CONNECTION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THIS PRESSURE AT EACH STANDPIPE POINT OF CONNECTION. IRRIGATION MAXIMUM DEMAND IS 110 GPM. THE CONTRACTOR SHALL PROVIDE WATER TRUCK CAPABLE OF PRODUCING REQUIRED FLOW RATE AND PRESSURE NOTED ABOVE.
5. THE IRRIGATION AUTOMATED SYSTEM DESIGN IS BASED ON A STATIC WATER PRESSURE OF 75 PSI AT THE POINT OF CONNECTION AND MAXIMUM DEMAND OF 30 GPM. THE CONTRACTOR SHALL VERIFY EXISTING WATER PRESSURE AT POINT OF CONNECTION PRIOR TO CONSTRUCTION. ANY DIFFERENCES MORE THAN 5 PSI IN EITHER DIRECTION BETWEEN THE WATER PRESSURE INDICATED ABOVE AND THE ACTUAL PRESSURE READING AT THE POINT OF CONNECTION SHALL BE REPORTED TO THE ENGINEER. CONTRACTOR SHALL AWAIT RECEIPT OF WRITTEN INSTRUCTIONS FROM ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION OF IRRIGATION SYSTEM.
6. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FAMILIARIZE THEMSELF WITH SITE CONDITIONS, INCLUDING ALL GRADE DIFFERENCES, LOCATIONS OF WALLS, RETAINING WALLS, BRIDGES; CULVERTS, ETC. CONTRACTOR SHALL COORDINATE WORK TO BE DONE WITH OTHER CONSTRUCTION DISCIPLINES FOR THE LOCATION AND INSTALLATION OF SLEEVES THROUGH WALLS, UNDER PAVING, MAINTENANCE ROADS, STRUCTURES, BRIDGES, CULVERTS, ETC.
7. DO NOT WILLFULLY INSTALL THE IRRIGATION SYSTEMS AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, GRADE DIFFERENCES, OR DIFFERENCES IN THE AREA DIMENSIONS EXIST. SUCH OBSTRUCTIONS, OR DIFFERENCES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. IN THE EVENT THAT THIS NOTIFICATION IS NOT PERFORMED, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.

IRRIGATION DETAIL IDENTIFICATION



NOTE: FOR IRRIGATION DETAILS IDENTIFIED WITH AN EMPTY BOTTOM CIRCLE, THERE IS NO SPECIFIC CROSS REFERENCING OF DRAWINGS. THESE DETAILS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO ALL SIMILAR SITUATIONS OCCURRING ON THIS PROJECT, WHETHER OR NOT THEY ARE REFERENCED TO IN EACH APPLICABLE LOCATION.

IRRIGATION ABBREVIATIONS

GENERAL

APPROX	APPROXIMATELY
DEG	DEGREE
DIA	DIAMETER
FIPT	FEMALE IRON PIPE THREAD
FT	FEET
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
HWY	HIGHWAY
IPT	IRON PIPE THREAD
ISC	IN-STREAM COMPLEXITY
LS	LAKE SILVEIRA
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
OC	ON-CENTER
SCH	SCHEDULE
SQ	SQUARE
STA	STATION
TYP	TYPICAL
UV	ULTRAVIOLET

IRRIGATION LATERAL LINE SIZING CHART

SIZE	MATERIAL	GPM
1/2"	IPS PVC FLEX HOSE (ON-GRADE)	0-4
1/2"	SCH 40 PVC (TRENCHED)	0-4
3/4"	SCH 40 PVC*	4-8
1"	SCH 40 PVC*	8-12
1 1/4"	SCH 40 PVC	12-22
1 1/2"	SCH 40 PVC	22-32
2"	CLASS 315	32-50
2 1/2"	CLASS 315	50-70
3"	CLASS 315	70-100
3"	SCH 40 GALV STEEL**	70-110

* USE UV RESISTANT PIPE WHEN SCH 40 PVC IS ON GRADE

** USED FROM STANDPIPE TO TEE OF LATERAL TRUNK LINE PER (1/GL-5). UNLESS SHOWN OTHERWISE ON IRRIGATION PLANS

DIGALERT®

US Army Corps of Engineers®

RMC water and environment

R.E. HARVEY & ASSOCIATES

SUBMITTED:
GLENN GERMANSON
RMC TECH MNGR. C46539

APPROVED:
LYNCHEL MOULTON
RMC PROJ MNGR.
RMC PRINCIPAL C21189

STATE OF CALIFORNIA — LICENSED LANDSCAPE ARCHITECT — 4598 — EXP. 12/31/18

MARK	DESCRIPTION	DATE	APP'D
	100% SUBMITTAL NOT FOR CONSTRUCTION		

DESIGNED BY: D. Stephens, K. Vanpelt
DRAWN BY: C.Brewer, J.Lopez
CHECKED BY: J.Lopez
DATE: November 2017
SOLICITATION NO.:
CONTRACT NO.:
FILE NUMBER
EDMS PROJECT NO.: 26178264
SCALE: AS NOTED 22 x 34 | 11x17 - PLANTING
JOB NO. 20171106.DWG

Santa Clara Valley Water District®
ASSISTED BY DISTRICT
DATE

CALIFORNIA
SANTA CLARA COUNTY
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PHASE 1
IRRIGATION NOTES, LEGEND AND ABBREVIATIONS

SHEET NUMBER
GL-1
PAGE 350 OF 423

Attachment 3
Page 99 of 644

PHASE 1 PLANTING

REACH 4, REACHES 5 AND 14 DOWNSTREAM OF PHASE 1-PHASE 2 TRANSITION, REACH 7A, AND LAKE SILVEIRA

PLANT CONTAINER SIZE AND ON-CENTER SPACING

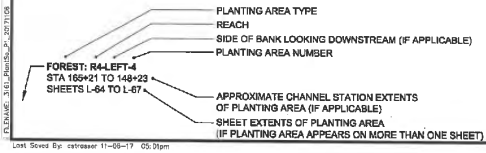
BOTANICAL NAME	COMMON NAME	PLANTING TYPE	CONTAINER SIZE †	ON-CENTER SPACING (FT)																								
				REACH 4						REACH 8				REACH 14	REACH 7A						LAKE SILVEIRA							
				FOREST	FOREST INFILL	SCRUB	XERIC SCRUB	STREAM-SIDE SCRUB	MODIFIED STREAM-SIDE SCRUB	FOREST	FOREST INFILL	SCRUB	STREAM-SIDE SCRUB	XERIC SCRUB	FOREST	INDIVIDUAL TREES	WILLOW FOREST	SYCAMORE FOREST ‡	FOREST UNDER-STORY	SCRUB	FOREST	FOREST INFILL	SYCAMORE FOREST ‡	SYCAMORE FOREST INFILL	FOREST UNDER-STORY	FOREST UNDERSTORY WITHOUT WATERING BASIN	WETLAND	WILLOW FOREST
*AESCULUS CALIFORNICA**	CALIFORNIA BUCKEYE	SMALL CONTAINER	3	25	18	-	-	-	-	16	16	-	-	-	16	-	-	-	-	-	16	16	-	-	-	-	-	-
ARTEMISIA CALIFORNICA	CALIFORNIA SAGEBRUSH	SMALL CONTAINER	2	12	8	10	10	-	-	8	8	10	-	10	8	-	-	-	-	10	8	8	-	-	-	-	-	-
*ARTEMISIA DOUGLASIANA**	MUGWORT	SMALL CONTAINER	2	10	8	-	-	10	-	8	8	-	-	-	8	-	-	8	10	-	8	8	-	-	-	-	-	-
BACCHARIS PILULARIS	COYOTE BRUSH	SMALL CONTAINER	2	15	10	12	12	-	-	10	10	10	-	12	10	-	-	-	-	-	8	8	8	8	10	20	-	-
BACCHARIS SALICIFOLIA	MULEFAT	CUTTING	N/A	12	8	-	-	10	10	10	10	-	10	-	10	-	-	10	-	-	10	10	10	10	-	-	-	-
FRANGULA CALIFORNICA	COFFEEBERRY	SMALL CONTAINER	2	15	10	12	12	-	-	10	10	12	-	12	10	-	-	-	-	10	10	10	-	-	-	-	-	-
HETEROMELES ARBUTIFOLIA	TOYON	SMALL CONTAINER	2	15	12	12	12		-	12	12	12		12	12	-	-	-	-	10	12	12	-	-	-	-	3	-
JUNCUS EFFUSUS	COMMON RUSH	PLUG CONTAINER	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-
JUNCUS MEXICANUS	MEXICAN RUSH	PLUG CONTAINER	1	-	-	-	-	-	-	-	-	-	-	-	-	PER PLAN	-	20	-	-	-	-	20	25	-	-	-	-
PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	SMALL CONTAINER	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-	-	18	18	-	-	-	-
POPULUS FREMONTII	FREMONT COTTONWOOD	SMALL CONTAINER	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	15	15	-	-	-	-	-	-
PRUNUS ILICIFOLIA	HOLLYLEAF CHERRY	SMALL CONTAINER	3	15	15	25	25	-	-	15	15	20	-	25	15	-	-	-	-	-	20	20	-	-	-	-	-	-
QUERCUS AGRIFOLIA	COAST LIVE OAK	SMALL CONTAINER	3	35	25	-	-	-	-	20	20	-	-	-	20	PER PLAN	-	-	-	-	20	20	-	-	-	-	-	-
QUERCUS LOBATA	VALLEY OAK	SMALL CONTAINER	3	35	25	-	-	-	-	20	20	-	-	-	20	PER PLAN	-	-	-	-	20	20	-	-	-	-	-	-
*ROSA CALIFORNICA**	CALIFORNIA ROSE	SMALL CONTAINER	2	12	8	8	-	-	-	8	8	8	-	-	8	-	-	10	-	8	8	8	10	10	-	-	-	-
*RUBUS URSINUS**	CALIFORNIA BLACKBERRY	SMALL CONTAINER	2	-	-	-	-	-	-	-	-	-	-	-	8	-	-	10	10	-	8	8	10	10	10	20	-	-
*SALIX EXIGUA***	SANDBAR WILLOW	CUTTING	N/A	-	-	-	-	10	-	-	-	-	10	-	-	-	10	-	-	-	-	-	-	-	-	-	8	10
*SALIX LAEVIGATA***	RED WILLOW	CUTTING	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	-	-	-	-	10	10	-	-	8	10
*SALIX LASIOLEPIS***	ARROYO WILLOW	CUTTING	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	-	-	-	-	10	10	-	-	8	10
SAMBUCUS NIGRA	ELDERBERRY	SMALL CONTAINER	3	20	15	15	15	-	-	12	12	12	-	16	12	-	-	-	-	12	12	8	-	-	-	-	-	-
SCHOENOPLECTUS ACUTUS	HARDSTEM BULRUSH	PLUG CONTAINER	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-
SCHOENOPLECTUS CALIFORNICUS	CALIFORNIA BULRUSH	PLUG CONTAINER	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-
SPARGANIUM EURYCARPUM	BROADFRUIT BUR REED	PLUG CONTAINER	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-
*SYMPHORICARPOS ALBUS**	SNOWBERRY	SMALL CONTAINER	2	-	-	-	-	-	-	8	8	-	-	-	8	-	-	8	10	-	8	12	8	8	10	20	-	-

† CONTAINER SIZES ARE AS FOLLOWS: SIZE 1 IS APPROX 2.25" SQ X 5" DEEP. SIZE 2 IS APPROX 2.5 DIA X 10" DEEP. SIZE 3 IS APPROX 4" SQ X 14" DEEP.
‡ IN THIS PLANTING ZONE RED WILLOW, ARROYO WILLOW, AND FREMONT COTTONWOOD SHALL BE INSTALLED CLOSER TO THE WATER'S EDGE. CONTRACTOR SHALL FLAG THE LOCATIONS OF THESE SPECIES IN COORDINATION WITH ENGINEER.
*MUGWORT, CALIFORNIA ROSE, CALIFORNIA BLACKBERRY, AND SNOWBERRY SHALL BE PLANTED IN GROUPS OF 3 SMALL CONTAINER PLANTS OF THE SAME SPECIES PER WATERING BASIN. PLANTING TABLE ABOVE DEPICTS ON-CENTER SPACING BETWEEN PLANTING LOCATIONS.
**MODIFY SANDBAR WILLOW, RED WILLOW, AND ARROYO WILLOW SPACING PER DETAILS AT ISC STRUCTURES. SEE SHEET GL-27.

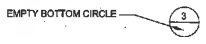
PLANTING AND SEEDING LEGEND

- FOREST PLANTING
- FOREST INFILL PLANTING
- SYCAMORE FOREST PLANTING
- SYCAMORE FOREST INFILL PLANTING
- FOREST UNDERSTORY PLANTING
- FOREST UNDERSTORY PLANTING AND BROADCAST SEED MIX
- SCRUB PLANTING
- XERIC SCRUB PLANTING AND BROADCAST SEED MIX (SEE NOTE 2)
- STREAMSIDE SCRUB PLANTING
- MODIFIED STREAMSIDE SCRUB PLANTING
- WILLOW FOREST PLANTING
- WETLAND PLANTING
- WETLAND SEED MIX
- HYDROSEEDING, SEE SPECIFICATIONS FOR ADDITIONAL LOCATIONS/REQUIREMENTS
- PHASE 1-PHASE 2 TRANSITION ZONE
- DECOMPACTION AREA
- EXISTING VEGETATION
- INDIVIDUAL TREE - CALIFORNIA SYCAMORE
- INDIVIDUAL TREE - VALLEY OAK
- INDIVIDUAL TREE - COAST LIVE OAK
- LOG PILE: SINGLE-LOG (1 / GL-3)
- LOG PILE: FIVE-LOG (1 / GL-3)

PLANTING AREA CALLOUT



PLANTING DETAIL IDENTIFICATION



NOTE: FOR PLANTING DETAILS IDENTIFIED WITH AN EMPTY BOTTOM CIRCLE, THERE IS NO SPECIFIC CROSS REFERENCING OF DRAWINGS. THESE DETAILS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO ALL SIMILAR SITUATIONS OCCURRING ON THIS PROJECT, WHETHER OR NOT THEY ARE REFERENCED TO IN EACH APPLICABLE LOCATION.

PLANTING NOTES

1. PLANTING AREAS SHALL BE HYDROSEEDED AND/OR BROADCAST SEEDED PRIOR TO PLANTING AS SHOWN ON PLANTING & SEEDING PLANS AND PER THE SPECIFICATIONS.
2. IN THE XERIC SCRUB AREAS, APPLY BROADCAST SEEDING PRIOR TO HYDROSEEDING.
3. PLANTING HOLES SHALL BE INSTALLED PER DETAIL (1 / GL-29) EXCEPT IN FOREST UNDERSTORY WITHOUT WATERING BASIN PLANTING AREAS, WHICH SHALL BE INSTALLED PER DETAIL (5 / GL-29)
4. SMALL CONTAINER PLANTS SHALL BE INSTALLED PER DETAIL (1 / GL-26) EXCEPT IN FOREST UNDERSTORY WITHOUT WATERING BASIN PLANTING AREAS,WHICH SHALL BE INSTALLED PER DETAIL (5 / GL-29)
5. CUTTINGS SHALL BE COLLECTED PER DETAIL (2 / GL-29) AND INSTALLED PER DETAIL (3 / GL-29) EXCEPT IN WETLAND PLANTING AREAS, WHICH SHALL BE INSTALLED PER DETAIL (3 / GL-29)
6. PLUG CONTAINER PLANTS SHALL BE INSTALLED PER DETAIL (2 / GL-29)
7. INSTALL LOG PILES PER DETAIL (1 / GL-3)
8. FOR PLANTING LAYOUT AT ISC STRUCTURES, SEE SHEET GL-27.
9. FOR PLANTING LAYOUT IN MODIFIED STREAMSIDE SCRUB AREAS, SEE DETAIL (4 / GL-29)
10. FOR PLANTING QUANTITIES, SEE THE FOLLOWING SHEETS:
    a. REACH 4, SEE SHEETS GL-10 AND GL-11.
    b. REACH 5, SEE SHEET GL-12.
    c. REACH 14, SEE SHEET GL-13.
    d. REACH 7A, SEE SHEETS GL-14 AND GL-15.
    e. LAKE SILVEIRA, SEE SHEET GL-16.
11. THE CHANNEL STATION EXTENTS SHOWN IN PLANTING AREA CALLOUTS ARE APPROXIMATE AND SHOULD ONLY BE USED AS A GUIDE FOR PLANTING LAYOUT.

US Army Corps of Engineers®
RMC WATER AND ENVIRONMENT
H.T. HARVEY & ASSOCIATES
SUBMITTED: GLENN STENSGAARD, RMC TECH MANGR. C46659
APPROVED:
1ST PRELIM. MILESTONE SUBM. PROJ MANGR. RMC PRINCIPAL: CET/JD
LANDSCAPE ARCHITECT J. M. LA JOIE 4598 exp. 12/31/18 STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE	APPR
	100% SUBMITTAL NOT FOR CONSTRUCTION		

DATE: November 2017
SOLICITATION NO.:
CONTRACT NO.:
FILENUMBER:
SCHED/PROJECT NO.: 36.1
FILE NAME: 22 x 34 356 - PLANTSC_P1_(GL)105.DWG

PREPARED BY: D. Stephens, K. Vanpool
DESIGNED BY: N. Hetherington, L. Dahlke
DRAWN BY:
CHECKED BY: J. La Joie
QUANTITIES BY:

Santa Clara Valley Water District
ACCEPTED BY DISTRICT:

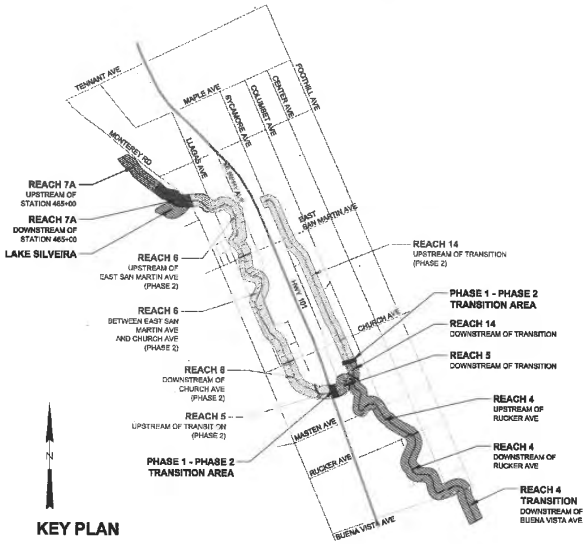
SANTA CLARA COUNTY CALIFORNIA
UPPER LLAGAS CREEK FLOOD PROTECTION PROJECT
PHASE 1
PLANTING AND SEEDING PLAN, LEGEND, AND PLANTING PALETTE

SHEET NUMBER GL-8
PAGE 356 OF 423

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REACH 7A PLANT QUANTITY TABLES BY PLANTING AREA TYPE

DOWNSTREAM OF STATION 465+00



KEY PLAN

NOTE:
1. PLANT QUANTITY TABLES DEPICT QUANTITY OF PLANTING LOCATIONS. MUGWORT, CALIFORNIA ROSE, CALIFORNIA BLACKBERRY, AND SNOWBERRY SHALL BE PLANTED IN GROUPS OF 3 SMALL CONTAINER PLANTS OF THE SAME SPECIES PER WATERING BASIN.
2. PLANT QUANTITY TABLES ACCOUNT FOR PLANTS AT ISC STRUCTURES.

FOREST			LEFT BANK: PLANT QUANTITIES BY PLANTING AREA		RIGHT BANK: PLANT QUANTITIES BY PLANTING AREA		
SYMBOL	BOTANICAL NAME	COMMON NAME	R7A-LEFT-1	R7A- LEFT-2	R7A-RIGHT-1	R7A-RIGHT-2	TOTAL
	*AESCULUS CALIFORNICA**	CALIFORNIA BUCKEYE	9	12	14	2	37
	ARTEMISIA CALIFORNICA	CALIFORNIA SAGEBRUSH	37	48	55	9	149
	*ARTEMISIA DOUGLASIANA**	MUGWORT	31	40	46	8	125
	BACCHARIS PILULARIS	COYOTE BRUSH	23	31	35	6	95
	BACCHARIS SALICIFOLIA	MULEFAT	20	25	30	5	80
	FRANGULA CALIFORNICA	COFFEEBERRY	23	31	35	6	95
	HETEROMELES ARBUTIFOLIA	TOYON	16	21	25	4	66
	PRUNUS ILICIFOLIA	HOLLY-LEAF CHERRY	10	14	16	3	43
	QUERCUS AGRIFOLIA	COAST LIVE OAK	15	19	22	4	60
	QUERCUS LOBATA	VALLEY OAK	14	18	21	4	57
	*ROSA CALIFORNICA**	CALIFORNIA ROSE	37	48	55	9	149
	*RUBUS URSINUS**	CALIFORNIA BLACKBERRY	37	48	55	9	149
	SAMBUCUS NIGRA	ELDERBERRY	16	21	25	4	66
	*SYMPHORICARPOS ALBUS**	SNOWBERRY	43	56	65	11	175

*SEE NOTE 1

SYCAMORE FOREST			RIGHT BANK: PLANT QUANTITIES BY PLANTING AREA			
SYMBOL	BOTANICAL NAME	COMMON NAME	R7A- RIGHT-1	R7A-RIGHT-2	R7A-RIGHT-3	TOTAL
	*ARTEMISIA DOUGLASIANA**	MUGWORT	301	146	16	463
	BACCHARIS SALICIFOLIA	MULEFAT	193	94	10	297
	PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	60	29	3	92
	POPULUS FREMONTII	FREMONT COTTONWOOD	50	24	3	77
	*ROSA CALIFORNICA**	CALIFORNIA ROSE	160	78	9	247
	*RUBUS URSINUS**	CALIFORNIA BLACKBERRY	177	86	10	273
	SALIX LAEVIGATA	RED WILLOW	160	78	9	247
	SALIX LASIOLEPIS	ARROYO WILLOW	160	78	9	247
	*SYMPHORICARPOS ALBUS**	SNOWBERRY	251	122	14	387

*SEE NOTE 1

INDIVIDUAL TREES			PLANT QUANTITIES BY BANK		
SYMBOL	BOTANICAL NAME	COMMON NAME	LEFT BANK	RIGHT BANK	TOTAL
	PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	12	10	22
	QUERCUS AGRIFOLIA	COAST LIVE OAK	23	17	40
	QUERCUS LOBATA	VALLEY OAK	27	18	45

WILLOW FOREST			LEFT BANK: PLANT QUANTITIES BY PLANTING AREA				RIGHT BANK: PLANT QUANTITIES BY PLANTING AREA		
SYMBOL	BOTANICAL NAME	COMMON NAME	R7A-LEFT-5*	R7A-LEFT-6	R7A-LEFT-7	R7A-LEFT-8	R7A-RIGHT -4	R7A-RIGHT -5	TOTAL
	SALIX EXIGUA	SANDBAR WILLOW	18	20	9	261	105	14	427
	SALIX LAEVIGATA	RED WILLOW	28	32	14	418	169	22	683
	SALIX LASIOLEPIS	ARROYO WILLOW	25	28	12	366	147	19	597

*WILLOW FOREST R7A-LEFT-5 EXTENDS UPSTREAM OF STATION 465+00

FOREST UNDERSTORY			RIGHT BANK: PLANT QUANTITIES BY PLANTING AREA	
SYMBOL	BOTANICAL NAME	COMMON NAME	R7A-RIGHT-1	TOTAL
	*ARTEMISIA DOUGLASIANA**	MUGWORT	65	65
	*RUBUS URSINUS**	CALIFORNIA BLACKBERRY	109	109
	*SYMPHORICARPOS ALBUS**	SNOWBERRY	44	44

*SEE NOTE 1

US Army Corps of Engineers

RMC Water and Environment

SUBMITTED: CLIENT/HERMANSON, RMC TECH MNGR C48659

APPROVED: LYNDRA HILTON, RMC PROJ MNGR, Cert. PRINCIPAL C27169

REGISTERED PROFESSIONAL ENGINEER, CHRISTOPHER M. FOLEY, No. 48599, Exp. 12/31/18, STATE OF CALIFORNIA

100% SUBMITTAL NOT FOR CONSTRUCTION

DESCRIPTION	DATE	KDPS

DESIGNED BY: J. Stephens, K. Vorpool; DRAWN BY: L. Dobbas; CHECKED BY: K. Vorpool; DATE: November 2017; SOLICITATION NO.: ; CONTRACT NO.: ; FILE NUMBER: 2017108.DWG; DOWNSPRING PROJECT NO.: 2017108; FILE NAME: 22 x 34 S1G1 PLANTSC_P1

Santa Clara Valley Water District

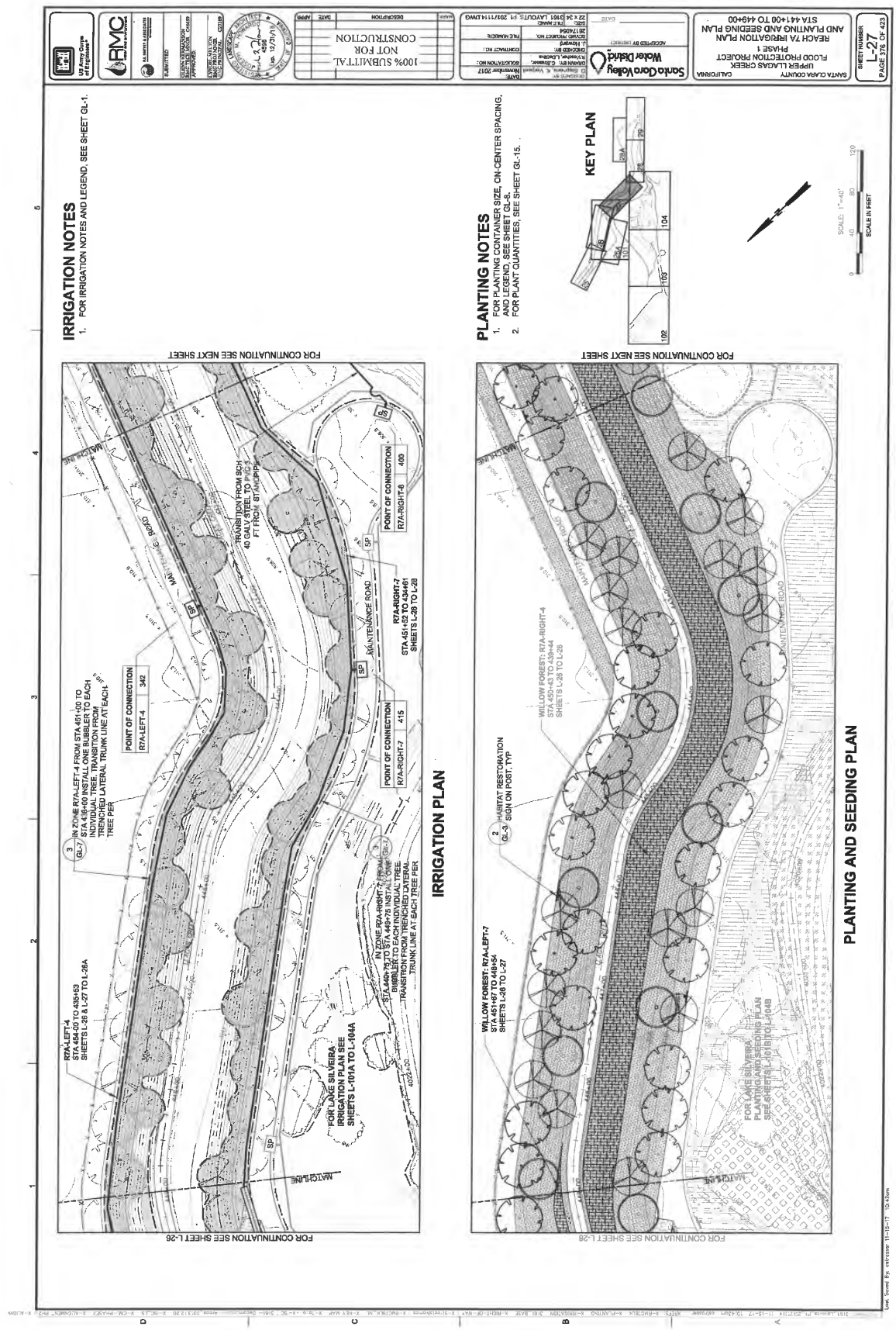
ADOPTED BY DISTRICT BOARD OF DIRECTORS ON DATE

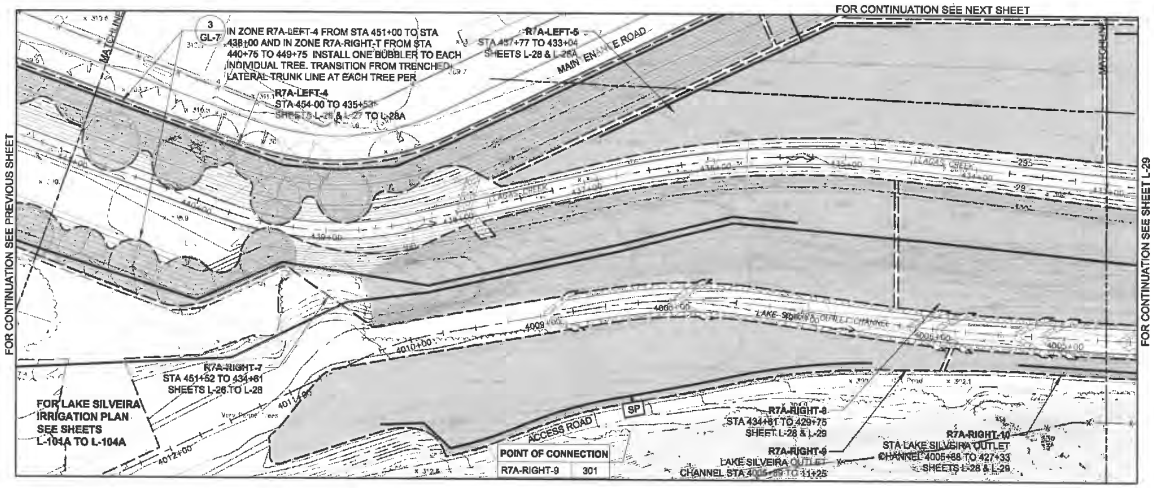
SANTA CLARA COUNTY, CALIFORNIA
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PHASE 1
REACH 7A PLANT QUANTITIES
DOWNSTREAM OF STATION 465+00

SHEET NUMBER GL-15
PAGE 362 OF 423

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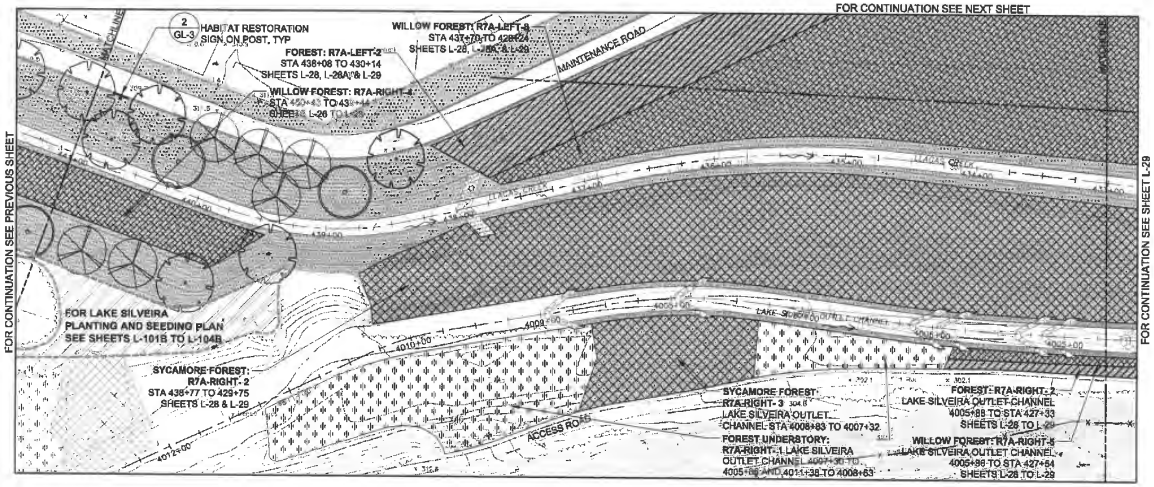

IRRIGATION NOTES
1. FOR IRRIGATION NOTES AND LEGEND, SEE SHEET GL-1.
PLANTING NOTES
1. FOR PLANTING CONTAINER SIZE, ON-CENTER SPACING, AND LEGEND, SEE SHEET GL-5.
2. FOR PLANT QUANTITIES, SEE SHEET GL-15.
KEY PLAN
FOR CONTINUATION SEE NEXT SHEET
FOR CONTINUATION SEE SHEET L-26
IRRIGATION PLAN
PLANTING AND SEEDING PLAN
FOR CONTINUATION SEE SHEET L-28
SCALE: 1"=40'
SCALE IN FEET
SANTA CLARA COUNTY CALIFORNIA
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PHASE 1
REACH 7A IRRIGATION PLAN
AND PLANTING AND SEEDING PLAN
STA 441+00 TO 449+00
SHEET NUMBER
L-27
PAGE 376 OF 423
Sonia Darrow Vollaj
Water District
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IRRIGATION PLAN

IRRIGATION NOTES

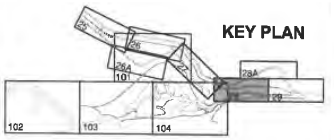
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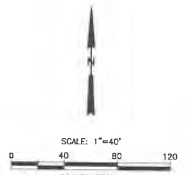


PLANTING AND SEEDING PLAN

PLANTING NOTES

1. FOR PLANTING CONTAINER SIZE, ON-CENTER SPACING, AND LEGEND, SEE SHEET GL-6.
2. FOR PLANT QUANTITIES, SEE SHEET GL-15.





US Army Corps of Engineers®

RMC

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RMC TECH MANGR C46689

APPROVED:
LYNDEL MELTON
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LAND SURVEYOR
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EXP. 12/31/18
STATE OF CALIFORNIA

100% SUBMITTAL NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE

Santa Clara Valley Water District

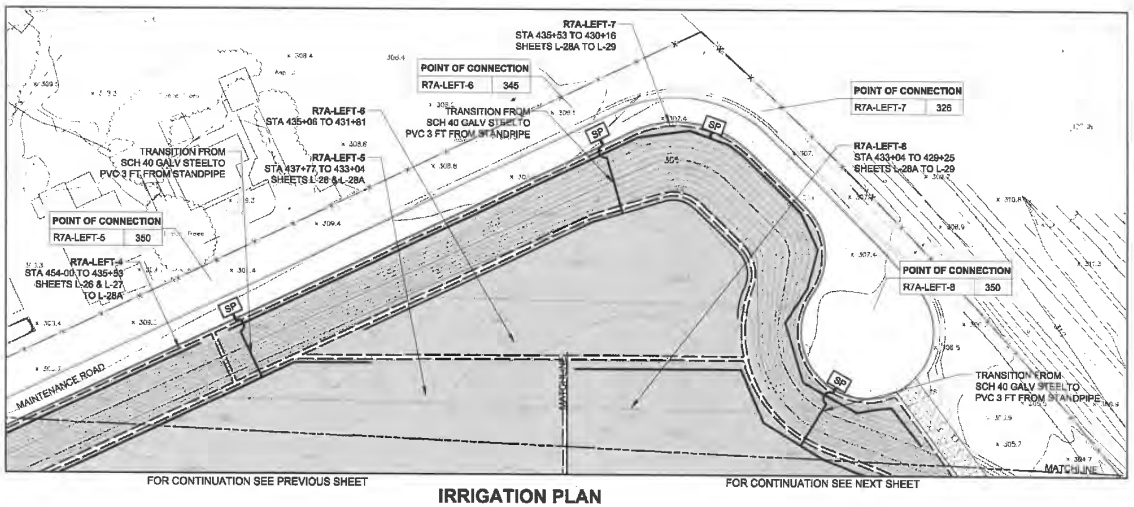
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DRAWN BY: D. Stechenius, K. Kapheid
CHECKED BY: K. Kapheid
SCVWD PROJECT NO. 26172004
DATE: November 2017
SOLICITATION NO.:
CONTRACT NO.:
FILE NUMBER:
ASSISTED BY DISTRICT
22 x 34 USE 1 LAYOUTS
C2171114.DWG

CALIFORNIA
SANTA CLARA COUNTY
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PHASE 1

REACH 7A IRRIGATION PLAN AND PLANTING AND SEEDING PLAN
STA 433+40 TO 441+40

SHEET NUMBER
L-28
PAGE 377 OF 423

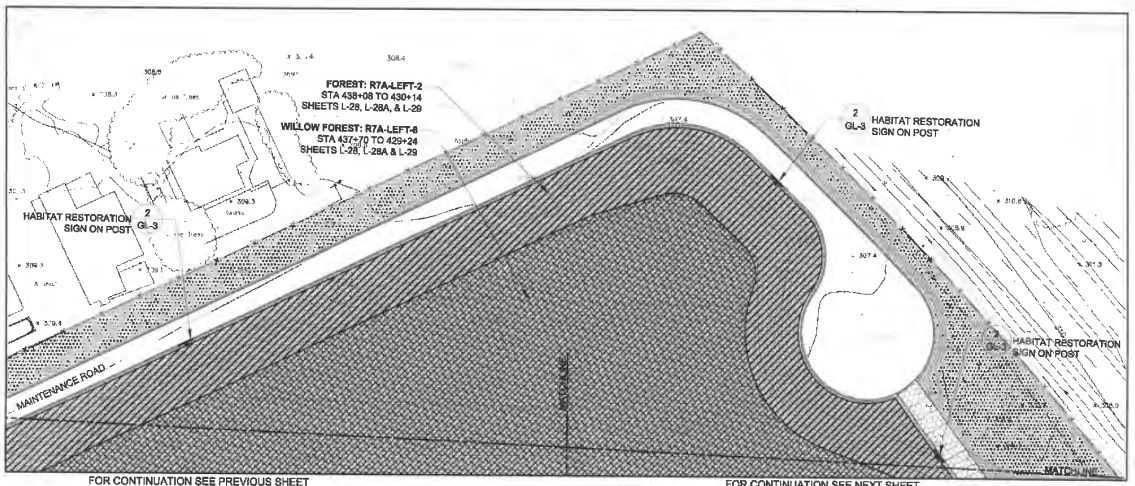
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IRRIGATION PLAN

IRRIGATION NOTES

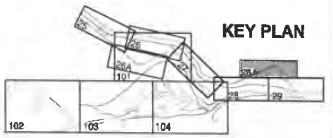
1. FOR IRRIGATION NOTES AND LEGEND, SEE SHEET GL-1.



PLANTING AND SEEDING PLAN

PLANTING NOTES

1. FOR PLANTING CONTAINER SIZE, ON-CENTER SPACING, AND LEGEND, SEE SHEET GL-8.
2. FOR PLANT QUANTITIES, SEE SHEET GL-15.



US Army Corps of Engineers

RMC

H.T. HARVEY & ASSOCIATES

SUBMITTED:

ALEX SUN-HARMON
ENG TECH MNGR CA6639

APPROVED:

LYNNE MELTON
PROJ MNGR
PROJ PRINCIPAL

LANDSCAPE ARCHITECT
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DATE	DESCRIPTION	APPR
	100% SUBMITTAL NOT FOR CONSTRUCTION	

DESIGNED BY: D. Stagnaro, K. Vanpeel
DRAWN BY: T. Dalbow, H. Vowles
CHECKED BY: L. Lacy
QC REVIEW BY: D. Stagnaro
DATE: November 2017
SOLICITATION NO.:
CONTRACT NO.:
FILENUMBER:
PLOT DATE: 22 x 34
PLOT TIME: 5161
PLOT NAME: LAYOUT5
FILENAME: 20171114.DWG

Santa Clara Valley Water District

ADOPTED BY DISTRICT

SANTA CLARA COUNTY, CALIFORNIA
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PHASE 1
REACH 7A IRRIGATION PLAN AND PLANTING AND SEEDING PLAN
STA 439+75 TO 437+60

SHEET NUMBER
L-28A
PAGE 378 OF 423

Last Saved By: cstropper 11-15-17 10:42am

SANTA CLARA COUNTY
CALIFORNIA
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
REACH 7A IRRIGATION PLAN
AND PLANTING AND SEEDING PLAN
PHASE 1
STA 426+00 TO 433+00
SHEET NUMBER
L-29
PAGE 379 OF 423
Santa Clara Valley Water District
DESIGNED BY: P. Espinoza, K. Vanpelt
DRAWN BY: D. Bressler, V.Wagner, L.Dedina
CHECKED BY:
CONTRACT NO.:
SCANNED RECORD NO.:
FILE NUMBER:
ACQUIRED BY DISTRICT
DATE:
SCALE: 1"=40'
SCALE IN FEET
KEY PLAN
IRRIGATION NOTES
1. FOR IRRIGATION NOTES AND LEGEND, SEE SHEET GL-1.
PLANTING NOTES
1. FOR PLANTING CONTAINER SIZE, ON-CENTER SPACING, AND LEGEND, SEE SHEET GL-8.
2. FOR PLANT QUANTITIES, SEE SHEET GL-15.
IRRIGATION PLAN
PLANTING AND SEEDING PLAN
FOR CONTINUATION SEE SHEET L-30 OF PHASE 2
FOR CONTINUATION SEE SHEET L-28
FOR CONTINUATION SEE PREVIOUS SHEET
MONTEREY ROAD
MATCHLINE
ACCESS ROAD
MAINTENANCE ROAD
POINT OF CONNECTION
R7A-RIGHT-10 139
NOT FOR CONSTRUCTION
100% SUBMITTAL

IRRIGATION NOTES
1. FOR IRRIGATION NOTES AND LEGEND,, SEE SHEET GL-1.
2. FOR PLANTING AND SEEDING PLAN, SEE SHEET L-101B.
KEY PLAN
SCALE: 1"=40'
IRRIGATION PLAN
MAINTENANCE ROAD
POINT OF CONNECTION
LS-13
FOR REACH 7A IRRIGATION PLAN SEE SHEETS L-24 TO L-29
TEMPORARY MAINTENANCE ACCESS (DIRT 2-TRACK PATH; WITHOUT COMPACTION, DESIGN, OR REMOVAL REQUIREMENTS)
MATCHLINE: FOR CONTINUATION SEE SHEET L-104A
MATCHLINE
PROPERTY LINE
SANTA CLARA COUNTY
CALIFORNIA
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
LAKE SILVERA
PHASE 1
IRRIGATION PLAN 1
SHEET NUMBER
L- 101A
PAGE 403 OF 423
Santa Clara Valley Water District
100% SUBMITTAL
NOT FOR
CONSTRUCTION
RMC
US Army Corps of Engineers

PLANTING NOTES
1. FOR PLANTING CONTAINER SIZE, ON-CENTER SPACING, AND LEGEND, SEE SHEET GL-8.
2. FOR PLANT QUANTITIES, SEE SHEET GL-16.
3. FOR IRRIGATION PLAN, SEE SHEET L-101A.
KEY PLAN
SCALE: 1"=40'
SCALE IN FEET
MAINTENANCE ROAD
FOR REACH 7A PLANTING AND SEEDING PLAN SEE SHEETS L-24 to L-29
PROPERTY LINE
FOREST UNDERSTORY WITHOUT WATERING BASIN: LS-8 SHEETS L-101B & L-103B
FOREST UNDERSTORY WITHOUT WATERING BASIN: LS-7 SHEETS L-101B, L-103B, & L-104B
FOREST: LS-3 SHEETS L-101B TO L-103B
SYCAMORE FOREST: LS-1 SHEETS L-101B, L-103B, & L-104B
FOREST INFILL: LS-3 SHEETS L-101B TO L-103B
HABITAT RESTORATION SIGN ON POST, TYP.
FOREST INFILL: LS-4
SYCAMORE FOREST INFILL: LS-2
FOREST: LS-5 SHEETS L-101B & L-104B
FOREST UNDERSTORY WITHOUT WATERING BASIN: LS-8
SYCAMORE FOREST: LS-3 SHEETS L-101B & L-104B
FOREST UNDERSTORY WITHOUT WATERING BASIN: LS-9 SHEETS L-101B & L-104B
MATCHLINE FOR CONTINUATION SEE SHEET L-103B
MATCHLINE FOR CONTINUATION SEE SHEET L-104B
PLANTING AND SEEDING PLAN
SANTA CLARA COUNTY CALIFORNIA
UPPER LLAGAS CREEK FLOOD PROTECTION PROJECT PHASE 1 LAKE SILVERA
PLANTING AND SEEDING PLAN 1
SHEET NUMBER L-101B
USACE 404 OF 423
Santa Clara Valley Water District
100% SUBMITTAL NOT FOR CONSTRUCTION
DESIGNED BY
DRAWN BY
CHECKED BY
DATE
SCALE AS SHOWN
22 x 34 (81st LAYOUTS Pt 20171114.DWG

SANTA CLARA COUNTY CALIFORNIA
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PHASE 1
LAKE SILVEIRA
IRRIGATION PLAN 2
SHEET NUMBER
L-102A
OF 423
Santa Clara Valley Water District
100% SUBMITTAL
NOT FOR
CONSTRUCTION
RMC
MATCHLINE: FOR CONTINUATION SEE SHEET L-103A
SCALE: 1"=40'
SCALE IN FEET
0
40
80
120
N
KEY PLAN
LS-1
SHEETS L-102A TO L-103A
LS-1
L-102A TO L-103A
OLIVE AVE
IRRIGATION NOTES
1. FOR IRRIGATION NOTES AND LEGEND, SEE SHEET GI-1.
2. FOR PLANTING AND SEEDING PLAN, SEE SHEET L-102B.
IRRIGATION PLAN

SANTA CLARA COUNTY CALIFORNIA
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PHASE 1
LAKE SILVERA
PLANTING AND SEEDING PLAN 2
SHEET NUMBER
L-102B
PHASE 406 OF 423
Santa Clara Valley Water District
DESIGNED BY
D. Stephens, K. Vanderwier
DRAWN BY
D. Stephens
CHECKED BY
K. Vanderwier, L.Dudley
SCWD PROJECT NO.
A Hyphen
CONTRACT NO.
SCALE
ACCEPTED BY DISTRICT
DATE
FILE NUMBER
DATE
NOVEMBER 2017
SCALE
AS SHOWN
22 x 34
2181 LAYOUTS P1 20121114DWG
100% SUBMITTAL
NOT FOR
CONSTRUCTION
DESCRIPTION
MARK
DATE
APPR.
SUBMITTED:
KNAPP, WILSON & ARENZ
KEVIN WILSON
ELECTRONIC SIGNATURE
CA 27189
DESIGN, HYDROLOGY, & HYDRAULICS
RMC
Water and Environment
US Army Corps of Engineers
MATCHLINE FOR CONTINUATION SEE SHEET L-103B
SCALE: 1"=40'
SCALE IN FEET
0
40
80
120
N
KEY PLAN
PLANTING NOTES
1. FOR PLANTING CONTAINER SIZE, ON-CENTER SPACING, AND LEGEND, SEE SHEET GL-8.
2. FOR PLANT QUANTITIES, SEE SHEET GL-16.
3. FOR IRRIGATION PLAN, SEE SHEET L-102A, SHEET L-102A.
FOREST UNDERSTORY
WITHOUT WATERING BASIN: LS-5
SHEETS L-102B TO L-103B
FOREST UNDERSTORY
WITHOUT WATERING BASIN: LS-5
SHEETS L-102B TO L-103B
FOREST INFILL: LS-3
SHEETS L-101B TO L-103B
2
HABITAT RESTORATION SIGN ON POST, TYP.
GL-3
OLIVE AVE
MITIGATION PLANTINGS
PROHIBITED IN THIS AREA
FOREST UNDERSTORY
WITHOUT WATERING BASIN: LS-4
SHEETS L-102B TO L-103B
FOREST INFILL: LS-1
SHEETS L-102B TO L-103B
PLANTING AND SEEDING PLAN

IRRIGATION PLAN
IRRIGATION NOTES
1. FOR IRRIGATION NOTES AND LEGEND, SEE SHEET GL-1
2. FOR PLANTING AND SEEDING PLAN, SEE SHEET L-103B
KEY PLAN
MATCHLINE: FOR CONTINUATION SEE SHEET L-102A
MATCH LINE: FOR CONTINUATION SEE SHEET L-101A
TEMPORARY MAINTENANCE ACCESS (DIRT 2-TRACK PATH WITHOUT COMPACTION, DESIGN, OR REMOVAL REQUIREMENTS)
CROSSING AT LAKE INLET STRUCTURE
POINT OF CONNECTION SOUTH OF ATHERTON WAY
ATHERTON WAY
SMOOTH OUT EXISTING SLOPE AS NECESSARY TO PROVIDE MAINTENANCE ACCESS
SCALE IN FEET
SANTA CLARA COUNTY
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PHASE 1
LAKE SILVERA
IRRIGATION PLAN 3
SHEET NUMBER
L-103A
PAGE 407 OF 423
100% SUBMITTAL
NOT FOR
CONSTRUCTION

SANTA CLARA COUNTY
CALIFORNIA
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PHASE 1
LAKE SILVERA
PLANTING AND SEEDING PLAN 3
SHEET NUMBER
L-103B
PAGE 466 OF 423
Santa Clara Valley Water District
ACCEPTED BY DISTRICT
100% SUBMITTAL
NOT FOR
CONSTRUCTION
DESCRIPTION
DATE
APPD
MARK
PLANTING AND SEEDING PLAN
KEY PLAN
PLANTING NOTES
1. FOR PLANTING CONTAINER SIZE, ON-CENTER SPACING, AND LEGEND, SEE SHEET GL-8.
2. FOR PLANT QUANTITIES, SEE SHEET GL-16.
3. FOR IRRIGATION PLAN, SEE SHEET L-103A.
SHEET L-103A.
MATCHLINE: FOR CONTINUATION SEE SHEET L-104B
MATCHLINE: FOR CONTINUATION SEE SHEET L-102B
WETLAND: LS-3
WETLAND: LS-2
WETLAND: LS-4
WETLAND: LS-1
FOREST: LS-3
SHEETS L-101B,
L-103B, & L-104B
SYCAMORE FOREST: LS-1
SHEETS L-101B,
L-103B, & L-104B
FOREST INFILL: LS-2
HABITAT RESTORATION SIGN ON POST, TYP
FOREST INFILL: LS-3
SHEETS L-101B TO L-103B
FOREST UNDERSTORY
WITHOUT WATERING BASIN: LS-6
SHEETS L-101B TO L-102B
FOREST UNDERSTORY
WITHOUT WATERING BASIN: LS-7
SHEETS L-101B TO L-103B
SYCAMORE FOREST INFILL: LS-1
PLANTING LAYOUT AT ROOTWAD IN WILLOW FOREST, TYP
FOREST UNDERSTORY
WITHOUT WATERING BASIN: LS-5
L-102 TO L-103
WILLOW FOREST: LS-3
INSTALL 20 CUTTINGS IN ROOTWADS AND 30 CUTTINGS IN A ROW BEHIND ROOTWADS
ATHERTON WAY
WILLOW FOREST: LS-1
WILLOW FOREST: LS-2
FOREST UNDERSTORY: LS-1
FOREST UNDERSTORY: LS-2
FOREST: LS-1
FOREST: LS-2
FOREST UNDERSTORY
WITHOUT WATERING BASIN: LS-4
SHEETS L-102 TO L-103
FOREST INFILL: LS-4
SHEETS L-102B TO L-103B
SCALE 1"=40'
SCALE IN FEET

IRRIGATION PLAN
L-104A
SHEET NUMBER
PAGE 408 OF 423
SANTA CLARA COUNTY
CALIFORNIA
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PHASE 1
LAKE SILVERA
IRRIGATION PLAN 4
Santa Clara Valley Water District
100% SUBMITTAL
NOT FOR
CONSTRUCTION
DESCRIPTION
DATE
IRRIGATION NOTES
SEE SHEET L-104B
FOR IRRIGATION NOTES AND LEGEND
SEE SHEET L-104A
FOR PLANTING AND SEEDING PLAN
SEE SHEET L-104B
KEY PLAN
SCALE: 1"=40'
SCALE IN FEET
FOR REACH 7A
IRRIGATION PLAN SEE
SHEETS L-24 TO L-29
MAINTENANCE ROAD
POINT OF CONNECTION
LS-12
LS-11
LS-10
LS-9
LS-8
LS-7
LS-6
LS-5
LS-4
LS-3
LS-2
LS-1
LLAGAS CREEK
CROSSING AT
OUTLET RIVER
STRUCTURE
LLAGAS CREEK
OUTLET CHANNEL
TEMPORARY MAINTENANCE
ACCESS (DIRT 2-TRACK PATH
WITHIN LIMIT OF PROJECT DISTURBANCE
OR REMOVAL REQUIREMENTS)
ACCESS ROAD
MATCHLINE FOR CONTINUATION SEE SHEET L-103A
MATCHLINE FOR CONTINUATION SEE SHEET L-101A

SANTA CLARA COUNTY
CALIFORNIA
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PHASE 1
LAKE SILVERA
PLANTING AND SEEDING PLAN 4
SHEET NUMBER
L-104B
PAGE 410 OF 423
Santa Clara Valley Water District
DESIGNED BY: O. Serafimova, K. Vangeet
DRAWN BY: C. Simmons, T. Chelsea, L. Howard
CHECKED BY:
CONTRACT NO.:
FILE NUMBER
SOUTH/NORTH NO.:
DRAWING PROJECT NO.
PLOT SCALE
PLOT DATE
DESCRIPTION
DATE
MARK
100% SUBMITTAL
NOT FOR
CONSTRUCTION
PLANTING AND SEEDING PLAN
PLANTING NOTES
1. FOR PLANTING CONTAINER SIZE, ON-CENTER SPACING, AND LEGEND, SEE SHEET GL-3
2. FOR PLANT QUANTITIES, SEE SHEET GL-10
3. FOR IRRIGATION PLAN, SEE SHEET L-104A
KEY PLAN
SCALE: 1"=40'
SCALE IN FEET
MATCHLINE: FOR CONTINUATION SEE SHEET L-103B
MATCHLINE: FOR CONTINUATION SEE SHEET L-103A
MARTIN MURPHY ROAD
ACCESS ROAD
SILVERA CREEK OUTLET CHANNEL
FOR REACH 7A PLANTING AND SEEDING PLAN SEE SHEETS L-24 to L-28
SYCAMORE FOREST: L8-4 SHEETS L-1018 & L-104B
SYCAMORE FOREST: L8-5
FOREST: L8-3 SHEETS L-1018 TO L-104B
FOREST INFILL: L8-6
FOREST UNDERSTORY WITHOUT WATERING BASIN: L8-10
FOREST UNDERSTORY WITHOUT WATERING BASIN: L8-11
FOREST UNDERSTORY WITHOUT WATERING BASIN: L8-7 SHEETS L-1018, L-103B, & L-104B
WILLOW FOREST: L8-4
WILLOW FOREST: L8-5
SYCAMORE FOREST: L8-7
FOREST: L8-6
HABITAT RESTORATION SIGN ON POST, TYP.
WETLAND: L8-10
WETLAND: L8-9
WETLAND: L8-8
WETLAND: L8-7
WETLAND: L8-6
WETLAND: L8-5
WETLAND: L8-4
WETLAND: L8-11
FOREST UNDERSTORY: L8-3
SYCAMORE FOREST: L8-2
SYCAMORE FOREST: L8-1

APPENDIX D

Land Manager Monitoring Report Template

CE Holder Monitoring Report Template

CE Holder Monitoring Checklist

R14288

CONSERVATION EASEMENT REPORTING TEMPLATES

The Conservation Easement Land Manager will prepare and submit annual reports to USFWS, USACE, CDFW, and RWQCB (hereinafter referred to as the "Permitting Agencies") by December 31 each year. After 5 years, with the concurrence of the Permitting Agencies, reporting may be reduced to every 5 years. Each report will cover monitoring activities of the current year (or previous 5 years for 5-year reports) and will pertain specifically to the Conservation Easement, but may contain incidental information pertaining to the entire Property not subject to agency review for purposes of the CE.

The Conservation Easement Holder will prepare and submit biannual reports to the Conservation Easement Land Manager by May 1 (spring report) and November 1 (fall report) each year. This biannual report will include a summary of the results of monitoring tasks conducted, make recommendations with regard to, (1) any habitat enhancement measures deemed necessary, (2) any problems that need attention and (3) any changes in the monitoring or management program that appear to be warranted. The biannual report will only cover the area included within the CE area.

The Biannual reports, prepared by the CE Holder, and Annual reports, prepared by the Land Manager, will include the following information:

Project Information

Project name; applicant information; permit file numbers for all agencies; CE Land Manager and the CE Holder contact information.

Conservation Easement Information

Site location (including a regional map); purpose of the CE; Property Fee and CE ownerships; Date of initiation of CE and the Management Plan; CE monitoring year.

Figures

Site map showing the CE area. Additional tables and figures will present monitoring results graphically, where applicable, to facilitate data interpretation and analyses.

Management Plan Tasks (pertaining to the CE area)

Table of Management Plan tasks.

Summary of Data Collected and Findings

Summary of current year's Management Plan monitoring tasks and results with the CE monitoring checklist(s) attached. Tables and figures will be included where applicable, to facilitate data interpretation and analysis.

Discussion: Problems Noted and Proposed Remedial Measures

Discussion of problems noted during the biannual (CE Holder) or annual (Land Manager) monitoring year, including an analysis of any non-compliance with terms of the CE, and a discussion of proposed remedial measures or recommendations to address these problems.

Suggested Management Plan Revisions (Land Manager Use Only)

Adaptive management recommendations and suggested revisions to the Management Plan will be discussed.

LAND MANAGER MONITORING REPORT TEMPLATE

CONSERVATION EASEMENT FOR THE LAKE SILVEIRA COMPENSATORY MITIGATION PRESERVE

Inspection Date

Property Owner, Conservation Easement Name, and Project Name

SCVWD is the Property Owner, Conservation Easement for the Lake Silveira Compensatory Mitigation Preserve, Upper Llagas Creek Flood Protection Project

History

The United States Army Corps of Engineers (USACE), San Francisco District Civil Works, and the local sponsor, Santa Clara Valley Water District (SCVWD) are constructing flood protection improvements to approximately 13.9 miles of stream within Llagas Creek and its tributaries, West Little Llagas Creek and East Little Llagas Creek. Llagas Creek is a tributary of the Pajaro River in south Santa Clara County within the communities of Morgan Hill, San Martin and Gilroy.

The Conservation Easement (CE) was established to conserve, protect, and compensate for unavoidable impacts to waters of the U.S. and critical habitat for the ESA listed steelhead trout. The CE area is comprised of 15.99 acres of land and water which includes 6.28 acres of pond (i.e. open water), 2.63 acres of seasonal wetlands, 0.32 acres of perennial marsh, and 0.21 acres of perennial water. Additionally, the CE area has 6.55 acres of upland habitat between the stream restoration site and the wetland creation in the existing condition. Once flow is restored, the CE will include approximately 2,000 linear feet of restored perennial stream in Llagas Creek which is critical habitat for South Central California Coast Steelhead Distinct Population Segment (S-CCC steelhead DPS). The Permitting Agencies are the San Francisco District of the U.S. Army Corps of Engineers, Region 9 of the U.S. Environmental Protection Agency, the National Marine Fisheries Service, the Central California Coast Regional Water Quality Control Board, and the California Department of Fish and Wildlife (CDFW) Bay Delta Region 3 (hereinafter referred to as the "Permitting Agencies").

To provide sufficient site protection for the CE, the SCVWD has identified a third party (i.e. non-profit resource management agency) CE Holder, Land Trust of Santa Clara Valley (LTSCV), to monitor the property and enforce site protections as appropriate. The LTSCV is a 501(c)3 non-profit corporation with a mission is to protect and preserve natural habitats and agriculture within Santa Clara Valley. The LTSCV has acquired, maintained, and preserved over 1,400 acres within the County, since its inception in 1998.

The SCVWD and LTSCV assume designated responsibilities for CE management, monitoring, and reporting subject to the terms of an agreement between the respective agencies. The SCVWD, the Land Manager, is responsible for annual monitoring for compliance with the terms of this conservation easement. The LTSCV, CE Holder, is responsible for biannual monitoring for compliance with the terms of this conservation easement.

This annual report by the Land Manager constitutes compliance with Covenants, Terms, Conditions and Restrictions (CTC&R) Section 4 (Grantee's Duties) of the easement, which states:

(a) To ensure that the Purposes of this Conservation Easement as described in Section 1 are being accomplished, Grantee and its successors and assigns shall:

(1) Perform, at a minimum on an annual basis, compliance monitoring inspections of the Easement Property as described in the Management Plan to identify any prohibited uses as set forth in section 3; and

(2) Prepare reports on the results of the compliance monitoring inspections, and provide these reports to the Permitting Agencies on an annual basis.

Assessor's Parcel Number Covering Conservation Easement Limits

APN 779-06-030

Owner Name, Phone Number, and Mailing Address

Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
Phone: (408) 265-2600

Land Manager Contact Person, Phone Number and Mailing Address

Santa Clara Valley Water District
Ms. Norma Camacho, Chief Executive Officer
5750 Almaden Expressway
San Jose, CA 95118
Phone: (408) 630-2084

Conservation Easement Monitoring Attendees and Affiliations:

LAND MANAGER:

LTSCV:

Date of Last Monitoring

DATE:

RESULTS

The CE Monitoring Checklist include monitoring of the Prohibited Uses and Grantor's Duties and their status. The results are summarized below.

Covenants, Terms, Conditions and Restrictions: Section 3. Prohibited Uses

List and describe any observed activities or evidence of uses identified as prohibited uses in the Conservation Easement. Please note if any violations were observed or if not indicate "no violations".

Covenants, Terms, Conditions and Restrictions; Section 5. Grantor's Duties

List and describe any observed activities or evidence of activities that indicate compliance or lack of compliance with Grantor's Duties. Please note if any violations were observed or if not indicate "no violations".

Corrective Action Taken by the Land Manager

List and describe any corrective actions performed by the Land Manager since the last report.

Suggested Management Plan Revisions

List and describe any suggested Management Plan revisions since the last report.

Adaptive Management Action Taken by the Land Manager

List and describe any adaptive management actions performed by the Land Manager since the last report.

Additional Notes and Comments

Prepared by: _____ _____ _____

Date: _____ _____ _____

Attachments: CE Monitoring Checklist, Conservation Easement Map, and Site Photographs

CE HOLDER MONITORING REPORT TEMPLATE

CONSERVATION EASEMENT FOR THE LAKE SILVEIRA COMPENSATORY MITIGATION PRESERVE

Inspection Date

Property Owner, Conservation Easement Name, and Project Name

SCVWD is the Property Owner, Conservation Easement for the Lake Silveira Compensatory Mitigation Preserve, Upper Llagas Creek Flood Protection Project

History

The United States Army Corps of Engineers (USACE), San Francisco District Civil Works, and the local sponsor, Santa Clara Valley Water District (SCVWD) are constructing flood protection improvements to approximately 13.9 miles of stream within Llagas Creek and its tributaries, West Little Llagas Creek and East Little Llagas Creek. Llagas Creek is a tributary of the Pajaro River in south Santa Clara County within the communities of Morgan Hill, San Martin and Gilroy.

The Conservation Easement (CE) was established to conserve, protect, and compensate for unavoidable impacts to waters of the U.S. and critical habitat for the ESA listed steelhead trout. The CE includes 15.99 acres of land and waters of the U.S. including approximately 3.34 acres of preserved wetlands, approximately 4.02 acres of created wetlands, approximately 7.90 acres (2000 linear feet of perennial stream-Llagas Creek) of critical habitat for South Central California Coast Steelhead (Distinct Population Segment). The Permitting Agencies are the San Francisco District of the U.S. Army Corps of Engineers, Region 9 of the U.S. Environmental Protection Agency, the National Marine Fisheries Service, the Central California Coast Regional Water Quality Control Board, and the California Department of Fish and Wildlife (CDFW) Bay Delta Region 3 (hereinafter referred to as the "Permitting Agencies").

To provide sufficient site protection for the CE, the SCVWD has identified a third party (i.e. non-profit resource management agency) CE Holder, Land Trust of Santa Clara Valley (LTSCV), to monitor the property and enforce site protections as appropriate. The LTSCV is a 501(c)3 non-profit corporation with a mission is to protect and preserve natural habitats and agriculture within Santa Clara Valley. The LTSCV has acquired, maintained, and preserved over 1,400 acres within the County, since its inception in 1998.

The SCVWD and LTSCV assume designated responsibilities for CE management, monitoring, and reporting subject to the terms of an agreement between the respective agencies. The SCVWD, the Land Manager, is responsible for annual monitoring for compliance with the terms of this conservation easement. The LTSCV, CE Holder, is responsible for biannual monitoring for compliance with the terms of this conservation easement.

This biannual report prepared by the CE Holder and submitted to the Land Manager constitutes compliance with the terms and conditions of the Management Plan Section 8.0 Task J-Reporting Sub-Task J1: which states:

"Prepare biannual reports by May 1st (spring report) and November 1st (fall report) in each given year. This biannual report will include a summary of the results of monitoring tasks conducted, make recommendations with regard to (1) any habitat enhancement measures deemed necessary, (2) any problems that need attention and (3) any changes in the monitoring or

management program that appear to be warranted. The biannual report will only cover the area included within the CE area."

Assessor's Parcel Number Covering Conservation Easement Limits

APN 779-06-030

Owner Name, Phone Number, and Mailing Address

Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
Phone: (408) 265-2600

CE Holder Contact Person, Phone Number and Mailing Address

Land Trust of Santa Clara Valley
Mr. Greg Leonard, Executive Director
605 Tennant Avenue, Suite H
Morgan Hill, CA 95037
Phone: (650) 799-9618

Conservation Easement Monitoring Attendees and Affiliations

LTSCV:

LAND MANAGER:

Date of Last Monitoring

DATE:

RESULTS

The CE Monitoring Checklist includes monitoring of the various CE sub-tasks, identification of any issues, including recommendations. *The monitoring and identification of any issues are summarized below.*

Recommendations by the CE Holder

List and describe any recommendations to the Land Manager since the last report.

Additional Notes and Comments

Prepared by: _____ _____ _____

Date: _____ _____ _____

Attachments: CE Monitoring Checklist, Conservation Easement Map, and Site Photographs

CONSERVATION EASEMENT MONITORING CHECKLIST

Name of Monitor(s): _____ Date: _____

CONSERVATION EASEMENT ITEM	STATUS
3. Prohibited Uses	
General: Any activity on or use of the Easement Property that is inconsistent with the Purposes of this Conservation Easement is prohibited. Without limiting the generality of the foregoing, the following uses and activities by Grantor, Grantor's agents, and third parties are expressly prohibited:	
(a) Unseasonable watering; use of fertilizers, pesticides, biocides, herbicides or other agricultural chemicals; weed abatement activities; incompatible fire protection activities; and any and all other activities and uses which may impair or interfere with the Purposes of this Conservation Easement, except for non-native invasive plant species management as specifically provided in the Management Plan.	
(b) Use of off-road vehicles and use of any other motorized vehicles except on existing roadways and trails identified in **Appendix E** of the Management Plan (Roads/Trails), is incorporated by this reference into this Conservation Easement as if fully set forth herein, and except as specifically provided in the Management Plan. Where the use of such off-road vehicles is solely for site management or monitoring activities, Grantee's use of the Easement Property shall not be limited to existing roadways and trails so long as such use is consistent with the Management Plan.	
(c) Agricultural activity of any kind, except grazing for vegetation management as specifically provided in the Management Plan.	
(d) Recreational activities, including, but not limited to hunting or fishing are prohibited. However, walking, jogging, running, hiking, and horseback riding are permitted for public, non-commercial, recreational activities of the Grantor and its invitees, so long as such activities are consistent with the Purposes of this Conservation Easement and specifically provided for in the Management Plan. Walking, jogging, running, hiking, and horseback riding use by the public shall be limited to the existing roads and trails as depicted in **Appendix E** of the Management Plan. Any future recreational use, as described herein, shall be consistent with the Purposes of this Conservation Easement and governed by a duly executed joint use	

	CONSERVATION EASEMENT ITEM	STATUS
	and management agreement between the Grantor and Grantee. Furthermore, receipt of all necessary permits and satisfaction of all regulatory requirements shall be conditions precedent for use of the Easement Property for such recreation. The Permitting Agencies' written approval of the joint use agreement shall be required prior to use of the Easement Property by Grantee and its invitees for recreational activities.	
(e)	Commercial, industrial, residential, or institutional uses.	
(f)	Any legal or de facto division, subdivision or partitioning of the Easement Property.	
(g)	Construction, reconstruction, erecting or placement of any building, billboard or sign, or any other structure or improvement of any kind, except for rehabilitation, repair, and maintenance of existing roads and trails identified in **Appendix E** of the Management Plan, creek crossing construction/rehabilitation, wetland side weir maintenance, wetland outlet control maintenance installation and repair of signage (i.e., trespassing, informational, mitigation, and open space interpretive signs), and habitat enhancement and management activities as specifically provided in the Management Plan. Permits such as a Streambed Alteration Agreement with the CDFW, Clean Water Act section 404 permit from the USACE, and Clean Water Act section 401 certification from the Regional Water Board must be obtained, if required.	
(h)	Depositing or accumulation of soil, trash, ashes, refuse, waste, bio-solids or any other materials except where construction materials may be temporarily stored in support of Easement Property management and maintenance activities as specifically provided in the Management Plan.	
(i)	Planting, introduction or dispersal of non-native or exotic plant or animal species except as approved by the California Department of Food and Agriculture's Biological Control Program for control of invasive species as specifically provided in the Management Plan and with the approval of the Permitting Agencies.	
(j)	Filling, dumping, excavating, draining, dredging, mining, drilling, removing or exploring for or extracting minerals, loam, soil, sand, gravel, rock or other material on or below the surface of the Easement Property, or granting or authorizing surface entry for any of these Purposes, except for infrastructure and facilities management and habitat enhancement of the Easement Property as specifically provided in the Management Plan.	

CONSERVATION EASEMENT ITEM	STATUS
(k) Altering the surface or general topography of the Easement Property, including but not limited to any alterations to habitat, building roads or trails, paving or otherwise covering the Easement Property with concrete, asphalt or any other impervious material except for (i) rehabilitation, repair and maintenance of existing roads and trails identified on **Appendix E** of the Management Plan, (ii) construction of roads and trails as generally depicted on **Appendix E** of the Management Plan, (iii) creek crossing construction/rehabilitation, and (iv) those other habitat management activities specified in the Management Plan.	
(l) Removing, destroying, or cutting of trees, shrubs or other vegetation, except as required by law for (i) fire breaks, (ii) maintenance of existing foot trails or roads, or (iii) prevention or treatment of disease, (iv) for rehabilitation, repair and maintenance of existing roads and trails identified on **Appendix E** of the Management Plan, (v) construction of roads and trails as generally depicted on **Appendix E** of the Management Plan, (vi) for creek crossing construction/rehabilitation, and (vii) for other tasks as specifically provided in the Management Plan.	
(m) Manipulating, impounding or altering any natural water course, body of water or water circulation on the Easement Property, and any activities or uses detrimental to water quality, including but not limited to degradation or pollution of any surface or groundwater. To the extent any of these activities are required for construction, rehabilitation, repair and maintenance of roads and trails identified on Exhibit C, creek crossing construction/rehabilitation, or other tasks as specifically provided in the Management Plan, the Grantor or its designated Grantee will obtain proper authorizations including permits such as a Streambed Alteration Agreement with the CDFW, Clean Water Act 404 permit from the USACE, and Clean Water Act Section 401 certification from the Regional Water Board, if required.	
(n) Without the prior written consent of Grantee, which Grantee may withhold, transferring, encumbering, selling, leasing, or otherwise separating the mineral, air or water rights for the Easement Property; changing the place or purpose of use of the water rights; abandoning or allowing the abandonment of, by action or inaction, any water or water rights, ditch or ditch rights, spring rights, reservoir or storage rights, wells, ground water rights, or other rights in and to the use of water historically used on or otherwise appurtenant to the	

CONSERVATION EASEMENT ITEM	STATUS
Easement Property, including but not limited to: (i) riparian water rights; (ii) appropriative water rights; (iii) rights to waters which are secured under contract with any irrigation or water district, to the extent such waters are customarily applied to the Easement Property; and (iv) any water from wells that are in existence or may be constructed in the future on the Easement Property.	
(o) Engaging in any use or activity that may violate, or may fail to comply with, relevant federal, state, or local laws, regulations, or policies applicable to Grantor, the Easement Property, or the use or activity in question.	
5. Grantor's Duties	
Grantor shall undertake all reasonable actions to prevent the unlawful entry and trespass by persons whose activities may degrade or harm the Conservation Values of the Easement Property or that are otherwise inconsistent with this Conservation Easement. In addition, Grantor shall undertake all necessary actions to perfect and defend Grantee's rights under Section 2 of this Conservation Easement, and to observe and carry out the obligations of Grantor under the Management Plan. Where Grantee has provided Grantor with reports on the results of the compliance monitoring inspections as set forth in Section 4(a)(2), above, Grantor shall provide these reports to the Permitting Agencies on an annual basis.	

ID	Checklist Questions	Location, Description of Condition, Potential Cause	Recommendations
Task A: Llagas Creek Restoration			
A1	Stream Bank Stability (**Stable, Slightly Stable, Moderately Unstable, Completely Unstable)**		
A2	Riparian Assessment **HABITAT**		
	Riparian Assessment **COVER**		
Task B: Inspection of Lake's Side Weir Inlet and Outlet Structure			
B1	Is vegetation, debris, or sediment impacting inlet structure?		
	Is there erosion in and around the inlet structure?		
	Does inlet structure appear to be operating correctly?		
	Does the inlet structure appear to need maintenance?		
	Is there vegetation, debris, or sediment at outlet structure?		
	Any erosion at the outlet structure?		
	Does the outlet structure appear to be operating correctly?		
	Does the outlet structure appear to need maintenance?		
	Is there any vandalism noted at either inlet or outlet structure?		
Task C: Non-Native Invasive Plant Species Management			
C1	Is there invasive vegetation within the restored Llagas Creek? What is the rating of the plant species identified according to Cal-IPC?		
	Is there a presence of invasive vegetation within the created wetlands? restored Llagas Creek? ? What is the rating of the plant species identified according to Cal-IPC?		

ID	Checklist Questions	Location, Description of Condition, Potential Cause	Recommendations
	Is there a presence of invasive vegetation within wetland islands? ? What is the rating of the plant species identified according to Cal-IPC?		
	Is there a presence of new exotic or invasive vegetation within littoral lake margins? ? What is the rating of the plant species identified according to Cal-IPC?		
Task D: Trash and Debris and Water Quality			
D1	Is there anthropogenic trash and debris in the restored Llagas Creek? If yes, please provide georeferenced data and description to accompany this checklist.		
	Is there anthropogenic trash and debris in the created wetlands? If yes, please provide georeferenced data and description to accompany this checklist.		
	Are there any anomalies, i.e. excessive turbidity, odor, sheen in the wetlands or stream? If yes, please describe and provide photos, description, and georeferenced data for location.		
	Is there evidence of illegal dumping or other non-point pollution degrading waterway?		If so, call SCVWD Pollution Hotline 888-510-5151
Task E: Wetland Creation			
E2	Is the size & the shape of the wetlands comparable to the as-built condition? (Fall Report only)		
E3	Are the turtle perches in working condition?		

ID	Checklist Questions	Location, Description of Condition, Potential Cause	Recommendations
Task F: Security: Vandalism and Trespass			
F1	Are there signs of vandalism with the CE area? Are there signs of illegal trespass?		
Task G: Signage Fencing and Gates			
G1	Document the condition of existing signage (i.e. Habitat restoration) within the CE area.		
	Document the condition of existing fencing protecting the CE area.		
	Document the condition of existing gates and locks protecting the CE area.		
Task H: Public Access			
H3	Monitor and document any public access issues that are observed if the City or County or other party develops the Property for a park purpose of trail connectivity, scenic protection, habitat conservation and open space preservation.		
	Numbers of pedestrians observed within the CE area?		
	Any evidence of off-trail recreational activity within the CE?		
	Evidence of damage to any infrastructure caused by Public Access?		
Task I: Reporting (Refer to CE Holder Monitoring Report Template for Details)			

APPENDIX E

Project Map

Anticipated Public Access Trail Alignments Within the Property

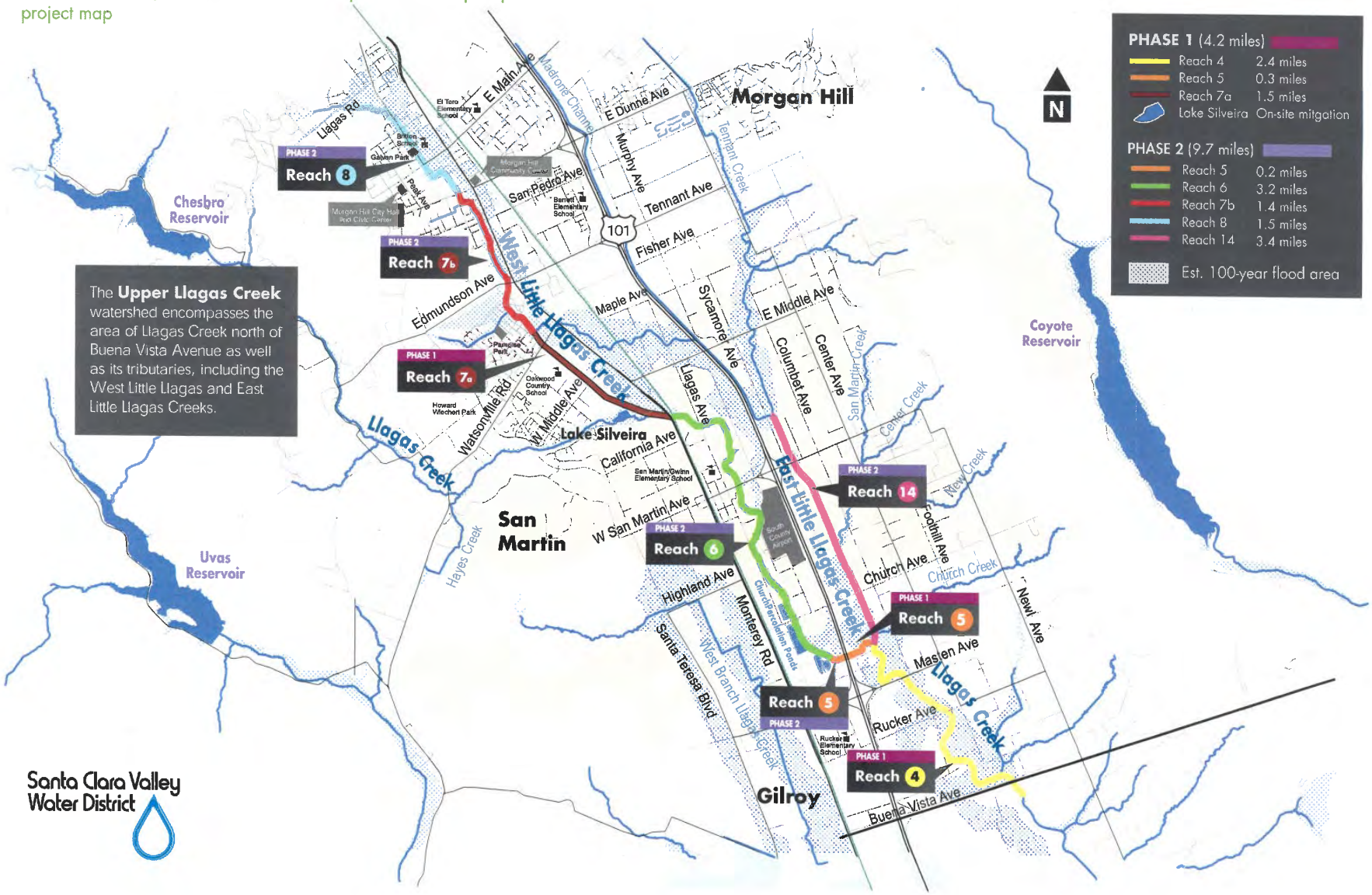
R14288

Project Map

R14288

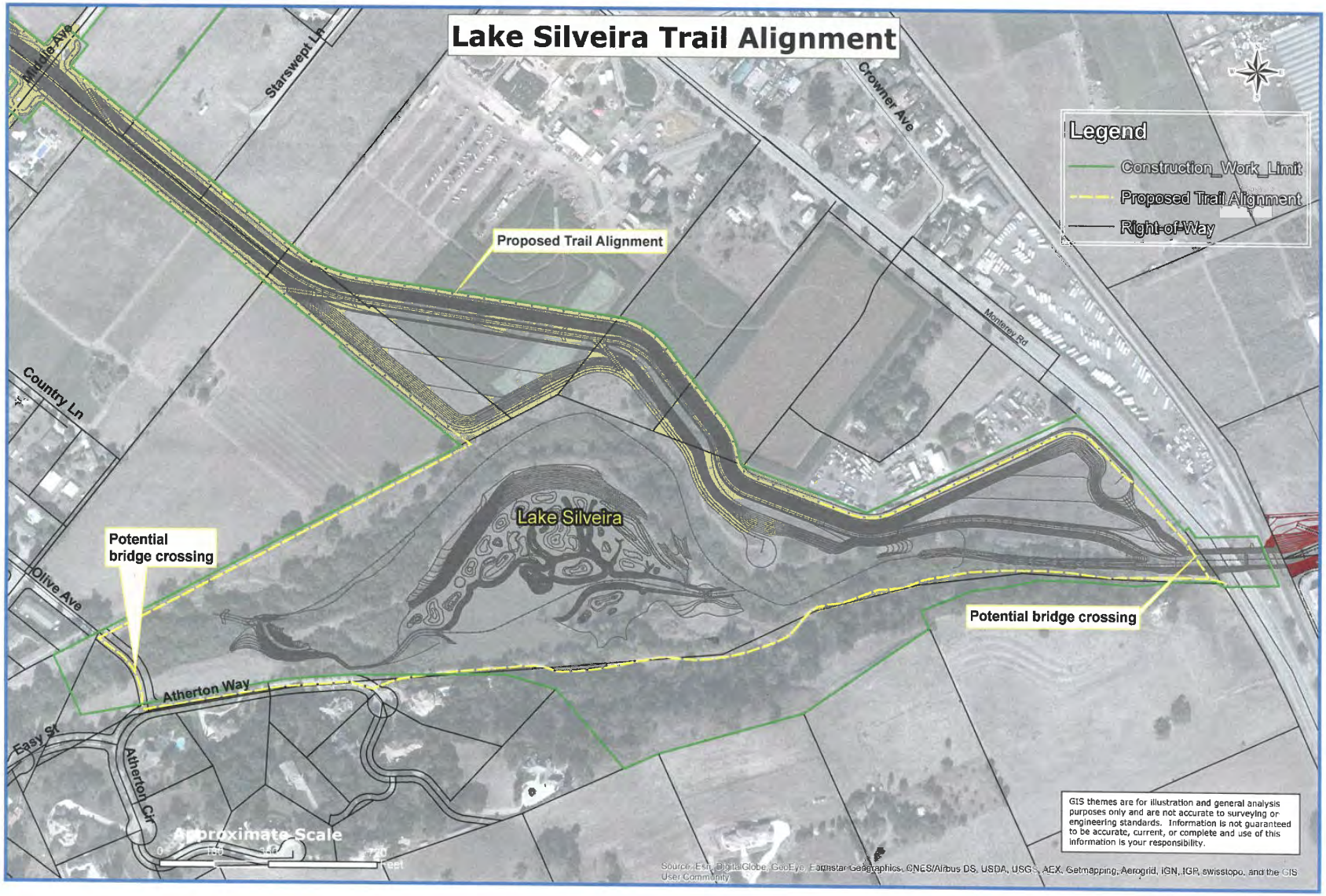
Upper Llagas Creek flood protection project

project map



Anticipated Public Access Trail Alignments Within the Property

R14288


Lake Silveira Trail Alignment
Starswept Ln
Crowner Ave
Legend
Construction_Work_Limit
Proposed Trail Alignment
Right-of-Way
Proposed Trail Alignment
Monterey Rd
Country Ln
Lake Silveira
Potential bridge crossing
Olive Ave
Potential bridge crossing
Atherton Way
Easy St
Atherton Cir
Approximate Scale
GIS themes are for illustration and general analysis purposes only and are not accurate to surveying or engineering standards. Information is not guaranteed to be accurate, current, or complete and use of this information is your responsibility.
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

APPENDIX F

Final Mitigation and Monitoring Plan (December 2018)

R14288

Upper Llagas Creek Flood Protection Project

Mitigation and Monitoring Plan

USACE Final—December 2018



Prepared by:

H. T. Harvey & Associates
Balance Hydrologics
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RESPONSIBLE PARTIES

The Santa Clara Valley Water District is the applicant for the Upper Llagas Creek Flood Protection Project, and Stephen Ferranti is its representative.

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LIST OF ABBREVIATIONS

°F	degrees Fahrenheit
ac	acre(s)
CAR	Coordination Act Report
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
cfs	cubic feet per second
CNDDB	California Natural Diversity Database
County	County of Santa Clara
CRAM	California Rapid Assessment Method
Creek	East Little Llagas Creek, West Little Llagas Creek, and Llagas Creek
CRLF	California red-legged frog
CTS	California tiger salamander
DBH	diameter at breast height
ft	feet
ft^2	square feet
GIS	geographic information system
HEP	Habitat Evaluation Procedure
HTH	H. T. Harvey & Associates
in	inch(es)
ln ft	linear feet
mi	miles(s)
MMP	mitigation and monitoring plan
NAVD	North American Vertical Datum
NRCS	Natural Resources Conservation Service
OHWM	ordinary high-water mark
PEM	emergent marsh
PFO	riparian forest
PLS	pure live seed
Project	Upper Llagas Creek Flood Protection Project
PSS	riparian scrub
RWQCB	Central Regional Water Quality Control Board
SCVWD	Santa Clara Valley Water District
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
YOY	young-of-the-year

SECTION 1.0 PURPOSE AND OBJECTIVE

The purpose of this document is to describe the proposed Compensatory Wetland and Riparian Mitigation and Monitoring Plan (MMP) for mitigating the potential impacts incurred by implementation of the Upper Llagas Creek Flood Protection Project (Project). The proposed mitigation measures set forth in this MMP are intended to compensate for Project impacts that would result from flood protection activities. The U.S. Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and Central Coast Regional Water Quality Control Board (CCRWQCB) jurisdictional habitats would be affected by grading the creek banks and low-flow channel; installing riprap, grade control structures, and other permanent fills in the creek channel; removing riparian trees; and dewatering associated with channel realignment and construction of a diversion channel.

The overall objective of this MMP is to ensure that there will be no net loss of wetland or riparian function and values resulting from either direct, indirect and/or cumulative impacts associated with construction of the Project. The second objective of this MMP is to demonstrate that functions and values have improved post construction for habitat impacted by construction of the flood control project. The USACE and Environmental Protection Agency (EPA) issued a Final Rule governing compensatory mitigation for activities authorized by permits issued by the USACE (Final Rule, USACE, 2008). This MMP is intended to substantially comply with provisions of that Final Rule.

1.1 INTRODUCTION

The Santa Clara Valley Water District (SCVWD), City of Morgan Hill, and U.S. Army Corps of Engineers (USACE) are partners in an effort to increase flood protection for urban areas of Morgan Hill, agricultural areas of San Martin, and unincorporated areas of Santa Clara County (Appendix A) by increasing the flood conveyance capacity of Llagas Creek. The Project involves constructing flood protection–related elements along portions of East Little Llagas Creek, West Little Llagas Creek, and Llagas Creek (collectively referred to as the Creek).

A Habitat Evaluation Procedure (HEP) was conducted by the U.S. Fish and Wildlife Service (USFWS) to quantitatively assess Project-related impacts on fish and wildlife resources, and determine appropriate habitat mitigation requirements (USFWS 2003a). This analysis informed USFWS's Coordination Act Report (CAR), which presented the original mitigation requirements to compensate for Project impacts (USFWS 2003b). The SCVWD was directed by the USACE and USFWS on October 6, 2011 to incorporate the CAR mitigation recommendations into the design of the Project. Specifically, impacts on wetland habitat would be mitigated via wetland creation at Lake Silveira (USFWS 2003b). While the direction from the USACE was to utilize the CAR as a guidance document, the objective for mitigation was to maximize ecological functions and values to improve biotic conditions within the watershed. Therefore, the CAR's compensatory mitigation recommendation for jurisdictional stream restoration and wetland creation at Lake Silveira was considered by resource agencies and the USACE as a viable opportunity to improve local conditions for flora and fauna. This approach is also consistent with the federal Final Rule. The USFWS acknowledged concurrence with the mitigation recommendation within the CAR in January 2014 after multiple collaboration meetings on the Project's progression (USFWS, 2014).

The SCVWD has done extensive analyses during the Project's design and development to create an on-site mitigation approach to stream restoration which is self-sustaining, will improve the natural succession of the riparian corridor and requires little intervention to manage for flood protection. Through the development of numerous detailed technical memoranda, consideration was given to creek restoration which would improve local conditions for Endangered Species Act (ESA) listed and non-listed species which are currently utilizing the stream corridor. Notable technical memoranda which influenced design and the mitigation approach included: Recommended Bankfull Geometries (Balance Hydrologics, 2012) which incorporated design recommendations for creation of bankfull geometry with regional curves developed for sediment transport models. This approach would arrest ongoing channel incision and limit future maintenance for channel capacity. Additionally, the SCVWD requisitioned a report of the historic ecology in South Santa Clara Valley to help understand what habitat types existed prior to creek degradation and what would be the potential for restoration of Llagas Creek in its current state (Grossinger et. al, 2008). The planning process also included a review of existing vegetation types, as well as channel roughness and flood capacity constraints, detailed avoidance and minimization strategies for sycamores and other high-quality riparian vegetation, hydrology, soil analysis, plant growth potential and requirements. The culmination of this comprehensive investigation has resulted in this MMP, which represents the mitigation approach to compensate for impacts to jurisdictional riparian, wetland and aquatic habitats by Project construction and maintenance for flood management.

Proposed mitigation and enhancement measures included in this document are as follows:

- Riparian, wetland, and aquatic habitat restoration
- Steelhead lifecycle monitoring of Llagas and Uvas creeks
- Girdling of nonnative trees to create bat habitat snags
- Installation of upland log piles
- Installation of turtle perches at Lake Silveira
- Removal of invasive plants
- Remediation of contaminated soils and removal of riprap, concrete and legacy trash and debris
- Installation of instream complexity structures
- Reach 8 diversion tunnel potential bat habitat

Riparian habitat impacts would be mitigated via riparian restoration along and above the banks of the newly constructed channel, in canopy gaps along the undisturbed Creek banks (hereafter referred to as infill planting areas), and in select locations at Lake Silveira. Riparian impacts would also be mitigated via contaminated soils remediation, riprap and concrete removal, and Himalayan blackberry and giant reed removal/control. Wetland impacts would be mitigated via habitat creation onsite/in-kind at Lake Silveira and *in situ* at impact sites through natural reestablishment. Aquatic impacts would be mitigated primarily through natural reestablishment of USACE jurisdictional habitats after channel construction and creation of new USACE

jurisdictional habitats and restoration of approximately 2,000 linear feet of Llagas Creek as well as additional measures described in detail within the document.

The SCVWD's Board of Directors certified the Final Environmental Impact Report (FEIR) for the Upper Llagas Creek Project on June 10, 2014. As required by California Environmental Quality Act statutes and guidelines, the FEIR describes in detail many elements of the Project including: background and purpose, objectives, channel design features, affected environment, an evaluation of sensitive species and wildlife habitats, and an alternatives analysis.

1.2 PROJECT DESCRIPTION

The Project is 13.9 miles of Llagas Creek, East/West Little Llagas Creek. The Project description includes these constructed elements which are summarized here but as-builts can be found in Appendix E.

1.2.1 Flood Protection Features

- Construction of a high flow diversion tunnel through Nob Hill within Reach 8;
- Widening (generally by constructing along one bank) and deepening the creek in all reaches except a portion of Reach 8 where a tunnel will divert high flows through downtown Morgan Hill;
- 1.25-mile-long diversion channel on West Little Llagas Creek Reach 7A;
- Relocation/replacement of utilities within the Project construction footprint;
- Exhume buried bridge crossings in Reach 7A at Watsonville Road and West Middle Avenue;
- Relocation/replacement of 3 residences (3) and other structures within the Project's right of way (ROW);
- Adding a parallel culvert at four road crossing locations in Reach 7B;
- Culvertizing a section of West Little Llagas Creek along Hale Ave in Reach 8; and
- Removal of a cinder block/brick wall that constricts flows at the Llagas Road culvert; cleaning of sediment, rocks, dirt and debris for all culverts and under the Hillwood Lane bridge in Reach 8.
- In Reach 7A, there is no existing creek most of this reach is currently agricultural/vacant lands. A new diversion channel would be constructed (Reach 7A) that connects to the upstream Reach 7B; diverting flows from West Little Llagas Creek. West Little Llagas Creek flows would be diverted into the newly constructed diversion channel at a location 0.2 mile south of South La Crosse Drive.

- A 250-foot-long sediment trap and an inlet weir (diversion) structure would be constructed in the 600 feet of West Little Llagas Creek between Wright Avenue and Hillwood Lane. A new 18-foot-wide maintenance/access road would be constructed along the sediment detention basin at the top of the south bank of the creek between Hillwood Lane and Wright Avenue.

- A 36-inch-diameter reinforced concrete pipe (RCP) culvert would be constructed paralleling Hale Avenue, stretching from the weir structure 2,400 feet downstream and discharging into existing West Little Llagas Creek south of West Main Avenue. The 2,400-foot-long earthen section of West Little Llagas Creek between Wright Avenue and West Main Avenue would be replaced with the RCP culvert. The RCP culvert would maintain low flows up to 50 cfs in the existing creek through the downtown area without exceeding the creek's capacity in a 100-year event.

- Two high-flow diversion culverts would be constructed. One would be 10 feet by 8 feet in size, while the other would be 10 feet by 9 feet in size. Both culverts would extend from the weir structure parallel to Hale Avenue and stretch 2,750 feet to Warren Avenue where they would convey high flood flows to the tunnel diversion.

- A 2,100-foot-long tunnel diversion would be constructed, extending under Nob Hill between Warren Avenue and Del Monte Avenue, continuing under Nob Hill Terrace. This modification also includes constructing box culverts for transition to and from the tunnel diversion, and construction of a tunnel portal at the upstream end.

- Also, at the boundary of Reach 8/Reach 7B the following would be modified:

    - Double box culverts would be constructed; one 10 feet by 8 feet in size, and the other 10 feet by 9 feet in size, from the tunnel outlet at West Dunne Avenue to downstream of Ciolino Avenue where high flows from the diversion will confluence with the low flows within existing West Little Llagas Creek.

1.2.2 Geomorphic Features and Creek Stabilization

- Construct sinuous low-flow creek channel, with benches at bankfull elevation;

- Grade control structures constructed of natural boulders, in all reaches to arrest channel incision;

- Removal of a dysfunctional Denil style fish ladder in Reach 4. Creek modifications include Reaches 4, 5, 6, 7B, 8 and 14 would consist of widening and deepening, and would result in a cross section with a low-flow creek channel, bankfull creek channel, benches, and engineered stable banks that are typically 3 Horizontal(H):1 Vertical (V) slope. Creek benches would typically be located on at least one side and sometimes both sides of the creek, ranging from 9 to 21 feet wide. The creek bench is set at approximately the 2-year-flow event elevation. The creek benches provide opportunities for natural deposition of

sediments during runoff events and also potentially provide a surface for revegetation by way of natural recruitment and, if appropriate, for active plantings. In some areas (e.g. where large meanders, crossings, and confluences occur) the benches would be eliminated to allow for additional flow capacity and/or to allow natural deposition patterns to form. The total top width of the creek would be on the order of 125 feet excluding the maintenance road itself, but actual widths at any given location are variable depending upon the hydraulic design capacity. This is about 30 to 60 feet wider than the existing creek. Creek depths would range up to approximately 14 feet, which is typically about 4 to 5 feet deeper than existing conditions.

1.2.3 Habitat Enhancement Features

- Aquatic habitat enhancements (instream complexities) in Reaches 4, 5, 6, and 7A.
- A drainage swale/filter strip to collect surface runoff from surrounding agricultural land in Reach 7a and in areas in Reach 4.
- Wetland creation at Lake Silveira and restoration of approximately 2,000 linear feet of abandoned channel of Llagas Creek.
- Construction of turtle basking perches and islands within Lake Silveira.
- Installation of a stream gage in Reach 6 to accurately assess flows downstream of wetland creation and stream restoration site post construction.
- Installation of a fish screen in Reach 6 at Church Pond recharge facility.
- Girdling of non-native trees (i.e. tree of heaven) for bat habitat.
- Installation of log piles for upland habitat.
- Removal of invasive vegetation (i.e., Himalayan Blackberry and *Arundo donax*).
- Remediation of sites outside of the flood protection project footprint where concrete rubble, trash and debris or steep slopes has otherwise limited native vegetation colonization.
- Installation of bat and owl boxes.
- Infill plantings on areas of the creek where the project will not disturb soil but where the riparian corridor could benefit from the addition of riparian vegetation to improve the vertical and horizontal complexity of the riparian corridor. Instream habitat enhancement features including a sinuous low-flow creek channel, pools, large woody debris placements, boulder placements, root wad structures, and wing log deflectors, are to be installed in Reaches 4, 5, 6, and 7A.

1.2.4 Maintenance Features

- Permanent access roads at top of both banks in all reaches, except for a few locations where not feasible.
- Culverts at two tributary drainages where they confluence with Reach 6 and three drainages in Reach 14 to provide for continuous maintenance access.
- Construction of a sediment detention basin and inlet weir in Reach 8.
- Minor vegetation maintenance activities after construction to ensure the ecological integrity of revegetation sites as well as minor maintenance of other features, such as storm drain outfalls during construction. Maintenance/access roads would be provided along each reach, with roads at the top of the bank on one or both sides of the creek for winter management, maintenance, and inspection activities. The maintenance road would be 18 feet wide, designed for all-weather access, and would be aggregate-based. This 18-foot maintenance road width is needed to allow equipment with outriggers to fully swing around and reach out as far as the center line of the creek. The maintenance road construction involves some minor excavation. Access ramps would be constructed at various locations along the Project alignment to provide access to the creek bottom. Construction of access ramps and construction access areas within the Project site are strategically positioned to minimize the need for vegetation removal.

1.2.5 Construction Phasing

Project construction will occur in two phases. Phase 1 construction consists of channel modifications to Reach 4, Reach 7a, Reach 5 downstream of U.S. Highway 101, Reach 6 underneath Monterey Road, lower portion of Reach 14, and restoration-related construction at Lake Silveira.

Phase 2 construction consists of channel modifications to the remaining portion of Reach 5, Reach 6 downstream of Monterey Road, Reach 7b, Reach 8, and most of Reach 14 (upstream of Church Creek). Phase 1 and Phase 2 are each expected to occur over 1 to 3 years. The Phase 1 and Phase 2 transition areas are located in Reaches 5 and 14.

The phasing of construction will allow for establishment of wetland vegetation and early succession stage riparian vegetation by planting and natural recruitment prior to impacts incurring in the second stage of construction.

1.3 PROJECT LOCATION AND EXISTING ECOLOGICAL CONDITIONS

The Project site is located approximately 25 mi southeast of San Jose in the communities of Morgan Hill, San Martin, and Gilroy, Santa Clara County, California. Because the Project site is located in a valley landform, topography is relatively flat and slopes gently from northwest to southeast. Elevations range from approximately 370 ft. above sea level at the northern end of Reach 8 to approximately 220 ft. above sea level at the southern end of Reach 4. The Project is located on the Morgan Hill, Mount Madonna, and Gilroy U.S. Geological Survey 7.5-minute quadrangle maps. The average annual temperature in the region ranges from a low of 46.4°F to

a high of 74.5 °F, and the average annual precipitation is approximately 20.69 inches (in) measured at the Gilroy station (CA3417) (NRCS 2012).

The Llagas Creek watershed collects water, sediment, and other stream borne materials primarily from the eastern flank of the Santa Cruz Mountains; Chesbro Reservoir impounds water, sediment, and woody material from the upper western watershed. Small tributaries also emanate from the western side of the Diablo Range, joining the Creek on the Santa Clara Valley floor. The Creek flows generally in a southeasterly direction and is one of the tributaries of the Pajaro River draining a watershed area of approximately 104 square mi. The Pajaro River flows west into Monterey Bay. Flows are intermittent in Reaches 4, 5, 7, 8, and 14 and perennial through a portion of Reach 6, to approximately San Martin Avenue in most years.

The Llagas Creek watershed has a history of channel incision and has incised 12 to 20 ft. below the adjacent floodplain elevation (Balance Hydrologics, Inc. 2012) because of the combined effect of various land use changes:

- Conversion of the Santa Clara Valley's oak savanna habitat to agriculture during the early years of the Gold Rush, which increased the number of ditches and connections between mountains and axial valley streams, such as Llagas Creek (Grossinger et al. 2008)

- Construction of Chesbro Dam and Reservoir in the mid-1950s, which likely slowed the delivery of sediment (Balance Hydrologics, Inc. 2012)

- Drainage improvements, including the narrowing of channels at bridge crossings and active channel deepening as a means of flood control (Grossinger et al. 2008)

- Urbanization and associated increases in impervious surfaces and channelization (Grossinger et al. 2008)

In most cases, flow and deposition during recurrence events not much greater than the 2-year flow are now disconnected from the valley floor. Alluvial terraces, which are generally narrow, have formed in the incised channel, but do not serve the same functions as the formerly wide floodplains. Below the dam, rainfall induced creek flows rise and fall more rapidly, affected by urban impervious surfaces and storm water drainage infrastructure.

Vegetation ranges from dense, relatively high-quality riparian forest in Reach 6 to almost exclusively ruderal and annual grassland habitat in Reach 14. A large proportion of the Project site has been degraded as a result of invasion of nonnative species such as Himalayan blackberry (*Rubus armeniacus*) and giant reed (*Arundo donax*).

1.3.1 Reach 8

Reach 8 is an approximately 1.6 mi long trapezoidal earthen channel that flows intermittently and is located along West Little Llagas Creek in downtown Morgan Hill between Llagas Road in the north to West Dunne Avenue in the south (Appendix A). This reach is highly urbanized, intermittent and constrained by development with homes, roads, or other buildings next to the channel. The average channel width at the top-of-bank varies from 12 to 50 ft. Conveyance capacity is approximately 300 cubic feet per second (cfs), which is less than the 10% flood event. Some sections of the channel are open concrete and other sections are underground, passing through 11 single-box

culverts, all of which are undersized for the 1% flow. Culverts are located at the Llagas Road/Llagas Creek Drive intersection, Llagas Creek Drive, Hillwood Lane, the Wright Avenue/Hale Avenue intersection, Main Street, Warren Avenue, the West 2nd Street/Del Monte Avenue Intersection, West 2nd Street, West 3rd Street, West 4th Street, and West 5th Street. The open stream channel bed consists of gravel, sand, silt, and clay, and varies in character from unvegetated sections to areas with dense perennial emergent wetland vegetation, such as cattail (*Typha* sp.) and bulrush (*Schoenoplectus* sp.). The banks are generally vegetated with annual grassland species, although a large section of this reach has a tree canopy composed of exotic trees and native tree species, such as coast live oak (*Quercus agrifolia*) and valley oak (*Q. lobata*). A diversion tunnel will be constructed as part of the Reach 8 work (see project description).

1.3.2 Reach 7b

Reach 7b is an approximately 1.4 mi long, intermittent, trapezoidal earthen channel and is located along West Little Llagas Creek in an urban/residential area of Morgan Hill between West Dunne Avenue in the north and South La Crosse Drive in the south (Appendix A). The channel width is constrained by right-of-way limitations. It averages 15 ft. wide at the top-of-bank in the northern portion of the reach and 75 ft. wide at the top-of-bank in the southern portion of the reach. The Creek passes through seven reinforced-concrete box culverts, three of which are undersized for the 1% flow. Existing culverts include a quadruple-box culvert at South La Crosse Drive; triple-box culverts at North La Crosse Drive, West Edmundson Avenue, Edes Street, and Cosmo Avenue; and a culvert at Spring Avenue. A 674-ft long single-box culvert conveys flows under the Morgan Hill Plaza Shopping Center from West Dunne Avenue to Ciolino Avenue. The stream bed is composed of gravel, sand, silt, and clay, and contains seasonal wetland vegetation, such as tall flatsedge (*Cyperus eragrostis*). The banks and undisturbed areas beyond the top-of-bank support annual grassland species. Extensive portions of this reach have no tree canopy. Where tree canopy is present, it consists of a combination of planted exotic trees and native trees.

1.3.3 Reach 7a

Reach 7a extends 1.6 mi from South La Crosse Drive to the north to Reach 6 just upstream of the Monterey Road Bridge in the south (Appendix A). Most of the reach is agricultural fields with no existing channel except for a 0.3-mi length of trapezoidal constructed earthen channel at the north end of the reach. The earthen diversion channel proposed by the Project would be approximately 1.3 mi long and divert flows from West Little Llagas Creek upstream of Watsonville Road to Llagas Creek downstream of Lake Silveira at Monterey Road.

In the channelized northern portion of Reach 7a, flows are intermittent; the streambed is composed of gravel, sand, silt, and clay; and vegetation is primarily nonnative annual grassland. Vegetation in the non-channelized southern portion of Reach 7a consists of row crops and annual nonnative grassland on fallow lands.

1.3.4 Reach 6

Reach 6 is a natural earthen channel approximately 3.7 mi long from Monterey Road in the north to 700 feet (ft.) upstream of U.S. Highway 101 in the south (Appendix A). Land use adjacent to the Creek varies from commercial and residential in the north to

agricultural in the south. Reach 6 carries the discharge of Llagas Creek downstream of Lake Silveira. This reach is perennial with flows terminating around San Martin Avenue in most years with flow continuously supported by releases from Chesbro Reservoir. The average width at the ordinary high-water mark (OHWM) varies between 15 and 30 ft. It meanders considerably between Monterey Road and South County Airport. There are bridge crossings at Monterey Road, the Southern Pacific Railroad tracks, Llagas Avenue, San Martin Avenue, and Church Avenue. Flows from Reach 6 are diverted to the SCVWD Church Avenue percolation ponds at the southern extent of the reach to recharge the aquifer.

This reach supports a mix of native and nonnative vegetation along the stream banks. The riparian tree canopy is dense in the upper portion of the reach and becomes patchy in the lower portion. Tree canopy is provided by native species, such as coast live oak, valley oak, Fremont cottonwood (*Populus fremontii*), California sycamore (*Platanus racemosa*), and native willows (*Salix* sp.), and by nonnative species, such as eucalyptus (*Eucalyptus* sp.). The understory is heavily infested with Himalayan blackberry, and giant reed is also prevalent.

1.3.5 Reach 5

Reach 5 is a natural earthen channel approximately 0.4 mi long from 700 ft. upstream of U.S. Highway 101 in the west to the Llagas Creek/East Little Llagas Creek confluence in the east (Appendix A). The average width at the OHWM is 15 ft. Bridges cross this reach along the north and south lanes of U.S. Highway 101.

Flows in Reach 5 are intermittent and, as a consequence, riparian vegetation is limited along this segment of the Creek. Where tree canopy is present, it consists of a combination of planted exotic trees, such as eucalyptus and Monterey pine (*Pinus radiata*), and native trees, such as coast live oak. The stream bed is composed of gravel and sand, and supports native riparian shrubs, such as mulefat (*Baccharis salicifolia*). The banks and undisturbed areas beyond the top-of-bank support annual grassland species.

1.3.6 Reach 4

Reach 4 is an approximately 2.4-mi-long natural earthen channel and is the most downstream reach of the Project. It extends along Llagas Creek from the Llagas Creek/East Little Llagas Creek confluence in the north to 1,000 linear feet (ln ft.) south of Buena Vista Avenue in the south (Appendix A). This reach contains several sinuous bends, particularly near Masten Avenue and Buena Vista Avenue. The average width at the OHWM is 30 ft. There are bridge crossings at Masten Avenue, Rucker Avenue, and Buena Vista Avenue.

Flows in Reach 4 are intermittent. The stream bed is composed of cobbles, pebbles, and sands, and supports sparse mature vegetation, such as mulefat. The banks support a mixture of native and exotic tree species, and although somewhat patchy, forest habitat in this reach is more extensive than in any other reach. Eucalyptus is particularly prevalent throughout Reach 4.

1.3.7 Reach 14

Reach 14 is a constructed earthen channel that extends approximately 3.4 mi along East Little Llagas Creek from just downstream of the Corralitos Creek confluence in the north to the Llagas Creek confluence in the south (Appendix A). It is an excavated earthen channel that was straightened and realigned by the California Department of Transportation in the 1970s during construction of U. S. Highway 101. Agriculture is the dominant land use in the vicinity of Reach 14, although residential and commercial buildings are also present.

This reach averages 25 ft. wide at the OHWM and 70 ft. at the top-of-bank. The channel contains box culverts where the creek intersects East San Martin Avenue and Church Avenue. Flows in Reach 14 are intermittent, and the reach is typically dry in the summer and fall months. The bottom of the channel is composed of cobbles, gravel, sand, and silt, and contains a combination of annual grassland species and bare ground. Vegetation on the stream banks is primarily annual grassland with a few scattered native trees, such as coast live oak.

1.3.8 Lake Silveira and Historic Channel

Llagas Creek flows through Lake Silveira just upstream of the Monterey Road crossing. This approximately 8-ac in-channel artificial lake was formed in the late 1970s, when a berm separating the Creek from an off-channel abandoned quarry was breeched. This resulted in dewatering an approximately 2,000 ft. long segment of Llagas Creek along the northern edge of Lake Silveira (Appendix A). This section of the Creek is referred to as the historic channel. Flows are reintroduced to Llagas Creek at the lake's outlet at its eastern extent. The shoreline of the lake is composed of barren cobble; emergent wetland vegetation (e.g., cattails); and woody riparian species, such as willows and mulefat. There is a mix of native and nonnative vegetation along the banks of the historic channel. The riparian tree canopy is dense and composed of native species, such as coast live oak, valley oak, Fremont cottonwood, California sycamore, and willow. The understory is heavily invaded by the nonnative species Himalayan blackberry.

Llagas Creek flows through the approximately 10 ft. deep Lake Silveira just upstream of the Monterey Road crossing. Releases from Chesbro Reservoir keep this reach of the Creek and Lake Silveira perennially wetted with the exception of the historic channel to the north of the Lake. The historic channel still conveys flow during high-flow events (Balance Hydrologics, Inc. 2013a).

Two aquifers composed of unconsolidated alluvium are present under the valley floor in the vicinity of the Lake Silveira/historic channel complex (Balance Hydrologics, Inc. 2013b). A shallow aquifer composed of younger alluvium occurs 8 to 12 ft. below the valley floor east of Lake Silveira. A deeper aquifer composed of older alluvium is present 20 to 30 ft. below the valley floor. The two aquifers are separated by a 12 to 20 ft. thick unit composed of cohesive gravelly clays of lacustrine origin. Results of an aquifer pump test conducted by Balance Hydrologics, Inc. (2013b) indicate that these aquifers are fundamentally unconfined and that the gravelly clay layer, which acts as an aquitard, is not continuous.

SECTION 2.0 IMPACTS ON JURISDICTIONAL HABITATS

The impact analysis was completed by overlaying the active work types on the construction plans (including clearing and grubbing, grading, and tree removal) with the existing conditions, including vegetation, topography, and tree survey data. Impacts on potential jurisdictional habitats were grouped into temporary and permanent impacts based on the nature of the impact and vegetation type altered. All removal of woody vegetation, all replacement of vegetation with hardscape features, and all fills to potential jurisdictional areas were considered permanent impacts. Work that would result in the expansion of CDFW, USACE, and RWQCB jurisdictional areas, and would not result in the removal of woody or non-woody vegetation was considered a temporary impact.

Detailed impact maps for riparian, grasslands, wetlands and habitat have been created for the Project and can be found in Appendix B of this document. Owing to the size and complexity of the Project, it is difficult to graphically represent impacts in one combined figure. The SCVWD assessed impacts on riparian and grassland habitats by first characterizing the riparian vegetation throughout the Project site. This layer included riparian vegetation polygons categorized by species. HTH refined these polygons and then collapsed them into the broader categories of native and nonnative riparian, wetland, and grassland habitats.

Further mapping and refinement of the existing vegetation layers was conducted to fill data gaps, maximize mapping precision, and fully capture all potential Project impacts. This mapping was accomplished both remotely by digitizing aerials where vegetation signatures were clear and by field-mapping.

2.1 SUMMARY OF JURISDICTIONAL HABITATS

Riparian Habitat. Riparian habitat is composed of native and nonnative woody plant species occurring in areas hydrologically influenced by the Creek. This habitat is generally found in the bed and banks of the Creek, but includes trees and shrubs with canopies that extend beyond the bed and banks. Overbank riparian habitat in some cases reflects areas historically wetted by creek flows that are now isolated from all but the most extreme flood flows. The structure of this habitat varies throughout the Project site, ranging from single, isolated trees or shrubs with sparse to no herbaceous understory to dense, multiple-layered forest or scrub canopy. Tall tree species include red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), coast live oak, valley oak, black walnut (*Juglans hindsii*), Fremont cottonwood, eucalyptus, and California sycamore; shorter tree species include blue elderberry (*Sambucus nigra* ssp. *caerulea*), California buckeye (*Aesculus californica*), and sandbar willow (*Salix exigua*); and shrub species include mulefat, coyote brush (*Baccharis pilularis*), Himalayan blackberry, California rose (*Rosa californica*), and giant reed, among others.

Grassland Habitat. Grassland habitat on the Project site is located on the Creek channel banks and slopes. This habitat type is composed of nonnative annual grasses, such as wild oat (*Avena* sp.), ripgut brome (*Bromus diandrus*), barley (*Hordeum* sp.), and Italian ryegrass (*Festuca perennis*), and forbs such as mustards (*Brassica* sp.), clovers (*Trifolium* sp.), and filaree (*Erodium* sp.). Many areas have been degraded and are dominated by invasive species, such as poison hemlock (*Conium maculatum*) and yellow star-thistle (*Centaurea solstitialis*), which significantly lowers the ecological value of this habitat. Areas where the Creek banks occur

under bridges were characterized as grassland even though vegetation cover tends to be sparse in these areas.

Wetland Habitat. Wetland habitat consists of both perennial marshes and seasonal wetlands. These habitats are generally found on the edges of the active channel; however, some span the entire channel bed (H. T. Harvey & Associates 2014b). Perennial marsh habitat generally occurs in the perennially flowing reaches of the Creek and is composed of native species such as cattail, California bulrush (*Schoenoplectus californicus*), tall flatsedge, and fringed willowherb (*Epilobium ciliatum*). Seasonal wetland habitat is generally located in the intermittently flowing reaches of the Creek and are composed of nonnative species such as curly dock (*Rumex crispus*), cocklebur (*Xanthium strumarium*), and dallisgrass (*Paspalum dialatatum*). The SCVWD has conducted a preliminary wetland delineation which includes Lake Silveira and portions of Llagas Creek and its tributaries within the Project limits. The surveyed area encompassed approximately 200.16 acres in the surveyed areas, which included the creek bed within these reaches and up to the top of bank, and associated upland riparian canopy.

Aquatic Habitat. Aquatic habitat on the Project site occurs within the limits of the active channel of the Creek and Lake Silveira. For the purposes of this impact assessment, aquatic habitat was defined as any aquatic habitat that is under USACE jurisdiction, which includes intermittent and perennial streams, pond habitat, culverts, and drop structures. Emergent marsh plant species, such as cattail and bulrush, occur sporadically along the water's edge in the perennially wetted portions of the Project site (e.g., Lake Silveira and Reach 6), whereas floating and submerged aquatic species are uncommon or absent. In the portions of the Project site where flows are intermittent, the streambed is generally unvegetated and has substrate composed of coarse materials ranging from sands to cobbles, or the streambed is sparsely vegetated with various mesic nonnative herbaceous species, including cocklebur and Italian ryegrass.

Sycamore Woodland Habitat. Sycamore woodland habitat on the Project site is generally located in the riparian corridor and is composed of mature, widely spaced California sycamore trees that make up at least 5% of the absolute cover of the contiguous tree canopy layer. Other species co-occurring with California sycamore include coast live oak, valley oak, sandbar willow, red willow, arroyo willow, and black walnut. In most cases, sycamore woodland is a subset of riparian habitat.

California sycamore trees provide important habitat; however, degradation as a result of channel incision and hydrologic modifications have substantially affected their habitat value. The independent science advisors for Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan suggest that sycamore woodland restoration efforts should be focused in areas that exhibit hydrologic conditions necessary to support this habitat, such as the intermittent braided side channels of Coyote Creek (CBI 2006). The authors also state that Llagas Creek has limited potential for restoration of sycamore woodland because the riparian corridor has been narrowed as a result of suburban development, agricultural use, and the construction of leveed channels. California sycamore restoration is further complicated by hybridization with London plane trees (*Platanus hybrid*), a commonly planted landscape tree in urban and residential areas. Vegetation staff at SCVWD believe it is very difficult to impossible to find pure California sycamore seed. Restoration may have to experiment with vegetative establishment (e.g., cuttings) or have seeds tested before planting.

To establish an accurate basis for an impact analysis on this habitat type, a detailed California sycamore tree survey was conducted in November 2014 by HTH's ecologist Maya Goklany to

refine the original tree survey data provided by the SCVWD and to accurately assess impacts on this species.

Sycamore woodland habitat represents a portion of the total riparian habitat throughout the Project site, but also includes sycamores that are adjacent to CDFW jurisdictional habitat (e.g., trees outside the bed and banks of the Creek). For riparian forest habitat to be considered sycamore woodland, California sycamore must account for more than 5% absolute cover of the tree layer with Fremont cottonwood being less than 5% (Sawyer et al. 2009).

The extent of sycamore woodland habitat was determined by mapping the canopy of individual California sycamore trees and forest habitat immediately adjacent to sycamore woodland (Sawyer et al. 2009).

2.2 QUANTIFICATION OF IMPACTS

All trees within the project footprint were tagged, measured and identified to species. The 65% plans were laid over the mapped trees. Canopy associated with these removed trees was considered permanently affected (i.e., acres or square feet of canopy cover lost counted as a permanent impact). For trees near construction areas that would not be directly affected, HTH designated setback areas around each tree using a setback radius equation provided by Linda Spahr of the SCVWD (Spahr pers. comm. 2013a). The setback radius equation was calculated as follows:

> Diameter at breast height (DBH) as expressed in inches * 1.25 = radial setback around a tree trunk (as expressed in feet).

To quantify impacts on tree setback areas the grading plans were overlain in GIS with the setback footprint to determine the percentage of the setback area that would be altered by implementing the Project. If the area of overlap between the footprint of grading and the tree setback was more than 33%, the entire tree was generally considered permanently affected, even if the tree would not be removed. However, the impact determination allows for use of best professional judgment. The following combination of factors was considered when the impact determination was made: (1) the degree of overlap between the buffers and grading footprint; (2) the tree stem proximity to grading limits; (3) the depth of excavation or fill in the vicinity of the tree stem; (4) the species of the tree in question; and (5) the age, health, and vigor of the tree.

The tree and shrub canopy in the existing vegetation GIS layer was used to determine the surface area of impacts. If the limits of active work intersected the existing vegetation polygons, the following rules were applied:

- All woody vegetation removal was considered permanent.
- Impacts on grassland habitat were considered temporary because this habitat can reestablish relatively quickly (the exception being areas where the vegetation would be converted to hardscape or other features that do not allow vegetation to reestablish). Permanent conversions to hardscape were considered permanent impacts.
- Removal of Himalayan blackberry and giant reed was not considered an impact because these are proposed for mitigation and because these species have a deleterious effect on riparian habitat quality.

2.2.1 Wetland and Aquatic Habitat Impact Assessment Methodology

Impacts on wetland and aquatic habitats were assessed using the impact quantification methodology described above. All jurisdictional wetland habitat and other waters shown in the USACE jurisdictional delineation were considered wetland and aquatic habitats, respectively. All excavation in wetland and aquatic areas was considered temporary because these areas are expected to reestablish following Project construction. All fills were considered permanent impacts because the fills would generally eliminate the hydrology and substrate necessary to support wetland and aquatic habitats.

2.2.2 Sycamore Woodland Habitat Impact Assessment Methodology

In addition to impacts on overall riparian habitat, impacts on sycamore woodland habitat were determined separately because resource agencies raised concerns about the rare nature of this habitat type in California (CBI 2006). The same impact quantification methodology described above was used for sycamore woodland.

2.2.3 Summary of Direct Habitat Impacts

Permanent and temporary impacts on jurisdictional habitat types by reach and phase are presented in Tables 1 and 2.

TABLE 1
Summary of Permanent Impacts to Jurisdictional Habitats by Reach

Reach	Riparian		Grassland	Wetland		Aquatic				
	Native	Non-native		Perennial Marsh	Seasonal Wetland	Perennial Creeks	Intermittent Creeks	Pond	Culverts	Drop Structures
	(ac)	(ac)	(ac)	(ac)	(ac)	(ac)	(ac)	(ac)	(ac)	(ac)
8	0.69	0.23	0.50	0.00	0.46	0.00	0.11	0.00	0.01	0.00
7b	0.72	0.38	0.37	0.00	0.47	0.00	0.07	0.00	0.00	0.00
7a	0.48	0.03	0.08	0.057	0.00	0.13	0.00	0.00	0.00	0.00
Lake Silveira	2.91	0.04	0.07	0.00	0.00	0.00	0.00	0.58	0.00	0.00
6	10.21	3.04	0.68	0.03	0.01	0.30	0.02	0.00	0.00	0.00
5	1.00	0.81	0.54	0.00	0.01	0.00	0.13	0.00	0.00	0.00
4	5.95	5.90	0.61	0.00	0.00	0.00	0.62	0.00	0.02	0.0007
14	0.26	0.01	0.68	0.00	0.01	0.00	0.79	0.00	0.00	0.00
TOTAL	**22.22**	**10.43**	**3.54**	**0.087**	**0.96**	**0.43**	**1.74**	**0.58**	**0.03**	**0.0007**

Note: Values are approximate due to rounding errors.

TABLE 2
Summary of Temporary Impacts to Jurisdictional Habitats by Reach

Reach	Riparian		Grassland	Wetland		Aquatic				
	Native	Non-native		Perennial Marsh	Seasonal Wetland	Perennial Creeks	Intermittent Creeks	Pond	Culverts	Drop Structures
	(ac)	(ac)	(ac)	(ac)	(ac)	(ac)	(ac)	(ac)	(ac)	(ac)
8	N/A	N/A	1.13	0.00	0.56	0.00	0.00	0.00	0.07	0.00
7b	N/A	N/A	4.95	0.00	3.10	0.00	0.26	0.00	0.33	0.00
7a	N/A	N/A	1.49	0.06	0.26	1.26	0.00	0.00	0.00	0.00
Lake Silveira	N/A	N/A	0.49	0.00	0.00	0.00	0.00	7.30	0.00	0.00
6	N/A	N/A	12.67	0.71	0.02	7.72	0.95	0.00	0.00	0.00
5	N/A	N/A	2.01	0.00	0.01	0.00	1.25	0.00	0.00	0.00
4	N/A	N/A	7.50	0.00	0.01	0.00	7.57	0.00	0.00	0.17
14	N/A	N/A	9.51	0.00	0.31	0.00	12.52	0.00	0.00	0.00
TOTAL	**N/A**	**N/A**	**39.75**	**0.77**	**4.27**	**8.98**	**22.55**	**7.30**	**0.40**	**0.17**

Note: Values are approximate due to rounding errors.

Table 3 summarizes permanent and temporary impacts on USACE, RWQCB, and CDFW jurisdictional habitats.

TABLE 3
Summary of Impacts to Jurisdictional Habitats

Habitat	Permanent Impacts (ac)	Temporary Impacts (ac)
Riparian, Native	22.22	N/A
Riparian, Non-native	10.43	N/A
TOTAL RIPARIAN	**32.65**	**N/A**
TOTAL GRASSLAND	**3.54**	**39.74**
Perennial Marsh	0.087	0.77
Seasonal Wetland	0.96	4.27
TOTAL WETLAND	**1.05**	**5.04**
Perennial Creeks	0.43	8.98
Intermittent Creeks	1.74	22.55
Pond	0.58	7.30
Culverts	0.03	0.40
Drop Structures	0.0007	0.17
TOTAL AQUATIC	**2.78**	**39.40**

Note: Values are approximate due to rounding errors.

2.2.4 CDFW Jurisdiction

A total of approximately 32.65 ac of riparian habitat under CDFW jurisdiction would be permanently affected by implementing the Project. The following sections describe each component of CDFW jurisdictional habitat impacts.

2.2.5 Tree Removal

A total of 1,724 native and nonnative trees would be removed or otherwise affected as a result of Project construction (Table 4). These trees range in DBH from 2 to 90 inches.

TABLE 4
Tree Impacts

Scientific Name	Common Name	Number of Affected Trees
Native		
Aesculus californica	California buckeye	16
Heteromeles arbutifolia	Toyon	1
Platanus racemosa	California sycamore	241
Populus fremontii	Fremont cottonwood	45
Quercus agrifolia	coast live oak	64
Quercus lobata	valley oak	98
Salix sp.	Willow	374
Sambucus nigra ssp. *caerulea*	blue elderberry	44
	Native Subtotal	**883**
Non-native		
Acacia sp.	Acacia	3
Ailanthus sp.	tree-of-heaven	2
Cyperus sp.	Cyperus	2
Eucalyptus sp.	Eucalyptus	573
Ficus sp.	Fig	1
Fraxinus sp.	Ash	3
Juglans sp.	Walnut	104
Ligustrum sp.	Privet	2
Morus alba	Mulberry	4
Pinus sp.	Pine	27
Pistacia sp.	Pistachio	2
Platanus hybrida	London plane tree	1
Populus sp.	Poplar	3
Prunus sp.	Almond	29
Prunus sp.	Apricot	1
Prunus sp.	Plum	35
Pyrus sp.	Pear	1
Robinia pseudoacacia	black locust	9
Schinus molle	Peruvian peppertree	1
Ulmus sp.	Elm	33
Unidentified	Unidentified	3
Unknown	Cedar	1
Washingtonia sp.	Palm	1
	Non-native Subtotal	**841**
	TOTAL	**1724**

2.2.6 Sycamore Woodland Habitat Direct Impacts

In addition to impacts of overall riparian habitat, impacts to sycamore woodland habitat were calculated and evaluated separately due to concerns raised by the resource agencies over the rare nature of this habitat type in California. Sycamore woodland habitat represents a portion of the total riparian habitat throughout the Project area, but also includes sycamores that are adjacent to existing CDFW jurisdiction (e.g., trees outside the bed and banks of the Creek). For riparian forest habitat to be considered sycamore woodland, California sycamore must account for more than 5% absolute cover of the tree layer with Fremont cottonwood being less than 5%.

The extent of sycamore woodland habitat was determined by mapping the canopy of individual California sycamore trees and forest habitat immediately adjacent to sycamore woodland.

Sycamore woodland habitat within the Project area is generally located within the riparian corridor and is composed of mature, widely spaced California sycamore trees comprising at least 5% of the absolute cover of the contiguous tree canopy layer. Other species co-occurring with California sycamore include coast live oak, valley oak, sandbar willow, red willow, arroyo willow, and black walnut.

Approximately 11.17 acres of sycamore woodland habitat, which is a subset of the riparian permanent impacts, would be permanently impacted by construction of the Project. These impacts stem from excavation associated with creek widening and deepening and permanent access road construction at the top of bank. A total count of Sycamores removed are summarized by reach in Table 5. However, because of the ecological significance of the sycamore woodland habitat, the SCVWD focused on design modifications and refinements through planning to further reduce impacts to sycamores. These refinements included realignment of top of bank maintenance road access which required purchase of additional right of way as well as detailed refinements to grading plans for sycamores which were in close proximity to the outer limits of the clear and grub boundary (i.e. limit of grading). These refinements resulted in the preservation of 50 sycamores. Of the 706 individual California sycamores, which were documented during the field survey within the Project reaches, through refinements to design, the number for removal was reduced to 241.

TABLE 5
California Sycamore Tree Impacts

Reach	# of Impacted Sycamore Trees
8	0
7b	0
7a	21
Lake Silveira	0
6	115
5	4
4	101
14	0
TOTAL	**241**

2.2.7 Grassland Habitat

A total of approximately 3.54 ac of grassland habitat would be permanently affected and 39.74 ac would be temporarily affected by construction of the Project (Appendix B). Temporary impacts stem from excavation associated with channel widening and deepening, and temporary access road construction at Lake Silveira. This habitat type is expected to be quickly replaced in the widened bed and banks. Permanent impacts on this habitat type are associated with earthen fills to the Creek in Reach 8 between Wright Avenue and West Main Street.

2.2.8 Santa Clara County Roads and Airports Department Riparian Mitigation Sites Impacts

Two riparian mitigation sites were installed in 2012 by the County of Santa Clara (County) Roads and Airports Department to mitigate for vegetation removal associated with repairs around the Masten Avenue and Llagas Avenue bridge footings. These mitigation sites occur in areas that would be affected by the Project (Masten Avenue Site in Reach 4 and Llagas Avenue Site in Reach 6). These mitigation areas will be removed to accommodate the Project and while worth mentioning in this document to account for all impacts, these 54 trees will not be tracked separately as part of this MMP.

The Masten Avenue riparian mitigation site is located in Reach 4 of Llagas Creek at the Masten Avenue Bridge crossing in Gilroy, California. Critical scour conditions within the limits and beneath the spread of the bridge footings had rendered the bridge unstable. To repair scour and erosion around the bridge footings, soil was excavated from around the structures, and rock riprap and native backfill soil were installed. Scour repair activities resulted in the removal of several riparian trees and shrubs permanently affecting 320 square feet (ft^2) of riparian canopy, and temporarily affecting 0.05 ac of streambed. Mitigation for these impacts included erosion control seeding and the installation of 34 native trees and shrubs. The total footprint of mitigation planting was approximately 1547.1 ft^2 (0.036 ac). The 34 native trees and shrubs were planted based on a per plant mitigation ratio required by the RWQCB (WRA 2011a).

The Llagas Avenue riparian mitigation site was located in Reach 6 on Llagas Creek at the Llagas Avenue Bridge crossing in San Martin, California. Critical scour conditions within the limits and beneath the spread of the bridge footings had rendered the bridge unstable. To repair the scour and erosion around the bridge footings, soil was excavated from around the structures, and rock riprap and native backfill soil were installed. Scour repair activities resulted in the removal of several riparian trees, permanently affecting 579 ft^2 of riparian canopy, and temporarily affecting 0.05 ac of streambed. Mitigation for these impacts included erosion control seeding and the installation of 20 native trees and shrubs. The total footprint of mitigation planting is approximately 714.1 ft^2 (0.016 ac).

A total of 54 native trees and shrub mitigation plantings will be removed as a result of channel widening activities (Table 6).

TABLE 6
County Mitigation Sites' Tree Impacts

Reach	Mitigation Site	Number of Affected County Mitigation Trees and Shrubs
4	Masten Avenue	34
6	Llagas Avenue	20
	TOTAL	**54**

2.2.9 Wetland and Aquatic Jurisdictional Habitats

Wetland Habitat. A total of approximately 1.05 ac of wetland habitat would be permanently affected and 5.04 ac temporarily affected by construction of the Project (Appendix B). Permanent earthen fills and channel abandonment associated with channel realignment constitute permanent impacts on wetland habitat. Approximately 420 ln ft. of the Creek in the upstream portion of Reach 8 would be abandoned, starting approximately 450 ft. downstream of the Llagas Creek Drive and Llagas Road intersection. This would eliminate in-channel seasonal wetland habitat throughout this area. The Creek in Reach 8 would be abandoned from Hillwood Lane south to Wright Avenue because flows would be redirected from the existing channel into a proposed sediment trap basin paralleling Hale Avenue. This would eliminate in-channel seasonal wetland habitat throughout this area. The Creek would be filled and brought to the top-of-bank grade in Reach 8 from Wright Avenue south to West Main Street, which would eliminate in-channel wetland habitat. Approximately 900 ln ft. of Creek containing in-channel wetland habitat would be abandoned because of the realignment near Cosmo Avenue. Excavation associated with Creek channel widening and deepening and Lake Silveira mitigation wetland construction would constitute temporary impacts on wetland habitat.

Aquatic Habitat. Approximately 2.78 ac of aquatic habitat would be permanently affected and 39.40 ac temporarily affected by construction of the Project (Appendix B). Permanent earthen fills and channel abandonment associated with channel realignment constitute permanent impacts on aquatic habitat. Approximately 420 ln ft. of the Creek in the upstream portion of Reach 8 would be abandoned, starting approximately 450 ft. downstream of the Llagas Creek Drive and Llagas Road intersection. This would eliminate aquatic habitat throughout this area. The Creek would be filled and brought to the top-of-bank grade in Reach 8 from Wright Avenue south to West Main Street, effectively converting aquatic habitat to upland. The northern portion of Lake Silveira would be filled and converted to wetland and riparian habitat, which would permanently affect 0.58 ac of aquatic habitat. Approximately 900 ln ft. of channel would be abandoned because of the realignment near Cosmo Avenue. Excavation associated with Creek channel widening and deepening and dewatering of Lake Silveira during mitigation wetland construction would constitute temporary impacts on aquatic habitat.

2.3 INDIRECT IMPACTS WEST/EAST LITTLE LLAGAS CREEK JURISDICTIONAL HABITAT PRE- AND POST-PROJECT CONDITIONS

Construction of the Reach 7a diversion channel starting near Watsonville Road would redirect flows from the final 1.9-mi stretch of West and East Little Llagas Creek (collectively referred to as Little Llagas Creek) from Watsonville Road to its confluence with the Madrone Channel immediately east of the U.S. Highway 101 crossing. Although overland flow and local drainages would continue to contribute flows to Little Llagas Creek, rerouting of upstream flows would alter the existing hydrology and thus may affect habitat. The habitat values of Little Llagas Creek are relatively low because of the limited extent of wetland and riparian habitat, and little to no instream complexity (H. T. Harvey & Associates 2013c; SCVWD 2013).

Given the uncertainty associated with how hydrologic modifications would affect the habitat of Little Llagas Creek, post-construction monitoring of the area is proposed to determine whether an impact requiring mitigation has occurred. The following sections present an overview of the existing and predicted post-Project conditions of Little Llagas Creek. A proposed monitoring program to compare habitat values of Little Llagas Creek before and after Project construction is presented in Section 6.0, “Monitoring Plan,” along with suggested thresholds that would trigger habitat mitigation requirements. The proposed mitigation ratios are presented in Section 3.0, “Mitigation Approach.”

2.3.1 Existing (Pre-Project) Conditions

Topography. The topography in the vicinity of Little Llagas Creek is relatively flat. The elevation of the Creek ranges from approximately 317 ft. at the upstream extent of the Creek to 301 ft. at the downstream extent (Google Inc. 2013). This segment of the Creek has a very gradual slope, generally flowing in a southeasterly direction.

Hydrology. West/East Little Llagas Creek at present is an ephemeral channel, flowing shortly after precipitation occurs. The affected portion of creek does not have a surface water monitoring station; however, a stream gauge is located approximately 1 mi upstream at Edmundson Avenue (SCVWD 2013). The drainage area for this stream gauge is 3.51 square mi of watershed with the capacity of the Creek in this area being the 2-year event, which is estimated to be approximately 660 cfs. A review of the hydrograph covering the 1 October 2010 to 30 September 2011 period (SCVWD 2013) shows the sporadic and ephemeral nature of the flows in Little Llagas Creek. Flows in the affected reach of the Creek are supplemented by overland flows and by eight outfalls spread throughout the lower approximately 80% of the affected reach.

Soils. The NRCS maps five soil phases from four soil series in the vicinity of the Creek (NRCS 2013a): (1) San Ysidro loam, 0–2% slopes; (2) Zamora clay loam, 0–2% slopes; (3) Arbuckle gravelly loam, 0–2% slopes; (4) Pleasanton gravelly loam, 0–2% slopes; and (5) Pleasanton gravelly loam, 2–9% slopes. San Ysidro loam soils are found on terraces and alluvial fans and are composed of alluvium. These moderately well-drained soils are relatively deep with 20 in of loam overlying an additional 40 in of clay loam. Zamora clay loam soils are found on alluvial fans and are composed of alluvium. These well-drained soils are relatively deep with 70 in of clay loams throughout the soil profile. Arbuckle gravelly loam soils are found on terraces and are composed of alluvium. These well-drained soils are relatively deep with 60 in of gravelly loams throughout the soil profile. Pleasanton gravelly loam soils are found on terraces, and alluvial fans and are

composed of alluvium. These well-drained soils are relatively deep with 66 in of gravelly loams throughout the soil profile.

The channel substrate is composed of sand, silt, and clay with pockets of coarser gravel occurring in places (SCVWD 2013).

Vegetation and Riparian Habitat. HTH delineated the extent of riparian habitat (Appendix B) remotely using GIS and verified conditions in the field on 10 and 11 July 2013. Riparian canopy, defined as tree/shrub canopy that occurs in the Creek's bed and banks or is contiguous with canopy that occurs in the bed and banks of the Creek, was mapped.

Riparian habitat health and vigor was also assessed at the individual tree and habitat type level by evaluating such factors as leaf color, bud development, new growth, herbivory, drought stress, fungal/insect infestation, and physical damage. Health and vigor by species was determined based on the scale shown in Table 7 and is reported by habitat type. The data collected provides baseline conditions of the riparian habitat in Little Llagas Creek and will be compared to post-construction conditions to determine whether the hydrologic modifications associated with the Project are affecting habitat values.

TABLE 7
Health and Vigor Rating Scale

Qualitative Values	Numerical Values	Observations
High health and vigor	7–10	67–100% healthy foliage
Medium health and vigor	4–6	34–66% healthy foliage
Low health and vigor	1–3	1–33% healthy foliage
Dead	0	Dead

A delineation of this area was conducted by HTH in April 2014 (H. T. Harvey & Associates 2014b).

Vegetation throughout Little Llagas Creek is composed of 1.19 ac of sparsely distributed, mostly mature woody riparian species in an overall matrix of grassland species. The average health and vigor rating of all woody riparian vegetation is 7.7, which is considered high (Table 8). More detailed descriptions of riparian habitat are provided below.

TABLE 8
Pre-Construction Riparian Habitat Quantity

Riparian Habitat Type	Surface Area (ac)	Average Health and Vigor Score	Health and Vigor Rating
Native Riparian	0.90	8.0	High
Nonnative Riparian	0.29	7.1	High
GRAND TOTAL/AVERAGE	**1.19**	**7.7**	**High**

Note:
ac = acres.

Native and nonnative riparian habitat is found in the bed and banks of the Creek, but includes trees where canopy extends beyond the bed and banks. The structure of this habitat is generally single, isolated trees or shrubs, or groups of trees or shrubs occasionally with herbaceous understory. Native riparian habitat is composed of species such as red willow, coast live oak, valley oak, California sycamore, coast redwood (*Sequoia sempervirens*), mulefat, coyote brush, and California wild grape (*Vitis californica*). This habitat occupies approximately 0.90 ac of the Creek and has a high average health vigor rating of 8.0 (Table 8). Nonnative riparian habitat is composed of species such as black walnut, elm (*Ulmus* sp.), sweetgum (*Liquidamber styraciflua*), silver poplar (*Populus alba*), hazelnut (*Corylus* sp.), and various orchard trees (*Prunus* spp.). This habitat occupies approximately 0.29 ac of the Creek and has a high average health vigor rating of 7.1 (Table 8).

Grassland habitat is located on the Creek channel banks above the ordinary high-water mark (OHWM). This habitat type is composed of nonnative annual grasses, such as wild oat, ripgut brome, barley, and Italian ryegrass.

Wetland habitat is located in the bed of the Creek and is composed of species such as spotted ladythumb (*Persicaria maculosa*), rushes, and Italian ryegrass (H. T. Harvey & Associates 2014b).

Aquatic habitat includes all areas within the OHWM that were not delineated as jurisdictional wetland habitat and consists of ephemeral channel bottom substrate that is either unvegetated or vegetated with upland plant species such as wild oat, ripgut brome, and Italian ryegrass.

Wetland and Aquatic Habitat. Jurisdictional habitat throughout Little Llagas Creek is composed of 1.13 ac of wetland habitat and 2.99 ac of aquatic habitat (Table 9). Wetland and aquatic habitats in Little Llagas Creek are of relatively low quality because flows are ephemeral, and there is little instream complexity (i.e., riffles, runs, and pools).

TABLE 9
Pre-construction Jurisdictional Wetlands and Other Waters

Habitat Type	Surface Area (ac)
Wetlands	1.13
Aquatic (Other Waters)	2.99
TOTAL ACREAGE OF USACE JURISDICTION	**4.12**

Notes:
ac = acres.

Wildlife. This section describes wildlife use of West/East Little Llagas Creek (herein referred to as Little Llagas Creek) and is an excerpt from the *West and East Little Llagas Creek Reach— Wildlife Habitat Assessment* (H. T. Harvey & Associates 2013d).

To assess the current distribution of special-status wildlife in the Project vicinity, HTH wildlife biologists reviewed Project plans; recent ecological studies/summaries for other projects in the vicinity; aerial photographs and topographic maps; Breeding Bird Atlas of Santa Clara County, California (Bousman 2007a); CDFW's CNDDB (CNDDB 2013);

Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan (ICF International 2012); and other relevant scientific literature, technical databases, and resource agency reports.

Following review of these background materials, HTH wildlife ecologist Robin Carle conducted a reconnaissance-level survey to: (1) characterize existing habitat conditions and general wildlife communities; and (2) assess Little Llagas Creek for its potential to support special-status wildlife species, and their habitats. The survey area for this assessment included the bed and banks of Little Llagas Creek, as well as areas immediately adjacent to the Creek as access allowed.

The limited extent of trees along Little Llagas Creek, their fragmented distribution, minimal understory structure, presence of adjacent agriculture and residential development, and lack of large, contiguous woodland habitats in the vicinity generally limit the potential for wildlife species to occur in the Creek. Nevertheless, wildlife species in the vicinity will make use of these trees. The surrounding expanse of agricultural land allows these trees to provide breeding or foraging habitat for species that forage in grasslands, but breed or take cover in trees, such as some species of raptors. Common species of birds such as the American crow (*Corvus brachyrhynchos*) may nest and forage in the trees and shrubs along Little Llagas Creek. Migrating and wintering birds will forage in trees and other vegetation along Little Llagas Creek during the spring, fall, and winter seasons.

Insect-eating birds such as the western bluebird (*Sialia mexicanus*) and migrating and wintering birds such as white-crowned sparrows use grassland habitat for foraging. A number of small mammal species such as the deer mouse (*Peromyscus maniculatus*) breed and forage in these grasslands. The presence of mice, gophers, and other small mammals is expected to attract foraging grassland-associated predators, such as the gray fox (*Urocyon cinereoargenteus*), as well as foraging raptors, such as the red-tailed hawk.

A few common amphibian species, such as the western toad (*Anaxyrus boreas halophilus*), will breed, forage, or take refuge in grasslands, or under trees and shrubs along the Creek, especially those close to wet areas or wetlands in the channel. Reptiles, such as gopher snakes (*Pituophis catenifer*) will take cover and forage in debris and vegetation. Native mammals, such as the raccoon and nonnative mammals such as the Virginia opossum will breed, forage, and disperse along the Creek.

Little Llagas Creek channel holds water only seasonally and thus, provides limited habitat for aquatic and amphibious species. Burrows of Botta's pocket gophers were observed in the channel bed in the eastern portion of the Creek, indicating that this portion of the channel is dry for most of the year. During years of heavy rainfall, this channel would be accessible to aquatic wildlife such as fish during wet winter and spring months, when the eastern end of the channel connects with Madrone Channel immediately downstream of U.S. Highway 101. However, Little Llagas Creek does not hold water long enough to provide breeding habitat for fish species, and any fish that occur in the channel during wet winter months are expected to occur only as nonbreeding foragers.

Information concerning threatened, endangered, or other special-status wildlife species that could occur in Little Llagas Creek was collected from several sources and reviewed

by HTH biologists (H. T. Harvey & Associates 2013d). The specific habitat requirements and the locations of known occurrences of each special-status species were the principal criteria used for inclusion in the list of species potentially occurring in Little Llagas Creek. Based on the background review, several special-status animal species are known to occur in the general vicinity of Little Llagas Creek. However, the majority of these species are determined to be absent from Little Llagas Creek itself because of a lack of suitable habitat, or evidence that the species does not occur in the Little Llagas Creek vicinity.

Many special-status birds are protected as California species of special concern only when nesting. Several of these species may occur along Little Llagas Creek as uncommon to rare visitors, migrants, or transients, but suitable nesting habitat for these species is absent from the site and from adjacent areas. These are the northern harrier (*Circus cyaneus*), Vaux's swift (*Chaetura vauxi*), yellow warbler (*Setophaga petechia*), grasshopper sparrow (*Ammodramus savannarum*), Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), and tricolored blackbird (*Agelaius tricolor*). Because these species occur along Little Llagas Creek only as nonbreeders, they are not considered "special-status" when they occur along Little Llagas Creek.

Five special-status species are expected to occur on the site only as uncommon to rare visitors, migrants, or transients, but they are considered special-status species regardless of the breeding season: western red bat (*Lasiurus blossevillii*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), American badger (*Taxidea taxus*), and golden eagle (*Aquila chrysaetos*). No suitable breeding habitat for these species occurs in or near Little Llagas Creek, and these species are not expected to breed on the site, or to occur in large numbers. Given the habitat conditions on the site and the agricultural and rural matrix surrounding the site, Little Llagas Creek does not provide habitat that is important to populations of these species.

Four special-status wildlife species are known or expected to occur in the habitats present in Little Llagas Creek and could potentially breed or occur there: western pond turtle *(Actinemys marmorata)*, burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), and white-tailed kite (*Elanus leucurus*).

A full description of special-status species that may occur and breed in Little Llagas Creek, and species that do not occur or breed on the site, but for which resource agencies have expressed particular concern, or additional discussion is warranted is available in the *West and East Little Llagas Creek Reach - Wildlife Habitat Assessment* (H. T. Harvey & Associates 2013d).

2.3.2 Anticipated Post-Project Conditions

Flow regime in creeks and rivers are of central importance to maintaining the ecological integrity of the waterway. The structure of the environment is largely defined by physical processes, especially the movement of water and sediment. Changes in magnitude, frequency, duration, timing and rate of change of creek flows can certainly alter the physical structure of the habitat (Poff et. al., 1997). Therefore, it is important to fairly assess what physical habitat alterations may become apparent by alteration of the hydrograph in West/East Little Llagas Creek.

The SCVWD conducted an outfall study in the affected reach of West/East Little Llagas Creek to determine what post-construction flows would remain. The results indicate that two larger detention features will continue to provide surface flow to the creek after storms. The first detention facility located downstream of Monterey Road in West Little Llagas Creek with a drainage area of 25 rural acres and the second, the Butterfield detention facility downstream of Seymour Avenue discharges into East Little Llagas Creek. While these features are designed to detain flows from entering the creek during the peak storm event, they too alter the natural hydrograph by changing the magnitude, duration, and timing of flows which enter the creek. Presumably, the detention bio/filtration features provide mitigation for water quality issues by attenuating the pollutants common to urban/agricultural land uses prior to their discharge into either creek.

Other outfalls noted during the survey also contribute flow during precipitation events to the ephemeral drainage. If these outfalls were contributing non-point source pollutants to the creek during precipitation events, the lack of the upstream flow may exacerbate any water quality issues that may arise from these sources.

In order to consider what post-construction flows would remain in West/East Little Llagas, the creek capacity was evaluated. The creek capacity upstream of Watsonville Road is approximately the 2-year event at the proposed upstream end of the Reach 7A diversion channel for the Project. According to the 2006 USACE hydrology report the 2-year event flow at the upstream end of the Reach 7A diversion channel is cited as approximately 660 cubic feet per second (USACE, 2006). The drainage area for the stream gauge station is 3.51 square miles immediately upstream of proposed Reach 7A diversion. After completion of the proposed Project, this upstream drainage area flows will no longer be permitted to enter into West/East Little Llagas Creek, but instead will flow directly into the Reach 7A diversion channel.

The completed Butterfield Detention facility and City of Morgan Hill's Butterfield Channel extension has a drainage area of 2.78 square miles (Schaaf and Wheeler, 2013) and will introduce flows into West/East Little Llagas Creek that will be removed by the proposed Reach 7A diversion. However, these flows from the Butterfield facility are introduced into West/East Little Llagas Creek approximately 6,500 feet downstream of the Reach 7A diversion. SCVWD hydrology staff believe minimal flow regime changes will occur within West/East Little Llagas Creek downstream of the Butterfield detention facility, except that hydrograph peak flows will be reduced. Flows between the proposed Reach 7A diversion and the Butterfield detention facility are expected to be reduced for small events (i.e. ≤ 2-year event). But, there will be less of a change in the reduction of flows for greater flow events, as these flows currently and post-Project will overbank the existing West/East Little Llagas Creek as the creeks capacity in existing conditions is 10 cfs (SCVWD, 2013).

These flow reductions could result in detrimental effects on vegetation, wildlife, and the extent of jurisdictional habitats. The post-construction status of wildlife populations along the Creek would largely depend on the response of the Creek's vegetation to the changes in hydrology. Because Little Llagas Creek's wildlife habitat quality is already low (H. T. Harvey & Associates 2013d), wildlife populations present or potentially present are not expected to change substantially. However, monitoring the health and vigor and jurisdictional extent of wetlands post-construction will verify or refute this assertion.

2.3.3 Monitoring to Quantify Potential Impacts

To determine whether impacts on Little Llagas Creek would occur, pre-construction baseline vegetation monitoring data would be compared to post-construction vegetation monitoring data. If the data reveals that a substantial decline in vegetated habitats has occurred, it will be inferred that this decline is a result of the hydrologic modifications, and that habitat mitigation will be required. A monitoring program is proposed to compare jurisdictional habitats of the Creek before and after Project construction as presented in Section 4.4, along with suggested thresholds that would trigger habitat mitigation requirements.

2.3.4 Ownership Status

All mitigation would be accommodated on land that is owned by SCVWD, as the local sponsor and Project applicant. The SCVWD is currently in the process of acquiring all property rights adjacent to Llagas Creek. Acquisition of all property rights will occur prior to active construction.

2.4 PROPOSED MITIGATION RATIOS AND SURFACE AREAS

2.4.1 Mitigation Requirements

Riparian Habitat Mitigation. As shown in Table 10, the overall riparian habitat mitigation requirement totals 87.54 acres.

TABLE 10
Summary of Riparian Habitat Mitigation Requirements

Habitat Type	Impact Surface Area (ac)	Mitigation Ratio (mitigation acreage: impact acreage)	Mitigation Surface Area (ac)
Native Riparian	22.22	3:1	66.66
Nonnative Riparian	10.44	2:1	20.88
		TOTAL	**87.54**

Notes:
ac = acres.
All impacts on riparian habitat are considered permanent.

Wetland Habitat Mitigation (Lake Silveira). A mitigation ratio of 2:1 is proposed for permanent impacts on wetland habitat. Temporary impacts on wetland habitat are expected to quickly reestablish in and along the newly constructed Creek channel. Following the guidance provided in the CAR, portions of Lake Silveira would be filled with material excavated from elsewhere on the Project site (e.g., 7a diversion channel) and planted with emergent wetland species to create a mosaic of cattails and bulrushes and associated shallow, open water. The wetlands would also be enhanced with large woody debris and constructed turtle basking sites. Wetland habitat mitigation requirements are presented in Table 11.

TABLE 11
Summary of Wetland Habitat Mitigation Requirements

Impact Type	Impact Surface Area (ac)	Mitigation Ratio (mitigation acreage: impact acreage)	Mitigation Surface Area (ac)
Permanent	1.05	2:1	2.10
Temporary*	5.04	1:1	5.04
		TOTAL	**7.14**

Note: ac = acres.
*Reestablishment of this habitat type would be quantified through post-construction jurisdictional delineations of wetlands and other waters (5 year).

Aquatic Habitat Mitigation. A mitigation ratio of 1:1 is proposed for permanent impacts on aquatic habitat. Temporary impacts on aquatic habitat are expected to reestablish after channel construction and the creation of new USACE jurisdictional habitat in Reach 7a. Aquatic habitat mitigation requirements are presented in Table 12.

TABLE 12
Summary of Aquatic Habitat Mitigation Requirements

Impact Type	Impact Surface Area (ac)	Mitigation Ratio (mitigation acreage: impact acreage)	Mitigation Surface Area (ac)
Permanent	2.78	1:1	2.78
Temporary*	39.40	1:1	39.40
		TOTAL	**42.18**

Note: ac = acres.
*Temporary impacts on aquatic habitat are self-mitigating. Reestablishment of this habitat type would be quantified through post-construction jurisdictional delineations of wetlands and other waters.

Santa Clara County Roads and Airports Department Mitigation

A mitigation ratio of 3:1 is proposed to compensate for the removal of the two County riparian mitigation sites. The 34 trees and shrubs at the Masten Avenue County mitigation site and 20 trees and shrubs at the Llagas Avenue County mitigation site to be removed would be mitigated on a per stem basis.

Summary of Proposed Mitigation

The SCVWD proposed to actively plant 105.62 acres of riparian habitat (See Table 13) and is proposing an additional 2.25 of riparian mitigation credit for remediation site mitigation and an additional 6.2 acres for invasive plant control. This totals 114.07 acres of designed riparian mitigation. In addition to the increase in USACE jurisdiction with completion of 7a, for compensatory mitigation, the SCVWD will restore approximately 2,000 linear feet of abandoned channel and create a ~4-acre freshwater wetland in an abandoned quarry.

TABLE 13
Impacts, Mitigation Ratios, Required Mitigation, and Mitigation Design Acreages by Habitat Type

Habitat Type	Impact Acreage	Impact Type	Mitigation Ratio	Required Mitigation (ac)	Mitigation Designed (ac)	Excess/<Shortage > (ac)
Native Riparian	22.22	Permanent	3:1	66.66	105.62	–
	N/A	Temporary	N/A	N/A	N/A	–
Nonnative Riparian	10.44	Permanent	2:1	20.88	N/A	–
	N/A	Temporary	N/A	N/A	N/A	–
RIPARIAN TOTAL	**32.66**	**–**	**–**	**87.54**	**114.07***	**26.53**
Grassland	3.53	Permanent	1:1	3.53	–	–
	39.75	Temporary	1:1	39.75	–	–
GRASSLAND TOTAL	**43.28**	**–**	**–**	**43.28**	**60.43**	**17.15**
Wetland	1.05	Permanent	2:1	2.10	4.09[c]	**1.99**
	5.04	Temporary	1:1	5.04	–	–
WETLAND TOTAL	**6.09**	**–**	**–**	**7.14**	**4.09[d]**	**TBD**
Aquatic	2.78	Permanent	1:1	2.78	–	–
	39.40	Temporary	1:1	39.40	–	–
AQUATIC TOTAL	**42.18**	**–**	**–**	**42.18**	**64.8**	**TBD**

Notes:
ac = acres.
N/A = not applicable.
TBD = to be determined.

* = 105.62 acers plus additional 2.25 acres + 6.2 acres as described in previous paragraph

SECTION 3.0 MITIGATION

3.1 HABITAT REVEGETATION

Impacts on riparian habitat would be mitigated through riparian habitat restoration, which would include Himalayan blackberry and giant reed control, topsoil salvage and replacement and riparian habitat revegetation.

To replace vegetation removed as the result of flood protection improvements, riparian habitat revegetation would result in the mitigation acreages summarized in Table 13. In-kind riparian mitigation will consist of the installation of approximately 114.07 acres (See Table 13) of native vegetation plantings.

The goal of the riparian mitigation component of this Project is to restore high quality riparian habitat and associated ecological functions in areas that would be affected by Project construction, in existing canopy gaps on the unaffected sides of the Creek, and in select locations at Lake Silveira. Impacts on riparian habitat would be mitigated in-kind and include a combination of seeding and planting of native riparian tree and shrub species with a minimum of 3 years of vegetation maintenance. Riparian mitigation also includes extensive Himalayan blackberry and giant reed control, and contaminated soils remediation. Restoration activities intend to increase the extent and quality of riparian habitat relative to existing conditions.

3.1.1 Planting Palette Development

The development of the planting palette included a detailed review of the Project's extensive background materials; agency meeting notes and guidance documents; and numerous conference calls, meetings, and field visits with SCVWD staff and consultant team members (RMC, HTH, Balance Hydrologics, Inc., and Schaaf and Wheeler Consulting Engineers). The following sections summarize the relevant aspects of the key background materials that were used to develop the planting approach for this Project.

3.1.2 Historical and Existing Vegetation

To gain a better understanding of the historical ecology of the Creek, HTH reviewed the *South Santa Clara Valley Historical Ecology Study* (Grossinger et al. 2008). It documents that prior to Euro-American settlement, California sycamore was the dominant tree species that occurred in the Llagas Creek riparian corridor, although at low densities, and valley oak was the dominant tree species in the adjacent oak savannas and woodlands. Thus, due to its regional importance and since existing riparian stands will be impacted, California sycamore is included in the Reaches 6 and 7a, and Lake Silveira Forest and Sycamore Forest planting palettes. In addition, because of its importance to the historical ecology of the South Santa Clara Valley, valley oak is included as one of the primary tree species in the forest planting areas.

More relevant than historical accounts are the existing species composition along the Creek because this palette informs which species have the best potential to thrive given current conditions. This statement is slightly tempered by the fact that many of the large trees present, including California sycamore, became established when soil and hydrologic conditions were different from current conditions. With this in mind, HTH

created a list of the native species that were identified on the Project site during reconnaissance surveys concurrently with the planting polygon refinement activities (described in more detail below). To supplement the plant list, HTH reviewed several species occurrences websites (Calflora 2013; Jepson Flora Project 2013) and documents that provide vegetation descriptions of the Project site, including the *Upper Llagas Creek Stormwater Improvements Project Preliminary Delineation of Wetlands and Other Waters* (H. T. Harvey & Associates 2014b), *Upper Llagas Creek Project Baseline Biological Resources Report* (Cardno ENTRIX 2012b), *Upper Llagas Creek Riparian Corridor Assessment* (Condor Country Consulting 2012c), and *Draft Phase 2 Technical Memorandum* (Cardno ENTRIX 2012c).

3.1.3 Channel Roughness and Flood Capacity Constraints

Channel geometry design (Balance Hydrologics, Inc. 2012) and hydrologic modeling performed for the Project inform where the woody and herbaceous vegetation can be successfully established, and which species are most suited to site conditions. The channel design and modeling also defined the allowable extent of vegetation establishment, given vegetation's effect on channel roughness (Schaaf & Wheeler 2012a, 2013; Anderson pers. comm. 2013a, 2013b), and consequently on desired flood conveyance in the channel (Schaaf & Wheeler 2012a, 2012b).

3.1.4 Hydrology

HTH deemphasized, or in some cases completely eliminated, hydrophytic plant species from the planting palettes in the drier reaches of the Project site as identified in the *Upper Llagas Creek Flood Protection Project Site Characterization Report* (i.e., Reaches 4, 5, and 14) (Cardno ENTRIX 2012a) and during field observations, which showed no flows in the creek in the drier reaches in winter shortly after rain events. In these drier reaches, the species planted were restricted to those that are the most drought tolerant. In wetter reaches, more hydrophytic species were selected.

3.1.5 Soils Restrictions

HTH identified areas along the Creek that contain soils problematic for revegetation. An area was deemed problematic where soil sampling determined soil strength and compaction index to be root preventing, soil permeability to be slow, or soil hydrophobic index to be severe (Cardno ENTRIX 2012a). Additionally, during site reconnaissance surveys conducted in January 2013, HTH identified areas with significant surficial gravel/rock that have low revegetation success potential. The approach to revegetating areas with problematic soils is to select a habitat type (Xeric Scrub) composed of stress-tolerant native species, with broader on-center spacing to reduce competition for limited soil moisture and nutrients. The selection of stress-tolerant species was based on reconnaissance surveys of existing vegetation and soils, professional experience with past harsh-site restoration projects, and the use of growth requirement data provided by the NRCS Plants Database (NRCS 2013b). Specifically, HTH emphasized the installation of species that are adapted to coarse soil substrates, exhibit high drought tolerance, and have low to moderate soil fertility requirements.

Information from the *Soil & Plant Laboratory Soils Report* (Soil & Plant Laboratory 2012) supplemented HTH's understanding of soil limitations. Lab results indicated that the densic and cemented soil horizons would not necessarily prevent successful restoration.

HTH considered all relevant interpretations of soil conditions, combined with professional judgment, to develop the planting palettes for specific mitigation areas.

3.1.6 Propagule Source and Commercial Availability

Several thousand pounds of seed would be required to hydroseed all the disturbed surfaces on the Project site. The species chosen for the hydroseed mix are based on the anticipated quantity of seed that a local commercial supplier (in this case, Pacific Coast Seed) could produce for a given species (Gilpin pers. comm. 2013), as well as those species that are adapted to the anticipated conditions of the mitigation areas.

3.1.7 Planting Polygon Development

The preliminary planting polygons, first presented in the 30% Irrigation and Planting Plans, were developed by HTH as an office exercise and were based on channel geometry design (Balance Hydrologics, Inc. 2012) and flood protection design requirements (i.e., channel roughness constraints) (Schaaf & Wheeler 2012a, 2012b, 2013; Anderson pers. comm. 2013a, 2013b). With some exceptions, the Project calls for grading on only one side of the Creek channel in any given area to limit impacts on existing habitat. Planting polygon locations and habitat type designations were determined based on each site's soils, hydrology, geomorphology, topography, and light availability, including shading and canopy gaps. Planting polygons on the undisturbed side of the channel were sited where opportunities occur to establish riparian habitat as infill in canopy gaps.

Given that the planting polygons were initially developed in the office, it was necessary to field-verify their viability, and modify them accordingly. Several field visits were conducted throughout January 2013 by HTH's restoration ecologists Patrick Reynolds and Matthew Parsons, and landscape designers Sarah Von Lehman and Lauren DeSilva. Fieldwork was concentrated on the infill planting areas because all other areas would be subject to mass grading to accommodate flood protection requirements (Schaaf & Wheeler 2012a, 2012b). All segments of Reaches 4, 5, and 6 were reviewed to assess the suitability of each infill planting polygon. Reaches 7 and 8 were not reviewed because these reaches would be subject to mass grading and, as a result, existing surface conditions would bear little resemblance to the conditions that would be present following construction. Notes and polygon modifications were made on iPads and on hard copies of the 30% Irrigation and Planting Plans. Site characteristics assessed included extent of existing riparian canopy gaps; surface soil conditions; hydrology; slope gradient; presence of invasive species, debris, and trash; and locations and condition of existing native vegetation.

3.1.8 Seeding Plan

All riparian mitigation areas, excluding infill planting areas, would be hydroseeded with a Grassland seed mix composed of native herbaceous species (Table 14). All areas that would be planted with the Xeric Scrub habitat type would receive a supplementary broadcast seed mix (Table 14) in addition to the Grassland hydroseed mix. The Forest Understory planting areas where Himalayan blackberry removal would not be conducted would be broadcast-seeded with a forest understory seed mix (Table 14).

TABLE 14
Riparian Mitigation Area Seed Mixes

Scientific Name	Common Name	Seeding Rate (lbs. PLS/ac)*
Grassland Hydroseed Mix		
Acmispon americanus var. *americanus*	Spanish lotus	1.5
Asclepias speciosa	showy milkweed	0.5
Asclepias fascicularis	narrow leaf milkweed	0.5
Baccharis pilularus	Coyote brush	1.0
Bromus carinatus	California brome	9.0
Elymus glaucus	blue wildrye	9.0
Eschscholzia california	California poppy	1.5
Festuca microstachys	small fescue	3.0
Stipa pulchra	purple needlegrass	6.0
Triticum x *Elymus*	sterile wheat	22.0
	TOTAL	**54.0**
Xeric Scrub Broadcast Seed Mix		
Artemisia californica	California sagebrush	1.5
Stipa pulchra	purple needlegrass	7.0
	TOTAL	**8.5**
Forest Understory Broadcast Seed Mix		
Artemisia douglasiana	mugwort	0.5
Elymus glaucus	blue wildrye	11.0
Elymus triticoides	creeping wildrye	7.0
	TOTAL	**18.5**

*Pure live seed (PLS) is obtained by multiplying the purity percentage by the percentage of total viable seed (i.e., germination rate) and then dividing the number by 100. The recommended application rate (lbs.) shown above is divided by the percentage of PLS for this species to find the total number of pounds required to provide the application rate shown in the table.

3.1.9 Planting Compositions, Densities, and Spacing

The Project's planting palettes, including the percent composition and on-center spacing values for each reach and habitat type, are summarized in Table 15. The propagule types and container sizes are presented in Table 16. Below is a description of each habitat type.

TABLE 15
Riparian Mitigation Areas' Planting Palettes by Reach and Habitat Type

Scientific Name	Common Name	Percent Composition by Reach							On-center Spacing by Reach (ft.)						
		4	5	6	7a	LS[1]	7b	14	4	5	6	7a	LS[1]	7b	14
Forest															
Aesculus californica[2]	California buckeye	5%	5%	5%	6%	6%	6%	5%	18	16	16	16	16	16	18
Artemisia californica	California sage	13%	6%	5%	6%	6%	6%	13%	8	8	8	8	8	8	8
Artemisia douglasiana[3]	mugwort	5%	6%	5%	5%	5%	5%	5%	8	8	8	8	8	8	8
Baccharis pilularis	coyote brush	15%	10%	8%	6%	6%	6%	15%	10	10	10	10	10	10	10
Baccharis salicifolia	mulefat	5%	5%	5%	5%	5%	5%	5%	8	10	10	10	10	10	8
Frangula californica	coffeeberry	8%	10%	5%	6%	6%	6%	8%	10	10	10	10	10	10	10
Heteromeles arbutifolia	toyon	8%	8%	5%	6%	6%	6%	8%	12	12	12	12	12	12	12
Platanus racemosa	California sycamore	–	–	5%	–	–	–	–	–	–	25	–	–	–	–
Populus fremontii	Fremont cottonwood	–	–	5%	–	–	–	–	–	–	20	–	–	–	–
Prunus ilicifolia	hollyleaf cherry	5%	8%	4%	6%	6%	6%	5%	15	15	15	15	15	15	15
Quercus agrifolia[2]	coast live oak	10%	10%	10%	15%	15%	15%	10%	25	20	20	20	20	20	25
Quercus lobata[2]	valley oak	10%	10%	10%	14%	14%	14%	10%	25	20	20	20	20	20	25
Rosa californica[3,4]	California rose	5%	6%	7%	6%	6%	6%	5%	8	8	8	8	8	8	8

Scientific Name	Common Name	Percent Composition by Reach							On-center Spacing by Reach (ft.)						
		4	5	6	7a	LS[1]	7b	14	4	5	6	7a	LS[1]	7b	14
Rubus ursinus[3]	California blackberry	–	–	8%	6%	6%	6%	–	–	–	8	8	8	8	–
Sambucus nigra	elderberry	11%	10%	5%	6%	6%	6%	11%	15	12	12	12	12	12	15
Symphoricarpos albus[3]	snowberry	–	6%	8%	7%	7%	7%	–	–	8	8	8	8	8	–
Sycamore Forest															
Artemisia douglasiana[3]	mugwort	–	–	12%	12%	12%	–	–	–	–	8	8	8	–	–
Baccharis salicifolia	mulefat	–	–	12%	12%	12%	–	–	–	–	10	10	10	–	–
Platanus racemosa	California sycamore	–	–	15%	15%	15%	–	–	–	–	25	20	20	–	–
Populus fremontii[5]	Fremont cottonwood	–	–	10%	10%	10%	–	–	–	–	18	18	18	–	–
Rosa californica[3,4]	California rose	–	–	10%	10%	10%	–	–	–	–	10	10	10	–	–
Rubus ursinus[3]	California blackberry	–	–	11%	11%	11%	–	–	–	–	10	10	10	–	–
Salix laevigata[5]	red willow	–	–	10%	10%	10%	–	–	–	–	10	10	10	–	–
Salix lasiolepis[5]	arroyo willow	–	–	10%	10%	10%	–	–	–	–	10	10	10	–	–
Symphoricarpos albus[3]	snowberry	–	–	10%	10%	10%	–	–	–	–	8	8	8	–	–
Willow Forest															
Salix exigua	sandbar willow	–	–	25%	25%	25%	–	–	–	–	10	10	–	–	–
Salix laevigata	red willow	–	–	40%	40%	40%	–	–	–	–	10	10	–	–	–
Salix lasiolepis	arroyo willow	–	–	35%	35%	35%	–	–	–	–	10	10	–	–	–

Scientific Name	Common Name	Percent Composition by Reach							On-center Spacing by Reach (ft.)						
		4	5	6	7a	LS[1]	7b	14	4	5	6	7a	LS[1]	7b	14
Forest Understory															
Artemisia douglasiana[3]	mugwort	–	–	–	30%	30%	–	–	–	–	–	10	10/20[6]	–	–
Rubus ursinus[3]	California blackberry	–	–	–	50%	50%	–	–	–	–	–	10	10/20[6]	–	–
Symphoricarpos albus[3]	snowberry	–	–	–	20%	20%	–	–	–	–	–	10	10/20[6]	–	–
Scrub															
Artemisia californica	California sagebrush	20%	20%	–	–	–	–	–	10	10	–	–	–	–	–
Baccharis pilularis	coyote brush	20%	20%	–	–	–	–	–	12	10	–	–	–	–	–
Frangula californica	coffeeberry	20%	20%	–	–	–	–	–	12	12	–	–	–	–	–
Heteromeles arbutifolia	toyon	10%	10%	–	–	–	–	–	12	12	–	–	–	–	–
Prunus ilicifolia	hollyleaf cherry	10%	10%	–	–	–	–	–	25	20	–	–	–	–	–
Rosa californica[3,4]	California rose	10%	10%	–	–	–	–	–	8	8	–	–	–	–	–
Sambucus nigra	elderberry	10%	10%	–	–	–	–	–	15	12	–	–	–	–	–
Xeric Scrub															
Artemisia californica	California sagebrush	20%	20%	20%	–	–	–	20%	10	10	10	–	–	–	10
Baccharis pilularis	coyote brush	25%	25%	25%	–	–	–	25%	12	12	12	–	–	–	12
Frangula californica	coffeeberry	15%	15%	15%	–	–	–	15%	12	12	12	–	–	–	12

Scientific Name	Common Name	Percent Composition by Reach							On-center Spacing by Reach (ft.)						
		4	5	6	7a	LS[1]	7b	14	4	5	6	7a	LS[1]	7b	14
Heteromeles arbutifolia	toyon	5%	5%	5%	–	–	–	5%	12	12	12	–	–	–	12
Prunus ilicifolia	hollyleaf cherry	15%	15%	15%	–	–	–	15%	25	25	25	–	–	–	25
Sambucus nigra	elderberry	20%	20%	20%	–	–	–	20%	16	16	16	–	–	–	16
Streamside Scrub															
Artemisia douglasiana[3]	mugwort	15%	–	–	–	–	–	–	10	–	–	–	–	–	–
Baccharis salicifolia	mulefat	55%	60%	–	–	–	–	–	10	10	–	–	–	–	–
Salix exigua	sandbar willow	30%	40%	–	–	–	–	–	10	10	–	–	–	–	–
Savanna															
Platanus racemosa	California sycamore	–	–	–	21%	–	–	–	–	–	–	variable	–	–	–
Quercus agrifolia	coast live oak	–	–	–	32%	–	–	–	–	–	–	variable	–	–	–
Quercus lobata	valley oak	–	–	–	47%	–	–	–	–	–	–	variable	–	–	–

[1] LS stands for Lake Silveira.
[2] Indicates species that would be directly seeded. Coast live oak and valley oak would be planted in groups of three acorns of the same species per planting basin. California buckeye would be planted in groups of three seeds of the same species per planting basin.
[3] Indicates planting basins that would be installed at the on-center spacing specified in this table, but within each planting basin three individuals would be installed.
[4] California rose should be planted toward the lower banks within the planting zone.
[5] Indicates species that should be planted on the channel side of the Sycamore Forest planting zone.
[6] The Forest Understory habitat type includes areas that would be irrigated and areas that would not be irrigated. Planting basins in nonirrigated Forest Understory areas would be installed on 20-ft centers, planting basins in irrigated Forest Understory areas would be installed on 10-ft centers.

Forest. The Forest habitat type has the highest species diversity since it includes the same shrub species as the Scrub palette as well as a variety of riparian tree species. Species diversity of the Forest palette is lower in the drier reaches of the Project site as hydrophytic trees are removed from the palette due to a lack of plant available soil moisture. On-center spacing in this habitat type are typical for similar mitigation projects but are refined slightly to address local site conditions. HTH adjusted on-center spacing and percent composition values for each species in this habitat type such that total plant density decreases from upstream to downstream.

Sycamore Forest. The Sycamore Forest habitat type is dominated by California sycamore and is composed of species that are adapted to growing in areas that are in close proximity to stream channels subject to somewhat regular flooding. This habitat type would be installed on channel benches of Reaches 6, the 5-acre planting bench of Nature Quality in Reach 6, and 7a, along the Lake Silveira outlet channel, and along the northern portion of Lake Silveira on the lower slope of the fill wedge. These areas are located where plant available soil moisture is expected to be reasonably high.

TABLE 16.
Riparian Mitigation Plantings' Propagule Types and Container Sizes

Scientific Name	Common Name	Propagule Type	Container Size*
Aesculus californica	California buckeye	seed	N/A
Artemisia californica	California sage	container	deepot 40
Artemisia douglasiana	mugwort	container	deepot 40
Baccharis pilularis	coyote brush	container	deepot 40
Baccharis salicifolia	mulefat	cutting	N/A
Frangula californica	coffeeberry	container	deepot 40
Heteromeles arbutifolia	toyon	container	deepot 40
Platanus racemosa	California sycamore	container	treepot 4
Populus fremontii	Fremont cottonwood	container	treepot 4
Prunus ilicifolia	hollyleaf cherry	container	treepot 4
Quercus agrifolia	coast live oak	container	treepot 4
Quercus lobata	valley oak	container	treepot 4
Rosa californica	California rose	container	deepot 40
Rubus ursinus	California blackberry	container	deepot 40
Salix exigua	sandbar willow	cutting	N/A
Salix laevigata	red willow	cutting	N/A
Salix lasiolepis	arroyo willow	cutting	N/A
Sambucus nigra	elderberry	container	treepot 4
Symphoricarpos albus	snowberry	container	deepot 40

Note: N/A = not applicable.

*Deepot 40 dimensions are 2.5 inches in diameter by 10 inches deep. Treepot 4 dimensions are 4 square inches by 14 inches deep.

Willow Forest. The Willow Forest habitat type would be installed in narrow strips adjacent to the active low-flow channel in Reach 6 where plant-available soil moisture should be reasonably high. The Willow Forest palette consists of species that are adapted to coarse-textured soils associated with active channels.

Forest Understory. The Forest understory habitat type is composed of widely spaced, shade-tolerant woody and semiwoody shrubs and subshrubs. This habitat type would be installed at Lake Silveira in Forest Understory areas that are either bare or would become bare after Himalayan blackberry removal activities. Only the understory areas near the Lake Silveira inlet would receive irrigation. Forest Understory planting areas would not be held to vegetation performance and success criteria.

Scrub. The Scrub habitat type is composed solely of shrubs and subshrubs. On-center spacing in this habitat type would address local site conditions. HTH adjusted on-center spacing and percent composition values for each species in this habitat type such that total plant density decreases from upstream to downstream.

Xeric Scrub. The Xeric Scrub habitat type was created for Reach 14 since it has the most marginal growing conditions for habitat restoration (Cardno ENTRIX 2012a). HTH also specifies the planting of Xeric Scrub in several small locations in Reaches 4–6 that have particularly gravelly soils and/or are characterized by Cardno ENTRIX as exhibiting root-preventing soil strength and compaction indices, slow soil permeability, and severe soil hydrophobic index (Cardno ENTRIX 2012a). Xeric Scrub is composed of largely the same species as the Scrub habitat type; however, on-center spacing is increased from the Scrub palette to account for the reduced carrying capacity associated with the harsh growing conditions, and the species composition is altered to favor more drought-tolerant species.

Streamside Scrub. The Streamside Scrub habitat type would be installed in narrow strips adjacent to the active low-flow channel. The Streamside Scrub palette consists of species that are adapted to coarse-textured soils associated with active channels. Streamside Scrub would be installed on the benches of Reach 4 and in narrow strips along the active channel in Reaches 5 and 6.

Streamside Scrub (modified). The Streamside scrub habitat type would be installed in narrow strips on the bankfull banks in Reach 4.

Grassland. A native herbaceous hydroseed mix (Table 14) would be applied to all areas disturbed by grading activities, including all plant installation areas. All areas that are graded but required to remain free of woody vegetation for roughness purposes (i.e., grassed floodway areas) would be considered Grassland habitat.

3.1.10 Wetland Mitigation Area

Seeding Plan. The Lake Silveira wetland mitigation area would be broadcast-seeded with a native herbaceous wetland species seed mix (Table 17).

TABLE 17
Wetland Mitigation Area Broadcast Seed Mix

Scientific Name	Common Name	Seeding Rate (lbs. PLS/ac)*
Cyperus eragrostis	tall flatsedge	3.5
Juncus effuses	common rush	1.5
Juncus mexicanus	Mexican rush	1.5
Persicaria amphibia	water smartweed	3.0
Schoenoplectus acutus	hardstem bulrush	3.0
Schoenoplectus californicus	California bulrush	3.0
	TOTAL	**15.5**

*Pure live seed (PLS) is obtained by multiplying the purity percentage by the percentage of total viable seed (i.e., germination rate) and then dividing the number by 100. The recommended application rate (lbs) shown above is divided by the percentage of PLS for this species to find the total number of pounds required to provide the application rate shown in the table.

Planting Plan. The Lake Silveira wetland mitigation area would be planted with a variety of native wetland species (Table 18). The wetland plain would have an undulating surface, providing a range of planting elevations. The rushes, bulrushes and bur reed, and willows would be planted at slightly different elevation ranges relative to the water surface elevation based on their respective ecological requirements (Table 18).

TABLE 18
Wetland Planting Palette

Scientific Name	Common Name	Percent Composition	On-center Spacing (ft.)	Elevation Range (ft. above/ below 0)*
Container Stock				
Juncus effusus	common rush	33%	3	0 to 2
Juncus mexicanus	Mexican rush	33%	3	0 to 2
Schoenoplectus acutus	hardstem bulrush	7%	3	-1 to 1
Schoenoplectus californicus	California bulrush	7%	3	-1 to 1
Sparganium eurycarpum	broadfruit bur reed	7%	3	-1 to 1
Cuttings				
Salix exigua	sandbar willow	4%	8	2 to 4
Salix laevigata	red willow	4%	8	2 to 4
Salix lasiolepis	arroyo willow	4%	8	2 to 4

Notes:
ft. = feet.
The container size would be treeband 2 for all container plants. Treeband 2 dimensions are 2.25 square inches by 5 inches deep.
*0 denotes the water surface elevation.

3.1.11 Plant Procurement and Installation

All container stock, cuttings, and large seeds would be obtained from the Llagas Creek watershed as close to the Project site as possible. All container stock would be contract-grown by a qualified native plant nursery.

3.1.12 Container Stock and California Buckeye Seed

Container plants and California buckeye seed would be installed between 1 November and 31 December. The dimensions of planting holes would vary based on the type of plant and location. All rocks greater than 3 in in diameter would be removed from the excavated soils. Each planting hole would be irrigated before and again immediately following planting.

A 2- to 3-ft–diameter irrigation basin with a 4-in-high and 4-in-wide earthen berm would be manually constructed around each tree and shrub. The basin would help to conserve water for use by the plant and would be kept weed free during the plant establishment period to reduce plant competition.

The container plants would be installed so that their root crowns are at or slightly above (up to one-half in) grade following soil settlement that occurs after initial irrigation. The plants would also be installed so that their root crowns are at the highest position in the irrigation basin. This would minimize the amount of time that standing water would cover the root crown and therefore would reduce root disease.

California buckeye seeds should be installed at approximately 1 in below grade. Two California buckeye seeds would be placed in each planting location, spaced at least 4 in apart.

3.1.13 Cuttings

Willow and mulefat cuttings would be harvested from existing plants in the Llagas Creek watershed from areas as close to the Project site as possible. Harvest and installation would occur between 1 January and 28 February, while the plants are dormant, and after rainfall and/or flood flows have saturated the soils at the mitigation sites. Cuttings would be harvested from numerous plants to obtain a diversity of genetic material. No more than 10% of the canopy would be harvested from any one plant.

Cuttings would be approximately 2.5 ft. long and 0.5- to 1.5-inch in diameter. They would be transported immediately following harvest, stored in buckets of water such that 75% of the cutting is submersed, and installed at the mitigation site on the same day they are harvested. Cuttings would be installed such that the upper approximately one-third of the cutting is exposed above ground. The dimensions of planting holes would vary based on the type of plant and location. Backfill would be compacted firmly around the cutting to eliminate voids between the soil and cutting. Cuttings would not be driven into the ground using a hammer or mallet.

A 2- to 3-ft-diameter irrigation basin with a 4-inch high and 4-inch wide earthen berm would be manually constructed around each cutting. The basin would help to conserve water for use by the plant and would be kept weed free during the plant establishment period to reduce plant competition.

3.1.14 Planting Hole Amendments

All planting holes would be amended in Reaches 6, 7a, and 7b and at Lake Silveira prior to plant installation. Backfill soil for each planting hole would be amended as follows:

- 2.5 pounds of gypsum per cubic yard of backfill
- In the top 1 ft. of soil, one part organic compost into four parts native site soil

3.1.15 Seed Mixes

To maintain local genetic diversity and integrity, all seed for the hydroseed and broadcast seed mixes should originate from inland sources from the nine San Francisco Bay Area counties or from inland sources in Monterey County. Seed would be tested by the seed supplier for percent purity, percent germination, number of pure live seeds per pound, and weed seed content. Seeding would occur just prior to the onset of the rainy season (between 15 September and 15 October). Broadcast seeding of the Xeric Scrub mitigation areas should occur prior to the Grassland hydroseed application (Table 14).

3.1.16 Topsoil Harvest and Placement

Mass grading associated with channel-widening construction would expose low-quality subsoils throughout most of the Project site. Reaches 4, 5, and 14 are the driest reaches with the poorest soils and therefore present considerable revegetation challenges. To maximize the revegetation potential of the graded areas in these reaches, a topsoil management program would be implemented. A registered/licensed geologist is required on-site to monitor and direct the Contractor to harvest viable topsoil material for re-use. The management of topsoil involves the harvest of available topsoil, over-excavation of the subgrade to a specified depth, topsoil storage, topsoil amendment, subgrade preparation, and placement of topsoil up to the finished grade as shown below:

TABLE 19
Depths of Soil Preparation (i.e., Ripping) and
Depth of Topsoil Placement for Each Habitat Type in Project Reaches

Depths of Subgrade Ripping and Depths of Topsoil Placement		
Habitat Type	**Subgrade Ripping Depth (inches)**	**Topsoil Placement Depth (inches)**
Lake Silveira Wetland	**0**	**6**
>10 ft. from bank toe (upslope and downslope)		
Forest	12	12
Sycamore Forest	12	12
Willow Forest	12	12
Scrub	12	12
Streamside Scrub	12	0
Xeric Scrub	12	6

Depths of Subgrade Ripping and Depths of Topsoil Placement		
Habitat Type	**Subgrade Ripping Depth (inches)**	**Topsoil Placement Depth (inches)**
Grassland	12	6
Savanna	12	6
Within 10 ft. from bank toe (upslope and downslope)		
Forest	0	12
Sycamore Forest	0	12
Willow Forest**	0	12
Scrub	0	12
Streamside Scrub	12	0
Xeric Scrub	6	6
Grassland	6	6
Savanna	6	6
Within bankfull channel		
Willow Forest	12	0

3.1.17 Irrigation Plan

A bubbler irrigation system would be installed throughout the riparian mitigation areas prior to plant and seed installation so that all of the riparian plantings receive adequate water. The irrigation system would be of sufficient quality to reliably provide water to all riparian plantings and seedlings for at least 3 years. Hand watering for stream side scrub (Modified) will occur for a period of three years in Reach 4.

Watering would occur during the summer months and during periods of below-average rainfall. Summer watering (April through October) would be relatively infrequent and deep to encourage deep rooting by the native plants and to discourage weed establishment. The quantity and frequency of irrigation during the plant establishment period would be determined in the field by the landscape contractor with input from a qualified restoration ecologist. The quantity and frequency of irrigation would be greatest in Year 1 and would be reduced to an as-needed basis in subsequent years. A typical irrigation regime for native trees and shrubs in restored riparian woodland habitat is 5-10 gallons per plant, two times per month in the first summer, tapering down to one time per month in Year 2, and possibly tapering down to an as-needed basis in Year 3. The frequency and quantity of irrigation would be contingent on weather patterns and direct observations, which may warrant adjusting the irrigation regime at any time.

3.1.18 Phytophthora spp.

The Project has implemented measures to avoid using plant stock that may be infected with the plant pathogen *Phytophthora* spp. Through SCVWD contracting process, staff required the nurseries who bid on the contract to follow Nursery Industry Best Management Practices (BMPs) for *Phytophthora ramorum* Version 1.0 (and subsequent versions when released) by Horticultural Research Institute, USDA ARS & APHIS, CREES and State Department of Agriculture.

The nursery that was awarded the Project's contract, Watershed Nursery, is recognized for utilizing the clean growing practices endorsed by the Phytophthora Working Group (PWG). SCVWD vegetation management staff assisted nursery staff with collection of propagules and seeds for riparian restoration for the Project and BMPs that were followed include: (1) collections did not occur in likely or infected areas, (2) collections did not occur during rain events or wet conditions, (3) collections did not occur when soil was muddy, and (4) seeds, cuttings, or other propagules were collected from plants and fruit that appear healthy. The nursery staff has confirmed that they cleaned the seeds as soon as possible after collection and where compatible with seed storage and germination requirements, treated the seed with heat or appropriate disinfecting chemicals to eliminate seed-borne pathogens or external contamination.

3.2 INVASIVE PLANT CONTROL

The total surface area of Himalayan blackberry and giant reed to be controlled is approximately 12.93 ac and 0.29 ac respectively (Table 20). The majority of the giant reed to be controlled (0.27 ac) is in Reach 6 where no additional mitigation credit will be granted. As a result, the total area of removal for mitigation credit is 12.95 ac (12.93 ac Himalayan blackberry + 0.02 ac giant reed). With a proposed mitigation ratio of 0.5:1 (1/2 of the credit given for establishing new riparian habitat), 6.48 ac of additional mitigation acreage will be applied towards the Project's mitigation requirements. It should be noted that these acreage values are based on the most current design plans available and may vary slightly when the Project design is finalized.

TABLE 20
Surface Areas of Himalayan Blackberry and Giant Reed to be Controlled by Reach

Reach	Mitigation Credit Ratio	Himalayan Blackberry Surface Area (ac)	Giant Reed Surface Area (ac)	Mitigation Credit (1/2 of Control Areas) (ac)
4	0.5:1	0.013	0.022	0.017
5	0.5:1	0.016	0.000	0.008
6	0.5:1	0.961	0.268	0.480*
7a	0.5:1	0.000	0.000	0.000
7b	0.5:1	0.000	0.000	0.000
8	0.5:1	0.000	0.000	0.000
8b	0.5:1	0.000	0.000	0.000
14	0.5:1	0.005	0.000	0.002
Lake Silveira	0.5:1	11.934	0.000	5.967
	TOTAL	**12.928**	**0.289**	**6.475**

Note: The exotic plant control acreages and associated mitigation credit acreages are subject to change as the Project design has not yet been finalized.

*Mitigation credit for Reach 6 does not include the acreage of giant reed control.

3.2.1 Himalayan Blackberry

We conducted research to determine the most effective method(s) to control Himalayan blackberry in the Project. The results showed that Himalayan blackberry control is most effective when a combination of mechanical and chemical methods is employed and that repeated treatments are generally required to effectively eradicate this species in the long-term. To control Himalayan blackberry, all aboveground biomass should be first cut to the ground surface early in the growing season (April-May) and off-hauled. Care should be taken to ensure all live biomass has been removed from the site to reduce the potential spread of remaining plant fragments that can re-establish. The cut vegetation should then be allowed to re-sprout and the new growth treated with a foliar application of herbicide in early spring and/or late summer (see discussion below regarding preferred herbicides). Due to the difficulty associated with long-term control of this species, 1-2 rounds of follow-up herbicide treatments should be completed (DiTomaso 2012) between May and November during the first year of control. For optimal chemical transport to the plants' root systems, 1 round of herbicide application should occur during the late summer (DiTomaso 2012) or early fall. Follow-up herbicide treatments should occur 2-3 times during the following 2 growing seasons to ensure adequate control of this species. The number of follow-up herbicide treatments is flexible, so the treatment schedule can be adjusted if it is determined that more or fewer treatments are required for adequate control. Care should be taken to avoid damaging non-target species.

Most of the recent literature suggests that triclopyr is the most effective herbicide used to control Himalayan blackberry (DiTomaso 2012; Oregon State University 2008). In email correspondence with the SCVWD in 2007, Paul Amato from the Regional Water Quality Control Board recommended using an aquatic label of triclopyr (Renovate) with the surfactant Agri-dex to control Himalayan blackberry on the Guadalupe River to minimize potential impacts on steelhead (*Oncorhynchus mykiss)* (pers. comm. L. Spahr 2013a). Since this recommendation is consistent with the results of our research, we recommend using Renovate at a 1% solution with the surfactant Agri-dex for control of Himalayan blackberry. The herbicide should be applied by, or under the immediate direction of a Department of Pesticide Regulation licensed applicator, and should be applied in compliance with written recommendations from a State-licensed pest control advisor and in accordance with all label instructions and the SCVWD pesticide policy. Best management practices should be followed for all Himalayan blackberry control activities.

Table 21 provides a summary timeline for Himalayan blackberry control activities for the Project. The timeline provided assumes mechanical removal will not be allowed within the bed and banks of Llagas Creek between mid-fall and mid-spring.

TABLE 21
Himalayan Blackberry Control Schedule

Exotic Plant Control Activity	Schedule
Year 1	
Remove aboveground biomass	April-May
1 initial herbicide treatment and 1-2 rounds of follow-up herbicide treatment to re-sprouting vegetation*	June-November**
Year 2	
2-3 rounds of herbicide treatment to re-sprouting vegetation*	May-November**
Year 3	
2-3 rounds of herbicide treatment to re-sprouting vegetation*	May-November**

*The actual number of herbicide treatments will be based upon the response of the plants.

**One of the rounds of follow-up herbicide treatment should occur in late summer or early fall.

3.2.2 Giant Reed

We conducted research to determine the most effective methods to control giant reed at the Project. The results showed that giant reed control is most effective when a combination of mechanical and chemical methods is employed and repeated treatments are usually required to obtain effective long-term control. This finding is supported by the SCVWD's substantial experience controlling vast areas of giant reed including stands along Llagas Creek. The SCVWD has found that control is most effective when as much biomass as possible is initially removed (pers. comm. R. Austin 2013). This includes removal of both the rhizomes and shoots whenever possible. If rhizome removal is not possible, all aboveground biomass should be removed. Care should be taken to ensure that all live biomass that has been removed is properly disposed of off-site to reduce the potential spread of plant fragments at the Project site, which could result in re-establishment. The cut vegetation should be allowed to re-sprout and then the re-sprouts treated with herbicide (see discussion below regarding preferred herbicides) in early summer (Owen et al. 2013, Pers. comm. R. Austin 2013) and again in early fall (Pers. comm. R. Austin 2013). After approximately 6 months all dead giant reed biomass should be removed. This process should be repeated for the next 2 years to ensure all regrowth is completely eliminated. Care should be taken to avoid damaging non-target species.

The SCVWD has found that using the chemical glyphosate with a formulation registered for use in aquatic environments (e. g., Aquamaster) at a 4% solution with the surfactant Competitor or Agri-dex is very effective (pers. comm. R. Austin 2013). Tank mixing imazapyr (Habitat) with glyphosate incorporates an additional mode of control that could potentially improve the results (Pers. comm. R. Austin 2013). However, because of residual soil herbicide issues associated with imazapyr that could impact revegetation efforts, we don't recommend tank mixing with this glyphosate. All herbicides should be applied by, or under the immediate direction of a Department of Pesticide Regulation licensed applicator and should be applied in compliance with written recommendations from a State-licensed pest control advisor and in accordance with all label instructions

and the SCVWD pesticide policy. Best management practices should be followed for all giant reed control activities.

Table 22 provides a summary timeline for giant reed control activities for the Project. The timeline provided assumes mechanical removal will not be allowed within the bed and banks of Llagas Creek between mid-fall and mid-spring.

TABLE 22
Giant Reed Control Schedule

Exotic Plant Control Activity	Schedule
Year 1	
Remove maximum possible biomass	Early spring
Treat re-sprouted vegetation with herbicide	June
Treat remaining living vegetation with herbicide	September
Year 2	
Remove dead biomass	April
Treat re-sprouted vegetation with herbicide	September
Year 3	
Remove dead biomass	April
Treat re-sprouted vegetation with herbicide	September

3.2.3 Revegetation of Treated Sites

Once control of giant reed and Himalayan blackberry is complete, the treated areas should be revegetated with native species. This will occur with a combination of seeding and container plant installation. Since the primary goal of the control work is to eliminate Himalayan blackberry and giant reed, this revegetation is considered a good faith effort designed primarily to minimize the risk of establishment of other non-native species and to help control erosion. As a result, the revegetation work will not include the full complement of restoration measures (irrigation, wood chip mulch, dead plant replacement, etc.) and the success of the site will be based on the efficacy of control efforts and not vegetation establishment.

Broadcast Seeding. All Himalayan blackberry and giant reed control areas should be broadcast seeded with a native herbaceous species seed mix (Table 23) after the 3-year exotic plant control window has passed. Seed should originate from inland sources from the 9 San Francisco Bay-area counties or from inland sources within Monterey County (pers. comm. L. Spahr 2013b). Seeding should occur in the fall before the onset of the rainy season (15 September-15 October). If debris collects or other invasive plant species establish, the debris and invasive plants would be removed to create favorable conditions for seed germination. The broadcast seed should be manually raked into the upper ¼ inch of soil. If desired, the seed could also be applied via hydroseed. If so, the seeding rates in Table 23 below would be doubled.

TABLE 23
Native Herbaceous Species Hand Broadcast Seed Mix and Application Rates

Scientific Name	Common Name	Seeding Rate (pure live seed/acre)*
Artemisia douglasiana	mugwort	0.5
Elymus glaucus	blue wildrye	7.0
Elymus triticoides	creeping wild rye	7.0
	TOTAL	**14.5**

*Seeding rates should be doubled if the seed is applied by hydroseed.

Non-irrigated Enhancement Container Plant Installation. The Himalayan blackberry control areas around Lake Silveira will be planted with native riparian species to take advantage of the favorable conditions present in this particularly moist site (Table 24). The plantings will be installed in areas that are under existing tree canopies after the 3-year exotic plant control window has passed. All container stock should originate from within the Llagas Creek watershed as close to the Project area as possible and should be obtained from a qualified plant nursery. Container plants should be installed between November and December after rains have moistened the soil. Plants will be installed so that their root crowns are at or slightly above (up to ½ inch) grade. No irrigation is proposed for these plantings.

The container plant installation is a good faith enhancement effort to establish understory vegetation and more importantly to compete with non-native plant species. All replanting will occur within Himalayan blackberry removal areas under existing tree canopy. As a result, the container stock installed will benefit from the relatively cool and shady microclimate and should have a greater survival rate than typically found in non-irrigated sites. All of the proposed container plants are at least moderately shade tolerant.

Plants will be installed in single species clusters of 3 plants on 2-foot centers, with an average on-center spacing of 20 ft. between the clusters.

TABLE 24
Native Species Container Planting Palette

Scientific Name	Common Name	Container Size	% Composition
Artemisia douglasiana	mugwort	small container	30
Rubus ursinus	California blackberry	small container	50
Symphoricarpos albus	snowberry	small container	20

3.2.4 Success Criteria Invasive Plants

The SCVWD will control 12.98 acres of Himalayan Blackberry and 0.289 of *Arundo* within the Project footprint as previously described. At year 10 this mitigation element will be deemed complete if there is ≤0.5 acres of Himalayan Blackberry remaining within the pre-construction footprint. At year 10 this mitigation element will be deemed complete if there is ≤0.002 acres remaining within the pre-construction footprint for *Arundo*.

TABLE 25
Mitigation Design Acreage by Reach

Habitat Type	Phase 1						Phase 2							TOTAL
	Reach 4	Reach 5	Reach 7a	Lake Silveira	Reach 14	Subtotal	Reach 5	Reach 6	Reach 7a	Reach 7b	Reach 8	Reach 14	Subtotal	
Riparian Forest*	7.23	1.60	2.97	3.67	0.00	15.47	1.18	16.77	0.00	1.93	0.00	0.00	19.88	35.35
Sycamore Forest	0.00	0.00	4.73	1.36	0.00	6.09	0.00	11.02	0.00	0.00	0.00	0.00	11.02	17.11
Willow Forest	0.00t	0.00	4.16	0.30	0.00	4.46	0.00	7.12	0.00	0.00	0.00	0.00	7.12	11.58
Forest Understory**	0.00	0.00	0.00	0.26	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26
Forest Infill	4.25	0.31	0.00	4.26	0.00	8.82	0.00	11.88	0.00	0.00	0.00	1.76	13.64	22.46
Sycamore Forest Infill	0.00	0.00	0.00	0.74	0.00	0.74	0.00	0.74	0.00	0.00	0.00	0.00	0.74	1.48
Forest Subtotal	**11.48**	**1.91**	**11.86**	**10.59**	**0.00**	**35.84**	**1.18**	**47.53**	**0.00**	**1.93**	**0.00**	**1.76**	**52.40**	**88.24**
Scrub	4.66	0.68	0.56	0.00	0.00	5.90	0.00	0.00	0.00	0.11	0.00	0.00	0.11	6.01
Streamside Scrub	0.60	0.26	0.00	0.00	0.00	0.86	0.59	0.00	0.00	0.00	0.00	0.00	0.59	1.45
Xeric Scrub	0.54	0.00	0.00	0.00	0.40	0.94	0.19	0.88	0.00	0.00	0.00	7.24	8.31	9.25
Xeric Scrub Infill	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.19	0.19
Streamside Scrub (modified)	0.48	0.00	0.00	**0.00**	0.00	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
Scrub Subtotal	**6.28**	**0.94**	**0.56**	**0.00**	**0.40**	**8.18**	**0.97**	**0.88**	**0.00**	**0.11**	**0.00**	**7.24**	**9.09**	**17.38**
Grassland	12.77	0.22	8.49	0.00	0.87	22.35	0.37	0.08	3.81	9.77	4.66	14.17	32.86	55.21
Savanna***	0.00	0.00	5.22	0.00	0.00	5.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.22

*County Roads and Airports Department replacement mitigation area of 0.14 ac is included in these data.
**Values reflect one-half mitigation credit claimed for forest understory establishment. Values exclude overlap between Himalayan blackberry removal and understory planting to avoid double-counting mitigation credit.
***Riparian mitigation credit is not claimed for savanna since the majority of its cover is herbaceous.

3.3 CALIFORNIA SYCAMORE MITIGATION

The mitigation approach to compensate for impacts on California sycamores includes a combination of tree replacement measures and funding research by an academic institution to advance scientific knowledge regarding vegetative propagation of sycamores for habitat restoration purposes.

Tree Replacement. SCVWD proposes to maximize establishment of sycamore trees in all areas that have soil moisture, substrate and other conditions adequate to sustain this species in the long term. Based on the appropriate planting areas available, sycamore trees would be replaced where the soils and hydrology conditions will support self-sustaining trees at a 4.2:1 ratio. The total number of sycamore trees to be installed within the Project limits is approximately 1515. The number of Sycamore trees proposed for planting within Reaches 4, 5, 6, and 7a is 360 and locations are summarized in Table 26.

The remainder of the Sycamores, approximately 1155, will be planted on an ~ 5.1-acre Sycamore Alluvial Woodland bench as part of a recent (May 9, 2017) property acquisition. In order to construct the flood protection Project improvements in Reach 6, land rights were required from Nature Quality Incorporated, an industrial facility occupying 21+ acres of Llagas Creek side property. Through our Environmental Site Assessment(s) for property acquisition, SCVWD staff became familiar with the operations of the facility.

Process water used at the facility is pumped from two groundwater wells and stored in a holding tank where it is treated with chlorine prior to use. Wastewater from the operation is pumped to infiltration ponds on the eastern side of the facility after organic solids are separated in a lined settling pond. Up to 100,000 gallons of wastewater per day may be generated during the peak harvest season. The CCRWQCB issued a permit for operation of the infiltration ponds, and as a result, groundwater monitoring by Nature Quality, Inc. is a requirement.

Through negotiations of property rights for the flood protection element, the SCVWD was able to purchase the entire 21+ acres from Nature Quality as opposed to a water resources flood protection easement for the creek modifications/extents for the proposed Project. This full acquisition of the property, in lieu of easement, has provided an excellent opportunity for additional habitat restoration in the Llagas watershed, resulting in additional protection of beneficial uses through removal of an industrial facility from interaction with the ground/surface waters of Llagas Creek.



Figure 1. This figure depicts the ~5 acres location of a Sycamore Alluvial Woodland bench in Reach 6, downstream Monterey Highway contiguous to the proposed Lake Silveira wetlands mitigation.

TABLE 26
California Sycamore Mitigation

Reach	Number of Affected Sycamore Trees	Number of Sycamore Trees Planned for Installation
8	0	0
7b	0	0
7a	21	105
Lake Silveira	0	47
6	125	208
5	4	0
4	101	0
14	0	0
TOTAL	**251**	**360**

3.3.1 California Sycamore Propagation and Genetic Study Plan

The final Lake and Streambed Alteration Agreement, dated January 11, 2017, for the Upper Llagas Creek Flood Protection Project (Notification No. 1600-2015-0356-R3) requires that the Santa Clara Valley Water District (SCVWD) implement a California sycamore (*Platanus racemosa)* propagation and genetic study plan. The plan was submitted to the California Department of Fish and Wildlife for review and approval December 20, 2016. Preparation and implementation of this study plan will provide partial mitigation for impacts on California sycamore for the Upper Llagas Creek Flood Protection Project.

This research involves conducting a genetic analysis of California sycamore, London plane tree, and hybrids. A companion study will be undertaken to improve techniques to vegetatively propagate California sycamore, which would ensure the production of native sycamore nursery stock. H. T. Harvey & Associates has been contracted by the SCVWD to serve as the principal investigator for this research, which will advance the understanding of California sycamore ecology and the science of restoring California sycamore habitats. The research team for this project includes the University of California, Davis (UC Davis); California State University, Chico; the San Francisco Estuary Institute (SFEI); Phytosphere Research; the Watershed Nursery; and H.T. Harvey & Associates. The research builds on several ongoing California sycamore studies.

California sycamore is an iconic native tree species found in California and northern Baja California. It is the dominant species in sycamore alluvial woodland (SAW), an uncommon habitat type defined as an open to moderately closed, winter-deciduous, broad-leafed riparian woodland dominated by well-spaced California sycamore (Holland 1986). The central California SAW habitat type is described in the *Santa Clara Valley Habitat Plan* (VHP) (ICF International 2012) as a “very rare and threatened land cover type,” and the VHP identifies various goals designed to conserve and restore SAW.

The health and regeneration of California sycamore have been substantially affected by a wide range of factors, including hydrologic modifications of creeks, hybridization with London plane tree (*Platanus* × *hispanica*), and anthracnose. SFEI and H. T. Harvey & Associates have been conducting a Natural Community Conservation Planning grant-funded study designed to develop a better understanding of the biotic and abiotic factors that influence California sycamore health and regeneration (SFEI and H.T. Harvey & Associates in prep.). It is the first of the California sycamore studies funded and involves gathering substantial applicable background information and detailed site-specific information from two of the three sites used in this genetic study. To date, the first study has involved conducting an intensive review of California sycamore ecology literature, mapping sycamore-dominated habitats, and collecting and analyzing field data (e.g., size class, geomorphic position, regeneration patterns, health, survivorship, anthracnose infestations) at two study sites. The significant progress made on the study to date has helped build a foundation on which to better understand California sycamore ecology and what is required to restore and enhance SAW.

The genetic portion of this study involves collecting and analyzing leaf samples from approximately 288 trees (combination of California sycamore, London plane tree, and potential hybrids) from three different sites to determine the ancestry fraction (percent native California sycamore) in each tree sampled. These data will be used to

characterize the nature of hybridization between California sycamore and London plane tree in southern Santa Clara County and to locate California sycamore individuals that can be used as propagule sources for the propagation study.

The propagation study will aim to identify reliable and cost-effective techniques to vegetatively propagate California sycamore. Variables that may be tested in vegetative propagation experiments include time of propagule collection, age and type of material (e.g., root cutting, stem), application of rooting hormone and fungicide, rooting media, and growing conditions (e.g., humidity, heat).

This study plan describes the genetic study that will be implemented to advance the science of restoring California sycamore–dominated habitats, such as those targeted for mitigation by the Upper Llagas Creek Flood Protection Project. It includes a description of the tree sampling, the Restriction Site Associated DNA (RAD) sequencing, and the statistical analysis that will be used to complete the genotyping of individuals and populations. It also describes how the approximately 288 individual trees (combination of pure California sycamore, pure London plane tree, and potential hybrids) will be sampled and analyzed to determine the ancestry fraction (percent native California sycamore) in each individual tree sampled. The pure California sycamore trees that are identified from this study will be used as the source material for the propagation study. The propagation study details will be developed immediately following the approval and implementation of the genetic study.

3.3.1.1 Study Plan Objectives

The study plan has the following objectives:

1. Examine the degree of hybridization present in southern Santa Clara County, and compare the results of this study with those of previous hybridization studies conducted in the northern Sacramento Valley to determine the relative degree of hybridization in the regions.

2. Use tree coring and the genetic analysis to determine approximately when hybridization began to occur in southern Santa Clara County. If a point in time can be identified before which hybridization did not occur, then we will identify the minimum tree size (diameter at breast height) that can be used as a “rule of thumb” to select pure California sycamore trees as source materials for propagation. Such a short cut would be a significant advantage for future sycamore restoration projects.

3. Identify genetically pure California sycamore “mother” trees for use in the propagation study associated with this project and for use in future habitat restoration projects.

3.3.1.2 Study Sites

Three study sites in southeastern Santa Clara County (Pacheco Creek, Upper Coyote Creek, and Upper Llagas Creek) will be used for the genetic analysis. The hydrology, geomorphology, vegetation, and human influence vary significantly among these sites, and together the sites provide a good representation of riparian habitat in southern Santa Clara County that supports

substantial stands of California sycamore. Each site is described separately below.

3.3.1.3 Pacheco Creek

The Pacheco Creek site, like the Upper Coyote Creek site described below, is the location of ongoing research as part of a Local Assistance Grant (LAG) study designed to better understand the biotic and abiotic factors that influence California sycamore health and regeneration. Tree size, location, and geomorphic position data collected as part of the LAG study will be used for this genetic study. The hydrology of the Pacheco Creek site is influenced by a reservoir in its watershed, and the surface of the site has been affected by past land uses, likely including gravel mining; nevertheless, the site contains broad floodplains subject to somewhat regular inundation. The site supports large California sycamore trees, including a moderate number of trees that have died in the last several years from an undetermined cause. The Pacheco Creek study site is owned by the California Department of Transportation, which has granted permission to use this site for scientific research. The Pacheco Creek site support relatively high-quality SAW habitat both upstream and downstream of the site.

3.3.1.4 Upper Coyote Creek

The Coyote Creek site, like the Pacheco Creek site, is the location of an ongoing LAG-funded study designed to better understand the biotic and abiotic factors that influence California sycamore health and regeneration. Data collected from the trees growing at this site as part of the LAG study include tree location, size, and geomorphic position, all of which will be used for this genetic study. The site supports very high-quality SAW with natural hydrology; intact fluvial geomorphologic processes; and large, healthy California sycamore trees. The Upper Coyote Creek site is owned by the Santa Clara Valley Open Space Authority (OSA), which has been a partner in the research conducted to date and will continue to support research, including this genetic study. The site is located in OSA's Palassou Ridge Preserve, an important public resource, and is subject to little human disturbance because of its relatively remote location. High-quality SAW is also present upstream and downstream of the site.

3.3.1.5 Upper Llagas Creek

The Upper Llagas Creek site falls within the footprint of the planned Upper Llagas Creek Flood Protection Project. It is located in the communities of Morgan Hill, San Martin, and Gilroy in Santa Clara County and is closer to urbanized areas than either the Upper Coyote Creek site or the Pacheco Creek site. Data collected for the flood protection project, including data obtained through a detailed tree survey, will be used for this genetic study. The hydrology on the Upper Llagas Creek site is managed by a dam upstream that regulates flows, primarily to feed off-channel groundwater percolation ponds designed to recharge groundwater. Despite the highly-modified hydrology and geomorphology of Upper Llagas Creek, the creek supports a large number of mature California sycamore trees that are an important natural resource for the region.

Upper Llagas Creek is also deeply incised, and most of its historic floodplains are now located well above the active channel. This leaves most of the large California sycamore trees outside the current bed and banks of the creek and no longer subject to regular inundation, which has reduced natural recruitment and is deleterious to the health of the trees.

3.3.2 Plant Material Sampling Approach

H. T. Harvey & Associates have sampled live California sycamore trees at the Pacheco Creek, Upper Coyote Creek, and Upper Llagas Creek study sites, as well as London plane trees growing in southern Santa Clara County. At each of the three study sites, individual California sycamore trees have been identified and measured to size and their locations recorded using handheld Global Positioning System units: In total, there are currently 151 trees at the Pacheco Creek site, 311 trees at the Upper Coyote Creek site, and 706 trees at the Upper Llagas Creek site (identified by H. T. Harvey & Associates for the District [H. T. Harvey & Associates 2014]). Tree surveys at the Pacheco Creek and Upper Coyote Creek sites were completed by H. T. Harvey & Associates and SFEI as part of a LAG-funded study (SFEI and H. T. Harvey & Associates in prep.). London plane trees from the Upper Llagas Creek site and other London plane trees located within approximately 15 miles of the study sites, to be identified by H. T. Harvey & Associates ecologists familiar with the region, also will be sampled. Information on abundance and tree size collected during these surveys will be used to help ensure that a range of tree sizes and geographic areas are represented in the sampling.

All 462 trees identified at the Pacheco Creek and Upper Coyote Creek sites will be eligible for sampling. Approximately 289 trees at the Upper Llagas Creek site will be preserved (not removed during construction) and for which coordinate data have been collected, will be eligible for sampling. Using only preserved trees for sampling at the Upper Llagas Creek site will ensure that any pure California sycamore trees identified during this study are available for the propagation element of this study and for use in future restoration projects. All trees at all sites will be categorized into size classes to ensure that a range of sizes are represented in the sampling. A total of 240 genetic samples will be collected from California sycamore trees at the Pacheco Creek, Upper Coyote Creek, and Upper Llagas Creek sites and an additional 48 genetic samples from London plane trees in southern Santa Clara County within approximately 15 miles of the study sites. The number of samples collected at each of the three study sites, and within each size class within sites, will be determined using proportional allocation. Using proportional allocation ensures that a similar sampling fraction is maintained throughout the population (Thompson 2002), which in this context means that trees across the three sites and three size classes will be sampled approximately evenly. Of the 751 trees, eligible for sampling across the three study sites, 20.1% occur at the Pacheco Creek site, 41.4% occur at the Upper Coyote Creek site, and 38.5% occur at the Upper Llagas Creek site. Thus, of the 240 genetic samples to be collected from California sycamore trees, 48 samples will be collected at the Pacheco Creek site, 100 at the Upper Coyote Creek site, and 92 samples at the Upper Llagas Creek site. At each site, samples will be allocated to size classes based on the abundance of each size class at each site. The samples will represent nine strata (three size classes at three sites), and within each stratum, we will select individual trees using the generalized random-tessellation stratified (GRTS) sampling design. GRTS sampling yields a spatially balanced sample that is more or less evenly dispersed and less susceptible to the

clustering that can occur using simple random sampling. Because the sample is more or less evenly distributed across space, it may provide a more representative sample of the population than simple random sampling (Stevens and Olsen 2004).

3.3.3 Tree Coring Sampling Approach

Fifteen trees selected for genetic sampling also will be cored to estimate age, estimate the relationship of size to age, and investigate the relationship between flood history and California sycamore regeneration. Among the trees used for genetic sampling, all with only one stem greater than 12 inches in diameter at breast height will be identified (a requirement for reliable aging using tree cores) as candidates for coring. Fifteen trees will then be randomly selected from these trees to collect core samples. If the trees selected do not occur in a variety of geomorphic settings (preferred for understanding the relationship of flooding to regeneration), or certain trees are targeted by SFEI that are not included in the set of core samples, we will randomly select trees to omit from our original core sample. For example, if SFEI elects to core three trees that are not included in the original core sample, we will randomly select three trees from our original selection to omit.

3.3.4 Plant Material Collection for DNA Extraction

Leaves will be collected from the 288 trees to be sampled for DNA extraction. Each leaf sample collected will be placed in a Ziploc bag, labeled with a unique tree identification code, and kept cool in an ice chest. The samples will be delivered to Dr. Michael Miller's lab at UC Davis (Miller Lab). The DNA extraction, genotyping, and statistical analysis to be performed by the Miller Lab is described in the "Genetic Analysis" section below.

3.3.5 Plant Material Collection for Herbarium Specimens

In keeping with past hybridization studies, approximately 10 voucher specimens (leaves) will be collected from trees from each of the three study sites and from the London plane trees growing in the vicinity (40 specimens total). These leaves will be collected at the same time when leaves are sampled for the genetic analysis, and they will be submitted to the UC Davis Herbarium for curating. For each leaf collected, the UC Davis Herbarium plant collection data sheet will be filled out with data on location, habitat type, and tree characteristics. The collected leaves will be inserted into plant presses. Labels associated with each herbarium sample will be prepared and submitted with the samples provided to the herbarium.

3.3.6 Tree Measurements

The diameter at breast height will be measured for each tree sampled at the Pacheco and Upper Coyote Creek sites but not at the Upper Llagas Creek site because this information is already available from earlier tree studies.

3.3.7 Genetic Analysis

The Miller Lab used a method called RAD sequencing to discover thousands of single nucleotide polymorphisms and will genotype them in each sample (Miller et al. 2007, 2012; Korneliussen et al. 2014; Ali et al. 2016). The lab has analyzed the 48 London plane tree samples, as well as the 240 samples made up of pure California sycamore

and admixed individuals, for a total of 288 samples. The samples were obtained from different locations and age classes, as described in the "Plant Material Sampling Approach" section above.

The analysis will use two complementary approaches to detect admixed individuals: (1) a maximum-likelihood based approach to identify genetic clusters and assign proportion ancestry for each individual (Pritchard et al. 2000, Skotte et al. 2013) and (2) principal component analysis to expose the genetic distances between all analyzed samples, which relates to their level of admixture (Reich et al. 2008, Fumagalli et al. 2014). These two approaches use different logical frameworks to approach this issue, but in the Miller Lab's experience, they provide almost identical results (e.g., Saglam et al. 2016). The consensus from these analyses will identify the ancestry fraction (e.g., 25% native, 95% native, 100% native) for each sample. The genetic analysis will add to the body of knowledge regarding California sycamore hybridization in general and how hybridization in southern Santa Clara County as determined by this study compares to recent hybridization work completed in the northern Sacramento Valley (Johnson et al. 2016).

The CDFW has required genetic testing of any plantings derived from either seed or stock within 5 years of planting (CDFW 1600-2015-0356-R3). The SCVWD proposes to replace the 241 sycamores with approximately 1,515 trees.

3.3.8 Reporting

A final report will be prepared and disseminated to CDFW, summer 2019, and all interested agencies that includes a detailed description of the genetic and propagation components of the study, their relationship to each other, and how the overall study will advance the science of California sycamore ecology and habitat restoration. It will include introduction, methods, results, and discussion sections. The report also will include figures that show the location of individual trees sampled for the genetic analysis. The following important findings are expected to be included in the report:

- Determination of the age-structure of the invasion of London plane tree in southern Santa Clara County
- Determination of the nature of hybridization between California sycamore and London plane tree in southern Santa Clara County
- Locations of pure California sycamore individuals for use in propagation for future restoration projects
- Locations of contaminated sycamore individuals that should not be used in propagation for future restoration projects
- Identification of a generalized minimum size class for pure California sycamores for use in vegetative propagation of California sycamore in central California
- Identification of propagation techniques that can be used to vegetative propagate California sycamore more reliably and cost-effectively

3.4 REMEDIATION SITE MITIGATION (2.25 ACRES)

Additional opportunities for riparian restoration arose during Project development and includes 15 locations within the Project footprint, which are areas not proposed for required grading for flood protection work (Appendix C). However, in the interest of improving the overall ecological health of the creek, these areas were included into the Project footprint for riparian restoration (remediation) purposes. These include an illegal road crossing in Reach 6 where the current land owner accesses their adjacent property through the creek. The SCVWD has acquired both sides of this property to eliminate the need for a road crossing through the creek. Other remediation's included in this work that would provide direct benefit for creek restoration include: the removal of legacy trash and debris on bed and banks of the creek, and removal of existing bank armoring (i.e. concrete slabs, remnant bridge material) previously installed to protect the failing creek banks due to creek incision. The 15 sites where the remediation will occur totals approximately 2.25 acres of creek restoration. After the sites are remediated (i.e. concrete rubble removed) the sites will be regarded and planted with native riparian vegetation.

The SCVWD has proposed 2.25 acres of riparian mitigation credit for the remediation of these sites.

3.5 WETLAND MITIGATION

Mitigation for impacts on wetland habitat consists of 4.09 ac of wetland creation (Table 13) at Lake Silveira (See 3.8 Compensatory Mitigation). Wetland habitat is also expected to naturally reestablish in the channel similar to current conditions soon after Project construction is completed. The Reach 7a diversion is anticipated to have wetland vegetation present post construction and will be managed to maximize wetland habitats. A post-construction USACE jurisdictional wetland delineation at year 5 will confirm expansion of jurisdiction and as a result of Project construction, an increase in seasonal wetlands within Llagas Creek.

3.6 AQUATIC MITIGATION

Aquatic impacts would be mitigated primarily through natural reestablishment of jurisdictional habitat after channel construction, creation of new jurisdictional habitat in Reach 7a, and restoration of flows to the historic channel at Lake Silveira. Additional aquatic enhancement measures include installation of instream habitat features in the newly constructed Creek channel, excavation of a meandering low-flow channel, savage and replacement of channel bed substrate in the low-flow channel.

Instream complexity features would be installed and channel bed substrate replaced to provide slope protection, velocity refuge for fish, and generally improve instream habitat. Instream complexity features would include rootwads, boulders, triangular boulder clusters, large woody debris, and single wing deflectors.

Excavation of a low-flow channel in the channel bottom and restoration of flow to the historic channel would facilitate the potential migration of anadromous fish in the downstream reaches and in the vicinity of Lake Silveira.

Proposed aquatic habitat mitigation measures for the Project are as follows:

- Natural reestablishment of jurisdictional habitat post-construction.

- Creation of new jurisdictional habitat in Reach 7a.
- Restoration of flows to the historic Llagas Creek channel at Lake Silveira.

Proposed aquatic habitat enhancement measures for the Project are as follows:

- Installation of instream habitat features in the newly constructed Creek channel.
- Excavation of a meandering low-flow channel.
- Replacement of channel bed substrate in the low-flow channel.

Post-construction jurisdictional wetland and other waters delineations will confirm whether or not aquatic (other waters) habitat has been expanded as a result of the Project.

3.7 HABITAT ENHANCEMENT MITIGATION MEASURES

3.7.1 Bat Habitat Mitigation

Several nonnative trees located on the Project site would be girdled to create snags. Snag creation serves the dual purpose of controlling nonnative, invasive trees and enhancing bat and wildlife habitat because standing dead trees have high habitat value.

3.7.1.1 Bat Habitat Snag Creation and Bat House Installation

A total of eight tree of heaven (*Ailanthus altissima*) and 19 eucalyptus trees would be girdled to provide standing dead snags for bat habitat (Table 27). There are 13 sites identified in Reach 4 and 14 sites identified in Reach 6 for tree girdling.

TABLE 27
Number and Location of Trees to Be Girdled

Reach	Scientific Name	Common Name	Number of Trees to Girdle
6	*Ailanthus altissima*	tree of heaven	7
	Eucalyptus sp.	Eucalyptus	7
4	*Ailanthus altissima*	tree of heaven	1
	Eucalyptus sp.	Eucalyptus	12
		TOTAL	**27**

Trees would be girdled with a chainsaw or similar implement, and the girdled portion of the stem would then be treated with herbicide. The tree would also by limbed and cut at the top so the height of the snag does not exceed 15 ft.

In addition to tree girdling, fifteen, four-chambered nursery bat houses will be installed throughout the project reach. The bat houses will be maintained for the duration of 10 years' post construction. This will allow for recovery of natural habitats (Figure 2).



Figure 2. Location of the fifteen nursery bat houses for the Upper Llagas Creek Project.

3.7.2 Upland Habitat Enhancement (Mammals/Reptiles/Amphibians)

Log piles would be installed throughout the riparian mitigation areas above the top-of-bank as a habitat enhancement measure. These logs would originate from trees removed during demolition work. Downed woody material provides wildlife habitat and, as it decomposes, facilitates the recovery of vegetation and soil nutrient cycling and improves nutrient holding capacity and soil water content (Brown and Naeth 2013).

3.7.3 Upland Log Piles

Single- and five-log piles would be installed above the top-of-bank throughout the riparian mitigation areas after earthwork has been completed in a given area. Logs would be obtained during demolition and would range from 10 to 24 in in diameter and from 8 to 10 ft. long. The quantities and locations of log piles are summarized in Table 28.

TABLE 28
Quantities and Locations of Upland Log Piles

Reach	Number of Single-log Piles	Number of Five-log Piles
8	0	0
7b	0	0
7a	0	0
Lake Silveira	12	10
6	28	35
5	1	4
4	19	29
14	1	4
TOTAL	**61**	**82**

3.7.4 Turtle Basking Habitat

Lake Silveira currently provides habitat for the western pond turtle (*Actinemys marmorata*). However, basking habitat for this species is limited at the lake due to the relative scarcity of woody debris. The restoration project includes the installation of ten basking logs. The basking logs, coupled with the enhanced foraging habitat associated with the sloughs within the marsh habitat, are expected to promote an increase in western pond turtle use of, and likely abundance in, Lake Silveira (H.T. Harvey, 2013). Ten turtle perches would be installed at Lake Silveira along the edges of the vegetated marsh adjacent to deep open water.

3.7.4.1 Turtle Basking Habitat

Ten turtle perches would be installed along the edge of the wetland plain in the open water portion of the Lake Silveira wetland mitigation area. The turtle perches would consist of two logs positioned at the water surface elevation and would be supported by logs that have been driven into the lake substrate. The perch logs would be positioned approximately parallel to the water surface but would be angled slightly to ensure that at least a portion of the logs would be above the water surface elevation and thus would provide sufficient turtle basking habitat throughout the full range of potential water level elevations. The perches would be positioned to maximize sun exposure. Please see Appendix E.

3.7.5 Reach 8 Diversion Tunnel Bat Mitigation

The Reach 8 diversion tunnel is designed to deter use by bats; however, it could still provide unintended and unwanted bat habitat. This mitigation measure would determine whether bats are using the tunnel and, if they are, may require the installation of devises to exclude them. Exclusion would reduce the potential for harm or injury to bats in case of a large flood flows and would protect against water quality degradation due to their guano. Bat monitoring of the tunnel would consist of visual inspections by a qualified biologist for bats and bat sign (i.e., individual animals and guano), to be conducted in the tunnel annually. If bats are detected, acoustic monitoring with AnaBat™ or Petersson units would be installed to monitor the number of bats using the tunnel. After establishing

a baseline count of bats occupying the tunnel, resource agencies would be consulted to determine whether further action is necessary.

3.8 COMPENSATORY MITIGATION LAKE SILVEIRA

To provide compensatory mitigation, for significant, unavoidable Project impacts the SCVWD at the recommendation of the United States Fish and Wildlife Service (Service), has proposed permittee-responsible onsite, in-kind wetland creation and stream restoration of Lake Silveira.

The Project has a protracted history with the first Final Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) prepared by the Natural Resources Conservation Service, United States Department of Agriculture, and the District in 1982. In 2001, a draft Supplemental Environmental Impact Statement (SEIS)/Supplemental Environmental Impact Report (SEIR) was prepared. At that time, under the authority of the Fish and Wildlife Coordination Act, the Service assessed fish and wildlife impacts and mitigation needs for the proposed project. A Coordination Act Report was prepared by the Service in 2001 and revised in 2003 (USFWS, 2003).

As a major mitigation element for the flood protection improvements in Llagas Creek, the Service recommended restoration of approximately 2,000 linear feet of abandoned stream channel and conversion of the present-day Lake Silveira (Lake) to emergent marsh habitat to replace lost functions and values, and provide aquatic habitat diversity with the mosaic of wetlands adjacent to the restored channel (USFWS, 2003). The Lake was artificially created prior to 1989 when unknown parties breached a portion of the northern levee forcing stream flows into an abandoned gravel quarry pit. The rerouting of the stream subsequently isolated and dewatered a portion of the higher quality riparian habitat of Llagas Creek. Mitigation for impacts on wetland habitat would be achieved via habitat restoration at Lake Silveira (USFWS 2003b). Wetland habitat is also expected to reestablish along the newly constructed channel margins where it currently exists along the Creek and through additional areas where Creek widening is proposed.

The CAR guidance relative to Lake Silveira mitigation goals is as follows, in summary:

- The restoration work should substantially adhere to the design criteria in the HEP report.
- Implementing the Project would restore flow to at least 1980 ln ft. of the historic creek channel and would reduce flow to the 600-ln ft. of channel that connects the historic channel to the lake.
- Portions of Lake Silveira would be filled with soil excavated from Reach 7a to create an emergent wetland mosaic with 3.5 ac of cattails and bulrushes and 4.5 ac of shallow open water. (Note that the current design provides for 4.09 ac of emergent wetland and 3.35 ac of open water.)
- The CAR also prescribes enhancing the wetland with at least 25 pieces of large woody debris.

While the compensatory mitigation recommendation was made by the Service prior to the USACE Compensatory Mitigation Rule (2008) the recommendation took into account a watershed wide perspective for improving habitat values within the watershed. The SCVWD developed these objectives during design and in coordination with resource agencies.

1. Maximize increase of overall ecological functions and values.

2. Provide improved habitat for steelhead, turtles, and other special-status wildlife species known to occur at the site.

3. Reduce suitable habitat for nonnative predatory fish.

4. Provide riparian habitat in Reach 7a to provide connectivity to existing high-quality riparian habitat in Reach 6 (downstream of Monterey Road) and upstream of the lake to Chesbro Reservoir.

5. Improve or protect upstream and downstream functions and resources, hydraulic conveyance, groundwater recharge, ecological resources.

6. Contribute to improved sediment supply to downstream reaches and ensure geomorphic stability for the lake, historic channel, and downstream reaches.

7. Provide a stable, low-maintenance confluence with the lake and/or historic channel to Reach 7a of the Upper Llagas Creek Project.

8. Improve water quality, including turbidity, temperature, and circulation/flushing.

9. Provide for adequate buffers to wildlife using the mitigation site, if the City of Morgan Hill develops passive recreation in the area in the future.

10. Minimize design, permitting, construction, monitoring, and maintenance costs.

The proposed Lake Silveira design splits Llagas Creek flows to achieve the restoration of flow to approximately 2,000 linear feet of historic channel while still allowing a portion of flow into the lake to maintain a self-sustaining wetland. A side weir flow split structure would be installed at the divergence point and a new lake outlet structure would be installed where the lake would tie back into Llagas Creek. In response to input from the National Marine Fisheries Service (NMFS), the majority of low flows would be directed into the historic channel, and higher flows would be split more evenly between the historic and lake inlet channels. The current hydrologic design represents a balancing of many of the goals cited above. For example, divergence of substantial flows to the historic channel reduces flushing of the lake. Monitoring and management activities would be undertaken by the SCVWD to optimize achieving the various Project goals.

Approximately two thirds of the lake would be filled to create wetland marsh habitat with transitional riparian areas surrounding the lake. The marsh plain is designed to be partially inundated by the lake, with an undulating surface that would vary from deeper ponding areas to areas slightly elevated above the water surface. Under high flows, the marsh would be fully inundated. The intent is to create a habitat mosaic of open water and vegetated marsh. The design also includes two islands in the marsh situated adjacent to open water areas, 10 rootwads, and 10 turtle perches. The lake level would remain relatively stable throughout the year at an assumed elevation of approximately 304 ft., with some slight decreases (approximately 0.5 ft.) on hot days and temporary increases in lake levels during high flow events. The lake water surface level can be regulated with the use of a notch-weir outlet structure. The wetland area would be revegetated by a combination of seeding and wetland container plant installation. The marsh plain's higher mounds and the two islands would also

include the installation of willows to maximize habitat value and complexity. See Figure 3 below.

Additionally, SCVWD is proposing removal of 11.934 acres of Himalayan blackberry and replacing with native herbaceous species within the restored historic channel and adjacent wetlands (see Section 3.2.3).

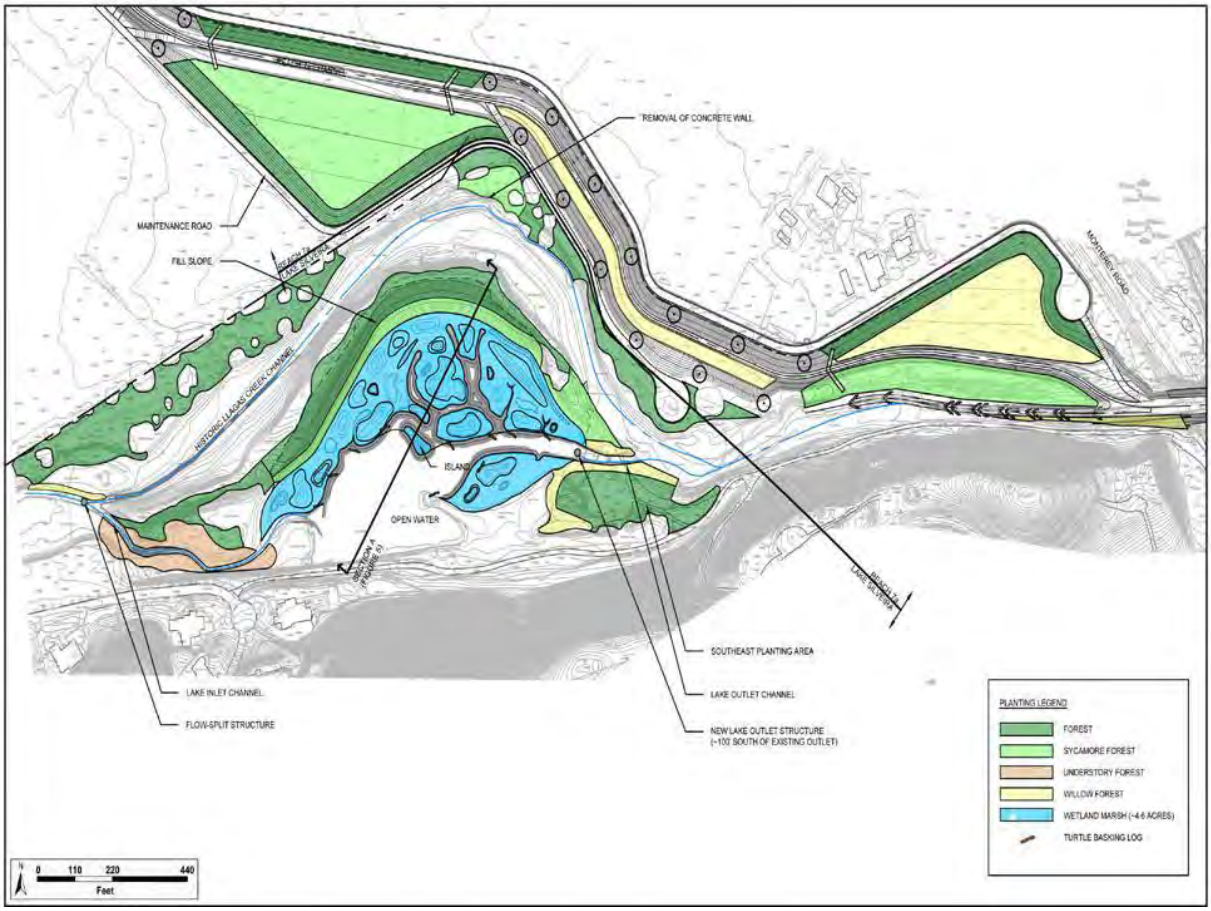


Figure 3. Lake Silveira Compensatory Mitigation Design

To better understand the sustainability of these created habitats, and because wetland and riparian habitats are predicted to be the most sensitive during drought, the SCVWD commissioned work during the recent drought condition (March 2013-September 2016) to better demonstrate sustainability of created/restored habitat. The SCVWD retained Balance Hydrologics (Balance) to a) collect hydrologic data and prepare a data report on water levels within Lake Silveira and the surrounding shallow aquifer, b) monitor the hydrologic system through the current period of drought, and c) work with the SCVWD to summarize basic water-quality parameters in the Llagas Creek, Lake Silveira and the adjacent shallow aquifer. This monitoring program was designed to assist in maintaining sustainable wetland and riparian habitat planned for the Lake Silveira during such conditions. The results of that work are presented in Appendix D; however, the monitoring has provided additional assurance that these created habitats will be sustainable into the future.

3.9 SPECIAL-STATUS SPECIES MITIGATION SOUTH CENTRAL COAST STEELHEAD

3.9.1 Summary of Mitigation for Impacts to S-CCC Steelhead

Impacts to South-Central California Coast Steelhead (S-CCCS)

The South-Central California Coast Steelhead (S-CCCS) ESU was listed by the National Marine Fisheries Service (NMFS) as "threatened" on August 18, 1997 (Federal Register 2006). The listing was reaffirmed on January 5, 2006. Steelhead trout utilizing the Pajaro River system are considered to be the northern-most component within the S-CCC ESU, as designated by the NMFS (2004). All steelhead within this Distinct Population Segment are considered "winter steelhead" (NMFS 2005) based on their migratory timing and behavior; ascending streams during the winter when winter rainfall results in suitable flow and temperature (Moyle 2002).

Critical habitat for South-Central California Coast steelhead is present in the Project area from Reach 4 (Llagas Creek at Buena Vista Avenue) through Reach 6 (Llagas Creek at Monterey Road). Outside the project area, critical habitat extends upstream (Llagas Creek from Monterey Road to Chesbro Dam) and downstream of the Project area (Llagas Creek from Monterey Road to the Pajaro River and stream reaches of the Pajaro River basin to, but not including, the Santa Maria River (NMFS 2005a). Llagas Creek is part of the Pajaro River Sub-Basin Hydrologic Unit (HU) 3305 and within the South Santa Clara Valley Hydrologic Sub-area (HSA) 330530 (NMFS 2005b). CDFW (2013) shows that the segment of Llagas Creek from Monterey Road (City of Morgan Hill) to Southside Drive (City of Gilroy), which encompasses Reaches 4, 5, and 6, contains fair spawning habitat, no rearing habitat, and poor migration opportunities.

Impacts to steelhead and aquatic biological resources were qualitatively evaluated for the FEIR using an approach that links Project activities to direct and indirect effects on steelhead and their habitats. Effects on aquatic biological resources can be direct, as in the mortality of individual specimens (i.e., during construction), and indirect, as in effects that do not cause the immediate mortality of an individual, but that may reduce the habitat or eliminate the species over time.

To summarize, the FEIR analyzed and found impacts to steelhead and steelhead habitat are less than significant with mitigation. The qualitative evaluation summarized impacts to each life history phase and proposed specific mitigation measures to minimize impacts in addition to channel design improvements as means of improving upon the existing conditions for steelhead in the Llagas Watershed. The FEIR can be referenced for that evaluation and for incorporation of Best Management Practices (BMPs) to further reduce impacts to steelhead trout but to summarize, six mitigation measures were identified in the FEIR to protect aquatic resources: AQUA 1a, Design for steelhead passage through the Project area; AQUA 1b, Inspect large woody debris for erosion hazard and ecological importance; AQUA 2a, Inspect for spawning steelhead prior to instream construction; AQUA 2b, Monitor for spawning steelhead during dewatering activities; BOT-1b, Mitigation Plan for special status plants; and BOT-1c T: Prepare a Revegetation, Monitoring, and Mitigation Plan. Two mitigation measures are directly related to construction, AQUA 2a and 2b, while a third, AQUA 1b is related to operations and maintenance of the project in relation to management of Large Woody Debris (LWD) through a tiered process to retain ecological value of wood in managed systems. Two mitigation measures, Botany 1b and 1c, are related to revegetation success and criteria

which will have its own section of the Mitigation and Monitoring Plan. Direct benefits to steelhead habitat will be extracted from the overall revegetation plan and presented in this section as Shaded Riverine Aquatic (SRA). The other mitigation element cited in the EIR is related to design of instream features for steelhead passage (AQUA 1a) is expanded upon herein.

Additionally, many other elements of Project design and planning, including the compensatory mitigation element for Project impacts and incorporation of instream complexity features into the design, has a direct benefit to the instream habitat and subsequently mitigation for steelhead, found within Llagas Creek, and will be summarized here with proposed monitoring and success criteria.

Summary of Mitigation for Impacts to S-CCC Steelhead

Stable Channel Design

Planning for improvements to the physical habitat in Llagas Creek, and in particular the critical habitat reaches of 4, 5, and 6 started early in Project development. Llagas Creek within the Project parameters is incising. The channel incision likely started many years ago, when the land was first converted to agriculture and from there many factors (i.e. reservoir construction and urbanization, etc.) have continued to contribute to the current level of degradation. A stable channel design analysis was performed by conducting sediment transport and hydraulic studies (Balance Hydrologics 2012; Noble Consultants and Northwest Hydraulics 2008). This analysis assisted in determining stable channel dimensions that would not result in channel aggradations (i.e., sediment deposition), or degradation (i.e., scour and incision), and would reduce potential long-term maintenance and still meet flood capacity objectives. The channel cross-sectional form was designed to be in a stable, dynamic equilibrium to match the flow conditions and sediment regime of the Llagas Creek watershed. The stable channel form includes a bank full channel morphology, whereby the width-depth ratio, slope, sinuosity, and overall channel dimensions have been sized to accommodate the flow and sediment load contributed by the drainage area. Additionally, the Project includes grade control structures to arrest existing incision processes and ensure the Project channels are vertically stable. The reduction of channel incision by creation of a stable channel should reduce the sediment loading to the Pajaro Watershed for which Llagas Watershed is an upper tributary while ensuring the stability of the physical habitat within Llagas Creek critical habitat into the future.

Steelhead Passage (Channel and Structure Design)

The final channel design incorporated criteria from Anadromous Salmonid Passage Facility Design (NMFS 2008) to mitigate any potential passage impediment created by new facilities. The SCVWD will document the criteria, rationale, and guidelines for proper fish passage at each constructed facility within critical habitat. Designing instream structures to allow fish passage requires site-specific analysis of each type of structure in addition to analysis of hydrology information and river morphology trends, as well as biological information including life stage, run size, and period of migration. Passage for adult and juvenile steelhead through different types of instream structures was obtained by following type specific criteria and guidelines, and analyzing site-specific attributes to maintain water velocities and fall heights to be within the range of published passage criteria for migrating steelhead.

Channel Restoration-Compensatory Mitigation

The proposed onsite compensatory mitigation Project element, to separate an artificial instream impoundment (Lake Silveira) from Llagas Creek and restore flows to approximately 2,000 linear feet of the abandoned channel, provides multiple benefits for steelhead trout. Once the separation is complete, there will be improved passage conditions for adult and juvenile fish as they will have unimpeded passage to upstream and downstream habitats through the restored natural channel. Additionally, this mitigation element would add rearing habitat back to the watershed while improving rearing habitat below the Lake by ameliorating most deleterious water quality effects (i.e. increased temperature and turbidity) created by the impounded water.

Revegetation-Shaded Riverine Aquatic

Implementation of Mitigation Measure BOT-1c T (*Prepare a Revegetation, Monitoring, and Mitigation Plan*) would reduce impacts related to the construction of flood conveyance channels on juvenile steelhead rearing habitat. Due to changed hydrology and land use (i.e. anthropogenic disturbance) within the Llagas watershed, the riparian corridor within the Project limits is degraded with little to no natural succession. BOT-1c selects vegetation which is suited to the current hydrologic condition and soil types found in the watershed which should provide a self-sustaining riparian corridor (i.e. large woody debris, detritus etc.) to benefit steelhead well into the future. Project elements related to revegetation of near shore habitats (i.e. Shaded Riverine Aquatic) will benefit steelhead head rearing in two areas. The first area is Reach 6 where it is anticipated water quality will improve (i.e. temperature and turbidity) once the historic channel is re-established. The strategy is to plant 6.90 acres of near shore willow forest within 15 feet of the wetted perimeter (Figure 2). The second area is located upstream of Monterey Road to the split flow, side weir located upstream of the Lake. This area is the re-established historic channel around Lake Silveira. The current design calls for 0.19 acres of willow forest within 15 feet of the wetted channel to augment the near shore habitat (Figure 2). This area is currently vegetated and will be managed as natural channel with no flood protection management actions taken (i.e. vegetation management for capacity or removal of large woody debris) thereby providing for higher quality steelhead rearing habitat.

Instream Complexity

To mitigate any additional affects to steelhead rearing or migratory corridors, instream complexity features will be installed and maintained in Reaches 4, 5, 6, and as part of the Lake Silveira on-site mitigation element. The constructed creek features are intended to assist with migration of steelhead during moderate to high flows by providing hydraulic cover. Further, the structures will provide escape cover for upstream migrating or rearing steelhead. The following structures will be installed and maintained in the Project area: clusters of log-root wad structures, stream boulders, triangular boulder clusters, and divide logs, wing deflectors, and groupings of coarse woody debris to create complexity. These features will be maintained to ensure they continue to function as they were designed and are retained within the system to provide the ecological value for steelhead. The greatest concentration of instream features to be installed are in Reach 6, as this is currently a perennial stream reach (down to San Martin Avenue) and potentially has the highest quality steelhead rearing habitat in the Project area. The structures will provide resting places for upstream migrating adult steelhead where no

resting places currently exist, improving migration success within the Project and through the Project area to potential spawning habitat in Llagas Creek below Chesbro Dam. These structures will provide a benefit to upstream migrating adult steelhead as well as the potential for increased cover for rearing juveniles in perennial portions of Reach 6.

Remediation Sites (2.25 Riparian Restoration) Removal of Road Crossings, Bank Hardscape Trash and Debris

Additional Project elements that would provide direct benefit for steelhead is the removal of an illegal road crossings, removal of legacy trash and debris on bed and banks of the creek, and removal of existing bank armoring (i.e. concrete structures) previously installed to protect the failing creek banks due to channel incision. These removal areas will be replanted with native vegetation.

Steelhead Monitoring Program

To provide "meaningful and focused mitigation" in alignment with recovery goals established by the federal S-CCC Steelhead Recovery Plan (NMFS 2013) the SCVWD requested technical support and assistance for development and implementation of a monitoring plan for actions that involve modifications to critical habitat in the Llagas Creek watershed as part of the proposed Project. Due to the lack of quantitative data in the S-CCC Distinct Population Segment (DPS), NMFS established a recovery objective focused on research and monitoring. Research and monitoring data collected under recommendations outlined in the recovery plan will be used to elucidate refined delisting criteria and serve as the baseline for evaluation of recovery actions. The monitoring methods and subsequent data collection efforts for the Project will go towards better understanding baseline conditions within this important DPS.

3.10 SPECIAL-STATUS SPECIES MITIGATION CALIFORNIA TIGER SALAMANDER

The Project is expected to result in a total of 25.61 acres of impacts to upland and aquatic dispersal for the California Tiger Salamander. This included 3.86 acres of “semi-permanent” impacts due to construction of access roads and 21.75 acres of temporary impacts. Access roads will not be maintained post-construction as part of the permit action for the Upper Llagas Project and therefore the maintenance roads are expected to support some fossorial mammal activity within two years of the initial impact.

Upland habitat within the Project limits is described as subterranean refuge on bed and banks of Llagas Creek and is expected to return to pre-Project conditions within one year. In addition to the Lake Silveira wetland creation and stream restoration compensatory mitigation within the 52+ acre site being purchased by the SCVWD, the purchased Nature Quality site provides an additional 21+ acres of property contiguous with Lake Silveira. Considering this 21+ acre site is contiguous with the 52+ acre Lake Silveira parcel, this protects 73+ acres along of Llagas Creek from future development. As a result of the additional property acquisitions required to accommodate the Project footprint, approximately 400+ acres of riparian habitat along the Llagas Creek watershed will be protected from future development within the city of Morgan Hill, city of Gilroy, and the unincorporated areas of Santa Clara County, specifically San Martin. This alleviates the direct threat of habitat conversion for upland habitat for CTS within the Llagas Creek watershed.

3.10.1 Summary of CDFW and USFWS Mitigation for Impacts to California Tiger Salamander

The area of the Project footprint which overlaps CTS upland habitat is within the City of Morgan Hill (City), all within Santa Clara County. The District contends that the long-term persistence of CTS within the vicinity of the City is likely compromised due to conversion of open space to urban infill adjacent to the 35-acre site where CTS were found. Therefore, preservation and enhancement of upland habitat within or adjacent to the Project site will only provide marginal benefits to the already fragmented population which has persisted within the dwindling remaining open space areas within the City. Therefore, to mitigate Project impacts for 29.47 acres of impacts to CTS the District purchased mitigation credits for CTS at Sparling Ranch. Sparling Ranch is located within the geographic area (i.e. service area) in which the permitted impacts can be compensated and has been approved through the formal process by CDFW and USFWS. The quality and quantity of available habitat for CTS at Sparling Ranch surpasses that of the area where the Project impacts will occur. The long-term persistence of the species at the Sparling Ranch is not compromised by urban disturbance.

A California Endangered Species Act (CESA) incidental take permit (ITP) was issued by CDFW on August 3, 2018 to the District pursuant to Fish and Game Code § 2081, subdivisions (b) and (c), and California Code of Regulations, Title 14 § 783.0 et. seq. To fully comply with requirements outlined in the Incidental Take Permit (ITP) procedures (Fish & G. Code § 2081 (b); Cal. Code Regs., tit. 14, §§ 783.2-783.8), as required and pursuant CESA, to fully mitigate project-related impacts to the CTS for implementation of the Upper Llagas Creek Project (Project), the purchased mitigation credits at the CDFW approved mitigation bank fulfills that commitment. Purchase of credits for CTS is consistent with Conditions for Approval 9.2 of the CDFW's issued final ITP.

The USFWS issued a Biological Opinion (BO) on August 22, 2018 for Project activities (U.S. Army Corps of Engineers (Corps) file number 2014-00086S). Term and Condition number 2 states "The Corps or SCVWD shall ensure that the purchase takes place for at least 29.47 acres of Central California tiger salamander credits at the Sparling Ranch Conservation Bank in Santa Clara/San Benito counties prior to the initiation of construction of the proposed project." The purchase of credits at Sparling Ranch fulfills term and condition number 2 of the issued BO.

SECTION 4.0 MONITORING

The SCVWD proposes to monitor the affected area post construction for 10 consecutive years with adaptive management strategies outlined in the latter half of the monitoring schedule to address uncertainties that may arise as a result of data collection. The specific elements outlined in this monitoring plan include geomorphology, hydrology, water quality, native revegetation success, invasive plant control success and ESA steelhead monitoring.

This monitoring program for Project impacts first established baseline conditions for biological condition utilizing the California Rapid Assessment Methodology within the Project limits, the Llagas Creek Watershed and the larger Pajaro watershed. The SCVWD hired scientific experts in the field of rapid assessment and ecological condition to conduct this assessment and therefore, the result for existing condition functions and values are presented here in this MMP as a result of their work. As this work is intended to form the foundation for long term monitoring, it will be presented without alteration from the original assessment in the form of excerpts. As a result of this baseline data collection effort, baseline biotic conditions are presented here.

4.1 GEOMORPHOLOGY AND HYDROLOGY

In order to mitigate the temporary and permanent losses and degradation of aquatic and riparian habitat that result from the construction of Project, the SCVWD has established habitat mitigation areas and channel complexity features. The mitigation elements will be monitored for success for a 10-year period. The hydrologic and geomorphic success criteria, and subsequent monitoring methods outlined below are designed to support the mitigation habitat goals of the Project. Specifically, the hydrologic and geomorphic monitoring plan is structured to answer the follow questions:

A. Compensatory Lake Silveira Mitigation Area

1. Is Lake Silveira wetland marsh functioning hydrologically to support a vigorous and sustainable wetland habitat, and meet water-quality objectives?

2. Are flows and sediment transport through the restored historical creek trending toward levels sufficient to support critical steelhead life stages and maintain channel stability downstream in Reaches 4, 5, and 6?

B. Flood Protection Project Area

Is long-term channel incision being slowed or arrested, such that mitigation established for the Project is likely to be effective?

Subsequent sections outline the quantitative and qualitative criteria for success followed by the methods for mitigation and monitoring.

4.1.1 Quantitative Hydrologic Success Criteria

The Water Quality Control Plan (the “Basin Plan”) for the Central Coast Basin establishes criteria for water quality. The ULCFPP post-project conditions are not expected to adversely affect the 13 beneficial uses highlighted in the Basin Plan,

however one of the goals of the Lake Silveira wetland marsh restoration is to improve water quality. Moore (2011) found that flows within and flow from Lake Silveira did not conform to the standards of the Basin Plan with respect to temperature and turbidity.

The Basin Plan objective for water temperature is as follows: “At no time or place shall the temperature of any water be increased by more than 5^0F above natural receiving temperature” (RWQCB, 2011). Moore (2011) found that the temperature of water passing through Lake Silveira is commonly elevated in excess of 5^0F during summer monitoring. One of the Lake Silveira wetland marsh design goals are to speed up the exchange of water through the marsh, and provide enhanced riparian shading. Therefore, the SCVWD establishes the following success criteria:

Success Criterion 1: Flows into the Lake Silveira wetland marsh must maintain a less than 5^0F increase in water temperature in and downstream of Lake Silveira wetland marsh.

The Basin Plan objective for turbidity is as follows: “Increase in turbidity attributable to controllable water quality factors shall not exceed the following limits: Where natural turbidity is between 0 and 50 Jackson Turbidity Units (JTU), increases shall not exceed 20 percent” (RWQCB, 2011). Moore (2012) also observed an increase in turbidity within Lake Silveira during winter and summer, but only observed elevated turbidity above the 20% threshold in Llagas Creek downstream of Lake Silveira during summer monitoring. The Lake Silveira wetland marsh design is intended to sequester clastic (or ‘mineral’) sedimentation (one possible source of the measured turbidity), and reduce temperatures or increase the rate at which water moves through the restored wetlands. As such, the SCVWD establishes the following success criteria:

Success Criterion 2: Flows into the Lake Silveira wetland marsh must be sufficient to maintain a less than 20% increase in turbidity within the Lake Silveira wetland marsh, and in the waters just downstream from the marsh.

4.1.2 Qualitative Geomorphic and Hydrologic Monitoring Success Criteria

In addition to the quantitative success criteria, there are numerous qualitative geomorphic and hydrologic factors which indicate that geomorphic and hydrologic conditions are stable, and are likely to support sustainable habitat development after the end of the 10-year monitoring program.

4.1.3 Qualitative Channel Stability Criteria

Llagas Creek is presently affected by ongoing channel incision (Noble Consultants, Inc., and Northwest Hydraulic Consultants, 2008; Hecht and others, 2012). This incision adversely affects aquatic habitat values, and eventually degrades riparian woodland. It also leads to bank instabilities, erosion at bridges and other channel controls, or falling water tables. Measurements and data have indicated additional bedload will reduce or even offset the ongoing, nearly ubiquitous downcutting. A major objective of the Lake Silveira habitat-enhancement effort is to allow additional bedload to move downstream, bypassing the existing bedload sink in Lake Silveira, and augment habitat in Reaches 4, 5, and 6.

Measuring sediment-transport rates will allow the SCVWD monitoring team to evaluate whether restoring sediment transport through the historical creek instead of through Lake Silveira is increasing sediment transport to Reach 6, and whether routing West Little Llagas Creek flows through the Reach 7a diversion directly into Llagas Creek is further augmenting bedload transport into Reaches 6, 5, and 4. Measuring sediment-transport rates will also establish when increases in sediment transport may lead to desired habitat properties—such as bar formation or gravel riffle development within the creek—in reaches 5 and 6.

Trends in bedload transport will also help to inform whether the channel configuration is likely to remain stable, an important foundation enabling management for the Project to meet habitat goals. If the amount of sediment transported at given moderate or high flows increases over time, it will likely establish that coarse-sediment transport around and downstream from Lake Silveira has been increased, enabling restoration. If bedload transport decreases at a given flow, it is likely that the restoration of the historic creek has not been successful. The baseline will be the actual measured transport during the storms of water year 2011 at the Buena Vista bridge and other sampling sites (Strudley and others, 2011).

Qualitative monitoring will further provide a general indication that the geomorphic and hydrologic conditions are stable and support habitat development if adverse conditions are NOT observed, either along the channel mitigation corridors, or through the Lake Silveira wetland marsh. The channels and wetland are expected to evolve following regrading, but any of the following may be cause for concern:

- Marked and ongoing head cutting.
- Marked channel incision or downcutting.
- Substantial bank erosion or lateral channel migration.
- Excessive sedimentation or aggradation.

As such, the following success criterion is established:

Success Criterion 3: Channel conditions will evolve, but, overall, the channel will remain stable.

4.1.4 Qualitative Hydrologic Success Criteria

Within the Lake Silveira wetland, sustained water levels are critical to maintaining wetland habitat. The lake water surface level can be regulated with the use of a notch-weir outlet structure. Collecting water levels in the Lake Silveira wetland marsh, and in the shallow aquifer, in tandem with inflow and outflow measurements, will provide data which can be utilized to study groundwater-surface water interactions at and adjacent to the Lake Silveira wetland marsh, and the southern portions of Reach 7a diversion channel. Relating seasonal and inter-annual fluctuations in streamflow (downstream in Reaches 4, 5 or 6), groundwater, and water levels in the Lake Silveira wetland marsh will be crucial to making potential wetland management decisions by the SCVWD to support a sustain a viable wetland habitat.

Success Criterion 4: Flows into the Lake Silveira wetland marsh, via surface water, direct precipitation, or through groundwater movement, should maintain water levels to a degree that sustains wetland vegetation during normal hydrologic conditions.

4.2 GEOMORPHIC AND HYDROLOGIC MONITORING METHODOLOGY

The proposed physical creek-monitoring program will evaluate how instream conditions are evolving over the first 10 years relative to the as-built conditions. The monitoring methods have been specifically selected to help evaluate the health, vigor and success of the aquatic and riparian habitat mitigation elements. In the event that repairs need to be made to sustain the value of the habitat mitigation elements, the monitoring program has been designed to provide substantive data to allow such repairs to be implemented effectively.

This comprehensive monitoring program addresses the objectives and enhanced functions the project design aim to achieve, as outlined in the Upper Llagas Creek Flood Protection Project 65% Design Documentation Report (RMC Water and Environment, 2013), and the 30% Lake Silveira Design Documentation Report (Stephens and others, 2013). The proposed stream physical monitoring program will include collecting quantitative data on stream flow, bed and suspended sediment loads, plus enough profiles and cross-sections to establish whether the right processes are effectively shaping the habitats. At the Lake Silveira wetland marsh, success depends on vigorous emergent wetland and riparian habitats that depend on surface and groundwater.

Water level data will be collected in tandem with water level data within the adjacent aquifer, such that differences in the level, hydraulic gradient, and surface water-groundwater interactions can be assessed. This data will allow the SCVWD monitoring team to relate water levels to vegetation development. Qualitative assessments will also be conducted during the monitoring effort describing signs of geomorphic stress or success, such as the extent of patches of sand-impaired habitat (stress) or organized gravel features—such as bars or riffles—which demonstrate increased availability of gravels and cobbles (success). The monitoring will include visual surveys of the stream channel beds, banks, riparian vegetation, and collection of bed samples for photo documentation and repeat photographs. The position of high-water marks from significant storms will be noted and recorded, such that actual channel roughness may be computed.

Monitoring will be completed in accordance with the schedule presented in Table 29. It is noted that dependent upon future weather conditions and patterns, full and scaled back monitoring years may need to be inter-changed in order to collect data appropriate for evaluation of the mitigation elements. These decisions will be evaluated after each year using the data collected in that year and previous years of monitoring.

TABLE 29
Monitoring Schedule

Monitoring Task	***Year 1***	***Year 2***	***Year 3***	***Year 4***	***Year 5***	***Year 6***	***Year 7***	***Year 8***	***Year 9***	***Year 10***
Hydrology and Geomorphology										
Creek Walk, Observations, Photo-documentation	X	X	X		X		X			X
Habitat-Significant Topographic Surveys (thalweg and x-section)	X	X	X		X		X			X
Flow and Sediment Transport Monitoring near Church Avenue Ponds	X		X		X		X			X
Lake Silveira	***Year 1***	***Year 2***	***Year 3***	***Year 4***	***Year 5***	***Year 6***	***Year 7***	***Year 8***	***Year 9***	***Year 10***
Creek Walk, Observations, Photo-documentation	X	X	X		X		X			X
Habitat-Significant Topographic Surveys (thalweg and x-section)	X	X	X		X		X			X
Flow observations at Lake Silveira Wetland Marsh Inlet Side Weir Flow Split	X	X	X	X	X	X	X	X	X	X
Water-level Monitoring Lake Silveira Wetland Marsh	X	X	X		X		X			X
Measurement of Water Quality in Lake Silveira Wetland Marsh and Reach 7a Diversion	X	X	X	X	X	X	X	X	X	X

**Summary Report and Long-Term Maintenance Plan will be written at Year 10*
***End of Year Report Findings will be submitted to agencies January 31st*

4.2.1 Llagas Flood Protection Monitoring Elements

Creek Walks, Channel and Bank Stability and Bed Material Observations, Photo-documentation (Relates to Success Criteria 1 and 4)

Qualitative observations of the creek channel and bank stability (dynamics) will be logged during monitoring creek walks and end-of-summer site visits when topographic data and photographs are scheduled for collection. These observations will be made and reported on the schedule outlined in Table 28. During the end-of-the-summer creek walks, monitors will also collect shovel samples of bed material within riffles through the project reach and photograph them to document general bed sediment characteristics. These assessments will serve as early detection for signs of bed downcutting or bank instability (dynamics) for which prompt corrective action may be recommended, and to evaluate trends in bed composition. Specifically, in documenting bed and bank conditions, SCVWD monitoring team will look for signs of obvious scour, head cuts and knick points, deposition or other significant changes in the low-flow and high-flow channels and along their bank margins, scour or undermining of storm water outfalls and at access roads, bank protection sites and/or at crossings, accumulation of woody debris having a detrimental impact on channel conveyance, and stability of the overall creek corridor.

Photo points will document conditions in monitoring years outlined in Table 28. Photo-documentation points will be installed during Year-1 monitoring. Subsequently, photo points will be monitored at the end of each water-year when topographic data is collected and channel stability conditions are evaluated. Approximately 5-20 photo-points will be permanently established through each reach, at locations of geomorphic significance (i.e. complexity structures, grade controls, channel bends, confluences). Efforts will be made to site photo points and/or shoot photos as late in the year as possible to avoid taking pictures of leaves and branches only as can commonly occur along establishing riparian corridors.

Annual Profile and Cross-sections Survey (Relates to Success Criteria 3)

Surveys of as-built conditions will be conducted immediately upon project construction to establish baseline monitoring conditions. Surveys will be tied to the project datum. Subsequently, profile and cross-section data will be collected to evaluate how the constructed channel evolves in response to future high-flow events and trends in overall watershed conditions. Long profiles will be collected for the entire 13.9 mile with point spacing at geomorphically significant intervals between 500-1000 feet, depending on morphology. Cross-sections will be collected overbank-to- overbank, including the active low-flow channel, the floodplain bench and access roads. All cross- sections will be established in riffle-head environments, near ‘crossover’ points, where channels tend to be the most stable and most diagnostic. Cross-sections will be monumented to facilitate accurate repeat surveys. Cross-sectional data will be collected at roughly 1500-foot intervals, equating to roughly 20 to 30 cross-sections for the full length of Llagas Creek between Lake Silveira and downstream end of Reach 4 (Buena Vista Ave). Survey sites will be selected in order to represent a variety of morphologies and related mitigation planting communities and ecotones.

Survey data will be compared to as-built surveys and cumulatively overlaid onto previous years’ survey data. Areas of excessive erosion and deposition will be noted, and

compared with observations from creek walks. The combination of a stream walk and widely-spaced habitat- significant geomorphic cross sections has proven quite effective in a number of Bay Area streams.

Streamflow and Bedload Sediment Transport Survey (Relates to Success Criteria 3 and 4)

Streamflow as well as suspended- and bedload-sediment transport through the constructed reach will be measured to assess the fundamental assumptions of the channel design and sediment modeling. Conditions will be monitored at one location in the reconfigured channel adjacent to the Church Avenue infiltration ponds in lower Reach 6, where SCVWD is planning to operate a stream gage. Streamflow and sediment load data were collected at a nearby stream gaging station during water year 2011 (Strudley and others, 2011), which should provide reasonable pre-project baseline data for comparison to future conditions. Flow and bedload transport conditions will be monitored at this location for up to 4 to 6 storm observations per year during selected years. At-a- station hydraulic geometry relations developed from discharge measurements at the station will be used to compare the simulated velocities near the Church Avenue gage to those actually measured, and will also be used quantify the amount of incision or deposition in this reach. Suspended- and bedload-sediment rating curves (which show how much sediment is being transported at a given flow) will be established at this station

4.2.2 Lake Silveira Wetland Marsh Monitoring

Creek Walks, Channel and Bank Stability and Bed Material Observations (Relates to Success Criteria 3 and 4)

A creek walk will be conducted in the same fashion as described in Section 4.2.1 from the confluence of Reaches 6 and 7a, through the historic creek, to the historic Olive Avenue crossing, as damage to the old crossing (which now serves as a grade-control structure) could lead to channel instabilities both upstream and downstream into the historic creek. Specific attention will be paid to the Olive Avenue crossing, the berm dividing the historic creek from the wetland marsh, and the side weir inlet structure and the Lake Silveira wetlands march outlet structure.

Annual Profile and Cross-sections Survey (Relates to Success Criteria 3)

At the Lake Silveira wetland marsh, 1-3 topographic profiles will be located in collaboration with project ecologists and surveyed to evaluate the establishment of wetland and riparian species in reference to water levels and water control infrastructure elevations in the Lake Silveira wetland marsh. In addition, long profiles will be surveyed through the inlet and outlet structures, 100 feet upstream and downstream of the structures, both in the Lake Silveira wetland marsh and historic creek, according to the schedule outlined in Table 24.

Habitat-significant cross-sections will extend from top of bank to top of bank and will include all major breaks in slope with sufficient detail to detect year-to-year vertical change of 0.10 feet. Data will be archived. The annual monitoring report will include all profile and cross-section data, and plots will illustrate each year's data cumulatively.

Lake Silveira Flow Monitoring, Wetland Water Level Monitoring, and Basic Water Quality (Relates to Success Criteria 1 and 2)

Water levels in the Lake Silveira wetland marsh will be a primary factor contributing to the success or failure of the wetland mitigation features therein. A permanent staff plate will be installed in the Lake Silveira wetland marsh, likely near the outlet structure, to facilitate water- level observations. Water levels within the Lake Silveira wetland marsh will be related to the project datum to assess the relative inundation of the Lake Silveira wetland marsh ecotones. Water level data will facilitate effective decisions regarding management or water levels in support of successful mitigation habitat.

In addition to water-level monitoring in the Lake Silveira wetland marsh, the SCVWD monitoring team will establish monitoring points at the side weir flow split structure, in the historic creek, and downstream of the Lake Silveira wetland marsh, within Llagas Creek. The SCVWD monitoring team will take manual flow measurements 4-6 times a year during years outlined in Table 24. It is recommended that water levels at the inlet side weir flow split structure be monitored with a continuously logging, telemetered water level recorder. Manual flow measurements will be correlated to staff measurements and stage-discharge rating curves will be developed, to facilitate management of the wetland to meet habitat goals.

SCVWD will install a continuously logging multi-parameter telemetered sonde within the Lake Silveira marsh. At a minimum, the sonde will be fitted to record water level, specific conductance (a measure of salts in solution), water temperature, dissolved oxygen and turbidity. In addition, when staff visit the site to download, calibrate and maintain the continuously recording instruments, specific conductance, temperature and turbidity will be sampled just upstream of the side weir flow split structure, and downstream of the Lake Silveira wetland marsh outlet within Llagas Creek, approximately at the same locations sampled by Moore (2011). These data will be recorded in an observer log and reported during end of year reporting.

Stream water level and flow data will be summarized and presented along with Lake Silveira wetland marsh water-level data and shallow aquifer water level data at the end of each water year. As the site evolves other parameters or locations may need to be monitored.

4.2.3 Annual Reporting

Quantitative, data and information will be summarized in an annual monitoring report based on the schedule outlined in Table 28 and will include adaptive management recommendations as warranted. This report will be submitted to the resource agencies by January 31 of each year for 10 years, four months following completion of hydrologic monitoring by September 30.

4.2.4 Remedial Actions

If observed conditions identify potential immediate management is required needs (such as deposition or erosion after a significant flow event, or if water quality thresholds are exceeded), the team will develop recommended actions within a target of 90 days describing the observed conditions and identifying potential actions appropriate to mitigate, control, and/or rectify the situation. Seasonal and inter-annual variability will

strongly influence conditions and subsequently, the monitoring schedule proposed in Table 28 may need to be modified.

4.2.5 10-Year Summary Report and Long-term Maintenance Plan

At the end of the 10-year period, a monitoring report will be assembled summarizing key monitoring data and observations. The 10 years of monitoring data is expected to establish a new baseline for longer term management and success of the Project channels and the Lake Silveira wetland marsh restoration. During the final year of the 10-year monitoring plan, the SCVWD monitoring team will produce a report summarizing the geomorphologic and hydrologic findings. The SCVWD monitoring team will also issue an addendum to the Project Operations and Maintenance Manual, utilizing data collected during the 10-year monitoring and maintenance program, which will be used to improve operations and maintenance practices of the Project channels and the Lake Silveira wetland marsh.

4.3 RIPARIAN VEGETATION MONITORING

Monitoring data would be collected and used for the following reasons: (1) to determine if mitigation would be required for potential indirect impacts on Little Llagas Creek, (2) to evaluate the success of the mitigation in the riparian, wetland, and aquatic habitats, and (3) to determine whether the sites are being adequately maintained and to direct future maintenance efforts.

A monitoring program would be employed to determine whether and how habitat values along West/East Little Llagas Creek would change as a result of construction of the Reach 7a diversion channel. This monitoring program would compare the existing extent of jurisdictional areas and extent, health and vigor of riparian and wetland habitat to post-Project conditions. If changes exceed established thresholds, then habitat mitigation would be required.

Following installation, the Project site, which includes the Lake Silveira compensatory property, would be monitored over a 10-year period (Years 1–4, 5, 7, and 10). Performance and final success criteria at the Project site would be based on woody plant percent survival, woody plant percent cover, tree height, Himalayan blackberry and giant reed cover, wetland vegetation percent cover, delineated jurisdictional areas, California Rapid Assessment Method (CRAM) scoring, and hydrologic and geomorphic functioning. By the end of the monitoring programs or demonstrated achievement of monitoring objectives, the mitigation areas are expected to be sufficiently established, and it can be determined whether they would eventually reach their long-term goals with little chance of failure. If the final success criteria have not been met at the end of the monitoring periods, monitoring would continue until they have been met.

As-built report data would be collected by the monitoring staff during construction of Phase 1 and Phase 2. Once each phase of restoration is complete, the data would be assembled, and an as-built report would be prepared for each phase.

The biological as-built reports would show all significant deviations from the MMP and plans, specifications, and estimates, such as changes to the mitigation area size or configuration, changes in the plant species installed, and/or any features added or removed from the sites that were or were not included in these documents. Future analysis of the mitigation sites would be based on restoration baseline documented in these reports.

The monitoring program would establish permanent photo-documentation points from representative locations throughout the mitigation areas to document as-built conditions. To the extent feasible, photo-documentation points would also be established prior to construction in non-graded areas as a means of documenting the restoration process from start to end. Future photo-documentation would be conducted from the original points established to capture changes in the mitigation areas over time.

Compared with the existing conditions, the proposed mitigation riparian habitat would provide more acreage, more continuous upper canopy, more diverse understory, and a reduced presence of invasive and nonnative plant species. Riparian habitat functions and values would be improved following successful riparian revegetation activities.

Wetland mitigation includes new vegetated wetland habitat creation at Lake Silveira. Wetland vegetation would be established via active planting and natural recruitment. The acreage of new vegetated wetland marsh, contiguous with open water, expanded riparian habitat, and a re-watered historic channel, would create a large and diverse habitat mosaic that is approached in only a few other areas in the region. Additionally, the Sycamore Alluvial Woodland bench restoration, (Reach 6) will add 5 acres of this rare habitat type to the adjacent property of Lake Silveira and thus, will provide for valuable buffer of upland habitat to the riparian corridor.

Grassland habitat is expected to support several common, widespread generalist wildlife species. Gopher snakes, common garter snakes (*Thamnophis sirtalis*), western fence lizards, Sierran chorus frogs (*Pseudacris sierra*), western toads, deer mice (*Peromyscus maniculatus*), Botta's pocket gophers, and California ground squirrels would use these habitats. A number of species of birds breeding in adjacent habitats with trees or shrubs, or breeding under nearby culverts or bridges, would forage in grassland habitat along Upper Llagas Creek. These include the California towhee, northern mockingbird (*Mimus polyglottos*), black phoebe, and barn swallow (*Hirundo rustica*). Migrating and wintering white-crowned sparrows and golden-crowned sparrows (*Zonotrichia atricapilla*) are common foragers on seeds in grassland habitats. Raptors such as the red-tailed hawk and red-shouldered hawk would forage on small reptiles and mammals in these grasslands as well.

Riparian scrub provides more habitat structure than grassland habitat and consequently is expected to support a greater abundance and diversity of wildlife. The species using grassland riparian habitats described above are expected to use riparian scrub as well. In addition, riparian scrub provides nesting sites for a number of birds, including the California towhee, northern mockingbird, lesser goldfinch (*Spinus psaltria*), Bewick's wren (*Thryomanes bewickii*), and Anna's hummingbird (*Calypte anna*).

Riparian forest provides even greater structural diversity and cover and would therefore provide habitat for numerous wildlife species. Common kingsnakes (*Lampropeltis getula*), slender salamanders (*Batrachoseps attenuatus*), southern alligator lizards, and western skinks (*Eumeces skiltonianus*) will forage and take refuge in mammal burrows and plant litter. Raccoons will use hollows in mature trees and other refugia as dens, and gray foxes will occur in this habitat. Small mammals such as the ornate shrew (*Sorex ornatus*) and Audubon's cottontail (*Sylvilagus audubonii*) will use these riparian habitats as well. Riparian forest will provide suitable foraging and breeding habitat for several functional groups of birds, including insectivores (e.g., warblers, flycatchers), seed-eaters (e.g., finches), raptors, and cavity-nesters (e.g., swallows and woodpeckers). Among the numerous species of birds expected to use the riparian habitats on the Project site for breeding are the Pacific-slope flycatcher (*Empidonax difficilis*), black-headed grosbeak (*Pheucticus melanocephalus*), warbling vireo (*Vireo gilvus*),

yellow warbler (*Dendroica petechia*), chestnut-backed chickadee, oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltriparus minimus*), western scrub-jay, house wren (*Troglodytes aedon*), and American robin. Raptors, such as the red-shouldered hawk and Cooper's hawk (*Accipiter cooperii*), will nest in these riparian corridors and forage in adjacent habitats. Large numbers of migrants and wintering birds will also occur in this riparian forest. Mature riparian forest will provide roosting habitat for bats, such as the Brazilian free-tailed bat (*Tadarida brasiliensis*), Yuma myotis (*Myotis yumanensis*), California myotis (*Myotis californicus*), and big brown bat (*Eptesicus fuscus*).

The proposed habitat modifications at Lake Silveira would improve conditions for large numbers of wildlife species that are relatively uncommon in the Santa Clara Valley. Implementing the Project would convert habitat that is relatively widespread in the region (open water habitat with relatively sparse riparian vegetation and no wetland vegetation) into a complex habitat mosaic represented in few areas in the Santa Clara Valley. This mosaic of habitats would include islands, emergent wetlands with varying depths, open water that includes both open pond-like areas and narrower channels in the wetlands, and extensive riparian vegetation. The increased complexity of vegetation would increase the number of "niches" that can be exploited by a variety of wildlife species.

The existing riparian, oak woodland, and scrub habitats onsite support a number of bird species, and implementing the Project would provide overwhelming benefits to a diverse array of bird species. Most importantly, the mosaic of islands, open water, and emergent marsh would support marsh habitat present in few other areas on the Santa Clara Valley floor. Marsh-associated birds, such as common moorhens (*Gallinula chloropus*), Virginia rails (*Rallus limicola*), and possibly American bitterns (*Botaurus lentiginosus*), may nest (and will definitely forage) in this habitat. A variety of duck species will nest and forage on the site. Species such as the mallard (*Anas platyrhynchos*), cinnamon teal (*Anas cyanoptera*), and gadwall (*Anas strepera*) will nest in marshy or grassy vegetation, and the cavity-nesting wood duck (*Aix sponsa*) and common merganser (*Mergus merganser*) may nest in trees in the vicinity and lead their broods to the restoration site to forage. Song sparrows (*Melospiza melodia*), marsh wrens (*Cistothorus palustris*), and common yellowthroats (*Geothlypis trichas*) are among the songbirds that will increase in abundance owing to the restoration of marsh habitat. Belted kingfishers (*Ceryle alcyon*), green herons (*Butorides virescens*), and great egrets (*Ardea alba*) are among the other waterbirds that will use this site in greater abundance following restoration than under current conditions.

In addition to the species mentioned above, implementing the restoration project would improve habitat conditions for several special-status species. Lake Silveira currently provides habitat for the western pond turtle, a California species of special concern. During a survey in May and June 2012, HTH ecologists observed up to two western pond turtles basking on woody debris along the northern shore of the lake (H. T. Harvey & Associates 2012b). However, basking habitat for this species is limited at the lake because of the relative scarcity of woody debris. The restoration project would include the installation of basking logs in a number of locations. This habitat enhancement, coupled with the enhanced foraging habitat associated with the sloughs in the marsh habitat, would promote an increase in western pond turtle use of, and likely abundance in, Lake Silveira.

In the San Francisco Bay Area, the yellow warbler, a California species of special concern, nests in riparian habitat, primarily that dominated by cottonwoods, willows, and sycamores. The existing riparian woodland on the Project site provides suitable habitat for the yellow warbler,

and it is possible that several pairs breed on the site. During an assessment for the least Bell's vireo in late June 2011, a singing male yellow warbler just upstream from Lake Silveira was one of only two detected on the entire Project site (H. T. Harvey & Associates 2011). The riparian habitat restoration associated with implementing the Project would enhance habitat for this species considerably in the Lake Silveira area. Likewise, riparian habitat enhancement may create suitable nesting conditions for another species of special concern: the yellow-breasted chat (*Icteria virens*). This species is also a riparian habitat obligate in the San Francisco Bay Area, but its distribution is much more localized than that of the yellow warbler. A singing male yellow-breasted chat was present along Llagas Creek upstream from Lake Silveira in April 1994, suggesting the possibility of breeding there (Bousman 2007b; Santa Clara County Bird Data). The riparian habitat restoration proposed at Lake Silveira would enhance habitat, and it is possible that yellow-breasted chats may breed on the site after the Project is completed.

4.4 MONITORING FOR INDIRECT EFFECTS WEST/EAST LITTLE LLAGAS CREEK

The response of existing habitat to changes in the hydrologic regime of West/East Little Llagas Creek cannot be accurately predicted as described above in Section 2.3. As a result, a monitoring program is proposed to assess whether and how habitat values would change. This monitoring program would compare the existing extent of jurisdictional areas and the existing extent, health and vigor of riparian habitat to post-Project conditions. If changes exceed the thresholds described below, then habitat mitigation would be required. The following sections describe the proposed monitoring methods and mitigation thresholds for potential indirect Project impacts on Little Llagas Creek. See Table 29 and Table 30.

The 2014 USACE jurisdictional delineation Geographic Information Systems (GIS) shape files provide the pre-construction baseline data for the extent of USACE jurisdictional areas. A new jurisdictional delineation will be conducted in Year 5 following construction for comparison purposes. The monitoring program will compare both the total USACE jurisdictional areas and areas of PEM to determine if the surface area has changed as a result of the Project. Monitoring in Years 3 and 5 will be used to determine if trends are occurring. At Year-10, when the full effects of the hydrologic changes should be known, the potential change in USACE jurisdiction will form the basis for determining if habitat mitigation is required as described in the mitigation thresholds section below.

Riparian Habitat Extent and Health and Vigor

The extent and health and vigor of riparian habitat will be re-assessed in Years 3, 5, and 10 following construction and will be compared against baseline conditions. The extent of riparian canopy and its health and vigor will be re-evaluated using the same techniques used to establish the baseline conditions as described in the methods section of this memo. Data analysis of monitoring results from Years 3 and 5 will be used to identify trends. At Year-10, when the full effects of the hydrologic changes should be known, the potential change in riparian extent will form the basis for determining if habitat mitigation is required.

Mitigation Thresholds

Proposed mitigation thresholds are as follows and are summarized in Table 30. Inter-annual variation in the extent of jurisdictional habitats is expected as part of normal climatic patterns. Thus, the threshold for habitat mitigation will not apply until there is a 10% or more reduction in USACE jurisdictional areas including PEM.

- Riparian Habitat Extent. Inter-annual variation in the extent of jurisdictional habitats is expected as part of normal climatic patterns. Thus, the threshold for habitat mitigation will not apply until there is a 10% or more reduction in riparian habitat including PEM. For the purposes of this assessment, riparian habitat will be combined values that include both native and non-native PFO and PSS.

- Riparian Habitat Health and Vigor. Health and vigor will be used to determine trends in vegetation condition but will not have specific mitigation requirement thresholds.

TABLE 30
Mitigation Thresholds for West/East Little Llagas indirect effects

Monitoring Parameter	Pre-construction	Year-3	Year-5	Year-10
USACE Jurisdictional Habitat Extent	Baseline	N/A	N/A	10% or more reduction in total USACE jurisdiction or PEM acreage
Riparian Habitat Extent*	Baseline	N/A	N/A	10% or more reduction in combined PFO and PSS acreage
Riparian Habitat Health and Vigor**	Baseline	N/A	N/A	N/A

* Combines native and non-native PFO and PSS

** Trend characteristic only - not used in mitigation threshold determination

TABLE 31
Monitoring Program Schedule

Monitoring Parameter	Pre-construction	Year-3	Year-5	Year-10
USACE Jurisdictional Habitat Extent	X	X	X	X
Riparian Habitat Extent	X	X	X	X
Riparian Habitat Health and Vigor	X	X	X	X

4.5 PROJECT MONITORING FOR DIRECT IMPACTS VEGETATION AND ECOLOGICAL FUNCTIONING PERFORMANCE AND FINAL SUCCESS CRITERIA

4.5.1 Woody Plant Percent Survival

Percent survival of woody species would be monitored during the first 3 years of short-term monitoring, primarily to trigger replanting during the maintenance period and to determine whether any species are incompatible with specific site conditions (e.g., hydrology and soils). The value of percent survival as a metric to quantify habitat establishment is less significant than percent cover once plants are established, mature,

and growing. Hydrologic conditions vary throughout the Project site, and to account for this, percent survival performance and final success criteria are lower in the drier portions of the Project site. The percent survival performance and final success criteria are presented in Table 33, Vegetation and Ecological Function Performance and Final Success Criteria.

Based on consultation with the CCRWQCB in May 2017, mitigation plantings were added to Reach 4. As a result, a tiered approach to the success criteria is proposed due to a lack of existing soil nutrients and water availability within Reaches 4 for forest habitat. The proposed percent survival criteria are for Year 1 at 75%, Year 2 at 70%, and Year 3 at 65%, with medium to high health and vigor assessment. Additionally, the modified stream side scrub polygon for Reach 4 is a monotypic stand of *Baccharis salicifolia* which will be installed on the bankfull benches at the request of the CCRWQCB. This vegetation will be irrigated for three years however, if the vegetation does not persist after the establishment period it will not be replaced.

4.5.2 California Sycamore Percent Survival

Percent survival of California sycamore trees would be monitored during the first 3 years, as well as Year 5 to confirm adequate survival beyond the maintenance period. The percent survival performance and final success criteria are presented in Table 33.

4.5.3 Woody Plant Health and Vigor Reach 4

A riparian habitat health and vigor assessment will be conducted in lieu of percent cover metric in Reach 4 forest habitat by evaluating factors such as leaf color, bud development, new growth, herbivory, drought stress, fungal/insect infestation, and physical damage.

Health and vigor will be evaluated using the following criteria:

- foliage- symptoms of disease, size, color, wilting, defoliation, new growth, browsing by wildlife, and insect damage;
- wood- symptoms of disease, browsing by wildlife, insect damage, girdling, structural deformities, die-back, and sunburn; and
- root crown- symptoms of disease, girdling, insect damage, and die-back.

The average rating for health and vigor must exceed 2 (“fair”) for the sample. A rating of fair is not uncommon under natural conditions. The health and vigor criteria allows clear differentiation between dead and live trees and enables remedial action to be initiated prior to the death of a substantial portion of the vegetation in permanent sampling plots.

Health and vigor by species will be determined through plot size sampling (50X50 quadrat). Plant health and vigor will be assessed for all planted trees and shrubs in each permanent sampling plot, then averaged for the plot. Plant health and vigor will be assessed annually in August or September over a 10-year period (Years 1-4, 5, 7, and 10) following planting.

The sampling plan will be developed for implementation at year 1. The plan will ensure that the quadrat size and locations statistically represent the entire planted acreage within Reach 4. If the health and vigor assessments for quadrats are in the low range for more than one sampling event an adaptive management plan will be written in to the next monitoring report to address how health and vigor can be improved. Changing the species or locations of trees may be options which will warrant implementation if health and vigor metrics are not met.

Health and vigor will be rated as follows:

3 good--less than 25% of plant affected by cumulative symptoms of poor health, for example, disease, insect damage, mechanical damage, and poor structure.

2 fair--25% to 75% of plant affected by cumulative symptoms.

1 poor--greater than 75% of plant affected by cumulative symptoms.

0 dead

Approximately 10% of the total forest habitat mitigation area (31,798 square feet) will be sampled to determine the performance and success of the mitigation, using 12 permanent sampling plots located within the forest habitat mitigation area in Reach 4. The number of plots may be adjusted based on future evaluation of actual variability of the indicators among the initial 12 plots.

The approximately 12,672 linear feet of forest habitat vegetation planted will be subdivided into 12 equal segments, each approximately 1,000 feet long. The 1,000-foot segments may be continuous or may be composed of several small segments. One 50-foot by 50-foot permanent plot will be randomly located within each 1,000-foot segment of forest habitat area. The 1,000-foot segments are not necessarily continuous; therefore, a 50-foot plot will have a set origin, but may span a distance along the stream that exceeds 50 feet. The location of each permanent plot will be determined by selecting a number between 0 and 999 from a random number table. The random number will determine the distance of the closest edge of the plot to the origin of the 1,000-foot segment. Markers on the permanent plots will indicate the plot number. The locations of the markers will be carefully mapped on an aerial photograph or GIS image and the position of the markers will be recorded using a GPS with sub-meter accuracy in a coordinate system based on NAD83. The slope and the aspect of each plot will be measured. Along with plot location, slope and aspect will be evaluated to determine which conditions have the greatest effect on the success of the mitigation.

4.5.4 Woody Plant Percent Cover

Woody Plant Percent Cover. Woody percent cover would be determined for a subset (10%) of all riparian plantings using the line intercept method (Bonham 1989). Randomly selected, 100-ft-long transects would be installed throughout the riparian mitigation areas using a stratified, random method to ensure that the transect locations are both representative of the site and unbiased. At least three transects per acre would be installed. However, the minimum number of transects established in each habitat type would be the point where additional transects do not substantially change the average

percent cover value obtained (Kershaw 1973). Sampling intensity should be proportional to the surface area of the respective habitat types.

Transect start and end points would be marked with metal U-posts. Data would be collected by vegetative layer, transect, habitat type, and native versus nonnative cover. The results would be compared to the respective percent cover performance and final success criteria for the monitoring year for each habitat type. Comparisons between monitoring years would be presented in successive monitoring reports.

The SCVWD is proposing that this metric (woody plant percent cover) will not be applied to revegetation in Reaches 4 as vegetation density has been modified to support more riparian forest then the SCVWD believes is attainable given the lack of available nutrients and water at the site. Therefore, to account for the increase in riparian forest habitat in nutrient limited areas, it is prudent to have a realistic monitoring metric that reflects this condition. Health and vigor assessment is more of a viable metric of success than percent cover for these reaches.

4.5.5 Woody Plant Natural Recruitment

Natural recruitment of native woody species would be monitored in Years 1–3, 5, 7, and 10. There would be no performance or final success criteria for this parameter. However, the data would inform the long-term sustainability of the mitigation areas. Naturally recruited woody riparian species will be counted in the survival and percent cover monitoring, and their values included toward meeting performance criteria.

4.5.6 Himalayan Blackberry and Giant Reed Cover

Himalayan blackberry and giant reed cover would be monitored in Years 1 and 3 following the completion of initial removal activities. Control activities should result in a minimum 90% reduction in total acreage of Himalayan blackberry and giant reed throughout the Project site by Year 3 as compared to pre-Project conditions. Table 33 presents the specific acreage targets for each species; these targets represent 10% of the current acreage present of these species. If these acreage values are exceeded, control measures would be reinitiated until the final success criterion has been achieved for at least 1 full year. If monitoring occurs during a drought period, the SCVWD will monitor an additional year to ensure full control of blackberry and giant reed has met the requisite criteria.

4.5.7 Wetland Vegetation Percent Cover

Percent cover of wetland vegetation at the Lake Silveira wetland mitigation area would be monitored in Years 1–5. Wetland vegetation percent cover would show an increasing trend and would be held to the performance and final success criteria presented in Table 33 in Years 3–5. The final success criterion would be 50% by Year 5. Percent cover of nonnative wetland species that are defined as invasive by California Invasive Plant Council would be no more than 5% in any year.

4.5.8 Wetland Delineation

Wetland Delineation. Delineations of jurisdictional wetlands and other waters would be conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual*

(Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008), and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (Lichvar and McColley 2008). The post construction delineation would occur throughout the extent of the Flood Control Project and the Lake Silveira mitigation areas in year 5 post construction. This will allow time to propose remedial measures or adaptive management strategies if impacts to waters of the US are not fully accounted for with the increase in jurisdictional area.

4.6 CALIFORNIA RAPID ASSESSMENT METHODOLOGY (CRAM)

Mitigation for the Project involves enhancing riverine wetlands on-site and restoring riverine wetlands and enhancing depressional wetlands at Lake Silveira, in the Llagas Creek watershed. The SCVWD is incorporating CRAM into its planning and assessment of mitigation efforts. CRAM results from the District's assessment of ambient stream conditions in the Llagas Creek watershed provide a watershed context for comparing impact and mitigation sites, consistent with USACE guidance (USACE 2015).

The SCVWD mapped the pre-construction riverine and depressional wetlands within the Project impact areas and at Lake Silveira. These maps served as the sample frame for a field survey of pre-construction conditions using the California Rapid Assessment Method for wetlands. The same assessment areas (AAs) were also used to estimate the future, post-construction wetland conditions of the Project and Mitigation sites (at 25 years after project completion) based on the planned flood control impacts and mitigation efforts.

The pre- and post-construction CRAM results were: (1) overlaid on the Llagas Creek watershed wide stream condition cumulative distribution function (CDF) plot to evaluate the Project and Mitigation scores in a watershed context, and (2) compared to characterize the expected overall ecological lift in the condition of the riverine and depressional wetlands within the Project and Mitigation sites based on CRAM.

Post-construction CRAM condition scores were supplemented by a separate analysis of the expected mitigation endpoints based on Habitat Development Curves (HDCs). An HDC depicts the correlation between habitat condition and age for a large population of natural and restored sites. For a detailed description of the methodology used in the development of these HDC'S the full cited report in in Appendix F.

The pre-construction CRAM assessments were conducted in July 2015 by experienced CRAM Practitioners. The CRAM assessments of future, post-construction conditions assumed that the planned onsite Project construction and vegetation planting efforts will be fully implemented, and that the AAs had fully matured.

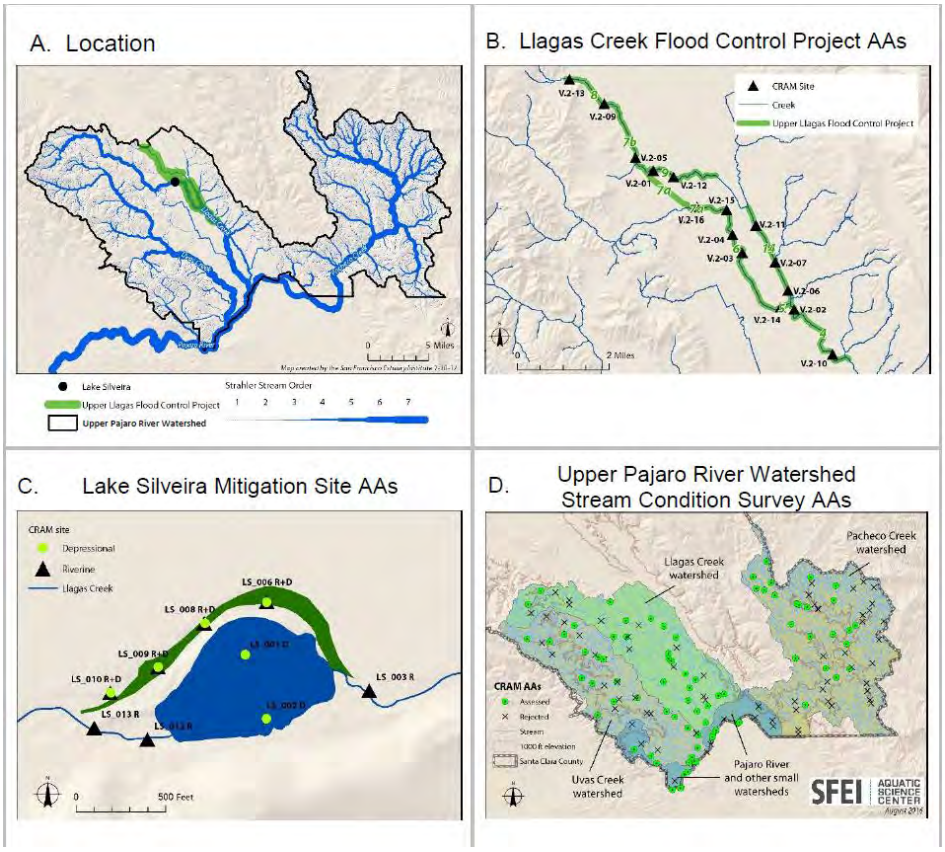
Pre- and post-construction CRAM scores were evaluated by charting them on the regional CRAM CDF plots to evaluate the overall ecological condition of the Project and Mitigation sites compared to the region and to evaluate the expected ecological lift due to wetland restoration efforts.

The overall physical and biological functioning of the riparian mitigation areas, and the Lake Silveira mitigation wetland was assessed using the CRAM Riverine and Depressional Wetland Modules, respectively. CRAM data was collected prior to construction to represent baseline conditions. CRAM will be conducted again at Years 5 and 10 to compare to the baseline

conditions and to see if scores are on the trajectory as predicted. The overall CRAM score in Year 10 should exceed the baseline CRAM score. A positive trend between the baseline, Year 5, and Year 10 is used as the measure of success to determine if mitigation habitat and features are established correctly, and because long-term vegetation establishment would take years to approach the existing conditions that are reflected in CRAM scores. Results from the CRAM assessments will be used to predict whether CRAM scores at the mitigation sites are acceptable compared to baseline and watershed ambient scores.

The preconstruction work was completed in 2015 and documented in A Watershed Approach to Restoration and Mitigation Planning, Monitoring, and Assessment Based on the Wetland and Riparian Area Monitoring Plan (WRAMP) Addendum to the Upper Pajaro River Watershed Assessment 2015 Report Prepared for the Santa Clara Valley Water District Llagas Creek Flood Control Project by San Francisco Estuary Institute and is found in Appendix F.

Figure 4. This figure shows (A) the location of the Llagas Creek Flood Control Project and Lake Silveira Mitigation Site along Llagas Creek in the upper Pajaro River watershed of Santa Clara County; (B) CRAM AAs within the Project Site; (C) CRAM AAs at the Lake Silveira Site; and (D) CRAM AAs for the District's Priority D5 Project's 2015 watershed wide ambient survey of stream condition in upper Pajaro River watershed and its three main watersheds.



Project Site—Summary of Index and Attribute Score Analyses

The Flood Control Project's riverine CRAM Index Scores ranged from Poor (Index Scores <50) to Good (Index Scores >75) and occupy the same range of condition as streams in the surrounding Llagas Creek watershed. About half the Project's streams are in relatively low

ecological condition (with 7 of the 15 AA Index Scores classified as Poor) and compared to the lowest 10% of streams within the Llagas Creek watershed as a whole. A portion of the Project's stream miles will not be impacted or enhanced by Project actions, and three AAs from those areas had the lowest Index Scores, which are not expected to improve over time. Even so, the average overall ecological condition for 80% of the stream miles within the Project is expected to improve by 6 Index points in the future to an average Index Score of 65.

Project Attribute scores were evaluated to characterize core wetland functions within a watershed context. The Project's pre-construction Buffer and Hydrology Scores generally fall within the lowest 25th percentile of the condition of streams within the watershed. Physical and Biotic Structure within the Project are generally Poor, but are consistent with Physical and Biotic Structure of streams in the surrounding watershed. Project implementation plans are expected to increase Buffer and Landscape Context and Hydrology Attribute Scores by an average of 3 and 8-points, respectively. However, Physical Structure Scores will not increase based on the Project's implementation plans. The Project's Biotic Structure Attribute Scores are expected to improve the most with an estimated average increase in scores of 11-points. Additionally, 13 of the 15 AAs are expected to see an increase in Biotic Structure Scores of 3 to 25-points.

Lake Silveira Mitigation Site

At Lake Silveira, an historical stream reach that has evolved into depressional wetlands due to flow diversion will be restored to riverine wetlands, and the quarry-pond, which is classified as depressional wetlands, will be enhanced. Figure 4 presents a map of Lake Silveira and the CRAM AAs surveyed in 2015. Three riverine AAs, located in stream reaches upstream and downstream of the quarry-pond will remain riverine. The mature, post-construction conditions based on CRAM were estimated based on the detailed, site-specific mitigation plans.

Mitigation Site—Summary of Riverine Index and Attribute Score Analyses

The project will convert depressional wetlands to riverine wetlands. The overall impact of the riverine wetland creation and enhancement to existing riverine wetlands is expected to increase the overall amount and condition of riverine wetlands within the Lake Silveira mitigation site. All Index Scores are expected to be in "Good condition" in the future. The lowest expected Score will be 78 - at one of the enhanced sites [LS_003_R]). Lake Silveira riverine wetland conditions will be similar to the top 10% of streams within the watershed based on the Llagas Creek watershed CDF. The wetland functions that increase the most, based on the mitigation plans, are the Buffer and Landscape Context and Biotic Structure. The improved riverine condition scores will be most evident in the restored historical channel.

Whether or not the enhancements would increase the 50th percentile score for the watershed depends on the proportion of total miles of riverine wetlands in the Llagas Creek watershed represented by the enhancement and restoration project, which is very small compared to the 250 miles of streams within the Llagas Creek watershed.

To further evaluate the change in ecological conditions of the restored riverine wetlands within the Silveira site, depressional CRAM assessments from the historical riverine channel (north of the quarry-pond) were compared to the corresponding post-construction riverine assessments to characterize the change in condition between the pre-construction depressional wetlands and the expected post-construction riverine wetlands based on planned restoration actions. Based on that comparison, the restored riverine wetlands will score 17 points higher than the existing depressional wetlands.

Depressional Wetlands—Quarry-Pond Index and Attribute Scores

The depressional wetland mitigation plans in the quarry-pond at Lake Silveira are likely to improve the overall ecological conditions on the north side of the quarry (LS_001 D) by 5 CRAM Index points, Buffer Scores are expected to increase by 6-points; Physical Structure by 13-points; and Biotic Structure by 17-points. However, the Hydrology Attribute Scores are expected to decrease by 17-points. This is because the mitigation efforts will increase the dependency of the pond on unnatural, managed hydrology. The south side of the quarry-pond (LS_002 D) is not expected to change much with the exception of changes in Hydrology based on the larger Mitigation planned at the Site.

Figure 5. Lake Silveira Mitigation Site AAs. The green area, north of the quarry-pond, is an historical riverine channel that is currently depressional wetlands that will be restored.



Results

Summary of CRAM scores for of pre-construction (2015) and estimated post-construction (25-years after construction is completed) CRAM scores for the Llagas Creek Flood Control Project and Lake Silveira Mitigation Site:

TABLE 32
Flood Control Project Site pre- and post-construction CRAM scores

SiteID	PRE CRAM Index Score	POST CRAM Index Score	PRE Buffer & Landscape	POST Buffer & Landscape	PRE Hydrology	POST Hydrology	PRE Physical Structure	POST Physical Structure	PRE Biotic Structure	POST Biotic Structure
Flood Control Project										
V.2-01	50	50	50	50	67	67	25	25	58	58
V.2-02	67	74	85	85	58	75	75	63	50	72
V.2-03	66	68	75	81	67	58	63	50	58	83
V.2-04	68	70	75	81	58	67	63	50	75	83
V.2-05	52	63	75	75	67	83	38	50	28	44
V.2-06	60	65	75	81	67	67	50	50	47	61
V.2-07	55	65	75	81	50	67	50	50	44	61
V.2-09	49	50	30	30	75	75	38	38	53	56
V.2-10	64	73	73	73	58	83	63	63	64	72
V.2-11	52	67	75	81	50	75	38	50	44	61
V.2-12	49	49	71	71	67	67	25	25	33	33
V.2-13	55	64	75	75	67	83	38	50	42	47
V.2-14	65	73	80	80	58	67	63	63	58	83
V.2-15	76	79	75	86	67	67	75	75	86	89
V.2-16	78	73	80	86	75	67	75	50	81	89

Success Criteria Establish for CRAM

The SCVWD proposes the use of CRAM to evaluate the overall ecological success (i.e., produced the desired ecological function) of the Project. The 15 CRAM sites evaluated here will be revisited at year 5 and year 10 post construction to compare with the pre/post conditions evaluated to ascertain if the wetlands/riparian restoration areas are functioning intended and are on target to meet our 25-year anticipated scores. If at year 10, CRAM scores are not on a trajectory to meet the 25-year target, a re-evaluation strategy will be prepared and presented to the agencies.

TABLE 33
Lake Silveira Mitigation Site pre- and post-construction CRAM scores

Site ID	PRE CRAM Index Score	POST CRAM Index Score	PRE Buffer & Landscape	POST Buffer & Landscape	PRE Hydrology	POST Hydrology	PRE Physical Structure	POST Physical Structure	PRE Biotic Structure	POST Biotic Structure
Quarry-pond										
LS_001 D	56	61	49	55	67	50	50	63	58	75
LS_002 D	76	72	63	63	67	50	100	100	75	75
Historical Riverine Channel (depressional wetlands in the historical channel will be restored to riverine wetlands) Pre-construction scores are based the depressional CRAM field book. Post-construction scores are estimated based on the riverine field book.										
LS_006 DtoR	66	82	45	90	67	83	75	75	75	81
LS_008 DtoR	66	81	65	86	67	83	75	75	56	81
LS_009 DtoR	64	84	49	86	67	83	75	88	64	78
LS_010 DtoR	65	79	61	81	75	83	75	75	47	78
Riverine wetlands										
LS_003 R	72	78	90	90	58	67	75	75	64	81
LS_012 R	82	82	88	88	83	83	75	75	81	81
LS_013 R	79	82	86	86	83	83	75	75	72	83

TABLE 34
Vegetation and Ecological Function Performance and Final Success Criteria

		Year						
Monitoring Task		**1**	**2**	**3**	**4**	**5**	**7**	**10**
Woody Plant Percent Survival								
Forest		80%	75%	70%	N/A	N/A	N/A	N/A
Forest (Reach 4)		75%	75%	65%	65%	65%	N/A	N/A
Scrub		75%	70%	65%	N/A	N/A	N/A	N/A
Xeric Scrub		60%	65%	65%	N/A	N/A	N/A	N/A
California Sycamore Tree Percent Survival		70%	75%	80%	N/A	N/A	N/A	N/A
Percent Cover								
Forest		N/A	N/A	N/A	N/A	30%	40%	50%
California Sycamore Tree Percent Survival		N/A	N/A	N/A	N/A	30%	40%	50%
Scrub		N/A	N/A	N/A	N/A	12%	20%	30%
Xeric Scrub		N/A	N/A	N/A	N/A	10%	15%	20%
Woody Plant Health and Vigor								
Forest (Reach 4)		N/A	N/A	N/A	N/A	See Section 4		
Himalayan Blackberry and Giant Reed Cover								
Himalayan blackberry		N/A	N/A	N/A	N/A	N/A	N/A	≤0.5 ac
Giant reed		N/A	N/A	N/A	N/A	N/A	N/A	≤0.002 ac
Lake Silveira Wetland Vegetation Percent Cover		Baseline	>Year 1	15%	30%	50%*	N/A	N/A
Wetland Delineation		N/A	N/A	N/A	N/A	>48.63 ac of USACE Jurisdiction	N/A	>48.63 ac of USACE Jurisdiction*
CRAM								
Riparian Sites	Baseline	N/A	N/A	N/A	N/A	Checkpoint	N/A	>Baseline
Lake Silveira Wetland	Baseline	N/A	N/A	N/A	N/A	Checkpoint	N/A	>Baseline

Notes:
ac = acres.
CRAM = California Rapid Assessment Method.
N/A = not applicable.
*Final Success Criteria, Year 10 monitoring for wetlands only applies if Year 5 criteria is < 48.63 ac

Photo documentation. Photo documentation of the mitigation areas would be conducted from a number of fixed locations (15 sites in total) in each monitoring year. Photographs would also be taken to record any event that may significantly affect the success of the mitigation, such as flood, fire, vandalism, erosion, scour, patches of mortality or vigorous growth. The locations of photo documentation points would be selected when the as-built reports are developed for the mitigation areas.

4.7 STEELHEAD MONITORING

4.7.1 Out-Migrant Trapping

NMFS provided early guidance on a status monitoring recommendation to provide quantitative data for a Core 1 population. Core 1 populations are defined as having the highest priority for recovery (NMFS 2013). NMFS' Central California Area Office specifically recommended the SCVWD to fund three concurrent years of out-migrant trapping for the Uvas and Llagas Watersheds. Estimates of smolt abundance provide a measure of productivity of steelhead populations in freshwater habitats and are an effective means of measuring aggregate watershed conditions. The District will construct and operate the out-migrant traps from February 15-June 15 each year[1] or until flow is discontinuous to upstream areas. Trap locations will be determined at a later date and in coordination with the NMFS.

The SCVWD will rely on the S-CCC Recovery Plan to detail the study elements and data collection design and collaboration with the NMFS on study elements and approaches. However, the study plan will focus on one key question the Recovery Plan raises and is as follows; "What is the relationship between reliability of migration corridors, and anadromous fraction? The SCVWD will investigate the relationship of flow patterns from Uvas and Chesbro Reservoirs to the abundance and timing of smolt runs in both watersheds. The objective of this is to inform management actions for managed flow regimes to maximize the protection and conservation of the species during critical migration periods. Additional information collected will include size and age (i.e. scale analysis) of smolts. The SCVWD will prepare a detailed study plan prior to the initiation of trapping efforts to obtain concurrence from NMFS on all study variables and reporting requirements.

Success Evaluation

The monitoring will be considered complete when three consecutive years of concurrent out-migrant trapping is conducted for Uvas and Llagas watersheds. An annual report will be prepared following completion of each trapping effort in the spring with a final compilation report analyzing the migratory patterns (i.e. connectivity of flow), reservoir operations, age analysis and all other agreed upon collected parameters in the final report.

[1] Start and end dates for trapping are general and should be dictated, in part, by flow conditions - i.e., start trapping as soon as flows are sufficient and stop when they are not, but no earlier than June 1st. This will allow documentation of the entire steelhead out-migration.

4.7.2 Fund Juvenile Rearing Study

As another component to the monitoring program, the SCVWD has agreed to provide equipment and staff for three years to supplement an existing monitoring program which has been implemented since 2005 (Casagrande, 2012). The objective of the monitoring program is to document the densities, growth, distribution and habitat usage of juvenile steelhead in both the Uvas and Llagas Watersheds. The District will provide the monitoring program with Passive Integrated Transponder Tags (PIT) (i.e. Radio Frequency Identification Tags-RFID), implanters, and readers for identification of the unique codes. District staff will assist with annual monitoring surveys and provide any other equipment necessary (i.e. nets, electrofisher, live cars) for successful completion of the field work associated with the monitoring program.

Success Evaluation

This monitoring element will be considered complete after the SCVWD provides equipment and personal to assist with the ongoing juvenile rearing study in both Uvas and Llagas for three consecutive years.

4.7.3 Fixed Station Installation and Monitoring

At the recommendation of the recovery plan (13.4.2.4) and in coordination with NMFS, the SCVWD will fund installation and monitoring for three years of one fixed station for reading radio frequency identification (RFID) tags instream. The station location will be determined in coordination with the NMFS staff.

Success Evaluation

The monitoring will be considered complete once a fixed station is installed and monitored for three years after installation.

4.7.4 Fund Training for Spawning Surveys

The final component of the plan for life cycle monitoring for the Upper Llagas Creek Project is to provide training for members of a local watershed organization, Coastal Habitat Education and Environmental Restoration (CHEER), to attend spawning survey training. The training would be limited to 4 group members to attend the specified training at the location recommended by the NMFS. The SCVWD will also provide limited funding for gas for spawning surveys.

Success Evaluation

This element will be considered complete once funds are paid for the community group to receive their training.

4.7.5 Instream Complexity Monitoring

The Project has incorporated 464 total instream habitat features to mitigate the effects of the construction of the bank full channel and increased capacity for flood protection within critical habitat areas for the S-CCC steelhead (Table 35). The constructed elements are intended to provide complex aquatic habitat post construction and enhance heterogeneity during the initial stages following construction until the project stabilizes and develops other complex features. The structures are intended to provide improved rearing, spawning and cover habitat for steelhead. One important element to the construction of instream structures is to monitor conditions, particularly after high flows, to determine if the desired habitat condition has been met or if maintenance or modification of the structure is required to ensure its proper function.

TABLE 35
Steelhead Mitigation and Monitoring Elements, Success Criterion, and Remedial Actions

Instream complexity features are listed by type with location, quantity, objective and function. Each feature will be monitored annually for the duration of the 10-year monitoring cycle to ensure stability and functionality. Success criteria are established at year 5 and 10.

Type and number of Structures	Reach Number (Quantity)	Objective	Monitor	Function	Stability
Log-rootwad Structures (228)	Reach 4 (133) GIS Station Locations: 97+60 to 99+50 (17); 106+20 to 107+30 (11); 112+25 to 113+90(14); Combination w/ boulder structure @ 141+00 (1); 141+45 to 142+05 (7); 142+95 to 143+05 (3); 148+20 to 149+80 (11); 157+15 to 158+05 (14); 159+00 to 160+25 (11); 196+00 to 197+25 (12); 199+50 to 201+15 (15); 218+00 to 220+00 (17).	Improve quality of pool habitat by increasing cover	Measure amount of effective cover in habitat unit (i.e. pool)	Is pool well scoured or has wood induced deposition of sediment in pool?	Has the structure been retained-is it stable?
	Reach 5 (31) GIS Station Locations: 229+60 to 232+00 (31).				
	Reach 6 (64) GIS Station Locations: At 289+90 (2); 320+25 to 321+90 (14); 346+25 to 346+95 (6); At 359+65 (2); 367+00 to 368+25 (11); 373+05 to 374+00 (7); At 377+85 (2); 388+75 to 392+50 (20).				

Type and number of Structures	Reach Number (Quantity)	Objective	Monitor	Function	Stability
Wing Deflectors (35)	Reach 4 (0)	To create scour pool and provide refuge for migrating fish	Did scour pool form? Measure velocity adjacent to deflectors	Is velocity reduced due to the deflectors compared to the open channel?	Has the structure been retained-is it stable?
	Reach 5 (2) GIS Station Locations: At 11+75 (2)				
	Reach 6 (33) GIS Station Locations: At 292+60 (2); At 300+30 (2); At 303+50 (2); At 308+90 (2); At 309+80 (1); At 311+65 (1); At 313+49 (1); At 315+30 (1); At 317+20 (1); At 319+00 (2); At 328+45 (2); At 333+70 (2); At 340+85 (2); At 346+00 (2); At 353+05 (2); At 359+80 (2); At 378+05 (2); At 385+30 (2); At 396+25 (2).				
Coarse Woody Habitat (75)	Reach 4 (0)	Improve quality of pool habitat by increasing cover	Measure amount of effective cover in habitat unit (i.e. pool)	Is pool well scoured or has wood induced deposition of sediment in pool?	Has the structure been retained-is it stable?
	Reach 5 (6) GIS Station Locations: 236+00 to 236+80 (5) At 250+25 (1)				
	Reach 6 (69) GIS Station Locations: At 250+25 (1); At 255+85 (1); At 260+60 (2); At 265+30 (2); At 270+15 (2); At 274+80 (1); At 283+50 (2); At 292+30 (1); At 295+10 (2); At 300+20 (1); At 301+25 (1); At 303+40 (1); At 305+10 (1); At 308+80 (1); At 309+70 (1); At 310+80 (2); At 311+50 (1); At 313+30 (1); At 315+20 (1); At 318+10 (2); At 318+90 (1); At 323+75 (2); At 328+30 (1); At 330+30 (1); At 333+45 (3); At 336+25 (1); At 340+65 (1); At 342+50 (2); At 345+80 (1); At 348+60 (2); At 352+80 (2); At 362+20 (2);				

Type and number of Structures	Reach Number (Quantity)	Objective	Monitor	Function	Stability
	At 368+25 (2); At 374+55 (2); At 380+75 (2); At 385+15 (2); At 386+80 (3); 389+10 to 391+20 (5); At 394+40 (4); At 396+05 (3).				
Stream Boulders (83)	Reach 4 (18) GIS Station Locations: At 115+25 (1); At 118+30 (1); At 119+40 (1); At 121+25 (1); At 123+50 (1); At 125+25 (1); At 160+55 (1); At 161+80 (1); At 163+95 (1); At 202+40 (1); At 208+50 (1); At 211+25 (1); At 214+25 (1); At 217+30 (1); At 220+70 (1); At 221+40 (1); At 222+70 (1); At 223+40 (1).	Diversify flow	Measure velocities in and around boulder structure	Is velocity reduced behind boulder structures compared to open channel?	Has the structure been retained-is it stable?
	Reach 5 (23) GIS Station Locations: 226+80 to 228+10 (15); 233+25 to 233+80 (8).				
	Reach 6 (42) GIS Station Locations: At 286+10 (1); At 287+80 (1); At 288+80 (1); At 297+35 (1); At 298+40 (1); At 307+85 (1); At 310+45 (1); At 313+48 (1); At 314+70 (1); At 317+40 (1); At 318+70 (1); At 319+70 (1); At 325+75 (1); At 327+15 (1); At 329+35 (1); At 335+00 (1); At 337+80 (1); At 339+15 (1); At 344+45 (1); At 345+30 (1); 349+70 to 352+30 (5); 363+65 to 366+05 (3); 369+65 to 372+70 (4); At 377+10 (1); At 380+15 (1); 382+25 to 384+45 (4); 405+50 to 406+50 (4).				

Type and number of Structures	Reach Number (Quantity)	Objective	Monitor	Function	Stability
Triangular Boulder Clusters (37)	Reach 4 (37) GIS Station Locations: At 103+60 (1); At 106+80 (1); At 108+50 (1); At 109+75 (1); At 112+25 (1); At 120+50 (1); At 127+50 (1); At 129+50 (1); At 131+20 (1); At 132+95 (1); At 137+40 (1); At 138+10 (1); At 144+15 (1); At 150+70 (1); At 152+25 (1); At 154+00 (1); At 155+05 (1); At 156+90 (1); At 162+80 (1); 168+00 to 191+25 (14); At 198+80 (1); At 209+90 (1); At 212+70 (1); At 216+15 (1).	Diversify flow and create velocity refuge for migrating fish	Measure velocities in and around boulder structures	Is velocity reduced behind boulder structures compared to open channel?	Has the structure been retained-is it stable?
	Reach 5 (0)				
	Reach 6 (0)				
Divide Logs (6)	Reach 4 (0)	Create a visual barrier for spawning fish-create escape cover	Placement of log (i.e. spawning riffle) Percent cover in riffle	Does the divide log create a visual barrier/escape cover?	Has the structure been retained-is it stable?
	Reach 5 (0)				
	Reach 6 (6) GIS Station Locations: At 309+95 (1); At 311+75 (1); At 313+65 (1); At 315+50 (1); At 317+30 (1); At 319+25 (1).				

Success Criteria for Instream Complexity

Criterion 1

The District anticipates that retention of 80% (371 of the 464) of the constructed instream complexity features will be retained within the system by monitoring Year 5. Additionally, 60% (278 of the 464) of the constructed instream complexity will have been retained by the system by Year 10. The instream complexity component will be considered successful if by Year 5, post construction monitoring reveals that 80% of the structures are retained within the stream and 60% by year 10.

Criterion 2

The question of function for instream features is as important as retention. Therefore, the established success criteria by Year 5 is 80% of the structures are functioning as designed and improving instream conditions for steelhead. Reaches 4, 5 and 6 are in a regulated portion of Llagas Creek, due to attenuation of flows downstream of Chesbro Reservoir and may take time for high flows to affect the instream complexity features outlined in Table 35. While monitoring will occur annually for retention and function, the threshold for determining success and subsequent remedial actions will be at year 5 post construction.

4.7.6 Monitoring Methods and Success Criteria for Steelhead

Table 36 summarizes the mitigation elements related to steelhead with monitoring and success criterion outlined. The SCVWD proposes mitigation credit for items 6, 7, 8, 9 and 10 (removal of hardscape, road crossing, and legacy trash, remove grouted/loose rock-Reach 4, remove concrete wall-Reach 6) as these areas are not within the Project footprint for flood protection but will provide greater ecological value once remediation of the areas is complete. For everyone acre of remediation, the SCVWD requests 1.5 acres of riparian vegetation credit.

TABLE 36
Steelhead Mitigation and Monitoring elements, success criterion and remedial actions

Mitigation Element	FEIR Citation	Monitoring	Success	Reporting and Remedial Actions
1) Stable Channel Design	Project Description	See Section 2.3 (Geomorphic and Hydrologic Mitigation and Monitoring Plan)	Success Criterion 4; Channel conditions will evolve, but overall the channel will remain stable	See Section 3.4
2) Steelhead Passage (Channel and Structure Design)	*Mitigation Measure AQUA-1a T: Steelhead Passage: Channel and Structure Design*	Monitor constructed facilities to ensure meets passage criteria outlined NMFS (2008) Monitoring will occur at Year 1, 3 and 5.	This element will be deemed successful if constructed facilities function to accommodate fish passage at a range of suitable flows. District will seek concurrence from NMFS after data is collected and presented	Remedial action (i.e. instream construction) may be necessary if it is deemed during monitoring that the facility does not meet fish passage criteria per design standards. Remedial actions will be submitted to resource agencies for review.
3) Channel Restoration Llagas Creek (i.e. 2000 linear feet around Lake Silveira)	Compensatory Mitigation	Water Quality Monitoring downstream of wetland.	Success Criterion 1 Success Criterion 2 From Geomorphic and Hydrologic Success Criteria	Success in restored channel is dependent on WQ in wetland. Remedial actions can be tied to the seasonal monitoring in restored channel and adjustment of flow into the Lake.

Mitigation Element	FEIR Citation	Monitoring	Success	Reporting and Remedial Actions
4) Channel Restoration Llagas Creek (i.e. 2000 linear feet around Lake Silveira)	Compensatory Mitigation	Passage/rearing conditions for adult and juvenile steelhead	Success Criterion 3 Success Criterion 4 Success Criterion 5 From Geomorphic and Hydrologic Success Criteria	During normal or wetter than normal hydrologic conditions, stream flows within the 1980 feet restored historic channel adjacent the Lake Silveira wetland marsh will be sufficient to prevent stranding of steelhead seasonally based on CDFW criteria, Adjustment of flows into the Lake may be required seasonally
5) Shaded Riverine Aquatic (SRA) Reach 6 & Restored Channel	*Mitigation Measure BOT-1c T: Prepare a Revegetation, Monitoring, and Mitigation Plan.*	Measure percent cover of transects of SRA in Reach 6 and Restored Channel pre-construction Measure percent cover of transects of SRA in Reach 6 and restored channel post construction	Compare results of pre- and post-project SRA percent coverage in Reach 6 and restored channel.	Shaded Riverine Aquatic (SRA) Reach 6 & Restored Channel. If SRA is not meeting projected success criteria target additional SRA planting will be installed
6) Instream Complexity	Project Description-Construct 464 structural improvements for quality and quantity of instream habitat	See feature specific criteria Table 34.	80% of the constructed features retained within the watershed by monitoring Year 5. 60% of the constructed complexity retained within the watershed by Year 10. 80% of the structures functioning as designed and improving instream conditions for steelhead by Year 5.	If retention and function criteria do not fall within projected limits by year 5 post construction, remedial actions (i.e. repair existing features, construct new complex features) will occur to meet projected standards

Mitigation Element	FEIR Citation	Monitoring	Success	Reporting and Remedial Actions
7) Remove Denil Fish Ladder/grouted rip-rap	Project enhancement	Remove 1300 cy grouted riprap (17,348 square feet-0.40 acres) Remove 3275 cy loose riprap (68,516 square feet-1.57 acres) Mitigation credit 1.5:1.0	Currently this site has an excess of sediment deposition within and around the denil fish ladder. After construction of bankful/low flow and grade control structure the channel at this location should transport sediment and be stable with no erosion or aggradations	Measure creek stability (i.e. erosion) and sediment transport at this location. If project site shows signs of active erosion or aggradations the District will remediate the site through corrective construction
8) Steelhead Monitoring (out-migrant trapping)	N/A	Three consecutive, concurrent years of out-migrant trapping in Uvas/Llagas	Monitoring and Reporting Complete	N/A
9) Funding for juvenile rearing	N/A	Provide labor and equipment for ongoing monitoring in Uvas/Llagas for three years	Work is complete	N/A
10) Fixed Station Installation and Monitoring		Install one fixed station (RFID) at a location selected by NMFS and monitor the station for a period of three years	Station is installed successfully and monitoring is complete for three years	N/A
11) Fund Training for CHEER	N/A	Provide funds for training for local community group (4 members)	Funding transfer complete	N/A

TABLE 37
Approximate Mitigation Implementation Schedule

Task	Schedule
Construction Period Tasks	
Pre-construction nesting bird surveys	1 March through 30 April
Initial Himalayan blackberry and giant reed removal	Throughout construction period
Snag creation	Throughout construction period
Upland log pile installation	Throughout construction period
Himalayan blackberry follow-up herbicide treatments	May, July, and September in each subsequent year after the initial herbicide event
Giant reed follow-up herbicide treatments	May and September in each subsequent year after the initial herbicide event
End-of-Phase Tasks	
Infill planting area nonnative, invasive species control	Once in March and once in May
Instream complexity feature installation	After earthwork and before seeding
Turtle basking habitat installation	After earthwork and before broadcast seeding
Broadcast seeding*	15 August through 15 October
Hydroseeding*	15 August through 15 October
Irrigation system installation	After completion of earthwork and before plant installation
Container stock, acorns, and California buckeye seed installation	15 November through 1 February
Cutting harvest and installation	1 December through 1 February

*Broadcast seeding of the Xeric Scrub mitigation areas should occur prior to Grassland hydroseeding.

SECTION 5.0 IMPLEMENTATION MAINTENANCE PLAN

5.1 IMPLEMENTATION PHASING

Construction of the Project will occur in two phases, and each phase would be carried out over multiple years. Some tasks, such as seeding, would occur on a rolling basis throughout the course of each phase of construction (construction period tasks), whereas other tasks, such as plant installation, would not occur until the completion of each phase (end-of-phase tasks). Implementation schedule details are provided below in Section 4.11.

5.1.1 Pre-construction Nesting Bird Surveys

To the extent possible, vegetation would be removed during the avian nonbreeding season, between 1 September and January 15. If vegetation removal occurs outside of this timeframe, a general pre-construction survey for nesting bird would be conducted no more than 14 days before ground disturbance and no more than 7 days before vegetation removal to avoid disturbance to active nests, eggs, and/or young. If an active nest is discovered in the work area, a “no disturbance” buffer zone would be established around the nest until a qualified biologist has determined that all young have fledged and are independent of parental care. The buffer zone size would depend on the species, location, and placement of nest and would be determined in consultation with CDFW. The amount of vegetation removed would be the least amount necessary to achieve Project goals.

5.1.2 Reach 8 Diversion Tunnel Bat Mitigation

If bats need to be excluded from the Reach 8 diversion tunnel, SCVWD staff would install one-way exits at the tunnel entrances through which the bats can leave but not return. Exits would consist of netting with 0.25-in mesh to prevent bats from returning.

5.1.3 Maintenance Guidelines (long-term)

Maintenance Guidelines were prepared for this Project as an avoidance and minimization measure through design. The permit action for this Project does not include long-term maintenance of the Upper Llagas Creek Flood Protection facility (i.e. creek, tunnel etc.). However, because the revegetation plan is based on reduction of future maintenance, SCVWD will reassess the Maintenance Guidelines that were prepared at Year 10 of this MMP.

At Year 10, when the District's Stream Maintenance Program (SMP) has the Project’s Operations and Maintenance responsibilities, the SCVWD will re-evaluate roughness within Reaches 4, 7, 8, and 14 based on the actual health, growth, and vigor of the creek's existing vegetation. This re-evaluation of roughness will determine if the Project's Maintenance Guidelines will need to be modified within the Project sub-reaches of Reaches 4, 7, 8, and 14. If any modifications to the Maintenance Guidelines are recommended based on this re-evaluation analysis, the SCVWD will prepare a report, including the roughness findings by sub-reaches to the Resource Agencies after Year 10, but before Year 11.

5.2 MAINTENANCE PLAN

The mitigation areas would be maintained for at least the first 3 years following installation (plant establishment period). Maintenance would include dead plant replacement, plant protection, irrigation, nonnative plant control, trash and debris removal, and maintenance of the instream complexity features and the Lake Silveira inlet and outlet structures. It is anticipated that 3 years of maintenance would be adequate to establish self-sustaining riparian habitat. However, it is possible that in some portions of this large project a fourth and possibly fifth year of maintenance would be required.

Monitoring data (see Section 6.0 regarding monitoring requirements) collected by a restoration professional would be used to evaluate the success of the mitigation areas and compare the results to the success criteria. Information from this monitoring program would provide feedback to guide maintenance and help ensure that the mitigation sites achieve the success criteria set forth in this MMP.

5.2.1 Dead Plant Replacement

During the first 3 years, the Project's plans, specifications, and estimates allow for up to nine replanting events. Each event consists of replanting up to 5% of the quantity of plants that were originally installed. Replanting would occur in Year 3 (for all plants) and Year 5 (for California sycamore only) if overall plant survival falls below the final success criteria. If some species perform significantly better than others, the high-performing species would be used preferentially for replanting. However, if the species replacement results in a change of more than 20% from the original plant palette, by species, then the replacement would be submitted to the regulatory agencies for approval prior to planting. Replanting activities would take place between 15 November and 1 February to the extent feasible.

5.2.2 Plant Protection

Plant protection measures are not proposed because browsing animals have not been observed on the Project site. If herbivory significantly impedes restoration success, foliage protection cages would be installed and maintained in good working order (upright and secure). In addition, root protection cages would be installed with replants if root herbivory significantly impedes restoration efforts.

5.2.3 Irrigation

The irrigation system would be maintained by the landscape contractor to ensure that it is in good working order. The water application rates would be based on the weather and health and vigor of the plants. The irrigation system would be tested and repaired on a regular basis as necessary.

Irrigation basins would be regularly maintained during the plant establishment period. Earthen berms that have deteriorated would be reconstructed as necessary to ensure that the water is directed to the plants without running off.

5.2.4 Nonnative Plant Control

Invasion of the mitigation sites by nonnative, invasive plant species can significantly impede the development of mitigation plantings and therefore would need to be monitored and controlled. All Himalayan blackberry and giant reed growing in the mitigation areas during the maintenance period would be controlled via spot herbicide application. It is anticipated that Himalayan blackberry and giant reed would require treatment three times and two times, respectively, between 1 May and 30 September during each of the 3 years of follow-up treatment.

During the maintenance period, the presence of other nonnative, invasive plant species in the mitigation areas would be controlled through manual removal and/or herbicide treatment. Care would be taken to avoid the inadvertent removal or spraying of naturally recruiting native vegetation.

5.3 MAINTENANCE OF INSTREAM COMPLEXITY FEATURES

As part of the 10-year maintenance of the mitigation areas, the SCVWD may need to periodically adjust the instream features in response to natural events, such as flooding. This maintenance is expected and is part of the habitat restoration process. As a result, it is assumed to be covered by the resource agency permits. Most of the expected maintenance activities can be implemented with manual labor and small equipment (e.g., skid steer) that would have minimal impacts on habitat. More significant, but less likely and less frequent, repairs could require the use of larger equipment. Through time, as the riparian habitat becomes established, the need for periodic maintenance would diminish, and eventually maintenance would no longer be required.

5.3.1 Lake Silveira Side Weir Flow Split/Outlet Structures

The side weir flow split structure is expected to require occasional vegetation, debris, or sediment removal to function properly. Willows are likely to establish in and around the structure, and sediment or debris may accumulate during higher flow events. If hydrologic monitoring indicates that the structure's proper function has been significantly compromised, then vegetation and/or sediment removal would be implemented. If high flows displace structural elements (which is not expected because the structural elements have been sized to withstand high flows), repair activities may be necessary.

The outlet structure is a more engineered feature and is very unlikely to require structural maintenance. However, large storm events may convey vegetation debris and trash that could clog the structure and impair proper functioning. If that occurs, such debris or trash would be removed.

The Project's operations and maintenance manual addressed maintenance activities associated with these features in more detail. Most of the expected maintenance activities can be implemented with manual labor and small equipment (e.g., bobcat) that would have minimal impacts on habitat. More significant, but less likely and less frequent, repairs could require the use of larger equipment. Routine maintenance of these features is expected to occur approximately every 3–5 years. Annual lubrication of the operating gate mechanisms would be required.

5.3.2 Natural Recruitment

Measures would be taken to protect native woody plant species and, to a lesser extent, native herbaceous plant species that have established through natural recruitment. At a minimum, these species would be identified and protected prior to and during maintenance activities.

5.4 MAINTENANCE SCHEDULE

The mitigation areas would be maintained regularly during the 3-year plant establishment period and potentially for 4–5 years in specific areas that require additional maintenance. Maintenance activities would occur as needed throughout each year during the maintenance period. The plant establishment period and associated site maintenance would be extended beyond 3 years if significant plant replacement is required because of low plant survivorship.

A qualified restoration professional would conduct site visits during the plant establishment period to identify any maintenance issues that may be hindering target habitat establishment. Site visits would be conducted during the growing season (1 March through 30 November). The monitoring ecologist would make the following assessment during site visits:

- Invasion of nonnative, invasive plant species
- Vegetation establishment with special attention paid to areas where vegetation performance is substandard
- Mortality of plantings
- Natural recruitment
- Slope stability and erosion
- Irrigation and maintenance needs of the plantings

SECTION 6.0 MONITORING SCHEDULE

The monitoring schedule is presented in Table 38 for all activities. The hydrology and geomorphology monitoring also has a detailed schedule in Table 29 (Section 4.2). Monitoring for riparian and wetland habitat mitigation would be conducted at the mitigation site between July and October of each monitoring year.

TABLE 38
Summary of All Monitoring Activities

Monitoring Task		Year						
		1	2	3	4	5	7	10
Geomorphic Monitoring		X	X	X	X	X	X	X
Vegetation Monitoring		X	X	X	X	X	X	X
Bat Monitoring		X	X	X	X	X	N/A	N/A
Steelhead Monitoring		X	X	X	N/A	N/A	N/A	N/A
Instream Complexity		X	X	X	X	X	X	X
West/East Little Llagas Creek (indirect effects)		N/A	N/A	X	N/A	X	N/A	X
Genetic Testing – Sycamores		N/A	N/A	N/A	X	N/A	N/A	N/A
Reassessment of Maintenance Guidelines		N/A	N/A	N/A	N/A	N/A	N/A	X
Wetland Delineation		N/A	N/A	N/A	N/A	X	N/A	N/A
Himalayan Blackberry and Giant Reed Cover								
Himalayan blackberry		N/A	N/A	N/A	N/A	N/A	N/A	X
Giant reed		N/A	N/A	N/A	N/A	N/A	N/A	X
Lake Silveira Wetland Vegetation Percent Cover		Baseline	X	X	X	X	N/A	N/A
Wetland Delineation		N/A	N/A	N/A	N/A	X	N/A	N/A
CRAM								
Riparian Sites	Baseline	N/A	N/A	N/A	N/A	X	N/A	X
Lake Silveira Wetland	Baseline	N/A	N/A	N/A	N/A	X	N/A	X

6.1 REPORTING

Annual monitoring reports would be submitted to the permitting agencies (CDFW, USACE, RWQCB, and National Oceanic and Atmospheric Administration) by 31 December of each monitoring year. Maps showing monitoring locations and copies of photo documentation would be provided along with reports. Field data sheets would be available for review upon request. The report would present monitoring results compared to mitigation performance criteria and address all habitat restoration–related monitoring elements, including vegetation, hydrogeomorphology and fisheries.

6.2 COMPLETION OF MITIGATION

At a minimum, monitoring would be conducted over a 10-year period for all mitigation areas. At the end of the monitoring periods, final monitoring reports would be prepared to establish whether the respective mitigation areas have achieved the final success criteria. If the mitigation areas have successfully met the success criteria, letters would be sent to the permitting agencies requesting final sign-off of the Project's mitigation.

6.3 CONTINGENCIES AND REMEDIAL ACTIONS

If annual performance criteria or final success criteria are not met, the SCVWD would incorporate an analysis of the cause(s) of failure into the appropriate annual monitoring report and propose remedial actions to the permitting agencies. The SCVWD would provide funding for the planning, implementation, and monitoring of any remedial actions that may be required by the permitting agencies to meet the goals of the mitigation.

If observed geomorphic and hydrologic conditions identify the need for immediate management (such as deposition or erosion after a flood, or if water quality thresholds are exceeded), the team would develop recommended actions within a target of 90 days that describe the observed conditions, and identify potential actions appropriate to mitigate, control, and/or rectify the situation. Seasonal and interannual variability would strongly influence conditions; subsequently, the monitoring schedule proposed in Table 32 may need to be modified.

A planned jurisdictional evaluation will occur at year 5 post construction as well as the first post construction CRAM evaluation. The year 5 check in point will be utilized to determine if the mitigation is on target or if adjustments are necessary within the project as whole.

6.4 STATEMENT OF FINANCIAL COMMITMENT

The SCVWD is financially responsible for the successful mitigation of biological impacts from the construction of the Upper Llagas Creek Flood Protection Project, including long-term monitoring, and any required remedial actions.

REFERENCES CITED

LITERATURE

Ali, O. A., S. M. O'Rourke, S. J. Amish, M. H. Meek, G. Luikart, C. Jeffres, and M. R. Miller. 2016. RAD Capture (Rapture): flexible and efficient sequence-based genotyping. Genetics 202:389–400.

Balance Hydrologics, Inc. 2012. Recommended Bankfull Geometries for Flood Protection Channel Design, Upper Llagas Creek, Santa Clara County, California. Dated 23 February 2012.

Balance Hydrologics, Inc. 2013a. Draft – Historical Aerial Photo Review Memorandum, Silveira Habitat Restoration Project. Dated 21 June 2013.

Balance Hydrologics, Inc. 2013b. Draft Field Assessment of Hydrogeologic Conditions Near Lake Silveira and Identification of Potential Effects of Proposed Reach 7a of the Upper Llagas Creek Flood Protection Program. Dated 6 November 2013.

Balance Hydrologics Inc., Santa Clara Valley Water District, and Condor Country Consulting, Inc. 2012. Hydrography, Hydrology, Water Quality, and Plant Communities of Lake Silveira, Morgan Hill area, Santa Clara County. Dated 23 July 2012.

Bonham, C. D. 1989. Measurements for Terrestrial Vegetation. John Wiley & Sons, New York.

Bossard, C. C., J. M. Randall, and M. C. Hoshovsky. 2000. Invasive Plants of California's Wildlands. Berkeley: The University of California Press.

Bousman, W. G. 2007a. Breeding Bird Atlas of Santa Clara County, California. Calflora. 2013.

Bousman, W. G. 2007b. Yellow-breasted Chat *Icteria virens*. Pages 390-391 *in* W. G. Bousman, editor. Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California.

Brown, R. L. and M. A. Naeth. 2013. Woody Debris Amendment Enhances Reclamation after Oil Sands Mining in Alberta, Canada. Restoration Ecology 22:40-48.

Calflora. 2013. The Calflora Database (http://www.calflora.org, accessed January 2013). Berkeley, California.

[Cal-IPC] California Invasive Plant Council. 2004. The Weed Workers' Handbook: A Guide to Techniques for Removing Bay Area Invasive Plants. California Invasive Plant Council and The Watershed Project. Dated May 2004.

Cardno ENTRIX. 2012a. Upper Llagas Creek Flood Protection Project Site Characterization Report. Dated June 2012.

Cardno ENTRIX. 2012b. Upper Llagas Creek Project Baseline Biological Resources Report. Dated 30 November 2012.

Cardno ENTRIX. 2012c. Draft Phase 2 Technical Memorandum: Development of Revegetation Polygons for 60% Design and Comparison of Potential On-site Mitigation Acres with Mitigation Needs. Dated 20 December 2012.

Cardno ENTRIX 2014. Draft Upper Llagas Creek Project Environmental Impact Report. Dated January 2014.

Casagrande, J. 2011. Uvas Creek Steelhead Distribution, Density, Growth, and Habitat Use, 2010. Prepared for the California Department of Fish and Game. 30 pp.

Casagrande, J. 2012. Uvas and Llagas Creek Juvenile Steelhead Distribution and Abundance, 2011. Prepared for the California Department of Fish and Game. 49 pp.

[CBI] Conservation Biology Institute. 2006. Report of Independent Science Advisors for Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan. Dated December 2006.

[CDFG] California Department of Fish and Game. 2008. California Wildlife Habitat Relationships System, Version 8.2. Available online at: http://www.dfg.ca.gov/biogeodata/cwhr/wildlife_habitats.asp. Accessed on January 19, 2012.

[CDFG] California Department of Fish and Game. 2011. Special Animals. State of California Department of Fish and Game Habitat Conservation Division. January. Available online at: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPAnimals.pdf. Accessed in April 2013.

[CDFW] California Department of Fish and Wildlife. 2013. CalFish, A California Cooperative Anadromous Fish and Habitat Data Program. Electronic database accessed April 5, 2013.

[CNDDB] California Natural Diversity Database. 2013. Rarefind Version 3.1.1. California Department of Fish and Wildlife, Biogeographic Data Branch.

Condor Country Consulting, Inc. 2012a. Baseline Biological Resources/Habitat Mapping – Verification. Dated 3 July 2013.

Condor Country Consulting, Inc. 2012b. Wetland Delineation and Preliminary Jurisdictional Determination Santa Clara Valley Water District Upper Llagas Creek Flood Control Project. Dated 1 August 2012.

Condor County Consulting, Inc. 2012c. Upper Llagas Creek Riparian Corridor Assessment. Dated 30 July 2013.

[CWHR] California Wildlife Habitat Relationships System. 1988a. Eucalyptus (EUC). California Department of Fish and Game, California Interagency Wildlife Task Group. Available online at: http://www.dfg.ca.gov/biogeodata/cwhr/pdfs/EUC.pdf. Accessed on February 15, 2013.

[CWHR] California Wildlife Habitat Relationships System. 1988b. Mixed Chaparral (MCH). California Department of Fish and Game, California Interagency Wildlife Task Group.

Available online at: http://www.dfg.ca.gov/biogeodata/cwhr/pdfs/MCH.pdf. Accessed on February 15, 2013.

[CWHR] California Wildlife Habitat Relationships System. 2006. Mule Deer (*Odocoileus hemionus*). California Department of Fish and Game, California Interagency Wildlife Task Group. February.

[CWMW] California Wetlands Monitoring Group. 2012. California Rapid Assessment Method (CRAM) for Wetlands and Riparian Areas, Version 6.0.

Environmental Laboratory. 1987. U.S. Corps of Engineers Wetlands Delineation Manual. Department of the Army.

Fumagalli, M., F. G. Vieira, T. Linderoth, and R. Nielsen. 2014. ngsTools: methods for population genetics analyses from next-generation sequencing data. Bioinformatics 30:1486–1487.

Gillies, E. L. 1998. Effects of Regulated Streamflows on the Sycamore Alluvial Woodland Riparian Community. M.S. Thesis. San Jose State University, San Jose.

Google, Inc. 2013. Google Earth (Version 7). Available at http://www.google.com/earth/index.html. Accessed 8 July 2013.

Grossinger, R. M., E. E. Beller, M. N. Saloman, A. A. Whipple, R. A. Askevold, C. J. Striplen, E. Brewster, and R. A. Leidy. 2008. South Santa Clara Valley Historical Ecology Study, Including Soap Lake, the Upper Pajaro River, and Llagas, Uvas-Carnadero, and Pacheco Creeks. Prepared for the Santa Clara Valley Water District and The Nature Conservancy. A report of SFEI's Historical Ecology Program, SFEI Publication #558, San Francisco Estuary Institute, Oakland, CA.

Hecht, B., Strudley, M., Senter, A. 2012. Informal field trip compendium, hydraulic geometry design basis report for Llagas Creek inset channel, February 28, 2012. Prepared for Santa Clara Valley Water District and RMC Water and Environment. Multi-paged.

Holland, R. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game, Natural Heritage Division, Sacramento, California.

Howell, C. A., Wood, J. K., Dettling, M. D., Griggs, K., Otte, C. C., Lina, L., T. Gardali. 2010. Least Bell's Vireo Breeding Records in the Central Valley Following Decades of Extirpation. pp. 105-113.

H. T. Harvey & Associates. 1997. Santa Clara Valley Water District, California Red-legged frog Distribution and Status - 1997. 3 June 1997.

H. T. Harvey & Associates. 1999. Santa Clara Valley Water District, California Tiger Salamander Distribution and Status - 1999. 3 December 1999.

H. T. Harvey & Associates. 2010. Lower Llagas Creek Least Bell's Vireo Surveys. Prepared for SCVWD. 19 August 2010.

H. T. Harvey & Associates. 2011. Upper Llagas Creek Flood Protection Project Least Bell's Vireo Assessment. 26 September 2011.

H. T. Harvey & Associates. 2012a. California Tiger Salamander Surveys and Site Assessments at Selected Santa Clara County Locations. Dated 29 August 2012.

H. T. Harvey & Associates. 2012b. Western Pond Turtle Site Assessments and Surveys at Selected Santa Clara County Locations. Prepared for the Santa Clara Valley Water District.

H. T. Harvey & Associates. 2013a. Lake Silveira Restoration Project Design Development Report. Dated 13 November 2013.

H. T. Harvey & Associates. 2013b. Upper Llagas Creek Flood Protection Project California Sycamore Trees Potentially Saved with Grading or Maintenance Road Modifications. Dated 28 October 2013 (Revised 5 December 2013).

H. T. Harvey & Associates. 2013c. Upper Llagas Creek Flood Protection Project - West/East Little Llagas Creek Mitigation Strategy Technical Memorandum. Dated 3 October 2013.

H. T. Harvey & Associates. 2013d. West and East Little Llagas Creek Reach- Wildlife Habitat Assessment. Dated 29 August 2013.

H. T. Harvey & Associates. 2013e. Upper Llagas Creek Flood Protection Project –Santa Clara County Roads and Airports Department Mitigation Sites Compensation Analysis Technical Memorandum. Dated 21 October 2013.

H. T. Harvey & Associates. 2013f. Upper Llagas Creek Flood Protection Project Habitat Restoration Planting Palette, Species Composition, and Spacing Technical Memorandum. Dated 21 March 2013 (Revised 6 June 2013).

H. T. Harvey & Associates. 2014a. Upper Llagas Creek Flood Protection Project Soils Management Plan. Dated 21 November 2013 (Revised 3 July 2014).

H. T. Harvey & Associates. 2014b. Upper Llagas Creek Stormwater Improvements Project Preliminary Delineation of Wetlands and Other Waters. Dated 30 May 2014.

H. T. Harvey & Associates. 2014c. Upper Llagas Creek Flood Protection Project – California Sycamore Mitigation Assessment. Dated 29 January 2014.

Hunter, B. 1980. Letter dated 8 October 1980 from Brian Hunter to D. W. Patterson of the Soil Conservation Service, Red Bluff, California regarding proposed Llagas Creek Flood Control Project. California Department of Fish and Game, Yountville, California.

ICF International. 2012. Covered Species Accounts Bay-Delta Conservation Plan. Appendix 2.A. Administrative Draft. February (ICF 00610.10). Available online at: http://baydeltaconservationplan.com/Library/DocumentsLandingPage/BDCPPlanDocuments.aspx Accessed on February 8, 2012.

ICF International. 2012. Santa Clara Valley Habitat Plan. August. San Francisco, California. Prepared for County of Santa Clara, City of San Jose, City of Morgan Hill, City of Gilroy, Santa Clara Valley Water District, and Santa Clara Valley Transportation Authority.

Jennings, M.R. and M.P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. Report prepared for the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, California. 255 pp.

Jepson Flora Project. 2013. The Jepson Online Interchange California Floristics (http://ucjeps.berkeley.edu/interchange/index.html, accessed February 2013). University of California, Berkeley, California.

Johnson, M. G., K. Lang, P. Manos, G. H. Golet, and K. A. Schierenbeck. 2016. Evidence for genetic erosion of a California native tree, *Platanus racemosa*, via recent, ongoing introgressive hybridization with an introduced ornamental species. Conservation Genetics 17:593–602.

Keeler-Wolf, T. 1993. Rare Community Conservation in California. In J. Kelley (ed.), Proceedings of the Symposium: Interface Between Ecology and Land Development. Southern California Academy of Sciences.

Kershaw, K. A. 1973. Quantitative and Dynamic Plant Ecology. 2nd Edition. New York: America Elsevier Publishing.

Korneliussen, T. S., A. Albrechtsen, and R. Nielsen. 2014. ANGSD: analysis of next generation sequencing data. BMC Bioinformatics 15(1):356.

Lichvar, R. W. 2012. The National Wetland Plant List. ERDC/CRREL TR-12-11. Hanover, NH: U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory.

Lichvar, R. W. and S. M. McColley. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. U.S. Army Engineer Research and Development Center.

Miller, M. R., J. P. Brunelli, P. A. Wheeler, S. Liu, C. E. Rexroad 3rd, Y. Palti, C. Q. Doe, and G. H. Thorgaard. 2012. A conserved haplotype controls parallel adaptation in geographically distant salmonid populations. Molecular Ecology 21:237–249.

Miller, M. R., J. P. Dunham, A. Amores, W. A. Cresko, and E. A. Johnson. 2007. Rapid and cost-effective polymorphism identification and genotyping using restriction site associated DNA (RAD) markers. Genome Research 17:240–248.

Moore, M. 2010. Lake and stream maintenance program renewal project, Appendix E. Guidelines prepared for the Santa Clara Valley Water District, by the Santa Clara Valley Water District Watershed Management Division. 6 p.

Moore, M. 2012. Lake Silveira Special Study – Water Quality. Report prepared for the Upper Llagas Creek Project, Santa Clara Valley Water District.15 p.

Moyle, P. B. 2002. Inland Fishes of California (second edition). University of California Press.

[NMFS] National Marine Fisheries Service. 2005. Final Assessment of the National Marine Fisheries Service's Critical Habitat Annual Review Teams (CHARTs) for Seven Salmon and Steelhead Evolutionarily Significant Units (ESUs) in California. NOAA Fisheries Protected Resources Division, Long Beach, California. July 2005.

Noble Consultants, Inc., and Northwest Hydraulic Consultants. 2008. Upper Llagas Creek flood control project: Llagas Creek – stable channel design and sediment impact assessment, final report, prepared for: U.S. Army Corps of Engineers, San Francisco District.

[NRCS] Natural Resources Conservation Service. 2012. National Water and Climate Center. Gilroy Station, CA3417 (http://www.wcc.nrcs.usda.gov/ftpref/support/climate/taps/ca/06085.txt, accessed December 2012).

[NRCS] Natural Resources Conservation Service. 2013a. Web Soil Survey. Available at http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed 23 August 2013.

[NRCS] Natural Resources Conservation Service. 2013b. The PLANTS Database (http://plants.usda.gov, updated 30 January 2013). National Plant Data Team, Greensboro, NC 27401-4901 USA.

Pritchard, J. K., M. Stephens, and P. Donnelly. 2000. Inference of population structure using multilocus genotype data. Genetics 155:945–959.

Reich, D., A. L. Price, and N. Patterson. 2008. Principal component analysis of genetic data. Nature Genetics 40:491–492.

RMC Water and Environment. 2013. Upper Llagas Creek Flood Protection Project Design Documentation Report 65% Submittal. Dated April 2013.

Rood, S. B., Braatne, J. H., and F. M. R. Hughes. 2003. Ecophysiology of Riparian Cottonwoods: Stream Flow Dependency, Water Relations, and Restoration. Tree Physiology 23:1113-1124.

[RWQCB] Regional Water Quality Control Board. 2011a. Technically Conditioned Water Quality Certification Number 34310WQ06 for the Scour Protection for Masten Avenue Bridge Over Llagas Creek Project, Santa Clara County.

[RWQCB] Regional Water Quality Control Board. 2011b. Technically Conditioned Water Quality Certification Number 34310WQ07 for the Scour Protection for Llagas Avenue Bridge Over Llagas Creek Project, Santa Clara County.

[RWQCB] Regional Water Quality Control Board. 2011c. Water quality control plan for the Central Coast basin. State Water Resources Control Board and California Environmental Protection Agency. Multi-paged.

Saglam, I. K., J. Baumsteiger, M. J. Smith, J. Linares-Casenave, A. L. Nichols, S. M. O'Rourke, and M. R. Miller. 2016. Phylogenetics suggests the common origin of two scientific icons: Devils Hole and Devils Hole pupfish. Molecular Ecology 25:3962–3973.

Santa Clara County Bird Data, unpublished. Data compiled and provided by William G. Bousman regarding birds reported in Santa Clara County.

Sawyer, J. O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society Press, Sacramento.

Sawyer, J. O., Keeler-Wolf, T., and J. M. Evens. 2009. A Manual of California Vegetation. 2nd Edition. California Native Plant Society Press, Sacramento.

Schaaf & Wheeler. 2012a. Upper Llagas Creek Flood Protection Project Vegetated Channel Sections Memorandum. Dated 28 March 2012.

Schaaf & Wheeler. 2012b. Upper Llagas Creek Flood Protection Project 30% Design Hydraulics Report. Dated 31 July 2012.

Schaaf & Wheeler. 2013. Composite Roughness Calculations (Appendix B of 65% hydraulics report). Dated April 2013.

[SCVWD] Santa Clara Valley Water District. 2011. Santa Clara Valley Water District Stream Maintenance Program Update Final Subsequent Environmental Impact Report. Dated December 2011. Available online at: http://www.valleywater.org/SMPSEIR2011-V2.aspx. Accessed on 2 April 2013.

[SCVWD] Santa Clara Valley Water District. 2013. Draft Upper Llagas Creek Flood Protection Project West Little Llagas Creek Hydrologic Modifications. Dated 17 July 2013.

[SCVWD] Santa Clara Valley Water District. 2014. Draft Upper Llagas Creek Routine Maintenance Description, Impacts and Mitigation Plan. Dated 25 July 2014.

[SCVWRPC] Santa Clara Valley Water Resources Protection Collaborative. 2006. User Manual: Guidelines for Land Use Near Streams. Dated July 2006.

[SFEI and H. T. Harvey & Associates] San Francisco Estuary Institute and H. T. Harvey & Associates. In preparation. Sycamore Alluvial Woodland Habitat Mapping and Regeneration Study. Prepared for California Department of Fish and Wildlife, Sacramento, California.

Skotte, L., T. S. Korneliussen, and A. Albrechtsen. 2013. Estimating individual admixture proportions from next generation sequencing data. Genetics 195:693–702.

Smith, J. J. 2007. Steelhead distribution and ecology in the upper Pajaro River system and mainstem Pajaro River (and stream descriptions, habitat quality ratings and limiting factors by reach for the Pajaro River and for the upper Pajaro River tributaries). Unpublished Report, Department of Biology, San José State University, November 7. 38pp.

Soil & Plant Laboratory, Inc. 2012. Upper Llagas Creek Flood Protection Project Soils Report. Dated 3 October 2012.

Stephens, D., Howard, J., Verpeet, K., Donaldson, E., Hecht, B., Anderson, C., Tanverakul, S. 2013. Lake Silveira Restoration Project Design Development Report. Report prepared for RMC Water and Environment. 42 p. + appendices.

Stevens, D. L., and A. R. Olsen. 2004. Spatially balanced sampling of natural resources. Journal of the American Statistical Association. 99(465):262–278.

Strudley, M., Hecht, B., and Baggett, T., 2011, Sediment gaging report for water year 2011 (partial), Llagas Creek at Buena Vista Avenue, Santa Clara County, California: Balance Hydrologics, Inc. consulting report prepared for RMC Water and Environment, 50 p.

Thompson, S. K. 2002. Sampling. Second edition. John Wiley & Sons, New York, New York.

Tu, M., Hurd, C., and J. M. Randall. 2001. Weed Control Methods Handbook: Tools and Techniques for Use in Natural Areas. The Nature Conservancy. http://tncweeds.ucdavis.edu, version: April 2001.

[USACE] U.S. Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. September 2008. ERDC/EL TR-06-16. U.S. Army Engineer Research and Development Center. Vicksburg, MS.

[USFWS] U.S. Fish and Wildlife Service. 1998. Draft Recovery Plan for the Least Bell's Vireo (*Vireo bellii pusillus*). Dated March 1998.

[USFWS] U.S. Fish and Wildlife Service. 2002. Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*). Dated 28 May 2002.

[USFWS] U.S. Fish and Wildlife Service. 2003a. Habitat Evaluation Procedure (HEP) Application, Llagas Creek Flood Control Project. Dated May 2003.

[USFWS] U.S. Fish and Wildlife Service. 2003b. Revised Draft Llagas Creek Flood Control Project Fish and Wildlife Coordination Act Report. Dated May 2003.

[WRA] Wetlands Research Associates, Inc. 2010. Butterfield Boulevard Extension Biological Resources Assessment. Prepared for the City of Morgan Hill. Dated May 2010.

WRA Environmental Consultants. 2011a. Bridge No. 37C0170 Llagas Creek at Masten Avenue Mitigation, Monitoring, and Reporting Plan. Dated November 2011.

WRA Environmental Consultants. 2011b. Bridge No. 37C0550 Llagas Creek at Llagas Avenue Mitigation, Monitoring, and Reporting Plan. Dated November 2011.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White. 1988. California's Wildlife: Volume I, Amphibians and Reptiles. Sacramento, CA: California Department of Fish and Game.

PERSONAL COMMUNICATIONS

Anderson, C. 2013a. Email communications between Steve Bui (RMC) and Chuck Anderson (Schaaf & Wheeler) regarding vegetation installation on Reaches 4, 5, 6.

Anderson, C. 2013b. Email communications between Steve Bui (RMC) and Chuck Anderson (Schaaf & Wheeler) regarding vegetation installation on Reaches 7a.

Gilpin, D. 2013. Email communication between Matt Parsons (H. T. Harvey & Associates) and David Gilpin (Pacific Coast Seed) regarding seed mix species availability.

Spahr, L. 2013a. Email communication between Pat Reynolds (H. T. Harvey & Associates) and Linda Spahr (Santa Clara Valley Water District) regarding construction setback.

Spahr, L. 2013b. Email communication between Pat Reynolds (H. T. Harvey & Associates) and Linda Spahr (Santa Clara Valley Water District) regarding seed source guidelines.

APPENDIX A

Photographs of Reaches

Appendix A

Upper Llagas Creek flood protection project

project map

The **Upper Llagas Creek** watershed encompasses the area of Llagas Creek north of Buena Vista Avenue as well as its tributaries, including the West Little Llagas and East Little Llagas Creeks.

PHASE 1 (4.2 miles)
- Reach 4 — 2.4 miles
- Reach 5 — 0.3 miles
- Reach 7a — 1.5 miles
- Lake Silveira — On-site mitgation

PHASE 2 (9.7 miles)
- Reach 5 — 0.2 miles
- Reach 6 — 3.2 miles
- Reach 7b — 1.4 miles
- Reach 8 — 1.5 miles
- Reach 14 — 3.4 miles

Est. 100-year flood area

N

Morgan Hill
San Martin
Gilroy
Lake Silveira
Chesbro Reservoir
Uvas Reservoir
Coyote Reservoir
West Little Llagas Creek
East Little Llagas Creek
Llagas Creek
Madrone Channel
Tennant Creek
Hayes Creek
Church Creek
Center Creek
New Creek
San Martin Creek
West Branch Llagas Creek
Church Percolation Ponds
South County Airport
El Toro Elementary School
Britton School
Galvan Park
Morgan Hill Community Center
Morgan Hill City Hall and Civic Center
Barrett Elementary School
Paradise Park
Oakwood Country School
Howard Wiechert Park
San Martin/Gwinn Elementary School
Rucker Elementary School
Llagas Rd
E Main Ave
E Dunne Ave
Murphy Ave
San Pedro Ave
Tennant Ave
Fisher Ave
101
Edmundson Ave
Maple Ave
Sycamore Ave
E Middle Ave
Columbet Ave
Center Ave
Watsonville Rd
W Middle Ave
Llagas Ave
California Ave
W San Martin Ave
Foothill Ave
Church Ave
Highland Ave
Monterey Rd
Santa Teresa Blvd
Newl Ave
Masten Ave
Rucker Ave
Buena Vista Ave

PHASE 2 Reach 8
PHASE 2 Reach 7b
PHASE 1 Reach 7a
PHASE 2 Reach 14
PHASE 2 Reach 6
PHASE 1 Reach 5
PHASE 2 Reach 5
PHASE 1 Reach 4

Santa Clara Valley Water District

Reach 4: Example of Reach 4 taken upstream of Masten Avenue



Reach 5: Example of Reach 5 west of Highway 101



Reach 6: Example of Reach 6 downstream from Church Avenue



Llagas Creek between Monterey Road and Silveira Lake





Reach 7A: Example of Reach 7A between Middle Avenue and Watsonville Road



Reach 7A: Example of Reach 7A upstream of Watsonville Road



Reach 7B: Example of Reach 7B upstream of LaCrosse Drive



Reach 8: Example of Reach 8A north of Wright Avenue



Reach 8B: Example of Reach 8B



Reach 14: Example of Reach 14 south of San Martin Avenue



APPENDIX B

Impact Maps



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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 1 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

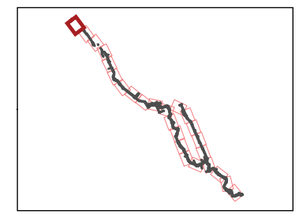
- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

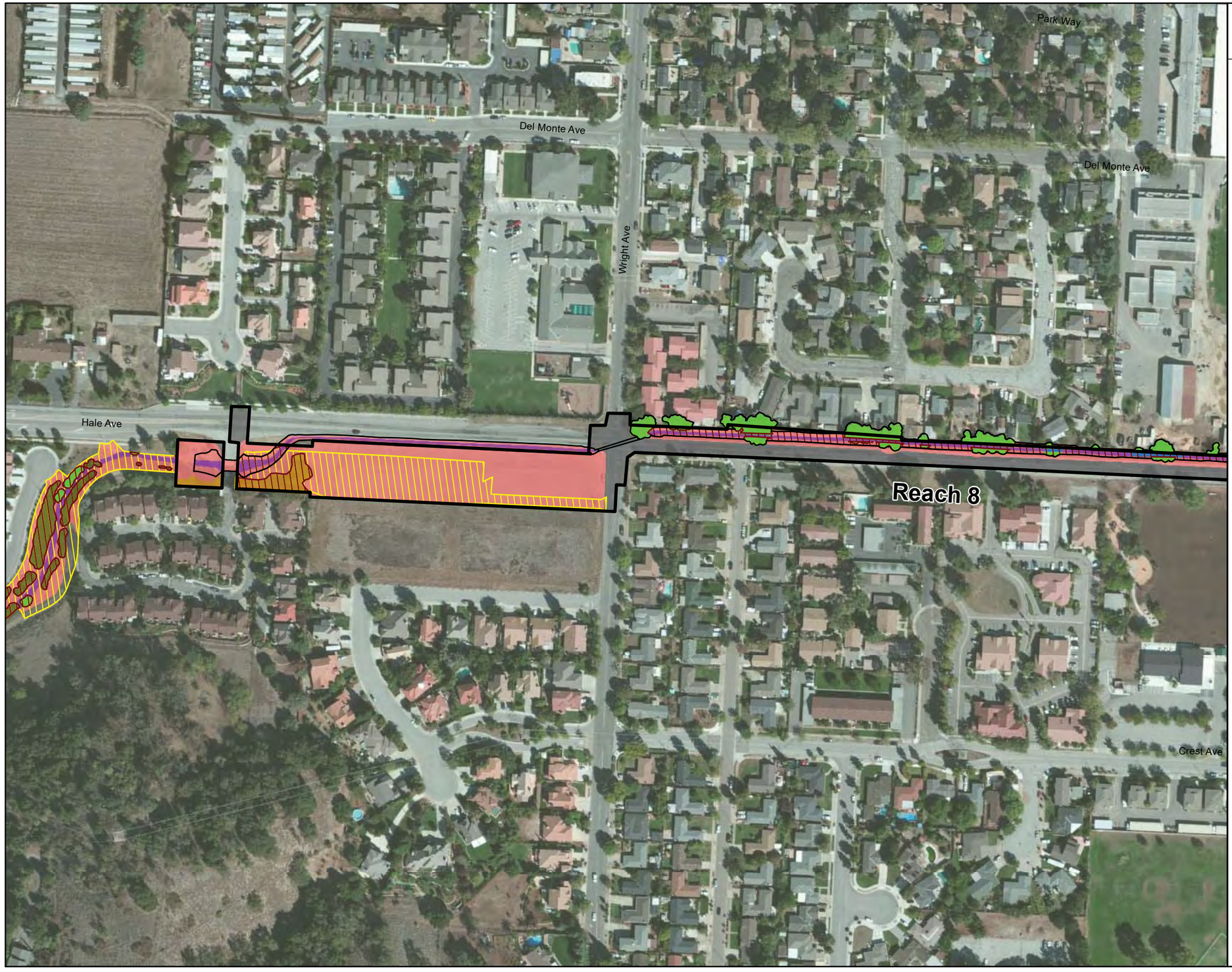
Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

0 125 250
Scale in Feet





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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 2 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

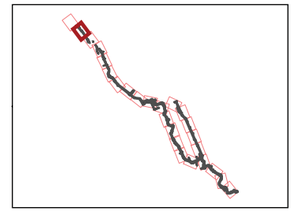
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- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

0 125 250
Scale in Feet



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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 3 of 25

Monterey St
Main Ave
2Nd St
3Rd St
4Th St
Del Monte Ave
onte Ave
Nob Hill Ter
Warren Ave
Hale Ave
Crest Ave
Reach 8

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

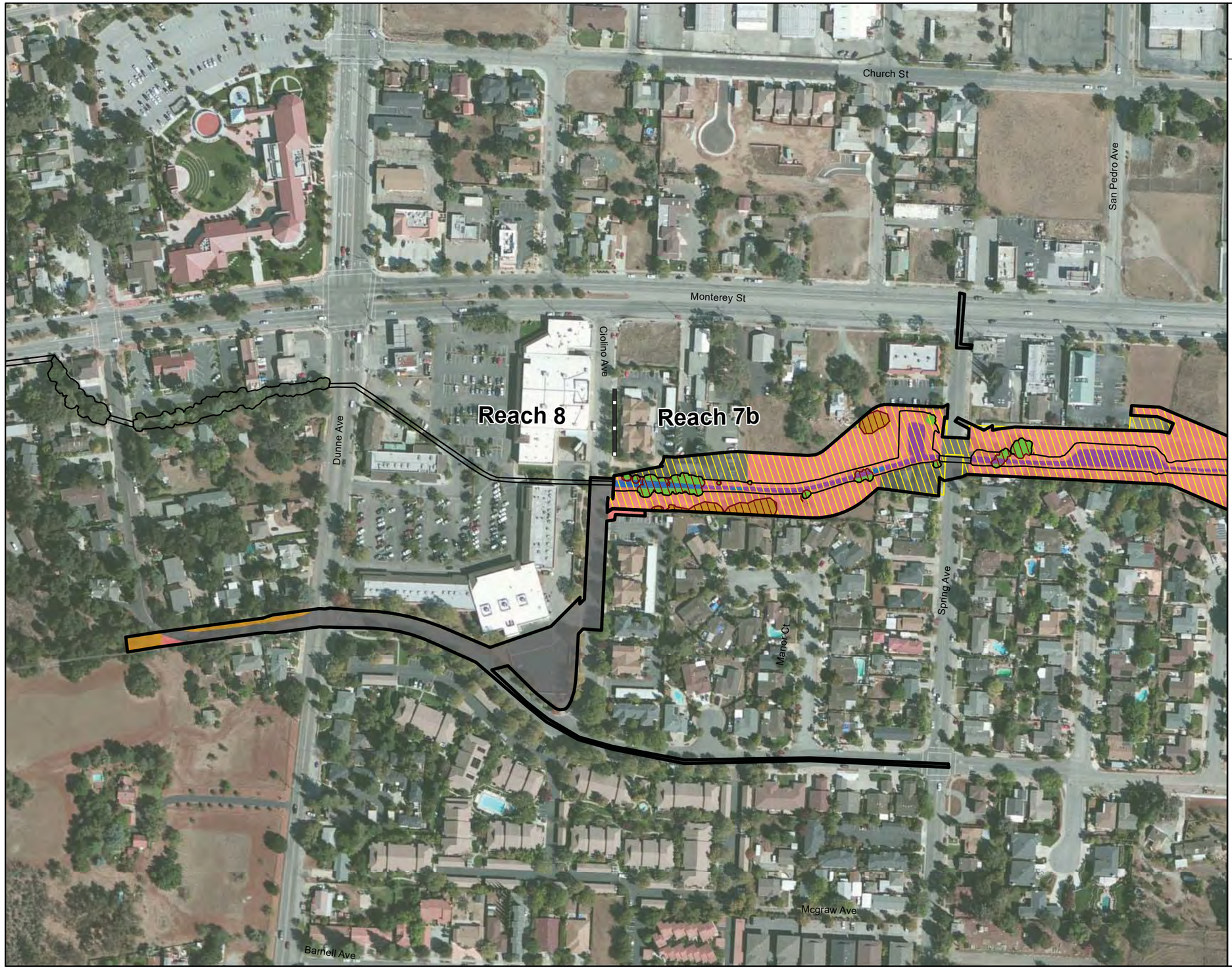
- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

0 125 250
Scale in Feet



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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 4 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

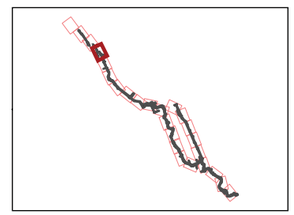
Other Habitat Types

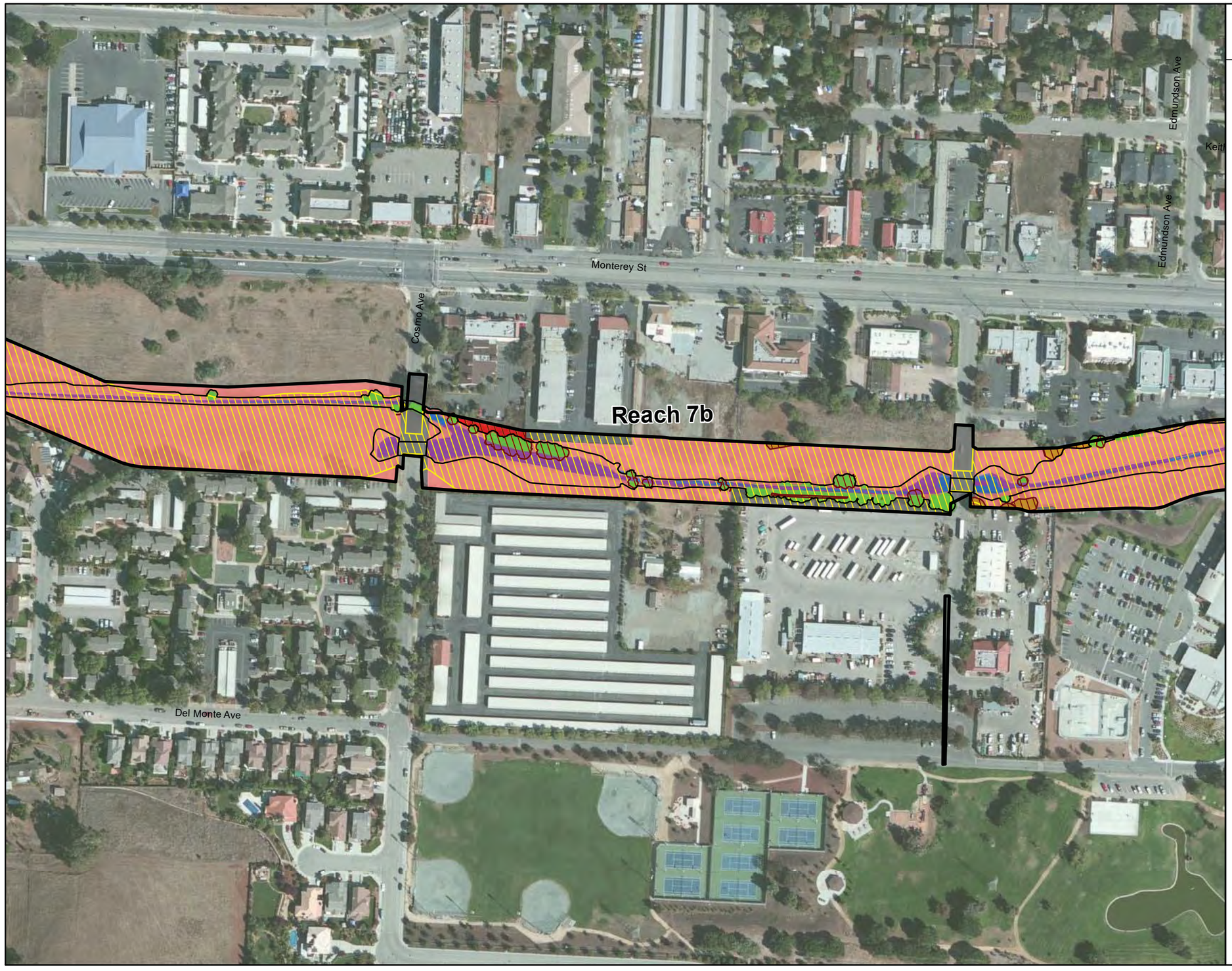
- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

N

0 125 250
Scale in Feet





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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 5 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

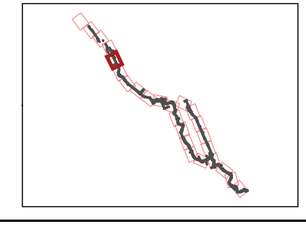
- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

0 125 250
Scale in Feet



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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 6 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

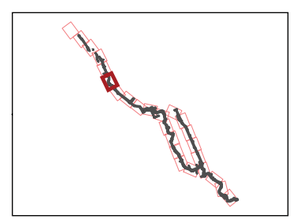
- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

0 125 250
Scale in Feet





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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 7 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

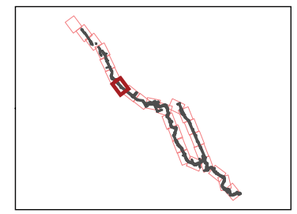
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- Upland Scrub (U/S)

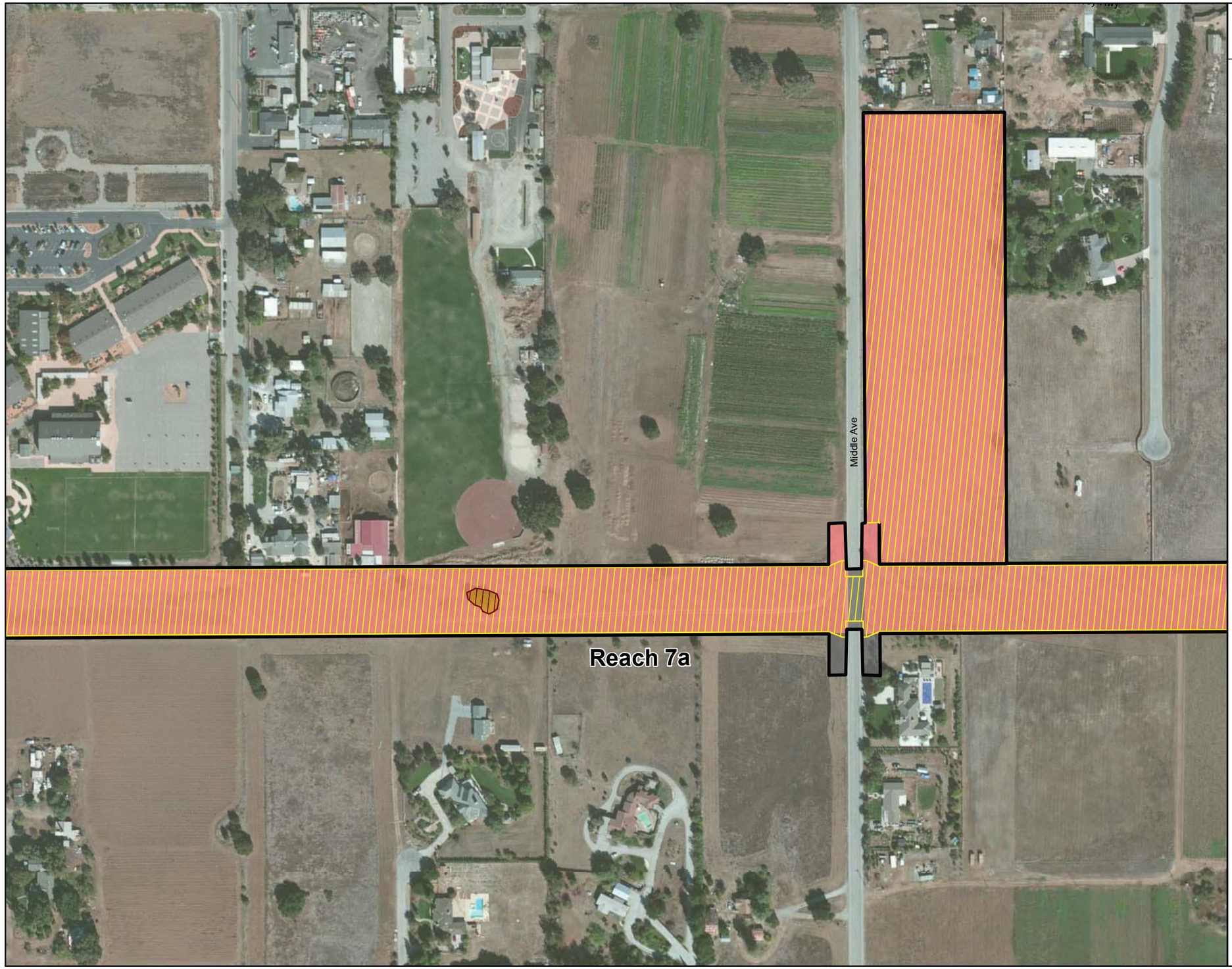
Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

0 125 250
Scale in Feet





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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 8 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

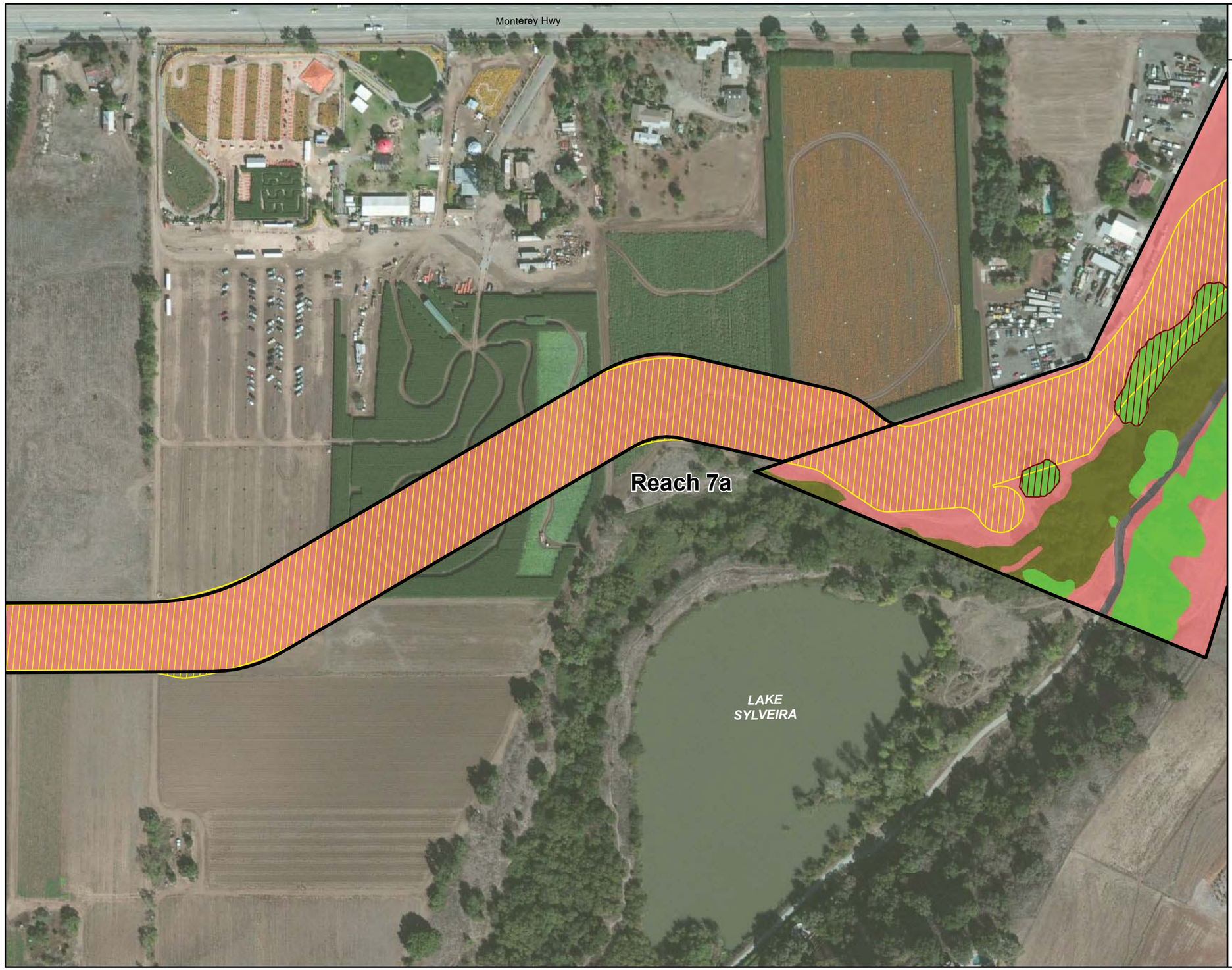
Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

N

0 125 250
Scale in Feet



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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 9 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

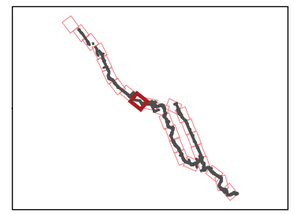
Other Habitat Types

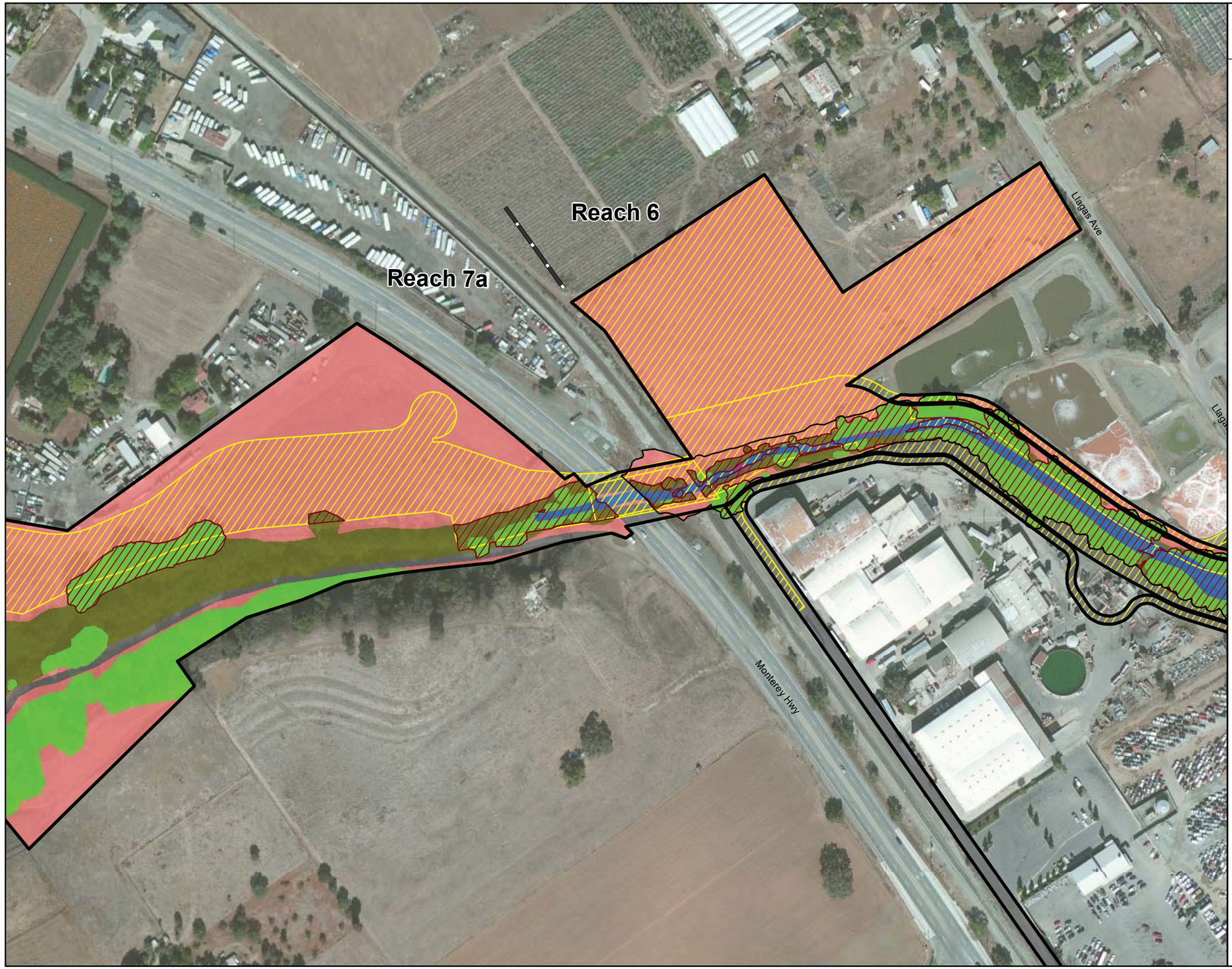
- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

N

0 125 250
Scale in Feet





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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 10 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

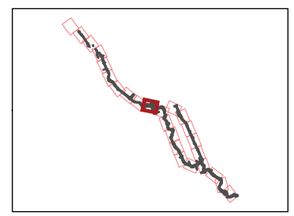
Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

N

0 125 250
Scale in Feet



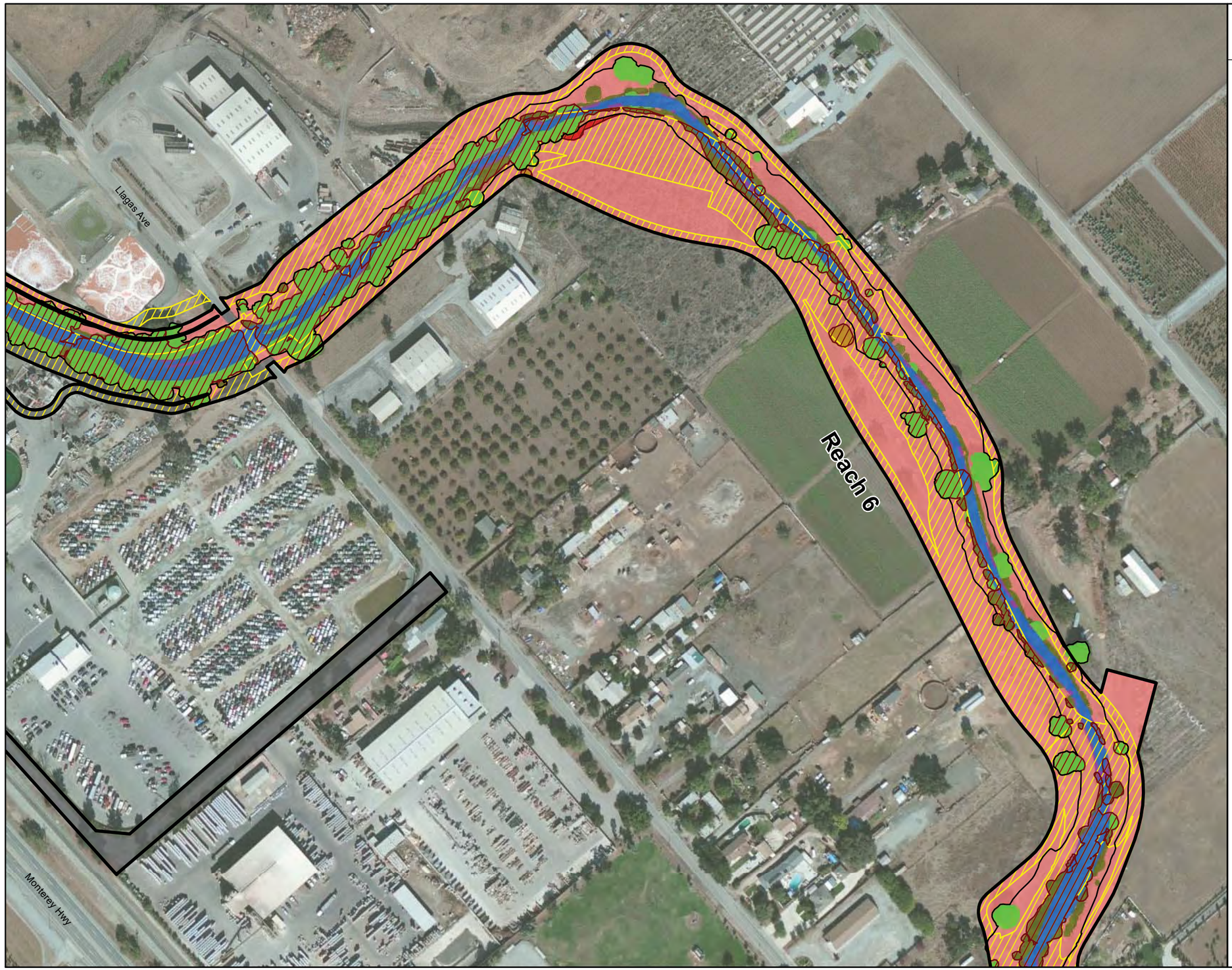
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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 11 of 25



Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

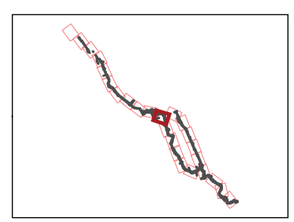
Other Habitat Types

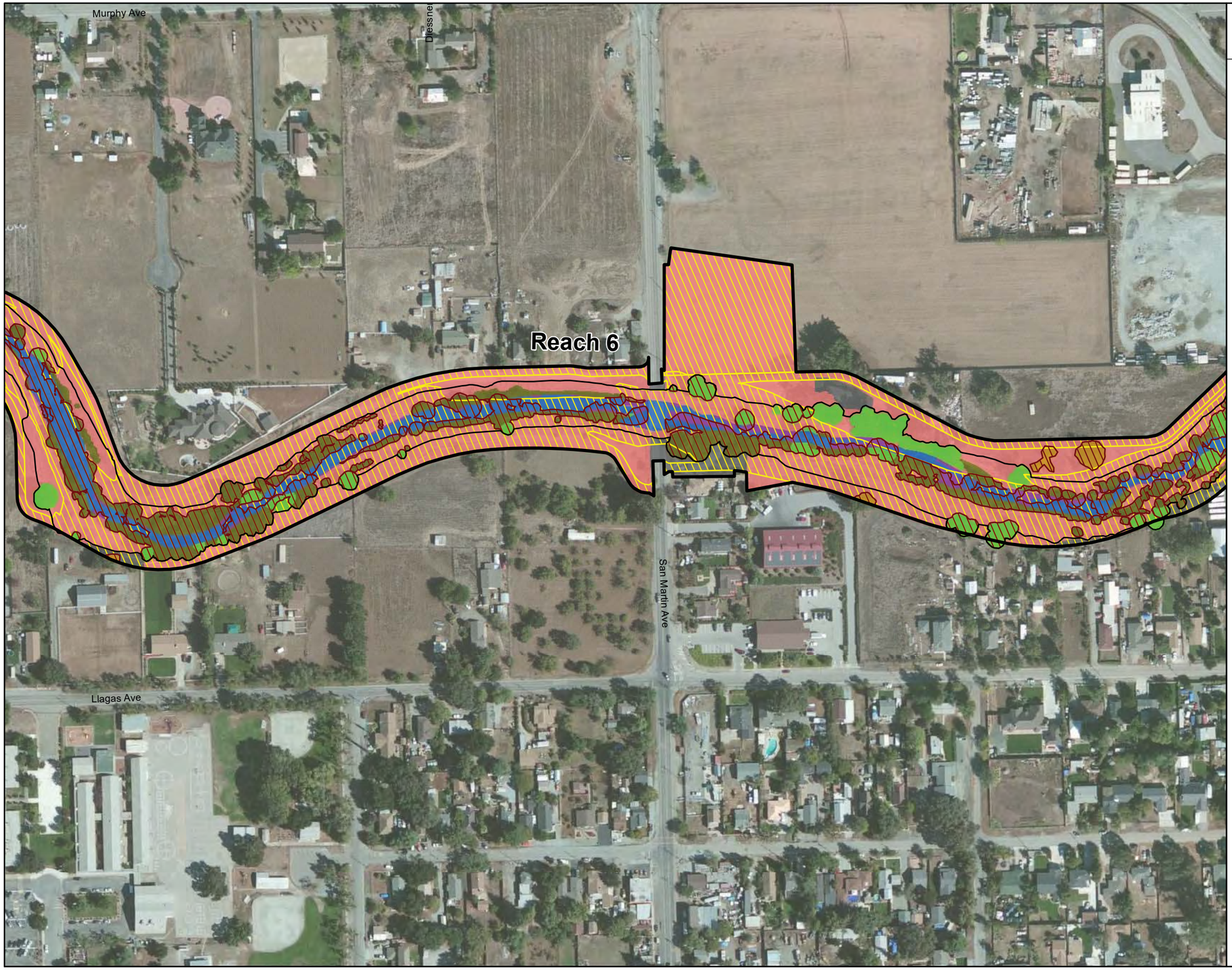
- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

N

0 125 250
Scale in Feet





Cardno ENTRIX

Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 12 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

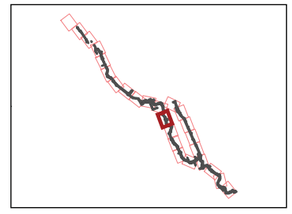
- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
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- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

0 125 250
Scale in Feet



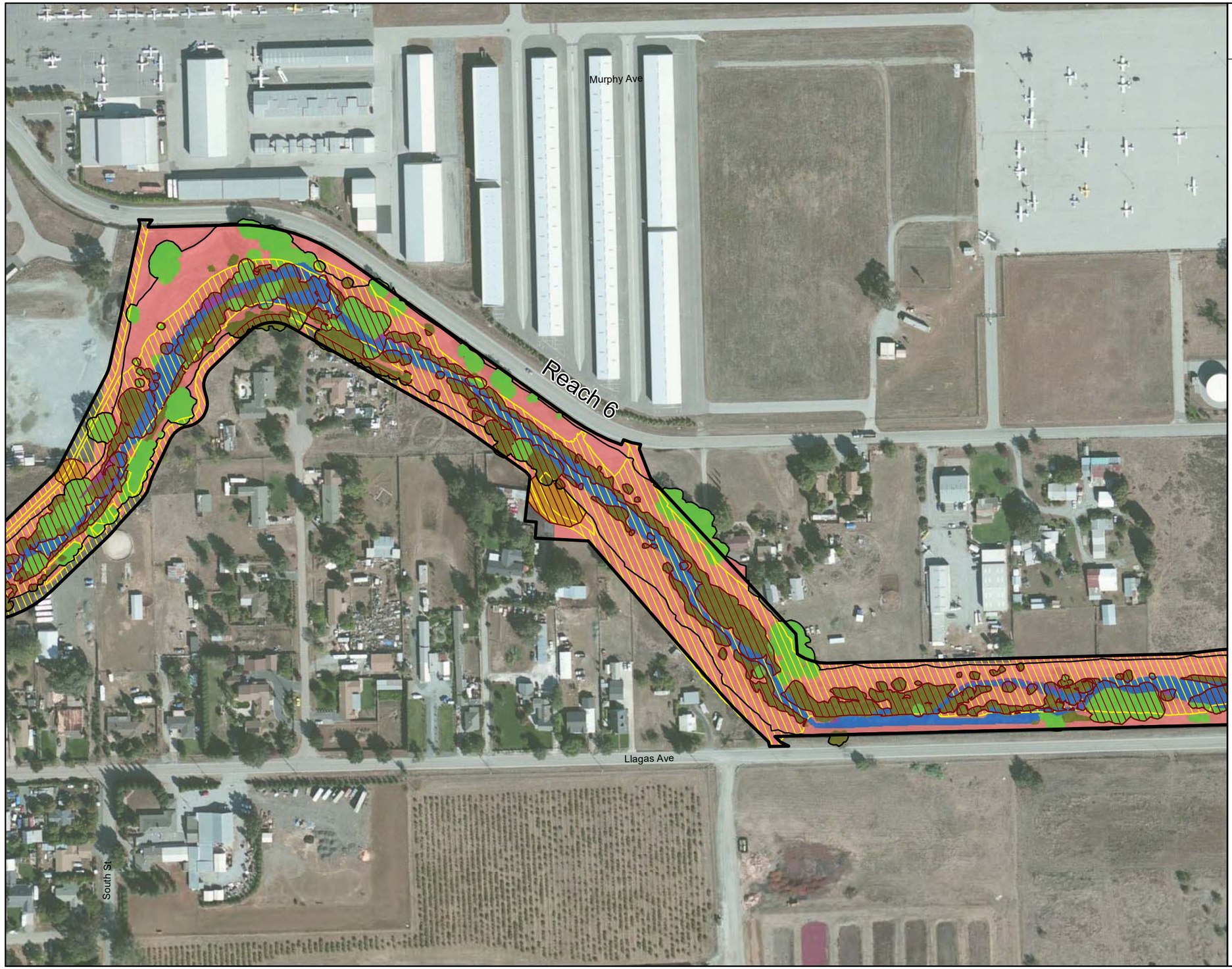
Cardno ENTRIX

Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 13 of 25



Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
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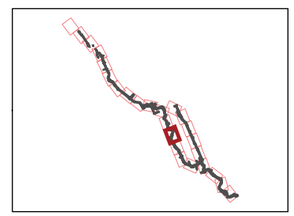
Other Habitat Types

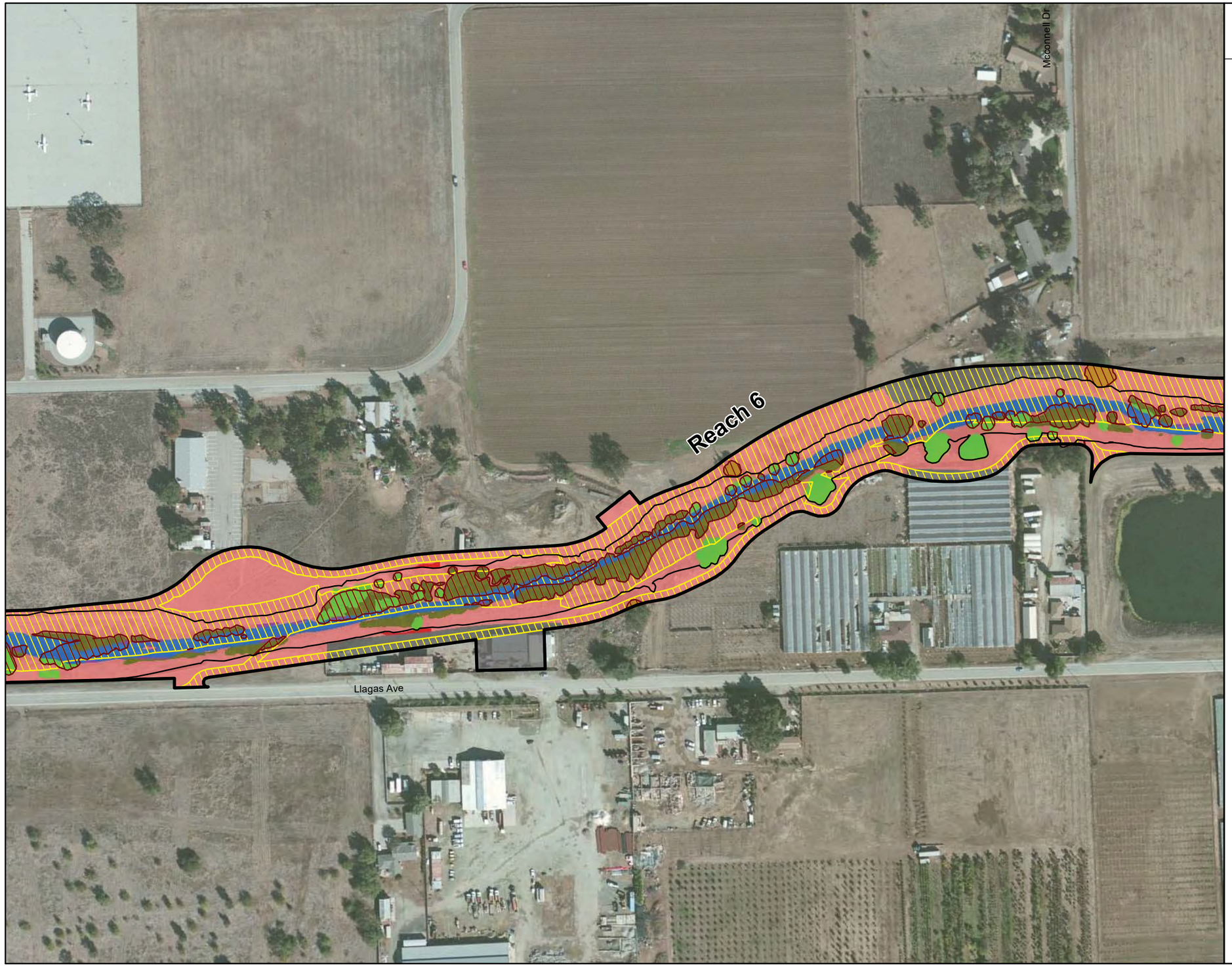
- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

N

0 125 250
Scale in Feet





Cardno ENTRIX

Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 14 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

Other Habitat Types

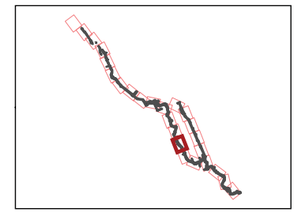
- Aquatic
- Developed

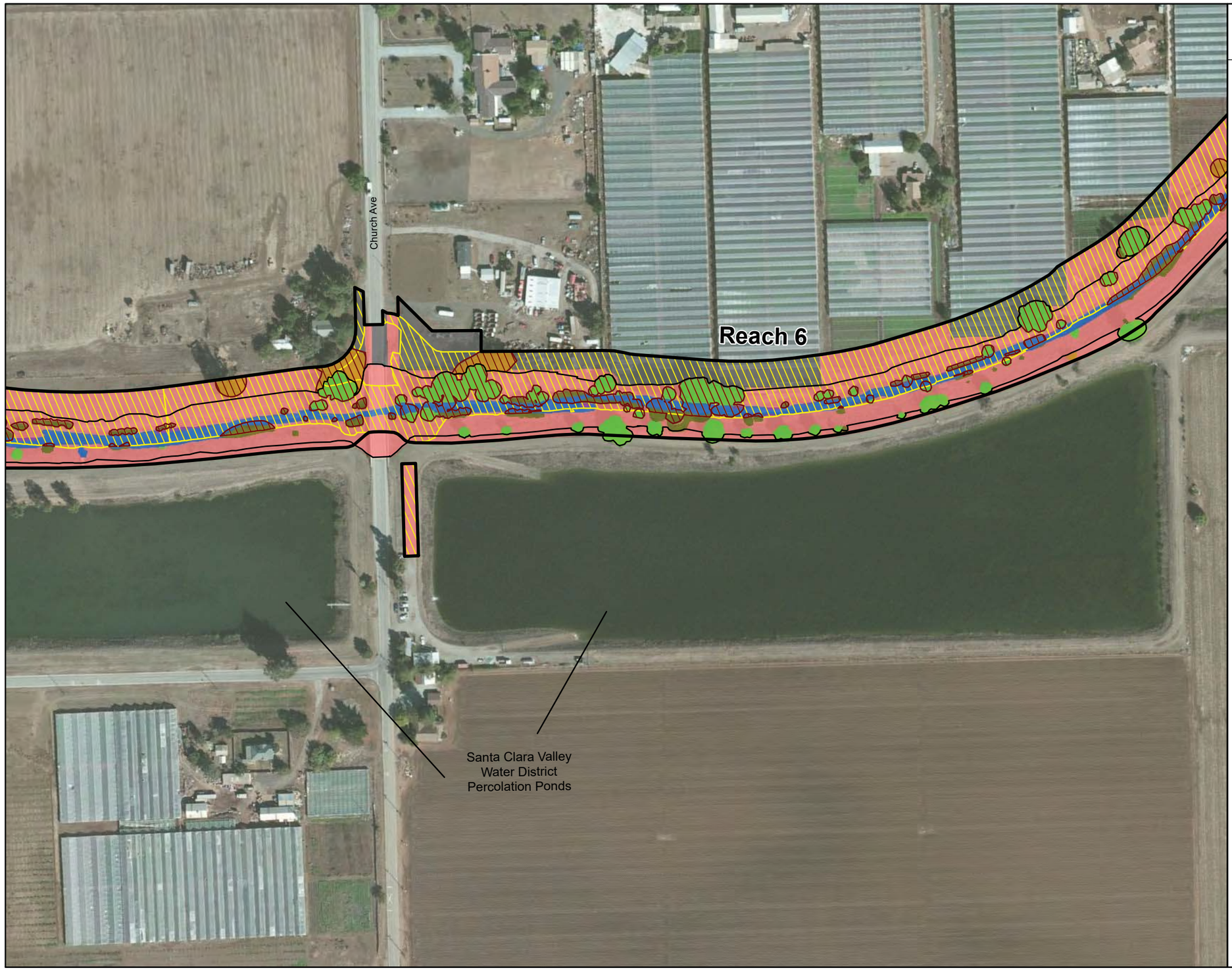
Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

N

0 125 250

Scale in Feet





Cardno ENTRIX

Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 15 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

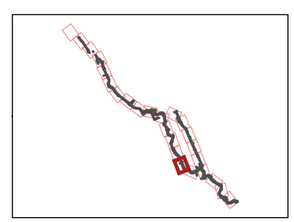
Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

N

0 125 250
Scale in Feet



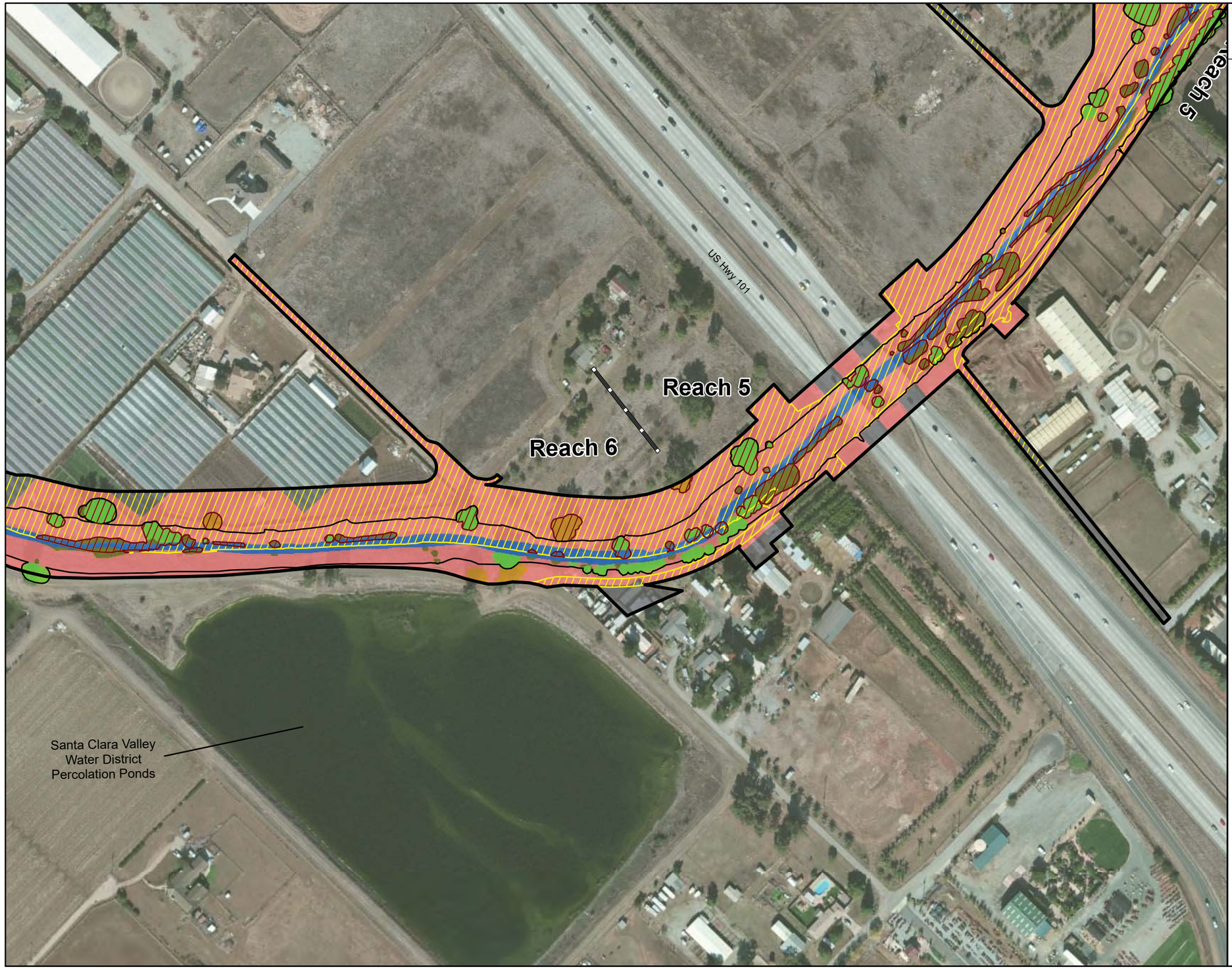
Cardno ENTRIX

Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 16 of 25



Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

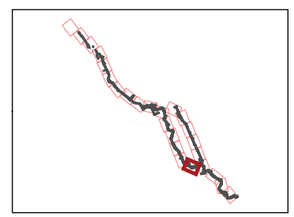
Other Habitat Types

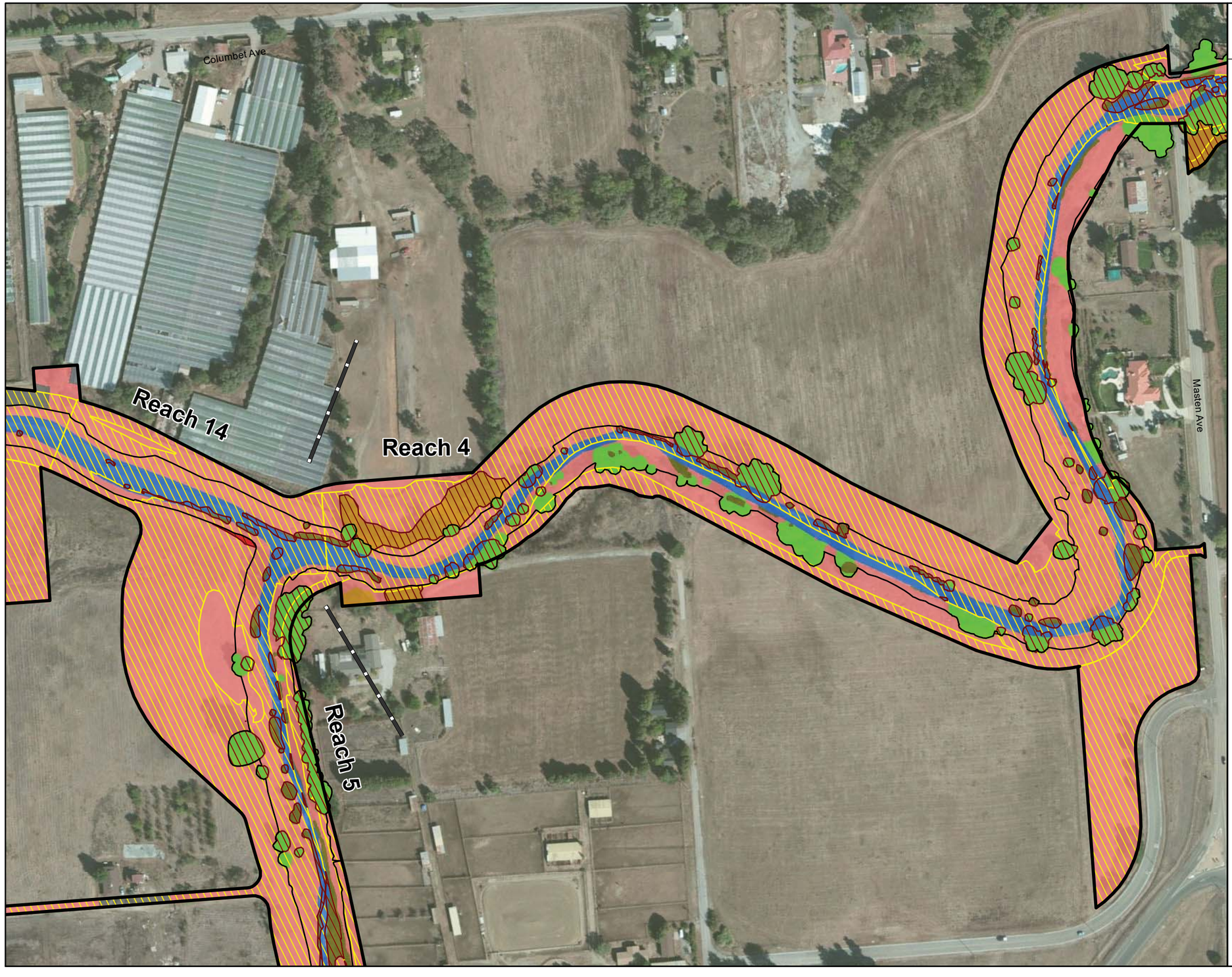
- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

N

0 125 250
Scale in Feet





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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 17 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

Other Habitat Types

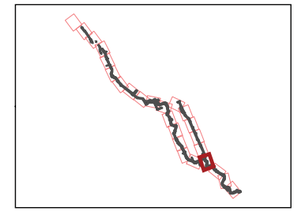
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- Developed

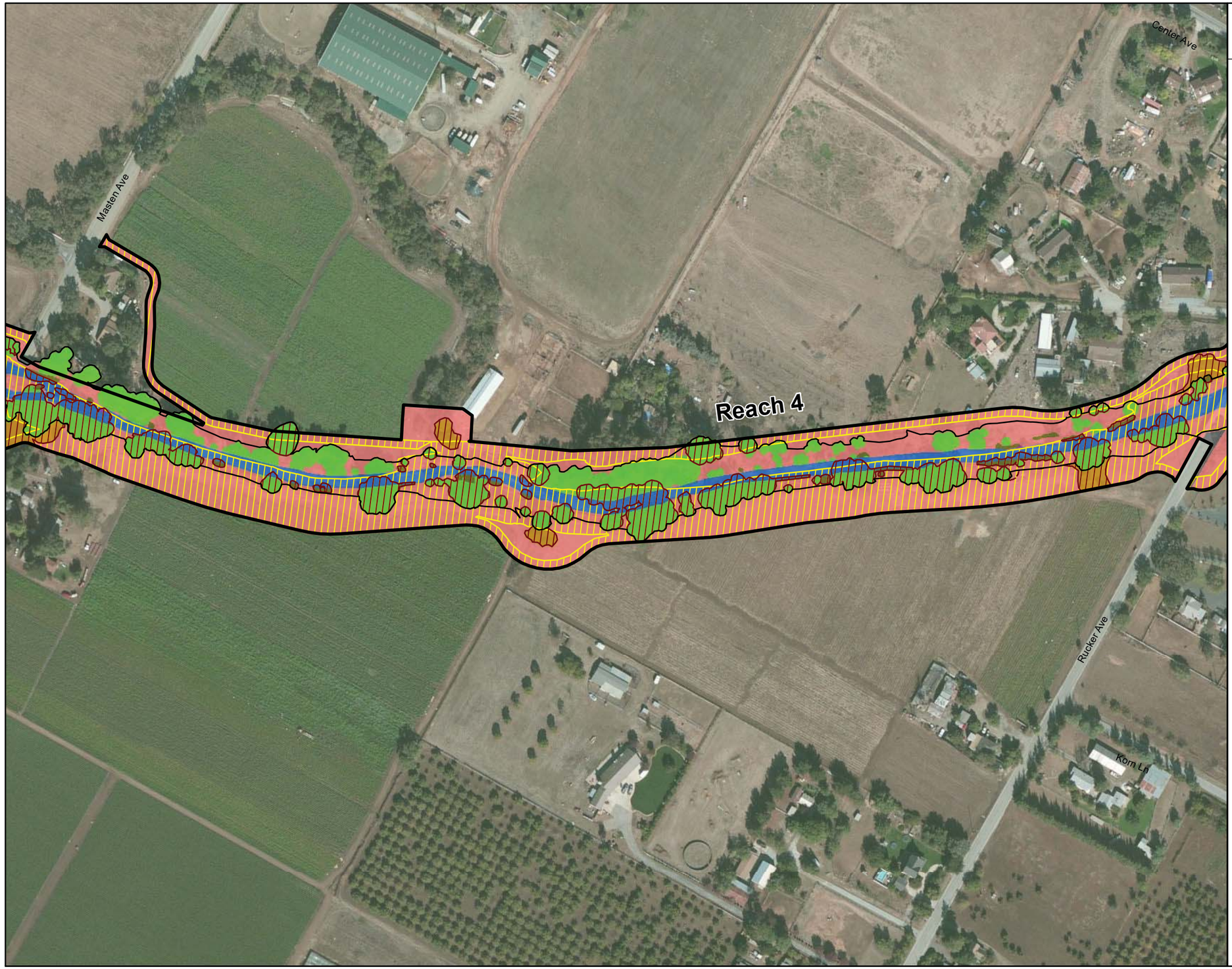
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Source: HT Harvey, 2013b

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0 125 250

Scale in Feet





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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 18 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

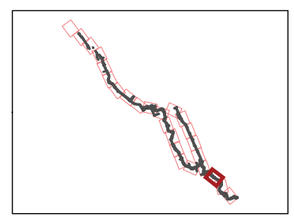
Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

N

0 125 250
Scale in Feet



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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 19 of 25

Reach 4

Rucker Ave

Korn Ln

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

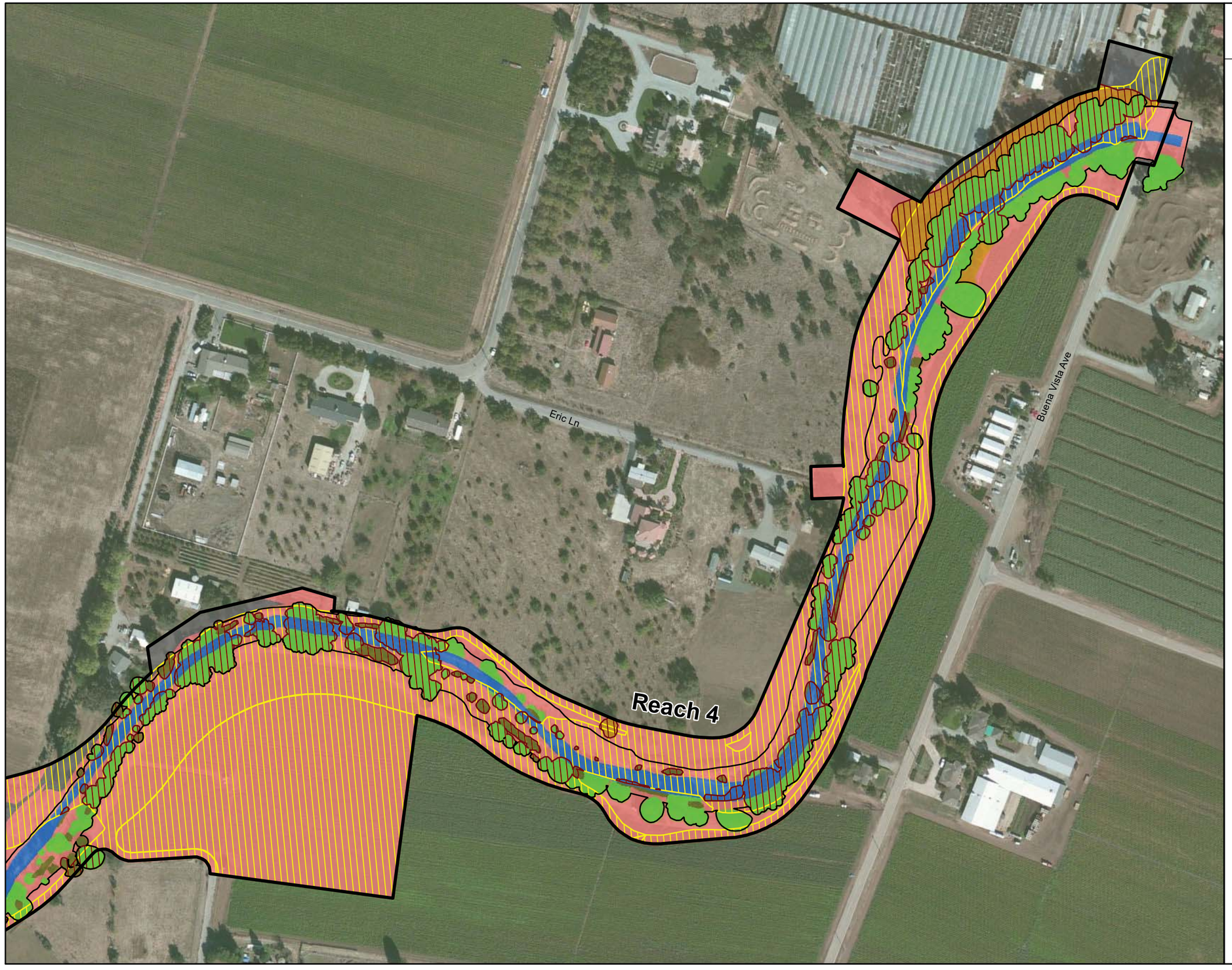
Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

N

0 125 250
Scale in Feet



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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 20 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

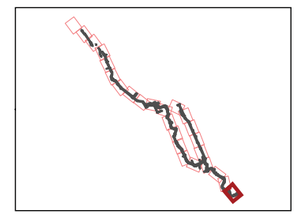
- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

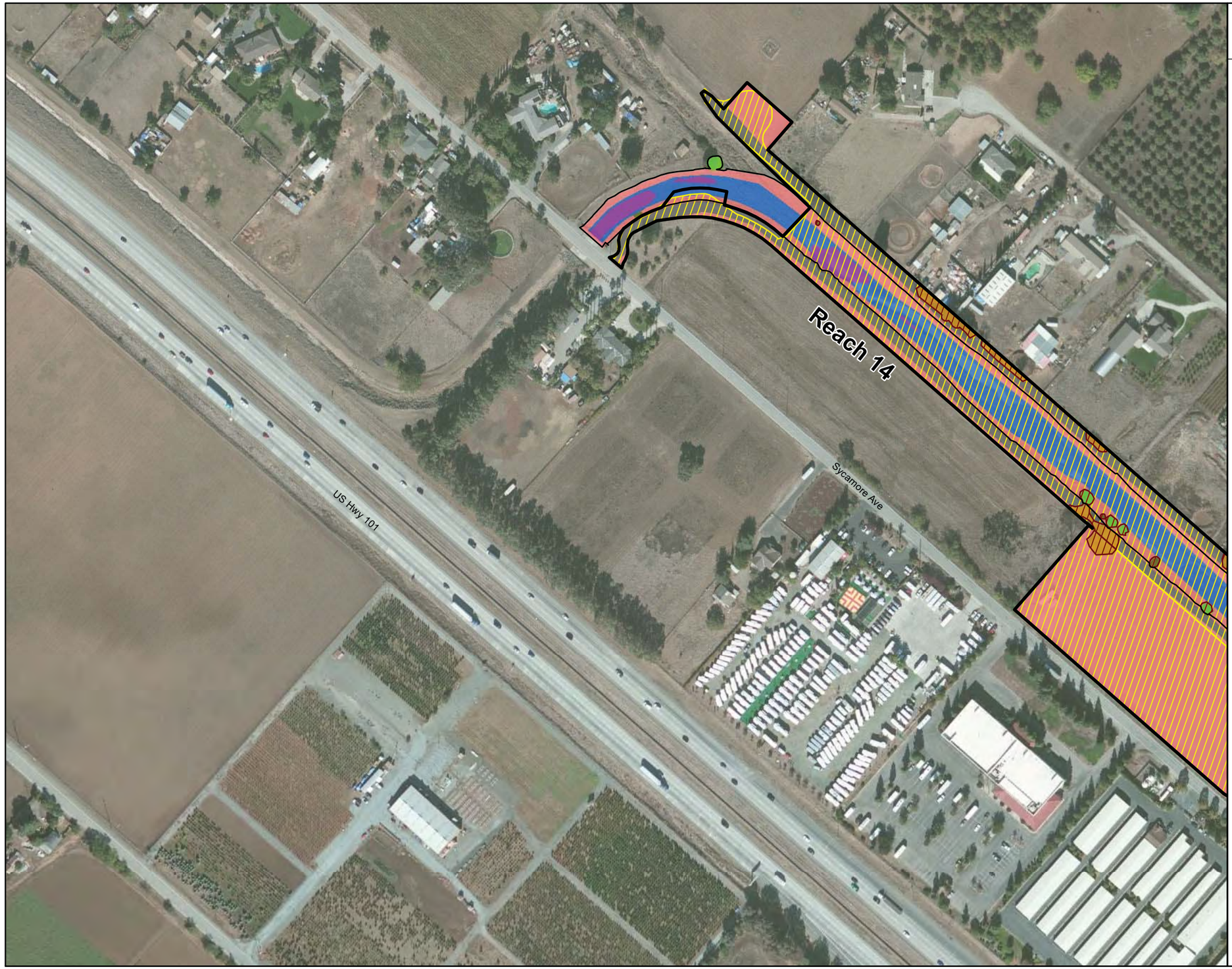
Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

0 125 250
Scale in Feet





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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 21 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

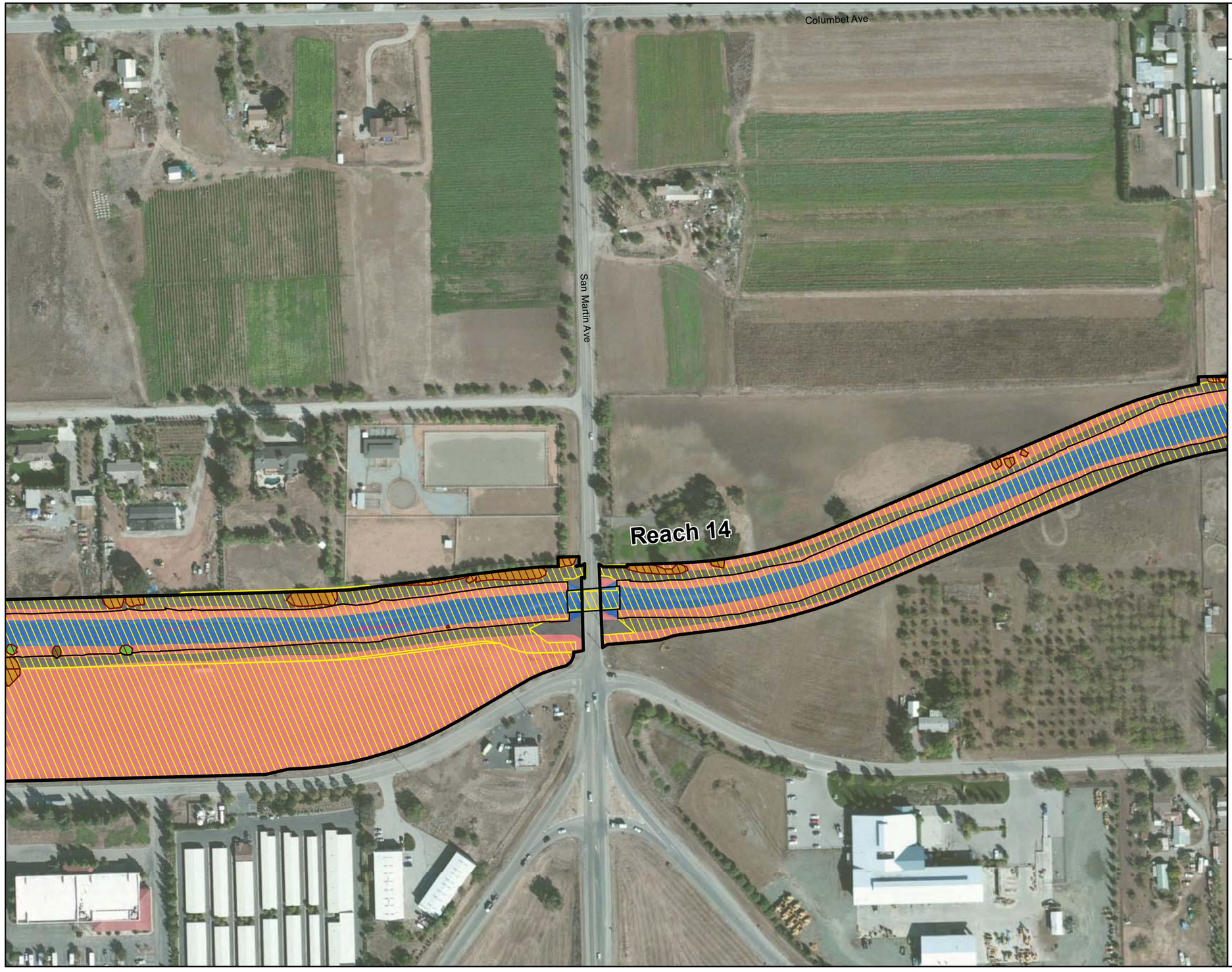
Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

N

0 125 250
Scale in Feet



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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 22 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

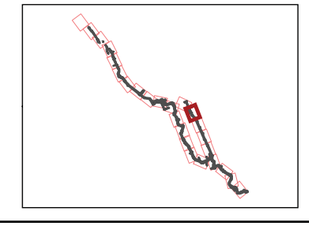
- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

0 125 250
Scale in Feet





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Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 23 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

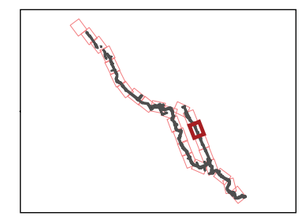
- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

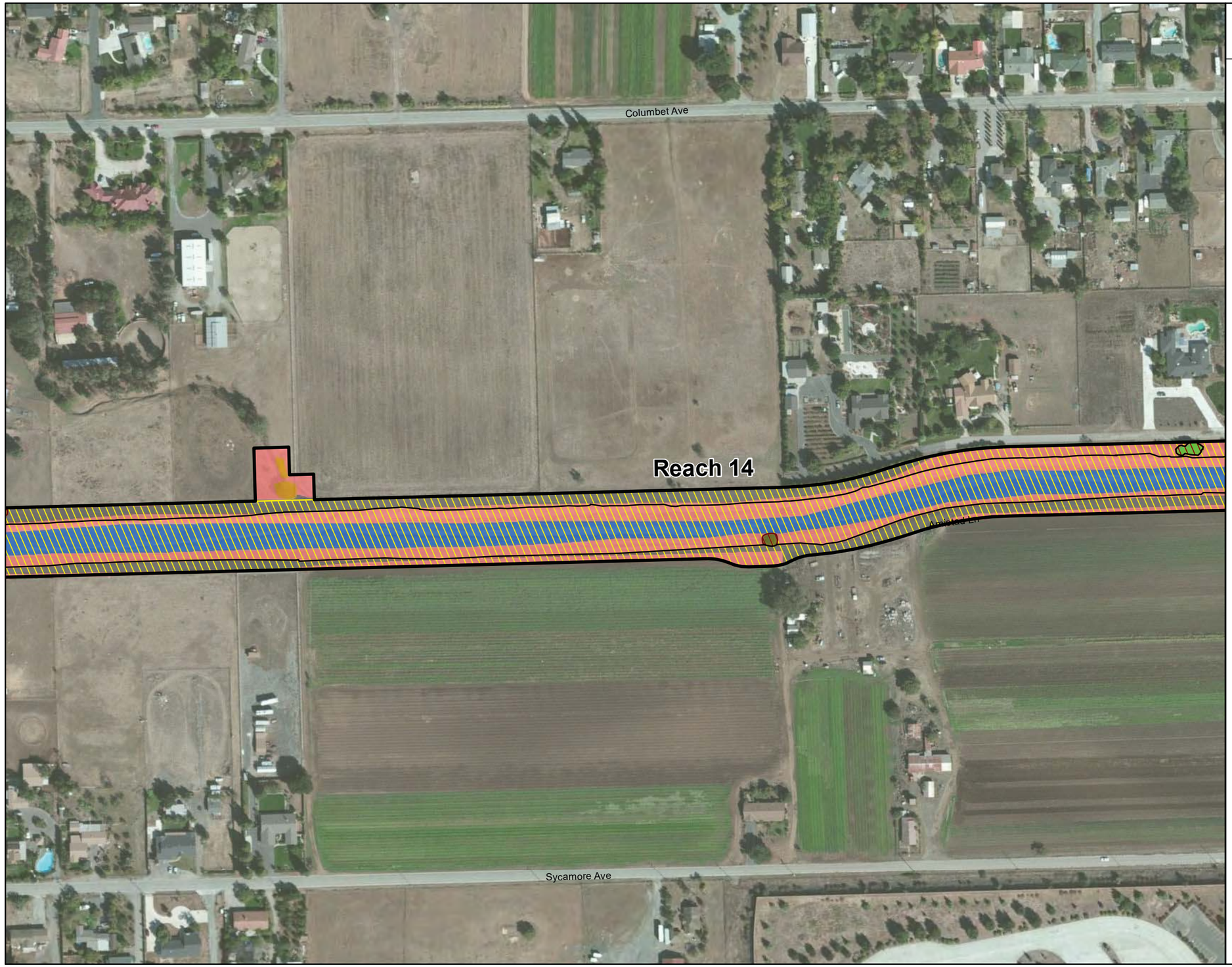
Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

0 125 250
Scale in Feet





Cardno ENTRIX

Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 24 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
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- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

Other Habitat Types

- Aquatic
- Developed

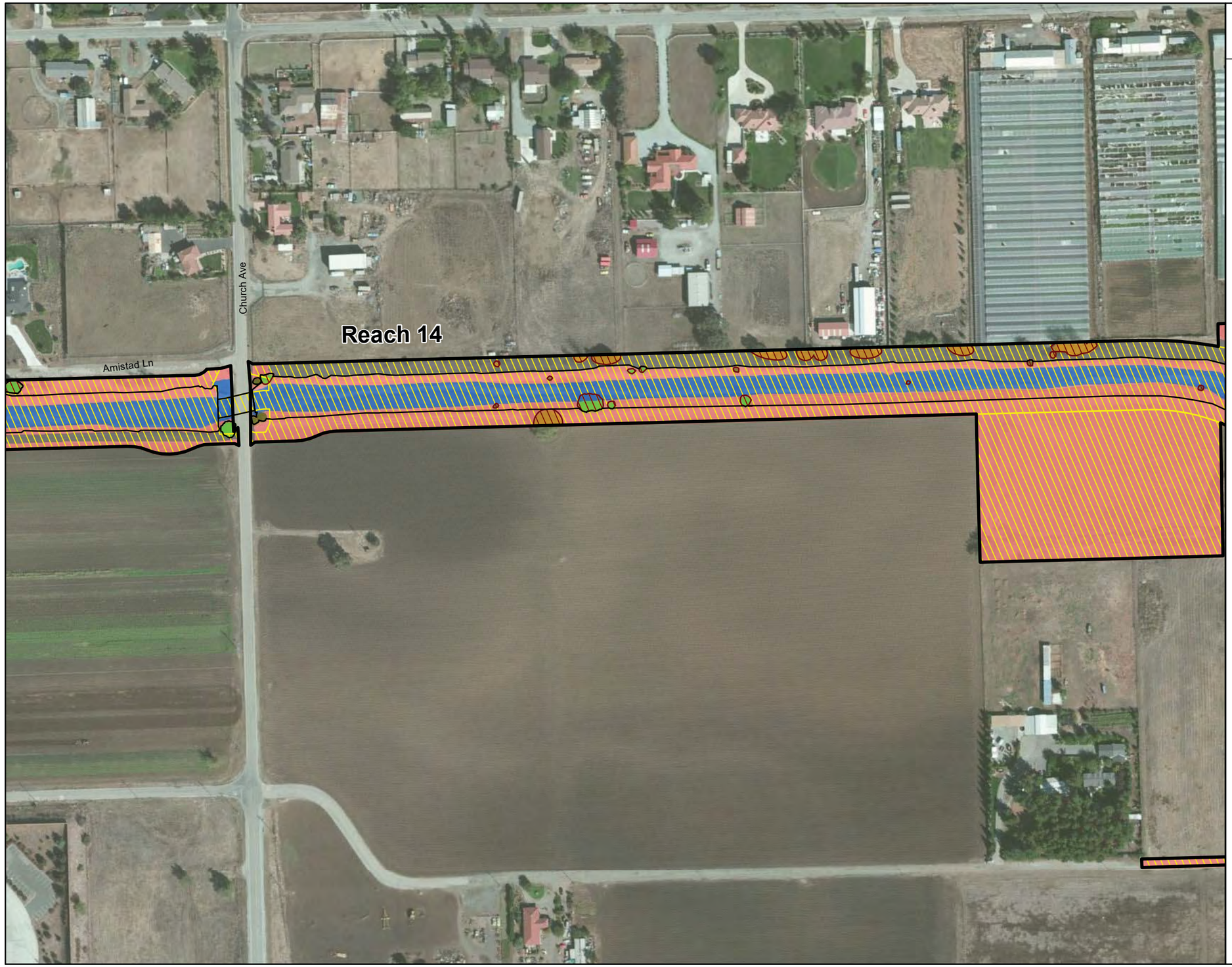
Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

N

0 125 250

Scale in Feet





Cardno ENTRIX

Upper Llagas Creek Project EIR

Appendix E

Impacts to Vegetation Types and Habitats for the Study Area

Map 25 of 25

Legend

- Reach Break
- Project Footprint
- CDFW Jurisdiction Boundary
- Temporary Impact
- Permanent Impacts

CAR Habitat Types

- Riparian Forest (PFO)
- Riparian Scrub-shrub (PSS)
- Perennial Emergent Marsh (PEM)
- Upland Forest/Woodland (UF/W)
- Upland Herbaceous (U/H)
- Upland Scrub (U/S)

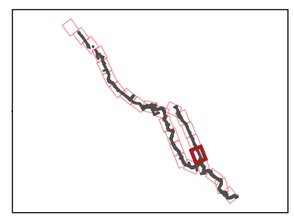
Other Habitat Types

- Aquatic
- Developed

Imagery: Microsoft, 05/12/2010
Source: HT Harvey, 2013b

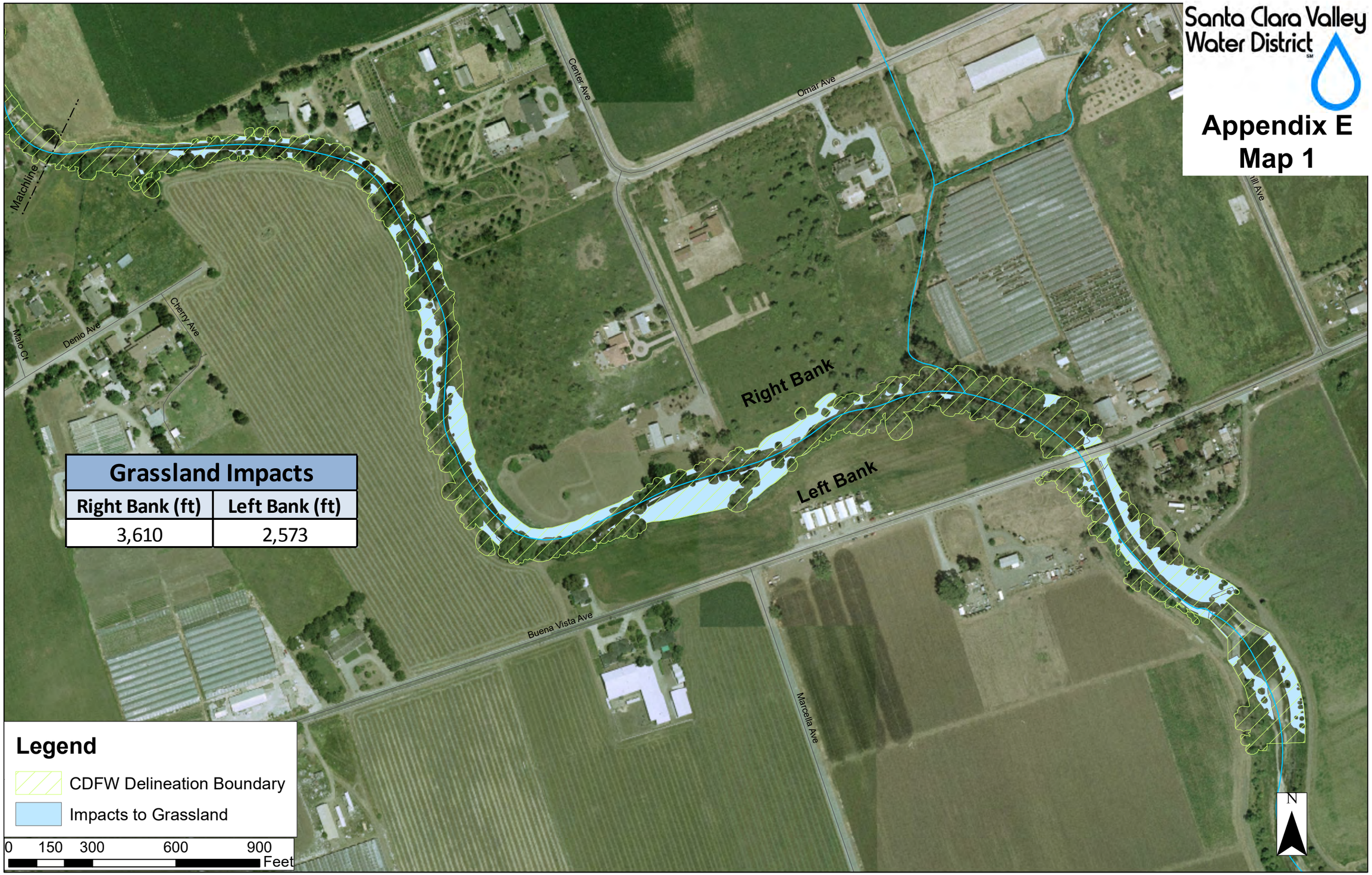
N

0 125 250
Scale in Feet



Santa Clara Valley Water District

Appendix E
Map 1



Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
3,610	2,573

Legend

- CDFW Delineation Boundary
- Impacts to Grassland

Santa Clara Valley Water District

Appendix E
Map 2

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
1,705	1,248

Left Bank

Right Bank

Rucker Ave

Korn Ln

Matchline

Center Ave

Garcia Ln

Kelly Ln

Malo Ct

Matchline

Legend

CDFW Delineation Boundary

Impacts to Grassland

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 3

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
3,569	2,461

Right Bank

Left Bank

Matchline

Piazza Ln

Columbet Ave

Masten Ave

No Name Uno

Center Ave

Borges Ct

Rucker Ave

Carolyn Ct

Matchline

Legend

- CDFW Delineation Boundary
- Impacts to Grassland

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 4

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
5,241	2,587

Right Bank

Left Bank

Matchline

Matchline

Matchline

Kanney Ln

Murphy Ave

Lena Ave

Lena Ave

No Name Uno

101

101

Legend

CDFW Delineation Boundary

Impacts to Grassland

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 5

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
3,017	2,769

Matchline

Sycamore Ave

Church Ave

Columbet Ave

Kannely Ln

Schofield Ct

Right Bank

Left Bank

Matchline

101

101

Legend

CDFW Delineation Boundary

Impacts to Grassland

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 6

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
3,000	3,039

Matchline

Right Bank

Left Bank

Matchline

101

Sycamore Ave

Amistad Ln

Church Ave

Columbet Ave

Stella Ct

Mary Ct

N

Legend

CDFW Delineation Boundary

Impacts to Grassland

0 150 300 600 900 Feet

Santa Clara Valley Water District

Appendix E
Map 7

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
3,125	3,130

Matchline

Right Bank

Left Bank

Matchline

Bravo Ct

Columbet Ave

Hager Ct

Joy Bell Ln

Sherry Ln

Hogue Ct

Sycamore Ave

101

SOUTH COUNTY

Legend

- CDFW Delineation Boundary
- Impacts to Grassland

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 8

Matchline

Mammini Ct

Diessner Ave

San Martin Ave

Columbet Ave

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
3,391	3,375

Right Bank

Left Bank

101

101

Murphy Ave

Sycamore Ave

Moreno Ct

Matchline

N

Legend

CDFW Delineation Boundary

Impacts to Grassland

0 150 300 600 900 Feet

Santa Clara Valley Water District

Appendix E
Map 9

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
2,007	2,098

Right Bank

Left Bank

Matchline

Sycamore Ave

Columbet Ave

Mannnini Ct

Murphy

San Ma

101

101

Legend

CDFW Delineation Boundary

Impacts to Grassland

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 10

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
2,833	1,476

Monterey Rd
Llagas Ave
Church Ave
Murphy Ave
Matchline
Matchline
Right Bank
Left Bank

Legend

- CDFW Delineation Boundary
- Impacts to Grassland

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 11

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
2,862	2,796

Matchline

Murphy Ave

Llagas Ave

Right Bank

Left Bank

Highland Ave

Monterey Rd

Mc Connell Dr

Matchline

N

Legend

CDFW Delineation Boundary

Impacts to Grassland

0 150 300 600 900 Feet

Santa Clara Valley Water District

Appendix E
Map 12

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
3,355	2,719

Chester Ave
Spring Ave
Depot St
Lincoln Ave
Matchline
South St
Hindiyeh Ln
Llagas Ave
Monterey Rd
Colony Ave
Cox Ave
Left Bank
Right Bank
Murphy Ave
Matchline
N

Legend

- CDFW Delineation Boundary
- Impacts to Grassland

0 150 300 600 900 Feet

Santa Clara Valley Water District

Appendix E
Map 13

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
2,011	2,648

Matchline

Rhodes Ct

Diessner Ave

San Martin Ave

Murphy Ave

Kimble Ct

Monterey Rd

North St

Liagas Ave

Depot St

Roosevelt Ave

Burbank Ave

Lincoln Ave

Spring Ave

Left Bank

Right Bank

Matchline

N

Legend

CDFW Delineation Boundary

Impacts to Grassland

0 150 300 600 900 Feet

Santa Clara Valley Water District

Appendix E
Map 14

Matchline

Matchline

California Ave

Monterey Rd

Murphy Ave

Rhodes Ct

Right Bank

Left Bank

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
2,756	2,861

Legend

- CDFW Delineation Boundary
- Impacts to Grassland

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 15

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
1,138	342

Monterey Rd

Right Bank

Matchline

Left Bank

Olive Ave

Atherton Way

Easy St

Atherton Cir

Harding Ave

California Ave

N

Legend

CDFW Delineation Boundary

Impacts to Grassland

0 150 300 600 900 Feet

Santa Clara Valley Water District

Appendix E
Map 16

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
2,897	3,615

Matchline

Right Bank

Left Bank

Edmundson Ave
Village Cir
Vineyard Town Center Way
Vineyard Blvd
Village Way
Village Ln
Monterey Rd
La Mirada Ct
La Porte Ct
La Prenda Ct
La Rena Ct
La Roda Ct
La Escuela Ct
Descansa Ct
La Jolla Ct
La Mar Ct
La Honda Ct
La Honda Dr
La Via Azul Ct
La Agua Ct
La Jolla Dr
La Pala Ct
La Mar Dr
Via De Ninos
Via Navona
La Vela Ct
Via Largo
La Bella Ct
Calle Enrique
Calle Sueno
Via Naretto
Watsonville Rd

Legend

CDFW Delineation Boundary

Impacts to Grassland

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 17

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
2,627	2,562

Matchline

Kings Canyon Ct
Cosmo Ave
Barrett Ave
Scotts Bluff Pl
Denali Dr
Waterton Ct
Monterey Rd
Keith Way
Church St
Edes St
Edmundson Ave
Yellowstone Dr
Sunset Ave
Whitney Way
Bryce Dr
Edmondson Ct
Tennant Ave
Tennant Station Way
Left Bank
Right Bank
Olympic Dr
Cascades Ct
Edmundson Ave
Plazza Way
Vineyard Blvd
Matchline

Legend

- CDFW Delineation Boundary
- Impacts to Grassland

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 18

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
2,300	2,372

Right Bank

Left Bank

Matchline

Matchline

Dunne Ave
Clovind Ave
Barnett Ave
Chargin Way
Manor Ct
Spring Ave
Lone Hill Dr
Foothill Ct
Mathilda Ct
Del Monte Ave
Glenn Canyon
Cosmo Ave
Monterey Rd
Biscaglia Ave
Church St
San Pedro Ave
Railroad Ave
Mast St
Barrett Ave

Legend

- CDFW Delineation Boundary
- Impacts to Grassland

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 19

Matchline

Right Bank

Left Bank

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
829	933

Legend

- CDFW Delineation Boundary
- Impacts to Grassland

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 20

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
2,550	2,560

Right Bank

Left Bank

Matchline

Matchline

Carriage Dr
Malden Spring Way
Shadowbrook Way
Stoney Creek Way
Llagas Creek Dr
Rll Marianna Ct
Christeph Dr
Hillwood Ln
Christine Lynn Dr
Del Monte Ln
Hale Ave
Monterey Rd
Monterey Rd
Garden Way
El Toro St
Del Monte Ave
El Toro Ave
Park Way
Central Ave
Lindo Ct
El Toro Ct
Lindo Ln
Oak Grove Ct
Oak Grove Dr
Wright Ave
Crest Ave
Longview Dr
Peak Ave
Heidi Dr
Berry Ct

Legend

- CDFW Delineation Boundary
- Impacts to Grassland

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 21

Right Bank

Left Bank

Matchline

Grassland Impacts	
Right Bank (ft)	Left Bank (ft)
646	722

Legend

- CDFW Delineation Boundary
- Impacts to Grassland

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 22

Matchline

Center Ave

Omar Ave

Cherry Ave

Denio Ave

Malo Ct

Right Bank

Left Bank

Buena Vista Ave

Marcella Ave

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
3,587	3,481

Legend

- CDFW Delineation Boundary
- Impacts to Riparian

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 23

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
1,623	1,714

Left Bank

Right Bank

Matchline

Matchline

Rucker Ave

Korn Ln

Center Ave

Garcia Ln

Kelly Ln

Malo Ct

Legend

- CDFW Delineation Boundary
- Impacts to Riparian

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 24

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
2,591	3,297

Right Bank

Left Bank

Matchline

Masten Ave

Columbet Ave

Piazza Ln

Center Ave

No Name Uno

Borges Ct

Rucker Ave

Carolyn Ct

Matchline

N

Legend

CDFW Delineation Boundary

Impacts to Riparian

0 150 300 600 900 Feet

Santa Clara Valley Water District

Appendix E
Map 25

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
2,947	2,937

Right Bank

Left Bank

Matchline

Matchline

Matchline

Kanmey Ln

Murphy Ave

Lena Ave

Lena Ave

No Name Uno

101

101

Legend

CDFW Delineation Boundary

Impacts to Riparian

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 26

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
135	405

Sycamore Ave
Church Ave
Matchline
Columbet Ave
Right Bank
Left Bank
Kannely Ln
Schofield Ct
101
101
Matchline

Legend

- CDFW Delineation Boundary
- Impacts to Riparian

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 27



Santa Clara Valley Water District

Appendix E
Map 28

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
28	73

Matchline

Right Bank

Left Bank

Matchline

Bravo Ct

Columbet Ave

Hager Ct

Joy Bell Ln

Sherry Ln

Hogue Ct

Sycamore Ave

101

SOUTH COUNTY

Legend

- CDFW Delineation Boundary
- Impacts to Riparian

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 29

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
48	27

Matchline

Mammini Ct

Diessner Ave

San Martin Ave

Columbet Ave

Right Bank

Left Bank

Murphy Ave

Sycamore Ave

Moreno Ct

Matchline

101

101

Legend

CDFW Delineation Boundary

Impacts to Riparian

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 30

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
12	147

Right Bank

Left Bank

Sycamore Ave

Columbet Ave

Mannini Ct

Murphy Ave

101

Matchline

N

Legend

- CDFW Delineation Boundary
- Impacts to Riparian

0 150 300 600 900 Feet

Santa Clara Valley Water District

Appendix E
Map 31

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
1,896	1,023

Monterey Rd
Llagas Ave
Murphy Ave
Church Ave
Matchline
Matchline
Right Bank
Left Bank

Legend

- CDFW Delineation Boundary
- Impacts to Riparian

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 32

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
1,741	1,759

Matchline

Murphy Ave

Llagas Ave

Right Bank

Left Bank

Highland Ave

Monterey Rd

Mc Connell Dr

Matchline

N

Legend

CDFW Delineation Boundary

Impacts to Riparian

0 150 300 600 900 Feet

Santa Clara Valley Water District

Appendix E
Map 33

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
2,145	1,493

Chester AVe
Spring AVe
Depot St
Lincoln Ave
South St
Monterey Rd
Matchline
Hindiyeh Ln
Llagas Ave
Colony Ave
Cox Ave
Left Bank
Right Bank
Murphy Ave
Matchline
N

Legend

- CDFW Delineation Boundary
- Impacts to Riparian

0 150 300 600 900 Feet

Santa Clara Valley Water District

Appendix E
Map 34

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
1,567	2,191

Matchline

Rhodes Ct

Diessner Ave

San Martin Ave

Monterey Rd

North St

Llagas Ave

Depot St

Roosevelt Ave

Kimble Ct

Murphy Ave

Burbank Ave

Lincoln Ave

Spring Ave

Left Bank

Right Bank

Matchline

N

Legend

CDFW Delineation Boundary

Impacts to Riparian

0 150 300 600 900 Feet

Santa Clara Valley Water District

Appendix E
Map 35

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
2,972	3,884

Right Bank

Left Bank

Matchline

Matchline

Murphy Ave

Monterey Rd

California Ave

Rhodes Ct

Legend

CDFW Delineation Boundary

Impacts to Riparian

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 36

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
3,592	1,627

Monterey Rd

Right Bank

Left Bank

Matchline

Olive Ave

Atherton Way

Easy St

Atherton Cir

Harding Ave

California Ave

N

Legend

- CDFW Delineation Boundary
- Impacts to Riparian

0 150 300 600 900 Feet

Santa Clara Valley Water District

Appendix E
Map 37

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
706	752

Matchline

Right Bank

Left Bank

Edmundson Ave
Vineyard Town Center Way
Village Cir
Village Way
Village Ln
Vineyard Blvd
Monterey Rd
La Mirada Ct
La Porte Ct
La Prenda Ct
La Rena Ct
La Roda Ct
La Escuela Ct
Descansa Ct
La Jolla Ct
La Mar Ct
La Honda Ct
La Honda Dr
La Via Azul Ct
La Agua Ct
La Jolla Dr
La Pala Ct
La Mar Dr
Via De Ninos
Via Navona
La Vela Ct
Via Largo
La Bella Ct
Calle Enrique
Calle Sueno
Via Naretto
Watsonville Rd

Legend

CDFW Delineation Boundary

Impacts to Riparian

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 38

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
688	730

Matchline

Kings Canyon Ct
Cosmo Ave
Barrett Ave
Scotts Bluff Pl
Denali Dr
Waterton Ct
Monterey Rd
Keith Way
Church St
Edes St
Edmundson Ave
Yellowstone Dr
Sunset Ave
Whitney Way
Bryce Dr
Olympic Dr
Cascades Ct
Edmundson Ct
Tennant Ave
Tennant Station Way
Plazza Way
Vineyard Blvd
Left Bank
Right Bank
Matchline

Legend

- CDFW Delineation Boundary
- Impacts to Riparian

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 39

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
526	493

Right Bank

Left Bank

Matchline

Matchline

Dunne Ave

Clovind Ave

Barnett Ave

Chargin Way

Manor Ct

Spring Ave

Lone Hill Dr

Foothill Ct

Mathilda Ct

Glenn Canyon

Del Monte Ave

Cosmo Ave

Monterey Rd

Biscaglia Ave

Church St

San Pedro Ave

Railroad Ave

Mast St

Barrett Ave

Legend

CDFW Delineation Boundary

Impacts to Riparian

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 40

Matchline

Right Bank

Left Bank

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
52	70

Legend

- CDFW Delineation Boundary
- Impacts to Riparian

0 150 300 600 900 Feet

N

Matchline

Santa Clara Valley Water District

Appendix E
Map 41

Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
1,179	768

Right Bank

Left Bank

Matchline

Matchline

Carriage Dr
Malden Spring Way
Shadowbrook Way
Stoney Creek Way
Llagas Creek Dr
Rll Marianna Ct
Christeph Dr
Hillhead Ln
Christine Lynn Dr
Del Monte Ln
Hale Ave
Monterey Rd
Monterey Rd
Garden Way
El Toro St
Del Monte Ave
El Toro Ave
Park Way
Central Ave
Lindo Ct
El Toro Ct
Lindo Ln
Oak Grove Ct
Oak Grove Dr
Wright Ave
Crest Ave
Longview Dr
Peak Ave
Heidi Dr
Berry Ct

Legend

- CDFW Delineation Boundary
- Impacts to Riparian

0 150 300 600 900 Feet

N

Santa Clara Valley Water District

Appendix E
Map 42

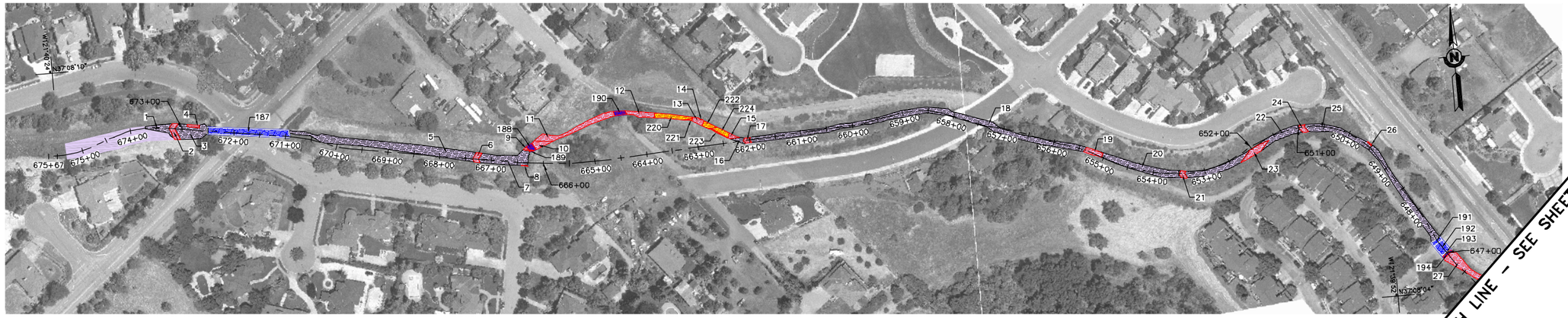


Riparian Impacts	
Right Bank (ft)	Left Bank (ft)
95	185

Legend

- CDFW Delineation Boundary
- Impacts to Riparian

0 150 300 600 900 Feet



PLAN

SCALE 1" = 100'

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
1	567.80	0.01	TEMPORARY	8	SEASONAL WETLANDS
2	345.66	0.01	PERMANENT	8	SEASONAL WETLANDS
3	1418.39	0.03	TEMPORARY	8	SEASONAL WETLANDS
4	99.51	0.00	PERMANENT	8	SEASONAL WETLANDS
5	5157.83	0.12	TEMPORARY	8	SEASONAL WETLANDS
6	201.62	0.00	PERMANENT	8	SEASONAL WETLANDS
7	1819.85	0.04	TEMPORARY	8	SEASONAL WETLANDS
8	9.45	0.00	PERMANENT	8	SEASONAL WETLANDS
9	33.21	0.00	PERMANENT	8	SEASONAL WETLANDS
10	327.36	0.01	PERMANENT	8	SEASONAL WETLANDS
11	1375.77	0.03	PERMANENT	8	SEASONAL WETLANDS
12	493.91	0.01	PERMANENT	8	SEASONAL WETLANDS
13	208.93	0.00	PERMANENT	8	SEASONAL WETLANDS
14	8.36	0.00	PERMANENT	8	SEASONAL WETLANDS
15	103.83	0.00	PERMANENT	8	SEASONAL WETLANDS

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
16	180.43	0.00	TEMPORARY	8	SEASONAL WETLANDS
17	120.60	0.00	PERMANENT	8	SEASONAL WETLANDS
18	7002.57	0.16	TEMPORARY	8	SEASONAL WETLANDS
19	349.85	0.01	PERMANENT	8	SEASONAL WETLANDS
20	2083.99	0.05	TEMPORARY	8	SEASONAL WETLANDS
21	161.57	0.00	PERMANENT	8	SEASONAL WETLANDS
22	2623.22	0.06	TEMPORARY	8	SEASONAL WETLANDS
23	516.76	0.01	PERMANENT	8	SEASONAL WETLANDS
24	172.47	0.00	PERMANENT	8	SEASONAL WETLANDS
25	4072.08	0.09	TEMPORARY	8	SEASONAL WETLANDS
26	13.75	0.00	PERMANENT	8	SEASONAL WETLANDS
27	1225.78	0.03	PERMANENT	8	SEASONAL WETLANDS
187	2038.12	0.05	TEMPORARY	8	CULVERTS
188	162.93	0.00	PERMANENT	8	CULVERTS
189	16.23	0.00	PERMANENT	8	CULVERTS

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
190	180.16	0.00	PERMANENT	8	CULVERTS
191	163.64	0.00	TEMPORARY	8	CULVERTS
192	496.16	0.01	TEMPORARY	8	CULVERTS
193	37.46	0.00	TEMPORARY	8	CULVERTS
194	84.95	0.00	PERMANENT	8	CULVERTS
220	545.43	0.01	PERMANENT	8	INTERMITTENT STREAM
221	35.95	0.00	PERMANENT	8	INTERMITTENT STREAM
222	212.20	0.00	PERMANENT	8	INTERMITTENT STREAM
223	39.33	0.00	PERMANENT	8	INTERMITTENT STREAM
224	284.26	0.01	PERMANENT	8	INTERMITTENT STREAM

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

REACH 8 WETLAND DELINEATION MAP

SCALE: AS SHOWN

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

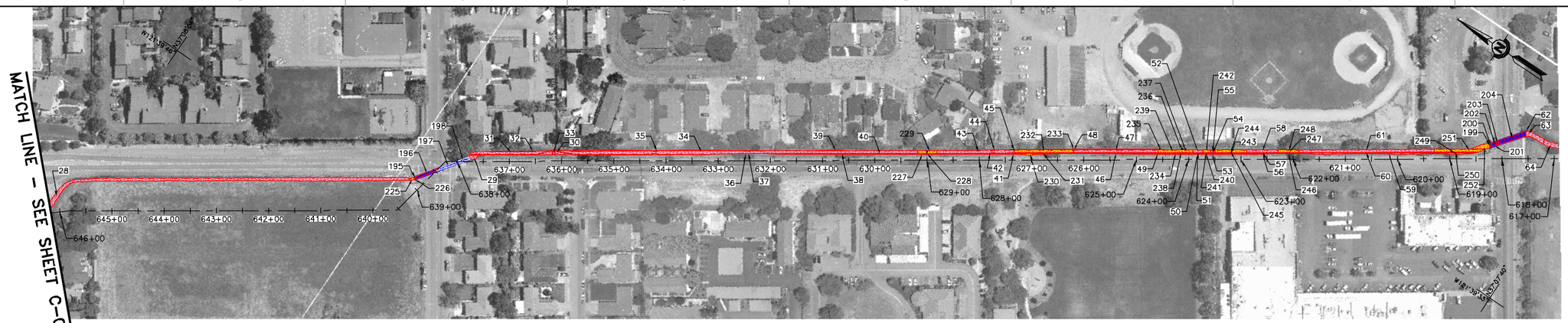
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SHEET CODE: C-01

SHEET NUMBER: 1 OF 19

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

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PLAN

SCALE 1" = 100'

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
28	3997.84	0.09	PERMANENT	8	SEASONAL WETLANDS
29	138.79	0.00	PERMANENT	8	SEASONAL WETLANDS
30	556.74	0.01	PERMANENT	8	SEASONAL WETLANDS
31	811.50	0.02	PERMANENT	8	SEASONAL WETLANDS
32	14.57	0.00	TEMPORARY	8	SEASONAL WETLANDS
33	25.00	0.00	PERMANENT	8	SEASONAL WETLANDS
34	3904.96	0.09	PERMANENT	8	SEASONAL WETLANDS
35	368.14	0.01	PERMANENT	8	SEASONAL WETLANDS
36	0.29	0.00	PERMANENT	8	SEASONAL WETLANDS
37	0.63	0.00	PERMANENT	8	SEASONAL WETLANDS
38	309.19	0.01	PERMANENT	8	SEASONAL WETLANDS
39	22.47	0.00	PERMANENT	8	SEASONAL WETLANDS
40	71.73	0.00	PERMANENT	8	SEASONAL WETLANDS
41	110.95	0.00	PERMANENT	8	SEASONAL WETLANDS
42	180.61	0.00	PERMANENT	8	SEASONAL WETLANDS

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
43	826.92	0.02	PERMANENT	8	SEASONAL WETLANDS
44	5.26	0.00	PERMANENT	8	SEASONAL WETLANDS
45	0.23	0.00	TEMPORARY	8	SEASONAL WETLANDS
46	183.14	0.00	PERMANENT	8	SEASONAL WETLANDS
47	970.42	0.02	PERMANENT	8	SEASONAL WETLANDS
48	112.48	0.00	PERMANENT	8	SEASONAL WETLANDS
49	116.88	0.00	PERMANENT	8	SEASONAL WETLANDS
50	26.32	0.00	PERMANENT	8	SEASONAL WETLANDS
51	21.33	0.00	PERMANENT	8	SEASONAL WETLANDS
52	102.50	0.00	PERMANENT	8	SEASONAL WETLANDS
53	11.63	0.00	PERMANENT	8	SEASONAL WETLANDS
54	10.01	0.00	PERMANENT	8	SEASONAL WETLANDS
55	47.27	0.00	PERMANENT	8	SEASONAL WETLANDS
56	91.00	0.00	PERMANENT	8	SEASONAL WETLANDS
57	70.03	0.00	PERMANENT	8	SEASONAL WETLANDS

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
58	336.98	0.01	PERMANENT	8	SEASONAL WETLANDS
59	474.97	0.01	PERMANENT	8	SEASONAL WETLANDS
60	301.57	0.01	PERMANENT	8	SEASONAL WETLANDS
61	1377.97	0.03	PERMANENT	8	SEASONAL WETLANDS
62	0.01	0.00	TEMPORARY	8	SEASONAL WETLANDS
63	343.89	0.01	PERMANENT	8	SEASONAL WETLANDS
64	268.53	0.01	PERMANENT	8	SEASONAL WETLANDS
195	17.91	0.00	PERMANENT	8	CULVERTS
196	201.67	0.00	PERMANENT	8	CULVERTS
197	219.84	0.01	TEMPORARY	8	CULVERTS
198	84.28	0.00	TEMPORARY	8	CULVERTS
199	1.75	0.00	PERMANENT	8	CULVERTS
200	35.60	0.00	PERMANENT	8	CULVERTS
201	0.26	0.00	PERMANENT	8	CULVERTS
202	65.98	0.00	PERMANENT	8	CULVERTS

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
203	27.27	0.00	PERMANENT	8	CULVERTS
204	459.62	0.01	PERMANENT	8	CULVERTS
225	38.45	0.00	PERMANENT	8	INTERMITTENT STREAM
226	0.36	0.00	PERMANENT	8	INTERMITTENT STREAM
227	11.31	0.00	PERMANENT	8	INTERMITTENT STREAM
228	42.89	0.00	PERMANENT	8	INTERMITTENT STREAM
229	212.38	0.00	PERMANENT	8	INTERMITTENT STREAM
230	102.56	0.00	PERMANENT	8	INTERMITTENT STREAM
231	128.51	0.00	PERMANENT	8	INTERMITTENT STREAM
232	688.55	0.02	PERMANENT	8	INTERMITTENT STREAM
233	77.51	0.00	PERMANENT	8	INTERMITTENT STREAM
234	112.46	0.00	PERMANENT	8	INTERMITTENT STREAM
235	3.33	0.00	PERMANENT	8	INTERMITTENT STREAM
236	0.07	0.00	PERMANENT	8	INTERMITTENT STREAM
237	0.26	0.00	PERMANENT	8	INTERMITTENT STREAM

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
238	86.80	0.00	PERMANENT	8	INTERMITTENT STREAM
239	355.29	0.01	PERMANENT	8	INTERMITTENT STREAM
240	19.78	0.00	PERMANENT	8	INTERMITTENT STREAM
241	16.79	0.00	PERMANENT	8	INTERMITTENT STREAM
242	78.71	0.00	PERMANENT	8	INTERMITTENT STREAM
243	83.72	0.00	PERMANENT	8	INTERMITTENT STREAM
244	71.84	0.00	PERMANENT	8	INTERMITTENT STREAM
245	327.04	0.01	PERMANENT	8	INTERMITTENT STREAM
246	53.33	0.00	PERMANENT	8	INTERMITTENT STREAM
247	46.30	0.00	PERMANENT	8	INTERMITTENT STREAM
248	215.95	0.00	PERMANENT	8	INTERMITTENT STREAM
249	177.00	0.00	PERMANENT	8	INTERMITTENT STREAM
250	96.23	0.00	PERMANENT	8	INTERMITTENT STREAM
251	492.71	0.01	PERMANENT	8	INTERMITTENT STREAM
252	215.14	0.00	PERMANENT	8	INTERMITTENT STREAM

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

REACH 8 WETLAND DELINEATION MAP

SCALE: AS SHOWN

VERIFY SCALES: 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

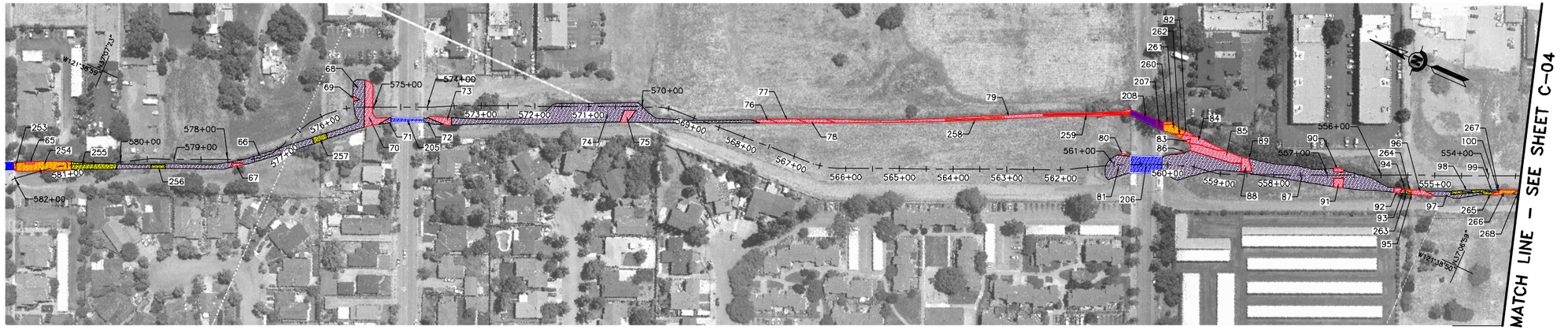
PROJECT NUMBER: 26174054

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SHEET NUMBER: 2 OF 19

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PLAN

SCALE 1" = 100'

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
65	61.32	0.00	PERMANENT	7B	SEASONAL WETLANDS
66	3132.63	0.07	TEMPORARY	7B	SEASONAL WETLANDS
67	113.92	0.00	PERMANENT	7B	SEASONAL WETLANDS
68	2246.82	0.05	TEMPORARY	7B	SEASONAL WETLANDS
69	62.30	0.00	PERMANENT	7B	SEASONAL WETLANDS
70	1542.96	0.04	PERMANENT	7B	SEASONAL WETLANDS
71	120.32	0.00	TEMPORARY	7B	SEASONAL WETLANDS
72	212.37	0.00	TEMPORARY	7B	SEASONAL WETLANDS
73	433.47	0.01	PERMANENT	7B	SEASONAL WETLANDS
74	9355.03	0.21	TEMPORARY	7B	SEASONAL WETLANDS
75	433.72	0.01	PERMANENT	7B	SEASONAL WETLANDS
76	204.63	0.00	PERMANENT	7B	SEASONAL WETLANDS
77	361.18	0.01	PERMANENT	7B	SEASONAL WETLANDS
78	330.89	0.01	PERMANENT	7B	SEASONAL WETLANDS
79	2747.95	0.06	PERMANENT	7B	SEASONAL WETLANDS

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
80	43.03	0.00	PERMANENT	7B	SEASONAL WETLANDS
81	1628.55	0.04	TEMPORARY	7B	SEASONAL WETLANDS
82	105.44	0.00	PERMANENT	7B	SEASONAL WETLANDS
83	35.98	0.00	PERMANENT	7B	SEASONAL WETLANDS
84	755.75	0.02	PERMANENT	7B	SEASONAL WETLANDS
85	1564.12	0.04	PERMANENT	7B	SEASONAL WETLANDS
86	11.50	0.00	PERMANENT	7B	SEASONAL WETLANDS
87	11241.51	0.26	TEMPORARY	7B	SEASONAL WETLANDS
88	420.82	0.01	PERMANENT	7B	SEASONAL WETLANDS
89	0.64	0.00	TEMPORARY	7B	SEASONAL WETLANDS
90	123.47	0.00	PERMANENT	7B	SEASONAL WETLANDS
91	297.70	0.01	PERMANENT	7B	SEASONAL WETLANDS
92	115.07	0.00	PERMANENT	7B	SEASONAL WETLANDS
93	65.68	0.00	TEMPORARY	7B	SEASONAL WETLANDS
94	2.84	0.00	PERMANENT	7B	SEASONAL WETLANDS

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
95	0.50	0.00	TEMPORARY	7B	SEASONAL WETLANDS
96	307.00	0.01	PERMANENT	7B	SEASONAL WETLANDS
97	748.33	0.02	TEMPORARY	7B	SEASONAL WETLANDS
98	53.56	0.00	TEMPORARY	7B	SEASONAL WETLANDS
99	93.75	0.00	TEMPORARY	7B	SEASONAL WETLANDS
100	6.88	0.00	PERMANENT	7B	SEASONAL WETLANDS
205	482.61	0.01	TEMPORARY	7B	CULVERTS
206	1862.58	0.04	TEMPORARY	7B	CULVERTS
207	130.81	0.00	PERMANENT	7B	CULVERTS
208	644.18	0.01	PERMANENT	7B	CULVERTS
253	36.99	0.00	PERMANENT	7B	INTERMITTENT STREAM
254	1626.42	0.04	PERMANENT	7B	INTERMITTENT STREAM
255	942.72	0.02	TEMPORARY	7B	INTERMITTENT STREAM
256	180.83	0.00	TEMPORARY	7B	INTERMITTENT STREAM
257	295.66	0.01	TEMPORARY	7B	INTERMITTENT STREAM

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
258	216.36	0.00	PERMANENT	7B	INTERMITTENT STREAM
259	347.10	0.01	PERMANENT	7B	INTERMITTENT STREAM
260	82.30	0.00	PERMANENT	7B	INTERMITTENT STREAM
261	521.91	0.01	PERMANENT	7B	INTERMITTENT STREAM
262	62.87	0.00	PERMANENT	7B	INTERMITTENT STREAM
263	46.75	0.00	TEMPORARY	7B	INTERMITTENT STREAM
264	53.86	0.00	PERMANENT	7B	INTERMITTENT STREAM
265	380.23	0.01	TEMPORARY	7B	INTERMITTENT STREAM
266	295.28	0.01	PERMANENT	7B	INTERMITTENT STREAM
267	2.28	0.00	TEMPORARY	7B	INTERMITTENT STREAM
268	52.56	0.00	TEMPORARY	7B	INTERMITTENT STREAM

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

REACH 7B WETLAND DELINEATION MAP

SCALE: AS SHOWN

VERIFY SCALES: 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

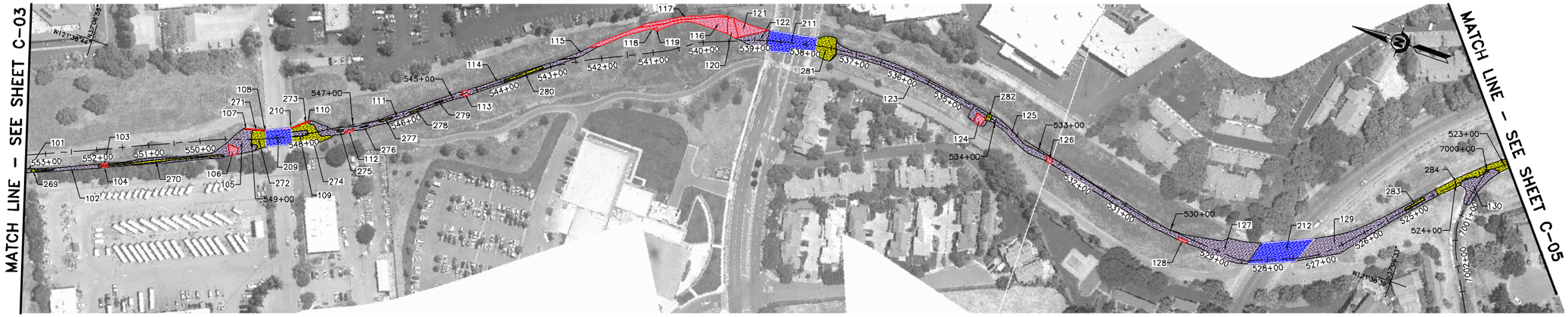
PROJECT NUMBER: 26174054

SHEET CODE: C-03

SHEET NUMBER: 3 OF 19

DOCUMENT NUMBER: XXXX-X-0000-000000.00

USERNAME: Jenford 6/26/2014 4:01 PM
FILENAME: K:\Active Projects\MP-26174054\SHEET\Req#5191\C-03.dwg



PLAN

SCALE 1" = 100'

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
101	89.95	0.00	TEMPORARY	7B	SEASONAL WETLANDS
102	840.92	0.02	TEMPORARY	7B	SEASONAL WETLANDS
103	35.04	0.00	PERMANENT	7B	SEASONAL WETLANDS
104	31.09	0.00	PERMANENT	7B	SEASONAL WETLANDS
105	3429.58	0.08	TEMPORARY	7B	SEASONAL WETLANDS
106	295.25	0.01	PERMANENT	7B	SEASONAL WETLANDS
107	60.10	0.00	PERMANENT	7B	SEASONAL WETLANDS
108	0.95	0.00	TEMPORARY	7B	SEASONAL WETLANDS
109	298.07	0.01	TEMPORARY	7B	SEASONAL WETLANDS
110	8.58	0.00	PERMANENT	7B	SEASONAL WETLANDS
111	3009.70	0.07	TEMPORARY	7B	SEASONAL WETLANDS
112	60.93	0.00	PERMANENT	7B	SEASONAL WETLANDS
113	120.67	0.00	PERMANENT	7B	SEASONAL WETLANDS
114	1507.97	0.03	TEMPORARY	7B	SEASONAL WETLANDS
115	392.41	0.01	TEMPORARY	7B	SEASONAL WETLANDS

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
116	2649.18	0.06	PERMANENT	7B	SEASONAL WETLANDS
117	870.60	0.02	PERMANENT	7B	SEASONAL WETLANDS
118	0.06	0.00	PERMANENT	7B	SEASONAL WETLANDS
119	50.03	0.00	PERMANENT	7B	SEASONAL WETLANDS
120	565.96	0.01	PERMANENT	7B	SEASONAL WETLANDS
121	1073.81	0.02	PERMANENT	7B	SEASONAL WETLANDS
122	1314.16	0.03	TEMPORARY	7B	SEASONAL WETLANDS
123	4024.96	0.09	TEMPORARY	7B	SEASONAL WETLANDS
124	303.92	0.01	PERMANENT	7B	SEASONAL WETLANDS
125	1473.00	0.03	TEMPORARY	7B	SEASONAL WETLANDS
126	123.71	0.00	PERMANENT	7B	SEASONAL WETLANDS
127	7871.43	0.18	TEMPORARY	7B	SEASONAL WETLANDS
128	102.04	0.00	PERMANENT	7B	SEASONAL WETLANDS
129	5982.81	0.14	TEMPORARY	7B	SEASONAL WETLANDS
130	1917.31	0.04	TEMPORARY	7B	SEASONAL WETLANDS

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
209	1606.51	0.04	TEMPORARY	7B	CULVERTS
210	2.19	0.00	PERMANENT	7B	CULVERTS
211	3465.34	0.08	TEMPORARY	7B	CULVERTS
212	3779.93	0.09	TEMPORARY	7B	CULVERTS
269	136.57	0.00	TEMPORARY	7B	INTERMITTENT STREAM
270	819.54	0.02	TEMPORARY	7B	INTERMITTENT STREAM
271	5.94	0.00	PERMANENT	7B	INTERMITTENT STREAM
272	882.87	0.02	TEMPORARY	7B	INTERMITTENT STREAM
273	72.52	0.00	PERMANENT	7B	INTERMITTENT STREAM
274	1773.86	0.04	TEMPORARY	7B	INTERMITTENT STREAM
275	43.73	0.00	TEMPORARY	7B	INTERMITTENT STREAM
276	31.05	0.00	TEMPORARY	7B	INTERMITTENT STREAM
277	58.44	0.00	TEMPORARY	7B	INTERMITTENT STREAM
278	69.20	0.00	TEMPORARY	7B	INTERMITTENT STREAM
279	46.35	0.00	TEMPORARY	7B	INTERMITTENT STREAM

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
280	387.22	0.01	TEMPORARY	7B	INTERMITTENT STREAM
281	1612.07	0.04	TEMPORARY	7B	INTERMITTENT STREAM
282	137.64	0.00	TEMPORARY	7B	INTERMITTENT STREAM
283	236.55	0.01	TEMPORARY	7B	INTERMITTENT STREAM
284	1961.35	0.05	TEMPORARY	7B	INTERMITTENT STREAM

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

REACH 7B WETLAND DELINEATION MAP

SCALE: AS SHOWN

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

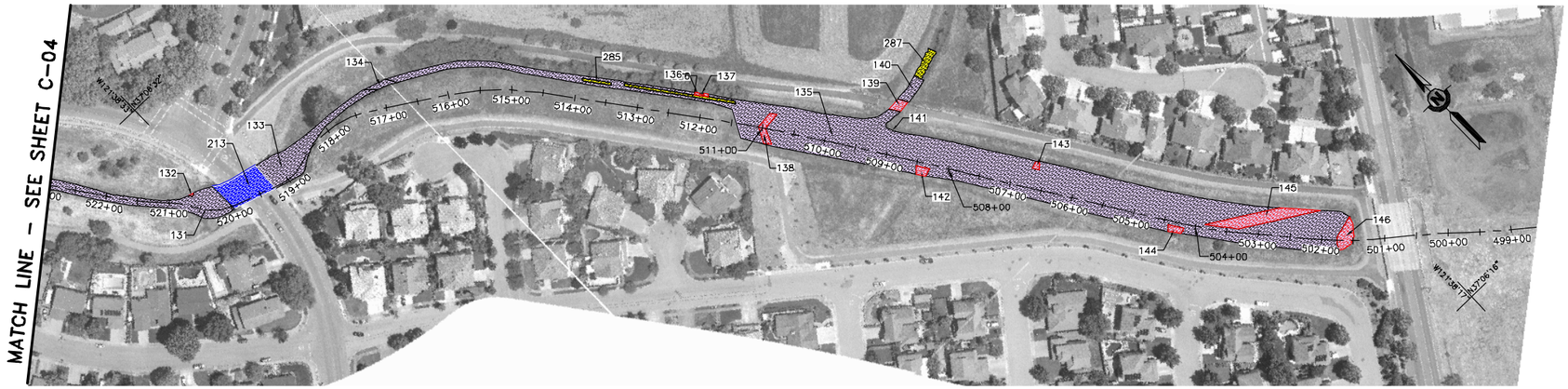
PROJECT NUMBER: 26174054

SHEET CODE: C-04

SHEET NUMBER: 4 OF 19

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

USERNAME: Jentford 6/26/2014 4:03 PM
FILENAME: K:\Active Projects\MP-26174054\SHEET\Req#5191\C-04.dwg



PLAN

SCALE 1" = 100'

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
131	5676.75	0.13	TEMPORARY	7B	SEASONAL WETLANDS
132	20.93	0.00	PERMANENT	7B	SEASONAL WETLANDS
133	5108.01	0.12	TEMPORARY	7B	SEASONAL WETLANDS
134	359.06	0.01	TEMPORARY	7B	SEASONAL WETLANDS
135	62917.66	1.44	TEMPORARY	7B	SEASONAL WETLANDS
136	70.59	0.00	PERMANENT	7B	SEASONAL WETLANDS
137	12.81	0.00	TEMPORARY	7B	SEASONAL WETLANDS
138	554.26	0.01	PERMANENT	7B	SEASONAL WETLANDS
139	309.23	0.01	PERMANENT	7B	SEASONAL WETLANDS
140	687.07	0.02	TEMPORARY	7B	SEASONAL WETLANDS
141	0.32	0.00	TEMPORARY	7B	SEASONAL WETLANDS
142	240.59	0.01	PERMANENT	7B	SEASONAL WETLANDS
143	105.03	0.00	PERMANENT	7B	SEASONAL WETLANDS
144	243.62	0.01	PERMANENT	7B	SEASONAL WETLANDS
145	2287.64	0.05	PERMANENT	7B	SEASONAL WETLANDS

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
146	835.95	0.02	PERMANENT	7B	SEASONAL WETLANDS
213	3263.04	0.07	TEMPORARY	7B	CULVERTS
285	189.02	0.00	TEMPORARY	7B	INTERMITTENT STREAM
286	742.35	0.02	TEMPORARY	7B	INTERMITTENT STREAM
287	603.82	0.01	TEMPORARY	7B	INTERMITTENT STREAM

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

REACH 7B WETLAND DELINEATION MAP

SCALE: AS SHOWN

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

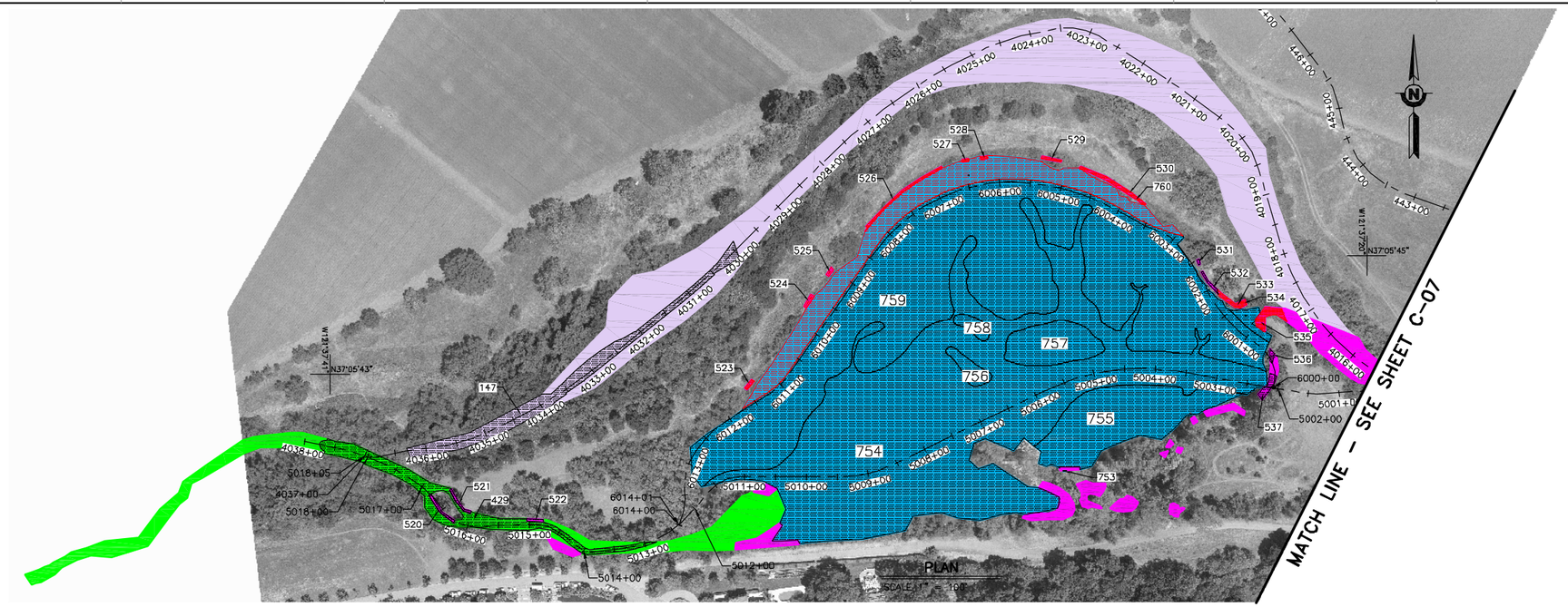
PROJECT NUMBER: 26174054

SHEET CODE: C-05

SHEET NUMBER: 5 OF 19

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

USERNAME: Jennford 6/26/2014 4:04 PM
FILENAME: K:\Active Projects\MP-26174054\SHEET\Req#5191\C-05.dwg



LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
147	11223.27	0.26	TEMPORARY	7A	SEASONAL WETLANDS
429	9633.14	0.22	TEMPORARY	7A	PERENNIAL WATERS
520	204.24	0.00	TEMPORARY	7A	PERENNIAL MARSH
521	196.48	0.00	TEMPORARY	7A	PERENNIAL MARSH
522	105.40	0.00	TEMPORARY	7A	PERENNIAL MARSH
523	85.40	0.00	PERMANENT	7A	PERENNIAL MARSH
524	128.97	0.00	PERMANENT	7A	PERENNIAL MARSH
525	73.46	0.00	PERMANENT	7A	PERENNIAL MARSH
526	500.43	0.01	PERMANENT	7A	PERENNIAL MARSH
527	41.27	0.00	PERMANENT	7A	PERENNIAL MARSH
528	44.24	0.00	PERMANENT	7A	PERENNIAL MARSH
529	106.13	0.00	PERMANENT	7A	PERENNIAL MARSH
530	567.40	0.01	PERMANENT	7A	PERENNIAL MARSH
531	23.80	0.00	TEMPORARY	7A	PERENNIAL MARSH
532	122.33	0.00	TEMPORARY	7A	PERENNIAL MARSH

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
533	290.06	0.01	PERMANENT	7A	PERENNIAL MARSH
534	71.78	0.00	PERMANENT	7A	PERENNIAL MARSH
535	781.66	0.02	PERMANENT	7A	PERENNIAL MARSH
536	107.27	0.00	TEMPORARY	7A	PERENNIAL MARSH
537	426.29	0.01	TEMPORARY	7A	PERENNIAL MARSH
753	7.14	0.00	BELOW 306'	7A	POND
754	146420.13	3.36	BELOW 306'	7A	POND
755	22530.04	0.52	BELOW 306'	7A	POND
756	1887.72	0.04	BELOW 306'	7A	POND
757	8838.29	0.20	BELOW 306'	7A	POND
758	1355.41	0.03	BELOW 306'	7A	POND
759	136087.93	3.12	BELOW 306'	7A	POND
760	0.24	0.00	ABOVE 306'	7A	POND
761	25435.75	0.58	ABOVE 306'	7A	POND
762	1243.58	0.03	BELOW 306'	7A	POND

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

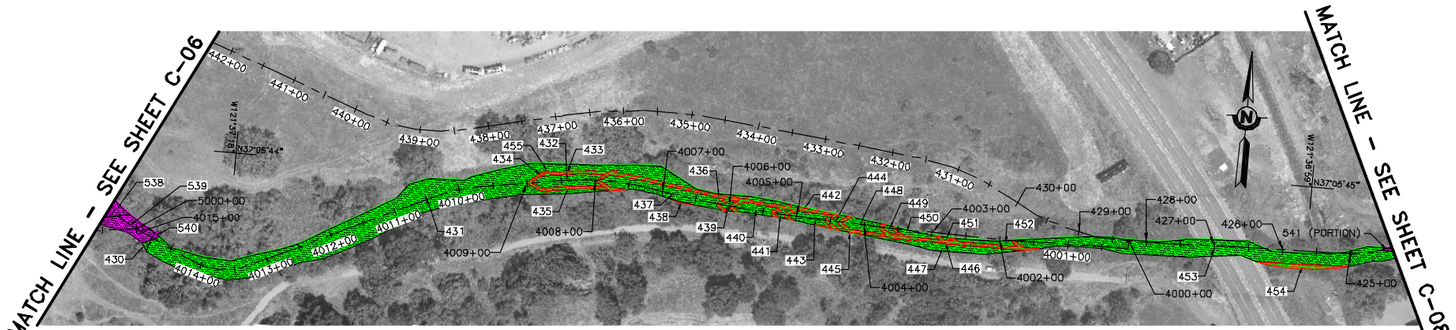
REACH 7A WETLAND DELINEATION MAP

SCALE: AS SHOWN
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

PROJECT NUMBER: 26174054
SHEET CODE: C-06
SHEET NUMBER: 6 OF 19

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

USERNAME: Jennford 6/26/2014 4:06 PM
FILENAME: K:\Active Projects\MP-26174054\SHEET\Req#5191\C-06.dwg



PLAN

SCALE 1" = 100'

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
430	90.53	0.00	TEMPORARY	7A	PERENNIAL WATERS
431	24451.39	0.56	TEMPORARY	7A	PERENNIAL WATERS
432	1670.41	0.04	TEMPORARY	7A	PERENNIAL WATERS
433	370.81	0.01	PERMANENT	7A	PERENNIAL WATERS
434	224.27	0.01	PERMANENT	7A	PERENNIAL WATERS
435	365.38	0.01	PERMANENT	7A	PERENNIAL WATERS
436	2212.16	0.05	PERMANENT	7A	PERENNIAL WATERS
437	2952.42	0.07	TEMPORARY	7A	PERENNIAL WATERS
438	35.18	0.00	PERMANENT	7A	PERENNIAL WATERS
439	202.79	0.00	TEMPORARY	7A	PERENNIAL WATERS
440	749.43	0.02	TEMPORARY	7A	PERENNIAL WATERS
441	187.50	0.00	TEMPORARY	7A	PERENNIAL WATERS
442	6.21	0.00	TEMPORARY	7A	PERENNIAL WATERS
443	919.63	0.02	TEMPORARY	7A	PERENNIAL WATERS
444	286.27	0.01	TEMPORARY	7A	PERENNIAL WATERS

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
445	0.98	0.00	TEMPORARY	7A	PERENNIAL WATERS
446	1623.37	0.04	PERMANENT	7A	PERENNIAL WATERS
447	1766.56	0.04	TEMPORARY	7A	PERENNIAL WATERS
448	859.46	0.02	TEMPORARY	7A	PERENNIAL WATERS
449	168.46	0.00	TEMPORARY	7A	PERENNIAL WATERS
450	456.59	0.01	TEMPORARY	7A	PERENNIAL WATERS
451	64.63	0.00	TEMPORARY	7A	PERENNIAL WATERS
452	516.74	0.01	TEMPORARY	7A	PERENNIAL WATERS
453	10360.90	0.24	TEMPORARY	7A	PERENNIAL WATERS
454	599.86	0.01	PERMANENT	7A	PERENNIAL WATERS
455	0.96	0.00	PERMANENT	7A	PERENNIAL WATERS
538	442.85	0.01	TEMPORARY	7A	PERENNIAL MARSH
539	1540.19	0.04	TEMPORARY	7A	PERENNIAL MARSH
540	62.42	0.00	TEMPORARY	7A	PERENNIAL MARSH
541	494.51	0.01	TEMPORARY	7A	PERENNIAL MARSH

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

REACH 7A WETLAND DELINEATION MAP

SCALE: AS SHOWN

VERIFY SCALES: 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

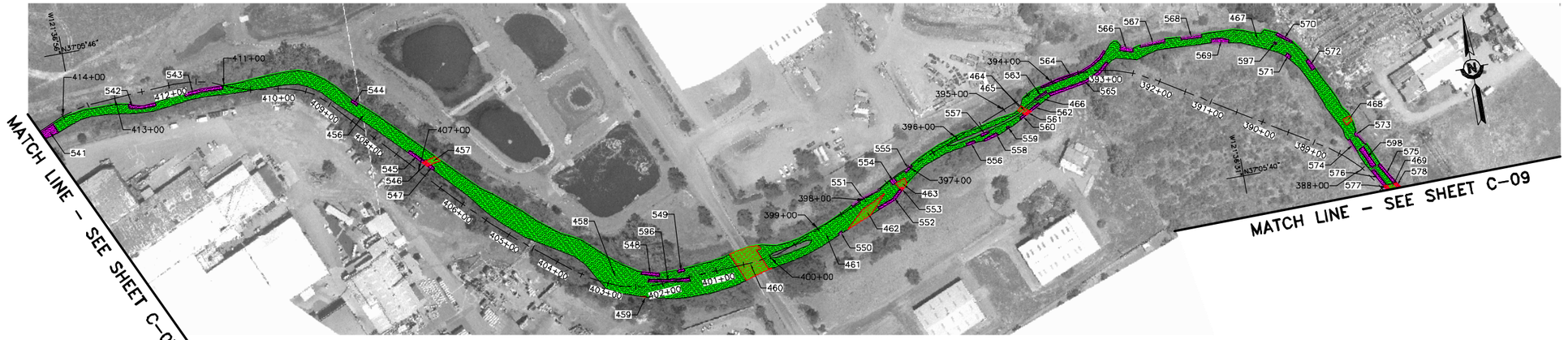
PROJECT NUMBER: 26174054

SHEET CODE: C-07

SHEET NUMBER: 7 OF 19

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

USERNAME: Patrkey 6/26/2014 4:07 PM
FILENAME: K:\Active Projects\MP-26174054\SHEET\Req#5191\C-07.dwg



PLAN

SCALE 1" = 100'

PARCEL AREA TABLE					
PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
456	13077.71	0.30	TEMPORARY	6	PERENNIAL WATERS
457	196.32	0.00	PERMANENT	6	PERENNIAL WATERS
458	23468.88	0.54	TEMPORARY	6	PERENNIAL WATERS
459	5.40	0.00	PERMANENT	6	PERENNIAL WATERS
460	2508.66	0.06	PERMANENT	6	PERENNIAL WATERS
461	11568.70	0.27	TEMPORARY	6	PERENNIAL WATERS
462	790.50	0.02	PERMANENT	6	PERENNIAL WATERS
463	223.62	0.01	PERMANENT	6	PERENNIAL WATERS
464	58.95	0.00	PERMANENT	6	PERENNIAL WATERS
465	49.48	0.00	PERMANENT	6	PERENNIAL WATERS
466	274.02	0.01	TEMPORARY	6	PERENNIAL WATERS
467	14913.25	0.34	TEMPORARY	6	PERENNIAL WATERS
468	148.90	0.00	PERMANENT	6	PERENNIAL WATERS
469	130.98	0.00	PERMANENT	6	PERENNIAL WATERS
541	494.51	0.01	TEMPORARY	6	PERENNIAL MARSH

PARCEL AREA TABLE					
PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
542	264.05	0.01	TEMPORARY	6	PERENNIAL MARSH
543	422.29	0.01	TEMPORARY	6	PERENNIAL MARSH
544	55.89	0.00	TEMPORARY	6	PERENNIAL MARSH
545	158.72	0.00	TEMPORARY	6	PERENNIAL MARSH
546	59.42	0.00	PERMANENT	6	PERENNIAL MARSH
547	54.63	0.00	TEMPORARY	6	PERENNIAL MARSH
548	147.78	0.00	TEMPORARY	6	PERENNIAL MARSH
549	58.48	0.00	TEMPORARY	6	PERENNIAL MARSH
550	18.88	0.00	TEMPORARY	6	PERENNIAL MARSH
551	189.40	0.00	TEMPORARY	6	PERENNIAL MARSH
552	229.41	0.01	TEMPORARY	6	PERENNIAL MARSH
553	20.44	0.00	PERMANENT	6	PERENNIAL MARSH
554	89.59	0.00	TEMPORARY	6	PERENNIAL MARSH
555	46.68	0.00	TEMPORARY	6	PERENNIAL MARSH
556	69.54	0.00	TEMPORARY	6	PERENNIAL MARSH

PARCEL AREA TABLE					
PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
557	57.87	0.00	TEMPORARY	6	PERENNIAL MARSH
558	95.85	0.00	TEMPORARY	6	PERENNIAL MARSH
559	16.93	0.00	TEMPORARY	6	PERENNIAL MARSH
560	48.72	0.00	TEMPORARY	6	PERENNIAL MARSH
561	47.34	0.00	PERMANENT	6	PERENNIAL MARSH
562	90.38	0.00	TEMPORARY	6	PERENNIAL MARSH
563	74.46	0.00	TEMPORARY	6	PERENNIAL MARSH
564	517.94	0.01	TEMPORARY	6	PERENNIAL MARSH
565	578.46	0.01	TEMPORARY	6	PERENNIAL MARSH
566	173.42	0.00	TEMPORARY	6	PERENNIAL MARSH
567	201.39	0.00	TEMPORARY	6	PERENNIAL MARSH
568	193.80	0.00	TEMPORARY	6	PERENNIAL MARSH
569	228.51	0.01	TEMPORARY	6	PERENNIAL MARSH
570	122.68	0.00	TEMPORARY	6	PERENNIAL MARSH
571	55.01	0.00	TEMPORARY	6	PERENNIAL MARSH

PARCEL AREA TABLE					
PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
572	122.87	0.00	TEMPORARY	6	PERENNIAL MARSH
573	89.90	0.00	TEMPORARY	6	PERENNIAL MARSH
574	86.11	0.00	TEMPORARY	6	PERENNIAL MARSH
575	243.28	0.01	TEMPORARY	6	PERENNIAL MARSH
576	184.19	0.00	TEMPORARY	6	PERENNIAL MARSH
577	57.84	0.00	PERMANENT	6	PERENNIAL MARSH
578	65.21	0.00	PERMANENT	6	PERENNIAL MARSH
596	394.00	0.01	TEMPORARY	6	PERENNIAL MARSH
597	13.82	0.00	TEMPORARY	6	PERENNIAL MARSH
598	334.16	0.01	TEMPORARY	6	PERENNIAL MARSH

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

REACH 6 WETLAND DELINEATION MAP

SCALE: AS SHOWN

VERIFY SCALES: 0 1"

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

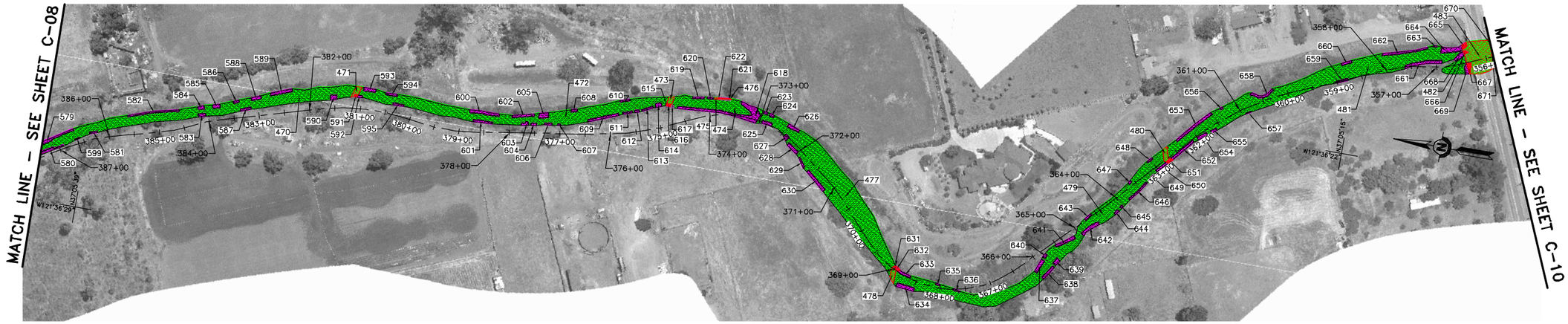
PROJECT NUMBER: 26174054

SHEET CODE: C-08

SHEET NUMBER: 8 OF 19

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

USERNAME: Patrkey 6/26/2014 4:09 PM
FILENAME: K:\Active Projects\MP-26174054\SHEET\Req#5191\C-08.dwg



PLAN

SCALE 1" = 100'

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
470	12573.79	0.29	TEMPORARY	6	PERENNIAL WATERS
471	203.28	0.00	PERMANENT	6	PERENNIAL WATERS
472	12242.77	0.28	TEMPORARY	6	PERENNIAL WATERS
473	150.59	0.00	PERMANENT	6	PERENNIAL WATERS
474	3209.76	0.07	TEMPORARY	6	PERENNIAL WATERS
475	20.76	0.00	PERMANENT	6	PERENNIAL WATERS
476	1.11	0.00	PERMANENT	6	PERENNIAL WATERS
477	15860.38	0.36	TEMPORARY	6	PERENNIAL WATERS
478	244.48	0.01	PERMANENT	6	PERENNIAL WATERS
479	14398.52	0.33	TEMPORARY	6	PERENNIAL WATERS
480	267.85	0.01	PERMANENT	6	PERENNIAL WATERS
481	17015.73	0.39	TEMPORARY	6	PERENNIAL WATERS
482	1018.30	0.02	TEMPORARY	6	PERENNIAL WATERS
483	3186.51	0.07	PERMANENT	6	PERENNIAL WATERS
579	272.79	0.01	TEMPORARY	6	PERENNIAL MARSH

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
580	185.86	0.00	TEMPORARY	6	PERENNIAL MARSH
581	43.39	0.00	TEMPORARY	6	PERENNIAL MARSH
582	272.38	0.01	TEMPORARY	6	PERENNIAL MARSH
583	90.10	0.00	TEMPORARY	6	PERENNIAL MARSH
584	70.10	0.00	TEMPORARY	6	PERENNIAL MARSH
585	88.97	0.00	TEMPORARY	6	PERENNIAL MARSH
586	40.30	0.00	TEMPORARY	6	PERENNIAL MARSH
587	91.40	0.00	TEMPORARY	6	PERENNIAL MARSH
588	126.93	0.00	TEMPORARY	6	PERENNIAL MARSH
589	210.86	0.00	TEMPORARY	6	PERENNIAL MARSH
590	102.66	0.00	TEMPORARY	6	PERENNIAL MARSH
591	23.26	0.00	PERMANENT	6	PERENNIAL MARSH
592	39.48	0.00	TEMPORARY	6	PERENNIAL MARSH
593	132.91	0.00	TEMPORARY	6	PERENNIAL MARSH
594	79.94	0.00	TEMPORARY	6	PERENNIAL MARSH

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
595	71.43	0.00	TEMPORARY	6	PERENNIAL MARSH
599	20.64	0.00	TEMPORARY	6	PERENNIAL MARSH
600	296.10	0.01	TEMPORARY	6	PERENNIAL MARSH
601	131.83	0.00	TEMPORARY	6	PERENNIAL MARSH
602	187.35	0.00	TEMPORARY	6	PERENNIAL MARSH
603	72.18	0.00	TEMPORARY	6	PERENNIAL MARSH
604	37.24	0.00	TEMPORARY	6	PERENNIAL MARSH
605	174.99	0.00	TEMPORARY	6	PERENNIAL MARSH
606	50.18	0.00	TEMPORARY	6	PERENNIAL MARSH
607	17.03	0.00	TEMPORARY	6	PERENNIAL MARSH
608	53.87	0.00	TEMPORARY	6	PERENNIAL MARSH
609	273.66	0.01	TEMPORARY	6	PERENNIAL MARSH
610	64.56	0.00	TEMPORARY	6	PERENNIAL MARSH
611	68.01	0.00	TEMPORARY	6	PERENNIAL MARSH
612	45.33	0.00	TEMPORARY	6	PERENNIAL MARSH

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
613	71.43	0.00	TEMPORARY	6	PERENNIAL MARSH
614	88.92	0.00	TEMPORARY	6	PERENNIAL MARSH
615	3.71	0.00	TEMPORARY	6	PERENNIAL MARSH
616	45.58	0.00	PERMANENT	6	PERENNIAL MARSH
617	20.43	0.00	TEMPORARY	6	PERENNIAL MARSH
618	1359.84	0.03	TEMPORARY	6	PERENNIAL MARSH
619	77.64	0.00	TEMPORARY	6	PERENNIAL MARSH
620	34.19	0.00	TEMPORARY	6	PERENNIAL MARSH
621	43.70	0.00	TEMPORARY	6	PERENNIAL MARSH
622	36.16	0.00	PERMANENT	6	PERENNIAL MARSH
623	35.90	0.00	TEMPORARY	6	PERENNIAL MARSH
624	40.74	0.00	TEMPORARY	6	PERENNIAL MARSH
625	114.58	0.00	TEMPORARY	6	PERENNIAL MARSH
626	141.32	0.00	TEMPORARY	6	PERENNIAL MARSH
627	73.57	0.00	TEMPORARY	6	PERENNIAL MARSH

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
628	150.54	0.00	TEMPORARY	6	PERENNIAL MARSH
629	66.37	0.00	TEMPORARY	6	PERENNIAL MARSH
630	286.64	0.01	TEMPORARY	6	PERENNIAL MARSH
631	2.04	0.00	TEMPORARY	6	PERENNIAL MARSH
632	57.17	0.00	PERMANENT	6	PERENNIAL MARSH
633	134.49	0.00	TEMPORARY	6	PERENNIAL MARSH
634	258.98	0.01	TEMPORARY	6	PERENNIAL MARSH
635	24.04	0.00	TEMPORARY	6	PERENNIAL MARSH
636	30.05	0.00	TEMPORARY	6	PERENNIAL MARSH
637	184.39	0.00	TEMPORARY	6	PERENNIAL MARSH
638	146.76	0.00	TEMPORARY	6	PERENNIAL MARSH
639	108.32	0.00	TEMPORARY	6	PERENNIAL MARSH
640	46.29	0.00	TEMPORARY	6	PERENNIAL MARSH
641	208.01	0.00	TEMPORARY	6	PERENNIAL MARSH
642	252.04	0.01	TEMPORARY	6	PERENNIAL MARSH

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
643	55.36	0.00	TEMPORARY	6	PERENNIAL MARSH
644	37.47	0.00	TEMPORARY	6	PERENNIAL MARSH
645	24.84	0.00	TEMPORARY	6	PERENNIAL MARSH
646	138.65	0.00	TEMPORARY	6	PERENNIAL MARSH
647	25.62	0.00	TEMPORARY	6	PERENNIAL MARSH
648	25.37	0.00	TEMPORARY	6	PERENNIAL MARSH
649	22.54	0.00	TEMPORARY	6	PERENNIAL MARSH
650	116.81	0.00	TEMPORARY	6	PERENNIAL MARSH
651	46.70	0.00	PERMANENT	6	PERENNIAL MARSH
652	215.52	0.00	TEMPORARY	6	PERENNIAL MARSH
653	382.71	0.01	TEMPORARY	6	PERENNIAL MARSH
654	108.47	0.00	TEMPORARY	6	PERENNIAL MARSH
655	47.92	0.00	TEMPORARY	6	PERENNIAL MARSH
656	20.96	0.00	TEMPORARY	6	PERENNIAL MARSH
657	25.33	0.00	TEMPORARY	6	PERENNIAL MARSH

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
658	222.24	0.01	TEMPORARY	6	PERENNIAL MARSH
659	90.72	0.00	TEMPORARY	6	PERENNIAL MARSH
660	78.75	0.00	TEMPORARY	6	PERENNIAL MARSH
661	402.69	0.01	TEMPORARY	6	PERENNIAL MARSH
662	334.68	0.01	TEMPORARY	6	PERENNIAL MARSH
663	19.71	0.00	TEMPORARY	6	PERENNIAL MARSH
664	400.47	0.01	TEMPORARY	6	PERENNIAL MARSH
665	71.66	0.00	PERMANENT	6	PERENNIAL MARSH
666	38.12	0.00	PERMANENT	6	PERENNIAL MARSH
667	112.70	0.00	PERMANENT	6	PERENNIAL MARSH
668	166.27	0.00	TEMPORARY	6	PERENNIAL MARSH
669	124.91	0.00	TEMPORARY	6	PERENNIAL MARSH
670	2.29	0.00	PERMANENT	6	PERENNIAL MARSH
671	30.52	0.00	PERMANENT	6	PERENNIAL MARSH

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

REACH 6 WETLAND DELINEATION MAP

SCALE: AS SHOWN

VERIFY SCALES: 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

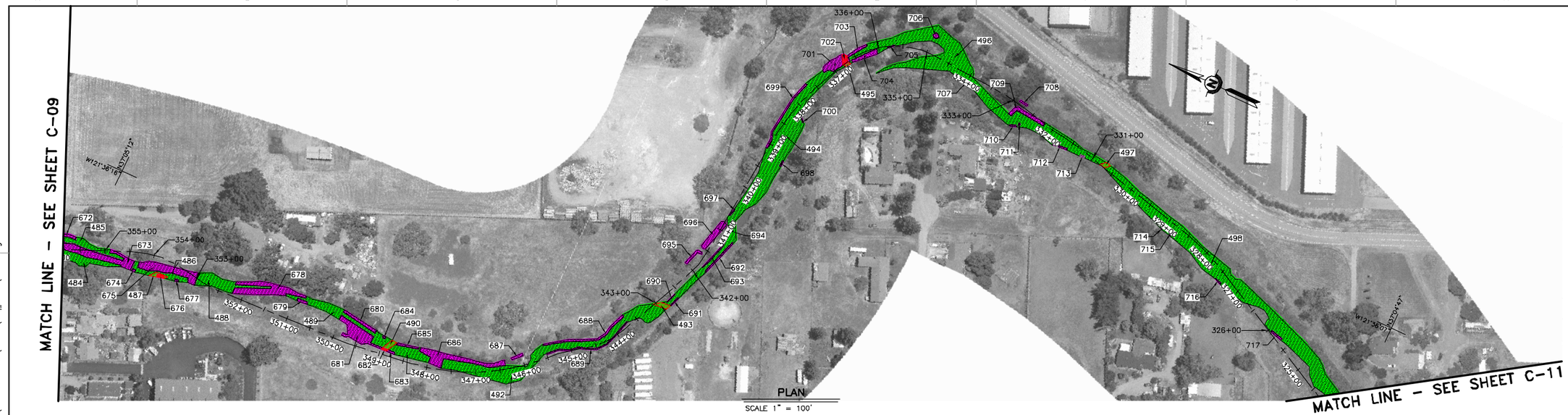
PROJECT NUMBER: 26174054

SHEET CODE: C-09

SHEET NUMBER: 9 OF 19

USERNAME: Patrkey 6/26/2014 4:11 PM
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DOCUMENT NUMBER: XXXX-X-0000-0000000.00



PARCEL AREA TABLE					
PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
484	1620.90	0.04	TEMPORARY	6	PERENNIAL WATERS
485	1535.01	0.04	TEMPORARY	6	PERENNIAL WATERS
486	1164.74	0.03	TEMPORARY	6	PERENNIAL WATERS
487	145.23	0.00	PERMANENT	6	PERENNIAL WATERS
488	2338.14	0.05	TEMPORARY	6	PERENNIAL WATERS
489	2985.06	0.07	TEMPORARY	6	PERENNIAL WATERS
490	236.06	0.01	PERMANENT	6	PERENNIAL WATERS
491	1554.59	0.04	TEMPORARY	6	PERENNIAL WATERS
492	9873.57	0.23	TEMPORARY	6	PERENNIAL WATERS
493	257.56	0.01	PERMANENT	6	PERENNIAL WATERS
494	14201.60	0.33	TEMPORARY	6	PERENNIAL WATERS
495	53.17	0.00	PERMANENT	6	PERENNIAL WATERS
496	16771.26	0.39	TEMPORARY	6	PERENNIAL WATERS
497	134.21	0.00	PERMANENT	6	PERENNIAL WATERS
498	17781.87	0.41	TEMPORARY	6	PERENNIAL WATERS

PARCEL AREA TABLE					
PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
672	152.78	0.00	TEMPORARY	6	PERENNIAL MARSH
673	2237.61	0.05	TEMPORARY	6	PERENNIAL MARSH
674	32.96	0.00	TEMPORARY	6	PERENNIAL MARSH
675	1958.79	0.04	TEMPORARY	6	PERENNIAL MARSH
676	84.93	0.00	PERMANENT	6	PERENNIAL MARSH
677	33.75	0.00	TEMPORARY	6	PERENNIAL MARSH
678	2451.36	0.06	TEMPORARY	6	PERENNIAL MARSH
679	106.63	0.00	TEMPORARY	6	PERENNIAL MARSH
680	440.64	0.01	TEMPORARY	6	PERENNIAL MARSH
681	1748.94	0.04	TEMPORARY	6	PERENNIAL MARSH
682	42.80	0.00	PERMANENT	6	PERENNIAL MARSH
683	64.49	0.00	TEMPORARY	6	PERENNIAL MARSH
684	25.52	0.00	TEMPORARY	6	PERENNIAL MARSH
685	166.73	0.00	TEMPORARY	6	PERENNIAL MARSH
686	2177.61	0.05	TEMPORARY	6	PERENNIAL MARSH

PARCEL AREA TABLE					
PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
687	120.56	0.00	TEMPORARY	6	PERENNIAL MARSH
688	665.39	0.02	TEMPORARY	6	PERENNIAL MARSH
689	483.67	0.01	TEMPORARY	6	PERENNIAL MARSH
690	28.27	0.00	TEMPORARY	6	PERENNIAL MARSH
691	37.61	0.00	TEMPORARY	6	PERENNIAL MARSH
692	203.66	0.00	TEMPORARY	6	PERENNIAL MARSH
693	200.49	0.00	TEMPORARY	6	PERENNIAL MARSH
694	33.42	0.00	TEMPORARY	6	PERENNIAL MARSH
695	221.24	0.01	TEMPORARY	6	PERENNIAL MARSH
696	803.79	0.02	TEMPORARY	6	PERENNIAL MARSH
697	36.27	0.00	TEMPORARY	6	PERENNIAL MARSH
698	28.79	0.00	TEMPORARY	6	PERENNIAL MARSH
699	509.09	0.01	TEMPORARY	6	PERENNIAL MARSH
700	32.17	0.00	TEMPORARY	6	PERENNIAL MARSH
701	800.69	0.02	TEMPORARY	6	PERENNIAL MARSH

PARCEL AREA TABLE					
PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
702	188.35	0.00	PERMANENT	6	PERENNIAL MARSH
703	244.97	0.01	TEMPORARY	6	PERENNIAL MARSH
704	409.12	0.01	TEMPORARY	6	PERENNIAL MARSH
705	27.86	0.00	TEMPORARY	6	PERENNIAL MARSH
706	91.40	0.00	TEMPORARY	6	PERENNIAL MARSH
707	15.00	0.00	TEMPORARY	6	PERENNIAL MARSH
708	59.53	0.00	TEMPORARY	6	PERENNIAL MARSH
709	566.93	0.01	TEMPORARY	6	PERENNIAL MARSH
710	39.76	0.00	TEMPORARY	6	PERENNIAL MARSH
711	12.70	0.00	TEMPORARY	6	PERENNIAL MARSH
712	94.82	0.00	TEMPORARY	6	PERENNIAL MARSH
713	29.63	0.00	TEMPORARY	6	PERENNIAL MARSH
714	2.00	0.00	TEMPORARY	6	PERENNIAL MARSH
715	18.70	0.00	TEMPORARY	6	PERENNIAL MARSH
716	33.22	0.00	TEMPORARY	6	PERENNIAL MARSH

PARCEL AREA TABLE					
PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
717	99.62	0.00	TEMPORARY	6	PERENNIAL MARSH

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

REACH 6 WETLAND DELINEATION MAP

SCALE: AS SHOWN

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY. 0 1"

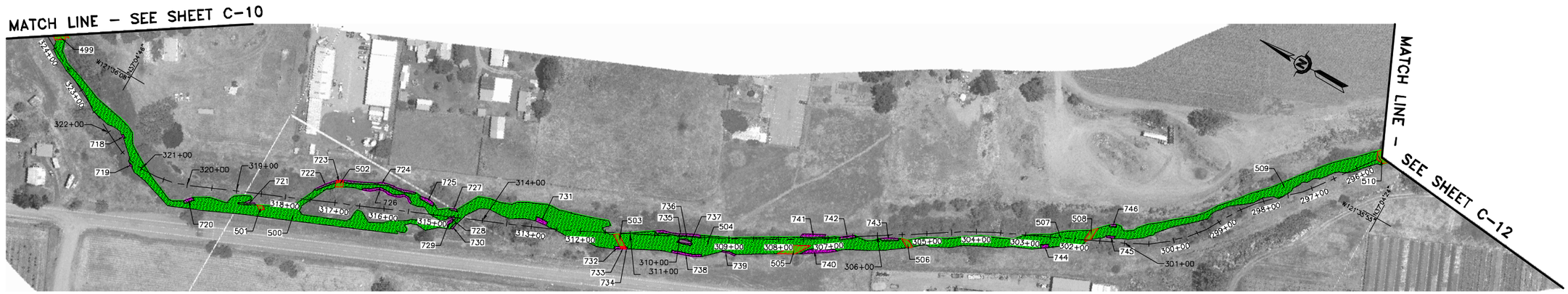
PROJECT NUMBER: 26174054

SHEET CODE: C-10

SHEET NUMBER: 10 OF 19

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

USERNAME: Patrkey 6/26/2014 4:12 PM
FILENAME: K:\Active Projects\MP-26174054\SHEET\Req#5191\C-10.dwg



PLAN

SCALE 1" = 100'

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
499	271.77	0.01	PERMANENT	6	PERENNIAL WATERS
500	33557.59	0.77	TEMPORARY	6	PERENNIAL WATERS
501	99.97	0.00	PERMANENT	6	PERENNIAL WATERS
502	136.03	0.00	PERMANENT	6	PERENNIAL WATERS
503	280.66	0.01	PERMANENT	6	PERENNIAL WATERS
504	15982.24	0.37	TEMPORARY	6	PERENNIAL WATERS
505	623.19	0.01	PERMANENT	6	PERENNIAL WATERS
506	193.98	0.00	PERMANENT	6	PERENNIAL WATERS
507	7615.07	0.17	TEMPORARY	6	PERENNIAL WATERS
508	262.88	0.01	PERMANENT	6	PERENNIAL WATERS
509	10939.35	0.25	TEMPORARY	6	PERENNIAL WATERS
510	328.32	0.01	PERMANENT	6	PERENNIAL WATERS
718	27.48	0.00	TEMPORARY	6	PERENNIAL MARSH
719	28.54	0.00	TEMPORARY	6	PERENNIAL MARSH
720	136.22	0.00	TEMPORARY	6	PERENNIAL MARSH

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
721	102.37	0.00	TEMPORARY	6	PERENNIAL MARSH
722	188.87	0.00	TEMPORARY	6	PERENNIAL MARSH
723	58.90	0.00	PERMANENT	6	PERENNIAL MARSH
724	635.75	0.01	TEMPORARY	6	PERENNIAL MARSH
725	213.57	0.00	TEMPORARY	6	PERENNIAL MARSH
726	505.41	0.01	TEMPORARY	6	PERENNIAL MARSH
727	60.76	0.00	TEMPORARY	6	PERENNIAL MARSH
728	27.48	0.00	TEMPORARY	6	PERENNIAL MARSH
729	86.68	0.00	TEMPORARY	6	PERENNIAL MARSH
730	51.38	0.00	TEMPORARY	6	PERENNIAL MARSH
731	202.96	0.00	TEMPORARY	6	PERENNIAL MARSH
732	58.79	0.00	TEMPORARY	6	PERENNIAL MARSH
733	55.50	0.00	PERMANENT	6	PERENNIAL MARSH
734	14.78	0.00	TEMPORARY	6	PERENNIAL MARSH
735	442.90	0.01	TEMPORARY	6	PERENNIAL MARSH

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
736	43.25	0.00	TEMPORARY	6	PERENNIAL MARSH
737	60.71	0.00	TEMPORARY	6	PERENNIAL MARSH
738	259.62	0.01	TEMPORARY	6	PERENNIAL MARSH
739	92.94	0.00	TEMPORARY	6	PERENNIAL MARSH
740	433.85	0.01	TEMPORARY	6	PERENNIAL MARSH
741	330.79	0.01	TEMPORARY	6	PERENNIAL MARSH
742	179.67	0.00	TEMPORARY	6	PERENNIAL MARSH
743	178.08	0.00	TEMPORARY	6	PERENNIAL MARSH
744	114.98	0.00	TEMPORARY	6	PERENNIAL MARSH
745	68.48	0.00	TEMPORARY	6	PERENNIAL MARSH
746	51.87	0.00	TEMPORARY	6	PERENNIAL MARSH

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

REACH 6 WETLAND DELINEATION MAP

SCALE: AS SHOWN

VERIFY SCALES: 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

PROJECT NUMBER: 26174054

SHEET CODE: C-11

SHEET NUMBER: 11 OF 19

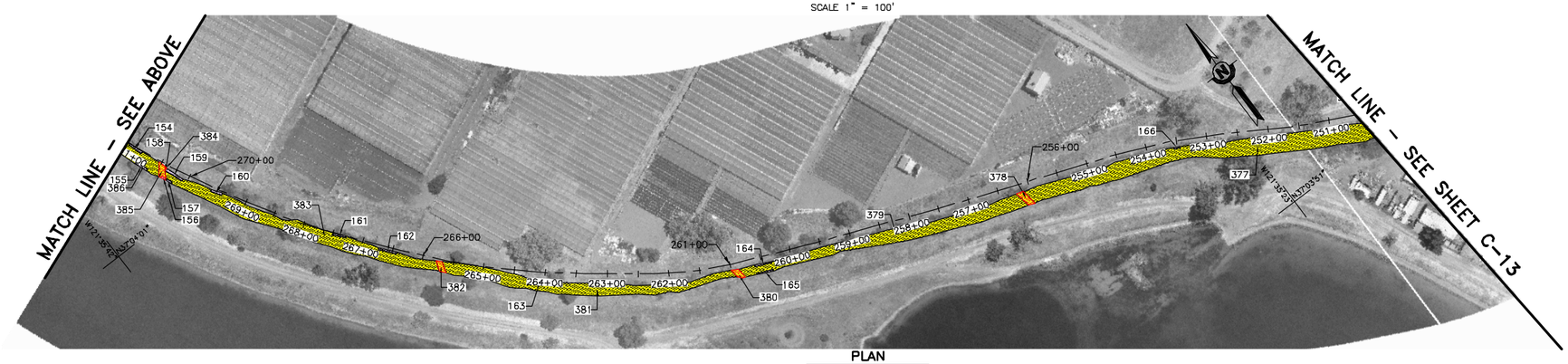
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USERNAME: Patrkey 6/26/2014 4:13 PM
FILENAME: K:\Active Projects\MP-26174054\SHEET\Req#5191\C-11.dwg



PLAN

SCALE 1" = 100'



PLAN

SCALE 1" = 100'

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
153	176.22	0.00	TEMPORARY	6	SEASONAL WETLANDS
154	92.82	0.00	TEMPORARY	6	SEASONAL WETLANDS
155	64.18	0.00	TEMPORARY	6	SEASONAL WETLANDS
156	27.78	0.00	PERMANENT	6	SEASONAL WETLANDS
157	34.86	0.00	TEMPORARY	6	SEASONAL WETLANDS
158	0.21	0.00	PERMANENT	6	SEASONAL WETLANDS
159	138.13	0.00	TEMPORARY	6	SEASONAL WETLANDS
160	66.70	0.00	TEMPORARY	6	SEASONAL WETLANDS
161	73.44	0.00	TEMPORARY	6	SEASONAL WETLANDS
162	100.19	0.00	TEMPORARY	6	SEASONAL WETLANDS
163	122.73	0.00	TEMPORARY	6	SEASONAL WETLANDS
164	65.27	0.00	TEMPORARY	6	SEASONAL WETLANDS
165	59.63	0.00	TEMPORARY	6	SEASONAL WETLANDS
166	23.53	0.00	TEMPORARY	6	SEASONAL WETLANDS
377	14607.41	0.34	TEMPORARY	6	INTERMITTENT STREAM

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
378	267.73	0.01	PERMANENT	6	INTERMITTENT STREAM
379	8765.39	0.20	TEMPORARY	6	INTERMITTENT STREAM
380	170.55	0.00	PERMANENT	6	INTERMITTENT STREAM
381	7952.21	0.18	TEMPORARY	6	INTERMITTENT STREAM
382	185.61	0.00	PERMANENT	6	INTERMITTENT STREAM
383	8848.41	0.20	TEMPORARY	6	INTERMITTENT STREAM
384	7.53	0.00	PERMANENT	6	INTERMITTENT STREAM
385	203.96	0.00	PERMANENT	6	INTERMITTENT STREAM
386	1363.40	0.03	TEMPORARY	6	INTERMITTENT STREAM
511	13746.33	0.32	TEMPORARY	6	PERENNIAL WATERS
512	368.50	0.01	PERMANENT	6	PERENNIAL WATERS
513	17572.10	0.40	TEMPORARY	6	PERENNIAL WATERS
514	415.88	0.01	PERMANENT	6	PERENNIAL WATERS
515	11030.04	0.25	TEMPORARY	6	PERENNIAL WATERS
516	801.19	0.02	PERMANENT	6	PERENNIAL WATERS

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
517	7151.85	0.16	TEMPORARY	6	PERENNIAL WATERS
518	299.86	0.01	PERMANENT	6	PERENNIAL WATERS
519	8538.22	0.20	TEMPORARY	6	PERENNIAL WATERS
747	132.43	0.00	TEMPORARY	6	PERENNIAL MARSH
748	300.19	0.01	TEMPORARY	6	PERENNIAL MARSH
749	684.78	0.02	TEMPORARY	6	PERENNIAL MARSH

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

REACH 6 WETLAND DELINEATION MAP

SCALE: AS SHOWN

VERIFY SCALES: 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

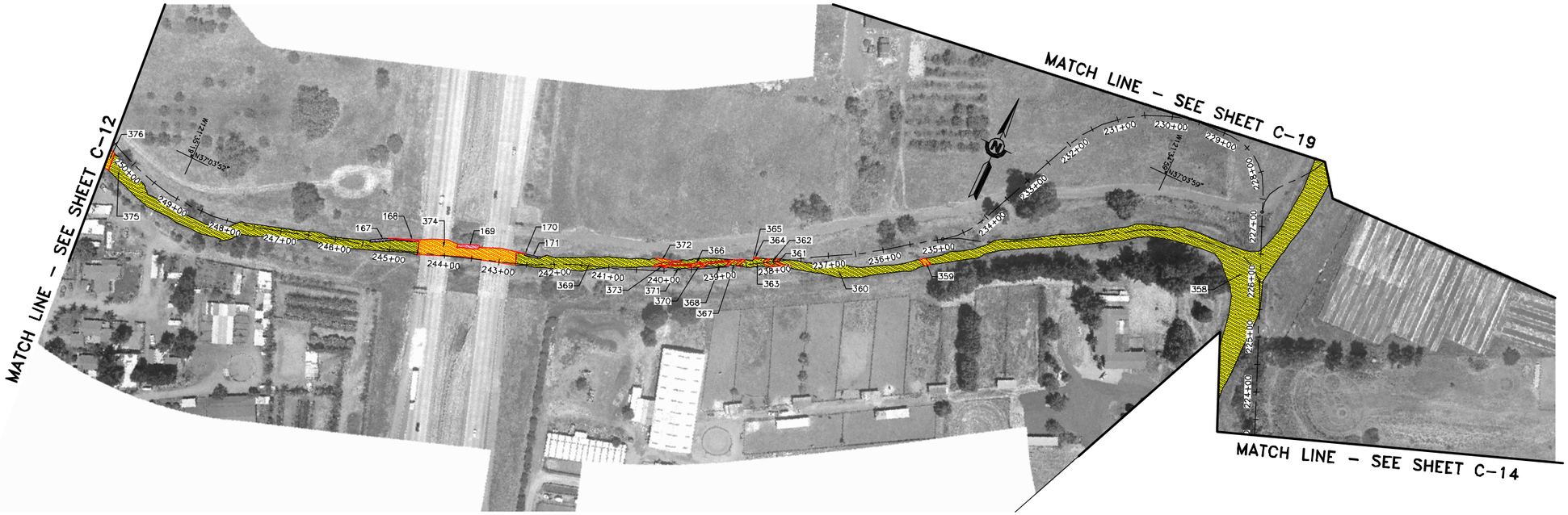
PROJECT NUMBER: 26174054

SHEET CODE: C-12

SHEET NUMBER: 12 OF 19

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

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PLAN
SCALE 1" = 100'

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
167	219.01	0.01	TEMPORARY	5	SEASONAL WETLANDS
168	145.81	0.00	PERMANENT	5	SEASONAL WETLANDS
169	255.64	0.01	PERMANENT	5	SEASONAL WETLANDS
170	0.04	0.00	PERMANENT	5	SEASONAL WETLANDS
171	86.90	0.00	TEMPORARY	5	SEASONAL WETLANDS
358	31286.80	0.72	TEMPORARY	5	INTERMITTENT STREAM
359	153.76	0.00	PERMANENT	5	INTERMITTENT STREAM
360	4426.69	0.10	TEMPORARY	5	INTERMITTENT STREAM
361	236.57	0.01	PERMANENT	5	INTERMITTENT STREAM
362	184.41	0.00	TEMPORARY	5	INTERMITTENT STREAM
363	587.18	0.01	TEMPORARY	5	INTERMITTENT STREAM
364	16.56	0.00	PERMANENT	5	INTERMITTENT STREAM
365	1.13	0.00	PERMANENT	5	INTERMITTENT STREAM
366	599.88	0.01	PERMANENT	5	INTERMITTENT STREAM
367	103.14	0.00	TEMPORARY	5	INTERMITTENT STREAM

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
368	243.08	0.01	TEMPORARY	5	INTERMITTENT STREAM
369	5655.31	0.13	TEMPORARY	5	INTERMITTENT STREAM
370	55.57	0.00	TEMPORARY	5	INTERMITTENT STREAM
371	196.99	0.00	TEMPORARY	5	INTERMITTENT STREAM
372	149.49	0.00	PERMANENT	5	INTERMITTENT STREAM
373	24.23	0.00	TEMPORARY	5	INTERMITTENT STREAM
374	4308.80	0.10	PERMANENT	5	INTERMITTENT STREAM
375	12215.43	0.28	TEMPORARY	5	INTERMITTENT STREAM
376	321.58	0.01	PERMANENT	5	INTERMITTENT STREAM

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

REACH 5 WETLAND DELINEATION MAP

SCALE: AS SHOWN
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

PROJECT NUMBER: 26174054
SHEET CODE: C-13
SHEET NUMBER: 13 OF

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

USERNAME: Jennford 6/26/2014 4:16 PM
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PLAN

SCALE 1" = 100'

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
172	94.41	0.00	TEMPORARY	4	SEASONAL WETLANDS
173	170.76	0.00	TEMPORARY	4	SEASONAL WETLANDS
174	5.68	0.00	TEMPORARY	4	SEASONAL WETLANDS
182	12.16	0.00	TEMPORARY	4	SEASONAL WETLANDS
387	3254.73	0.07	PERMANENT	4	INTERMITTENT STREAM
388	1111.43	0.03	TEMPORARY	4	INTERMITTENT STREAM
389	78169.91	1.79	TEMPORARY	4	INTERMITTENT STREAM
390	138.13	0.00	PERMANENT	4	INTERMITTENT STREAM
391	1109.97	0.03	PERMANENT	4	INTERMITTENT STREAM
392	73.40	0.00	PERMANENT	4	INTERMITTENT STREAM
393	843.76	0.02	PERMANENT	4	INTERMITTENT STREAM
394	1062.79	0.02	PERMANENT	4	INTERMITTENT STREAM
395	71748.94	1.65	TEMPORARY	4	INTERMITTENT STREAM
396	252.35	0.01	PERMANENT	4	INTERMITTENT STREAM

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

REACH 4 WETLAND DELINEATION MAP

SCALE: AS SHOWN

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

PROJECT NUMBER: 26174054

SHEET CODE: C-14

SHEET NUMBER: 14 OF 19

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

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USERNAME: Jennford 6/26/2014 4:19 PM
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PLAN
SCALE 1" = 100'

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
175	75.66	0.00	TEMPORARY	4	SEASONAL WETLANDS
395	71748.94	1.65	TEMPORARY	4	INTERMITTENT STREAM
397	257.72	0.01	PERMANENT	4	INTERMITTENT STREAM
398	3398.53	0.08	PERMANENT	4	INTERMITTENT STREAM
399	99.98	0.00	PERMANENT	4	INTERMITTENT STREAM
400	46870.56	1.08	TEMPORARY	4	INTERMITTENT STREAM
401	147.97	0.00	PERMANENT	4	INTERMITTENT STREAM

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

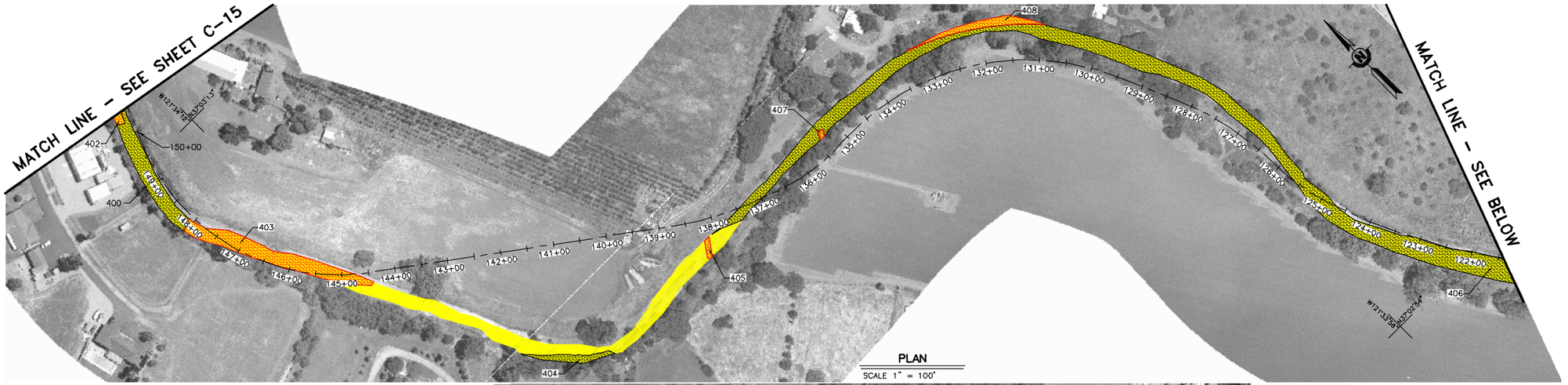
UPPER LLAGAS PROJECT

REACH 4 WETLAND DELINEATION MAP

SCALE: AS SHOWN
VERIFY SCALES: 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

PROJECT NUMBER: 26174054
SHEET CODE: C-15
SHEET NUMBER: 15 OF 19

DOCUMENT NUMBER: XXXX-X-0000-0000000.00



PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
181	17.99	0.00	TEMPORARY	4	SEASONAL WETLANDS
218	0.15	0.00	PERMANENT	4	CULVERTS
219	1080.03	0.02	PERMANENT	4	CULVERTS
400	46870.56	1.08	TEMPORARY	4	INTERMITTENT STREAM
402	341.13	0.01	PERMANENT	4	INTERMITTENT STREAM
403	9479.14	0.22	PERMANENT	4	INTERMITTENT STREAM
404	1667.74	0.04	TEMPORARY	4	INTERMITTENT STREAM
405	379.88	0.01	PERMANENT	4	INTERMITTENT STREAM
406	93385.44	2.14	TEMPORARY	4	INTERMITTENT STREAM
407	140.26	0.00	PERMANENT	4	INTERMITTENT STREAM
408	2591.38	0.06	PERMANENT	4	INTERMITTENT STREAM
409	1963.32	0.05	PERMANENT	4	INTERMITTENT STREAM
410	120.04	0.00	PERMANENT	4	INTERMITTENT STREAM
411	309.83	0.01	PERMANENT	4	INTERMITTENT STREAM
412	56.52	0.00	PERMANENT	4	INTERMITTENT STREAM

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
413	506.03	0.01	PERMANENT	4	INTERMITTENT STREAM
414	14507.04	0.33	TEMPORARY	4	INTERMITTENT STREAM
415	258.40	0.01	PERMANENT	4	INTERMITTENT STREAM
416	22002.27	0.51	TEMPORARY	4	INTERMITTENT STREAM
750	31.40	0.00	PERMANENT	4	DROP STRUCTURE
751	3518.30	0.08	TEMPORARY	4	DROP STRUCTURE
752	3747.15	0.09	TEMPORARY	4	DROP STRUCTURE

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

REACH 4 WETLAND DELINEATION MAP

SCALE: AS SHOWN

VERIFY SCALES: 0 1"
BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

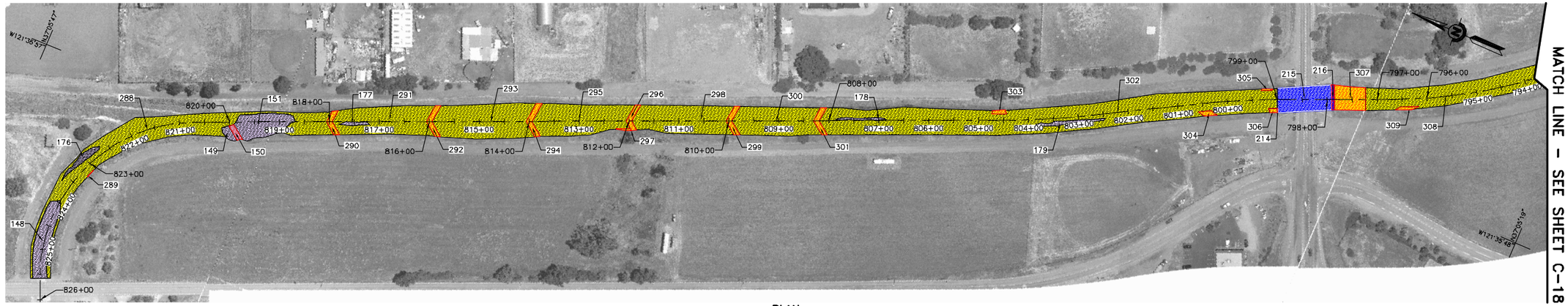
PROJECT NUMBER: 26174054

SHEET CODE: C-16

SHEET NUMBER: 16 OF 19

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

USERNAME: Jennford 6/26/2014 4:20 PM
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PLAN

SCALE 1" = 100'

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
148	4579.10	0.11	TEMPORARY	14	SEASONAL WETLANDS
149	482.08	0.01	TEMPORARY	14	SEASONAL WETLANDS
150	328.41	0.01	PERMANENT	14	SEASONAL WETLANDS
151	4616.89	0.11	TEMPORARY	14	SEASONAL WETLANDS
176	906.15	0.02	TEMPORARY	14	SEASONAL WETLANDS
177	332.41	0.01	TEMPORARY	14	SEASONAL WETLANDS
178	395.99	0.01	TEMPORARY	14	SEASONAL WETLANDS
179	921.91	0.02	TEMPORARY	14	SEASONAL WETLANDS
214	4.80	0.00	PERMANENT	14	CULVERTS
215	5217.95	0.12	TEMPORARY	14	CULVERTS
216	293.58	0.01	PERMANENT	14	CULVERTS
288	23091.40	0.53	TEMPORARY	14	INTERMITTENT STREAM
289	10.84	0.00	PERMANENT	14	INTERMITTENT STREAM
290	545.65	0.01	PERMANENT	14	INTERMITTENT STREAM
291	10155.91	0.23	TEMPORARY	14	INTERMITTENT STREAM

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
292	705.22	0.02	PERMANENT	14	INTERMITTENT STREAM
293	12700.50	0.29	TEMPORARY	14	INTERMITTENT STREAM
294	761.35	0.02	PERMANENT	14	INTERMITTENT STREAM
295	10839.77	0.25	TEMPORARY	14	INTERMITTENT STREAM
296	675.00	0.02	PERMANENT	14	INTERMITTENT STREAM
297	2.11	0.00	PERMANENT	14	INTERMITTENT STREAM
298	10293.71	0.24	TEMPORARY	14	INTERMITTENT STREAM
299	657.48	0.02	PERMANENT	14	INTERMITTENT STREAM
300	9243.98	0.21	TEMPORARY	14	INTERMITTENT STREAM
301	628.95	0.01	PERMANENT	14	INTERMITTENT STREAM
302	44431.86	1.02	TEMPORARY	14	INTERMITTENT STREAM
303	196.44	0.00	PERMANENT	14	INTERMITTENT STREAM
304	265.06	0.01	PERMANENT	14	INTERMITTENT STREAM
305	69.43	0.00	PERMANENT	14	INTERMITTENT STREAM
306	130.24	0.00	PERMANENT	14	INTERMITTENT STREAM

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
307	2980.88	0.07	PERMANENT	14	INTERMITTENT STREAM
308	14259.99	0.33	TEMPORARY	14	INTERMITTENT STREAM
309	230.21	0.01	PERMANENT	14	INTERMITTENT STREAM

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT
—
REACH 14 WETLAND DELINEATION MAP

SCALE: AS SHOWN
VERIFY SCALES: 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

PROJECT NUMBER: 26174054
SHEET CODE: C-17
SHEET NUMBER: 17 OF 19

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

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PLAN

SCALE 1" = 100'

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
152	293.25	0.01	TEMPORARY	14	SEASONAL WETLANDS
180	354.51	0.01	TEMPORARY	14	SEASONAL WETLANDS
310	437.52	0.01	PERMANENT	14	INTERMITTENT STREAM
311	13537.26	0.31	TEMPORARY	14	INTERMITTENT STREAM
312	248.62	0.01	PERMANENT	14	INTERMITTENT STREAM
313	399.94	0.01	PERMANENT	14	INTERMITTENT STREAM
314	13656.13	0.31	TEMPORARY	14	INTERMITTENT STREAM
315	571.99	0.01	PERMANENT	14	INTERMITTENT STREAM
316	20600.77	0.47	TEMPORARY	14	INTERMITTENT STREAM
317	391.18	0.01	PERMANENT	14	INTERMITTENT STREAM
318	658.67	0.02	PERMANENT	14	INTERMITTENT STREAM
319	21008.70	0.48	TEMPORARY	14	INTERMITTENT STREAM
320	653.32	0.01	PERMANENT	14	INTERMITTENT STREAM
321	21003.72	0.48	TEMPORARY	14	INTERMITTENT STREAM
322	748.55	0.02	PERMANENT	14	INTERMITTENT STREAM

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
323	318.65	0.01	PERMANENT	14	INTERMITTENT STREAM
324	646.16	0.01	PERMANENT	14	INTERMITTENT STREAM
325	20692.11	0.48	TEMPORARY	14	INTERMITTENT STREAM
326	654.66	0.02	PERMANENT	14	INTERMITTENT STREAM
327	17730.41	0.41	TEMPORARY	14	INTERMITTENT STREAM
328	552.19	0.01	PERMANENT	14	INTERMITTENT STREAM
329	16627.87	0.38	TEMPORARY	14	INTERMITTENT STREAM
330	177.47	0.00	PERMANENT	14	INTERMITTENT STREAM

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT
—
REACH 14 WETLAND DELINEATION MAP

SCALE: AS SHOWN

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

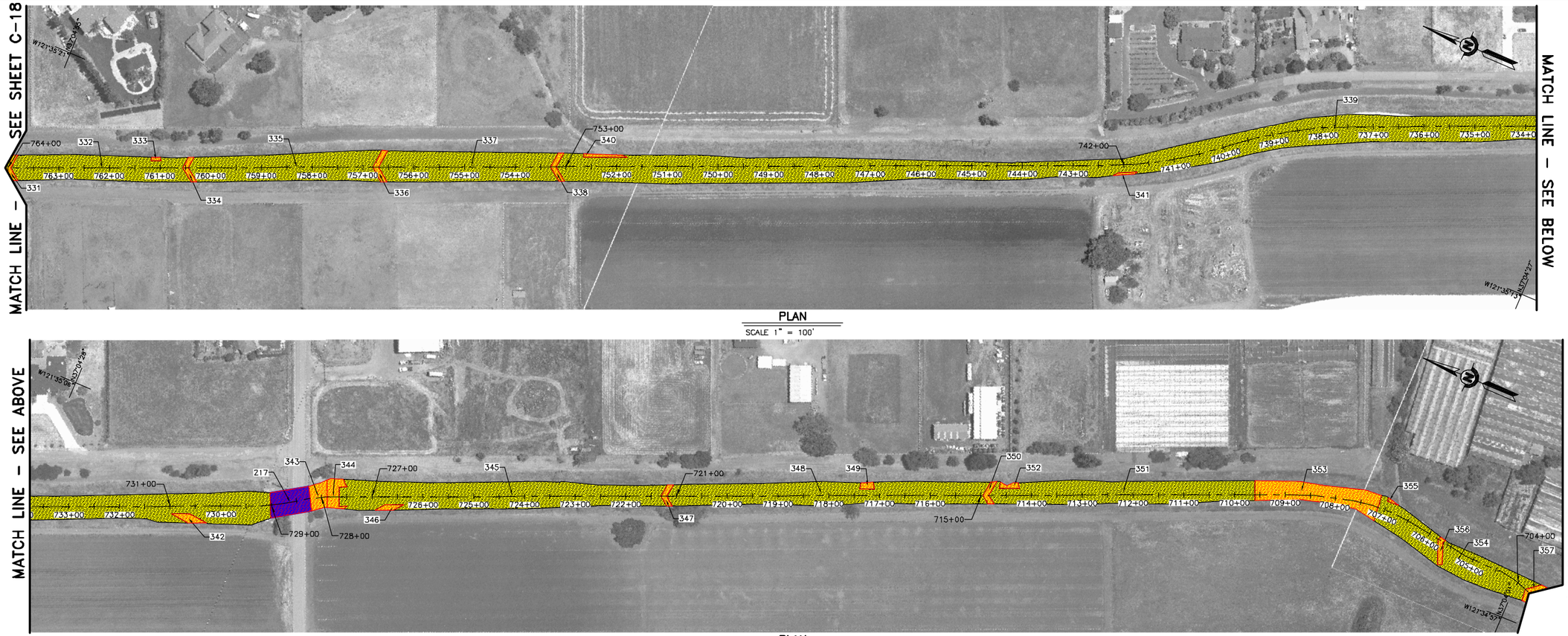
PROJECT NUMBER: 26174054

SHEET CODE: C-18

SHEET NUMBER: 18 OF 19

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

USERNAME: Jennford 6/26/2014 4:24 PM
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PLAN
SCALE 1" = 100'

PLAN
SCALE 1" = 100'

LEGEND

	NO IMPACT	PERMANENT IMPACT	TEMPORARY IMPACT
CULVERTS			
DROP STRUCTURE			
INTERMITTENT STREAM			
PERENNIAL MARSH			
PERENNIAL WATERS			
POND			
SEASONAL WETLAND			

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
217	3865.65	0.09	PERMANENT	14	CULVERTS
331	574.61	0.01	PERMANENT	14	INTERMITTENT STREAM
332	16503.51	0.38	TEMPORARY	14	INTERMITTENT STREAM
333	136.92	0.00	PERMANENT	14	INTERMITTENT STREAM
334	565.16	0.01	PERMANENT	14	INTERMITTENT STREAM
335	19445.98	0.45	TEMPORARY	14	INTERMITTENT STREAM
336	705.12	0.02	PERMANENT	14	INTERMITTENT STREAM
337	19793.25	0.45	TEMPORARY	14	INTERMITTENT STREAM
338	645.38	0.01	PERMANENT	14	INTERMITTENT STREAM
339	112782.69	2.59	TEMPORARY	14	INTERMITTENT STREAM
340	507.64	0.01	PERMANENT	14	INTERMITTENT STREAM
341	157.29	0.00	PERMANENT	14	INTERMITTENT STREAM
342	662.82	0.02	PERMANENT	14	INTERMITTENT STREAM
343	1704.92	0.04	PERMANENT	14	INTERMITTENT STREAM
344	1652.36	0.04	PERMANENT	14	INTERMITTENT STREAM

PARCEL AREA TABLE

PARCEL #	AREA (SQ FT)	AREA (ACRES)	IMPACT	REACH	JURISDICTION
345	31635.20	0.73	TEMPORARY	14	INTERMITTENT STREAM
346	421.20	0.01	PERMANENT	14	INTERMITTENT STREAM
347	487.37	0.01	PERMANENT	14	INTERMITTENT STREAM
348	26290.76	0.60	TEMPORARY	14	INTERMITTENT STREAM
349	352.14	0.01	PERMANENT	14	INTERMITTENT STREAM
350	507.52	0.01	PERMANENT	14	INTERMITTENT STREAM
351	22124.07	0.51	TEMPORARY	14	INTERMITTENT STREAM
352	382.76	0.01	PERMANENT	14	INTERMITTENT STREAM
353	9478.73	0.22	PERMANENT	14	INTERMITTENT STREAM
354	16881.35	0.39	TEMPORARY	14	INTERMITTENT STREAM
355	82.25	0.00	PERMANENT	14	INTERMITTENT STREAM
356	549.11	0.01	PERMANENT	14	INTERMITTENT STREAM
357	567.36	0.01	PERMANENT	14	INTERMITTENT STREAM

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. AERIAL PHOTOGRAPHY TAKEN BY PHOTOSCIENCE, MAY 24, 2011.

DATE 06-26-14
DESIGN M. MOORE
DRAWN J. FORD
CHECKED P. KEY

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS PROJECT

REACH 14 WETLAND DELINEATION MAP

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PROJECT NUMBER: 26174054
SHEET CODE: C-19
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APPENDIX C

Remediation Sites

Reach 4 - Downstream of Masten Ave

Columbet Ave

Masten Ave

Site 14
Area = 26,200sqft

0 80 160 320 Feet

Approximate Scale

Santa Clara Valley Water District

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P:\Llagas Design Services\Design\Environmental\Remediation Maps

Reach 4 - Downstream of Rucker Ave

Site 15
Area = 3,400sqft

Korn Ln

Malo Ct

Kelly Ln

0 80 160 320 Feet

Approximate Scale

Santa Clara Valley Water District

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P:\Llagas Design Services\Design\Environmental\Remediation Maps

Reach 4 - Upstream of Masten Ave

Site 11
Area = 2,100sqft

Site 12
Area = 400sqft

Site 13
Area = 13,000sqft

Lena Ave

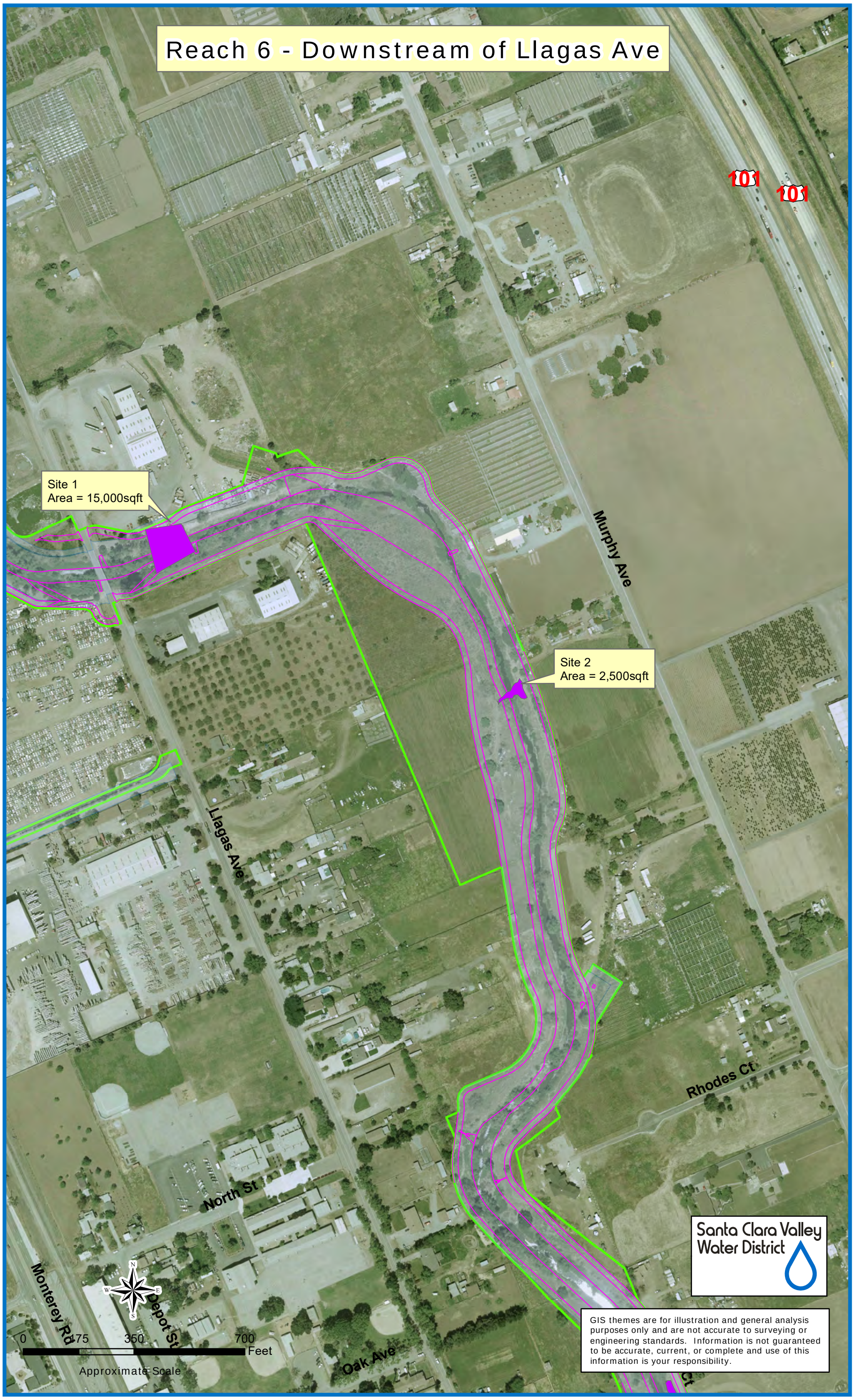
0 80 160 320 Feet

Approximate Scale

Santa Clara Valley Water District

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P:\Llagas Design Services\Design\Environmental\Remediation Maps


Reach 6 - Downstream of Llagas Ave
Site 1
Area = 15,000sqft
Site 2
Area = 2,500sqft
Murphy Ave
Llagas Ave
North St
Monterey Rd
Depot St
Oak Ave
Rhodes Ct
101
101
N
W
E
S
0
175
350
700
Feet
Approximate Scale
Santa Clara Valley Water District
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P:\Llagas Design Services\Design\Environmental\Remediation Maps

Reach 6 - Downstream and Upstream of San Martin Ave

Kimble Ct

Murphy Ave

Site 3
Area = 3,050sqft

San Martin Ave

Site 4
Area = 1,300sqft

Site 5
Area = 2,682sqft

Llagas Ave

Site 6
Area = 2,616sqft

South St

0 85 170 340 Feet

Approximate Scale

Santa Clara Valley Water District

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P:\Llagas Design Services\Design\Environmental\Remediation Maps

Reach 6 - Upstream of Church Ave

Site 7
Area = 33,400sqft

Site 8
Area = 31,000sqft

Murphy Ave

Mc Connell Dr

Monterey Rd

Llagas Ave

0 160 320 640
Feet
Approximate Scale

N
W
E
S

Santa Clara Valley Water District

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P:\Llagas Design Services\Design\Environmental\Remediation Maps

Reach 6 - Upstream and Downstream of Murphy Ave



P:\Llagas Design Services\Design\Environmental\Remediation Maps

APPENDIX D

Lake Silveira Dry Season Monitoring

HYDROLOGIC MONITORING OF LAKE SILVEIRA AND ADJACENT SHALLOW AQUIFER, MARCH 2013 THROUGH SEPTEMBER 2015, SANTA CLARA COUNTY, CALIFORNIA

Report prepared for:
Santa Clara Valley Water District

Prepared by:
Eric Donaldson, P.G.
Barry Hecht, C.E.G., C.Hg.

Balance Hydrologics, Inc.

March 2016

A report prepared for:

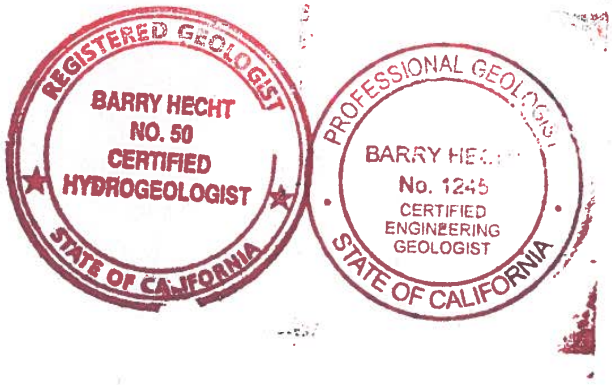
Santa Clara Valley Water District
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Hydrologic Monitoring of Lake Silveira and Adjacent Shallow Aquifer, March 2013 through September 2015, Santa Clara County, California

© 2016 Balance Hydrologics, Inc. Project Assignment: 215164
by



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Hydrologist/Geomorphologist



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March 24, 2016

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Figure 2. Lake Silveira water levels and water levels in the adjacent aquifer, Partial WY2013, WY2014, and WY2015. Lake Silveira Hydrologic Monitoring, Santa Clara County, California.

APPENDIX

Appendix A. Water quality lab reports October 2014 through September 2015.

1. INTRODUCTION

The Santa Clara Valley Water District (SCVWD) is planning the Lake Silveira Habitat Restoration (LSHR) Project to mitigate for effects of the Upper Llagas Creek Flood Protection Program (ULCFPP). LSHR is a critical step in sustaining habitat and habitat values for a number of sensitive communities and species in the Morgan Hill area. The lake occupies a former aggregate quarry operated during the early 1970s to provide fill for the Highway 101 freeway. The new Silveira wetland complex also includes re-directing Llagas Creek flows back into its historical channel, which was abandoned when the gravel pit 'captured' Llagas Creek, which eroded through the levee north of the quarry during high flows of the late 1970s. Since that time, Llagas Creek has flowed through the abandoned quarry, sustaining Lake Silveira. The historical channel, which seems to have remained almost always dry since the capture 40 years ago, is aligned between the lake and the proposed Reach 7a channel.

The SCVWD has retained Balance Hydrologics (Balance) to a) collect hydrologic data and prepare a data report on water levels within Lake Silveira and the surrounding shallow aquifer, b) monitor the hydrologic system through the current period of drought, and c) work with the SCVWD to summarize basic water-quality parameters in the Llagas Creek, Lake Silveira and the adjacent shallow aquifer. LSHR wetlands and riparian habitats are predicted to be most sensitive during severe drought. This monitoring program is designed to assist the SCVWD in maintaining sustainable wetland and riparian habitat planned for the LSHR during such conditions.

This report is the water-year-end[1] deliverable for Water Year 2015 (WY2015), which includes Lake Silveira water levels (See **Figure 1** for gage locations) collected between March 28, 2013, and September 30, 2015, and groundwater levels in the adjacent aquifer collected at monitoring wells MW-LS-2 and 13-01 (**Figure 1**) between October 16, 2014 and September 30, 2015. This report also includes measurements and observations collected by SCVWD staff during summer 2015.

[1] A water year (WY) is defined as that period from October 1st of a preceding year through September 30th of the named following year. For example, WY2015 occurs from October 1, 2014 through September 30, 2015.

2. THE SURFACE WATER-GROUNDWATER SYSTEM

The units and boundaries, fluctuations, and properties of the surface water and groundwater system near Lake Silveira provide the context within which this important area can be managed to meet both existing future habitat needs. Monitoring drought conditions at LSHR develops our understanding of existing physical processes and how the effects of the ULCFPP impacts may be best mitigated. Balance prepared a Hydrologic Mitigation and Monitoring Plan (Donaldson and Hecht, 2014), which outlines the success criteria and planned monitoring methods. The work contained here is intended to provide context to eventual post-project monitoring and mitigation efforts. The premises under which we have planned this initial monitoring of the lake's overall hydrologic system is based in part on prior work as well as the field evidence encountered during a shallow well-drilling campaign in 2013. A more detailed summary of the local surface water-groundwater system can be found in Woyshner and others (2013, Draft).

2.1 Regional Framework and Prior Work

The Gilroy-Hollister Valley Groundwater Basin is nestled between the northwest-trending Santa Cruz Mountains and the San Andreas Fault to the west and the Diablo Range and the Hayward and Calaveras faults to the east. The basin includes, in part, the floor of the Llagas Subbasin, a large structural trough that has been filled by sediment (gravel, sand, silt and clay) eroded from the adjacent mountain ranges, and the smaller valleys of tributary streams, of similar composition. Lake Silveira and environs are situated at the junction of one of the largest of the tributary valleys – that of Llagas Creek – and the main Llagas Valley trough. Groundwater beneath this confluence is derived from deposits of both the Llagas Subbasin and the alluvium beneath Llagas Creek. Pumping, draining, or other influencing groundwater potentially affects water levels north and east of the confluence in the tributary aquifer system beneath the valley floor along the creek, and in the main Valley.

Water which may enter the reestablished historical channel of the Llagas Creek and the proposed Reach 7a flood-control channel (**Figure 1**) discharges into Reach 6, a middle segment of Llagas Creek extending roughly from the Monterey Highway Bridge downstream below Church Avenue to near the Highway 101 Bridge near San Martin. Upstream of Lake Silveira the LSHR site, the Llagas Creek watershed collects water, sediment and other stream-borne materials primarily from the eastern flank of the Santa Cruz Mountains. Constructed during the mid-1950s about 4 miles upstream of the lake, Chesbro Reservoir impounds water, sediments, and wood from the upper western

watershed. Small tributaries also emanate from the western side of the Diablo Range, joining the creek on the valley floor. Further downstream from Reach 6, Llagas Creek is a tributary to the Pajaro River, which flows to the Pacific Ocean west of Watsonville, California. The watershed of Llagas Creek at Lake Silveira encompasses 27.5 mi^2 of the catchment of Llagas Subbasin. Chesbro Reservoir receives drainage from 18.7 mi^2, therefore 8.8 mi^2 of unregulated Llagas Creek flows downstream to the LSHR site. Like Silveira, about 10 feet deep, occupies 8.5 acres of a gravel quarry operated during 1970s to support construction of the Sig Sanchez Freeway segment of Highway 101 (see Donaldson and others, 2013).

2.2 Historical Groundwater-Level Fluctuations

Historical regional well data suggest that water levels in the vicinity of Lake Silveira often fluctuate approximately 5 to 10 feet annually (see Donaldson and others, 2013). Over a cycle of typical wet (2005-2006) and dry years (2007-2009), fluctuations are commonly 30 feet or more. During more extreme droughts, such as those of 1976-1977 or 1987-1991, water-level depression of up to 60 feet or more can be expected.

Historically, the water table was about 15 feet below the valley floor in 1890 (Grossinger and others, 2008) and 1918-1919 (Clark, 1924). Water levels were lowered 60 to 80 feet in this area between the 1920s, when turbine pumps were introduced, and the 1970s and early 1980s, when water levels recovered as a result of managed recharge (see Donaldson and others, 2013). It is worth noting that the Silveira Quarry, now occupied by the lake, was excavated prior to full recovery of the local water levels.

3. INSTALLATION OF WELLS, PIEZOMETERS, AND LAKE GAGE

A gaging station was installed at the far west portion of Lake Silveira on March 28, 2013 by Balance staff to measure the water level of the lake (**Figure 1**). The gaging station consists of a U.S. Geological Survey 'Style C' staff plate and an automated water-level recording datalogger (Levelogger ®). The levelogger was programmed to record a water-level measurement every 1 hour. A second lake-level station was installed on October 16, 2014, as water levels fell beneath the original gage.

As part of planning the LSHR project, Balance staff (Gustavo Porras) observed the installation of the well and piezometers, and characterized and logged the drill cuttings (See Hecht and others, 2013, Draft). Monitoring wells MW-LS-01 and MW-LS-02 were concurrently installed with a hollow-stem auger by drillers contracted by Pacific Geotechnical Engineering. The pumping well (13-01) and the piezometer cluster were installed at the proposed edge of the reach 7a channel on ground which is not planned to be disturbed during excavation, such that they can remain in place during grading and be used in the future to monitor water-level changes. Monitoring well MW-LS-01 is within the proposed reach 7a channel, it will be removed and destroyed during construction. Balance selected to monitor monitoring well MW-LS-02 because it is located near the upstream end (west) of Lake Silveira, and should provide a reasonable understanding of the upstream boundary condition of the Lake Silveira-shallow aquifer system. In addition, we selected to monitor pumping well 13-01 because it is the deepest well at the downstream (east) side of the lake. Bore logs from well 13-01, indicated that the screened interval (approximately 22-42 feet below ground surface [bgs]) is connected to the shallow aquifer, and will provide a reasonable understanding of the downstream boundary condition of Lake Silveira-shallow aquifer system. MW-LS-02 and 13-01 were equipped with an automated water-level recording datalogger (Levelogger ®) on October 16, 2014. The leveloggers were programmed to record a water-level measurement every 1 hour.

A log of field activities is summarized in **Table 1**. Note that depth to water is considered an estimate when a well sounder was not used to measure depth to water.

4. RESULTS

Hydrologic data collected during WY2013 (partial), WY2014, and WY2015 are presented in **Figure 2**. In addition to data collected by Balance at the Lake Silveira-shallow aquifer system, **Figure 2** presents rainfall data from Morgan Hill (SCVWD ALERT 1503), as well as flows in Llagas Creek downstream of Chesbro Reservoir (SCVWD ALERT 5069), which flows downstream to Lake Silveira. The sections below summarize the results of our hydrologic monitoring through September 30, 2015. It is our understanding that the Uvas-Llagas pipeline was not utilized during the monitoring period, and the results presented below reflect that understanding.

4.1 Rainfall

To provide context for the monitoring results Balance presents rainfall data for nearby SCVWD rainfall station ALERT number 1503. WY2013-2015 are characterized by lower than average rainfall based on mean annual precipitation (MAP) for this station (Nahn and Saah, 1989) of about 22 inches. During WY2013 and WY2014, 12.22 and 7.75 inches of rain were recorded at Morgan Hill, respectively. During WY2015, 13.5 inches of rain were recorded at Morgan Hill.

4.2 Surface Water

It should be noted that during WY2014, lake levels dropped significantly, the first lake water-level monitoring station went dry. Prior to October 2014, the equipment was installed and operated pro-bono and was downloaded and maintained only when staff were in the area to accomplish other project work. On June 29, water levels in the lake began dropping to historically low levels, and the equipment installed to record lake levels was no longer submerged in the water. In October 2014, Balance was retained to collect baseline monitoring data, and refurbish the lake water level monitoring gage. At that point, Balance staff installed a secondary station in a deeper portion of the lake, just to the north east of the delta entering the lake. Between June 29, 2014 and October 16, 2014, we do not have detailed data about the recession of lake levels; however, in **Figure 2**, we see that releases from Chesbro were consistent until September 20, when they dropped precipitously. Balance assumes that, on the whole, lake levels receded continually, and gradually, as depicted in **Figure 2** by our interpolated water level.

Based on the data collected during WY2013 (partial), WY2014, and WY2015, Balance staff observed the following conditions at Lake Silveira. Note that results of the groundwater monitoring are summarized in **Section 4.3 Groundwater**, below.

- During WY2013, lake levels fluctuated very little, on the order of 1 foot, between about 304 and 305 ft. NAVD88. Summer flows emanating from Chesbro Reservoir ranged from approximately 7-9 cfs.
- WY2014 was exceptionally dry. Flows emanating from Chesbro reservoir reduced beginning in October 2013 to approximately 5-6 cfs, then again in January 2014 to approximately 2 cfs. A large storm on February 28, 2014 that produced approximately 3.4 inches of rain, generating modest flows at the downstream of Chesbro Reservoir gage. This storm triggered a 1.4 feet rise in water levels in Lake Silveira, which subsided quickly after the storm. After the late February storm, water levels slowly began to decline.
- Baseflows emanating from Chesbro Reservoir did not return to summer 2013 levels during spring and summer 2014. Chesbro Reservoir was nearly empty, and by September 20, 2014, flows emanating from Chesbro Reservoir were 1.3 cfs. Between September 20 and November 30, 2014, little to no water emanated from Chesbro Reservoir. A series of storms starting on November 28, 2014 presumably allowed reservoir managers to begin releasing a moderate amount of water from Chesbro reservoir.
- As a result of the reduced inflow from Chesbro and very limited rainfall during WY2014, lake levels fell approximately 4.5 ft., to 299.6 ft. NAVD88 on November 22, 2014. The lake level recorder reports no lake level recession between November 22, 2014 and December 2, 2014. Because groundwater levels in the adjacent aquifer continued to decline, the lack of receding water levels measured in the lake may be due to localized issues within the central portions of the lake that allowed water to perch at the recorder, while lake levels continued to decline.
- Regionally, an intense period of rainfall began November 28, 2014 and continued through December 2014. Water levels quickly rebounded following heavy rainfall on December 11 and 12, 2014 to 311.65 ft. NAVD88, then receded to 308.8 ft. NAVD after about two weeks, on December 26, 2014. Field observations indicate that this new base lake level is likely caused by debris clogging the outlet channel at the downstream end of the lake.

- An additional series of storms during February 6-8, 2015 produced a spike in lake level similar to the December 2014 storms.
- During spring and summer 2015, water had been consistently released from Chesbro reservoir. Releases appeared to range from approximately 2 to 6 cfs. Balance staff have observed water entering the lake from Llagas Creek during winter, and summer WY2014 site visits. Lake water levels remained consistent, and appear to be increasing gradually through the year. Our field observations during July 2015 suggest the gradually increasing lake levels resulted from recruitment of debris and vegetation growth at the lake outlet.
- Between Storms of December 2014 and the July 21 site visit, some noise is observed in the Lake Level signal that does not appear to be associated with inflows to the lake. On the July 21, 2015 visit, we noted that the delta at the lake inlet had significantly prograded, and deposited 2-3 feet of gravel and sand at the lake gage location. Close inspection of the gage, and associated temperature data suggest that the noise in the signal, characterized as sporadic, 0.01 to 0.1 foot drops in apparent water surface, may be associated with the stilling well containing the sensor being partially buried in new delta material that was likely deposited during the December 2014 storms.
- Coinciding approximately with our July 21, 2015 site visit, Balance staff observed a slow lowering of the water levels in Lake Silveira of approximately 0.35 foot, down to 308.6 feet NAVD.

4.3 Groundwater

Continuous automated records at monitoring well MW-LS-2 and well 13-01 began on October 16, 2014. A summary of our observations are listed below:

- During our October 16, 2014 site visit, Balance staff observed monitoring well MW-LS-2 was dry and groundwater levels were deeper than the casing. Balance's recorder did not measure water levels until December 4, 2014 in response to rainfall. In well 13-01, Balance staff observed water levels at 289.74 ft. NAVD on October 16, 2014. Water levels in 13-01 fell to a maximum low point of 283.67 ft. NAVD on November 28, 2014, when rainfall commenced in earnest for the season.
- Well 13-01 responded to the 2.68 in of rainfall measured at Morgan Hill between November 28 and December 2, 2014, with a water level increase of approximately 8.5 feet. Well MW-LS-2 shows a similar response, but since the well

was not deep enough to measure water levels during the seasonal low point, a precise comparison is not possible.

- Antecedent wetting required to begin filling the shallow aquifer is minimal. During the exceptional drought during WY14, only 3.5 inches were required to begin filling the shallow aquifer, which was achieved by December 2, 2014.
- Well 13-01 responded to 2.39 in of rainfall measured at Morgan Hill between December 11 and December 13 with a water level increase of approximately 12.2 feet. Well MW-LS-2 shows a more muted response, where water levels rose 6 ft. to 306.24. Interestingly, water levels in MW-LS-2 appear to respond more slowly than at well 13-01, and don't show the peaked-ness observed in 13-01 or the surface water hydrograph. We suspect MW-LS-2 responds more slowly because it is further from lake Silveira and wetted portions of Llagas Creek. Well logs suggest MW-LS-2 penetrates similar clayey gravels at depth, however differences in geologic material between Lake Silveira and Llagas Creek and the monitoring wells may also result in the slower response times to rainfall observed in MW-LS-2.
- Whereas water levels drop in 13-01 between storms on December 11 and 15, 2014, water levels in MW-LS-2 slowly continue to rise and plateau.
- Between storms during mid-December 2014 and February 7, 2015, water levels receded, well MW-LS-2 more slowly than well 13-01. The February 7 and 8, 2015 storms produced approximately 3 feet of water level rise, which receded to relatively consistent base water levels for the remainder of the spring and summer, 2015, at 304.8 and 302.3 ft. NAVD at MW-LS-2 and 13-01, respectively.
- Similar to what was observed in Lake Silveira, Balance staff observed a gradual decline in water levels at monitoring wells MW-LS-2 and 13-01 following our July 21, 2015 site visit of 0.5 foot and 0.4 foot, respectively.

4.4 Water Quality

4.4.1 Surface Water

SCVWD collected water-quality samples from the Lake Silveira, as well as Llagas Creek upstream and downstream of the lake on August 10, and September 17, 2015, in order to create a record of baseline water-quality conditions, with respect to the Basin Plan objectives (RWQCB, SWRCB, EPA, 2011). The results are presented in **Table 2**.

Notably, none of the tested constituents exceeded the standards for public water supply ("MCLs). Balance staff note that the sulfates, chlorides, and Total Dissolved Solids

(TDS) all exceed the Basin Plan objectives, on both sample dates, and all sample locations. Boron was at or slightly above the Basin Plan objective, and sodium was detected at levels below the Basin Plan objectives. Basin plan objectives are not water-quality standards; rather, they are the concentrations or conditions that the RWQCB would like to see, given general local conditions. They are best considered as targets to be achieved through a suite of successful management practices.

Significant change in the concentration of any of the 5 key constituents listed in the Basin Plan objectives between the station upstream were not observed, in, and downstream of Lake Silveira.

4.4.2 Groundwater

SCVWD collected water-quality samples from the two monitoring wells adjacent to Lake Silveira on October 16, 2014, in order to create a record of baseline water-quality conditions. SCVWD selected a suite of water quality parameters of potential concern. The results are presented in **Table 3**.

Neither well contained PCBs or organic pesticides above the detection limits for each of the types samples (See **Appendix A**). None of the measured constituents regulated by the State of California exceed the listed maximum contaminant level (MCL). We observed relatively high amounts of Nickel and Chromium. The presence of Nickel and Chromium is likely natural; in our experience these constituents can be indicative of Franciscan Formation rocks in the watershed.

5. DISCUSSION

This section reports key findings relating to the planned LSHR project, based on our observations of the recent measurements made at Lake Silveira.

Notably, in 2014, water levels in Lake Silveira dropped significantly, largely due to dwindling releases from Chesbro Reservoir. The data preliminarily suggest that prolonged periods with releases of less than 2 cfs from Chesbro Reservoir impact water levels in Lake Silveira. Our observations of lake level on Chesbro Reservoir releases during spring 2014 support the established notion that Lake Silveira is largely maintained by the consistent releases from Chesbro Reservoir, but that during times of limited release, wet season rainfall below the reservoir contributes to maintaining Lake levels.

Balance staff observe that the local hydraulic gradient is away from Lake Silveira and Llagas Creek during dry conditions. The data suggest that, even after a large rain event, the hydraulic gradient slopes away from Lake Silveira and Llagas Creek, however more continuous monitoring, particular during a very wet year, may indicate when, and how much that gradient can reverse in the vicinity of Lake Silveira.

SCVWDs baseline water quality samples suggest that the Basin Plan objectives may be too low (with the exception of sodium), and the impacts of the proposed project should be based on these baseline measurements.

The ULCFFP design team expects to encounter groundwater during the construction of the LSHR and Reach 7a. Groundwater quality results suggest that groundwater encountered during construction may be suitable for discharge back into Llagas Creek. The high degree of connectivity between Llagas Creek and the adjacent aquifer supports the notion that water quality in Llagas Creek and the adjacent aquifer should be similar under most conditions. Samples collected on October 16, 2014 were taken during extreme drought conditions. A horizontal hydraulic gradient away from Llagas Creek and Lake Silveira was observed. During wet conditions, a horizontal gradient toward Llagas Creek and Lake Silveira from the surrounding aquifer could drive undetected contaminants from potential undefined surrounding sources toward Llagas Creek. If construction activity is likely to expand past one construction season, this may be of concern to the SCVWD. Balance suggests collecting another water quality sample from monitoring well 13-01 during winter conditions, when the gradient is driving groundwater toward Llagas Creek and Lake Silveira.

6. RECOMMENDATIONS

Balance suggests continuing the hydrologic monitoring into WY2016. El Nino climatic patterns during October, November and December 2015 suggest a potential for a wetter-than-normal water year, which potentially presents SCVWD with a unique opportunity to investigate how the Llagas Creek, Lake Silveira, and the adjacent aquifer respond to a wetter-than-normal year following the historic drought conditions the system has experienced over the past four years.

7. LIMITATIONS

This report was prepared in general accordance with the accepted standard of practice existing in Northern California at the time the investigation was performed. No other warranties, expressed or implied, are made.

Balance Hydrologics has prepared this report for the client's exclusive use on this particular project. The report is based in large part on work performed by experts and contractors in related fields, and both older records and recent observations provided by SCVWD staff. Balance has not independently verified the validity, accuracy or representativeness to this or other sites.

If readers are aware of additional data, observations, conditions, or forthcoming changes to the bases of our analyses, please let us know at the first opportunity, such that this report may be appropriately revised.

8. REFERENCES

Clark, W.G., 1924, Ground water in Santa Clara Valley, California: U. S. Geological Survey Water-Supply Paper 519, 204 p.

Donaldson, E., Hecht, B., 2014, Geomorphic and hydrologic monitoring plan, Upper Llagas Creek Flood Protection Project. Technical memorandum prepared for H.T. Harvey and Associates. 14p.

Donaldson, E., Hecht, B., and Chartrand, S, 2013, Design Basis Report, Silveira Wetland habitat enhancement restoration. Balance Hydrologics consulting report prepared for RMC Water and Environment on behalf of the Santa Clara Valley Water District. 37 p.

Grossinger, R.M., Beller, M.N., Whipple, A.A., Askevold, R.A., Striplen, C.J., Brewster, E., and Leidy, R.A., 2008, South Santa Clara Valley historical ecology report, including Soap Lake, the upper Pajaro River, and Llagas, Uvas-Carnadero, and Pacheco Creeks: SFEI Publication #558, 276 p.

Hecht, B., Strudley, M., and Senter, A., 2012, Hydraulic geometry design basis for the Llagas Creek inset channel: Informal field trip compendium prepared for prepared for the Santa Clara Valley Water District, February 2012.

Helley, E.J., Graymer, R.W., Phelps, G.A., Showalter, P.K., and Wentworth, C.M., 1994, Preliminary Quaternary geologic maps of Santa Clara Valley, Santa Clara, Alameda, and San Mateo counties, California: A digital database: U.S. Geological Survey Open-File Report 94-231.

Nahn, C.E. and Saah, A.D., 1989, Mean annual precipitation map San Francisco and Monterey Bay Region 1989. Santa Clara Valley Water District.

Saiz, S. G., 2011. Water-quality control plan for the Central Coastal Basin. Prepared by Regional Water Quality Control Board, Central Coast Region, State Water Resources Control Board and California Environmental Protection Agency. 223 p.

Woyshner, M., Porras, G., Hecht, B., and Donaldson, E. 2013. Field assessment of hydrogeologic conditions near Lake Silveira and identification of potential effects of proposed Reach 7a of the Upper Llagas Creek Flood Protection Program. Client Review Draft prepared for the Santa Clara Valley Water District. 65 p +tables, figures and appendices.

TABLES

Table 1a. Surface water monitoring observations, water year 2013 (partial), 2014, and 2015, Lake Silveira and environs, Santa Clara County, California

Site Conditions			Water Level		Water Quality Observations					Datalogger		Remarks
Time Zone	Date/Time	Observer(s)	Gage Height (old staff on w. shore)	WSE	Water Temperature	Specific Conductance at field temp.	Specific Conductance at 25C	Samples		Datalogger Downloaded?		
(PST/PDT)	(mm/dd/yr hr:mn)	(see notes)	(feet)	(ft NAVD)	(° C)	(µmhos/cm)	(at 25 ° C)	(see notes)		(Y/N)		
Lake Silveira												
Offset to NAVD (ft. NAVD88) = 300.690												
New staff plate installed 10/16/14, to convert new staff readings to old staff plate subtract 0.13												
			ft	*ft NAVD*								
PDT	3/28/13 8:30	ed			#						#	
PDT	4/16/13 14:00	CLS		304.24	#							WATER LEVEL 44649
PDT	4/16/13 14:00	CLS		304.16	#							WATER LEVEL 44654
PDT	4/19/13 9:00	CLS		304.19	#							WATER LEVEL 44874
PDT	5/17/13 15:17	as			#					yes		
PDT	5/17/13 16:00	as			#					yes		
PDT	8/13/13 13:00	ed			#					yes		
PDT	9/9/13 13:53	gp			#							
PDT	9/12/13 13:45	gp									#	
PDT	9/16/13 16:15	gp			#					yes	#	

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Table 1a. Surface water monitoring observations, water year 2013 (partial), 2014, and 2015, Lake Silveira and environs, Santa Clara County, California

Site Conditions			Water Level		Water Quality Observations				Datalogger	Remarks
Time Zone (PST/PDT)	Date/Time (mm/dd/yr hr:mn)	Observer(s) (see notes)	Gage Height (old staff on w. shore) (feet)	WSE (ft NAVD)	Water Temperature (° C)	Specific Conductance at field temp. (µmhos/cm)	Specific Conductance at 25C (at 25 ° C)	Samples (see notes)	Datalogger Downloaded? (Y/N)	
Lake Silveira - WY2015										
PDT	10/16/14 0:00									DRY, New staff installed
PDT	10/16/14 10:18	ed							yes	Water level is well below staff plate. Unable to download Levelogger F30 BSN 2156, SN 14036714. Replaced with
PDT	10/16/14 15:55	ed	0.75	301.44						See below
PDT	10/16/14 16:00	ed	0.75	301.44						GH on new staff (middle of lake) 0.88 feet or 0.75 in terms of the new staff
PDT	10/21/15 8:54	mm	0.67	301.36						Estimate of WSE based on field photos, considered an estimate +/- 0.03 ft
PST	12/18/14 12:05	gp	8.86	309.55	14.1	313	397	...		Could not find location of new staff plate and levelogger
PST	12/18/14 14:10	gp	8.80	309.49	...	...	...	...	yes	Installed Levelogger BSN 2159, SN 101044511. Estimate of lake inflow is 5.5 cfs; estimate of lake outflow is 10 cfs.
PDT	7/21/15 11:30	df,ed	8.29	308.98	20.3	348	383	…	yes	Located new lake logger. Downloaded both leveloggers; depth to bottom of staff plate in middle of lake is approx. 5 feet; middle of lake staff plate is at an approx. 5-8 degree angle slant; shortened string attached to levelogger after download; installed a 1.5 ft stick to top of staff plate to make more visible.
PDT	9/30/15 12:36	cn,ed	7.95	308.64	20.9	342	371	…	yes	Downloaded both level loggers; old staff was 7.95 at 12:36, logger in the middle of the lake was not encased in sediment. Flow input from Llagas was 2.28 cfs

Notes:
1) ed is Eric Donaldson, gp is Gustavo Porras, bh is Barry Hecht, df is Dan Freitas, mm is Melissa Moore, bhd = Ben Hwang (District), pk = Patrick Kallas, ag = Ashton Greer, CLS = Crosslands surveys
2) NR is not recorded
3) NA or "-" is not applicable
4) Abbreviations: SCT = specific conductance and temperature; DL = datalogger; PT = pressure transducer; HWM = high water mark, GH = gage height

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Table 1b. Groundwater monitoring observations, water year 2013 (partial), 2014, and 2015, Lake Silveira and environs, Santa Clara County, California

Site Conditions			Water Level		Water Quality Observations				Datalogger	Remarks
Time Zone (PST/PDT)	Date/Time (mm/dd/yr hr:mn)	Observer(s) (see notes)	Depth to Water from RP (feet)	Groundwater Elevation (ft NAVD)	Water Temperature (°C)	Specific Conductance at field temp. (µmhos/cm)	Specific Conductance at 25C (at 25 °C)	Samples (see notes)	Datalogger Downloaded? (Y/N)	
Well 13-01										
RP elevation (ft. NAVD88) =			308.78							
Ground surface elevation (ft. NAVD88) =			308.78							
Depth of well from ground surface (feet) =			42.17							
Depth to Levelogger from RP (feet) =			40.00							
PDT	10/16/14 14:06	ed	19.04	289.74	...	...	...	...	...	Installed Levelogger F30(?) SN 2030155
PST	12/18/14 16:12	gp	4.93	303.85	16.9	497	589	...	yes	SCT at bottom of well
PST	12/18/14 16:12	gp	...		17.8	452	523	...	yes	SCT at top of water column; Levelogger not relaunched
PDT	7/21/15 14:41	df, ed	6.72	302.06	22.0	406	431	…	yes	SCT at top of water column, DTW was estimate
PDT	8/21/15 10:31	pk. BHD	6.25	302.53	23.0	408	423		...	SCT at top of water column
PDT	9/17/15 0:00	BHD	6.50	302.28					...	
PDT	9/30/15 15:00	cn,ed	6.85	301.93	20.1	391	431	…	yes	SCT 10ft belwo WSE, DTW was estimate
Well MW-LS-01										
Reference point elevation (ft. NAVD88) =			309.89							
Stickup, recessed (feet) =			-0.30							
Ground surface elevation (ft. NAVD88) =			310.19							
Depth of well from ground surface (feet) =			18.10							
Depth of well from RP (feet) =			17.80							
PDT	10/16/14 13:10	ed	17.80	292.09					...	Well is dry.
PST	12/18/14 16:38	gp	6.46	303.43	18.7	647	736	...	...	SCT at bottom of well
PST	12/18/14 16:38	gp	...		11.9	530	611	...	...	SCT at top of water column; Christie box full of water with SCT 322 µmhos/cm @13.1°C; 416 µmhos/cm @25°C
PDT	7/21/15 14:20	df, ed	8.60	301.29	23.0	425	446	…	…	Ponded water in well casing, SCT 901 µmhos/cm @ 31.5oC, 801 µmhos/cm @ 25oC, DTW was estimate
	8/21/15 10:15	PK, BHD	6.90	302.99	21.6	402	430	…	…	Ponded water in well casing, SCT 878 µmhos/cm @ 29oC, 817 µmhos/cm @ 25oC
	9/17/15 0:00	BHD	8.50	301.39				…	…	No notes received
PDT	9/90/15 14:47	cn,ed	8.80	301.09	21.2	430	463	…	…	DTW was estimate

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Table 1b. Groundwater monitoring observations, water year 2013 (partial), 2014, and 2015, Lake Silveira and environs, Santa Clara County, California

Site Conditions			Water Level		Water Quality Observations				Datalogger	Remarks
Time Zone	Date/Time	Observer(s)	Depth to Water from RP	Groundwater Elevation	Water Temperature	Specific Conductance at field temp.	Specific Conductance at 25C	Samples	Datalogger Downloaded?	
(PST/PDT)	(mm/dd/yr hr:mn)	(see notes)	(feet)	(ft NAVD)	(° C)	(µmhos/cm)	(at 25 ° C)	(see notes)	(Y/N)	
Well MW-LS-02										
Reference point elevation (ft. NAVD88) =			315.83							
Stickup, recessed (feet) =			-0.40							
Ground surface elevation (ft amsl) =			316.23							
Depth of well from ground surface (feet) =			18.70							
Depth of to Levelogger from RP (feet) =										
Depth of well from RP (feet) =			18.30							
PDT	10/16/14 11:19	ed	...						…	Well is dry. Fine clayey mud at 17.6 ft. from RP (Elev. 298.23 ft). Installed Levelogger SN 2018142.
PST	12/18/14 15:47	gp	8.71	307.12	17.8	688	797	...	…	SCT at bottom of well
PST	12/18/14 15:47	gp	...		18.4	668	765	...	yes	SCT at top of water column; Levelogger not relaunched.
PDT	7/21/15 13:09	df, ed	11.00	304.83	18.4	371	427	…	yes	SCT at top of water column, DTW was estimate
	8/10/15 13:40	PK,BHD,AG	11.30	304.53	17.9	365	422		…	SCT at top of water column
	9/17/15 12:15	BHD							…	No notes received
PDT	9/30/15 14:11	cn, ed	11.40	304.43	17.9	389	451	…	yes	SCT in middle of water column, DTW was estimate
Well 13-02A										
Reference point elevation (ft. NAVD88) =			309.39							
Ground surface elevation (ft. NAVD88) =			309.39							
Depth of well from ground surface (feet) =			34.42							
PDT	10/16/14 13:12	ed	15.08	294.31	...	...	...	...	...	
PST	12/18/14 16:55	gp	12.10	297.29	16.7	599	702	...	...	SCT at bottom of well
PST	12/18/14 16:55	gp	...		18.3	474	543	...	...	SCT at top of water column.
PDT	7/21/15 14:09	df, ed	6.60	302.79	24.8	575	576	…	...	SCT at top of water column. DTW was estimate
PDT	9/30/1515:15	cn,ed	6.70	302.69	21.7	542	584	…	…	SCT 0.5-1 ft below WSE, DTW was estimate

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Table 1b. Groundwater monitoring observations, water year 2013 (partial), 2014, and 2015, Lake Silveira and environs, Santa Clara County, California

Site Conditions			Water Level		Water Quality Observations				Datalogger	Remarks
Time Zone	Date/Time	Observer(s)	Depth to Water from RP	Groundwater Elevation	Water Temperature	Specific Conductance at field temp.	Specific Conductance at 25C	Samples	Datalogger Downloaded?	
(PST/PDT)	(mm/dd/yr hr:mn)	(see notes)	(feet)	(ft NAVD)	(° C)	(µmhos/cm)	(at 25 ° C)	(see notes)	(Y/N)	
Well 13-02B										
Reference point elevation (ft. NGVD88) =			309.27							
Ground surface elevation (ft. NGVD88) =			309.27							
Depth of well from ground surface (feet) =			17.72							
PDT	10/16/14 13:11	ed	17.72	291.55					...	
PST	12/18/14 16:52	gp	4.96	304.31	18.6	623	711	...	...	SCT at bottom of well
PST	12/18/14 16:52	gp	...		16.1	539	654	...	...	SCT at top of water column.
PDT	7/21/15 14:12	df ,ed	6.65	302.62	23.4	467	484	…	...	SCT at top of water column., DTW was estimate
	8/21/15 10:40	pk, bhd	6.40	302.87	23.0	475	493		...	SCT at top of water column.
PDT	9/30/15 15:00	cn,ed	6.70	302.57	21.8	460	490	…	...	SCT in middle of water column, DTW was estimate

Notes:

1) ed is Eric Donaldson, gp is Gustavo Porras, bh is Barry Hecht, df is Dan Freitas, mm is Melissa Moore, bhd = Ben Hwang (District), pk = Patrick Kallas, ag = Ashton Greer, CLS = Crosslands surveys

2) NR is not recorded

3) NA or "-" is not applicable

4) Abbreviations: SCT = specific conductance and temperature; DL = datalogger; PT = pressure transducer; HWM = high water mark, GH = gage height

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Table 2. Surface water quality data collected by SCVWD at Lake Silveira and environs, Water Year 2015

Date and Sampling Location	*Sample Conditions* Flow at SCVWD Downstream of Chesbro Gage	Constituent Sulfate	Chloride	Sodium	Boron	Total Dissolved Solids
	(cfs)	*(mg/L)*	*(mg/L)*	*(mg/L)*	*(mg/L)*	*(mg/L)*
Detection Limit for Reporting		*10.00*	*1.00*	*0.50*	*0.05*	*10.00*
Maximum Contaminant Levels, California (MCL)		*250/ 500*	*250/ 500*	*n/a*	*n/a*	*500/ 1000*
2011 Basin Objectives		*20*	*10*	*20*	*0.20*	*200*
August 10, 2015						
Lake Inlet Channel		20.0	14.0	11.0	0.20	240.0
Lake	5.1	20.0	15.0	12.0	0.20	250.0
Lake Outlet Channel		20.0	15.0	12.0	0.21	240.0
September 17, 2015						
Lake Inlet Channel		27.0	14.0	11.0	0.23	290.0
Lake	4.5	23.0	14.0	11.0	0.21	270.0
Lake Outlet Channel		23.0	14.0	11.0	0.22	270.0
Averages: WY 2015						
Lake Inlet Channel		23.5	14.0	11.0	0.22	265.0
Lake		21.5	14.5	11.5	0.21	260.0
Lake Outlet Channel		21.5	14.5	11.5	0.22	255.0

Notes:

All laboratory analyses performed by Test America wiith chain-of-custody was established by SCVWD

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Table 3. Groundwater quality data collected by SCVWD near Lake Silveira, Water Year 2015

Sample Conditions Sampling Location / Date	Flow at SCVWD Downstream of Chesbro Gage	Sulfate	Chloride	Sodium	Boron	Total Dissolved Solids	Turbidity	pH	Specific Conductance	PCBs	Organochlorine Pesticides	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nitrate as NO3	Nitrite	Nickel	Selenium	Silver	Thalium	Vanadium	Zinc
	(cfs)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	NTU	SU	(µmhos/cm)	(mg/L)	(µg/L) [1]	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Detection Limit for Reporting		*10.00*	*1.00*	*0.50*	*0.05*	*10.00*	*0.10*	*0.10*	*10.00*	*0.48*	*varies* [1]	*0.01*	0.01	0.005	0.002	0.0025	0.01	0.002	0.02	0.005	0.0002	0.01	1	1	0.01	0.02	0.005	0.01	0.01	0.02
Maximum Contaminant Levels, California (MCL)		*250/ 500*	*250/ 500*	*n/a*	*n/a*	*500/ 1000*	*n/a*	*6.5 - 8.5*	*900/1600*	*0.0005*	*varies*	*0.006*	*0.01*	*1*	*0.004*	*0.005*	*0.05*	*n/a*	*1.3*	*0.015*	*0.002*	*n/a*	*45*	*0.1*	*0.1*	*0.05*	*n/a*	*0.002*	*n/a*	*5*
2011 Basin Objectives		*20*	*20*	*20*	*0.20*	*300*																								
October 16, 2014																														
Well 13-01	0.07		16			290.0	53.0	7.5	500.0	ND	ND	ND	ND	0.16	ND	ND	0.043	0.007	0.027	ND	ND	ND	ND	ND	0.060	ND	ND	ND	0.051	0.036
Well 13-02A	0.07		18			*280.0*	*8.2*	7.6	500.0	ND	ND	ND	ND	0.046	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

[1] Detection limits vary, see lab results in Appendix A

All laboratory analyses performed by Test America, with chain-of-custody was established by SCVWD

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FIGURES



Figure 1. Location of installed wells, piezometers, and lake water level recorders with staff plates, Lake Silveira, Santa Clara County, California.

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214162 Fig. 1.xlsx, Figure 1

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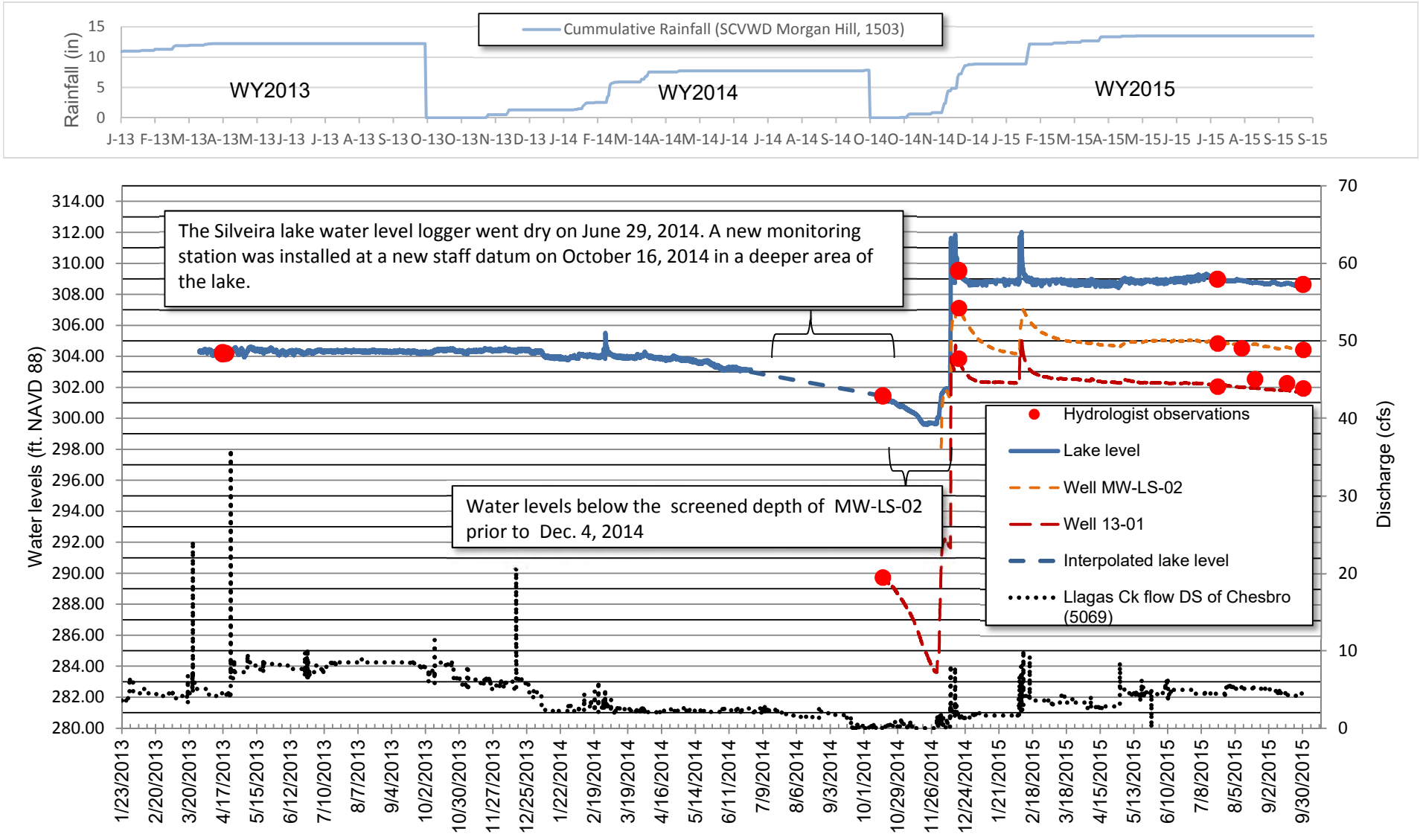


Figure 2. Lake Silveira water levels and water levels in the adjacent aquifer, Partial WY2013, WY2014, and WY2015. Lake Silveira Hydrologic Monitoring, Santa Clara County, California. Mean annual precipitation (MAP) for the Morgan Hill station is 21.68 inches (Saah and Nahn, 1989).

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APPENDICES

APPENDIX A

Water Quality Lab Reports October 2014 through September 2015

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-60632-1
Client Project/Site: Upper Llagas Creek Flood Protection

For:
Santa Clara Valley Water Dist
PO BOX 20670
San Jose, California 95160-0670

Attn: Melissa Moore

Authorized for release by:
10/30/2014 3:42:10 PM

Micah Smith, Project Manager II
(925)484-1919
micah.smith@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 720-60632-1

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative
720-60632-1

Comments
No additional comments.

Receipt
The samples were received on 10/16/2014 5:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0º C.

Except:

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. LKE 132-A @ 1:27 and LK2 1301 @ 12:47 poly 500ml container COC does not have turbidity box checked off on the COC, the sample labels have pH and Turbidity written on them. Samples were logged in for turbidity.

GC Semi VOA
Method(s) 8081A: The following analyte recovered outside control limits for the LCS associated with prep batch 248798 and analytical batch 249091: Endosulfan sulfate. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported. The associated samples are ND for Endosulfan sulfate.

Method(s) 8082: The following sample required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: (LCS 720-169274/2-A), (LCSD 720-169274/3-A), (MB 720-169274/1-A), LKE 13-2A (720-60632-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method(s) 3510C, 8081A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 248798

Method(s) 3510C: MS/MSD was not performed due to insufficient sample provided. In the absence of MS/MSD, LCSD was created with the batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client Sample ID: LKE 132-A — Lab Sample ID: 720-60632-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	500		10		umhos/cm	1		120.1	Total/NA
Turbidity	8.2		0.10		NTU	1		SM 2130B	Total/NA
Analyte	**Result**	**Qualifier**	**RL**	**RL**	**Unit**	**Dil Fac**	**D**	**Method**	**Prep Type**
pH	7.55		0.100		SU	1		9040B	Total/NA

Client Sample ID: LKE 1301 — Lab Sample ID: 720-60632-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	500		10		umhos/cm	1		120.1	Total/NA
Turbidity	53		0.10		NTU	1		SM 2130B	Total/NA
Analyte	**Result**	**Qualifier**	**RL**	**RL**	**Unit**	**Dil Fac**	**D**	**Method**	**Prep Type**
pH	7.46		0.100		SU	1		9040B	Total/NA

Client Sample ID: LKE 13-2A — Lab Sample ID: 720-60632-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	280		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: LKE 13-2A — Lab Sample ID: 720-60632-4

No Detections.

Client Sample ID: LKE 1301 — Lab Sample ID: 720-60632-5

No Detections.

Client Sample ID: LKE 1301 — Lab Sample ID: 720-60632-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	290		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: LKE 1301 — Lab Sample ID: 720-60632-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.16		0.0050		mg/L	1		6010B	Total/NA
Chromium	0.043		0.010		mg/L	1		6010B	Total/NA
Cobalt	0.0069		0.0020		mg/L	1		6010B	Total/NA
Copper	0.027		0.020		mg/L	1		6010B	Total/NA
Nickel	0.060		0.010		mg/L	1		6010B	Total/NA
Vanadium	0.051		0.010		mg/L	1		6010B	Total/NA
Zinc	0.036		0.020		mg/L	1		6010B	Total/NA

Client Sample ID: LKE 13-2A — Lab Sample ID: 720-60632-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18		1.0		mg/L	1		300.0	Total/NA

Client Sample ID: LKE 1301 — Lab Sample ID: 720-60632-9

No Detections.

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Client Sample ID: LKE 1301 — Lab Sample ID: 720-60632-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	16		1.0		mg/L	1		300.0	Total/NA

Client Sample ID: LKE 13-2A — Lab Sample ID: 720-60632-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.046		0.0050		mg/L	1		6010B	Total/NA

Client Sample ID: LKE 13-2A — Lab Sample ID: 720-60632-12

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Client Sample ID: LKE 132-A
Date Collected: 10/16/14 13:27
Date Received: 10/16/14 17:00

Lab Sample ID: 720-60632-1
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	500		10		umhos/cm			10/24/14 09:10	1
Turbidity	8.2		0.10		NTU			10/17/14 18:03	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.55		0.100		SU			10/16/14 21:14	1

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Client Sample ID: LKE 1301
Date Collected: 10/16/14 12:47
Date Received: 10/16/14 17:00

Lab Sample ID: 720-60632-2
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	500		10		umhos/cm			10/24/14 09:11	1
Turbidity	53		0.10		NTU			10/17/14 18:03	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.46		0.100		SU			10/16/14 21:25	1

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Client Sample ID: LKE 13-2A
Date Collected: 10/16/14 13:24
Date Received: 10/16/14 17:00

Lab Sample ID: 720-60632-3
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	280		10		mg/L			10/22/14 08:39	1

Client Sample ID: LKE 13-2A
Date Collected: 10/16/14 13:30
Date Received: 10/16/14 17:00

Lab Sample ID: 720-60632-4
Matrix: Water

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.48		ug/L		10/21/14 10:05	10/21/14 22:44	1
PCB-1221	ND		0.48		ug/L		10/21/14 10:05	10/21/14 22:44	1
PCB-1232	ND		0.48		ug/L		10/21/14 10:05	10/21/14 22:44	1
PCB-1242	ND		0.48		ug/L		10/21/14 10:05	10/21/14 22:44	1
PCB-1248	ND		0.48		ug/L		10/21/14 10:05	10/21/14 22:44	1
PCB-1254	ND		0.48		ug/L		10/21/14 10:05	10/21/14 22:44	1
PCB-1260	ND		0.48		ug/L		10/21/14 10:05	10/21/14 22:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*39*		*19 - 98*	*10/21/14 10:05*	*10/21/14 22:44*	*1*
DCB Decachlorobiphenyl	*52*		*10 - 122*	*10/21/14 10:05*	*10/21/14 22:44*	*1*

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Client Sample ID: LKE 1301
Date Collected: 10/16/14 12:51
Date Received: 10/16/14 17:00

Lab Sample ID: 720-60632-5
Matrix: Water

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
4,4'-DDE	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
4,4'-DDT	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
Aldrin	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
alpha-BHC	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
alpha-Chlordane	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
beta-BHC	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
Chlordane (technical)	ND		0.49		ug/L		10/20/14 20:24	10/22/14 17:30	1
Chlorpyrifos	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
delta-BHC	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
Dieldrin	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
Endosulfan I	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
Endosulfan II	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
Endosulfan sulfate	ND	*	0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
Endrin	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
Endrin aldehyde	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
Endrin ketone	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
gamma-BHC (Lindane)	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
gamma-Chlordane	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
Heptachlor	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
Heptachlor epoxide	ND		0.049		ug/L		10/20/14 20:24	10/22/14 17:30	1
Methoxychlor	ND		0.097		ug/L		10/20/14 20:24	10/22/14 17:30	1
Toxaphene	ND		1.9		ug/L		10/20/14 20:24	10/22/14 17:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*35*		*34 - 122*	*10/20/14 20:24*	*10/22/14 17:30*	*1*
Tetrachloro-m-xylene	*66*		*28 - 115*	*10/20/14 20:24*	*10/22/14 17:30*	*1*

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Client Sample ID: LKE 1301
Date Collected: 10/16/14 12:45
Date Received: 10/16/14 17:00

Lab Sample ID: 720-60632-6
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	290		10		mg/L			10/22/14 08:39	1

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Client Sample ID: LKE 1301
Date Collected: 10/16/14 12:56
Date Received: 10/16/14 17:00

Lab Sample ID: 720-60632-7
Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.010		mg/L		10/20/14 19:08	10/21/14 22:50	1
Arsenic	ND		0.010		mg/L		10/20/14 19:08	10/21/14 22:50	1
Barium	**0.16**		0.0050		mg/L		10/20/14 19:08	10/21/14 22:50	1
Beryllium	ND		0.0020		mg/L		10/20/14 19:08	10/21/14 22:50	1
Cadmium	ND		0.0025		mg/L		10/20/14 19:08	10/21/14 22:50	1
Chromium	**0.043**		0.010		mg/L		10/20/14 19:08	10/21/14 22:50	1
Cobalt	**0.0069**		0.0020		mg/L		10/20/14 19:08	10/21/14 22:50	1
Copper	**0.027**		0.020		mg/L		10/20/14 19:08	10/21/14 22:50	1
Lead	ND		0.0050		mg/L		10/20/14 19:08	10/21/14 22:50	1
Molybdenum	ND		0.010		mg/L		10/20/14 19:08	10/21/14 22:50	1
Nickel	**0.060**		0.010		mg/L		10/20/14 19:08	10/21/14 22:50	1
Selenium	ND		0.020		mg/L		10/20/14 19:08	10/21/14 22:50	1
Silver	ND		0.0050		mg/L		10/20/14 19:08	10/21/14 22:50	1
Thallium	ND		0.010		mg/L		10/20/14 19:08	10/21/14 22:50	1
Vanadium	**0.051**		0.010		mg/L		10/20/14 19:08	10/21/14 22:50	1
Zinc	**0.036**		0.020		mg/L		10/20/14 19:08	10/21/14 22:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/28/14 08:58	10/28/14 13:34	1

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Client Sample ID: LKE 13-2A
Date Collected: 10/16/14 13:20
Date Received: 10/16/14 17:00

Lab Sample ID: 720-60632-8
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as NO3	ND		1.0		mg/L			10/17/14 11:07	1
Chloride	**18**		1.0		mg/L			10/17/14 11:07	1
Nitrite as NO2	ND		1.0		mg/L			10/17/14 11:07	1

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Client Sample ID: LKE 1301
Date Collected: 10/16/14 12:54
Date Received: 10/16/14 17:00

Lab Sample ID: 720-60632-9
Matrix: Water

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.48		ug/L		10/21/14 10:05	10/21/14 21:54	1
PCB-1221	ND		0.48		ug/L		10/21/14 10:05	10/21/14 21:54	1
PCB-1232	ND		0.48		ug/L		10/21/14 10:05	10/21/14 21:54	1
PCB-1242	ND		0.48		ug/L		10/21/14 10:05	10/21/14 21:54	1
PCB-1248	ND		0.48		ug/L		10/21/14 10:05	10/21/14 21:54	1
PCB-1254	ND		0.48		ug/L		10/21/14 10:05	10/21/14 21:54	1
PCB-1260	ND		0.48		ug/L		10/21/14 10:05	10/21/14 21:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*57*		*19 - 98*	*10/21/14 10:05*	*10/21/14 21:54*	*1*
DCB Decachlorobiphenyl	*47*		*10 - 122*	*10/21/14 10:05*	*10/21/14 21:54*	*1*

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Client Sample ID: LKE 1301
Date Collected: 10/16/14 12:42
Date Received: 10/16/14 17:00

Lab Sample ID: 720-60632-10
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as NO3	ND		1.0		mg/L			10/17/14 11:24	1
Chloride	**16**		1.0		mg/L			10/17/14 11:24	1
Nitrite as NO2	ND		1.0		mg/L			10/17/14 11:24	1

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Client Sample ID: LKE 13-2A
Date Collected: 10/16/14 13:30
Date Received: 10/16/14 17:00

Lab Sample ID: 720-60632-11
Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.010		mg/L		10/20/14 19:08	10/21/14 22:55	1
Arsenic	ND		0.010		mg/L		10/20/14 19:08	10/21/14 22:55	1
Barium	**0.046**		0.0050		mg/L		10/20/14 19:08	10/21/14 22:55	1
Beryllium	ND		0.0020		mg/L		10/20/14 19:08	10/21/14 22:55	1
Cadmium	ND		0.0025		mg/L		10/20/14 19:08	10/21/14 22:55	1
Chromium	ND		0.010		mg/L		10/20/14 19:08	10/21/14 22:55	1
Cobalt	ND		0.0020		mg/L		10/20/14 19:08	10/21/14 22:55	1
Copper	ND		0.020		mg/L		10/20/14 19:08	10/21/14 22:55	1
Lead	ND		0.0050		mg/L		10/20/14 19:08	10/21/14 22:55	1
Molybdenum	ND		0.010		mg/L		10/20/14 19:08	10/21/14 22:55	1
Nickel	ND		0.010		mg/L		10/20/14 19:08	10/21/14 22:55	1
Selenium	ND		0.020		mg/L		10/20/14 19:08	10/21/14 22:55	1
Silver	ND		0.0050		mg/L		10/20/14 19:08	10/21/14 22:55	1
Thallium	ND		0.010		mg/L		10/20/14 19:08	10/21/14 22:55	1
Vanadium	ND		0.010		mg/L		10/20/14 19:08	10/21/14 22:55	1
Zinc	ND		0.020		mg/L		10/20/14 19:08	10/21/14 22:55	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/28/14 08:58	10/28/14 13:36	1

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Client Sample ID: LKE 13-2A
Date Collected: 10/16/14 13:29
Date Received: 10/16/14 17:00

Lab Sample ID: 720-60632-12
Matrix: Water

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
4,4'-DDE	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
4,4'-DDT	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
Aldrin	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
alpha-BHC	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
alpha-Chlordane	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
beta-BHC	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
Chlordane (technical)	ND		0.48		ug/L		10/20/14 20:24	10/22/14 17:47	1
Chlorpyrifos	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
delta-BHC	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
Dieldrin	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
Endosulfan I	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
Endosulfan II	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
Endosulfan sulfate	ND	*	0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
Endrin	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
Endrin aldehyde	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
Endrin ketone	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
gamma-BHC (Lindane)	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
gamma-Chlordane	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
Heptachlor	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
Heptachlor epoxide	ND		0.048		ug/L		10/20/14 20:24	10/22/14 17:47	1
Methoxychlor	ND		0.096		ug/L		10/20/14 20:24	10/22/14 17:47	1
Toxaphene	ND		1.9		ug/L		10/20/14 20:24	10/22/14 17:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*61*		*34 - 122*	*10/20/14 20:24*	*10/22/14 17:47*	*1*
Tetrachloro-m-xylene	*57*		*28 - 115*	*10/20/14 20:24*	*10/22/14 17:47*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 280-248798/1-A
Matrix: Water
Analysis Batch: 249091

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 248798

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
4,4'-DDE	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
4,4'-DDT	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
Aldrin	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
alpha-BHC	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
alpha-Chlordane	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
beta-BHC	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
Chlordane (technical)	ND		0.50		ug/L		10/20/14 20:24	10/22/14 16:38	1
Chlorpyrifos	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
delta-BHC	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
Dieldrin	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
Endosulfan I	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
Endosulfan II	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
Endosulfan sulfate	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
Endrin	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
Endrin aldehyde	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
Endrin ketone	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
gamma-BHC (Lindane)	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
gamma-Chlordane	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
Heptachlor	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
Heptachlor epoxide	ND		0.050		ug/L		10/20/14 20:24	10/22/14 16:38	1
Methoxychlor	ND		0.10		ug/L		10/20/14 20:24	10/22/14 16:38	1
Toxaphene	ND		2.0		ug/L		10/20/14 20:24	10/22/14 16:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*84*		*34 - 122*	*10/20/14 20:24*	*10/22/14 16:38*	*1*
Tetrachloro-m-xylene	*56*		*28 - 115*	*10/20/14 20:24*	*10/22/14 16:38*	*1*

Lab Sample ID: LCS 280-248798/2-A
Matrix: Water
Analysis Batch: 249091

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 248798

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	0.500	0.413		ug/L		83	78 - 138
4,4'-DDE	0.500	0.388		ug/L		78	74 - 124
4,4'-DDT	0.500	0.381		ug/L		76	72 - 139
Aldrin	0.500	0.332		ug/L		66	44 - 127
alpha-BHC	0.500	0.435		ug/L		87	73 - 133
alpha-Chlordane	0.500	0.388		ug/L		78	75 - 128
beta-BHC	0.500	0.361		ug/L		72	67 - 133
delta-BHC	0.500	0.433		ug/L		87	72 - 135
Dieldrin	0.500	0.401		ug/L		80	78 - 132
Endosulfan I	0.500	0.390		ug/L		78	73 - 128
Endosulfan II	0.500	0.388		ug/L		78	75 - 132
Endosulfan sulfate	0.500	0.381	*	ug/L		76	77 - 135
Endrin	0.500	0.389		ug/L		78	74 - 171
Endrin aldehyde	0.500	0.340		ug/L		68	59 - 136
Endrin ketone	0.500	0.388		ug/L		78	75 - 137

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 280-248798/2-A
Matrix: Water
Analysis Batch: 249091

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 248798

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
gamma-BHC (Lindane)	0.500	0.429		ug/L		86	71 - 132
gamma-Chlordane	0.500	0.377		ug/L		75	73 - 131
Heptachlor	0.500	0.353		ug/L		71	52 - 129
Heptachlor epoxide	0.500	0.403		ug/L		81	77 - 132
Methoxychlor	0.500	0.438		ug/L		88	67 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*83*		*34 - 122*
Tetrachloro-m-xylene	*55*		*28 - 115*

Lab Sample ID: LCSD 280-248798/3-A
Matrix: Water
Analysis Batch: 249091

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 248798

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4,4'-DDD	0.500	0.428		ug/L		86	78 - 138	4	50
4,4'-DDE	0.500	0.391		ug/L		78	74 - 124	1	50
4,4'-DDT	0.500	0.393		ug/L		79	72 - 139	3	25
Aldrin	0.500	0.281		ug/L		56	44 - 127	17	33
alpha-BHC	0.500	0.452		ug/L		90	73 - 133	4	50
alpha-Chlordane	0.500	0.392		ug/L		78	75 - 128	1	50
beta-BHC	0.500	0.377		ug/L		75	67 - 133	4	50
delta-BHC	0.500	0.451		ug/L		90	72 - 135	4	50
Dieldrin	0.500	0.413		ug/L		83	78 - 132	3	22
Endosulfan I	0.500	0.403		ug/L		81	73 - 128	3	50
Endosulfan II	0.500	0.404		ug/L		81	75 - 132	4	50
Endosulfan sulfate	0.500	0.392		ug/L		78	77 - 135	3	50
Endrin	0.500	0.404		ug/L		81	74 - 171	4	39
Endrin aldehyde	0.500	0.358		ug/L		72	59 - 136	5	50
Endrin ketone	0.500	0.398		ug/L		80	75 - 137	2	50
gamma-BHC (Lindane)	0.500	0.448		ug/L		90	71 - 132	4	26
gamma-Chlordane	0.500	0.377		ug/L		75	73 - 131	0	50
Heptachlor	0.500	0.316		ug/L		63	52 - 129	11	27
Heptachlor epoxide	0.500	0.416		ug/L		83	77 - 132	3	50
Methoxychlor	0.500	0.445		ug/L		89	67 - 150	1	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*84*		*34 - 122*
Tetrachloro-m-xylene	*54*		*28 - 115*

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 720-169274/1-A
Matrix: Water
Analysis Batch: 169250

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 169274

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.50		ug/L		10/21/14 10:05	10/21/14 21:54	1
PCB-1221	ND		0.50		ug/L		10/21/14 10:05	10/21/14 21:54	1
PCB-1232	ND		0.50		ug/L		10/21/14 10:05	10/21/14 21:54	1
PCB-1242	ND		0.50		ug/L		10/21/14 10:05	10/21/14 21:54	1
PCB-1248	ND		0.50		ug/L		10/21/14 10:05	10/21/14 21:54	1
PCB-1254	ND		0.50		ug/L		10/21/14 10:05	10/21/14 21:54	1
PCB-1260	ND		0.50		ug/L		10/21/14 10:05	10/21/14 21:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*56*		*19 - 98*	*10/21/14 10:05*	*10/21/14 21:54*	*1*
DCB Decachlorobiphenyl	*74*		*10 - 122*	*10/21/14 10:05*	*10/21/14 21:54*	*1*

Lab Sample ID: MB 720-169274/1-A
Matrix: Water
Analysis Batch: 169250

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 169274

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.50		ug/L		10/21/14 10:05	10/21/14 23:01	1
PCB-1221	ND		0.50		ug/L		10/21/14 10:05	10/21/14 23:01	1
PCB-1232	ND		0.50		ug/L		10/21/14 10:05	10/21/14 23:01	1
PCB-1242	ND		0.50		ug/L		10/21/14 10:05	10/21/14 23:01	1
PCB-1248	ND		0.50		ug/L		10/21/14 10:05	10/21/14 23:01	1
PCB-1254	ND		0.50		ug/L		10/21/14 10:05	10/21/14 23:01	1
PCB-1260	ND		0.50		ug/L		10/21/14 10:05	10/21/14 23:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*52*		*19 - 98*	*10/21/14 10:05*	*10/21/14 23:01*	*1*
DCB Decachlorobiphenyl	*72*		*10 - 122*	*10/21/14 10:05*	*10/21/14 23:01*	*1*

Lab Sample ID: LCS 720-169274/2-A
Matrix: Water
Analysis Batch: 169250

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 169274

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	2.58		ug/L		64	40 - 115
PCB-1260	4.00	3.20		ug/L		80	48 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*54*		*19 - 98*
DCB Decachlorobiphenyl	*77*		*10 - 122*

Lab Sample ID: LCS 720-169274/2-A
Matrix: Water
Analysis Batch: 169250

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 169274

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	2.33		ug/L		58	40 - 115

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 720-169274/2-A
Matrix: Water
Analysis Batch: 169250

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 169274

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1260			4.00	2.94		ug/L		74	48 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*48*		*19 - 98*
DCB Decachlorobiphenyl	*77*		*10 - 122*

Lab Sample ID: LCSD 720-169274/3-A
Matrix: Water
Analysis Batch: 169250

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 169274

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016			4.00	3.00		ug/L		75	40 - 115	15	20
PCB-1260			4.00	3.30		ug/L		83	48 - 115	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*63*		*19 - 98*
DCB Decachlorobiphenyl	*86*		*10 - 122*

Lab Sample ID: LCSD 720-169274/3-A
Matrix: Water
Analysis Batch: 169250

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 169274

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016			4.00	2.70		ug/L		67	40 - 115	15	20
PCB-1260			4.00	3.01		ug/L		75	48 - 115	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*56*		*19 - 98*
DCB Decachlorobiphenyl	*79*		*10 - 122*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 720-169229/1-A
Matrix: Water
Analysis Batch: 169361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 169229

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.010		mg/L		10/20/14 19:08	10/21/14 20:49	1
Arsenic	ND		0.010		mg/L		10/20/14 19:08	10/21/14 20:49	1
Barium	ND		0.0050		mg/L		10/20/14 19:08	10/21/14 20:49	1
Beryllium	ND		0.0020		mg/L		10/20/14 19:08	10/21/14 20:49	1
Cadmium	ND		0.0025		mg/L		10/20/14 19:08	10/21/14 20:49	1
Chromium	ND		0.010		mg/L		10/20/14 19:08	10/21/14 20:49	1
Cobalt	ND		0.0020		mg/L		10/20/14 19:08	10/21/14 20:49	1
Copper	ND		0.020		mg/L		10/20/14 19:08	10/21/14 20:49	1
Lead	ND		0.0050		mg/L		10/20/14 19:08	10/21/14 20:49	1
Molybdenum	ND		0.010		mg/L		10/20/14 19:08	10/21/14 20:49	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 720-169229/1-A
Matrix: Water
Analysis Batch: 169361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 169229

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	ND		0.010		mg/L		10/20/14 19:08	10/21/14 20:49	1
Selenium	ND		0.020		mg/L		10/20/14 19:08	10/21/14 20:49	1
Silver	ND		0.0050		mg/L		10/20/14 19:08	10/21/14 20:49	1
Thallium	ND		0.010		mg/L		10/20/14 19:08	10/21/14 20:49	1
Vanadium	ND		0.010		mg/L		10/20/14 19:08	10/21/14 20:49	1
Zinc	ND		0.020		mg/L		10/20/14 19:08	10/21/14 20:49	1

Lab Sample ID: LCS 720-169229/2-A
Matrix: Water
Analysis Batch: 169361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 169229

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	1.00	0.982		mg/L		98	80 - 120
Arsenic	1.00	1.00		mg/L		100	80 - 120
Barium	1.00	1.03		mg/L		103	80 - 120
Beryllium	1.00	1.01		mg/L		101	80 - 120
Cadmium	1.00	1.00		mg/L		100	80 - 120
Chromium	1.00	1.03		mg/L		103	80 - 120
Cobalt	1.00	1.04		mg/L		104	80 - 120
Copper	1.00	1.02		mg/L		102	80 - 120
Lead	1.00	1.04		mg/L		104	80 - 120
Molybdenum	1.00	1.04		mg/L		104	80 - 120
Nickel	1.00	1.03		mg/L		103	80 - 120
Selenium	1.00	0.986		mg/L		99	80 - 120
Silver	0.500	0.500		mg/L		100	80 - 120
Thallium	1.00	1.03		mg/L		103	80 - 120
Vanadium	1.00	1.01		mg/L		101	80 - 120
Zinc	1.00	0.959		mg/L		96	80 - 120

Lab Sample ID: LCSD 720-169229/3-A
Matrix: Water
Analysis Batch: 169361

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 169229

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	1.00	0.991		mg/L		99	80 - 120	1	20
Arsenic	1.00	0.988		mg/L		99	80 - 120	1	20
Barium	1.00	1.02		mg/L		102	80 - 120	1	20
Beryllium	1.00	1.00		mg/L		100	80 - 120	1	20
Cadmium	1.00	0.993		mg/L		99	80 - 120	1	20
Chromium	1.00	1.03		mg/L		103	80 - 120	0	20
Cobalt	1.00	1.02		mg/L		102	80 - 120	1	20
Copper	1.00	1.02		mg/L		102	80 - 120	0	20
Lead	1.00	1.03		mg/L		103	80 - 120	1	20
Molybdenum	1.00	1.04		mg/L		104	80 - 120	0	20
Nickel	1.00	1.02		mg/L		102	80 - 120	1	20
Selenium	1.00	0.981		mg/L		98	80 - 120	0	20
Silver	0.500	0.495		mg/L		99	80 - 120	1	20
Thallium	1.00	1.02		mg/L		102	80 - 120	1	20
Vanadium	1.00	1.00		mg/L		100	80 - 120	1	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCSD 720-169229/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 169361 — **Prep Batch: 169229**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Zinc	1.00	0.947		mg/L		95	80 - 120	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 720-169758/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 169799 — **Prep Batch: 169758**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/28/14 08:58	10/28/14 13:22	1

Lab Sample ID: LCS 720-169758/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 169799 — **Prep Batch: 169758**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.0100	0.0101		mg/L		101	85 - 115

Lab Sample ID: LCSD 720-169758/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 169799 — **Prep Batch: 169758**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.0100	0.0103		mg/L		103	85 - 115	2	20

Method: 120.1 - Conductivity, Specific Conductance

Lab Sample ID: MB 720-169546/2 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 169546

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		10		umhos/cm			10/24/14 09:02	1

Lab Sample ID: LCS 720-169546/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 169546

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Specific Conductance	1000	1050		umhos/cm		105	90 - 110

Lab Sample ID: LCSD 720-169546/4 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 169546

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Specific Conductance	1000	1050		umhos/cm		105	90 - 110	1	20

Method: 300.0 - Chloride

Lab Sample ID: MB 720-169053/4
Matrix: Water
Analysis Batch: 169053

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0		mg/L			10/17/14 09:41	1

Lab Sample ID: LCS 720-169053/5
Matrix: Water
Analysis Batch: 169053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.89		mg/L		99	90 - 110

Method: 300.0 - Nitrate & Nitrite

Lab Sample ID: MB 720-169054/4
Matrix: Water
Analysis Batch: 169054

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as NO3	ND		1.0		mg/L			10/17/14 09:41	1
Nitrite as NO2	ND		1.0		mg/L			10/17/14 09:41	1

Lab Sample ID: LCS 720-169054/5
Matrix: Water
Analysis Batch: 169054

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as NO3	10.0	9.92		mg/L		99	90 - 110
Nitrite as NO2	10.0	9.83		mg/L		98	90 - 110

Method: 9040B - pH

Lab Sample ID: LCS 720-169020/1
Matrix: Water
Analysis Batch: 169020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	6.940		SU		99	99 - 101

Lab Sample ID: 720-60632-1 DU
Matrix: Water
Analysis Batch: 169020

Client Sample ID: LKE 132-A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.55		7.540		SU		0.1	5

Method: SM 2130B - Turbidity

Lab Sample ID: MB 720-169110/2
Matrix: Water
Analysis Batch: 169110

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	ND		0.10		NTU			10/17/14 18:03	1

Lab Sample ID: LCS 720-169110/3
Matrix: Water
Analysis Batch: 169110

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Turbidity	10.0	9.20		NTU		92	80 - 120

Lab Sample ID: 720-60632-1 MS
Matrix: Water
Analysis Batch: 169110

Client Sample ID: LKE 132-A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Turbidity	8.2		10.0	17.5		NTU		93	80 - 120

Lab Sample ID: 720-60632-1 MSD
Matrix: Water
Analysis Batch: 169110

Client Sample ID: LKE 132-A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Turbidity	8.2		10.0	17.4		NTU		92	80 - 120	1	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 440-213376/1
Matrix: Water
Analysis Batch: 213376

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			10/22/14 08:39	1

Lab Sample ID: LCS 440-213376/2
Matrix: Water
Analysis Batch: 213376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	1000		mg/L		100	90 - 110

GC Semi VOA

Analysis Batch: 169250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-4	LKE 13-2A	Total/NA	Water	8082	169274
LCS 720-169274/2-A	Lab Control Sample	Total/NA	Water	8082	169274
LCS 720-169274/2-A	Lab Control Sample	Total/NA	Water	8082	169274
LCSD 720-169274/3-A	Lab Control Sample Dup	Total/NA	Water	8082	169274
LCSD 720-169274/3-A	Lab Control Sample Dup	Total/NA	Water	8082	169274
MB 720-169274/1-A	Method Blank	Total/NA	Water	8082	169274
MB 720-169274/1-A	Method Blank	Total/NA	Water	8082	169274

Analysis Batch: 169251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-9	LKE 1301	Total/NA	Water	8082	169274

Prep Batch: 169274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-4	LKE 13-2A	Total/NA	Water	3510C	
720-60632-9	LKE 1301	Total/NA	Water	3510C	
LCS 720-169274/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 720-169274/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 720-169274/1-A	Method Blank	Total/NA	Water	3510C	

Prep Batch: 248798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-5	LKE 1301	Total/NA	Water	3510C	
720-60632-12	LKE 13-2A	Total/NA	Water	3510C	
LCS 280-248798/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 280-248798/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 280-248798/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 249091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-5	LKE 1301	Total/NA	Water	8081A	248798
720-60632-12	LKE 13-2A	Total/NA	Water	8081A	248798
LCS 280-248798/2-A	Lab Control Sample	Total/NA	Water	8081A	248798
LCSD 280-248798/3-A	Lab Control Sample Dup	Total/NA	Water	8081A	248798
MB 280-248798/1-A	Method Blank	Total/NA	Water	8081A	248798

Metals

Prep Batch: 169229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-7	LKE 1301	Total/NA	Water	3010A	
720-60632-11	LKE 13-2A	Total/NA	Water	3010A	
LCS 720-169229/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 720-169229/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	
MB 720-169229/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 169361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-7	LKE 1301	Total/NA	Water	6010B	169229
720-60632-11	LKE 13-2A	Total/NA	Water	6010B	169229

Metals (Continued)

Analysis Batch: 169361 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 720-169229/2-A	Lab Control Sample	Total/NA	Water	6010B	169229
LCSD 720-169229/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	169229
MB 720-169229/1-A	Method Blank	Total/NA	Water	6010B	169229

Prep Batch: 169758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-7	LKE 1301	Total/NA	Water	7470A	
720-60632-11	LKE 13-2A	Total/NA	Water	7470A	
LCS 720-169758/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 720-169758/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
MB 720-169758/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 169799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-7	LKE 1301	Total/NA	Water	7470A	169758
720-60632-11	LKE 13-2A	Total/NA	Water	7470A	169758
LCS 720-169758/2-A	Lab Control Sample	Total/NA	Water	7470A	169758
LCSD 720-169758/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	169758
MB 720-169758/1-A	Method Blank	Total/NA	Water	7470A	169758

General Chemistry

Analysis Batch: 169020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-1	LKE 132-A	Total/NA	Water	9040B	
720-60632-1 DU	LKE 132-A	Total/NA	Water	9040B	
720-60632-2	LKE 1301	Total/NA	Water	9040B	
LCS 720-169020/1	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 169053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-8	LKE 13-2A	Total/NA	Water	300.0	
720-60632-10	LKE 1301	Total/NA	Water	300.0	
LCS 720-169053/5	Lab Control Sample	Total/NA	Water	300.0	
MB 720-169053/4	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 169054

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-8	LKE 13-2A	Total/NA	Water	300.0	
720-60632-10	LKE 1301	Total/NA	Water	300.0	
LCS 720-169054/5	Lab Control Sample	Total/NA	Water	300.0	
MB 720-169054/4	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 169110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-1	LKE 132-A	Total/NA	Water	SM 2130B	
720-60632-1 MS	LKE 132-A	Total/NA	Water	SM 2130B	
720-60632-1 MSD	LKE 132-A	Total/NA	Water	SM 2130B	
720-60632-2	LKE 1301	Total/NA	Water	SM 2130B	
LCS 720-169110/3	Lab Control Sample	Total/NA	Water	SM 2130B	

General Chemistry (Continued)

Analysis Batch: 169110 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 720-169110/2	Method Blank	Total/NA	Water	SM 2130B	

Analysis Batch: 169546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-1	LKE 132-A	Total/NA	Water	120.1	
720-60632-2	LKE 1301	Total/NA	Water	120.1	
LCS 720-169546/3	Lab Control Sample	Total/NA	Water	120.1	
LCSD 720-169546/4	Lab Control Sample Dup	Total/NA	Water	120.1	
MB 720-169546/2	Method Blank	Total/NA	Water	120.1	

Analysis Batch: 213376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60632-3	LKE 13-2A	Total/NA	Water	SM 2540C	
720-60632-6	LKE 1301	Total/NA	Water	SM 2540C	
LCS 440-213376/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-213376/1	Method Blank	Total/NA	Water	SM 2540C	

Client Sample ID: LKE 132-A — **Lab Sample ID: 720-60632-1**
Date Collected: 10/16/14 13:27 — **Matrix: Water**
Date Received: 10/16/14 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	120.1		1	169546	10/24/14 09:10	MJK	TAL PLS
Total/NA	Analysis	9040B		1	169020	10/16/14 21:14	EYT	TAL PLS
Total/NA	Analysis	SM 2130B		1	169110	10/17/14 18:03	EYT	TAL PLS

Client Sample ID: LKE 1301 — **Lab Sample ID: 720-60632-2**
Date Collected: 10/16/14 12:47 — **Matrix: Water**
Date Received: 10/16/14 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	120.1		1	169546	10/24/14 09:11	MJK	TAL PLS
Total/NA	Analysis	9040B		1	169020	10/16/14 21:25	EYT	TAL PLS
Total/NA	Analysis	SM 2130B		1	169110	10/17/14 18:03	EYT	TAL PLS

Client Sample ID: LKE 13-2A — **Lab Sample ID: 720-60632-3**
Date Collected: 10/16/14 13:24 — **Matrix: Water**
Date Received: 10/16/14 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	213376	10/22/14 08:39	XL	TAL IRV

Client Sample ID: LKE 13-2A — **Lab Sample ID: 720-60632-4**
Date Collected: 10/16/14 13:30 — **Matrix: Water**
Date Received: 10/16/14 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			169274	10/21/14 10:05	NDU	TAL PLS
Total/NA	Analysis	8082		1	169250	10/21/14 22:44	DCH	TAL PLS

Client Sample ID: LKE 1301 — **Lab Sample ID: 720-60632-5**
Date Collected: 10/16/14 12:51 — **Matrix: Water**
Date Received: 10/16/14 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			248798	10/20/14 20:24	AH1	TAL DEN
Total/NA	Analysis	8081A		1	249091	10/22/14 17:30	DAW	TAL DEN

Client Sample ID: LKE 1301 — **Lab Sample ID: 720-60632-6**
Date Collected: 10/16/14 12:45 — **Matrix: Water**
Date Received: 10/16/14 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	213376	10/22/14 08:39	XL	TAL IRV

Client Sample ID: LKE 1301 — **Lab Sample ID: 720-60632-7**
Date Collected: 10/16/14 12:56 — **Matrix: Water**
Date Received: 10/16/14 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			169229	10/20/14 19:08	CTD	TAL PLS
Total/NA	Analysis	6010B		1	169361	10/21/14 22:50	CAM	TAL PLS
Total/NA	Prep	7470A			169758	10/28/14 08:58	JCR	TAL PLS
Total/NA	Analysis	7470A		1	169799	10/28/14 13:34	EFH	TAL PLS

Client Sample ID: LKE 13-2A — **Lab Sample ID: 720-60632-8**
Date Collected: 10/16/14 13:20 — **Matrix: Water**
Date Received: 10/16/14 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	169053	10/17/14 11:07	MJK	TAL PLS
Total/NA	Analysis	300.0		1	169054	10/17/14 11:07	MJK	TAL PLS

Client Sample ID: LKE 1301 — **Lab Sample ID: 720-60632-9**
Date Collected: 10/16/14 12:54 — **Matrix: Water**
Date Received: 10/16/14 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			169274	10/21/14 10:05	NDU	TAL PLS
Total/NA	Analysis	8082		1	169251	10/21/14 21:54	DCH	TAL PLS

Client Sample ID: LKE 1301 — **Lab Sample ID: 720-60632-10**
Date Collected: 10/16/14 12:42 — **Matrix: Water**
Date Received: 10/16/14 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	169053	10/17/14 11:24	MJK	TAL PLS
Total/NA	Analysis	300.0		1	169054	10/17/14 11:24	MJK	TAL PLS

Client Sample ID: LKE 13-2A — **Lab Sample ID: 720-60632-11**
Date Collected: 10/16/14 13:30 — **Matrix: Water**
Date Received: 10/16/14 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			169229	10/20/14 19:08	CTD	TAL PLS
Total/NA	Analysis	6010B		1	169361	10/21/14 22:55	CAM	TAL PLS
Total/NA	Prep	7470A			169758	10/28/14 08:58	JCR	TAL PLS
Total/NA	Analysis	7470A		1	169799	10/28/14 13:36	EFH	TAL PLS

Client Sample ID: LKE 13-2A
Date Collected: 10/16/14 13:29
Date Received: 10/16/14 17:00

Lab Sample ID: 720-60632-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			248798	10/20/14 20:24	AH1	TAL DEN
Total/NA	Analysis	8081A		1	249091	10/22/14 17:47	DAW	TAL DEN

Laboratory References:

EMLab P&K = EMLab P&K - South San Francisco, 1150 Bayhill Drive #100, San Bruno, CA 94066, TEL (866)888-6653

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Certification Summary

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Laboratory: TestAmerica Pleasanton

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-16

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Denver

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-15 *
A2LA	ISO/IEC 17025		2907.01	10-31-15
Alabama	State Program	4	40730	09-30-12 *
Alaska (UST)	State Program	10	UST-30	04-05-15
Arizona	State Program	9	AZ0713	12-19-14
Arkansas DEQ	State Program	6	88-0687	06-01-15
California	State Program	9	2513	08-31-16
Florida	NELAP	4	E87667	06-30-15
Georgia	State Program	4	N/A	01-09-15
Illinois	NELAP	5	200017	04-30-15
Iowa	State Program	7	370	12-01-14 *
Kansas	NELAP	7	E-10166	04-30-15
Louisiana	NELAP	6	02096	06-30-15
Maine	State Program	1	CO0002	03-03-15
Minnesota	NELAP	5	8-999-405	12-31-14
Nevada	State Program	9	CO0026	07-31-15
New Hampshire	NELAP	1	205310	04-28-15
New Jersey	NELAP	2	CO004	06-30-15
New Mexico	State Program	6	CO00026	01-09-15
New York	NELAP	2	11964	03-31-15
North Carolina (WW/SW)	State Program	4	358	12-31-14
North Dakota	State Program	8	R-034	06-30-14 *
Oklahoma	State Program	6	8614	08-31-15
Oregon	NELAP	10	4025	01-09-15
Pennsylvania	NELAP	3	68-00664	07-30-15
South Carolina	State Program	4	72002001	06-30-15
Texas	NELAP	6	T104704183-13-8	09-30-15
USDA	Federal		P330-13-00202	07-02-16
Utah	NELAP	8	CO00026	07-31-15
Virginia	NELAP	3	460232	06-14-15
Washington	State Program	10	C583	08-03-15
West Virginia DEP	State Program	3	354	11-30-14
Wisconsin	State Program	5	999615430	08-31-15
Wyoming (UST)	A2LA	8	2907.01	10-31-15

Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15

* Certification renewal pending - certification considered valid.

Laboratory: TestAmerica Irvine (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	LA Cty Sanitation Districts	9	10256	01-31-15
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-15
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15
Northern Mariana Islands	State Program	9	MP0002	01-29-15
Oregon	NELAP	10	4005	01-29-15
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

* Certification renewal pending - certification considered valid.

Method Summary

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Method	Method Description	Protocol	Laboratory
8081A	Organochlorine Pesticides (GC)	SW846	TAL DEN
8082	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL PLS
6010B	Metals (ICP)	SW846	TAL PLS
7470A	Mercury (CVAA)	SW846	TAL PLS
120.1	Conductivity, Specific Conductance	MCAWW	TAL PLS
300.0	Chloride	40CFR136A	TAL PLS
300.0	Nitrate & Nitrite	40CFR136A	TAL PLS
9040B	pH	SW846	TAL PLS
SM 2130B	Turbidity	SM	TAL PLS
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
Local Method	General Sub Contract Method	NONE	EMLab P&K

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

NONE = NONE

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EMLab P&K = EMLab P&K - South San Francisco, 1150 Bayhill Drive #100, San Bruno, CA 94066, TEL (866)888-6653

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Sample Summary

Client: Santa Clara Valley Water Dist
Project/Site: Upper Llagas Creek Flood Protection

TestAmerica Job ID: 720-60632-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-60632-1	LKE 132-A	Water	10/16/14 13:27	10/16/14 17:00
720-60632-2	LKE 1301	Water	10/16/14 12:47	10/16/14 17:00
720-60632-3	LKE 13-2A	Water	10/16/14 13:24	10/16/14 17:00
720-60632-4	LKE 13-2A	Water	10/16/14 13:30	10/16/14 17:00
720-60632-5	LKE 1301	Water	10/16/14 12:51	10/16/14 17:00
720-60632-6	LKE 1301	Water	10/16/14 12:45	10/16/14 17:00
720-60632-7	LKE 1301	Water	10/16/14 12:56	10/16/14 17:00
720-60632-8	LKE 13-2A	Water	10/16/14 13:20	10/16/14 17:00
720-60632-9	LKE 1301	Water	10/16/14 12:54	10/16/14 17:00
720-60632-10	LKE 1301	Water	10/16/14 12:42	10/16/14 17:00
720-60632-11	LKE 13-2A	Water	10/16/14 13:30	10/16/14 17:00
720-60632-12	LKE 13-2A	Water	10/16/14 13:29	10/16/14 17:00

EMLab P&K
A TestAmerica Company

Report for:

Mr. Micah Smith
TestAmerica-Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566

Regarding: Project: Santa Clara Valley Water District; Balance Hydro
EML ID: 1278128

Approved by:



Technical Manager
Dr. Kamashwaran Ramanathan

Dates of Analysis:
MPN-Standard Bacteria: 10-20-2014

Service SOPs: MPN-Standard Bacteria (EM-BT-S-1577)

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the items tested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

EMLab P&K
1150 Bayhill Drive, Suite 100, San Bruno, CA 94066
(866) 888-6653 Fax (650) 829-5852 www.emlab.com

Client: TestAmerica-Pleasanton
C/O: Mr. Micah Smith
Re: Santa Clara Valley Water District; Balance Hydro

Date of Receipt: 10-16-2014
Date of Report: 10-23-2014

MPN REPORT

Location: Lake 13-2A — Lab ID-Version‡: 5820153-1

Sample size: 100		Unit: 100 ml		Percent solid: N/A	
Bacteria	**Method**	**Setup Time**	**MPN*/Unit**	**LCL****	**UCL****
Fecal Coliform	SM 9221 E	10/16/14 16:00	< 2	-	14
Total Coliform	SM 9221 B	10/16/14 16:00	< 2	-	14

Comments: CA-ELAP no. 2604. EPA ID: CA01463. Sample prepared by DS and analyzed by MP.

Location: Lake 1301 — Lab ID-Version‡: 5820157-1

Sample size: 100		Unit: 100 ml		Percent solid: N/A	
Bacteria	**Method**	**Setup Time**	**MPN*/Unit**	**LCL****	**UCL****
Fecal Coliform	SM 9221 E	10/16/14 16:00	< 2	-	14
Total Coliform	SM 9221 B	10/16/14 16:00	< 2	-	14

Comments: CA-ELAP no. 2604. EPA ID: CA01463. Sample prepared by DS and analyzed by MP.

*MPN - Most Probable Number.
MPN methods:
SM - Standard Methods for the Examination of Waters and Wastewaters, 20th ed. 1998.
FDA BAM - U.S. Food and Drug Administration Bacteriological Analytical Manual, January 2001.
MPN values are calculated using the method of Thomas (1942).
The MPN method was developed to handle samples with a high load of particulate matter, such as turbid waters, soils, wastewaters and sludges. MPN values are statistically derived calculations of viable bacterial density based on the assumptions of random distribution of single, non-clustered, bacteria not attached to particulate matter within a sample. Due to the fact that bacteria can cluster and adhere to materials, values determined by the MPN method should be considered estimates in many instances.
**The Upper 95% Confidence Limit (UCL) and Lower 95% Confidence Limit (LCL) are calculated using the method of deMan (1983) and represent that "before the tubes are inoculated, the chance is at least 95 percent that the confidence interval associated with the eventual result will enclose the actual concentration" (FDA BAM).
Interpretation is left to the company and/or persons who conducted the field work.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

720-60632

TESTAMERICA Pleasanton Chain of Custody
1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 600-3002

Reference #: 156968

Date 10/16/14 Page 1 of 2

10/30/2014

Report To

Attn: Melissa Moore
Company: SCVWD
Address: 5750 Almaden Ex.
Email: mmoore@valleywater.org
Bill To:
Sampled By: Ballanco Hydrolab
Attn:
Phone:

Analysis Request

Sample ID	Date	Time	Matrix	Preserv	Volatile Organics GC/MS (VOCs) ☐ EPA 8260B	HVOCs by ☐ EPA 8260B	EPA 8260b: ☐ Gas ☐ BTEX ☐ 5 Oxygenates ☐ DCA, EDB ☐ Ethanol	TEPH EPA 8015B ☐ Silica Gel ☐ Diesel ☐ Motor Oil ☐ Other	SemiVolatile Organics GC/MS ☐ EPA 8270C	PNA/PAH's by ☐ 8270C ☐ 8270C SIM	Oil and Grease (EPA 1664/9071) ☐ Petroleum ☐ Total	Pesticides ☐ EPA 8081 ☐ EPA 8082 PCBs?	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ 6010B ☐ 200.7 ☐ Lead ☐ LUFT ☐ RCRA ☐ Other	Metals. ☐ 6020 ☐ 200.8 (ICP-MS):	W.E.T (STLC) ☐ W.E.T (DI) ☐ TCLP	Hex. Chrom by ☐ EPA 7196 ☐ or EPA 7199	pH ☐ 9040 ☐ SM4500	Spec. Cond. ☐ Alkalinity ☐ TSS ☐ TDS	Anions: ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4	☐ Perchlorate by EPA 314.0	COD ☐ EPA 410.4 ☐ SM5220D ☐ Turbidity	TDS	Organic Nitrogen	Number of Containers
1. LKE 132A	10/16	1127																X					X	X	4
2. LKE 130 1	10/16	1247																X					X		4
3. LKE 13-2A	10/16	1:24																							1
4. LKE 13-2A	10/16	1:30										X													1
5. LKE 130 1	10/16	12:51																							1
6. LKE 130 1	10/16	12:45																							1
7. LKE 130 1	10/16	12:56																							1
8. LKE 13-2A	10/16	1:20	Cloride / Nitrates / Nitrites										X												1
9. LKE 130 1	10/16	12:54																							1
10. LKE 130 1	10/16	12:42	Cloride / Nitrates / Nitrites																						1

Project Info.

Project Name/ #: Upper Llagas
PO#:

Sample Receipt

of Containers: 12
Head Space:
Temp: 20°c

Credit Card Y/N: If yes, please call with payment information ASAP

TAT: 10 Day | 5 Day | 4 Day | 3 Day | 2 Day | 1 Day | Other:

Report: ☐ Routine ☐ Level 3 ☐ Level 4 ☐ EDD ☐ EDF
Special Instructions / Comments: ☐ Global ID _____

See Terms and Conditions on reverse

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature: 1430 Time	Signature: 1700 Time	Signature: Time
Printed Name: Melissa Moore 10/16 Date	Printed Name: Ed Martinez 10.16.14 Date	Printed Name: Date
Company: SCVWD	Company: JA	Company:
1) Received by:	2) Received by:	3) Received by:
Signature: 1430 Time	Signature: 1700 Time	Signature: Time
Printed Name: Ed Martinez 10.16.14 Date	Printed Name: J Gonzales 10/16/14 Date	Printed Name: Date
Company:	Company: TAP	Company:

720-60632 Chain of Custody

Rev.10/2012

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

T20-0632

TESTAMERICA Pleasanton Chain of Custody
1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 600-3002

Reference #: _____

Date 10/16/14 Page 2 of 2

10/30/2014

Report To

Attn:
Company:
Address:
Email:
Bill To: | Sampled By:
Attn: | Phone:

Analysis Request

Sample ID	Date	Time	Matrix	Preserv	Volatile Organics GC/MS (VOCs) ☐ EPA 8260B	HVOCs by ☐ EPA 8260B	EPA 8260B: ☐ Gas ☐ BTEX ☐ 5 Oxygenates ☐ DCA, EDB ☐ Ethanol	TEPH EPA 8015B ☐ Silica Gel ☐ Diesel ☐ Motor Oil ☐ Other ____	SemiVolatile Organics GC/MS ☐ EPA 8270C	PNA/PAH's by ☐ 8270C ☐ 8270C SIM	Oil and Grease (EPA 1664/9071) ☐ Petroleum ☐ Total	Pesticides PCBs ☐ EPA 8081 ☐ EPA 8082	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ 6010B ☐ 200.7 ☐ Lead ☐ LUFT ☐ RCRA ☐ Other: ____	Metals: ☐ 6020 ☐ 200.8 (ICP-MS). ____	W.E.T (STLC) ☐ W.E.T (DI) ☐ TCLP	Hex. Chrom by ☐ EPA 7196 ☐ or EPA 7199	pH ☐ 9040 ☐ SM4500	☐ Spec. Cond. ☐ Alkalinity ☐ TSS ☐ SS ☐ TDS	Anions: ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4	☐ Perchlorate by EPA 314.0	COD ☐ EPA 410.4 ☐ SM5220D ☐ Turbidity	Organic Pest	Number of Containers
11 LKE 13-2A	10/16	1:30											X											
12 LKE 13-2A	10/16	1:29																					X	

Page 40 of 44

Project Info.

Project Name/ #:
PO#:
Credit Card Y/N: If yes, please call with payment information ASAP

Sample Receipt

of Containers:
Head Space:
Temp:

TAT: 10 Day | 5 Day | 4 Day | 3 Day | 2 Day | 1 Day | Other:

Report: ☐ Routine ☐ Level 3 ☐ Level 4 ☐ EDD ☐ EDF
Special Instructions / Comments: ☐ Global ID _____

See Terms and Conditions on reverse

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature: Melissa Moore 14:30	Signature: 1700	Signature:
Time:	Time:	Time:
Printed Name: Melissa Moore	Printed Name: Ed Martinez	Printed Name:
Date: 10/16	Date: 10.16.14	Date:
Company: SCVWD.	Company: TA	Company:

1) Received by:	2) Received by:	3) Received by:
Signature: 1430	Signature: 1700	Signature:
Time:	Time:	Time:
Printed Name: Ed Martinez	Printed Name: J Dhuh	Printed Name:
Date: 10.16.14	Date: 10/16/14	Date:
Company: TA	Company: TAN	Company:

Rev.10/2012

Smith, Micah

From: Melissa Moore [mmoore@valleywater.org]
Sent: Friday, October 17, 2014 9:21 PM
To: Smith, Micah
Subject: RE: TestAmerica report files from 720-60632-1 Upper Llagas Creek Flood Protection

yes we need sc it is on the bottle sorry

_____
From: Smith, Micah [micah.smith@testamericainc.com]
Sent: Friday, October 17, 2014 6:31 PM
To: Melissa Moore; Raymond Fields
Subject: TestAmerica report files from 720-60632-1 Upper Llagas Creek Flood Protection

Hello,

Did you need to run specific conductance, it was not on the COC?

Please feel free to contact me if you have any questions.

Thank you.

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: Project Feedback<http://secure.testamericainc.com/snaponline/s.asp?k=140312408469>

MICAH SMITH
Project Manager II

TestAmerica Pleasanton
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 925.484.1919
www.testamericainc.com<http://www.testamericainc.com>

Reference: [169819]
Attachments: 1

Login Sample Receipt Checklist

Client: Santa Clara Valley Water Dist

Job Number: 720-60632-1

Login Number: 60632
List Number: 1
Creator: Bullock, Tracy

List Source: TestAmerica Pleasanton

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Santa Clara Valley Water Dist

Job Number: 720-60632-1

Login Number: 60632
List Number: 2
Creator: Conquest, Tyler W

List Source: TestAmerica Denver
List Creation: 10/18/14 01:35 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Santa Clara Valley Water Dist

Job Number: 720-60632-1

Login Number: 60632
List Number: 3
Creator: Jackson, Brent E

List Source: TestAmerica Irvine
List Creation: 10/18/14 01:38 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-66619-1
Client Project/Site: Lake Silveira / Upper Llagas

For:
Santa Clara Valley Water Dist
PO BOX 20670
San Jose, California 95160-0670

Attn: Melissa Moore

Authorized for release by:
8/17/2015 4:51:02 PM

Micah Smith, Project Manager II
(925)484-1919
micah.smith@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 720-66619-1

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative
720-66619-1

Comments
No additional comments.

Receipt
The samples were received on 8/10/2015 6:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3º C.

Receipt Exceptions
The container label for the following sample(s) did not match the information listed on the Chain-of-Custody (COC): LAKE. The container labels list LAKE CENTER, while the COC lists LAKE. Samples were logged in per the COC.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira / Upper Llagas

TestAmerica Job ID: 720-66619-1

Client Sample ID: LAKE INLET — Lab Sample ID: 720-66619-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	20		10		mg/L	10		300.0	Total/NA
Chloride	14		10		mg/L	10		300.0	Total/NA
Sodium	11		0.50		mg/L	1		6010B	Total/NA
Boron	0.20		0.050		mg/L	1		6010B	Total/NA
Total Dissolved Solids	240		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: LAKE OUTLET — Lab Sample ID: 720-66619-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	20		10		mg/L	10		300.0	Total/NA
Chloride	15		10		mg/L	10		300.0	Total/NA
Sodium	12		0.50		mg/L	1		6010B	Total/NA
Boron	0.21		0.050		mg/L	1		6010B	Total/NA
Total Dissolved Solids	240		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: LAKE — Lab Sample ID: 720-66619-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	20		10		mg/L	10		300.0	Total/NA
Chloride	15		10		mg/L	10		300.0	Total/NA
Sodium	12		0.50		mg/L	1		6010B	Total/NA
Boron	0.20		0.050		mg/L	1		6010B	Total/NA
Total Dissolved Solids	250		10		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira / Upper Llagas

TestAmerica Job ID: 720-66619-1

Client Sample ID: LAKE INLET
Date Collected: 08/10/15 10:30
Date Received: 08/10/15 18:45

Lab Sample ID: 720-66619-1
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	20		10		mg/L			08/14/15 21:25	10
Chloride	14		10		mg/L			08/14/15 21:25	10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	11		0.50		mg/L		08/11/15 14:47	08/12/15 19:12	1
Boron	0.20		0.050		mg/L		08/11/15 14:47	08/12/15 19:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	240		10		mg/L			08/13/15 07:20	1

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira / Upper Llagas

TestAmerica Job ID: 720-66619-1

Client Sample ID: LAKE OUTLET
Date Collected: 08/10/15 12:15
Date Received: 08/10/15 18:45

Lab Sample ID: 720-66619-2
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	20		10		mg/L			08/14/15 21:42	10
Chloride	15		10		mg/L			08/14/15 21:42	10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	12		0.50		mg/L		08/11/15 14:47	08/12/15 19:17	1
Boron	0.21		0.050		mg/L		08/11/15 14:47	08/12/15 19:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	240		10		mg/L			08/13/15 07:20	1

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira / Upper Llagas

TestAmerica Job ID: 720-66619-1

Client Sample ID: LAKE
Date Collected: 08/10/15 14:00
Date Received: 08/10/15 18:45

Lab Sample ID: 720-66619-3
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	20		10		mg/L			08/14/15 21:59	10
Chloride	15		10		mg/L			08/14/15 21:59	10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	12		0.50		mg/L		08/11/15 14:47	08/12/15 19:22	1
Boron	0.20		0.050		mg/L		08/11/15 14:47	08/12/15 19:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	250		10		mg/L			08/13/15 07:20	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 720-187086/41
Matrix: Water
Analysis Batch: 187086

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0		mg/L			08/14/15 20:34	1
Chloride	ND		1.0		mg/L			08/14/15 20:34	1

Lab Sample ID: LCS 720-187086/42
Matrix: Water
Analysis Batch: 187086

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.1		mg/L		101	90 - 110
Chloride	10.0	9.72		mg/L		97	90 - 110

Lab Sample ID: LCSD 720-187086/43
Matrix: Water
Analysis Batch: 187086

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	9.99		mg/L		100	90 - 110	2	20
Chloride	10.0	9.68		mg/L		97	90 - 110	0	20

Lab Sample ID: 720-66619-3 MS
Matrix: Water
Analysis Batch: 187086

Client Sample ID: LAKE
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20		100	119		mg/L		99	80 - 120
Chloride	15		100	109		mg/L		94	80 - 120

Lab Sample ID: 720-66619-3 MSD
Matrix: Water
Analysis Batch: 187086

Client Sample ID: LAKE
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	20		100	119		mg/L		99	80 - 120	0	20
Chloride	15		100	109		mg/L		94	80 - 120	0	20

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 720-186752/1-A
Matrix: Water
Analysis Batch: 186822

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 186752

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		0.50		mg/L		08/11/15 14:37	08/12/15 10:18	1
Boron	ND		0.050		mg/L		08/11/15 14:37	08/12/15 10:18	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 720-186752/2-A
Matrix: Water
Analysis Batch: 186822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 186752

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sodium			10.0	9.77		mg/L		98	80 - 120		

Lab Sample ID: LCSD 720-186752/3-A
Matrix: Water
Analysis Batch: 186822

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 186752

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium			10.0	9.79		mg/L		98	80 - 120	0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 440-272908/1
Matrix: Water
Analysis Batch: 272908

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			08/13/15 07:20	1

Lab Sample ID: LCS 440-272908/2
Matrix: Water
Analysis Batch: 272908

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			1000	954		mg/L		95	90 - 110		

Lab Sample ID: 720-66619-1 DU
Matrix: Water
Analysis Batch: 272908

Client Sample ID: LAKE INLET
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	240			242		mg/L				0.4	5

HPLC/IC

Analysis Batch: 187086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-66619-1	LAKE INLET	Total/NA	Water	300.0	
720-66619-2	LAKE OUTLET	Total/NA	Water	300.0	
720-66619-3	LAKE	Total/NA	Water	300.0	
720-66619-3 MS	LAKE	Total/NA	Water	300.0	
720-66619-3 MSD	LAKE	Total/NA	Water	300.0	
LCS 720-187086/42	Lab Control Sample	Total/NA	Water	300.0	
LCSD 720-187086/43	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 720-187086/41	Method Blank	Total/NA	Water	300.0	

Metals

Prep Batch: 186752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-66619-1	LAKE INLET	Total/NA	Water	3010A	
720-66619-2	LAKE OUTLET	Total/NA	Water	3010A	
720-66619-3	LAKE	Total/NA	Water	3010A	
LCS 720-186752/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 720-186752/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	
MB 720-186752/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 186822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 720-186752/2-A	Lab Control Sample	Total/NA	Water	6010B	186752
LCSD 720-186752/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	186752
MB 720-186752/1-A	Method Blank	Total/NA	Water	6010B	186752

Analysis Batch: 186868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-66619-1	LAKE INLET	Total/NA	Water	6010B	186752
720-66619-2	LAKE OUTLET	Total/NA	Water	6010B	186752
720-66619-3	LAKE	Total/NA	Water	6010B	186752

General Chemistry

Analysis Batch: 272908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-66619-1	LAKE INLET	Total/NA	Water	SM 2540C	
720-66619-1 DU	LAKE INLET	Total/NA	Water	SM 2540C	
720-66619-2	LAKE OUTLET	Total/NA	Water	SM 2540C	
720-66619-3	LAKE	Total/NA	Water	SM 2540C	
LCS 440-272908/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-272908/1	Method Blank	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira / Upper Llagas

TestAmerica Job ID: 720-66619-1

Client Sample ID: LAKE INLET

Lab Sample ID: 720-66619-1
Matrix: Water
Date Collected: 08/10/15 10:30
Date Received: 08/10/15 18:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	187086	08/14/15 21:25	EYT	TAL PLS
Total/NA	Prep	3010A			186752	08/11/15 14:47	ECT	TAL PLS
Total/NA	Analysis	6010B		1	186868	08/12/15 19:12	SLK	TAL PLS
Total/NA	Analysis	SM 2540C		1	272908	08/13/15 07:20	XL	TAL IRV

Client Sample ID: LAKE OUTLET

Lab Sample ID: 720-66619-2
Matrix: Water
Date Collected: 08/10/15 12:15
Date Received: 08/10/15 18:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	187086	08/14/15 21:42	EYT	TAL PLS
Total/NA	Prep	3010A			186752	08/11/15 14:47	ECT	TAL PLS
Total/NA	Analysis	6010B		1	186868	08/12/15 19:17	SLK	TAL PLS
Total/NA	Analysis	SM 2540C		1	272908	08/13/15 07:20	XL	TAL IRV

Client Sample ID: LAKE

Lab Sample ID: 720-66619-3
Matrix: Water
Date Collected: 08/10/15 14:00
Date Received: 08/10/15 18:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	187086	08/14/15 21:59	EYT	TAL PLS
Total/NA	Prep	3010A			186752	08/11/15 14:47	ECT	TAL PLS
Total/NA	Analysis	6010B		1	186868	08/12/15 19:22	SLK	TAL PLS
Total/NA	Analysis	SM 2540C		1	272908	08/13/15 07:20	XL	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Certification Summary

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira / Upper Llagas

TestAmerica Job ID: 720-66619-1

Laboratory: TestAmerica Pleasanton

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-16

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-16
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-16 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-16
Hawaii	State Program	9	N/A	01-29-16
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-16

* Certification renewal pending - certification considered valid.

Method Summary

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira / Upper Llagas

TestAmerica Job ID: 720-66619-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PLS
6010B	Metals (ICP)	SW846	TAL PLS
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Sample Summary

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira / Upper Llagas

TestAmerica Job ID: 720-66619-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-66619-1	LAKE INLET	Water	08/10/15 10:30	08/10/15 18:45
720-66619-2	LAKE OUTLET	Water	08/10/15 12:15	08/10/15 18:45
720-66619-3	LAKE	Water	08/10/15 14:00	08/10/15 18:45

Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118-3614
Phone: (408) 265-2600
FAX: (408) 266-0271

720-66619

169987

CHAIN OF CUSTODY

FC 1019 (08-17-06)

Project/Site Name: Lake Silveira / Upper Llagas	Laboratory: Test America
Project Number: 26174054 1313	Sampled by (Print): Patrick Kallas, Ashton Grier, Ben Hwang
Site Location: Lake Silveira, Morgan Hill	Requested by: Melissa Moore

Sample ID#	Date Sampled	Time Sampled	Matrix	No. of Samples	Turn Around Time	Analyses Requested: Boron	Sodium	Total Dissolved Solids (TDS)	Chloride	Sulfate (SO4)				REMARKS
Lake Inlet	8/10/15	10:30				X	X	X	X	X				
Lake outlet	8/10/15	12:15				X	X	X	X	X				
Lake	8/10/15	14:00				X	X	X	X	X				

720-66619 Chain of Custody

MATRIX ABBREVIATION – Soil = S; Water = W; Product = P

Send FAX Results to:	District Approval:
	Authorization No.:

Relinquished by (Signatures)/Affiliation:	Please Print Name	Received by (Signatures)/Affiliation	Please Print Name	Date	Time
	Ben Hwang		Ed Martinez	8/10/15	16:06
	Ed Martinez		J Gonzales	8-10-15	1845

Distribution: **ORIGINAL**–RETURN TO DISTRICT WITH RESULTS, **YELLOW**–Laboratory, **PINK**–District

1.3°C

Page ____ of ____

Login Sample Receipt Checklist

Client: Santa Clara Valley Water Dist

Job Number: 720-66619-1

Login Number: 66619
List Number: 1
Creator: Bullock, Tracy

List Source: TestAmerica Pleasanton

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Santa Clara Valley Water Dist

Job Number: 720-66619-1

Login Number: 66619
List Number: 2
Creator: Ornelas, Olga

List Source: TestAmerica Irvine
List Creation: 08/12/15 04:21 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-67488-1
Client Project/Site: Lake Silveira/Upper Llagas

For:
Santa Clara Valley Water Dist
PO BOX 20670
San Jose, California 95160-0670

Attn: Melissa Moore

Authorized for release by:
9/25/2015 12:18:59 PM

Micah Smith, Project Manager II
(925)484-1919
micah.smith@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 720-67488-1

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative
720-67488-1

Comments
No additional comments.

Receipt
The samples were received on 9/18/2015 3:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

Receipt Exceptions
The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. There was no turn around time listed on the COC, logged as 5 day.

Metals
Method(s) 3010A: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: LAKE SILVEIRA (720-67488-3). The sample(s) was preserved to the appropriate pH in the laboratory. Added 1mL HNO3 @ 11:14 on 09/21/15; Started digestion @ 17:19 on 09/22/15.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira/Upper Llagas

TestAmerica Job ID: 720-67488-1

Client Sample ID: SILVEIRA INLET — Lab Sample ID: 720-67488-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	27		10		mg/L	10		300.0	Total/NA
Chloride	14		10		mg/L	10		300.0	Total/NA
Sodium	11		0.50		mg/L	1		6010B	Total/NA
Boron	0.23		0.050		mg/L	1		6010B	Total/NA
Total Dissolved Solids	290		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: SILVEIRA OUTLET — Lab Sample ID: 720-67488-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	23		10		mg/L	10		300.0	Total/NA
Chloride	14		10		mg/L	10		300.0	Total/NA
Sodium	12		0.50		mg/L	1		6010B	Total/NA
Boron	0.22		0.050		mg/L	1		6010B	Total/NA
Total Dissolved Solids	270		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: LAKE SILVEIRA — Lab Sample ID: 720-67488-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	23		10		mg/L	10		300.0	Total/NA
Chloride	14		10		mg/L	10		300.0	Total/NA
Sodium	11		0.50		mg/L	1		6010B	Total/NA
Boron	0.21		0.050		mg/L	1		6010B	Total/NA
Total Dissolved Solids	270		10		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira/Upper Llagas

TestAmerica Job ID: 720-67488-1

Client Sample ID: SILVEIRA INLET
Date Collected: 09/17/15 11:15
Date Received: 09/18/15 15:30

Lab Sample ID: 720-67488-1
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	27		10		mg/L			09/22/15 11:52	10
Chloride	14		10		mg/L			09/22/15 11:52	10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	11		0.50		mg/L		09/21/15 09:11	09/24/15 00:17	1
Boron	0.23		0.050		mg/L		09/21/15 09:11	09/23/15 00:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	290		10		mg/L			09/23/15 09:49	1

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira/Upper Llagas

TestAmerica Job ID: 720-67488-1

Client Sample ID: SILVEIRA OUTLET
Date Collected: 09/17/15 12:20
Date Received: 09/18/15 15:30

Lab Sample ID: 720-67488-2
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	23		10		mg/L			09/22/15 12:09	10
Chloride	14		10		mg/L			09/22/15 12:09	10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	12		0.50		mg/L		09/21/15 09:11	09/24/15 00:22	1
Boron	0.22		0.050		mg/L		09/21/15 09:11	09/23/15 00:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	270		10		mg/L			09/23/15 09:49	1

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira/Upper Llagas

TestAmerica Job ID: 720-67488-1

Client Sample ID: LAKE SILVEIRA
Date Collected: 09/17/15 12:55
Date Received: 09/18/15 15:30

Lab Sample ID: 720-67488-3
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	23		10		mg/L			09/22/15 12:26	10
Chloride	14		10		mg/L			09/22/15 12:26	10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	11		0.50		mg/L		09/22/15 15:47	09/24/15 01:47	1
Boron	0.21		0.050		mg/L		09/22/15 15:47	09/24/15 01:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	270		10		mg/L			09/23/15 09:49	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 720-189382/4
Matrix: Water
Analysis Batch: 189382

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0		mg/L			09/22/15 11:18	1
Chloride	ND		1.0		mg/L			09/22/15 11:18	1

Lab Sample ID: LCS 720-189382/5
Matrix: Water
Analysis Batch: 189382

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	9.86		mg/L		99	90 - 110
Chloride	10.0	9.46		mg/L		95	90 - 110

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 720-189272/1-A
Matrix: Water
Analysis Batch: 189425

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189272

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		0.50		mg/L		09/21/15 09:11	09/22/15 17:10	1
Boron	ND		0.050		mg/L		09/21/15 09:11	09/22/15 17:10	1

Lab Sample ID: LCS 720-189272/2-A
Matrix: Water
Analysis Batch: 189425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189272

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	10.0	10.1		mg/L		101	80 - 120

Lab Sample ID: LCSD 720-189272/3-A
Matrix: Water
Analysis Batch: 189425

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189272

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	10.0	9.89		mg/L		99	80 - 120	2	20

Lab Sample ID: MB 720-189405/1-A
Matrix: Water
Analysis Batch: 189541

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189405

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		0.50		mg/L		09/22/15 15:47	09/24/15 00:52	1
Boron	ND		0.050		mg/L		09/22/15 15:47	09/24/15 00:52	1

Lab Sample ID: LCS 720-189405/2-A
Matrix: Water
Analysis Batch: 189541

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189405

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	10.0	9.37		mg/L		94	80 - 120

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCSD 720-189405/3-A
Matrix: Water
Analysis Batch: 189541

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189405

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium			10.0	9.25		mg/L		93	80 - 120	1	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 440-281871/1
Matrix: Water
Analysis Batch: 281871

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			09/23/15 09:49	1

Lab Sample ID: LCS 440-281871/2
Matrix: Water
Analysis Batch: 281871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			1000	1010		mg/L		101	90 - 110		

HPLC/IC

Analysis Batch: 189382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-67488-1	SILVEIRA INLET	Total/NA	Water	300.0	
720-67488-2	SILVEIRA OUTLET	Total/NA	Water	300.0	
720-67488-3	LAKE SILVEIRA	Total/NA	Water	300.0	
LCS 720-189382/5	Lab Control Sample	Total/NA	Water	300.0	
MB 720-189382/4	Method Blank	Total/NA	Water	300.0	

Metals

Prep Batch: 189272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-67488-1	SILVEIRA INLET	Total/NA	Water	3010A	
720-67488-2	SILVEIRA OUTLET	Total/NA	Water	3010A	
LCS 720-189272/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 720-189272/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	
MB 720-189272/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 189405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-67488-3	LAKE SILVEIRA	Total/NA	Water	3010A	
LCS 720-189405/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 720-189405/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	
MB 720-189405/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 189425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 720-189272/2-A	Lab Control Sample	Total/NA	Water	6010B	189272
LCSD 720-189272/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	189272
MB 720-189272/1-A	Method Blank	Total/NA	Water	6010B	189272

Analysis Batch: 189463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-67488-1	SILVEIRA INLET	Total/NA	Water	6010B	189272
720-67488-2	SILVEIRA OUTLET	Total/NA	Water	6010B	189272

Analysis Batch: 189539

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-67488-1	SILVEIRA INLET	Total/NA	Water	6010B	189272
720-67488-2	SILVEIRA OUTLET	Total/NA	Water	6010B	189272

Analysis Batch: 189541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-67488-3	LAKE SILVEIRA	Total/NA	Water	6010B	189405
LCS 720-189405/2-A	Lab Control Sample	Total/NA	Water	6010B	189405
LCSD 720-189405/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	189405
MB 720-189405/1-A	Method Blank	Total/NA	Water	6010B	189405

QC Association Summary

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira/Upper Llagas

TestAmerica Job ID: 720-67488-1

General Chemistry

Analysis Batch: 281871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-67488-1	SILVEIRA INLET	Total/NA	Water	SM 2540C	
720-67488-2	SILVEIRA OUTLET	Total/NA	Water	SM 2540C	
720-67488-3	LAKE SILVEIRA	Total/NA	Water	SM 2540C	
LCS 440-281871/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-281871/1	Method Blank	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira/Upper Llagas

TestAmerica Job ID: 720-67488-1

Client Sample ID: SILVEIRA INLET

Lab Sample ID: 720-67488-1
Date Collected: 09/17/15 11:15
Matrix: Water
Date Received: 09/18/15 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	189382	09/22/15 11:52	MJK	TAL PLS
Total/NA	Prep	3010A			189272	09/21/15 09:11	OBI	TAL PLS
Total/NA	Analysis	6010B		1	189463	09/23/15 00:23	SLK	TAL PLS
Total/NA	Prep	3010A			189272	09/21/15 09:11	OBI	TAL PLS
Total/NA	Analysis	6010B		1	189539	09/24/15 00:17	SLK	TAL PLS
Total/NA	Analysis	SM 2540C		1	281871	09/23/15 09:49	XL	TAL IRV

Client Sample ID: SILVEIRA OUTLET

Lab Sample ID: 720-67488-2
Date Collected: 09/17/15 12:20
Matrix: Water
Date Received: 09/18/15 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	189382	09/22/15 12:09	MJK	TAL PLS
Total/NA	Prep	3010A			189272	09/21/15 09:11	OBI	TAL PLS
Total/NA	Analysis	6010B		1	189463	09/23/15 00:38	SLK	TAL PLS
Total/NA	Prep	3010A			189272	09/21/15 09:11	OBI	TAL PLS
Total/NA	Analysis	6010B		1	189539	09/24/15 00:22	SLK	TAL PLS
Total/NA	Analysis	SM 2540C		1	281871	09/23/15 09:49	XL	TAL IRV

Client Sample ID: LAKE SILVEIRA

Lab Sample ID: 720-67488-3
Date Collected: 09/17/15 12:55
Matrix: Water
Date Received: 09/18/15 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	189382	09/22/15 12:26	MJK	TAL PLS
Total/NA	Prep	3010A			189405	09/22/15 15:47	ASB	TAL PLS
Total/NA	Analysis	6010B		1	189541	09/24/15 01:47	SLK	TAL PLS
Total/NA	Analysis	SM 2540C		1	281871	09/23/15 09:49	XL	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Certification Summary

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira/Upper Llagas

TestAmerica Job ID: 720-67488-1

Laboratory: TestAmerica Pleasanton

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-16

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-16
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-16 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-16
Hawaii	State Program	9	N/A	01-29-16
Nevada	State Program	9	CA015312007A	07-31-16 *
New Mexico	State Program	6	N/A	01-29-16
Northern Mariana Islands	State Program	9	MP0002	01-29-16
Oregon	NELAP	10	4005	01-29-16
USDA	Federal		P330-09-00080	07-08-18

* Certification renewal pending - certification considered valid.

Method Summary

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira/Upper Llagas

TestAmerica Job ID: 720-67488-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PLS
6010B	Metals (ICP)	SW846	TAL PLS
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Sample Summary

Client: Santa Clara Valley Water Dist
Project/Site: Lake Silveira/Upper Llagas

TestAmerica Job ID: 720-67488-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-67488-1	SILVEIRA INLET	Water	09/17/15 11:15	09/18/15 15:30
720-67488-2	SILVEIRA OUTLET	Water	09/17/15 12:20	09/18/15 15:30
720-67488-3	LAKE SILVEIRA	Water	09/17/15 12:55	09/18/15 15:30

Santa Clara Valley Water District

Water Quality Laboratory
1026 Blossom Hill Road
San Jose, CA 95123

FC 1334 (05-24-12)

720-67488

163863

CHAIN OF CUSTODY—LABORATORY

Work Order No. _____

Client:

Project Name:	Project No.:	Laboratory:	Requested by:
Lake Silveira/Upper Hagas	26174054	Test America	Melissa Moore
☐ Compliance Samples ☐ Non-Compliance Samples ☐ Requires State Forms		Site Location: Lake Silveira, Morgan Hill	Sampled by: Ben Hwang

TAT Requested (Rush by advance notice only):
☐ Standard (2 weeks) ☐ Rush

Sample ID	Lab No.	Date Collected	Time Collected	Matrix	No. of Samples	Boron	Sodium	Chloride	Sulfate	Total Dissolved Solids (TDS)	Sampler Comments
Silveira Inlet		9/17/15	11:15 AM			X	X	X	X	X	
Silveira Outlet		9/17/15	12:20 P.M.			X	X	X	X	X	
Lake Silveira		9/17/15	12:55 P.M.			X	X	X	X	X	

Analyses Requested — ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ◄ ☒ Preserved*

720-67488 Chain of Custody

MATRIX ABBREVIATION: **RSW** = Raw Surface Water; **CTW** = Chlor(am)inated Treated Water; **RGW** = Raw Ground Water; **OTW** = Other Treated Water; **SW** = Storm Water

Samples Checked Against COC by:

Sample Temp When Rec'd by Lab: ☐ ≤ 6°C ☐ > 6°C

Condition of Blue Ice: ☐ Frozen ☐ Partially Frozen ☐ Thawed

Other Observations:

Relinquished by Affiliation Signature/Company	Print Name	Received by Signature/Company	Print Name	Date	Time
SCVWD	Ben Hwang		Gary Evans	9/18/15	1917

Distribution: **ORIGINAL**–RETURN TO DISTRICT WITH RESULTS, **YELLOW**–Laboratory; **PINK**–District

Page ____ of ____

*The sample container is preserved per the method requirement(s).

received by.

Gary Evans 9-18-15 15:30 — 9/18/15 1530 — 1.0°c

Login Sample Receipt Checklist

Client: Santa Clara Valley Water Dist

Job Number: 720-67488-1

Login Number: 67488
List Number: 1
Creator: Bullock, Tracy

List Source: TestAmerica Pleasanton

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Santa Clara Valley Water Dist

Job Number: 720-67488-1

Login Number: 67488
List Number: 2
Creator: Ornelas, Olga

List Source: TestAmerica Irvine
List Creation: 09/22/15 01:46 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX E

Design Plans for Upper Llagas Project

APPENDIX F

A Watershed Approach to Restoration and Mitigation Planning, Monitoring, and Assessment Based on the Wetland and Riparian Area Monitoring Plan

SFEI | AQUATIC SCIENCE CENTER

NUMBER 818 MAR 2017

A Watershed Approach to Restoration and Mitigation Planning, Monitoring, and Assessment Based on the Wetland and Riparian Area Monitoring Plan (WRAMP)

Addendum to the Upper Pajaro River Watershed Assessment 2015

Report Prepared for the Santa Clara Valley Water District
Llagas Creek Flood Control Project

SWVWD P.O. GEN-0000028333
SFEI-ASC project # 4094.01

Authors:
Sarah Lowe, Josh Collins, and Sarah Pearce

Date: March 3, 2017

SAN FRANCISCO ESTUARY INSTITUTE and the AQUATIC SCIENCE CENTER
4911 Central Avenue, Richmond, CA 94804 • p: 510-746-7334 (SFEI) • f: 510-746-7300 • www.sfei.org

THIS REPORT SHOULD BE CITED AS:

Lowe, S., Collins, J.N., and Pearce, S. (2017). A Watershed Approach to Restoration and Mitigation Planning, Monitoring, and Assessment Based on the Wetland and Riparian Area Monitoring Plan (WRAMP). San Francisco Estuary Institute & Aquatic Science Center, Richmond. CA. Contribution # 818.

Introduction

The Santa Clara Valley Water District (District) is leading the Llagas Creek Flood Control Project (Project) in the upper Pajaro River watershed. Mitigation for the Project involves enhancing riverine wetlands on-site and restoring riverine wetlands and enhancing depressional wetlands at Lake Silveira, in the Llagas Creek watershed.

The District is incorporating CRAM into its planning and assessment of mitigation efforts. CRAM results from the District's assessment of ambient stream conditions in the Llagas Creek watershed provide a watershed context for comparing impact and mitigation sites, consistent with USACE guidance (USACE 2015), which states:

> "A Functional or Condition Assessment Method (FCAM) should be developed and calibrated for the aquatic resource type/s and geographic area within which it is being applied. The same FCAM should be used to assess the impacts and proposed compensatory mitigation"

The District completed initial Project planning in 2013, including a Habitat Evaluation Procedure (HEP) to assess project-related impacts to fish and other wildlife resources, and to inform impact and mitigation site designs, including grading, irrigation, and re-vegetation. The District mapped the pre-construction riverine and depressional wetlands within the Project impact and at Lake Silveira. Those maps served as the sample frame for a field survey of pre-construction conditions using the California Rapid Assessment Method for wetlands (CRAM, Figure 1). The same assessment areas (AAs) were also used to estimate the future, post-construction wetland conditions of the Project and Mitigation sites (at 25 years after project completion) based on the planned flood control impacts and mitigation efforts.

The Llagas Creek watershed-wide stream condition survey was conducted under the District's Safe, Clean Water and Natural Flood Protection Program's Ecological Data Collection and Analysis Project (Priority D5), which assessed the ecological condition of streams in the whole upper Pajaro River watershed within Santa Clara County in 2015 using CRAM (Lowe et al. 2016).

The Flood Control Project's pre-construction CRAM field assessments were conducted in 2015 under the supervision of a senior member of the statewide CRAM oversight committee of the California Wetland Monitoring Workgroup (CWMW). The estimated post-construction conditions were assessed based on detailed restoration designs.

The pre- and post-construction CRAM results were: 1) overlaid on the Llagas Creek watershed wide stream condition cumulative distribution function (CDF) plot to evaluate the Project and Mitigation scores in a watershed context, and 2) compared to characterize the expected overall ecological lift in the condition of the riverine and depressional wetlands within the Project and Mitigation sites based on CRAM.

Post-construction CRAM condition scores were supplemented by a separate analysis of the expected mitigation endpoints based on Habitat Development Curves (HDCs). An HDC depicts the correlation between habitat condition and age for a large population of natural and restored sites. HDC's based on CRAM are being produced by the CWMW for the wetland types most commonly assessed using CRAM.

This memorandum demonstrates a possible watershed-based approach to evaluating mitigation sites using CRAM. A more comprehensive approach can be developed using additional data according to the 3-level framework provided by the Wetland and Riparian Area Monitoring Plan (WRAMP, CWMW 2010). WRAMP is produced by the CWMW and has been adopted by the District's D5 Project for assessments of watershed condition.

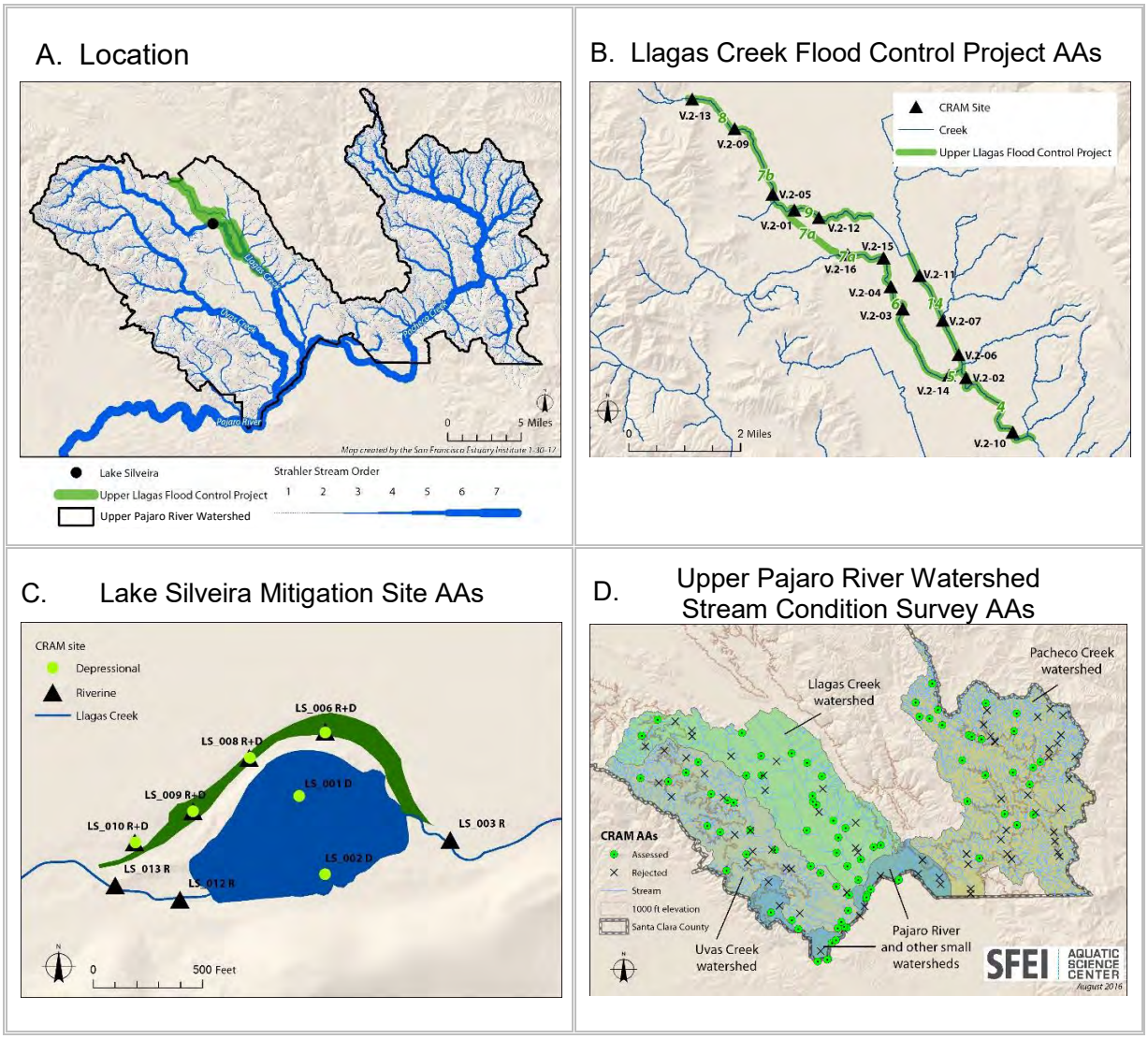


Figure 1. This figure shows (A) the location of the Llagas Creek Flood Control Project and Lake Silveira Mitigation Site along Llagas Creek in the upper Pajaro River watershed of Santa Clara County; (B) CRAM AAs within the Project Site; (C) CRAM AAs at the Lake Silveira Site; and (D) CRAM AAs for the District's Priority D5 Project's 2015 watershed wide ambient survey of stream condition in upper Pajaro River watershed and its three main watersheds.

Methods

CRAM Survey Designs

Two different survey designs were employed for the Llagas Creek Flood Control Project site and Lake Silveira Mitigation site based on the size of the two areas and the different wetland types to assess.

The Flood Control Project site includes 8 stream reaches and nearly 15 miles of streams and an unstratified sample design was selected to proportionally distribute CRAM AAs across the whole stream length. 15 AAs were randomly allocated across the Project extent using spatial survey design and analysis software tools for aquatic resources developed by the USEPA (Kincaid and Olsen 2016), and employed by the District's Priority D5 Project's watershed wide stream condition surveys using CRAM. Each AA represents an equal proportion of the Project or about 1 mile of the Flood Control Project extent.

The Lake Silveira Mitigation site is relatively small, encompassing about 8 acres. CRAM AAs were assigned based on guidance in the CRAM Technical Bulletin, section 5.D (CWMW 2009). Briefly, the extent of the riverine and depressional wetlands were identified on a GIS layer, and CRAM AAs were drawn to fill the entire extent of each wetland type. All the candidate AAs were then numbered sequentially. Because only 3 riverine AAs currently exist at the site, all three riverine AAs were assessed. The quarry-pond included 2 candidate AAs which were both assessed using the Depressional wetland module. The historical channel, which is currently depressional wetland and will be restored to riverine, fit 8 candidate AAs of which 4 were assessed. The final number of depressional assessments completed in the historical channel was dependent on the actual variability in its condition as observed in the field. Following guidance from the CRAM Technical Bulletin, the first 3 AAs were assessed and depending on the amount of variation between CRAM scores, additional assessments were added until the difference between the average scores of the initial assessments and the most recent assessment was <10 Index points.

CRAM Assessments

The pre-construction CRAM assessments were conducted in July 2015 by experienced CRAM Practitioners who were also conducting the District's Priority D5 upper Pajaro River watershed stream condition survey based on CRAM.

The CRAM assessments of future, post-construction conditions assumed that the planned onsite Project construction and vegetation planting efforts will be fully implemented, and that the AAs had fully matured.

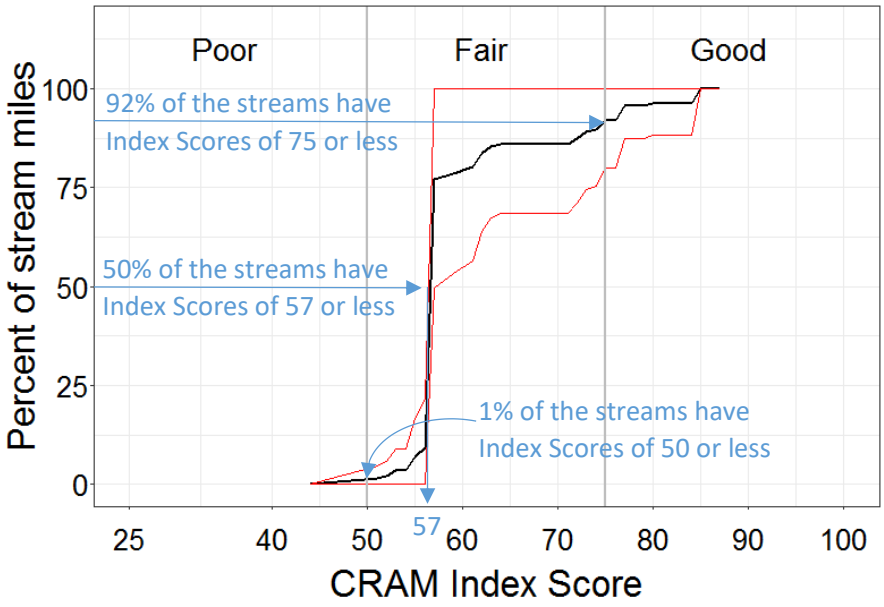
Pre- and post-construction CRAM scores were evaluated by charting them on the regional CRAM CDF plots to evaluate the overall ecological condition of the Project and Mitigation sites compared to the region and to evaluate the expected ecological lift due to wetland restoration efforts.

Pre- and post-construction CRAM scores were also summarized in simple box-and-whisker plots (boxplots) that compared the range, average, and median scores. The average scores were used to characterize the expected change in ecological conditions based on the planned wetland restoration efforts.

Application of CDFs and HDCs

The CDF plots presented in this report show the proportion of streams within a watershed or Project extent that has a specific CRAM score. Figure 2 shows the CDF plot for CRAM Index Scores of the Llagas Creek watershed stream condition survey of 2015. The black line represents the estimated percentage of stream network that has a specific corresponding CRAM score or lower. The two red lines represent the 95% confidence levels around the estimate. The blue arrows show examples of how to read across and down on the CDF to get the estimated percentage of streams with a specific CRAM Index Score. The range of possible CRAM scores has been separated into three equal-interval health classes labeled Good, Fair and Poor, as represented by CRAM scores of >75, 51-75, and ≤50, respectively.

Project AAs should achieve at least as good (or better) a CRAM Index Score than 50% of the streams within the surrounding watershed (or ecoregion) as estimated by the CDF, which is based on a probability sample or a reasonably large and spatially distributed regional sample.



Another way to summarize the overall watershed condition based on this example is to say that 8% of the streams are in Good ecological condition (>75), 91% are in Fair condition (51-75), and 1% are in Poor condition (≤50).

Figure 2. CDF plot of the CRAM Index Scores for the Llagas Creek watershed showing how to read across and down, and how to interpret the proportion of streams within the watershed that fall within the three equal-interval health classes of Poor, Fair and Good.

An HDC relates the condition of a habitat to its development stage or age. HDCs are useful for forecasting the rate of development of ecological restoration sites and have been developed for riverine wetlands in southern California coastal watersheds and for depressional wetlands statewide, using CRAM to assess condition. These HDCs can also be used in conjunction with CRAM Attribute and Metric Scores to gain insights about aspects of condition that might be improved through project design or management. Project AAs should achieve (or clearly be on a trajectory to achieve) a CRAM Index Score that is on or above the HDC.

Results

Application of Watershed Based Cumulative Distribution Function Curves

Llagas Creek Flood Control Project Site

Analysis of overall ecological condition based on CRAM Index Scores

CRAM field assessments (n=15) of pre-construction and estimated post-construction conditions for riverine wetlands in Llagas Creek Flood Control Project were plotted on the Llagas Creek CRAM Index Score CDF or streams in the Llagas Creek watershed (Figure 3).

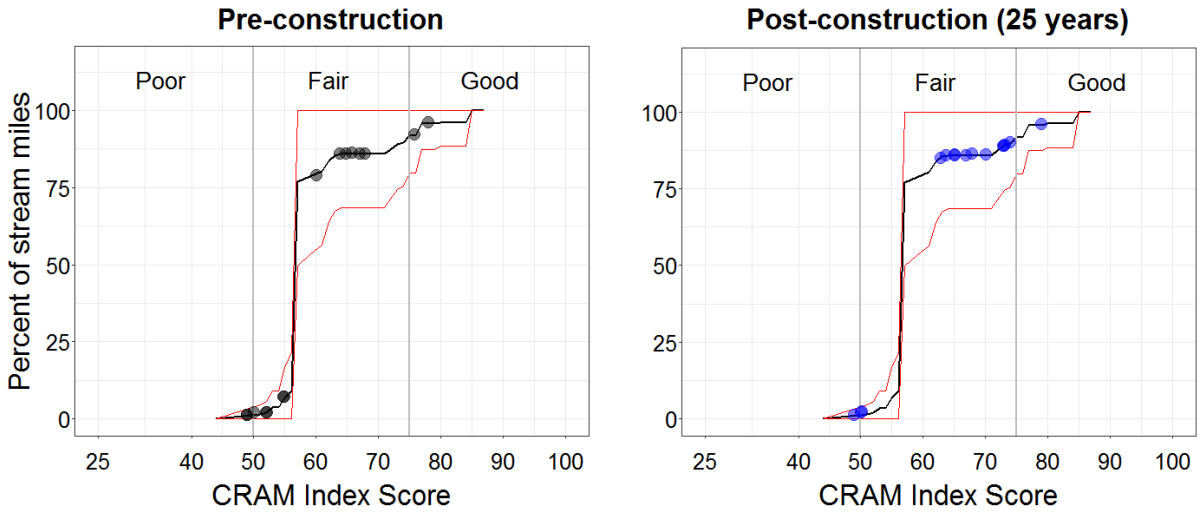


Figure 3. Existing (pre-construction) and expected future (post-construction) CRAM Index Scores for onsite Project riverine AAs plotted on the CDF profile of riverine wetlands for the Llagas Creek watershed.

The CDF indicates that streams within the Lllagas Creek watershed are mostly in Fair ecological condition. Less than 10% of the stream miles in the watershed are in Good condition, and about 1% of stream miles are in Poor condition.

7 of the 15 pre-construction onsite Project AAs had had Index Scores ≤55 and 3 of those AAs were in Poor condition (although it is difficult to see in Figure 2 since scores for three of the seven AA overlap). Those 7 low scores represent about half of the Flood Control Project's stream length and are comparable to the condition of 10% of streams in the Llagas Creek watershed. Three of the 7 AAs that were in Poor condition did not improve in the post-construction assessment because those areas have

no plans to be enhanced or restored[1]. The remaining four low-scoring pre-construction assessments are expected to increase between 9 and 15 CRAM Index points to an average Index Score of 65 - placing them well above the 50th percentile Index Score of 57 for the Llagas Creek watershed.

Whether or not the Project enhancements would significantly improve the overall Llagas Creek watershed CDF curve (shifting the curve towards the right) is largely dependent on the proportion of riverine wetlands in the Llagas Creek watershed represented by the enhancement project. This Project only effects 6% of the stream miles within the Llagas Creek watershed (14 out of 250 miles) and it is not expected to significantly change the CDF profile for the whole watershed. However, the Project is being implemented in highly modified stream channels within the valley floor region of the watershed and it will likely improve the overall ecological condition of modified stream reaches within the watershed.

When all 15 CRAM assessments completed at the Project site are included in the analysis, the average increase in overall ecological condition of the onsite streams is expected to be about 6 Index points (see the asterisks in the box-and-whisker plots presented in Figure 4). Post-construction Index Scores indicate that the Project will improve conditions for 80% of the stream miles within the Project.

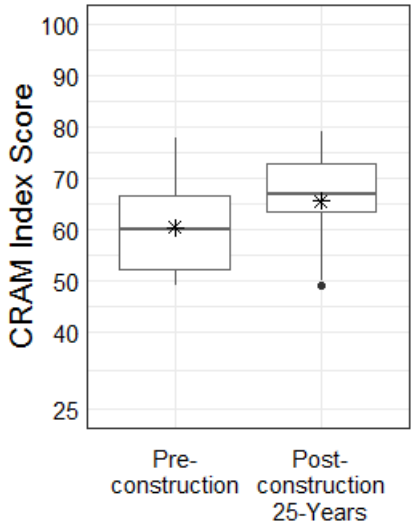


Figure 4. Boxplots[2] showing the interquartile range of CRAM Index Scores for the Llagas Creek Flood Control Project (n=15) pre- and post-construction, including the average Index Scores (shown as asterisks). There is an expected 6-point increase in the average Index Score for on-site riverine wetlands due to the Project's enhancement plans.

[1] SiteIDs: V.2-01 and V.2-12 in reach #9, and V.2-09 in reach #8.

[2] The 'box' within the boxplot indicates the interquartile range (or 25th and 75th percentiles) of the CRAM Project's Index scores (n=15). The median Index score (or 50th percentile score) is represented by the bold horizontal line inside the box. The average (or mean) Index score is indicated by an asterisk. The vertical lines (or whiskers) extend 1.5 x the inter-quartile range (or the distance between the 25th and 75th percentile range). Outliers are shown as black dots.

When the three Poor condition AAs, representing stream reaches that will not be enhanced, are dropped from the analysis the remaining 12 AAs that represent enhanced reaches can be used to more exactly assess the lift due to enhancement. These 12 AAs represent 80% of the stream miles in the Project (Figures 5 and 6). The expected lift equals about 7 CRAM points.

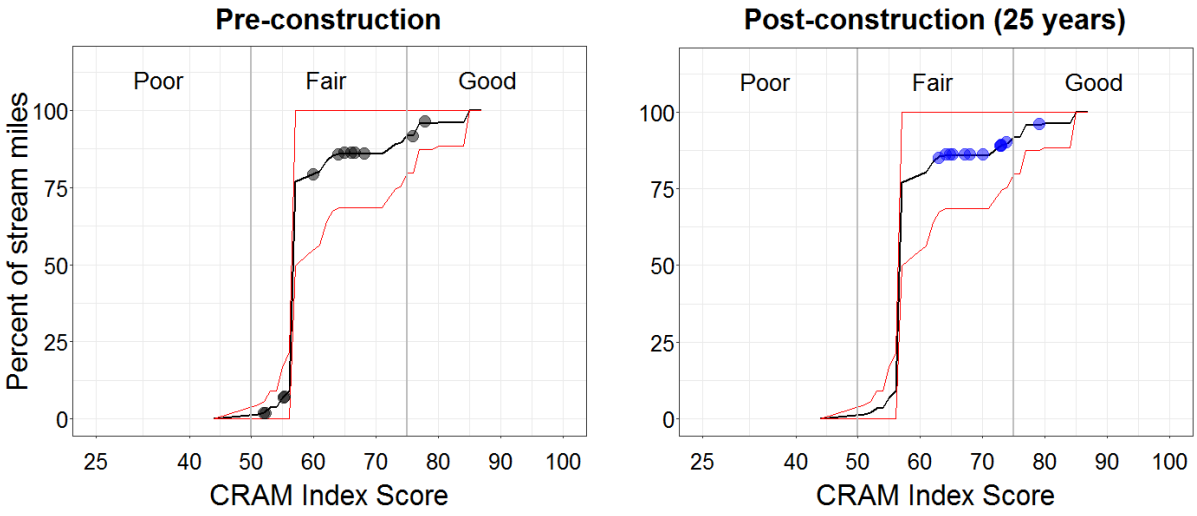


Figure 5. Pre- and post-construction CRAM Index Scores for 12 of the 15 onsite Project riverine AAs plotted on the CDF of riverine wetlands for the Llagas Creek watershed. These assessments represent areas of planned riverine wetland impacts or enhancements. This figure does not include 20% of the Project stream length represented by 3 AAs that have no planned impacts or enhancement actions.

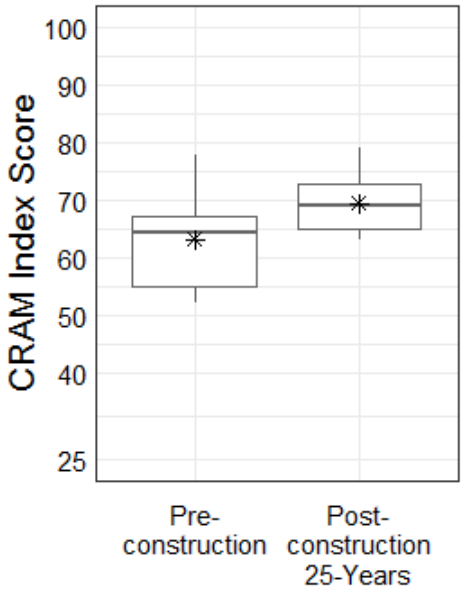


Figure 6. Boxplot showing an expected 7-point increase in the average CRAM Index Scores (asterisks) n for steams miles subject to restoration or enhancement (80% of the total stream miles). This figure does not include the 20% of the Project stream miles represented by 3 AAs that have no planned impacts or enhancement actions.

Analysis of specific ecological functions within the Project based on CRAM Attribute Scores

The following analysis characterizes of the underlying CRAM Attribute Scores that comprise the overall CRAM Index Scores presented above. CRAM Attribute Scores from pre- and post- construction assessments from the Project were plotted on the Attribute CDFs for streams in the Llagas Creek watershed, summarized visually as boxplots (Figures 7 and 8), and listed in Appendix 2. The CDF plots indicate the percent of streams in Good, Fair, or Poor condition. The Boxplots provide an additional comparison of the pre- and post-construction Project scores.

80% of streams in the Llagas Creek watershed have Good Buffer and Landscape Context Attribute Scores, but only 20% of the pre-construction streams in the Project have Good Buffer Scores (3 out of 15 AAs). The stream restoration and enhancement actions are expected to increase the proportion of Project stream miles in Good Buffer condition from 20% to 60%. Pre-construction assessments indicate that most of the Project's Buffer and Landscape Context is similar to the lowest 20th percentile of streams in the watershed. Pre-construction Buffer Scores ranged from Poor to Good condition (30 to 85) with an average score of 71 (Fair condition). The post-construction average Buffer Score is expected to increase by 3-points to 74 (compare asterisks in boxplots of Figure 7A), and 7 out of 15 AAs are expected to improve their overall Buffer conditions by 6 to 11-points.

75% of stream miles in the Llagas Creek watershed have Good Hydrology Attribute Scores, while all of the pre-construction streams are in Poor or Fair condition. The Project's pre-construction hydrologic condition, based on CRAM, falls within the lowest 25th percentile of streams in the watershed. The average post-construction Hydrology Score is expected to increase by 8-points, with 20% of the Project stream miles achieving Good Hydrology condition Scores. 2 AAs are expected to decrease in Hydrology Attribute Scores by about 9-points due to necessary flow management and unnatural engineering.

Only about 7% of stream miles in the Llagas Creek watershed have Good condition for Physical Structure Attribute; 3% have Fair condition; and 90% of the stream miles have Poor condition. . The pre-construction Project has just over half of its stream miles (8 of 15 AAs) in Poor condition for physical structure and the other half has Fair condition. The post-construction average Physical Structure Score is expected to decrease by 2-points to 50, and up to 73% of the Project is expected to have Poor Physical Structure Scores. 4 AAs are expected to decrease in Physical Structure Scores by 12 to 25-points.

12% of streams in the Llagas Creek watershed have Good Biotic Structure Attribute Scores, 8% have Fair structure Scores, and 80% of the streams have Poor Scores. 47% of the pre-construction Project streams have Poor Biotic Structure Scores, 40% have Fair Biotic Structure Scores, and 13% have Good scores. The average pre-construction Biotic Structure Score is 55 (Fair condition). The post-construction average Biotic Structure Score is expected to increase by 11-points to 66, and 20% of the Project is expected to have Good Biotic Structure Scores >75. 13 of the 15 AAs are expected to see an increase in Biotic Structure Scores by 3 to 25-points.

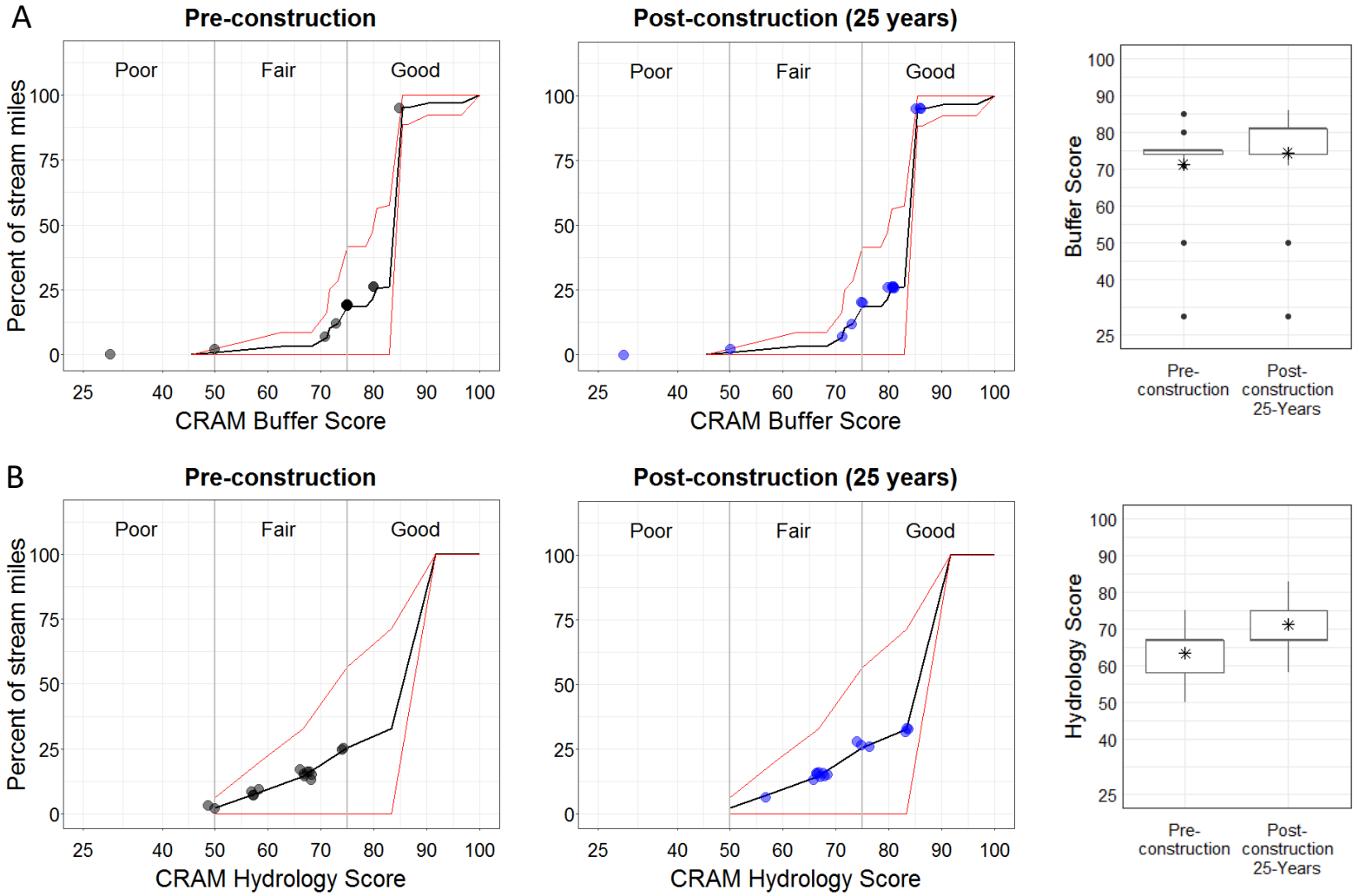


Figure 7. CRAM Buffer and Landscape Context (A) and Hydrology (B) Attribute Scores from the Flood Control Project's onsite pre- and post-construction riverine assessments (n=15) plotted on the corresponding Llagas Creek watershed CDF, along with boxplots that visually summarize the distribution of the onsite Project Scores.

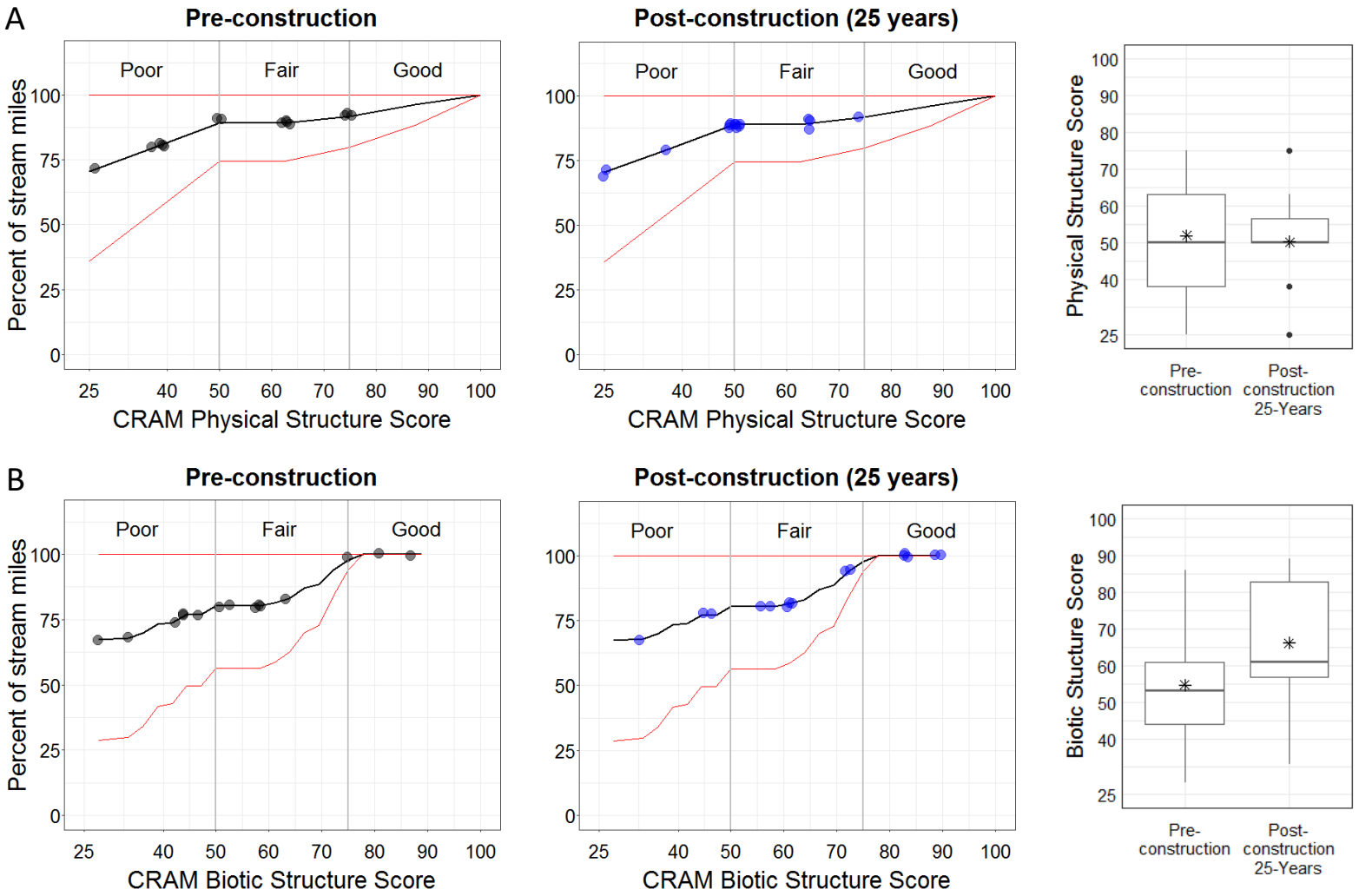


Figure 8. CRAM Physical Structure (A) and Biotic Structure (B) Attribute Scores from the Flood Control Project's onsite pre- and post-construction riverine assessments (n=15) plotted on the corresponding Llagas Creek watershed CDF, along with boxplots that visually summarize the distribution of onsite Project Scores.

Project Site - Summary of Index and Attribute Score Analyses

The Flood Control Project's riverine CRAM Index Scores ranged from Poor (Index Scores <50) to Good (Index Scores >75) and occupy the same range of condition as streams in the surrounding Llagas Creek watershed. About half the Project's streams are in relatively low ecological condition (with 7 of the 15 AA Index Scores classified as Poor) and compared to the lowest 10% of streams within the Llagas Creek watershed as a whole. A portion of the Project's stream miles will not be impacted or enhanced by Project actions, and three AAs from those areas had the lowest Index Scores, which are not expected to improve over time. Even so, the average overall ecological condition for 80% of the stream miles within the Project is expected to improve by 6 Index points in the future to an average Index Score of 65 (see Figure 4 post-construction, above).

Project Attribute scores were evaluated to characterize core wetland functions within a watershed context. The Project's pre-construction Buffer and Hydrology Scores generally fall within the lowest 25th percentile of the condition of streams within the watershed. Physical and Biotic Structure within the Project are generally Poor, but are consistent with Physical and Biotic Structure of streams in the surrounding watershed. Project implementation plans are expected to increase Buffer and Landscape Context and Hydrology Attribute Scores by an average of 3 and 8-points, respectively. However, Physical Structure Scores will not increase based on the Project's implementation plans. The Project's Biotic Structure Attribute Scores are expected to improve the most with an estimated average increase in scores of 11-points. Additionally, 13 of the 15 AAs are expected to see an increase in Biotic Structure Scores of 3 to 25-points.

Lake Silveira Mitigation Site

At Lake Silveira, an historical stream reach that has evolved into depressional wetlands due to flow diversion will be restored to riverine wetlands, and the quarry-pond, which is classified as depressional wetlands, will be enhanced. Figure 9 presents a map of Lake Silveira and the CRAM AAs surveyed in 2015. Three riverine AAs, located in stream reaches upstream and downstream of the quarry-pond will remain riverine. The mature, post-construction conditions based on CRAM were estimated based on the detailed, site-specific mitigation plans.

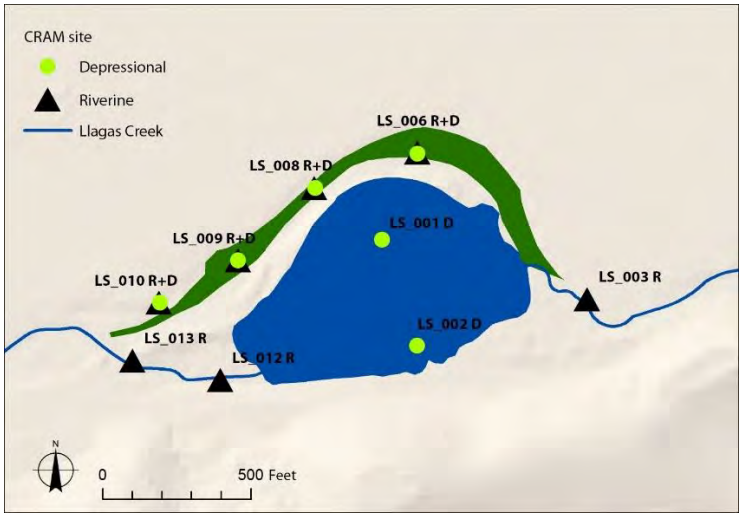


Figure 9. Lake Silveira Mitigation Site AAs. The green area, north of the quarry-pond, is an historical riverine channel that is currently depressional wetlands that will be restored.

Analysis of overall ecological condition based on CRAM Index Scores

CRAM field assessments of pre-construction and estimated post-construction conditions for riverine wetlands at the Lake Silveira Mitigation site were plotted on the Llagas Creek CRAM Index Score CDF for streams in the Llagas Creek watershed (Figure 10). Existing pre-construction riverine wetlands were assessed at 3 AAs and post-construction riverine wetlands included 7 AAs (they include the 3 AAs that will be enhanced and 4 AAs that will be restored from depressional wetlands in the historical channel north of the quarry-pond).

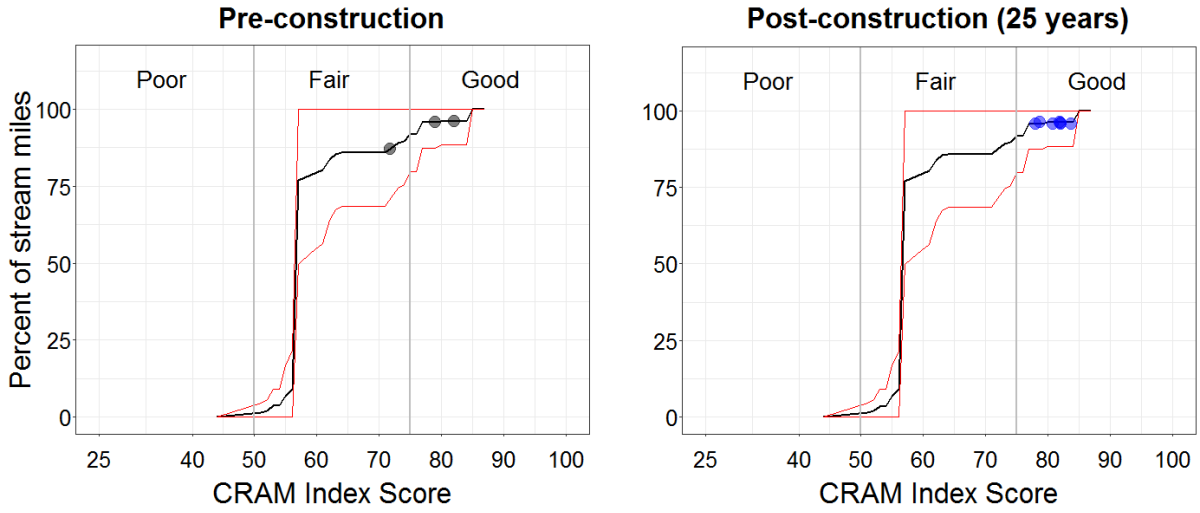


Figure 10. Pre- and post-construction CRAM Index Scores for riverine wetlands at the Lake Silveira Mitigation site plotted on the CDF of riverine wetlands for the Llagas Creek watershed.

The pre-construction riverine CRAM Index Scores fall within the top 20th percentile of streams in the Llagas Creek watershed. Boxplots in Figure 11 summarize basic statistics about the range of those Index Scores and indicate that the average expected increase in Index Scores for riverine wetlands at Lake Silveira is about 3-points, based on mitigation plans.

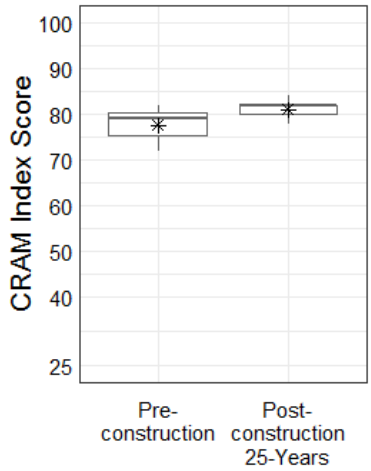


Figure 11. Boxplot showing the range of pre- and post-construction CRAM Index Scores for riverine wetlands at the Lake Silveira Mitigation site. Pre-construction riverine AAs (n=3) will be enhanced by mitigation efforts and existing depressional wetlands in the historical riverine channel will be restored to riverine wetlands (n=4). There are 7 post-construction scores represented here. There is an expected 3-point increase in the average riverine CRAM Index Scores (asterisks) due to enhancements and restoration.

To further evaluate the change in ecological conditions of the restored riverine wetlands within the Silveira site, depressional CRAM assessments from the historical riverine channel (north of the quarry-pond) were compared to the corresponding post-construction riverine assessments to characterize the change in condition between the pre-construction depressional wetlands and the expected post-construction riverine wetlands based on planned restoration actions. Based on that comparison, the restored riverine wetlands will score 17 points higher than the existing depressional wetlands Figure 12.

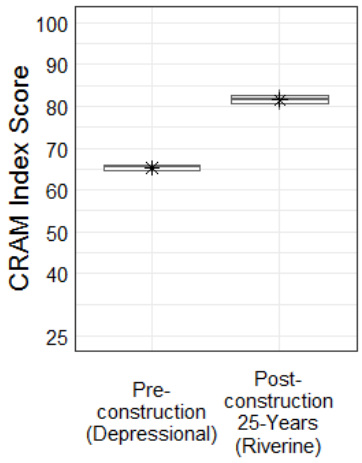


Figure 12. Boxplot showing the range of pre- and post-construction CRAM Index Scores for depressional wetlands that will be restored to riverine wetlands at the Lake Silveira Mitigation site. There is an expected 17-point increase in the average CRAM Index Scores (asterisks) due to this restoration effort.

Analysis of specific ecological functions within Lake Silveira Mitigation Site based on CRAM Attribute Scores

The following analysis characterizes of the underlying CRAM Attribute Scores that comprise the overall riverine CRAM Index Scores presented above. CRAM Attribute Scores from pre- and post-construction riverine assessments from the Lake Silveira Mitigation site were plotted on the Attribute CDFs for streams in the Llagas Creek watershed, summarized visually as boxplots (Figures 13 and 14), and listed in Appendix 2.

80% of streams in the Llagas Creek watershed have Good Buffer and Landscape Context Attribute Scores (Buffer Scores >75), and the pre-construction riverine wetlands in the Mitigation site had very high Buffer Scores (ranging from 86-90) placing them in the top 5% of streams in the Llagas Creek watershed. Enhancement and Restoration of riverine wetlands are expected not to change the overall riverine Buffer Scores. The Buffer Scores at the 4 AAs in the historical riverine channel are expected to increase between 20 and 45-points.

75% of streams in the Llagas Creek watershed have Good Hydrology Attribute Scores (>75), while the pre-construction riverine wetlands at the Mitigation site ranged from Fair (58, n=1) to Good (83, n=2) condition. Enhancement and Restoration of riverine wetlands are expected to increase Hydrology Scores in the historical riverine channel by an average of 14-points (based on the restoration plans), and scores in the existing riverine wetlands are expected to increase as well by an average of 3-points.

Only about 7% of streams in the Llagas Creek watershed have Good scores for the Physical Structure Attribute, 3% have Fair scores, and 90% of the streams have Poor scores. The pre-construction Physical Structure Scores of the existing riverine wetlands are all borderline Good. Enhancement and Restoration of riverine wetlands are not expected to change the Physical Structure Scores with the exception of one AA, within the historical channel, that will increase to an expected Score of 88.

Only 12% of streams in the Llagas Creek watershed have Good Biotic Structure Attribute Scores. 8% have Fair structure Scores, and 80% of the streams have Poor Scores. Pre-construction Biotic Structure Scores for riverine wetlands within the Mitigation site ranges from 64 to 81. Enhancement and Restoration of riverine wetlands are expected to increase the Biotic Structure Scores in the historical riverine channel by an average of 19-points based on the restoration plans, and Scores in the existing riverine wetlands are expected to increase as well by an average of 9-points.

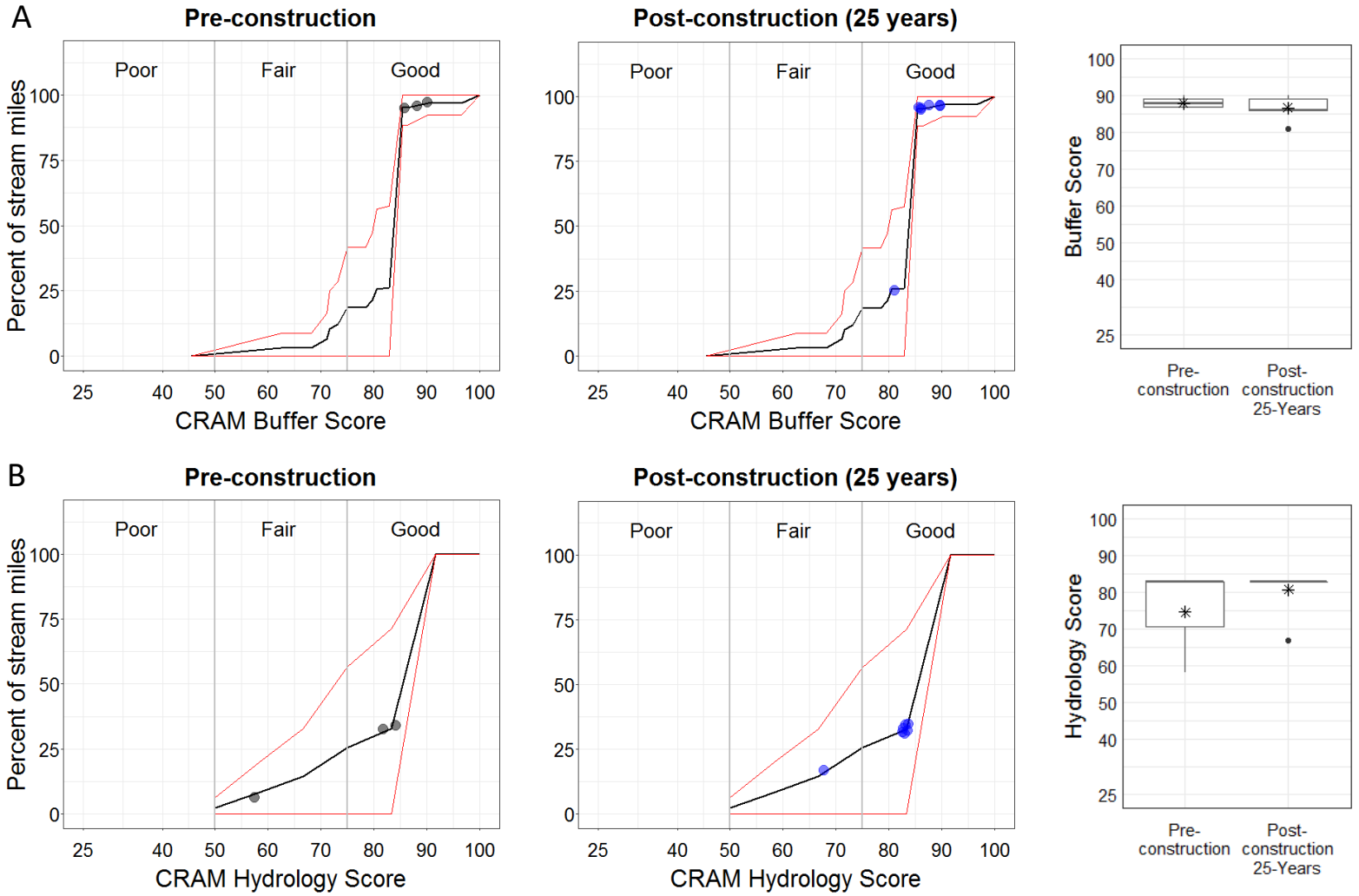


Figure 13. CRAM Buffer and Landscape Context (A) and Hydrology (B) Attribute Scores from the Lake Silveira Mitigation site pre- (n=3) and post-construction (n=7) riverine assessments plotted on the corresponding Llagas Creek watershed CDF, along with boxplots that visually summarize the distribution of the onsite Project scores.

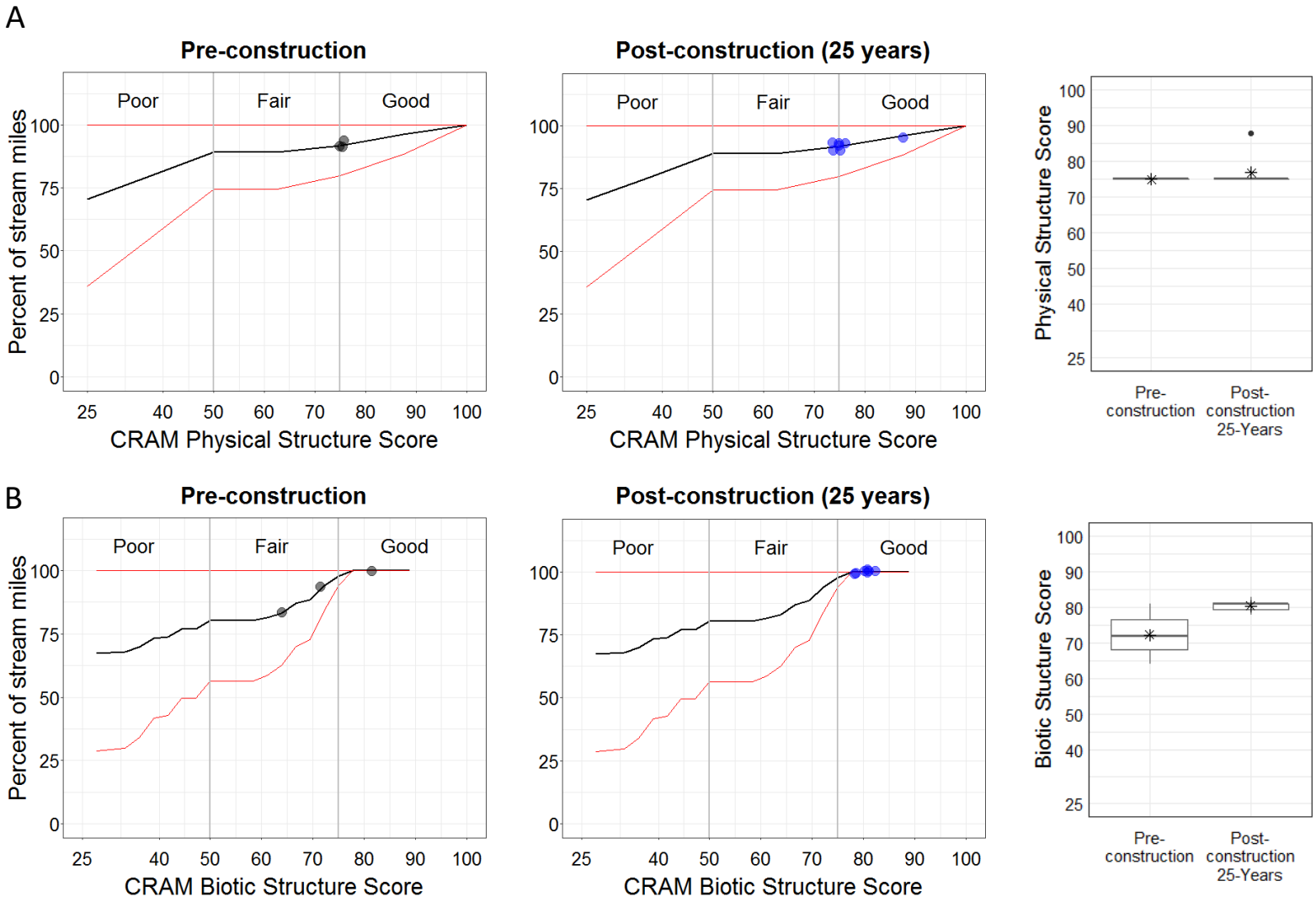


Figure 14. CRAM Physical Structure (A) and Biotic Structure (B) Attribute Scores from the Lake Silveira Mitigation site pre- (n=3) and post-construction (n=7) riverine assessments plotted on the corresponding Llagas Creek watershed CDF, along with boxplots that visually summarize the distribution of the onsite Project Scores.

Mitigation Site - Summary of Riverine Index and Attribute Score Analyses

The project will convert depressional wetlands to riverine wetlands. The overall impact of the riverine wetland creation and enhancement to existing riverine wetlands is expected to increase the overall amount and condition of riverine wetlands within the Lake Silveira mitigation site. All Index Scores are expected to be in "Good condition" in the future. The lowest expected Score will be 78 - at one of the enhanced sites [LS_003_R]). Lake Silveira riverine wetland conditions will be similar to the top 10% of streams within the watershed based on the Llagas Creek watershed CDF (Figure 10 post-construction, above). The wetland functions that increase the most, based on the mitigation plans, are the Buffer and Landscape Context and Biotic Structure. The improved riverine condition scores will be most evident in the restored historical channel.

Whether or not the enhancements would increase the 50th percentile score for the watershed depends on the proportion of total miles of riverine wetlands in the Llagas Creek watershed represented by the enhancement and restoration project, which is very small compared to the 250 miles of streams within the Llagas Creek watershed.

Depressional Wetlands - Quarry-Pond Index and Attribute Scores

The depressional wetland mitigation plans in the quarry-pond at Lake Silveira are likely to improve the overall ecological conditions on the north side of the quarry (LS_001 D) by 5 CRAM Index points, Buffer Scores are expected to increase by 6-points; Physical Structure by 13-points; and Biotic Structure by 17-points. However, the Hydrology Attribute Scores are expected to decrease by 17-points. This is because the mitigation efforts will increase the dependency of the pond on unnatural, managed hydrology. The south side of the quarry-pond (LS_002 D) is not expected to change much with the exception of changes in Hydrology based on the larger Mitigation planned at the Site.

Application of Habitat Development Curves

The future conditions of post-construction riverine and depressional wetlands can also be estimated using habitat development curves (HDCs). An HDC relates the condition of habitat to its developmental age. HCDs can be derived for any indicator of condition or stress, including indices of combined indicators. Multiple HDCs might be used in a weight-of-evidence approach to habitat assessment.

HDCs for CRAM are only available for a few common wetland types, and few watersheds have enough restoration or mitigation projects to support their own HDC. At this time, the only HDCs available for assessing mitigation for this Project are based on regional or statewide CRAM assessments of depressional and riverine wetlands.

To help assure that a wetland mitigation or restoration project improves the overall condition of wetlands within a watershed or other landscape, its condition should fall on or above the appropriate HDC. If not, corrective measures in project design or management should be considered to either reset the initial condition to a higher level or to elevate the condition over time and implement adaptive management efforts, such that the project has a developmental trajectory that intercepts the HDC within a reasonable timeline.

The depressional wetland HDC used for this Project (Figure 15) was derived from a statewide survey of natural and restored sites (SFEI 2016). It indicates that depressional wetland projects are unlikely to attain reference conditions. This is probably an artifact of the dataset. In aggregate, the AAs represent a very broad range in structural complexity due to their broad range in hydroperiod, relative to the reference conditions.

The only available HDC for riverine wetlands was developed for coastal streams of the Southern California Bight (Figure 16 part A, SCCWRP 2016 [in preparation]). Its applicability to the Llagas Creek watershed is questionable. It is included in this evaluation of mitigation sites to further illustrate the use of HDCs.

Like the HDC for depressional wetlands, the existing HDC for riverine wetlands suggests projects will not achieve reference condition. However, unlike the depressional wetlands HDC, which is influenced by the great variability in hydroperiod among projects, the HDC for riverine wetlands is strongly influenced by low project scores for the Physical Structure Attribute (see Figure 16 part C). This suggests that riverine projects should include more physical complexity in their initial designs.

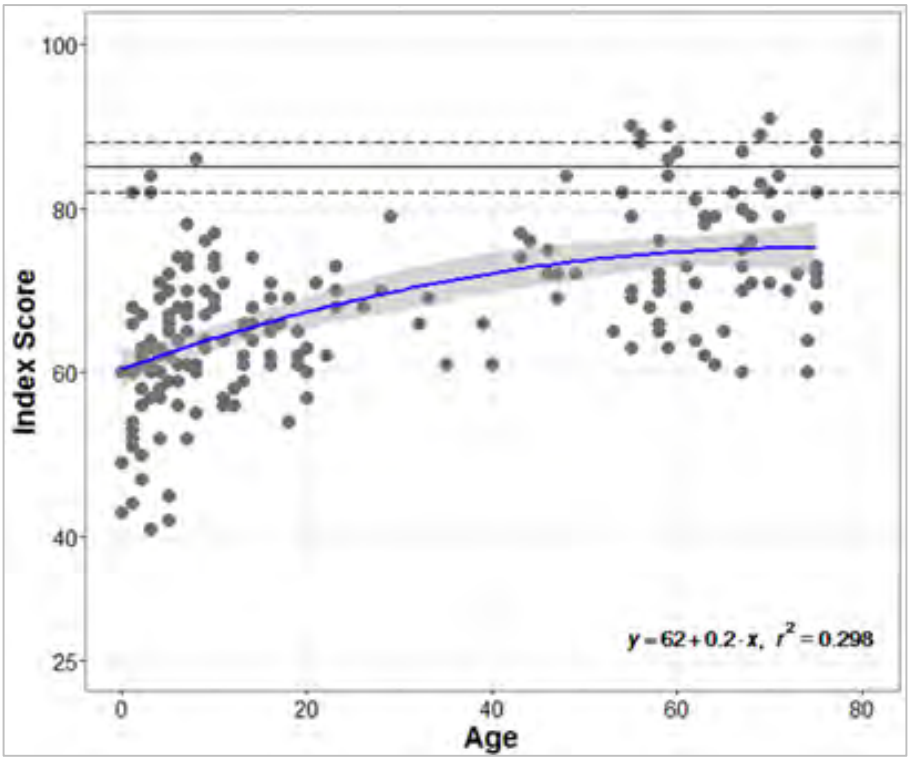


Figure 15. Depressional wetland Habitat Development Curve (HDC). The curve includes project sites, natural and naturalized sites, and represents a very broad range of hydroperiod. The solid horizontal line is the average reference CRAM Index score, bounded by dashed lines representing +/- one standard deviation.

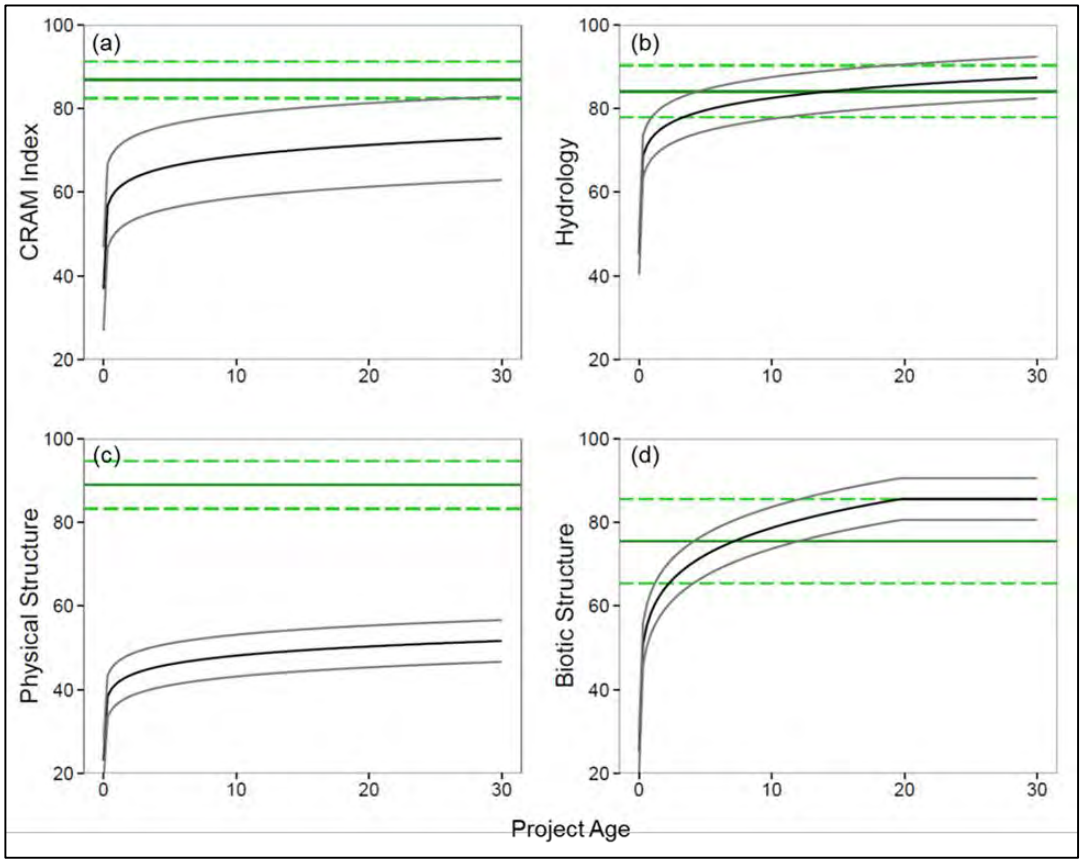


Figure 16: HDCs based on CRAM for riverine wetlands developed for coastal streams of the Southern California showing the development curves for the (A) CRAM Index Score, (B) Hydrology Attribute, (C) Physical Structure Attribute, and (D) Biotic Structure Attribute.

The condition of some restoration sites might be constrained by factors beyond the control of site planners and managers. Expecting such sites to ever achieve the reference conditions represented by the HDC might be unreasonable. In such cases, understanding site-specific constraints may be necessary to adjust expectations or to change sites.

For example, LS-001 D and LS-002 D are the two depressional wetland AAs located in the quarry-pond area of Lake Silveira (Figure 17). Current pre-construction conditions of LS-001 D and LS-002 D are above and below the HDC, respectively (Figure 18). The modeling of future scores suggests that the condition of LS-001 D will decrease, but remain above the HDC, whereas the condition of LS-002 D will increase but remain below the HDC. Both AAs get low scores for the Aquatic Area Abundance Metric due to the isolation of Lake Silveira in an otherwise terrestrial landscape. The District has very limited opportunity to affect any changes in the landscape that would increase the score for this metric. The score for the Hydroperiod Metric also decreases for both AAs. This is because the water level will be actively managed, making it reliant upon human actions, as compared to an entirely natural system. The score for the Topographic Complexity Metric remains moderately low because the steep banks make construction of topographic benches and other beneficial topographic elements very difficult. Further

analysis of the costs and benefits of creatively building greater topographic complexity into the project could be conducted.

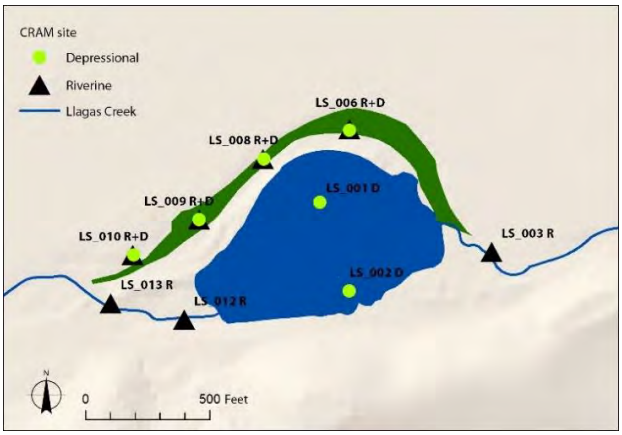


Figure 17. Pre-construction CRAM AAs for Lake Silveira showing the blue quarry-pond area and two AAs, on the north and south shores of the quarry-pond, which will be enhanced.

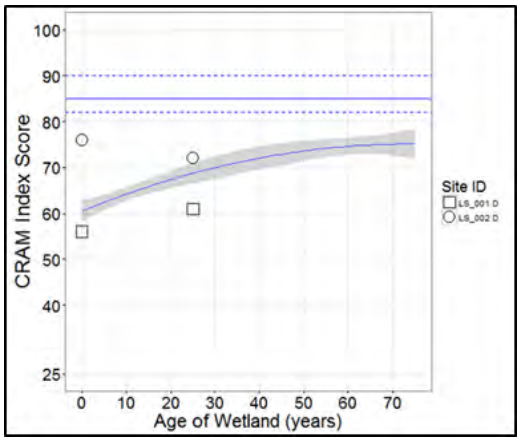


Figure 18. Selected pre- and post-construction depressional CRAM Index scores from the quarry-pond plotted on the statewide Habitat Development Curve (HDC) for depressional wetlands.

Summary

This memorandum illustrates how CDFs and HDCs based on CRAM can be used to evaluate wetland mitigation in the watershed context. To be specific:

- CRAM can be used in a probabilistic survey of wetlands within a watershed or project to develop a CDF that quantifies the relative abundance of wetlands based on their condition;
- CRAM can be used to estimate the future condition of mitigation wetlands based on their settings and designs;
- The condition of a project's impacted and mitigation wetlands relative to other wetlands in the project's watershed can be assessed by plotting the CRAM scores for the project onto the CDF for the watershed;
- Standard graphical and statistical procedures can be used to compare scores for different sets of wetlands, such as impact and mitigation wetlands, existing and proposed wetlands, and any set of wetlands over time;
- HDCs can be used to estimate the end-point condition of a mitigation site based on its early condition and thus estimate its eventual position on the CDF for its watershed.

- The scores for CRAM Attributes and Metrics can be used in combination with the CRAM Stressor Checklist to determine how the condition of a mitigation site might be improved through its design or management.

By applying these procedures to the Llagas Creek Flood Control Project, it has been determined that:

- Mitigation will at least moderately improve the condition of wetlands at the project and at the off-site mitigation area;
- Mitigation will not lessen the average condition of wetlands within the Llagas Creek watershed;
- The condition of some mitigation sites can be improved by decreasing the degree to which their hydrology is actively managed and by increasing their topographic complexity.

References

California Wetlands Monitoring Workgroup (CWMW). 2009. Using CRAM (California Rapid Assessment Method) to Assess Wetland Projects as an Element of Regulatory and Management Programs. Technical Bulletin. 46 pp.

California Wetland Monitoring Workgroup (CWMW). 2010. Tenets of the State Wetland and Riparian Monitoring Program (WRAMP). Available at: http://www.mywaterquality.ca.gov/monitoring_council/docs/wramp_letter_release.pdf

Kincaid, T. M. and Olsen, A. R. (2016). spsurvey: Spatial Survey Design and Analysis. R package version 3.3. Available at: https://cran.r-project.org/web/packages/spsurvey/index.html

Lowe S., Salomon M., Pearce S., Collins JN., and Titus, D. 2016. Upper Pajaro River Watershed Condition Assessment 2015. Technical memorandum prepared for the Santa Clara Valley Water District - Priority D5 Project. Agreement #A3765F-Task5. San Francisco Estuary Institute, Richmond, CA. SFEI Contribution # 810. Available at: http://www.sfei.org/documents/upper-pajaro-river-watershed-condition-assessment-2015-technical-memorandum-prepared-santa

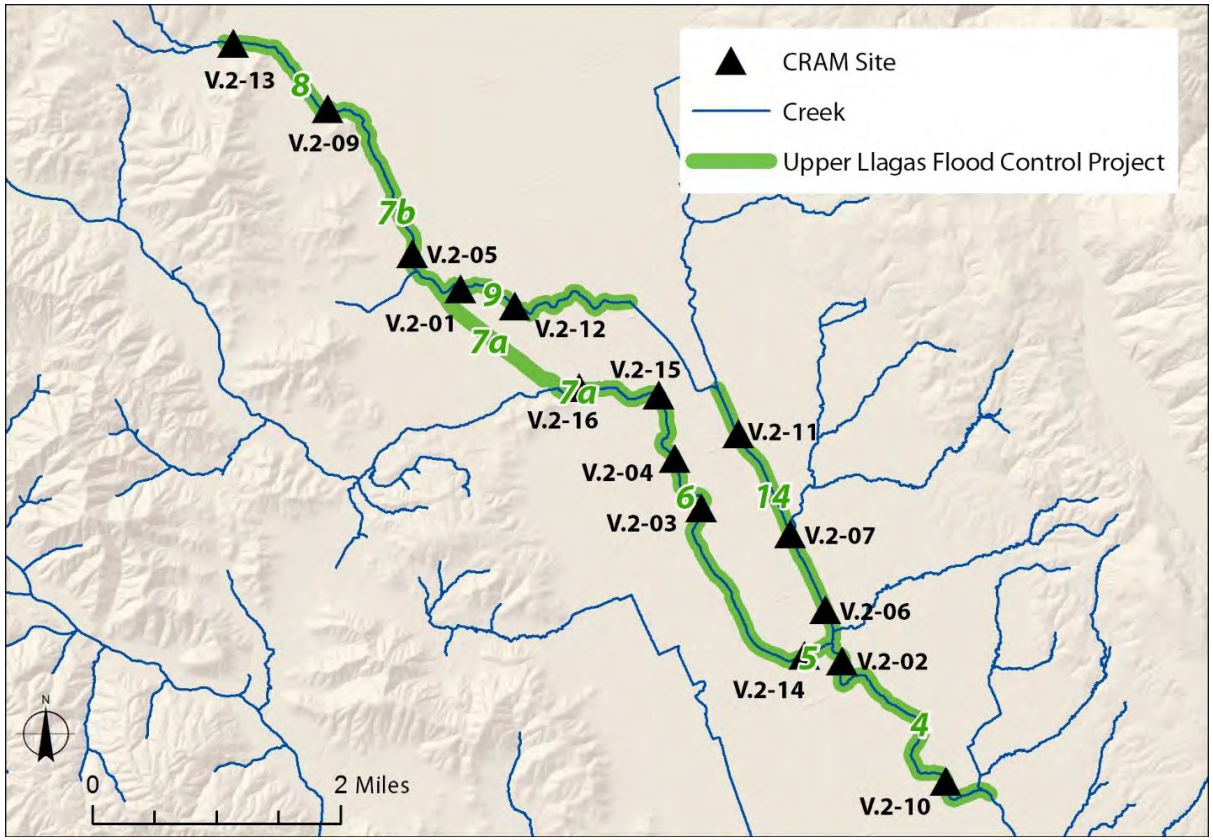
San Francisco Estuary Institute (SFEI). 2016. Depressional Wetland Habitat Development Curve. Technical memorandum prepared by the San Francisco Estuary Institute. Richmond, CA. Available at: http://www.sfei.org/documents/depressional-wetland-habitat-development-curve

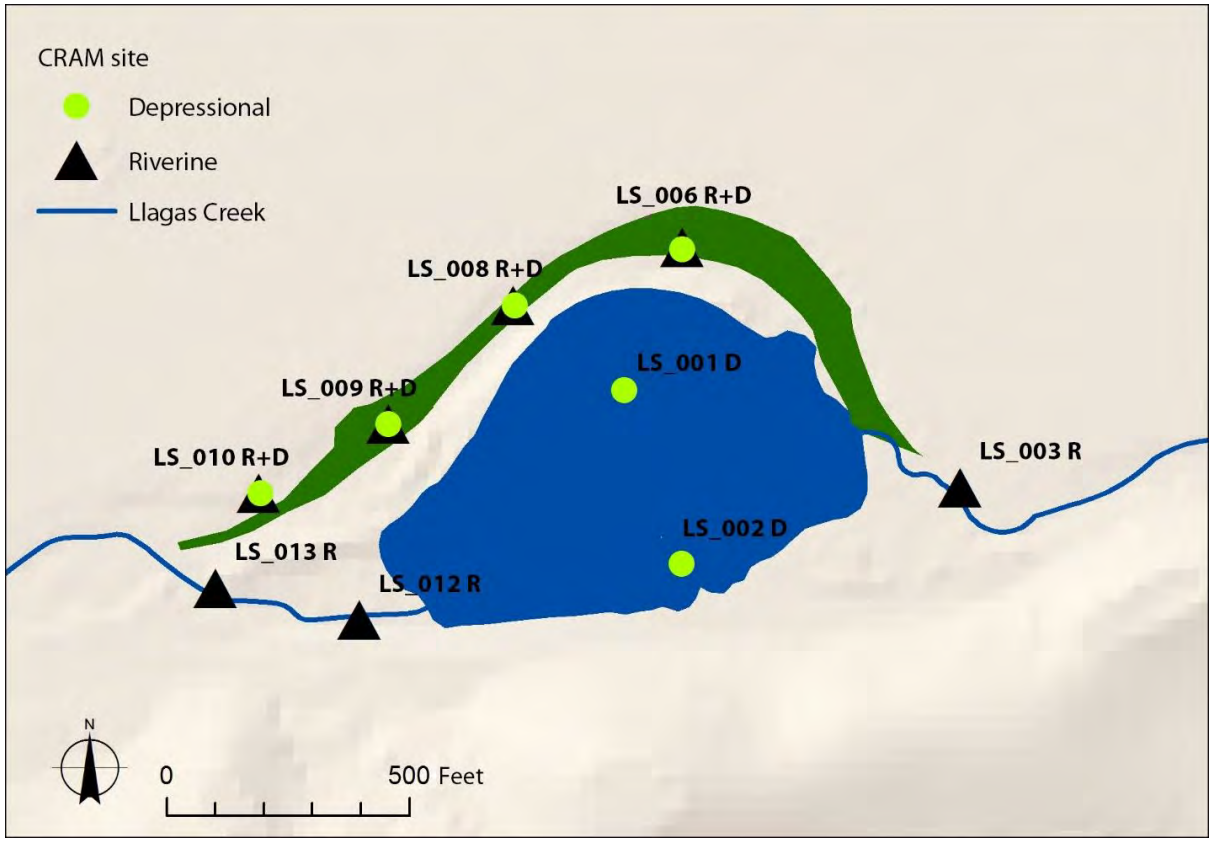
U.S. Army Corps of Engineers. 2015. Regional Compensatory Mitigation and Monitoring Guidance for South Pacific Division. Final January 12, 2015. Available at: http://www.spd.usace.army.mil/Portals/13/docs/regulatory/mitigation/MitMon.pdf

Appendix 1

CRAM AA location maps, descriptions, and pre-construction CRAM scores

for the Llagas Creek Flood Control Project and Lake Silveira Mitigation Site, 2015




CRAM site
Depressional
Riverine
Llagas Creek
LS_006 R+D
LS_008 R+D
LS_001 D
LS_009 R+D
LS_010 R+D
LS_003 R
LS_002 D
LS_013 R
LS_012 R
N
0
500 Feet

Llagas Creek Flood Control Project 2015 Pre-construction CRAM Results															
SiteID	AA Row ID	Latitude	Longitude	Visit Date	Wetland Class	Wetland Subclass	Hydroregime (Riverine)	AA Size (ha)	Bankfull Width (m)	Flowing Water	Index Score	Buffer & Landscape	Hydrology	Physical Structure	Biotic Structure
V.2-01	4311	37.1073	-121.6375	9/1/2015	riverine	non-confined	intermittent	0.05	2.14	0	50	50	67	25	58
V.2-02	5106	37.0645	-121.5809	9/10/2015	riverine	non-confined	intermittent	0.22	7	0	67	85	58	75	50
V.2-03	4304	37.0812	-121.6018	8/24/2015	riverine	non-confined	intermittent	0.11	5.6	0	66	75	67	63	58
V.2-04	4312	37.0879	-121.6058	9/2/2015	riverine	non-confined	perennial	0.17	5.97	0	68	75	58	63	75
V.2-05	4314	37.1107	-121.6444	9/1/2015	riverine	non-confined	intermittent	0.07	3.05	0	52	75	67	38	28
V.2-06	4316	37.0705	-121.5835	9/3/2015	riverine	non-confined	intermittent	0.08	1.81	0	60	75	67	50	47
V.2-07	4317	37.0785	-121.5883	9/2/2015	riverine	non-confined	intermittent	0.06	3.61	0	55	75	50	50	44
V.2-09	4451	37.1279	-121.6571	8/31/2015	riverine	non-confined	intermittent	0.12	1.9	0	49	30	75	38	53
V.2-10	4322	37.0505	-121.5656	9/3/2015	riverine	non-confined	intermittent	0.16	8.73	0	64	73	58	63	64
V.2-11	4321	37.0909	-121.5966	9/2/2015	riverine	non-confined	intermittent	0.03	2.3	0	52	75	50	38	44
V.2-12	4324	37.1047	-121.6288	9/1/2015	riverine	non-confined	intermittent	0.04	2.73	NA	49	71	67	25	33
V.2-13	4325	37.1355	-121.6711	8/31/2015	riverine	non-confined	intermittent	0.09	5.32	0	55	75	67	38	42
V.2-14	4327	37.0649	-121.5857	9/3/2015	riverine	non-confined	intermittent	0.09	4.5	0	65	80	58	63	58
V.2-15	4328	37.0951	-121.6084	9/4/2015	riverine	non-confined	perennial	0.13	4.95	1	76	75	67	75	86
V.2-16	4330	37.0957	-121.6202	9/9/2015	riverine	non-confined	perennial	0.35	3.98	1	78	80	75	75	81

Lake Silveira Mitigation Site 2015 Pre-construction CRAM Results															
SiteID	**AA Row ID**	**Latitude**	**Longitude**	**Visit Date**	**Wetland Class**	**Wetland Subclass**	**Hydro-regime (Riverine)**	**AA Size (ha)**	**Bankfull Width (m)**	**Flowing Water**	**Index Score**	**Buffer & Landscape**	**Hydrology**	**Physical Structure**	**Biotic Structure**
LS_003 R	4605	37.0953	-121.6221	10/29/2015	Riverine	non-confined	perennial	0.34	6.47	1	72	90	58	75	64
LS_012 R	4629	37.0945	-121.6264	10/28/2015	Riverine	non-confined	perennial	0.12	3.86	1	82	88	83	75	81
LS_013 R	4626	37.0947	-121.6274	10/28/2015	Riverine	non-confined	perennial	0.14	5.04	1	79	86	83	75	72
LS_001 D	4641	37.0958	-121.6245	10/29/2015	Depressional	perennial/seasonal	NA	0.41	NA	NA	56	49	67	50	58
LS_002 D	4644	37.0949	-121.6241	10/29/2015	Depressional	perennial/seasonal	NA	0.60	NA	NA	76	63	67	100	75
LS_006 D	4609	37.0966	-121.6241	10/26/2015	Depressional	ephemeral	NA	0.45	NA	NA	66	45	67	75	75
LS_008 D	4610	37.0963	-121.6253	10/29/2015	Depressional	ephemeral	NA	0.28	NA	NA	66	65	67	75	56
LS_009 D	4607	37.0956	-121.6262	10/30/2015	Depressional	ephemeral	NA	0.43	NA	NA	64	49	67	75	64
LS_010 D	4608	37.0952	-121.6271	11/29/2015	Depressional	ephemeral	NA	0.42	NA	NA	65	61	75	75	47

Appendix 2

Table of pre-construction (2015) and estimated post-construction (25 years after construction is completed)

CRAM scores for the Llagas Creek Flood Control Project and Lake Silveira Mitigation Site

Flood Control Project Site pre- and post-construction CRAM scores

SiteID	PRE CRAM Index Score	POST CRAM Index Score	PRE Buffer & Landscape	POST Buffer & Landscape	PRE Hydrology	POST Hydrology	PRE Physical Structure	POST Physical Structure	PRE Biotic Structure	POST Biotic Structure
Flood Control Project										
V.2-01	50	50	50	50	67	67	25	25	58	58
V.2-02	67	74	85	85	58	75	75	63	50	72
V.2-03	66	68	75	81	67	58	63	50	58	83
V.2-04	68	70	75	81	58	67	63	50	75	83
V.2-05	52	63	75	75	67	83	38	50	28	44
V.2-06	60	65	75	81	67	67	50	50	47	61
V.2-07	55	65	75	81	50	67	50	50	44	61
V.2-09	49	50	30	30	75	75	38	38	53	56
V.2-10	64	73	73	73	58	83	63	63	64	72
V.2-11	52	67	75	81	50	75	38	50	44	61
V.2-12	49	49	71	71	67	67	25	25	33	33
V.2-13	55	64	75	75	67	83	38	50	42	47
V.2-14	65	73	80	80	58	67	63	63	58	83
V.2-15	76	79	75	86	67	67	75	75	86	89
V.2-16	78	73	80	86	75	67	75	50	81	89

Lake Silveira Mitigation Site pre- and post-construction CRAM scores

SiteID	PRE CRAM Index Score	POST CRAM Index Score	PRE Buffer & Landscape	POST Buffer & Landscape	PRE Hydrology	POST Hydrology	PRE Physical Structure	POST Physical Structure	PRE Biotic Structure	POST Biotic Structure
Quary-pond										
LS_001 D	56	61	49	55	67	50	50	63	58	75
LS_002 D	76	72	63	63	67	50	100	100	75	75
Historical Riverine Channel (depressional wetlands in the historical channel will be restored to riverine wetlands) Pre-construction scores are based the depressional CRAM field book. Post-construction scores are estimated based on the riverine field book.										
LS_006 DtoR	66	82	45	90	67	83	75	75	75	81
LS_008 DtoR	66	81	65	86	67	83	75	75	56	81
LS_009 DtoR	64	84	49	86	67	83	75	88	64	78
LS_010 DtoR	65	79	61	81	75	83	75	75	47	78
Riverine wetlands										
LS_003 R	72	78	90	90	58	67	75	75	64	81
LS_012 R	82	82	88	88	83	83	75	75	81	81
LS_013 R	79	82	86	86	83	83	75	75	72	83

APPENDIX G

Lake Operations Plan

(To be prepared and submitted after post-Project 10-year mitigation and monitoring plan)

R14288

Exhibit C

Memorandum of Understanding
Between the
Department of the Army and the
Santa Clara Valley Water District

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
THE SANTA CLARA VALLEY WATER DISTRICT
TO ENSURE LONG TERM PROTECTION AND FINANCIAL ASSURANCE FOR THE LAKE SILVEIRA COMPENSATORY MITIGATION PRESERVE FOR THE UPPER LLAGAS CREEK FLOOD PROTECTION PROJECT

THIS MEMORANDUM OF UNDERSTANDING ("MOU") is entered into this ____ day of _____, 2019, by and between the Department of the Army, represented by the United States Army Engineer San Francisco District ("District Engineer") and Santa Clara Valley Water District ("Valley Water"). The District Engineer and Valley Water are collectively referred to as the "Parties." WITNESSETH, THAT:

WHEREAS, Valley Water is a flood protection and water district created by the Santa Clara Valley Water District Act – California Water Code Appendix Chapter 60 ("District Act").

WHEREAS, Valley Water is responsible for providing comprehensive water management for all beneficial uses and protection from flooding within Santa Clara County.

WHEREAS, the purposes of Valley Water include the enhancement, protection, and restoration of streams, riparian corridors, and natural resources in connection with carrying out its other purposes in the District Act, and preserving open space in Santa Clara County and supporting the county park system in a manner that is consistent with carrying out the powers granted by the District Act.

WHEREAS, Valley Water's Board Governance Policies provide that District goals and objectives include: the preservation of creek, bay and ecosystems through environmental stewardship and the improvement of watersheds, streams and natural resources.

WHEREAS, Valley Water is the owner of the 52.932-acre Lake Silveira property in Morgan Hill, California ("Property").

WHEREAS, in or about June 2019, Valley Water will grant a conservation easement on the Property in favor of the Land Trust of Santa Clara Valley to provide mitigation for potential impacts from construction of the Upper Llagas Creek Flood Protection Project ("Project").

WHEREAS, the aforementioned conservation easement also provides partial mitigation for impacts of Valley Water's Upper Llagas Creek Flood Protection Project to wetlands and other waters of the United States/State as specified in the NMFS' Biological Opinion No. WCR-2016-4163, dated February 9, 2018.

WHEREAS, the Department of the Army is one of the agencies requiring compensatory mitigation associated with this conservation easement.

WHEREAS, the compensatory mitigation associated with the referenced conservation easement was required to fully offset Valley Water's Upper Llagas Creek Flood Protection Project impacts authorized by Department of the Army permit number 2014-00086S, and these impacts were authorized and primarily incurred prior to issuance of the 2008 Mitigation Rule (33 CFR Parts 325 and 332).

WHEREAS, Valley Water is responsible for funding the perpetual management, maintenance and monitoring of the Property, and this funding responsibility is specified in and governed by the Santa Clara Valley Water District Lake Silveira Compensatory Mitigation Preserve Management Plan, dated February 2019 entered into between Valley Water and the Land Trust of Santa Clara Valley ("Management Plan").

NOW, THEREFORE, the District Engineer and Valley Water agree as follows:

1. The provisions of the Management Plan are incorporated by reference as if fully set forth herein.

2. Valley Water shall provide the District Engineer with its financial analysis conducted to calculate the annual management costs of the Management Plan ("Annual Management Costs") prior to recordation of the Lake Silveira property Conservation Easement and Management Plan.

3. Valley Water estimates the Annual Management Costs to be fourteen thousand three hundred dollars ($14,300.00).

4. Valley Water shall revise the Annual Management Costs at least every five years to reflect the San Francisco-Oakland-San Jose Consumer Price Index (CPI) for the preceding five years to account for inflation and shall provide the District Engineer with written notice of any such revision.

5. Valley Water shall provide sufficient revenue annually to cover the entire Annual Management Costs.

6. Valley Water shall establish a standby fund in the amount of seventy-one thousand five hundred dollars ($71,500) or 5 years of the Annual Management Costs (5 years x $14,300/year) in the form of a Letter of Credit when USACE-Regulatory requires such financial assurance to be established (currently anticipated in Year 2031 or 10 years after construction completion of the Lake Silveira Compensatory Mitigation Preserve). This standby fund shall be utilized in any year when Valley Water's annual appropriations are insufficient to cover the Annual Management Costs. Prior to anticipated Year 2031, the Lake Silveira Compensatory Mitigation Preserve shall be managed in accordance with the 10-year mitigation and monitoring plan (MMP) prepared by Valley Water, approved by the Regulatory Agencies, to offset unavoidable adverse impacts to wetlands and streams authorized by Clean Water Act § 404 permit.

7. The Letter of Credit shall be issued on behalf of Valley Water by a financial institution that provides for payment of the Annual Management Costs to the Department of the Army or its designee in the event Valley Water is unwilling or unable to pay the Annual Management Costs in any year and has failed to remedy such default within 30 days of service of written notice of such default by the District Engineer. As of the effective date of this MOU, the Department of the Army's anticipated designee is the Land Trust of Santa Clara Valley.

8. The Letter of Credit shall have an initial term of five years and an auto-renewal provision for its annual extension beyond that initial term. Valley Water shall establish a replacement Letter of Credit, or such similar financial instrument as approved by the Department of the Army, if the financial institution issuing the Letter of Credit gives notice that it elects not to renew it. Valley Water shall establish the replacement Letter of Credit within 30 days of the financial institution's notice that they elect not to renew the original Letter of Credit. The Letter of Credit shall have terms requiring Valley Water to pay the financial institution issuing the Letter of Credit the full amount of any funds that have been drawn upon by the Letter of Credit and any fees and/or interest accrued therein. A decrease in the CPI would not require a change in the Letter of Credit.

9. The Department of the Army shall accept this MOU, Valley Water Board Resolution authorizing execution of this MOU, and the Letter of Credit referenced herein, as sufficient documentation of Valley Water's commitment towards the Management Plan and Property. With that exception, nothing in this MOU creates any duty, obligation, or responsibility for the Department of the Army.

10. Execution of this MOU shall not be interpreted as a federal assurance regarding later approval of any permit or project.

11. Valley Water acknowledges that for Section 404 permits required for its mitigation properties, it will be required to comply with the provisions of the 2008

Mitigation Rule set forth at 33 C.F.R. section 332.3 (General compensatory mitigation requirements), where active long-term management and maintenance are necessary to ensure long-term sustainability, with the provisions of 33 C.F.R. section 332.7 (d) (Long-term management), and with any other applicable legal guidance including relevant and legally enforceable Department of Army Headquarters guidance.

IN WITNESS WHEREOF, the Parties have executed this MOU, which shall become effective upon the date it is signed by the District Engineer.

DEPARTMENT OF THE ARMY	SANTA CLARA VALLEY WATER DISTRICT
By:_____	By:_____
Travis J. Rayfield Lieutenant Colonel US Army Commander and District Engineer	Norma J. Camacho Chief Executive Officer
Date:_____	Date:_____

Exhibit D

Easement Property
Assessment and Warranty

PROPERTY ASSESSMENT and WARRANTY

for

Lake Silveira Compensatory Mitigation Preserve for
Upper Llagas Creek Flood Protection Project

This Property Assessment and Warranty ("Property Assessment") is made as of this_____day of____, 2019, by the Santa Clara Valley Water District, ("Property Owner"), a Special District, created by the California Legislature, for the benefit of the San Francisco District of the U.S. Army Corps of Engineers, which is referred to in the Property Assessment as the "Signatory Agency". Property Owner acknowledges that this Property Assessment and the statements in it may be conclusively relied upon by the Signatory Agency entering into a Memorandum of Understanding (MOU) with the Property Owner to ensure long term protection and financial assurance for the Lake Silveira compensatory mitigation preserve for the Upper Llagas Creek Flood Protection Project.

This Property Assessment provides a summary and explanation of each recorded or unrecorded lien or encumbrance on, or interest in, the Easement Property (as defined below), including, without limitation, each exception listed in the Preliminary Report issued by Old Republic Title Company, dated May 7, 2019, Title Report number 0621010141-RR (the "Preliminary Report"), covering the Easement Property, as described in **Attachment 1,** attached hereto and incorporated by this reference. Deed #24172724, recorded May 7, 2019 and an executed Joint Use Agreement (#A4201M) between the Property Owner and the City of Morgan Hill, dated August 28, 2018 are included as **Attachment 2,** attached hereto and incorporated by this reference which constitute the agreements or documents with an encumbrance on, or interest in the Easement Property. Specifically, **Attachment 3** of this Property Assessment includes a narrative explaining each lien, encumbrance or other exception to title and the manner in which it may affect the conservation easement to be recorded against the Easement Property (the "Conservation Easement").

Property Owner covenants, represents and warrants to the Signatory Agency as follows:

1. Property Owner is the sole owner in fee simple of certain real property containing approximately 15.993 acres located in the City of Morgan Hill, County of Santa Clara, State of California, designated as a portion of Assessor's Parcel Number 779-06-030 (the "Easement Property"), as legally described in the Preliminary Report. Property Owner has, and upon the recordation of the Conservation Easement, Property Owner shall have, good, marketable and indefeasible fee simple title to the Easement Property subject only to any exceptions approved in advance of recordation, in writing, by the Signatory Agency.

2. The Easement Property is available to be burdened by the Conservation Easement for the conservation purposes identified in the Conservation Easement.

3. The Easement Property includes legal access to and from adjacent fee lands owned by the Property Owner via Monterey Road.

4. A true, accurate and complete listing and explanation of each recorded or unrecorded lien or encumbrance on, or possessory or non-possessory interest in, the Easement Property is set forth in **Attachment 3** attached to and incorporated by reference in this Property Assessment. Except as disclosed in **Attachment 3**, there are no outstanding mortgages, liens, encumbrances or other interests in the Easement Property (including, without limitation, mineral interests). **Attachment 4**, attached hereto and incorporated by reference in this Property Assessment, depicts all relevant and plottable property lines, easements, dedications, etc. on the Easement Property.

5. Prior to recordation of the Conservation Easement, Property Owner shall certify to the Signatory Agency in writing that this Property Assessment remains true, accurate and complete in all respects.

6. Property Owner has no knowledge or notice of any legal or other restrictions upon the use of the Easement Property for conservation purposes, or affecting its Conservation Values, as described in the Conservation Easement, or any other matters that may adversely affect title to the Easement Property.

7. Property Owner has not granted any options, or committed or obligated to sell the Easement Property or any portion thereof, except as disclosed in writing to and agreed upon in writing by the Signatory Agency.

8. The following Appendix and attachments are incorporated by reference in this Property Assessment:

a) Attachment 1 – Preliminary Report, dated May 7, 2019;

b) Attachment 2 – Encumbrance Documents: Deed #24172724, dated May 7, 2019 and Joint Use Agreement (#A4201M), dated August 28, 2019

c) Attachment 3 – Summary and Explanation of Encumbrances; and

d) Attachment 4 – Easement Property Legal Plat and Description.

PROPERTY OWNER:
SANTA CLARA VALLEY WATER DISTRICT,
a Special District, created by the California Legislature

By:_____ _____
Norma J. Camacho Date
Chief Executive Officer

ATTEST:

By:_____
Michele King, CMC
Clerk/Board of Directors

Attachment 1
Preliminary Report

ORDER NO. : 0621010141

EXHIBIT A

The land referred to is situated in the County of Santa Clara, City of Morgan Hill, State of California, and is described as follows:

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF MORGAN HILL, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, BEING A PORTION OF PARCEL 1 AND PARCEL 3 AS SHOWN ON THAT CERTAIN PARCEL MAP FILED IN BOOK 432 AT PAGE 29, IN THE OFFICE OF THE RECORDER, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE INTERSECTION OF THE CENTERLINE OF OLIVE AVENUE (60.00 FEET WIDE) WITH THE NORTHWESTERLY LINE OF PARCEL 3, AS SHOWN ON SAID MAP;

THENCE ALONG SAID NORTHWESTERLY LINE, NORTH 61° 50' 14" EAST, 1,712.76 FEET TO A POINT ON THE NORTHEASTERLY LINE OF SAID PARCEL 3;

THENCE ALONG SAID NORTHEASTERLY LINE, SOUTH 70° 23' 40" EAST, 86.99 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID NORTHEASTERLY LINE OF SAID PARCEL 3 AND ALONG THE NORHTWESTERLY LINE OF PARCEL 1 AS SHOWN ON SAID MAP, SOUTH 70° 23' 40" EAST, 132.15 FEET;

THENCE LEAVING SAID NORTHWESTERLY LINE OF SAID PARCEL 1, SOUTH 55° 08' 06" EAST, 189.44 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 180.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 36° 35' 24", AN ARC LENGTH OF 114.95 FEET;

THENCE SOUTH 18° 32' 42" EAST, 134.07 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 360.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 43° 53' 06", AN ARC LENGTH OF 275.74 FEET;

THENCE SOUTH 24° 34' 39" WEST, 40.66 FEET;

THENCE SOUTH 77° 04' 33" WEST, 552.38 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 26.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 47° 08' 34", AN ARC LENGTH OF 21.39 FEET;

THENCE NORTH 55° 46' 53" WEST, 148.90 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 180.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 94° 40' 37", AN ARC LENGTH OF 297.44 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT, HAVING A RADIUS OF 122.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 59° 46' 11", AN ARC LENGTH OF 127.27 FEET;

THENCE SOUTH 89° 18' 41" WEST, 13.69 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 60.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 55° 22' 46", AN ARC LENGTH OF 57.99 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT, HAVING A RADIUS OF 220.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 65° 38' 00", AN ARC LENGTH OF 252.01 FEET;

THENCE NORTH 80°26'05" WEST, 187.51 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 140.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 65° 48' 22", AN ARC LENGTH OF 160.79 FEET;

THENCE NORTH 14° 37' 42" WEST, 55.16 FEET;

THENCE NORTH 79° 47' 32" EAST, 69.49 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 500.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 29° 02' 53", AN ARC LENGTH OF 253.49 FEET;

THENCE NORTH 50° 44' 39" EAST, 210.95 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 1,000.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 09° 37' 57", AN ARC LENGTH OF 168.12 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT HAVING A RADIUS OF 1,490.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 16° 04' 40", AN ARC LENGTH OF 418.11 FEET TO THE BEGINNING OF A COMPOUND CURVE TO THE RIGHT, HAVING A RADIUS OF 400.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 29° 31' 24", AN ARC LENGTH OF 206.11 FEET TO A POINT ON THE NORTHEASTERLY LINE OF SAID PARCEL 3 TO WHICH A RADIAL BEARS NORTH 03° 17' 14" WEST, SAID POINT ALSO BEING THE POINT OF BEGINNING.

APN's: 779-06-030 (Portion)

OLD REPUBLIC TITLE COMPANY

8060 Santa Teresa Blvd, Suite 100
Gilroy, CA 95020
(408) 847-1505 Fax: (408) 848-3507

PRELIMINARY REPORT

FIRST UPDATE

SANTA CLARA VALLEY WATER DISTRICT
5750 Almaden Expressway
San Jose, CA 95118

Attention: Bill Magleby

Our Order Number 0621010141-RR

When Replying Please Contact:

Randy Romriell
(408) 847-1505

Buyer:
USACE (Army Corp)

Property Address:

Apn 779-06-030 (portion), Olive Avenue, Morgan Hill, CA 95037

In response to the above referenced application for a policy of title insurance, OLD REPUBLIC TITLE COMPANY, as issuing Agent of Old Republic National Title Insurance Company, hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a Policy or Policies of Title Insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an Exception below or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations of said policy forms.

The printed Exceptions and Exclusions from the coverage and Limitations on Covered Risks of said Policy or Policies are set forth in Exhibit I attached. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Limitations on Covered Risks applicable to the Homeowner's Policy of Title Insurance which establish a Deductible Amount and a Maximum Dollar Limit of Liability for certain coverages are also set forth in Exhibit I. Copies of the Policy forms should be read. They are available from the office which issued this report.

Please read the exceptions shown or referred to below and the exceptions and exclusions set forth in Exhibit I of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.
It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects, and encumbrances affecting title to the land.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

Dated as of May 7, 2019, at 7:30 AM

OLD REPUBLIC TITLE COMPANY
For Exceptions Shown or Referred to, See Attached

ORT 3158-A (Rev. 08/07/08)

The form of policy of title insurance contemplated by this report is:

CLTA Standard Coverage Policy -1990; AND ALTA Loan Policy - 2006. A specific request should be made if another form or additional coverage is desired.

The estate or interest in the land hereinafter described or referred or covered by this Report is:

Fee

Title to said estate or interest at the date hereof is vested in:

The Santa Clara Valley Water District

The land referred to in this Report is situated in the County of Santa Clara, City of Morgan Hill, State of California, and is described as follows:

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF MORGAN HILL, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, BEING A PORTION OF PARCEL 1 AND PARCEL 3 AS SHOWN ON THAT CERTAIN PARCEL MAP FILED IN BOOK 432 AT PAGE 29, IN THE OFFICE OF THE RECORDER, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

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THENCE LEAVING SAID NORTHWESTERLY LINE OF SAID PARCEL 1, SOUTH 55° 08' 06" EAST, 189.44 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 180.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 36° 35' 24", AN ARC LENGTH OF 114.95 FEET;

THENCE SOUTH 18° 32' 42" EAST, 134.07 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 360.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 43° 53' 06", AN ARC LENGTH OF 275.74 FEET;

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THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 47° 08' 34", AN ARC LENGTH OF 21.39 FEET;

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THENCE SOUTH 89° 18' 41" WEST, 13.69 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 60.00 FEET;

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THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 65° 38' 00", AN ARC LENGTH OF 252.01 FEET;

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APN's: 779-06-030 (Portion)

At the date hereof exceptions to coverage in addition to the Exceptions and Exclusions in said policy form would be as follows:

1. Taxes and assessments, general and special, for the fiscal year 2019 - 2020, a lien, but not yet due or payable.

2. No Taxes have been assessed for the Fiscal Year 2018-2019 by the Santa Clara County Tax Collector's Office affecting the land described herein.

3. The lien of supplemental taxes, if any, assessed pursuant to the provisions of Section 75, et seq., of the Revenue and Taxation Code of the State of California.

4. Any right, title, claims, or other interest, and such rights as may be incidental thereto, whether or not shown by the public records to the waters of Llagas Creek.

5. Recitals as shown or noted on the filed map.

6. Terms and provisions as contained in an instrument,

Entitled	:	Grant Deed
Executed By	:	The County of Santa Clara and The Santa Clara Valley Water District
Recorded	:	May 7, 2019 in Official Records under Recorder's Serial Number 24172724

7. The requirement that satisfactory evidence be furnished to this Company of compliance with applicable statutes, ordinances and charters governing the ownership and disposition of the herein described land.

8. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

9. Any unrecorded and subsisting leases.

---------- Informational Notes ----------

A. The applicable rate(s) for the policy(s) being offered by this report or commitment appears to be section(s) 1.1 and 2.1.

B. The above numbered report (including any supplements or amendments thereto) is hereby modified and/or supplemented to reflect the following additional items relating to the issuance of an American Land Title Association loan form policy:

NONE

NOTE: Our investigation has been completed and there is located on said land vacant land known as Apn 779-06-030 (portion), Olive Avenue, Morgan Hill, CA 95037.

The ALTA loan policy, when issued, will contain the CLTA 100 Endorsement and 116 series Endorsement.

Unless shown elsewhere in the body of this report, there appear of record no transfers or agreements to transfer the land described herein within the last three years prior to the date hereof, except as follows:

NONE

C. NOTE: The last recorded transfer or agreement to transfer the land described herein is as follows:

Instrument		
Entitled	:	Grant Deed
By/From	:	Verne D. Freeman and Joanne O. Freeman, as Trustees of the Freeman Family 1979 Trust, as to an undivided 7/16 interest; Walter H. Von Tagen, as to an undivided 5/16 interest; and Joyce V. De Soto, as to an undivided 4/16 interest
To	:	County of Santa Clara
Dated	:	April 28, 1982
Recorded	:	July 1, 1982 in Book G877 of Official Records, Page 727 under Recorder's Serial Number 7403031

O.N.
am

Grant Deed executed by The County of Santa Clara to The Santa Clara Valley Distriict recorded May 7, 2019 in Official Records under Recorder's Serial Number 24172724.

Exhibit I

CALIFORNIA LAND TITLE ASSOCIATION
STANDARD COVERAGE POLICY - 1990
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building or zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or {iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien, or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.-

   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.

3. Defects, liens, encumbrances, adverse claims or other matters:

   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;

   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;.

   (c) resulting in no loss or damage to the insured claimant;

   (d) attaching or created subsequent to Date of Policy; or

   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.

4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable doing business laws of the state in which the land Is situated.

5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.

6. Any claim, which arises out of the transaction vesting in the insured the estate of interest insured by this policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

EXCEPTIONS FROM COVERAGE - SCHEDULE B, PART I

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments Which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.

   Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.

2. Any facts, rights, interests, or claims Which are not shown by the public records but which could be ascertained by an inspection of the land which may be asserted by persons in possession thereof,

3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.

4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the public records.

6. Any lien or right to a lien for services, labor or material not shown by the public records.

Exhibit I

AMERICAN LAND TITLE ASSOCIATION
LOAN POLICY OF TITLE INSURANCE - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

EXCEPTIONS FROM COVERAGE – SCHEDULE B, PART 1, SECTION ONE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) that arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

OLD REPUBLIC TITLE

rev. 07/2016

FACTS	WHAT DOES OLD REPUBLIC TITLE DO WITH YOUR PERSONAL INFORMATION?

Why?	Financial companies choose how they share your personal information. Federal law gives consumers the right to limit some but not all sharing. Federal law also requires us to tell you how we collect, share, and protect your personal information. Please read this notice carefully to understand what we do.
What?	The types of personal information we collect and share depend on the product or service you have with us. This information can include: • Social Security number and employment information • Mortgage rates and payments and account balances • Checking account information and wire transfer instructions When you are *no longer* our customer, we continue to share your information as described in this notice.
How?	All financial companies need to share customers' personal information to run their everyday business. In the section below, we list the reasons financial companies can share their customers' personal information; the reasons Old Republic Title chooses to share; and whether you can limit this sharing.

Reasons we can share your personal information	Does Old Republic Title share?	Can you limit this sharing?
For our everyday business purposes — such as to process your transactions, maintain your account(s), or respond to court orders and legal investigations, or report to credit bureaus	**Yes**	**No**
For our marketing purposes — to offer our products and services to you	**No**	**We don't share**
For joint marketing with other financial companies	**No**	**We don't share**
For our affiliates' everyday business purposes — information about your transactions and experiences	**Yes**	**No**
For our affiliates' everyday business purposes — information about your creditworthiness	**No**	**We don't share**
For our affiliates to market to you	**No**	**We don't share**
For non-affiliates to market to you	**No**	**We don't share**

Questions	**Go to www.oldrepublictitle.com** (*Contact Us*)

Who we are	
Who is providing this notice?	Companies with an Old Republic Title name and other affiliates. Please see below for a list of affiliates.

What we do	
How does Old Republic Title protect my personal information?	To protect your personal information from unauthorized access and use, we use security measures that comply with federal law. These measures include computer safeguards and secured files and buildings. For more information, visit http://www.OldRepublicTitle.com/newnational/Contact/privacy.
How does Old Republic Title collect my personal information?	We collect your personal information, for example, when you: • Give us your contact information or show your driver's license • Show your government-issued ID or provide your mortgage information • Make a wire transfer We also collect your personal information from others, such as credit bureaus, affiliates, or other companies.
Why can't I limit all sharing?	Federal law gives you the right to limit only: • Sharing for affiliates' everyday business purposes - information about your creditworthiness • Affiliates from using your information to market to you • Sharing for non-affiliates to market to you State laws and individual companies may give you additional rights to limit sharing. See the "Other important information" section below for your rights under state law.

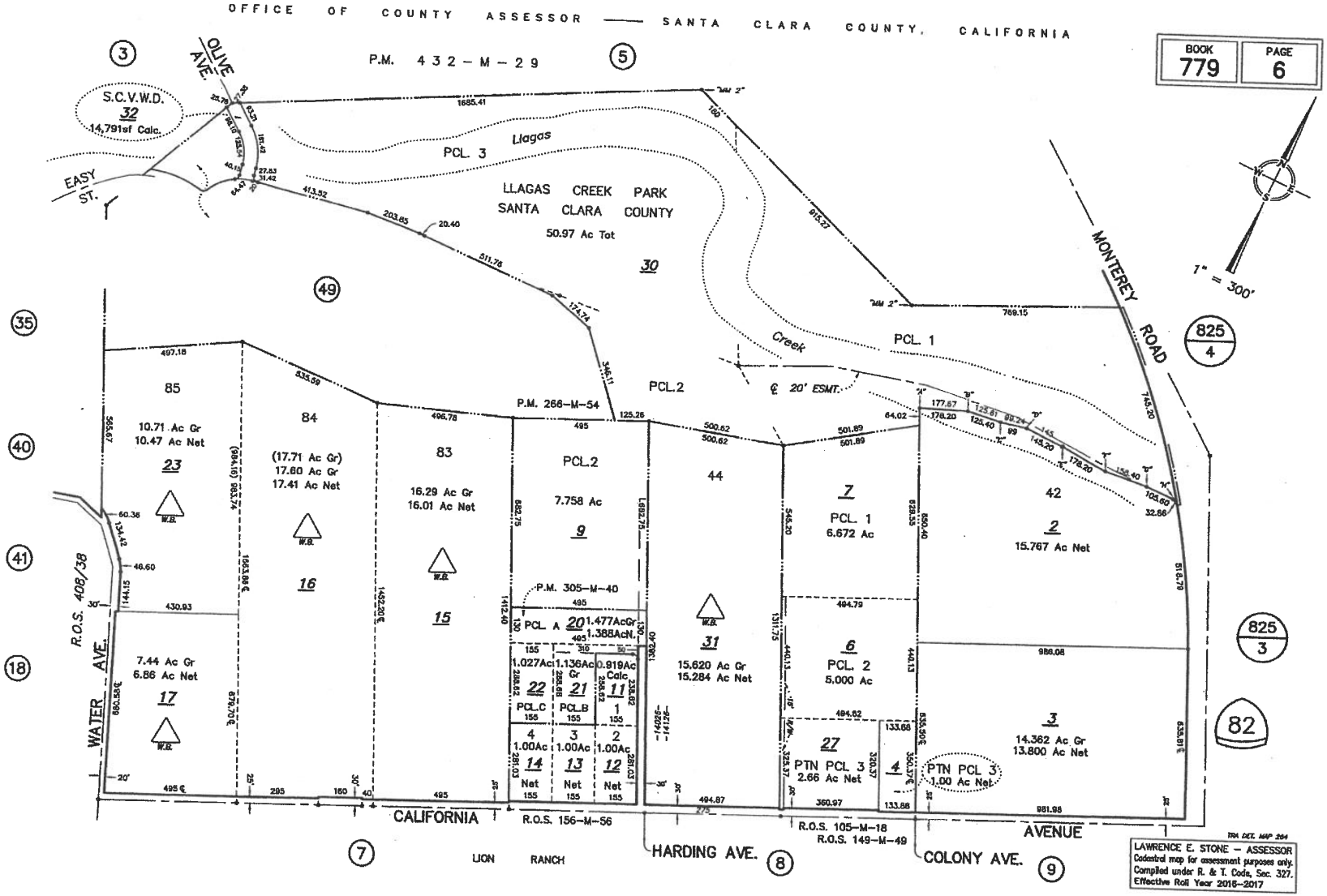
Definitions	
Affiliates	Companies related by common ownership or control. They can be financial and nonfinancial companies. • *Our affiliates include companies with an Old Republic Title name, and financial companies such as Attorneys' Title Fund Services, LLC, Lex Terrae National Title Services, Inc., Mississippi Valley Title Services Company, and The Title Company of North Carolina.*
Non-affiliates	Companies not related by common ownership or control. They can be financial and non-financial companies. • *Old Republic Title does not share with non-affiliates so they can market to you*
Joint marketing	A formal agreement between non-affiliated financial companies that together market financial products or services to you. • *Old Republic Title doesn't jointly market.*

Other Important Information

Oregon residents only: We are providing you this notice under state law. We may share your personal information (described on page one) obtained from you or others with non-affiliate service providers with whom we contract, such as notaries and delivery services, in order to process your transactions. You may see what personal information we have collected about you in connection with your transaction (other than personal information related to a claim or legal proceeding). To see your information, please click on "Contact Us" at www.oldrepublictitle.com and submit your written request to the Legal Department. You may see and copy the information at our office or ask us to mail you a copy for a reasonable fee. If you think any information is wrong, you may submit a written request online to correct or delete it. We will let you know what actions we take. If you do not agree with our actions, you may send us a statement.

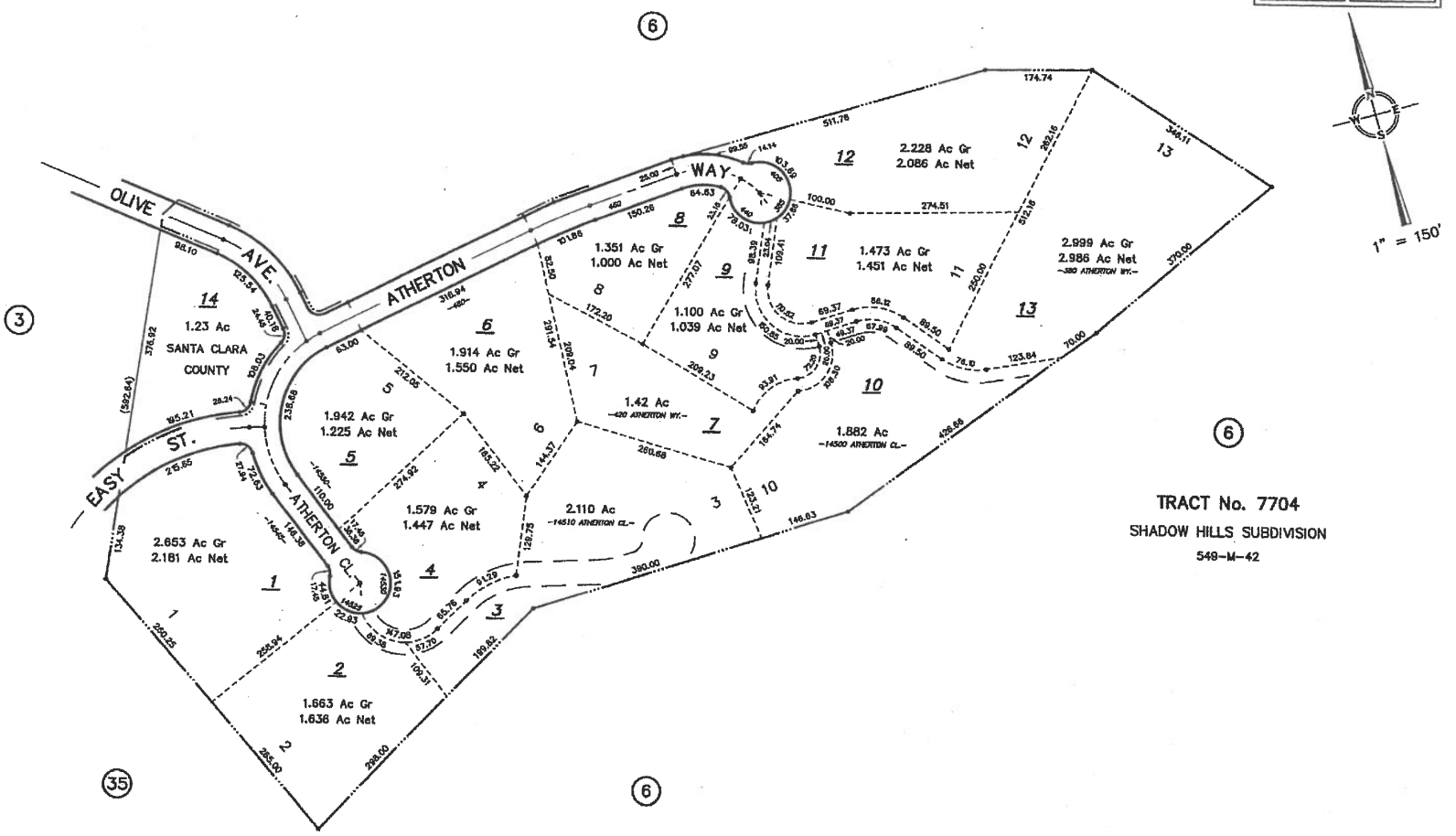
Affiliates Who May be Delivering This Notice

American First Abstract, LLC	American First Title & Trust Company	American Guaranty Title Insurance Company	Attorneys' Title Fund Services, LLC	Compass Abstract, Inc.
eRecording Partners Network, LLC	Genesis Abstract, LLC	Kansas City Management Group, LLC	L.T. Service Corp.	Lenders Inspection Company
Lex Terrae National Title Services, Inc.	Lex Terrae, Ltd.	Mara Escrow Company	Mississippi Valley Title Services Company	National Title Agent's Services Company
Old Republic Branch Information Services, Inc.	Old Republic Diversified Services, Inc.	Old Republic Exchange Company	Old Republic National Title Insurance Company	Old Republic Title and Escrow of Hawaii, Ltd.
Old Republic Title Co.	Old Republic Title Company of Conroe	Old Republic Title Company of Indiana	Old Republic Title Company of Nevada	Old Republic Title Company of Oklahoma
Old Republic Title Company of Oregon	Old Republic Title Company of St. Louis	Old Republic Title Company of Tennessee	Old Republic Title Information Concepts	Old Republic Title Insurance Agency, Inc.
Old Republic Title, Ltd.	Republic Abstract & Settlement , LLC	Sentry Abstract Company	The Title Company of North Carolina	Title Services, LLC
Trident Land Transfer Company, LLC				


OFFICE OF COUNTY ASSESSOR — SANTA CLARA COUNTY, CALIFORNIA
BOOK 779 PAGE 6
P.M. 432 – M – 29
OLIVE AVE.
EASY ST.
S.C.V.W.D. 32 14,791sf Calc.
PCL. 3
Llagas Creek
LLAGAS CREEK PARK SANTA CLARA COUNTY 50.97 Ac Tot
30
PCL. 1
PCL.2
℄ 20' ESMT.
P.M. 266–M–54
MONTEREY ROAD
1" = 300'
825 4
825 3
82
85 10.71 Ac Gr 10.47 Ac Net 23
84 (17.71 Ac Gr) 17.60 Ac Gr 17.41 Ac Net 16
83 16.29 Ac Gr 16.01 Ac Net 15
PCL.2 7.758 Ac 9
44 15.620 Ac Gr 15.284 Ac Net 31
7 PCL. 1 6.672 Ac
42 15.767 Ac Net 2
6 PCL. 2 5.000 Ac
3 14.362 Ac Gr 13.800 Ac Net
27 PTN PCL 3 2.66 Ac Net
4 PTN PCL 3 1.00 Ac Net
17 7.44 Ac Gr 6.86 Ac Net
R.O.S. 408/38
WATER AVE.
P.M. 305–M–40
PCL A 20 1.477AcGr 1.388AcN.
22 PCL.C 1.027Ac
21 PCL.B 1.136Ac Gr
11 0.919Ac Calc
14 13 12 1.00Ac Net
CALIFORNIA AVENUE
R.O.S. 156–M–56
R.O.S. 105–M–18
R.O.S. 149–M–49
HARDING AVE.
COLONY AVE.
LION RANCH
TRA DET. MAP 284
LAWRENCE E. STONE – ASSESSOR
Cadastral map for assessment purposes only.
Compiled under R. & T. Code, Sec. 327.
Effective Roll Year 2016–2017

OFFICE OF COUNTY ASSESSOR — SANTA CLARA COUNTY, CALIFORNIA

BOOK	PAGE
779	49



TRACT No. 7704
SHADOW HILLS SUBDIVISION
549-M-42

TRA DET. MAP 264

LAWRENCE E. STONE — ASSESSOR
Cadastral map for assessment purposes only.
Compiled under R. & T. Code, Sec. 327.
Effective Roll Year 2017-2018

Attachment 2
Encumbrance Documents:
Deed #24172724, dated May 7, 2019 and
Joint Use Agreement (#A4201M), dated August 28, 2019

This document was electronically submitted to Santa Clara County for recording

24172724

Regina Alcomendras
Santa Clara County - Clerk-Recorder
05/07/2019 08:18 AM

Titles: 1 Pages: 66
Fees: $0.00
Tax: $0.00
Total: $0.00

RECORDING REQUESTED BY

OLD REPUBLIC TITLE COMPANY

Escrow No.: 0616010639
APN: 779-06-030, 779-03-114, 779-49-014

Record without fee under California Government Code Sections 27383 and 6103

WHEN RECORDED MAIL TO

Santa Clara Valley Water District
Real Estate Services Unit
5750 Almaden Expressway
San Jose, CA 95118

Transfer is exempt from Documentary transfer tax pursuant to R&T Code Section 11922

SPACE ABOVE THIS LINE FOR RECORDER'S USE

Grant Deed

1 ☐ Exempt from fee per GC27388.1(a)(2); document recorded in connection with a concurrent transfer subject to the imposition of documentary transfer tax

2 ☐ Exempt from fee per GC27388.1(a)(2); document transfers real property that is a residential dwelling to an owner-occupier

3 ☐ Exempt from fee per GC27388.1(a)(2); document recorded in connection with a concurrent transfer that is a residential dwelling to an owner-occupier

4 ☐ Exempt from fee per GC27388.1(a)(1); fee cap of $225 reached

5 ☐ Exempt from fee per GC27388.1(a)(2); document is subject to the imposition of documentary transfer tax

11 ☒ Exempt from fee per GC27388.1(a)(2); document is executed or recorded by the state or any county, municipality, or other political subdivision of the state

Document No.: 5010-229

RR/rr

RECORD WITHOUT FEE UNDER CALIFORNIA
GOVERNMENT CODE SECTIONS 27383 AND 6103
RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:
Real Estate Services Unit
Santa Clara Valley Water District
5750 Almaden Expresway
San Jose, CA 95118

MAIL TAX STATEMENTS TO: Same as above

Space above this Line for Recorder's Use
A.P.N. Nos. 779-03-114; 779-06-030; 779-49-014
Transfer is exempt from documentary transfer tax pursuant to R&T Code Section 11922

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, the County of Santa Clara, a political subdivision of the state of California ("Grantor"), hereby GRANTS to the Santa Clara Valley Water District, a Special District of the State of California ("Grantee"), all of its right, title, fee, and interest in and to that real property situated in the City of Morgan Hill, County of Santa Clara, State of California, described on Exhibit 1 attached hereto. Recorded contemporaneously with this Grant Deed is the Conservation Easement (Exhibit 2) as part of the consideration for this Grant Deed.

In Witness Whereof, Grantor has caused this instrument to be executed on June 5, 2018.

GRANTOR: County of Santa Clara,
a political subdivision of the State of California

S. JOSEPH SIMITIAN, President
Board of Supervisors

Signed and certified that a copy of this
Document has been delivered by electronic
Or other means to the President, Board of Supervisors.

ATTEST:

MEGAN DOYLE
Clerk of the Board of Supervisors

90551

JUN 05 2018

ALL-PURPOSE ACKNOWLEDGMENT

CIVIL CODE §1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF SANTA CLARA } SS

On this 28 day of February, in the year 2019, before me Frank Soriano,

Notary Public, personally appeared S. Joseph Simitian
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Frank Soriano
Notary Public in and for said County and State

FRANK SORIANO
Notary Public - California
Santa Clara County
Commission # 2181503
My Comm. Expires Feb 16, 2021

CAPACITY CLAIMED BY SIGNER

Though statute does not require the Notary to fill in the data below, doing so may prove invaluable to persons relying on the document.

☐ Individual
☐ Corporate Officer(s): _____
☐ Trustee(s)
☐ Guardian/Conservator
☐ Attorney-In-Fact _____

Signer is Representing (Name of Person(s) or Entity(ies)

_____ _____

Santa Clara Valley Water District

CERTIFICATE OF CONSENT AND ACCEPTANCE

This is to certify that the interest in real property conveyed by the attached Deed or Grant to the Santa Clara Valley Water District, also referred to herein as the Grantee, is hereby accepted by the undersigned duly authorized agent on behalf of the Board of Directors of said Santa Clara Valley Water District, pursuant to authority conferred by Resolution No. 14-79 of said Board of Directors adopted on the 9th day of September 2014, and the Grantee consents to recordation thereof by its said duly authorized agent.

Dated: March 13, 2018

Santa Clara Valley Water District

By: _____
Chief Executive Officer/~~Clerk of the Board of Directors~~
(Strike out inapplicable one)

ALL-PURPOSE ACKNOWLEDGMENT

CIVIL CODE §1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF SANTA CLARA } SS

On this 23rd day of March, in the year 2018 before me Michele L. King,

Notary Public, personally appeared Norma Camacho
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Michele L. King
Notary Public in and for said County and State

MICHELE L. KING
Commission # 2121918
Notary Public - California
Santa Clara County
My Comm. Expires Aug 29, 2019

CAPACITY CLAIMED BY SIGNER

Though statute does not require the Notary to fill in the data below, doing so may prove invaluable to persons relying on the document.

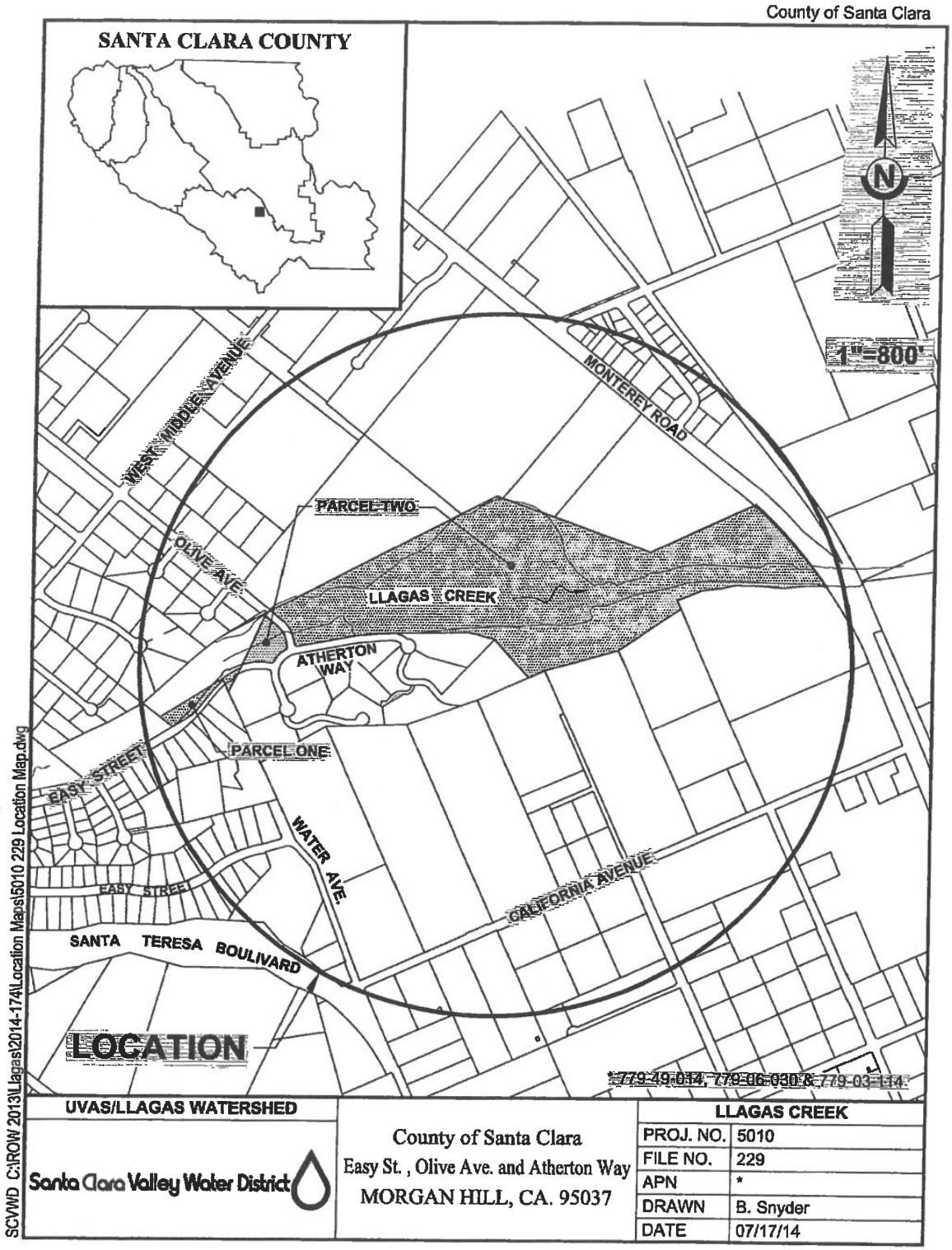
☐ Individual
☑ Corporate Officer(s): CEO
☐ Trustee(s)
☐ Guardian/Conservator
☐ Attorney-In-Fact _____

Signer is Representing (Name of Person(s) or Entity(ies)

_____ _____

Exhibit 1
(Grant Deed from County to SCVWD)

MAP AND LEGAL DESCRIPTION


County of Santa Clara
SANTA CLARA COUNTY
N
1"=800'
MONTEREY ROAD
WEST MIDDLE AVENUE
PARCEL TWO
OLIVE AVE.
LLAGAS CREEK
ATHERTON WAY
PARCEL ONE
EASY STREET
WATER AVE.
EASY STREET
CALIFORNIA AVENUE
SANTA TERESA BOULIVARD
LOCATION
779-49-014, 779-06-030 & 779-03-114
SCVWD C:\ROW 2013\Llagas\2014-174\Location Maps\5010 229 Location Map.dwg
UVAS/LLAGAS WATERSHED
Santa Clara Valley Water District
County of Santa Clara
Easy St. , Olive Ave. and Atherton Way
MORGAN HILL, CA. 95037
LLAGAS CREEK
PROJ. NO. 5010
FILE NO. 229
APN *
DRAWN B. Snyder
DATE 07/17/14

SANTA CLARA VALLEY WATER DISTRICT
San Jose, California

By: DOC. 7403031 & DOC. 7403032

Checked by:_____ Date:_____

PROJECT: LLAGAS CREEK
PROPERTY: COUNTY OF SANTA CLARA FILE NO.: 5010-229

All that certain real property situate in the City of Morgan Hill, County of Santa Clara, State of California, described as follows:

PARCEL ONE

Being that portion of LOT 52 as conveyed from Walter Von Tagen and Verne D. Freeman and Joanne O. Freeman, his wife to the County of Santa Clara per Document 7403032, Santa Clara County Records described as follows:

LOT 52, as said lot is shown upon that certain Map entitled, "Tract No. 5448, Amberwood Glen Unit No. 2" which Map was filed for record on June 13, 1974 in Book 341 of Maps, pages 46, 47 and 48, Santa Clara County Records described as follows:

EXCEPTING THEREFROM that portion thereof described in the Deed from Walter Von Tagen, et al, to the City of Morgan Hill, recorded February 2, 1976 in Book B849 of Official Records, page 25, as follows:

BEGINNING at the most Westerly corner of Lot 52, said corner also being a common corner with Lot 41 as said Lots and corners are shown on the Map entitled "Tract No. 5448, Amberwood Glen Unit No. 2" filed in Book 341 of Maps, pages 46, 47 and 48, Santa Clara County Records; thence South 51° 40' East 147.44 feet; thence North 57° 20' 30" East 628.33 feet; thence North 24° 26' 42" East 407.80 feet; thence South 62° 11' 31" West 224.91 feet; thence tangent to the last course, along a curve to the left an arc distance of 362.67 feet, said curve having a central angle of 15° 40' 58" and a radius of 1325.00 feet; thence tangent to the last curve, South 46° 30' 33" West 407.53 feet; thence along a curve to the right an arc distance of 33.87 feet, said curve having a central angle of 2° 21' 07" and a radius of 825.00 feet to the point of beginning.

ALSO EXCEPTING THEREFROM that portion thereof described in the Deed from Walter Von Tagen, et al, to Sunnybrook Ranch, a limited partnership, recorded June 9, 1976 in Book C071 of Official Records, page 423, as follows:

BEGINNING at the most northeastern corner of Parcel 3 as said parcel is shown on the Parcel Map filed in Book 326 of Maps, at page 42, Santa Clara County Records; thence South 56° 58' 35" West, 288.84 feet; thence from a tangent which bears North 42° 54' 23" East, along a curve to the left, an arc distance of 122.22 feet; said curve having a radius of 1000.00 feet and a central angle of 7° 00' 10"; thence tangent to the last curve along a curve to the right an arc distance of 192.08 feet, said curve having a radius of 1000.00 feet and a central angle of 11° 00' 19"; thence South 25° 03' 44" East, 89.21 feet to the point of beginning.

Containing 0.913 acre of land, more or less. APN's: 779-03-114

BASIS OF BEARING: Bearings are based on and identical to that certain Tract Map No. 5448 filed in Book 341 of Maps, at pages 46, 47 and 48, filed in the office of the Recorder, County of Santa Clara, State of California.

PARCEL TWO

Being that portion of Parcels 1, 2, and 3 as shown on Parcel Map recorded in book 432 of Maps at page 29, Santa Clara County Records as conveyed from Verne D. Freeman and Joanne O. Freeman et al to the County of Santa Clara per Document 7403031 described as follows:

Being all of Parcels 1, 2, and 3 as shown on Parcel Map recorded in book 432 of Maps at page 29, Santa Clara County Records described as follows:

Excepting therefrom a parcel of land described as follows:

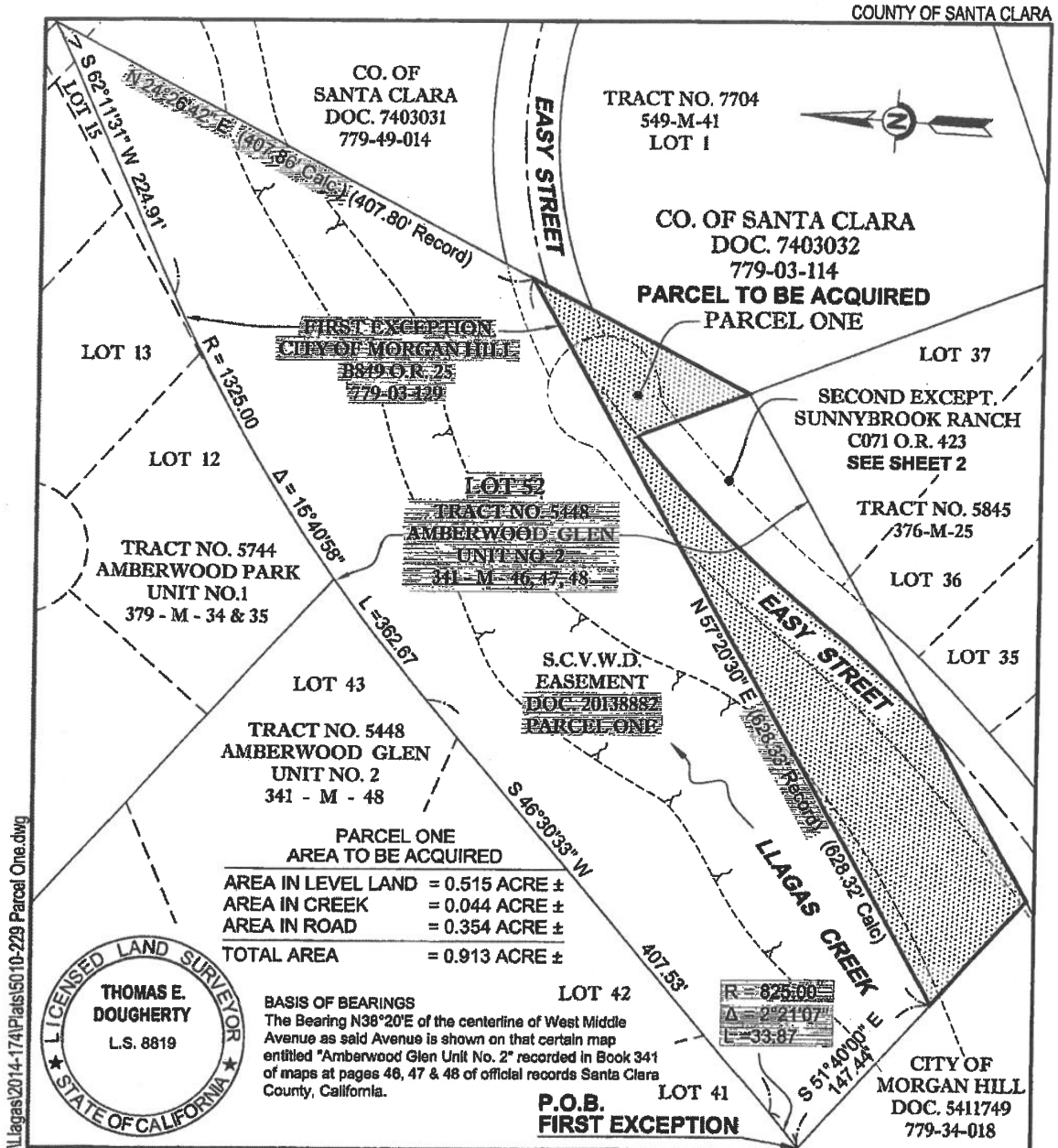
Beginning at an iron pipe at the Northwesterly line of Parcel 3 at the intersection with the centerline of Olive Avenue as shown on said map and running thence along said Northwesterly line North 61° 50' 14" East 27.35 feet; thence South 52° 05' 23" East 93.21; thence along a tangent curve to the right having a radius of 225.00 feet and a central angle of 41° 06' 14", a distance of 161.42 feet; thence South 10° 59' 09" East 27.83 feet; thence along a tangent curve to the left, having a radius of 20.00 feet and a central angle of 90° a distance of 31.42 feet; thence North 79° 00' 51" East 413.52 feet, and North 89° 59' 59" East 203.85 feet; thence along a tangent curve to the right, having a radius of 155 feet and a central angle of 7° 32' 32"; a distance of 20.40 feet; thence North 88° 45' 15" East 511.76 feet, South 75° 16' 02" East 174.74 feet, and South 41° 39' 22" East 346.11 feet to a point in the Southeasterly line of Parcel 2; thence along said Southeasterly line, South 64° 58' 03" West 370.00 to a 3/4" iron pipe, South 69° 49' 09" West 496.66 feet to an old 2" x 3" stake, and South 87° 47' 33" West 536.63 feet to a 3/4" iron pipe at the corner common to Parcels 2 and 3; thence along the Southeasterly line of Parcel 3, South 59° 40' 07" West 497.82 feet to 3/4 iron pipe at the most Southerly corner of Parcel 3; thence along the Southwesterly and Northwesterly line of Parcel 3, North 25° 05' 14" West 525.25 feet and North 23° 59' 11" East 207.43 feet; thence along a curve to the right from a tangent bearing of North 71° 20' 24" East, having a radius of 380.00 feet and a central angle of 29° 26' 02", a distance of 195.21 feet; thence along a tangent curve to the left, having a radius of 20.00 feet and a central angle of 75° 11' 02" a distance of 26.24 feet; thence along a tangent curve to the right, having a radius of 185.00 feet and a central angle of 33° 27' 30" a distance of 108.03 feet; thence along a tangent curve to the left, having a radius of 20.00 feet and a central angle of 70° 02' 02", a distance of 24.45 feet; thence North 10° 59' 09" West 40.15 feet; thence along a tangent curve to the left, having a radius of 175.00 feet and a central angle of 41° 06' 14" a distance of 125.55 feet; thence North 52° 05' 23" West 98.10 feet to the Northwesterly line of Parcel 3; thence along said Northwesterly line North 23° 59' 11" East 25.76 feet to the point of beginning.

Containing 52.019 acres of land, more or less. APN's: 779-06-030 and 779-49-014

BASIS OF BEARING: Bearings are based on and identical to that certain Tract Map No. 7704 filed in Book 549 of Maps, at pages 41, 42 and 43, filed in the office of the Recorder, County of Santa Clara, State of California.

SURVEYOR'S STATEMENT: The description was prepared by me or under my direction in conformance with the requirements of the Land Surveyor's Act.

Thomas E. Dougherty L. S. 8819 Date



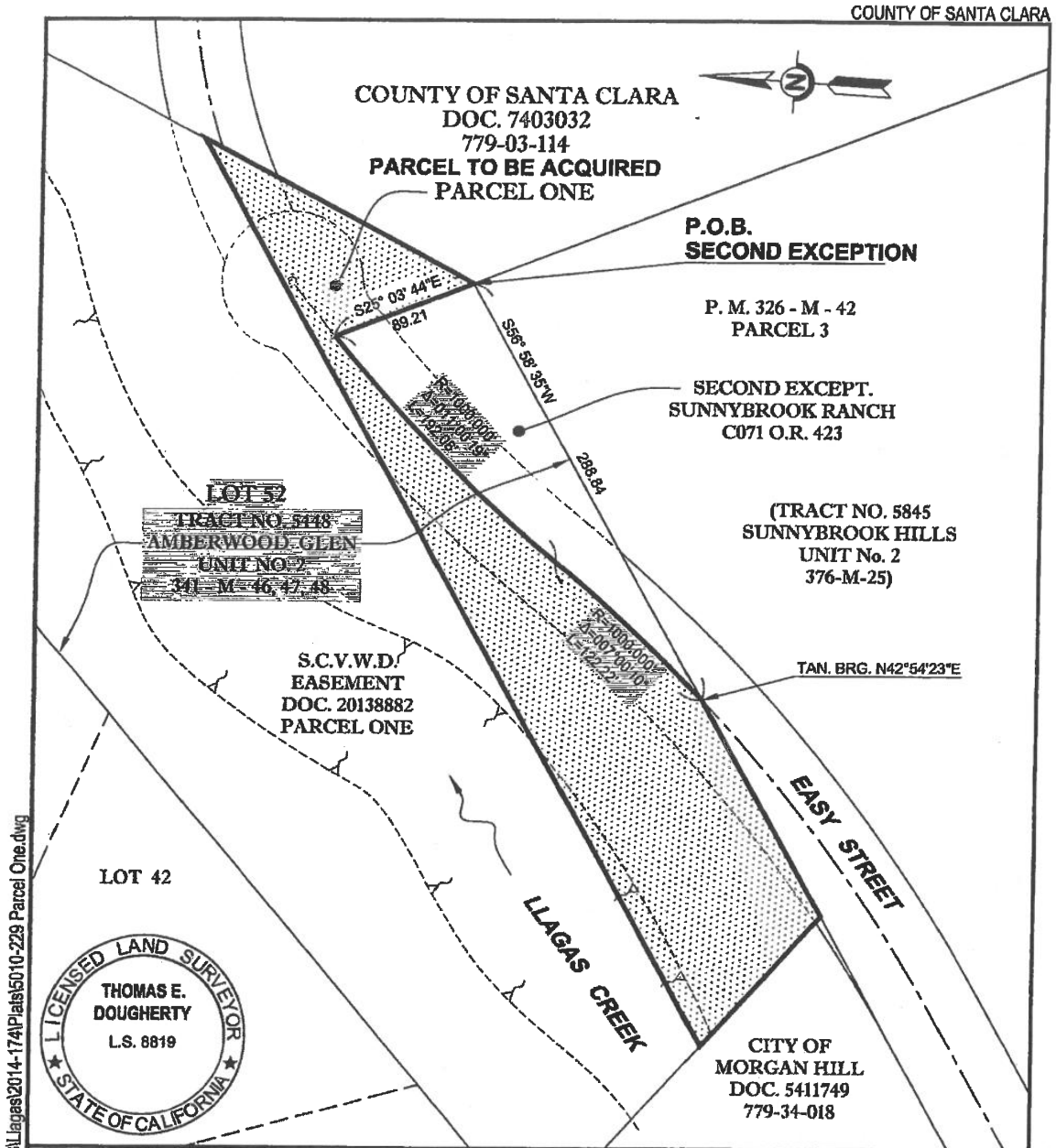
Santa Clara Valley Water District

SCALE: 1" = 100'

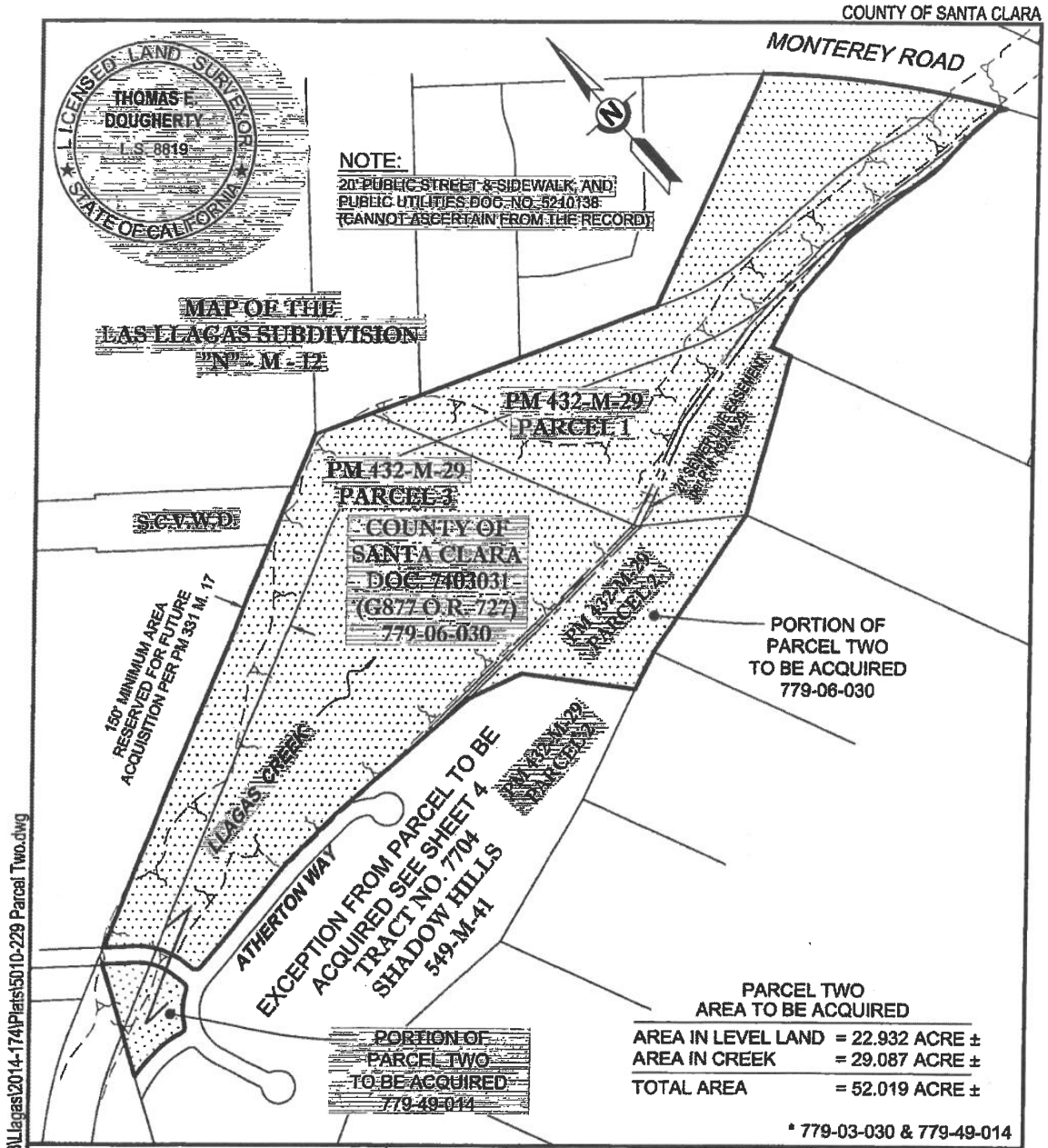
REV.	APPR.	DATE	DESCRIPTION
1			
2			

PROJ. NO.	5010
FILE NO.	229
APN	779-03-114
TITLE REPORT NO.	13-51058087-B-EB
DRAWN	B. Snyder
DATE	07/16/14

Sheet 1 of 4


COUNTY OF SANTA CLARA
COUNTY OF SANTA CLARA
DOC. 7403032
779-03-114
PARCEL TO BE ACQUIRED
PARCEL ONE
P.O.B.
SECOND EXCEPTION
S25° 03' 44"E
89.21
S56° 58' 35"W
P. M. 326 - M - 42
PARCEL 3
SECOND EXCEPT.
SUNNYBROOK RANCH
C071 O.R. 423
288.84
LOT 52
TRACT NO. 5148
AMBERWOOD GLEN
UNIT NO. 2
340 - M - 46, 47, 48
(TRACT NO. 5845
SUNNYBROOK HILLS
UNIT No. 2
376-M-25)
S.C.V.W.D.
EASEMENT
DOC. 20138882
PARCEL ONE
TAN. BRG. N42°54'23"E
EASY STREET
LLAGAS CREEK
LOT 42
LICENSED LAND SURVEYOR
THOMAS E.
DOUGHERTY
L.S. 8819
STATE OF CALIFORNIA
CITY OF
MORGAN HILL
DOC. 5411749
779-34-018
Santa Clara Valley Water District
SCALE: 1" = 80'
PROJ. NO. 5010
FILE NO. 229
APN 779-03-114
TITLE REPORT NO. 13-51058087-B-EB
DRAWN B. Snyder
DATE 07/16/14
REV. APPR. DATE DESCRIPTION
1
2
SCVWD C:\ROW\2013\Llagas\2014-174\Plats\5010-229 Parcel One.dwg

Sheet 2 of 4



SCVWD C:\ROW 2013\Llagas\2014-174\Plats\5010-229 Parcel Two.dwg

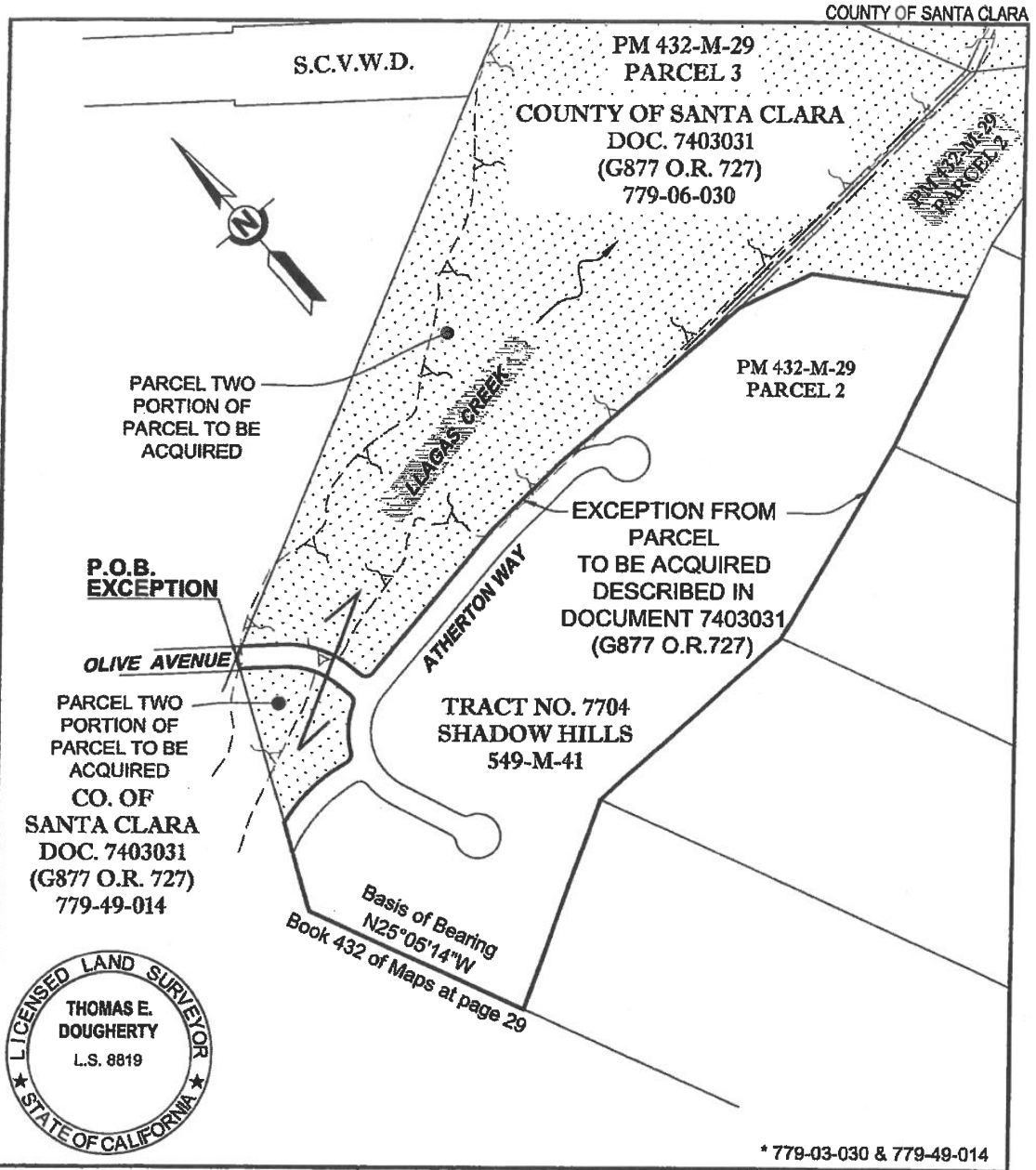
Santa Clara Valley Water District

SCALE: 1" = 400'

REV.	APPR.	DATE	DESCRIPTION
1		1/14	CHANGE TITLE REPORT NO.
2		7/14	Add property - update PTR (B. Snyder)

PROJ. NO.	26174051
FILE NO.	5010-229 TWO
APN	*
TITLE REPORT NO.	13-51058087-B-EB
DRAWN	K. Comerer
DATE	06/20/13

Sheet 3 of 4



Santa Clara Valley Water District

SCALE: 1" = 300'

REV.	APPR.	DATE	DESCRIPTION
1		1/14	CHANGE TITLE REPORT NO.
2		7/14	Add Parcel - update PTR

PROJ. NO.	26174051
FILE NO.	5010-229
APN	779-06-030
TITLE REPORT NO.	13-51058087-B-EB
DRAWN	K. Comerer
DATE	06/20/13

SCVWD C:\ROW 2013\Lagas\2014-174\Plats\5010-229 Parcel Two.dwg

Sheet 4 of 4

RECORDING REQUESTED BY:
County of Santa Clara

WHEN RECORDED, RETURN TO:
County of Santa Clara, Parks and Recreation Department
Real Estate Services
298 Garden Hill Drive
Los Gatos, CA 95032

TO BE RECORDED WITHOUT FEE AS PER GOVERNMENT CODE 6103

SPACE ABOVE THIS LINE FOR RECORDER'S USE

APN's: 779-03-114, 779-06-030, 779-49-014, 779-06-032

District Files: 5010-229.1; 5010-244.1

CONSERVATION EASEMENT AGREEMENT

Parties: Grantor: Santa Clara Valley Water District, a special district organized and existing under the laws of the State of California ("**Grantor**" or "**SCVWD**").

Grantee: The County of Santa Clara, a political subdivision of the State of California ("**Grantee**", "**County**" or "**County of Santa Clara**"); and,

Grantee: City of Morgan Hill, a municipal corporation of the State of California ("**Grantee**", "**City**" or "**City of Morgan Hill**"). Collectively, the City and County are referred to herein interchangeably as "Grantee" or "Grantees".

Subject Property: The "**Property**" consists collectively of both:

A. That certain real property commonly known as Lake Silveira, located in the City of Morgan Hill, County of Santa Clara, State of California, consisting of approximately 52.932 acres, as more particularly described in **Attachment 1** attached hereto and incorporated herein ("**Lake Silveira**"); and

B. That certain real property commonly known as the SCVWD Link Property, located in the City of Morgan Hill, County of Santa Clara, State of California, consisting of approximately 14,791 square feet, as more particularly described in **Attachment 2** attached hereto and incorporated herein (the "**Olive Street Crossing**").

Conservation This Conservation Easement preserves in perpetuity the "**Conservation Values**"

Easement which are the park purposes of trail connectivity through linkage of this site to the regional system of trails within the geographic boundary of Santa Clara County, scenic viewshed protection, habitat conservation and open space preservation consistent with the 1995 Countywide Trails Master Plan, as amended from time to time.

Mitigation Easement The Mitigation Easement (**Attachment 3**) is entered into between SCVWD and the United States by and through the United States Army Corps of Engineers. The easement will ensure that the mitigation activities associated with the Upper Llagas Creek Flood Protection Project, Project #26174052 ("**Flood Protection Project**") will be retained forever in its natural, restored, or enhanced condition. The area of mitigation to be covered by the Mitigation Easement shall be for the purpose of preservation, restoration and enhancement of native species and their habitats implemented in accordance with the Flood Protection Project. The mitigation easement area covered by the Mitigation Easement shall be comprised of not more than 16 acres within the Property as reflected in **Attachment 3-A** (the "**Mitigation Easement Area**") as more fully set out in exhibits and/or attachments to the final executed Mitigation Easement, and, with respect to the Mitigation Easement Area, the Conservation Easement shall be subordinate to the Mitigation Easement.

Easement Area: The "**Conservation Easement Area**" consists of that portion of the Property described on **Attachments 1 and 2** attached hereto and incorporated herein.

Agreed: By execution of this Conservation Easement ("**Conservation Easement**"), and in consideration of the above and mutual covenants, terms, conditions and restrictions contained herein below, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and pursuant to the laws of the State of California, including California Civil Code *Section 815 et seq.*, Grantor hereby voluntarily grants and conveys to Grantees and each of their respective successors and assigns, and Grantees hereby accept, this Conservation Easement forever in, on, over and across the Conservation Easement Area, subject to the terms and conditions set forth herein, restricting forever the uses which may be made of the Conservation Easement Area; and the parties agree to all of the foregoing and as follows:

RECITALS

A. Grantor is Owner. Grantor represents, warrants and agrees that Grantor is the sole owner, in fee title, of the Property; and,

B. Purpose of Easement. It is the intention of the Parties to protect the Conservation Easement Area in perpetuity to serve the Conservation Values through the grant of this Conservation Easement to County and City. This Conservation Easement forever protects the Conservation

Easement Area from uses that would impair or interfere with the Conservation Values. Use of the Conservation Easement Area must not impair or interfere with the Conservation Values and must be compatible with these Conservation Values. Notwithstanding the foregoing, Grantor and Grantee hereby acknowledge and agree that this Conservation Easement is subordinate and subject to the fully executed Mitigation Easement only with respect to the Mitigation Easement Area so long as all Grantor's successors and assigns are forever bound by the terms of this Conservation Easement and a future trail development and connectivity as generally depicted in the attached **Attachment 4** (**"Proposed Trail Alignment"**) is not impacted; and,

C. The City prepared and adopted a Master Plan for Lake Silveira, on or about April 19,1989, hereinafter called the "1989 Master Plan", which was approved by the County's Board of Supervisors on September 11, 1990; and,

D. County adopted the 1995 Countywide Trails Master Plan on November 14, 1995, as part of its General Plan, which included a proposed future connector trail through and around Lake Silveira.

E. City and County agree that by entering into this Conservation Easement, all prior agreements by, among or between the Grantees, including all leases, with respect to the Property, excepting any prior lawful transfer of any existing fee title or easement, interests, are terminated and are of no further force or effect.

TERMS, COVENANTS AND CONDITIONS

1. Conservation Easement Definition. This Conservation Easement shall have a definition, force and effect consistent with California Civil Code *Section 815.1 and shall include the Conservation Values.*

2. Grant of Easement/Rights of Grantees. To accomplish the purposes of this Conservation Easement, Grantor hereby grants and conveys the following rights to each of the Grantees for the entire Conservation Easement Area, except that, with respect to the Mitigation Easement Area only, such rights shall be subject and subordinate to the terms and conditions of the Mitigation Easement:

(a) To preserve, protect, sustain, restore, develop and enhance the Conservation Values for the Conservation Easement Area in accordance with the terms and conditions of this Conservation Easement;

(b) To enter upon the Conservation Easement Area for scientific research necessary to support monitoring and adaptive management of the Conservation Values; provided, that neither Grantee shall unreasonably interfere with Grantor's use and quiet enjoyment of the Conservation Easement Area or the Mitigation Easement Area;

(c) To enter upon the Conservation Easement Area to carry out those management and monitoring activities and requirements applicable to the Conservation Easement Area that either Grantee determines to be reasonable or necessary to preserve, protect, sustain, restore, create or enhance the Conservation Values; provided, that the Grantee performing these activities use reasonable good faith efforts to conduct such management and monitoring activities in a manner that does not unreasonably interfere with Grantor's use and quiet enjoyment of the Conservation Easement Area and the terms and conditions of the Mitigation Easement;

(d) To prevent any activity on or use of the Conservation Easement Area that is inconsistent with the Conservation Values, to enforce the terms or conditions of this Conservation Easement and/or to require the restoration of such areas or features of the Conservation Easement Area that may be damaged by any act, failure to act, or any use that is inconsistent with the Conservation Values; and,

(e) For the perpetual opportunity for the City to develop, operate and maintain a proposed trail system connecting through and along the Conservation Easement Area, as shown on the attached **Attachment 4** (the **"Proposed Trail Alignment"**). The Proposed Trail Alignment, as depicted by a yellow dashed line on **Attachment 4**, shall have a maximum eighteen (18) foot width and shall serve as an important Conservation Value once established. City's rights to establish the Proposed Trail Alignment shall not be removed, obstructed, altered or prevented by any action of Grantor, its successors, assigns or third party beneficiaries; except that the City may be required to realign the Proposed Trail Alignment for Grantor's purposes, including but not limited to flood protection on the Property or wetlands or habitat mitigation within the Mitigation Area, as determined by Grantor in its sole, but reasonable, discretion, or as may be necessary to meet the terms and conditions of the Mitigation Easement. City shall use best efforts to establish connectivity of the Proposed Trail Alignment through two potential pedestrian trail crossings located at Olive Avenue and parallel to Monterey Highway creek bridge (collectively, the **"Crossings"**), as depicted on **Attachment 4**. However, connectivity from the Proposed Trail Alignment to Crossings shall not be unreasonably obstructed, altered or prevented by any action of Grantor, its successors, assigns or third party beneficiaries.

3. Grantor's Use of Conservation Easement Area. Notwithstanding anything to the contrary stated in this Conservation Easement, Grantor is authorized to use the Mitigation Easement Area to fulfill the obligations and responsibilities set forth in the Mitigation Easement, including without limitation, construction of flood protection measures for the Flood Protection Project, subject to compliance with all requisite laws. The Parties further hereby acknowledge and agree that Grantor shall have the right, but not the obligation, to implement reasonable public safety measures from time to time on the Property.

4. Maintenance Responsibilities. Grantor and Grantees shall be responsible for construction and maintenance, as among themselves, as follows: a) Grantor shall be solely responsible for constructing and maintaining all flood protection and on-site mitigation improvements made as part of the Flood Protection Project within the Property, including any improvements required by the Mitigation Easement within the Mitigation Easement Area; and b) City of Morgan Hill shall be solely responsible for all costs for planning, design, construction,

operation and maintenance associated with the Conservation Values, including those which the City desires to undertake in accordance with the 1989 Master Plan, the funding for which the City of Morgan Hill shall, with diligence and good faith, pursue, seek and obtain at the level necessary to fulfill the Conservation Values at all times after Grantor's completion of the Flood Protection Project.

5. **Conservation Easement Appurtenant.** The grant of easement contained herein binds Grantor and all of Grantor's successors and assigns, and constitutes a servitude on the Conservation Easement Area that runs with the land in perpetuity.

6. **Enforcement.** Any act, conveyance, contract or authorization by the Grantor that uses, or causes or allows the use of, the Conservation Easement Area in a manner contrary to or inconsistent with the terms of this Conservation Easement constitutes a material breach of this Conservation Easement, but excepting therefrom the priority rights of the Mitigation Easement with respect to the Mitigation Easement Area only. The County or City may bring an action in any court to enforce the terms of this Conservation Easement and the responsibility for paying all costs, fees, damages, penalties and claims associated with or relating to enforcement, litigation, remediation, mitigation and compliance involving this Conservation Easement shall be as determined by said court. The enforcement remedies in this paragraph are not exclusive, and each of the Grantees may pursue any and all appropriate legal and equitable remedies, including but not limited to specific performance and injunctive relief. Grantees each have sole discretion to determine under what circumstances an enforcement action shall be brought. A Grantee's failure to enforce the terms of this Conservation Easement shall not be deemed a waiver of either of the Grantee's rights regarding any subsequent breach.

7. **Right of Entry.** Grantor grants to each of the Grantees and their respective successors, assigns, agents, employees and contractors a right to enter the Property (the "**Right of Entry**") at reasonable times to inspect the Conservation Easement Area for compliance with this Conservation Easement or to conduct any maintenance or restoration activities, with such right of entry being subordinate and subject to the terms and conditions of the Mitigation Easement with respect to the Mitigation Easement Area. Prior to entering the Property, the Grantee seeking entry will notify Grantor at least forty-eight (48) hours in advance, except for emergencies in which case said Grantee may provide notice immediately upon or after entry. The notice may be by telephone, personal service, email or U.S. mail delivered to the address of the Grantor as listed on the most recent assessment roll of the Office of the Assessor for Santa Clara County. Each Grantee shall indemnify, defend, and hold harmless Grantor for any and all claims, liabilities, losses, injuries (including death and bodily injury), penalties, fees and damages, directly caused by the Grantee's use of this Right of Entry and/or its agents, employees or contractors, excepting only loss, injury or damage caused by the negligence or willful misconduct of Grantor, its employees, agents, successors, assigns or contractors or the other Grantee or the other Grantee's employees, agents, successors, assigns or contractors. This Right of Entry includes the right to enter the land to correct any dangerous condition as defined by California Government Code *Section 830 et seq.*

(a) County acknowledges and agrees to apply for and secure an appropriate permit from the City of Morgan Hill for attendance by third party invitees at any County-sponsored

events occurring within the Conservation Easement, and such permit shall not be unreasonably withheld or denied.

8. Liability and Indemnification.

(a) Grantor's Obligations. Grantor shall hold harmless, protect and indemnify each of the Grantees and their respective directors, officers, employees, agents, contractors, and representatives and the heirs, personal representatives, successors and assigns of each of them (each a **"Grantee Indemnified Party"** and collectively, "the **Grantee Indemnified Parties"**) from, for and against any and all liabilities, penalties, costs, losses, damages, expenses (including, without limitation reasonable attorneys' fees and experts' fees), causes of action, claims, demands, orders, liens or judgments (each a **"Claim"** and, collectively, **"Claims"**), arising from or related to Grantor's use of the Property or the use of the Property by any of Grantor's directors, officers, employees, agents, contractors, and representatives and the heirs, personal representatives, successors and assigns of each of them, including but not limited to construction or maintenance of the Flood Protection Project, except that this indemnification shall be inapplicable to any Claim directly caused solely by the gross negligence or willful misconduct of any of the Grantees or any of the Grantee Indemnified Parties

(b) City's Obligations. City agrees to hold harmless, protect and indemnify the Grantor, its agents, officers, directors, and employees from and against any and all Claims arising from or related to the use of the Property as described in this Conservation Easement by any of the Grantees, any of the applicable Grantee Indemnified Parties, City's invitees, or the general public; except that this indemnification shall be inapplicable to any Claim directly caused solely by the gross negligence or willful misconduct of Grantor, the Corps or any of the Grantor's or Corps' successors, assigns, employees, agents, officers, directors, representatives, contractors or invitees.

(c) County's Obligations. County agrees to hold harmless, protect and indemnify the Grantor, its agents, officers, directors, and employees from and against any and all Claims arising from or related to the use of the Property by County or any of the County's directors, officers, employees, agents, contractors and representatives and each of their respective heirs, personal representatives, successors and assigns except that this indemnification shall be inapplicable to any Claim directly caused solely by the gross negligence or willful misconduct of Grantor, the Corps or any of Grantor's or Corps' successors, assigns, employees, agents, officers, directors, representatives, contractors or invitees.

9. Enforceable Covenant and Restriction. This Conservation Easement and every term, condition, restriction and covenant in it is intended for the benefit of each of the Grantees, their respective successors and assigns, and constitutes an enforceable restriction. Grantor and the Grantees each expressly intend that this covenant is to run with the land and constitutes an equitable servitude and shall bind every successive owner of the Property or of any interest in it, and shall be enforceable by each of the Grantees, their respective successors and assigns.

10. Taxes and Assessments. Grantor warrants, represents and agrees to timely pay or cause to be paid any real property taxes, assessments and liens that may be levied or assessed against the fee title to the Property, and the City of Morgan Hill hereby warrants, represents and agrees to timely pay or cause to be paid any real property taxes, assessments and liens that may be levied or assessed against any of its improvements made within the Conservation Easement Area. Grantor does not waive any legal right or recourse relating to the assessment or collection of taxes.

11. Transfer of Easement. Neither Grantee will transfer its Conservation Easement rights without the express written permission of the other Grantee and Grantor, which permission shall not be unreasonably withheld or delayed. Any proposed transfer shall be subject to the following: (a) the Grantee desiring to transfer or assign its Conservation Easement rights shall give the other Grantee and Grantor at least sixty (60) calendar days prior written notice of the proposed assignment or transfer, (b) the transfer is only to another California agency, city, county or special district that has the authority to acquire and hold conservation easements pursuant to California Civil Code *Section 815.3* and California Government Code *Section 65967(c)* (and any successor or other provisions then applicable), (3) the transferee or assignee is otherwise reasonably acceptable to the other Grantee and to Grantor; and (4) the transferee or assignee agrees in writing to assume fully the obligations hereunder of the Grantee seeking the transfer. The failure of a Grantee to perform any act provided in this section shall not impair the validity of this Conservation Easement or limit its enforceability in any way.

12. Transfer of Property. Grantor agrees to incorporate this Conservation Easement by reference into any deed or other legal instrument by which Grantor divests itself of any interest in all or any portion of the Property, including, without limitation, a leasehold interest. Grantor further agrees to give written notice to each of the Grantees of its intent to transfer any interest at least thirty (30) calendar days prior to the date of such transfer. Each of the Grantees shall have the right to prevent subsequent transfers in which prospective subsequent claimants or transferees are not given notice of the covenants, terms, conditions and restrictions of this Conservation Easement. The failure of Grantor to perform any act provided in this section shall not impair the validity of this Conservation Easement or limit its enforceability in any way. Any successor in interest of Grantor, by acceptance of a deed, lease, or other document purporting to convey an interest in the Property, shall be deemed to have consented to, reaffirmed and agreed to be bound by all of the terms, covenants, restrictions, and conditions of this Conservation Easement.

13. Amendment. This Conservation Easement may not be amended, modified or otherwise changed in any manner, except by a written amendment executed by all the parties hereto, or their successors in interest, it being understood that no Grantee or Grantor will ever be obligated to negotiate or enter into any such amendment; and no discretionary approval that this Conservation Easement may allow to be made from time to time by a party will operate to amend or modify any of the terms of this Conservation Easement to any extent or in any manner.

14. Merger. The doctrine of merger shall not operate to extinguish the Conservation Easement if the Conservation Easement and the Property become vested in the same party..

15. **Headings.** The titles and headings of the various sections of this Conservation Easement are intended solely for convenience of reference and are not intended to explain, modify or place any construction on any of the provisions of this Conservation Easement.

16. **Governing Law; Exclusive Jurisdiction.** This Conservation Easement, and all the rights and duties of the parties arising from or relating in any way to the subject matter of this Conservation Easement or the transaction(s) contemplated by it, shall be governed by, construed and enforced in accordance with the law of the State of California (excluding any conflict of laws provisions that would refer to and apply the substantive laws of another jurisdiction). Any suit or proceeding relating to this Conservation Easement, including arbitration or mediation proceedings, shall be brought only in the State of California, County of Santa Clara EACH OF THE PARTIES CONSENT TO THE EXCLUSIVE PERSONAL JURISDICTION AND VENUE OF THE COURTS, STATE AND FEDERAL, LOCATED IN THE STATE OF CALIFORNIA, COUNTY OF SANTA CLARA.

17. **Severability.** Each and every provision of this Conservation Easement is severable from any and all other provisions of this Conservation Easement. Should any provision or provisions of this Conservation Easement be, by operation of law, unenforceable, the balance shall nonetheless be of full force and effect. If there is a conflict between a part of this Conservation Easement and any present or future law, regulation or other regulatory mandate or requirement, the part of this Conservation Easement that is affected shall be curtailed only to the extent necessary to bring it within the requirements of the law, regulation, regulatory mandate or requirement. Such curtailment may commence as quickly as necessary to ensure full compliance with applicable law, regulation, regulatory mandate or requirement. Furthermore, in that event, the parties agree to negotiate in good faith to amend this Conservation Easement in such a manner as will provide each party with the same intended benefit while still complying with all applicable laws and regulations.

18. **Waivers.** No delay or omission by either party hereto to exercise any right in each instance, including those occurring upon any noncompliance or default by the other party, with respect to any of the terms of this Conservation Easement shall impair any such right or power or be construed to be a waiver thereof of any other instance in whole or in part. A waiver by either of the parties hereto of any of the covenants, conditions or agreements to be performed by the other shall not be construed to be a waiver of any succeeding breach thereof or of any covenant, condition or agreement herein contained.

19. **Cumulative Remedies.** The rights and remedies of each of the parties to this Conservation Easement, whether pursuant to this Conservation Easement or in accordance with law, shall be construed as cumulative, and the exercise of any single right or remedy shall constitute neither a bar to the exercise of nor the waiver of any other available right or remedy.

20. **Construction.** This Conservation Easement shall not be construed more strongly against any party regardless of who is more responsible for its preparation.

21. **Relationship of Parties.** The parties acknowledge that nothing set forth in this Conservation Easement shall be deemed or construed to render the parties as joint venturers, partners, agents, a joint enterprise or employer and employee. Under no circumstances shall any party be considered the employer of any other party's personnel, nor shall any party have any right with respect to any employee, agent or representative of any other party. No party shall have authority to contract for or bind the other in any manner.

22. **Voluntary Execution.** The parties acknowledge that each of them have been furnished with copies of, and have read, this Conservation Easement and that this Conservation Easement has been freely and voluntarily entered into by them and they agree to be fully bound by the terms hereof. Furthermore, this Conservation Easement is executed without reliance upon any representation by any person not contained herein.

23. **Status of Parties; Authority to Sign.** Each signatory to this Conservation Easement personally warrants that he/she has full authority to execute this Conservation Easement on behalf of the entity which he/she represents, if signing in a representative capacity. Grantor warrants that it is the sole owner, in fee title, of the Property and will continue to be the sole owner of the Property after the Effective Date (as defined below) of this Conservation Easement and the Conservation Easement shall be recorded in the official records of the County of Santa Clara.

24. **Entire Agreement.** This instrument, along with the Mitigation Easement, sets forth the entire agreement of the parties with respect to this Conservation Easement and supersedes all prior discussions, negotiations, understandings, or agreements relating to the subject matter contained herein. No alteration or variation of this instrument shall be valid or binding unless contained in an amendment in accordance with the provisions contained herein.

25. **Successors.** The covenants, terms, conditions, and restrictions of this Conservation Easement shall be binding upon, and inure to the benefit of, the parties hereto and their respective personal representatives, heirs, successors, and assigns and shall constitute a servitude running in perpetuity with the Property.

26. **Captions.** The captions in this instrument have been inserted solely for convenience of reference and are not a part of this instrument and shall have no effect upon its construction or interpretation.

27. **Recording.** Grantees shall record this Conservation Easement in the Official Records of the county where the Property is located, and may re-record it at any time as either Grantee deems necessary to preserve their/its respective rights hereunder.

28. **Counterparts.** The parties may execute this Conservation Easement in two or more counterparts, which shall, in the aggregate, be signed by all parties; each counterpart shall be deemed an original instrument as against any party who has signed it. In the event of any disparity between the counterparts produced, the recorded counterpart shall be controlling.

29. Effective Date. The effective date of this Conservation Easement ("**Effective Date**") shall be the last date that it is fully executed by the Grantor and each of the Grantees.

30. Survival. Those Sections and provisions that by their nature should survive, shall survive termination, expiration or cancellation of this Conservation Easement, including but not limited to Sections 1, 5, 6 and 8 through 30, inclusive.

////SIGNATURES FOLLOW ON NEXT PAGE////

IN WITNESS WHEREOF, effective as of the Effective Date, the parties hereto have executed this Conservation Easement as follows:

GRANTOR: SANTA CLARA VALLEY WATER DISTRICT, A Special District of the State of California

By: _____ Date: March 13, 2018
Norma J. Camacho
Chief Executive Officer

APPROVED AS TO FORM AND LEGALITY:

_____
Brian Hopper,
Senior Assistant District Counsel

////SIGNATURES FOLLOW ON NEXT PAGE////

ALL-PURPOSE ACKNOWLEDGMENT

CIVIL CODE §1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF SANTA CLARA } SS

On this 23rd day of March, in the year 2018 before me Michele L. King,
Notary Public, personally appeared Norma Camacho
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he/she/they~~ executed the same in ~~his/her/their~~ authorized capacity(ies), and that by ~~his/her/their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Michele L. King
Notary Public in and for said County and State

MICHELE L. KING
Commission # 2121918
Notary Public - California
Santa Clara County
My Comm. Expires Aug 29, 2019

CAPACITY CLAIMED BY SIGNER

Though statute does not require the Notary to fill in the data below, doing so may prove invaluable to persons relying on the document.

☐ Individual
☒ Corporate Officer(s): _____
☐ Attorney-In-Fact _____
☐ Trustee(s)
☐ Guardian/Conservator

Signer is Representing (Name of Person(s) or Entity(ies)

_____ _____

GRANTEE: COUNTY OF SANTA CLARA, a Political Subdivision of the State of California

By: _____ Date: JUN 05 2018
S. JOSEPH SIMITIAN, President,
Board of Supervisors

ATTEST:

By: _____ Date: JUN 05 2018
Megan Doyle, Clerk of the
Board of Supervisors

APPROVED AS TO FORM AND LEGALITY:

COUNTY COUNSEL, SANTA CLARA COUNTY

By: _____
Shirley R. Edwards,
Deputy County Counsel

////SIGNATURES FOLLOW ON NEXT PAGE////

ALL-PURPOSE ACKNOWLEDGMENT

CIVIL CODE §1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF SANTA CLARA } SS

On this 12 day of June, in the year 2018 before me Frank Soriano,

Notary Public, personally appeared Saven Joseph Simittan
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Frank Soriano
Notary Public in and for said County and State

FRANK SORIANO
Notary Public - California
Santa Clara County
Commission # 2181503
My Comm. Expires Feb 16, 2021

CAPACITY CLAIMED BY SIGNER

Though statute does not require the Notary to fill in the data below, doing so may prove invaluable to persons relying on the document.

☐ Individual
☐ Corporate Officer(s): _____
☐ Trustee(s)
☐ Guardian/Conservator
☐ Attorney-In-Fact _____

Signer is Representing (Name of Person(s) or Entity(ies)

_____ _____

03132018 5.2

GRANTEE: CITY OF MORGAN HILL, a Municipal Corporation

By: _____ Date: 3/14/18
Christina Turner, City Manager

ATTEST:

By: _____ Date: 3/15/18
Michelle Wilson, Deputy City Clerk

APPROVED AS TO FORM AND LEGALITY:

By: _____, Assistant City Attorney
for Donald Larkin, City Attorney

A notary or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Santa Clara

On March 14, 2018, before me, Angelica Gonzalez, a Notary Public in and for said County and State, personally appeared Christina J. Turner, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he/she/they~~ executed the same in ~~his/her/their~~ authorized capacity(~~ies~~), and that by ~~his/her/their~~ signature(s) on the instrument the person, or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

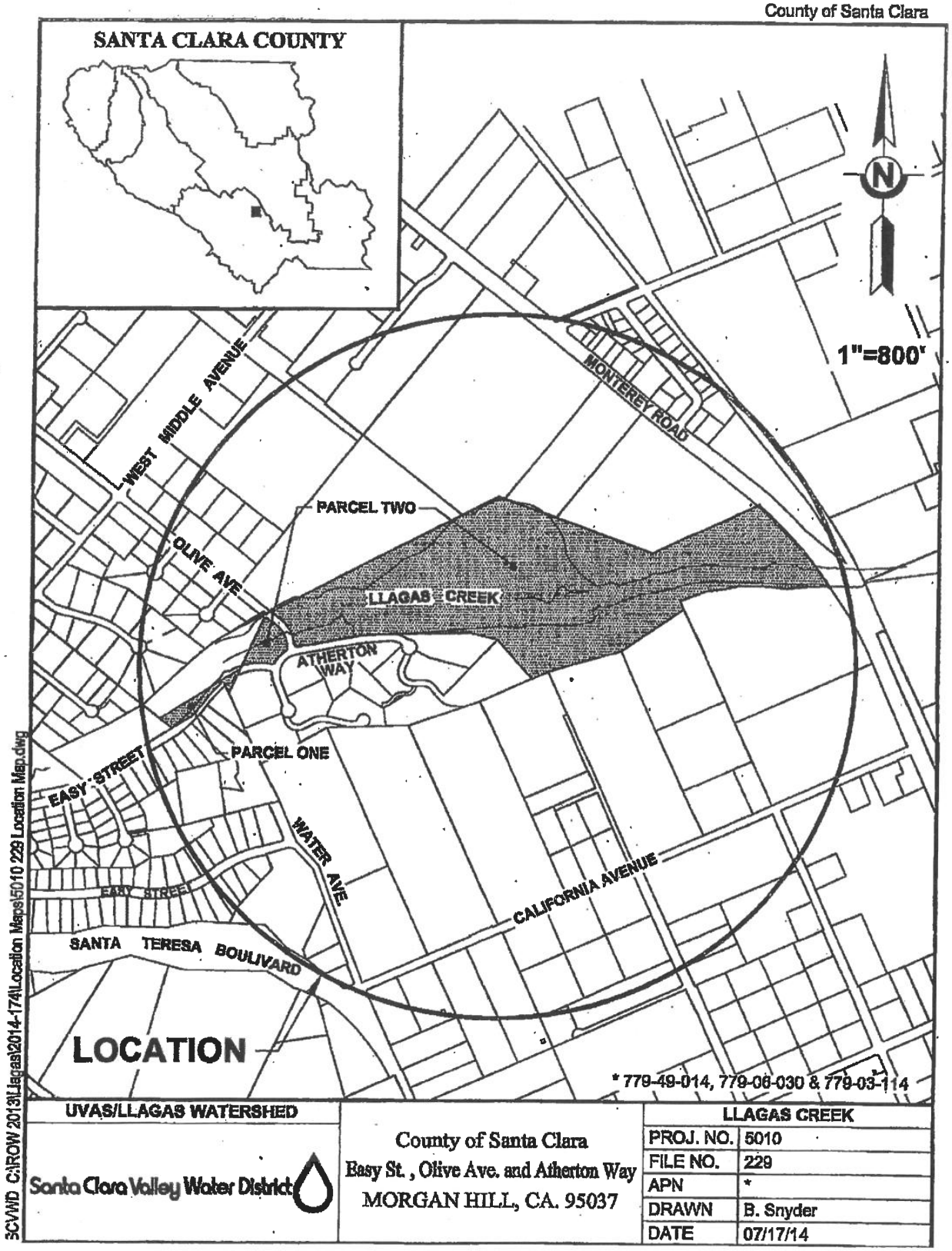
SIGNATURE OF NOTARY PUBLIC

ANGELICA GONZALEZ
Notary Public - California
Santa Clara County
Commission # 2113361
My Comm. Expires May 29, 2019

(ABOVE AREA FOR NOTARY SEAL)

ATTACHMENT 1
(to Conservation Easement)
LEGAL DESCRIPTION OF PROPERTY (LAKE SILVEIRA)

County of Santa Clara



SANTA CLARA VALLEY WATER DISTRICT
San Jose, California

By: DOC. 7403031 & DOC. 7403032

Checked by:_____ Date:_____

PROJECT: LLAGAS CREEK
PROPERTY: COUNTY OF SANTA CLARA FILE NO.: 5010-229

All that certain real property situate in the City of Morgan Hill, County of Santa Clara, State of California, described as follows:

PARCEL ONE

Being that portion of LOT 52 as conveyed from Walter Von Tagen and Verne D. Freeman and Joanne O. Freeman, his wife to the County of Santa Clara per Document 7403032, Santa Clara County Records described as follows:

LOT 52, as said lot is shown upon that certain Map entitled, "Tract No. 5448, Amberwood Glen Unit No. 2" which Map was filed for record on June 13, 1974 in Book 341 of Maps, pages 46, 47 and 48, Santa Clara County Records described as follows:

EXCEPTING THEREFROM that portion thereof described in the Deed from Walter Von Tagen, et al, to the City of Morgan Hill, recorded February 2, 1976 in Book B849 of Official Records, page 25, as follows:

BEGINNING at the most Westerly corner of Lot 52, said corner also being a common corner with Lot 41 as said Lots and corners are shown on the Map entitled "Tract No. 5448, Amberwood Glen Unit No. 2" filed in Book 341 of Maps, pages 46, 47 and 48, Santa Clara County Records; thence South 51° 40' East 147.44 feet; thence North 57° 20' 30" East 628.33 feet; thence North 24° 26' 42" East 407.80 feet; thence South 62° 11' 31" West 224.91 feet; thence tangent to the last course, along a curve to the left an arc distance of 362.67 feet, said curve having a central angle of 15° 40' 58" and a radius of 1325.00 feet; thence tangent to the last curve, South 46° 30' 33" West 407.53 feet; thence along a curve to the right an arc distance of 33.87 feet, said curve having a central angle of 2° 21' 07" and a radius of 825.00 feet to the point of beginning.

ALSO EXCEPTING THEREFROM that portion thereof described in the Deed from Walter Von Tagen, et al, to Sunnybrook Ranch, a limited partnership, recorded June 9, 1976 in Book C071 of Official Records, page 423, as follows:

BEGINNING at the most northeastern corner of Parcel 3 as said parcel is shown on the Parcel Map filed in Book 326 of Maps, at page 42, Santa Clara County Records; thence South 56° 58' 35" West, 288.84 feet; thence from a tangent which bears North 42° 54' 23" East, along a curve to the left, an arc distance of 122.22 feet; said curve having a radius of 1000.00 feet and a central angle of 7° 00' 10"; thence tangent to the last curve along a curve to the right an arc distance of 192.08 feet, said curve having a radius of 1000.00 feet and a central angle of 11° 00' 19"; thence South 25° 03' 44" East, 89.21 feet to the point of beginning.

Containing 0.913 acre of land, more or less. APN's: 779-03-114

BASIS OF BEARING: Bearings are based on and identical to that certain Tract Map No. 5448 filed in Book 341 of Maps, at pages 46, 47 and 48, filed in the office of the Recorder, County of Santa Clara, State of California.

PARCEL TWO

Being that portion of Parcels 1, 2, and 3 as conveyed from Verne D. Freeman and Joanne O. Freeman et al to the County of Santa Clara per Document 7403031 described as follows:

Being all of Parcels 1, 2, and 3 as shown on Parcel Map recorded in book 432 of Maps at page 29, Santa Clara County Records described as follows:

Excepting therefrom a parcel of land described as follows:

Beginning at an iron pipe at the Northwesterly line of Parcel 3 at the intersection with the centerline of Olive Avenue as shown on said map and running thence along said Northwesterly line North 61° 50' 14" East 27.35 feet; thence South 52° 05' 23" East 93.21; thence along a tangent curve to the right having a radius of 225.00 feet and a central angle of 41° 06' 14", a distance of 161.42 feet; thence South 10° 59' 09" East 27.83 feet; thence along a tangent curve to the left, having a radius of 20.00 feet and a central angle of 90° a distance of 31.42 feet; thence North 79° 00' 51" East 413.52 feet, and North 89° 59' 59" East 203.85 feet; thence along a tangent curve to the right, having a radius of 155 feet and a central angle of 7° 32' 32"; a distance of 20.40 feet; thence North 88° 45' 15" East 511.76 feet, South 75° 16' 02" East 174.74 feet, and South 41° 39' 22" East 346.11 feet to a point in the Southeasterly line of Parcel 2; thence along said Southeasterly line, South 64° 58' 03" West 370.00 to a 3/4" iron pipe, South 69° 49' 09" West 496.66 feet to an old 2" x 3" stake, and South 87° 47' 33" West 536.63 feet to a 3/4" iron pipe at the corner common to Parcels 2 and 3; thence along the Southeasterly line of Parcel 3, South 59° 40' 07" West 497.82 feet to 3/4 iron pipe at the most Southerly corner of Parcel 3; thence along the Southwesterly and Northwesterly line of Parcel 3, North 25° 05' 14" West 525.25 feet and North 23° 59' 11" East 207.43 feet; thence along a curve to the right from a tangent bearing of North 71° 20' 24" East, having a radius of 380.00 feet and a central angle of 29° 26' 02", a distance of 195.21 feet; thence along a tangent curve to the left, having a radius of 20.00 feet and a central angle of 75° 11' 02" a distance of 26.24 feet; thence along a tangent curve to the right, having a radius of 185.00 feet and a central angle of 33° 27' 30" a distance of 108.03 feet; thence along a tangent curve to the left, having a radius of 20.00 feet and a central angle of 70° 02' 02", a distance of 24.45 feet; thence North 10° 59' 09" West 40.15 feet; thence along a tangent curve to the left, having a radius of 175.00 feet and a central angle of 41° 06' 14" a distance of 125.55 feet; thence North 52° 05' 23" West 98.10 feet to the Northwesterly line of Parcel 3; thence along said Northwesterly line North 23° 59' 11" East 25.76 feet to the point of beginning.

Containing 52.019 acres of land, more or less. APN's: 779-06-030 and 779-49-014

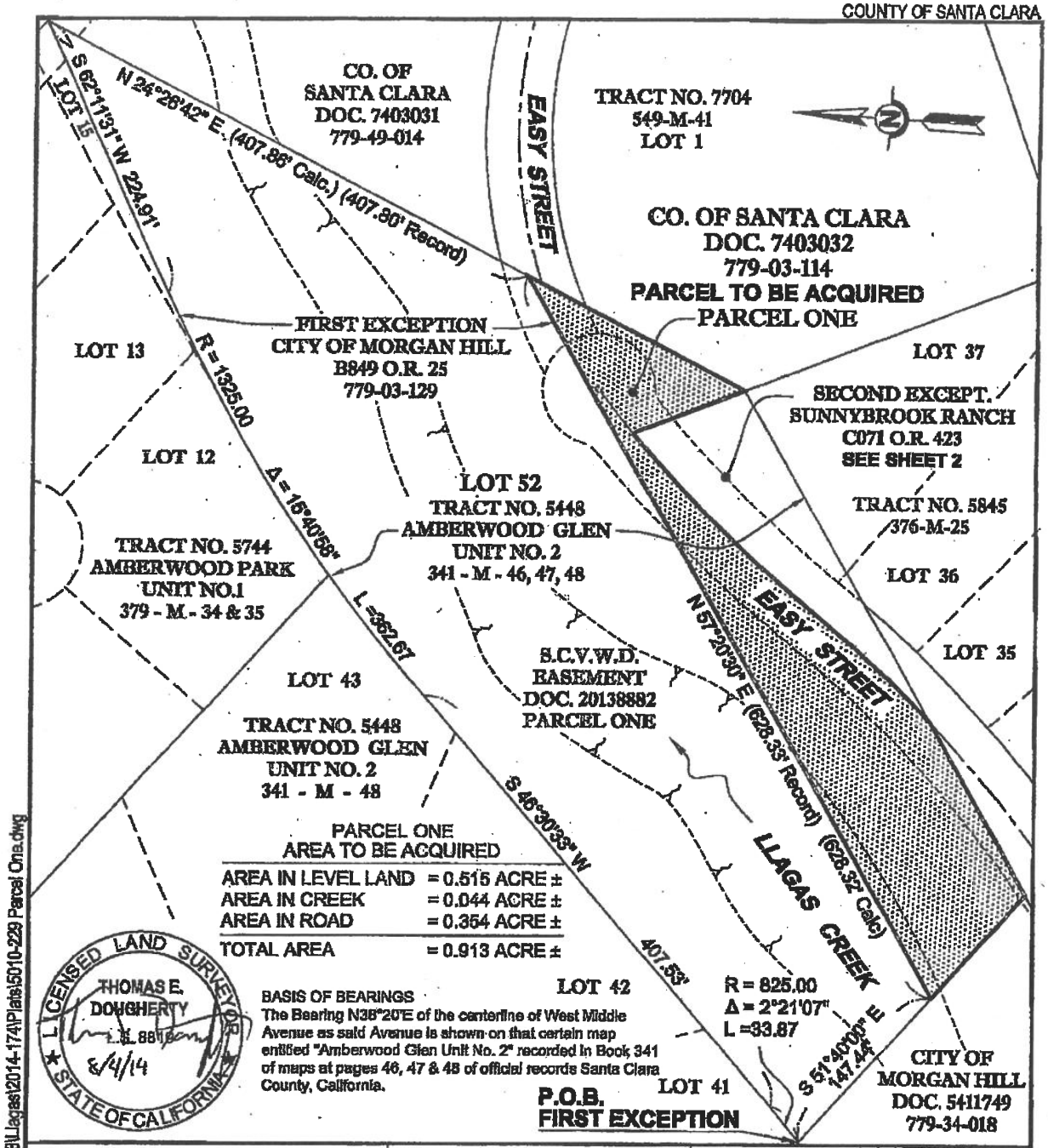
BASIS OF BEARING: Bearings are based on and identical to that certain Tract Map No. 7704 filed in Book 549 of Maps, at pages 41, 42 and 43, filed in the office of the Recorder, County of Santa Clara, State of California.

SURVEYOR'S STATEMENT: The description was prepared by me or under my direction in conformance with the requirements of the Land Surveyor's Act.

Thomas E. Dougherty L. S. 8819

8/4/14
Date

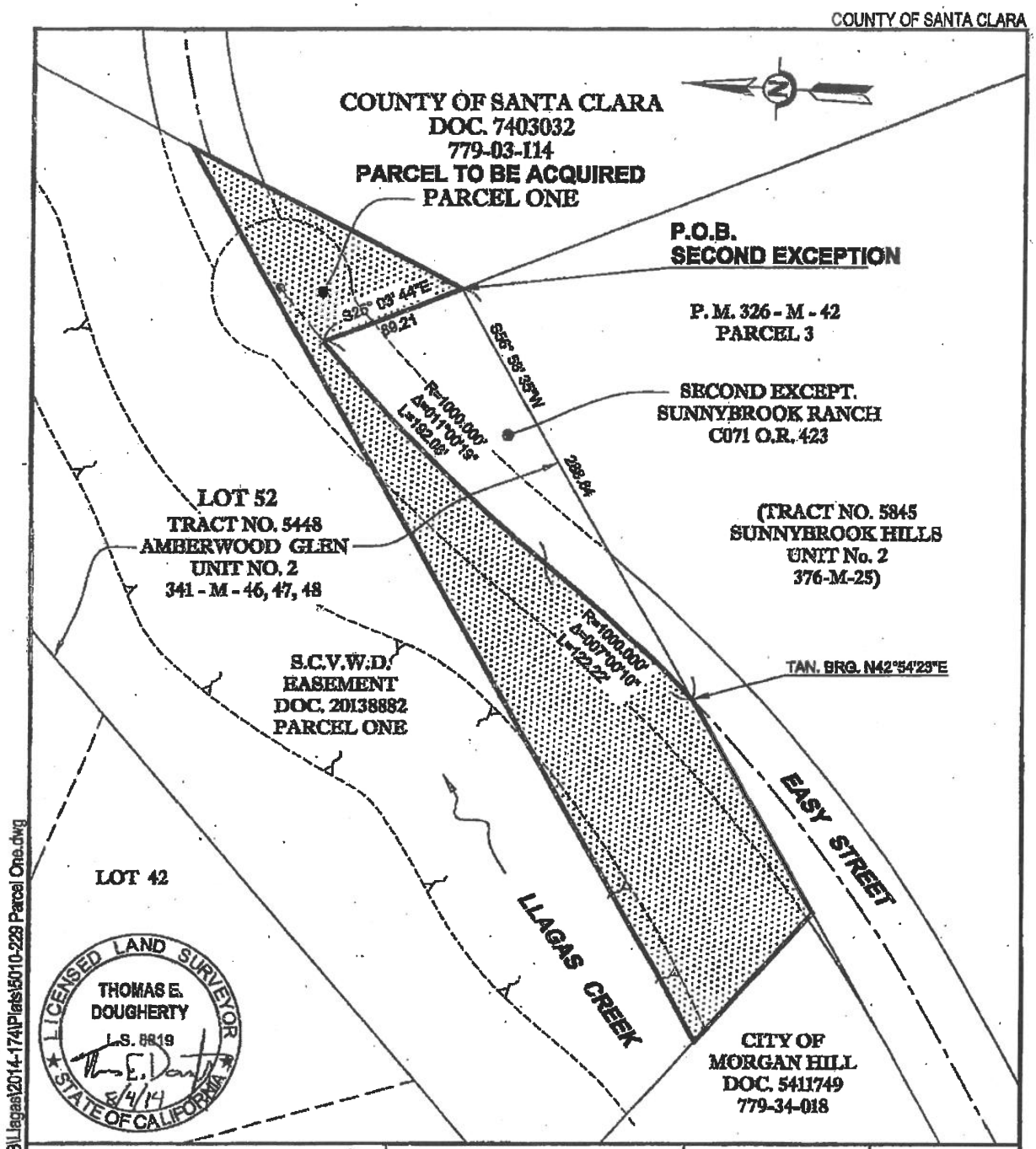
LICENSED LAND SURVEYOR
DOUGHERTY T. EVERETT
NO. 8819
STATE OF CALIFORNIA



Santa Clara Valley Water District	SCALE: 1" = 100'	PROJ. NO.	5010
		FILE NO.	229
		APN	779-03-114
REV. / APPR. / DATE / DESCRIPTION		TITLE REPORT NO.	13-51058087-B-EB
1		DRAWN	B. Snyder
2		DATE	07/16/14

SCVWD C:\ROW 2013\Lagas\2014-174\Plats\5010-229 Parcel One.dwg

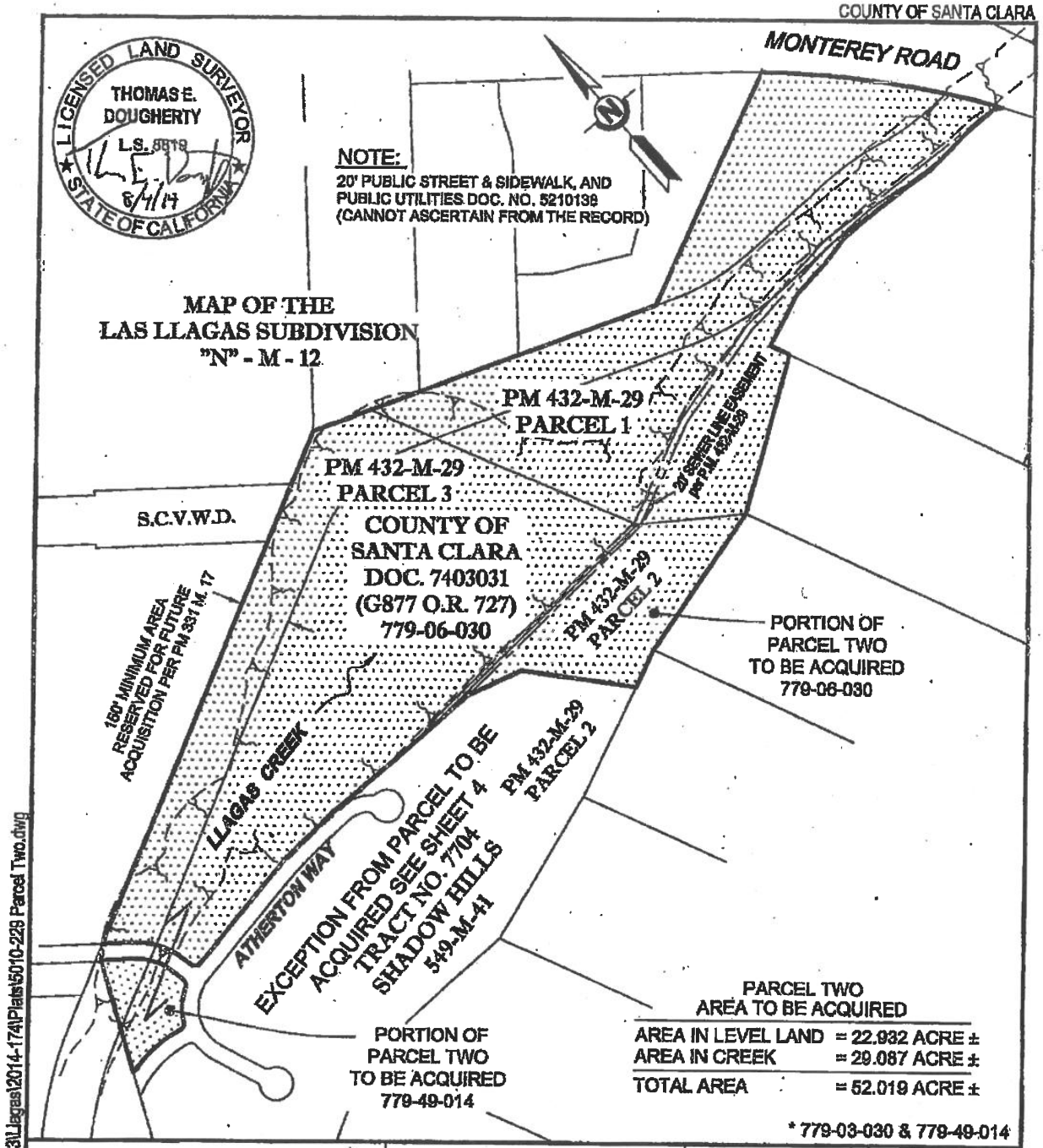
Sheet 1 of 4



Santa Clara Valley Water District	SCALE: 1" = 80'	PROJ. NO.	5010
		FILE NO.	229
		APN	779-03-114
		TITLE REPORT NO.	13-51058087-B-EB
		DRAWN	B. Snyder
		DATE	07/16/14

REV.	APPR.	DATE	DESCRIPTION
1			
2			

Sheet 2 of 4



Santa Clara Valley Water District

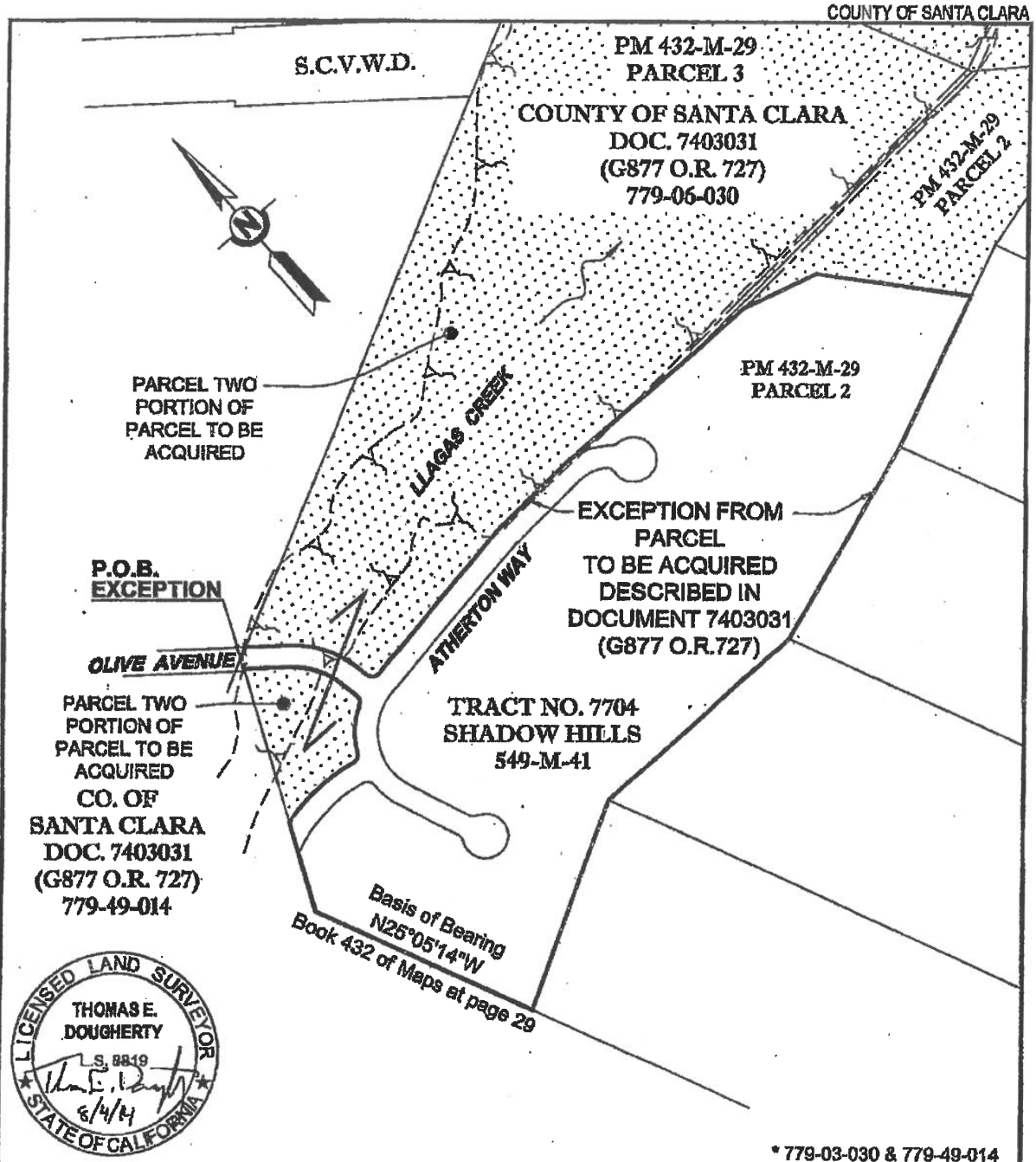
SCALE: 1" = 400'

PROJ. NO.	26174051
FILE NO.	5010-229 TWO
APN	*
TITLE REPORT NO.	13-51058087-B-EB
DRAWN	K. Comerer
DATE	06/20/13

REV.	APPR.	DATE	DESCRIPTION
1		1/14	CHANGE TITLE REPORT NO.
2		7/14	Add property - update PTR (B. Snyder)

SCVWD C:\ROW 2013\Llagas\2014-174\Plats\5010-229 Parcel Two.dwg

Sheet 3 of 4



SCVWD C:\ROW 2013\Llagas\2014-174\Plats\5010-229 Parcel Two.dwg

Santa Clara Valley Water District

SCALE: 1" = 300'

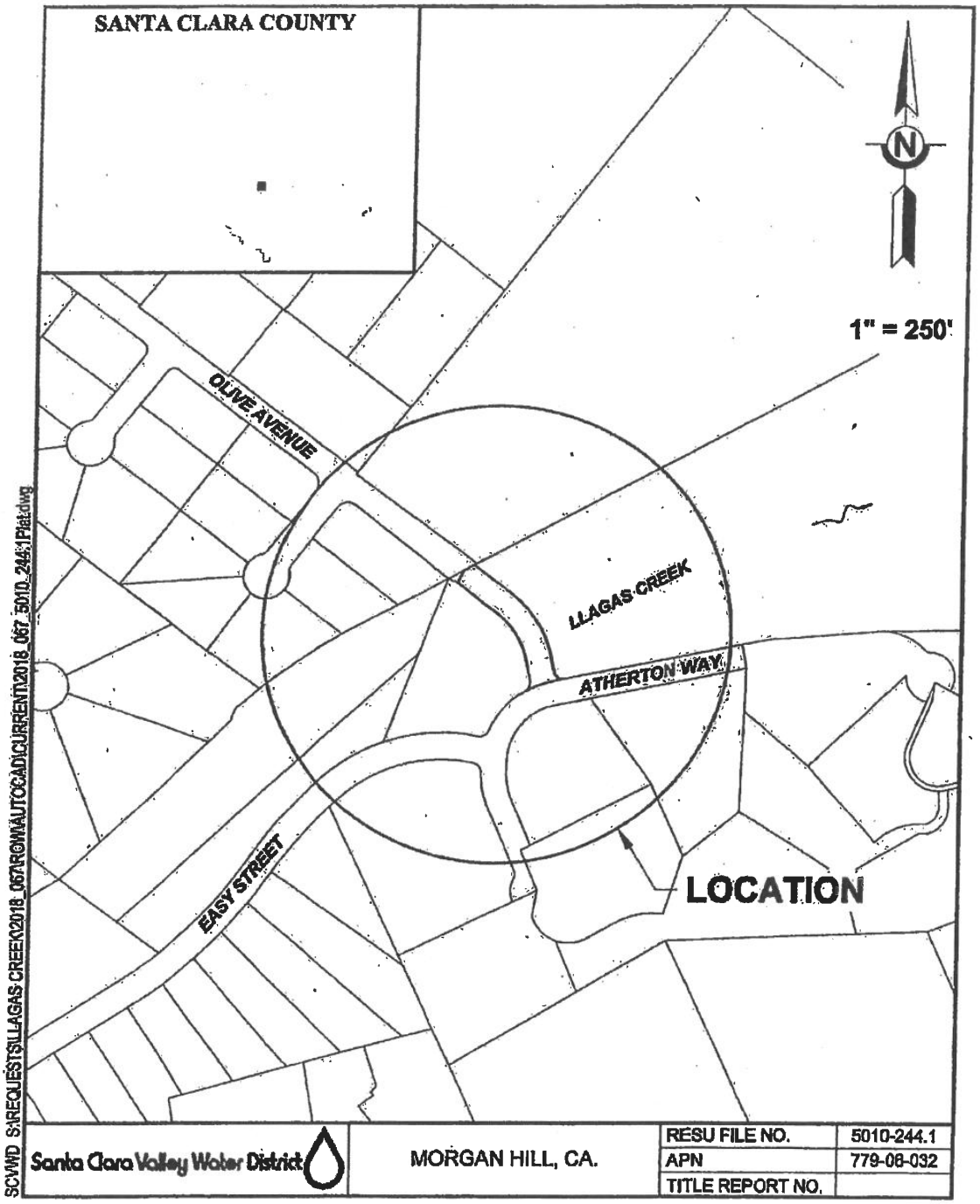
REV.	APPR.	DATE	DESCRIPTION
1		1/14	CHANGE TITLE REPORT NO.
2		7/14	Add Parcel - update PTR

PROJ. NO.	26174051
FILE NO.	5010-229
APN	779-06-030
TITLE REPORT NO.	13-51058087-B-EB
DRAWN	K. Comerer
DATE	06/20/13

Sheet 4 of 4

ATTACHMENT 2
(to Conservation Easement)

LEGAL DESCRIPTION OF OLIVE STREET CROSSING


SANTA CLARA COUNTY
N
1" = 250'
OLIVE AVENUE
LLAGAS CREEK
ATHERTON WAY
EASY STREET
LOCATION
SCVWD S:\REQUESTS\LLAGAS CREEK\2018_067\ROW\AUTOCAD\CURRENT\2018_067_5010_244.1Plat.dwg
Santa Clara Valley Water District
MORGAN HILL, CA.
RESU FILE NO. 5010-244.1
APN 779-06-032
TITLE REPORT NO.

SANTA CLARA VALLEY WATER DISTRICT
San Jose, California

PROJECT: LLAGAS CREEK RESU File No.: 5010-244.1

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF MORGAN HILL, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEING ALL OF THE LANDS AS DESCRIBED IN THAT CERTAIN GRANT DEED TO THE SANTA CLARA VALLEY WATER DISTRICT, RECORDED ON NOVEMBER 4, 2014 AS DOCUMENT NUMBER 22760059, IN THE OFFICE OF THE RECORDER, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA.

CONTAINING 0.339 ACRE OF LAND, MORE OR LESS.

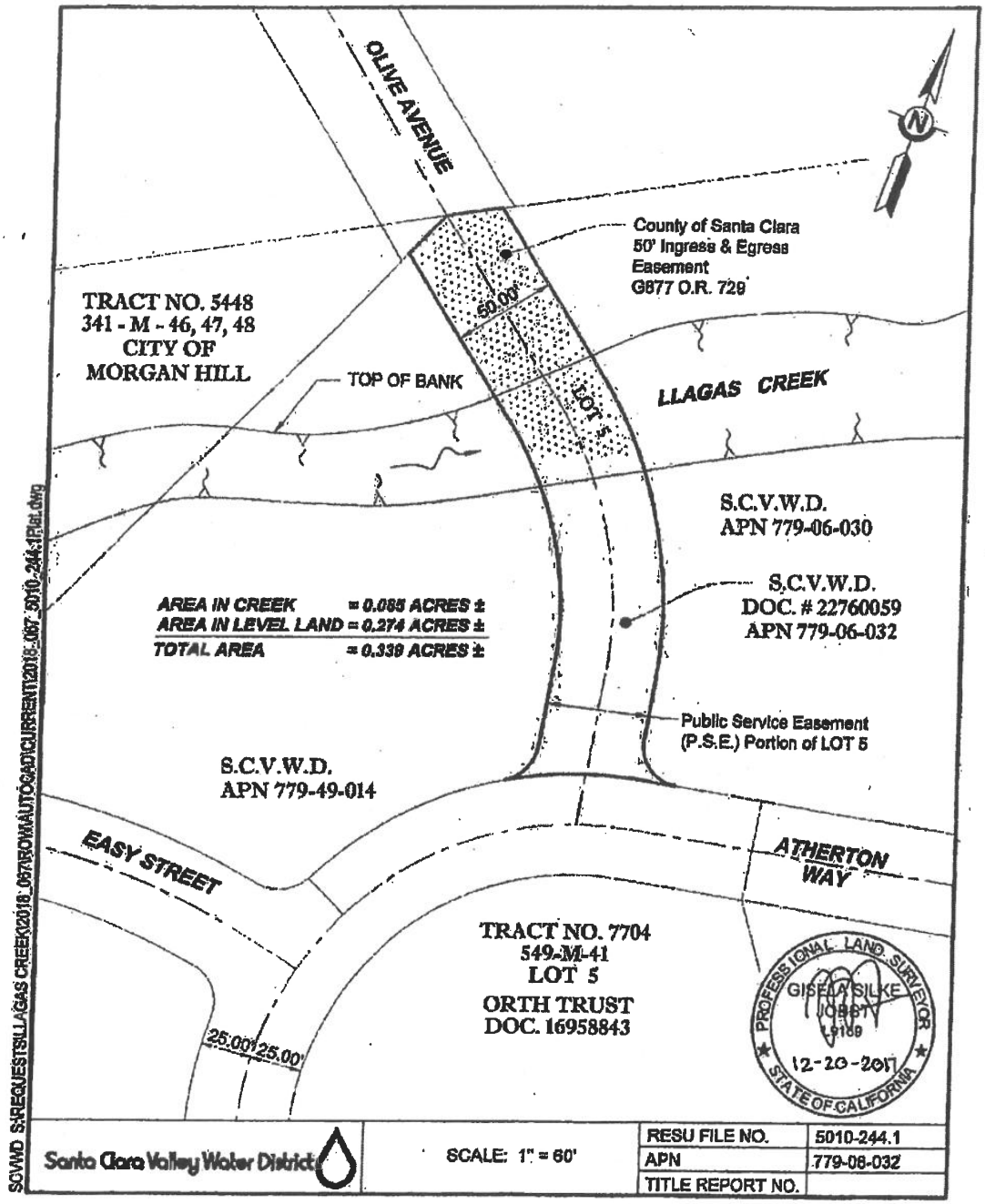
SURVEYOR'S STATEMENT:

THE DESCRIPTION WAS PREPARED BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE LAND SURVEYOR'S ACT.

GISELA SILKE JOBST, L9169 — 12-20-2017 Date



S:\REQUESTS\LLAGAS CREEK\2018_067\ROW\AUTOCAD\CURRENT\2018_067_5010_244.1Legal.docx


OLIVE AVENUE
County of Santa Clara
50' Ingress & Egress
Easement
G877 O.R. 729
50.00'
TRACT NO. 5448
341 - M - 46, 47, 48
CITY OF
MORGAN HILL
TOP OF BANK
LOT 5
LLAGAS CREEK
S.C.V.W.D.
APN 779-06-030
S.C.V.W.D.
DOC. # 22760059
APN 779-06-032
AREA IN CREEK = 0.065 ACRES ±
AREA IN LEVEL LAND = 0.274 ACRES ±
TOTAL AREA = 0.339 ACRES ±
Public Service Easement
(P.S.E.) Portion of LOT 5
S.C.V.W.D.
APN 779-49-014
EASY STREET
ATHERTON
WAY
TRACT NO. 7704
549-M-41
LOT 5
ORTH TRUST
DOC. 16958843
25.00'
25.00'
PROFESSIONAL LAND SURVEYOR
GISELA SILKE
JOB#
9189
12-20-2017
STATE OF CALIFORNIA
SCVWD SAREQUESTS\LLAGAS CREEK\2018_05\ROW\AUTOCAD\CURRENT\2018_087_2010_244.1(Rel.DWG
Santa Clara Valley Water District
SCALE: 1" = 60'
RESU FILE NO. 5010-244.1
APN 779-06-032
TITLE REPORT NO.

SHEET 1 OF 1

ATTACHMENT 3
(to Conservation Easement)

FORM OF MITIGATION EASEMENT

PLEASE NOTE: The following Conservation Easement Deed is provided by the multi-agency Project Delivery Team as a standardized template document for Mitigation and Conservation Banks in California. Any modifications to this template shall be identified using tracked changes or other electronic comparison and explained in a memorandum. (Template Version Date: March 2010)

RECORDING REQUESTED BY AND WHEN RECORDED MAIL TO:

[***Fill in Grantee Name/Address***] Grantee Name Grantee Address City, State ZIP
Attn:_____

Space Above Line for Recorder's Use Only

CONSERVATION EASEMENT DEED [*Insert Bank Name*]

THIS CONSERVATION EASEMENT DEED ("Conservation Easement") is made as of the _____ day of _____, 20____, by [***insert full legal name(s) of Grantor:*** _____] ("Grantor"), in favor of [***insert Grantee's full legal name:*** _____] [***if CDFW is Grantee insert:*** the State of California] ("Grantee"), with reference to the following facts:

RECITALS

A. Grantor is the sole owner in fee simple of certain real property containing approximately _____ acres, located in the City of [***insert City name***], County of [***insert County name***], State of California, and designated Assessor's Parcel Number(s) [***insert Assessor's Parcel Number(s)***] (the "Bank Property"). The Bank Property is legally described and depicted in **Exhibit A** attached to this Conservation Easement and incorporated in it by this reference.

B. The Bank Property possesses wildlife and habitat values of great importance to Grantee, the people of the State of California and the people of the United States. The Bank Property will provide high quality natural, restored and/or enhanced habitat for [***specify listed and sensitive plant and/or animal species***] and contain [***list habitats; native and/or non-native***], [***include the following phrase only if there are jurisdictional wetlands:*** and restored, created, enhanced and/or preserved jurisdictional waters of the United States]. Individually and collectively, these wildlife and habitat values comprise the "Bank Property Conservation Values" of the Bank Property.

C. The California Department of Fish and Wildlife ("CDFW") has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants and the habitat necessary for biologically sustainable populations of these species pursuant to California Fish and Wildlife Code Section 1802. CDFW is authorized to hold easements for these purposes

pursuant to California Civil Code Section 815.3, Fish and Wildlife Code Section 1348, and other provisions of California law.

D. The United States Fish and Wildlife Service (the "USFWS"), an agency within the United States Department of the Interior, has jurisdiction over the conservation, protection, restoration and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of these species within the United States pursuant to the federal Endangered Species Act, 16 U.S.C. Section 1531, *et seq.*, the Fish and Wildlife Coordination Act, 16 U.S.C. Sections 661-666c, the Fish and Wildlife Act of 1956, 16 U.S.C. Section 742(f), *et seq.*, and other provisions of federal law.

E. [***Remove/modify this recital as appropriate when USEPA or USACE is not a signatory to the BEI or CBEI***]. The U.S. Environmental Protection Agency ("USEPA") and U.S. Army Corps of Engineers ("USACE") have jurisdiction over waters of the United States pursuant to the federal Clean Water Act, 33 U.S.C. Section 1251, *et seq.*

F. [***Use this version of Recital F when qualified nonprofit organization is Grantee***]. Grantee is authorized to hold this conservation easement pursuant to California Civil Code Section 815.3 and Government Code Section 65965. Specifically, Grantee is (i) a tax-exempt nonprofit organization qualified under section 501(c) (3) of the Internal Revenue Code of 1986, as amended, and qualified to do business in California; (ii) a "qualified organization" as defined in section 170(h) (3) of the Internal Revenue Code; and (iii) an organization which has as its primary and principal purpose and activity the protection and preservation of natural lands or resources in its natural, scenic, agricultural, forested, or open space condition or use.

[***Use this version of Recital F when governmental entity is Grantee***]. Grantee is authorized to hold this conservation easement pursuant to California Civil Code Section 815.3. Specifically, Grantee is a governmental entity identified in Civil Code Section 815.3 (b) and otherwise authorized to acquire and hold title to real property.

G. [***Modify this recital as appropriate when CDFW, USFWS, USEPA or USACE is not a signatory to the BEI or CBEI.***] This Conservation Easement is granted pursuant to the [***insert the appropriate term:*** Mitigation Bank Enabling Instrument (the "BEI") ***or*** Conservation Bank Enabling Instrument (the "CBEI")], by and between [***insert Bank Sponsor name(s)***], [***insert Bank Property Owner name(s)***], and [***insert Region name***] CDFW, CDFW Tracking No. [***insert number***], the [***insert Field Office name***] of the USFWS, USFWS File No. [***insert number***], the [***insert District name***] District of USACE, USACE File No. [***insert number***], and Region IX of the USEPA, entered into concurrently with this Conservation Easement, and the Bank Development Plan (the "Development Plan"), and the Interim Management Plan and Long-Term Management Plan (as applicable, the "Management Plan") created under the [***insert:*** BEI ***or*** CBEI]. [***Remove reference to any agency that is not a party to the BEI or CBEI***] CDFW, USFWS, USACE, and USEPA are together referred to in this Conservation Easement as the "Signatory Agencies".

A final, approved copy of the [***insert:*** BEI ***or*** CBEI], the Development Plan and the Management Plan, and any amendments thereto approved by the Signatory Agencies, shall be kept on file at the respective offices of the Signatory Agencies. If Grantor, or any successor or assign, requires an official copy of the [***insert:*** BEI ***or*** CBEI], the Development

Plan or the Management Plan, it should request a copy from one of the Signatory Agencies at its address for notices listed in Section 12 of this Conservation Easement.

The [*insert:* BEI *or* CBEI], the Development Plan and the Management Plan are incorporated by this reference into this Conservation Easement as if fully set forth herein.

H. All section numbers referred to in this Conservation Easement are references to sections within this Conservation Easement, unless otherwise indicated.

COVENANTS, TERMS, CONDITIONS AND RESTRICTIONS

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and pursuant to the laws of the United States and the State of California, including California Civil Code Section 815, *et seq.*, Grantor hereby voluntarily grants and conveys to Grantee a conservation easement in perpetuity over the Bank Property.

1. Purposes.

The purposes of this Conservation Easement are to ensure that the Bank Property will be retained forever in its natural, restored, or enhanced condition as contemplated by the [*insert:* BEI *or* CBEI], the Development Plan, and the Management Plan, and to prevent any use of the Bank Property that will impair or interfere with the Bank Property Conservation Values. Grantor intends that this Conservation Easement will confine the use of the Bank Property to activities that are consistent with such purposes, including, without limitation, those involving the preservation, restoration and enhancement of native species and their habitats implemented in accordance with the [*insert:* BEI *or* CBEI], the Development Plan and the Management Plan.

2. Grantee's Rights.

To accomplish the purposes of this Conservation Easement, Grantor hereby grants and conveys the following rights to Grantee:

(a) To preserve and protect the Bank Property Conservation Values.

(b) To enter the Bank Property at reasonable times, in order to monitor compliance with and otherwise enforce the terms of this Conservation Easement, the [*insert:* BEI *or* CBEI], the Development Plan and the Management Plan and to implement at Grantee's sole discretion Development Plan and Management Plan activities that have not been implemented, provided that Grantee shall not unreasonably interfere with Grantor's authorized use and quiet enjoyment of the Bank Property.

(c) To prevent any activity on or use of the Bank Property that is inconsistent with the purposes of this Conservation Easement and to require the restoration of such areas or features of the Bank Property that may be damaged by any act, failure to act, or any use or activity that is inconsistent with the purposes of this Conservation Easement.

(d) To require that all mineral, air and water rights as Grantee deems necessary to preserve and protect the biological resources and Bank Property Conservation Values shall remain a part of and be put to beneficial use upon the Bank Property, consistent with the purposes of this Conservation Easement.

(e) All present and future development rights appurtenant to, allocated, implied, reserved or inherent in the Bank Property; such rights are hereby terminated and extinguished, and may not be used on or transferred to any portion of the Bank Property, nor any other property adjacent or otherwise.

3. Prohibited Uses.

Any activity on or use of the Bank Property that is inconsistent with the purposes of this Conservation Easement is prohibited. Without limiting the generality of the foregoing, the following uses and activities by Grantor, Grantor's agents, and third parties are expressly prohibited:

(a) Unseasonable watering; use of fertilizers, pesticides, biocides, herbicides or other agricultural chemicals; weed abatement activities; incompatible fire protection activities; and any and all other activities and uses which may impair or interfere with the purposes of this Conservation Easement [***include the following language only if the Development Plan or Management Plan, including any adaptive management measures, specifies such an exception:***], except for [***insert specific exception(s)***] as specifically provided in the [***specify:*** Development Plan ***or*** Management Plan].

(b) Use of off-road vehicles and use of any other motorized vehicles except on existing roadways [***include the following language only if the Development Plan or Management Plan, including any adaptive management measures, specifies such an exception:***], except for [***insert specific exception(s)***] as specifically provided in the [***specify:*** Development Plan ***or*** Management Plan].

(c) Agricultural activity of any kind [***include the following language only if the Development Plan or Management Plan, including any adaptive management measures, specifies such an exception:***] except grazing for vegetation management as specifically provided in the [***specify:*** Development Plan ***or*** Management Plan].

(d) Recreational activities, including, but not limited to, horseback riding, biking, hunting or fishing except for personal, non-commercial, recreational activities of the Grantor, so long as such activities are consistent with the purposes of this Conservation Easement and specifically provided for in the Management Plan.

(e) Commercial, industrial, residential, or institutional uses.

(f) Any legal or de facto division, subdivision or partitioning of the Bank Property.

(g) Construction, reconstruction, erecting or placement of any building, billboard or sign, or any other structure or improvement of any kind [***include the following language only if the Development Plan or Management Plan specifies such an exception:***], except for [***insert specific exception(s)***] as specifically provided in the [***specify:*** Development Plan ***or*** Management Plan].

(h) Depositing or accumulation of soil, trash, ashes, refuse, waste, bio-solids or any other materials.

(i) Planting, introduction or dispersal of non-native or exotic plant or animal species.

(j) Filling, dumping, excavating, draining, dredging, mining, drilling, removing or exploring for or extracting minerals, loam, soil, sand, gravel, rock or other material on or below the surface of the Bank Property, or granting or authorizing surface entry for any of these purposes.

(k) Altering the surface or general topography of the Bank Property, including but not limited to any alterations to habitat, building roads or trails, paving or otherwise covering the Bank Property with concrete, asphalt or any other impervious material except for those habitat management activities specified in the Development Plan or Management Plan.

(l) Removing, destroying, or cutting of trees, shrubs or other vegetation, except as required by law for (i) fire breaks, (ii) maintenance of existing foot trails or roads, or (iii) prevention or treatment of disease [***include the following language only if the Development Plan or Management Plan specifies such an exception:***]; and except for [***insert specific exception(s)***] as specifically provided in the [***specify:*** Development Plan ***or*** Management Plan].

(m) Manipulating, impounding or altering any natural water course, body of water or water circulation on the Bank Property, and any activities or uses detrimental to water quality, including but not limited to degradation or pollution of any surface or sub-surface waters [***include the following language only if the Development Plan or Management Plan specifies such an exception:***], except for [***insert specific exception(s)***] as specifically provided in the [***specify:*** Development Plan ***or*** Management Plan].

(n) Without the prior written consent of Grantee, which Grantee may withhold, transferring, encumbering, selling, leasing, or otherwise separating the mineral, air or water rights for the Bank Property; changing the place or purpose of use of the water rights; abandoning or allowing the abandonment of, by action or inaction, any water or water rights, ditch or ditch rights, spring rights, reservoir or storage rights, wells, ground water rights, or other rights in and to the use of water historically used on or otherwise appurtenant to the Bank Property, including but not limited to: (i) riparian water rights; (ii) appropriative water rights; (iii) rights to waters which are secured under contract with any irrigation or water district, to the extent such waters are customarily applied to the Bank Property; and (iv) any water from wells that are in existence or may be constructed in the future on the Bank Property.

(o) Engaging in any use or activity that may violate, or may fail to comply with, relevant federal, state, or local laws, regulations, or policies applicable to Grantor, the Bank Property, or the use or activity in question.

4. Grantee's Duties.

(a) To ensure that the purposes of this Conservation Easement as described in Section 1 are being accomplished, Grantee and its successors and assigns shall:

(1) Perform, at a minimum on an annual basis, compliance monitoring inspections of the Bank Property; and

(2) Prepare reports on the results of the compliance monitoring inspections, and provide these reports to the Signatory Agencies on an annual basis.

(b) In the event that the Grantee's interest in this easement is held by, reverts to, or is transferred to the State of California, Section 4(a) shall not apply.

5. Grantor's Duties.

Grantor shall undertake all reasonable actions to prevent the unlawful entry and trespass by persons whose activities may degrade or harm the Bank Property Conservation Values or that are otherwise inconsistent with this Conservation Easement. In addition, Grantor shall undertake all necessary actions to perfect and defend Grantee's rights under Section 2 of this Conservation Easement, and to observe and carry out the obligations of Grantor under the [*insert:* BEI *or* CBEI], the Development Plan and the Management Plan.

6. Reserved Rights.

Grantor reserves to itself, and to its personal representatives, heirs, successors, and assigns, all rights accruing from Grantor's ownership of the Bank Property, including the right to engage in or permit or invite others to engage in all uses of the Bank Property that are not prohibited or limited by, and are consistent with the purposes of, this Conservation Easement.

7. Grantee's Remedies.

If Grantee determines that a violation of this Conservation Easement has occurred or is threatened, Grantee shall give written notice to Grantor of such violation and demand in writing the cure of such violation ("Notice of Violation"). If Grantor fails to cure the violation within thirty (30) days after receipt of a Notice of Violation, or if the cure reasonably requires more than thirty (30) days to complete and Grantor fails to begin the cure within the thirty (30)-day period or fails to continue diligently to complete the cure, Grantee may bring an action at law or in equity in a court of competent jurisdiction for any or all of the following: to recover any damages to which Grantee may be entitled for violation of the terms of this Conservation Easement or for any injury to the Bank Property Conservation Values; to enjoin the violation, *ex parte* as necessary, by temporary or permanent injunction without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies; to pursue any other legal or equitable relief, including but not limited to, the restoration of the Bank Property to the condition in which it existed prior to any violation or injury; or to otherwise enforce this Conservation Easement. Without limiting the liability of Grantor, Grantee may apply any damages recovered to the cost of undertaking any corrective action on the Bank Property.

If Grantee, in its sole discretion, determines that circumstances require immediate action to prevent or mitigate injury to the Bank Property Conservation Values, Grantee may pursue its remedies under this Conservation Easement without prior notice to Grantor or without waiting for the period provided for cure to expire. Grantee's rights under this section apply equally to actual or threatened violations of this Conservation Easement.

Grantor agrees that Grantee's remedies at law for any violation of this Conservation Easement are inadequate and that Grantee shall be entitled to the injunctive relief described in this section, both prohibitive and mandatory, in addition to such other relief to which Grantee may be entitled, including specific performance of this Conservation Easement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies. Grantee's remedies described in this section shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity, including but not limited to the remedies set forth in California Civil Code Section 815, *et seq.* The failure of Grantee to discover a violation or to take immediate legal action shall not bar Grantee from taking such action at a later time.

(a) Costs of Enforcement.

All costs incurred by Grantee, where Grantee is the prevailing party, in enforcing the terms of this Conservation Easement against Grantor, including, but not limited to, costs of suit and attorneys' and experts' fees, and any costs of restoration necessitated by negligence or breach of this Conservation Easement, shall be borne by Grantor.

(b) Grantee's Discretion.

Enforcement of the terms of this Conservation Easement by Grantee shall be at the discretion of Grantee, and any forbearance by Grantee to exercise its rights under this Conservation Easement in the event of any breach of any term of this Conservation Easement shall not be deemed or construed to be a waiver of such term or of any subsequent breach of the same or any other term of this Conservation Easement or of any rights of Grantee under this Conservation Easement. No delay or omission by Grantee in the exercise of any right or remedy shall impair such right or remedy or be construed as a waiver.

(c) Acts Beyond Grantor's Control.

Nothing contained in this Conservation Easement shall be construed to entitle Grantee to bring any action against Grantor for any injury to or change in the Bank Property resulting from (i) any natural cause beyond Grantor's control, including, without limitation, fire not caused by Grantor, flood, storm, and earth movement, or any prudent action taken by Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Bank Property resulting from such causes; or (ii) acts by Grantee or its employees.

(d) Enforcement; Standing.

All rights and remedies conveyed to Grantee under this Conservation Easement shall extend to and are enforceable by [***insert if State of California is Grantee:*** CDFW and] the Third-Party Beneficiaries (as defined in Section 14(m)). These enforcement rights are in addition to, and do not limit, the rights of enforcement under the [***insert:*** BEI ***or*** CBEI], the Development Plan or the Management Plan. If at any time in the future Grantor uses, allows the use, or threatens to use or allow use of, the Bank Property for any purpose that is inconsistent with or in violation of this Conservation Easement then, despite the provisions of California Civil Code Section 815.7, the California Attorney General and the Third-Party Beneficiaries each has standing as an interested party in any proceeding affecting this Conservation Easement.

(e) Notice of Conflict.

If Grantor receives a Notice of Violation from Grantee or a Third-Party Beneficiary with which it is impossible for Grantor to comply consistent with any prior uncured Notice(s) of Violation, Grantor shall give written notice of the conflict (hereinafter "Notice of Conflict") to the Grantee and Third-Party Beneficiaries. In order to be a valid, a Notice of Conflict shall be given within fifteen (15) days of the date Grantor receives a conflicting Notice of Violation, shall include copies of the conflicting Notices of Violation, and shall describe the conflict with specificity, including how the conflict makes compliance with the uncured Notice(s) of Violation impossible. Upon issuing a valid Notice of Conflict, Grantor shall not be required to comply with the conflicting Notices of Violation until such time as the entity or entities issuing said conflicting Notices of Violation issue(s) revised Notice(s) of Violation that resolve the conflict. Upon receipt of a revised Notice of Violation, Grantor shall comply with such notice within the time period(s) described in the first grammatical paragraph of this Section. The failure of Grantor to issue a valid Notice of Conflict within fifteen (15) days of receipt of a conflicting Notice of Violation shall constitute a waiver of Grantor's ability to claim a conflict.

(f) [***Add if nonprofit organization is Grantee***] Reversion.

If the Signatory Agencies determine that Grantee is not holding, monitoring or managing this Conservation Easement for conservation purposes in the manner specified in this Conservation Easement or in the [***insert:*** BEI ***or*** CBEI], the Development Plan or the Management Plan then, pursuant to California Government Code Section 65965(c), this Conservation Easement shall revert to the State of California, or to another public agency or nonprofit organization qualified pursuant to Civil Code Section 815.3 and Government Code Section 65965 (and any successor or other provision(s) then applicable) and approved by the Signatory Agencies.

8. Access.

This Conservation Easement does not convey a general right of access to the public.

9. Costs and Liabilities.

Grantor retains all responsibilities and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the Bank Property. Grantor agrees that neither Grantee nor Third-Party Beneficiaries shall have any duty or responsibility for the operation, upkeep or maintenance of the Bank Property, the monitoring of hazardous conditions on it, or the protection of Grantor, the public or any third parties from risks relating to conditions on the Bank Property. Grantor remains solely responsible for obtaining any applicable governmental permits and approvals required for any activity or use permitted by this Conservation Easement [***insert if CDFW or another government entity is Grantee:*** , including permits and approvals required from Grantee acting in its regulatory capacity], and any activity or use shall be undertaken in accordance with all applicable federal, state, local and administrative agency laws, statutes, ordinances, rules, regulations, orders and requirements.

(a) Taxes; No Liens.

Grantor shall pay before delinquency all taxes, assessments (general and special), fees, and charges of whatever description levied on or assessed against the Bank Property by competent authority (collectively "Taxes"), including any Taxes imposed upon, or incurred as a result of, this Conservation Easement, and shall furnish Grantee with

satisfactory evidence of payment upon request. Grantor shall keep the Bank Property free from any liens (other than a security interest that is expressly subordinated to this Conservation Easement, as provided in Section 14(k)), including those arising out of any obligations incurred by Grantor for any labor or materials furnished or alleged to have been furnished to or for Grantor at or for use on the Bank Property.

(b) Hold Harmless.

(1) Grantor shall hold harmless, protect and indemnify Grantee and its directors, officers, employees, agents, contractors, and representatives and the heirs, personal representatives, successors and assigns of each of them (each a "Grantee Indemnified Party" and collectively, "Grantee's Indemnified Parties") from and against any and all liabilities, penalties, costs, losses, damages, expenses (including, without limitation reasonable attorneys' fees and experts' fees), causes of action, claims, demands, orders, liens or judgments (each a "Claim" and, collectively, "Claims"), arising from or in any way connected with: (i) injury to or the death of any person, or physical damage to any property, resulting from any act, omission, condition, or other matter related to or occurring on or about the Bank Property, regardless of cause, except that this indemnification shall be inapplicable to any Claim due solely to the negligence of Grantee or any of its employees; (ii) the obligations specified in Sections 5, 9 and 9(a); and (iii) the existence or administration of this Conservation Easement. If any action or proceeding is brought against any of the Grantee's Indemnified Parties by reason of any such Claim, Grantor shall, at the election of and upon written notice from Grantee, defend such action or proceeding by counsel reasonably acceptable to the Grantee's Indemnified Party [***insert if CDFW is grantee:*** or reimburse Grantee for all charges incurred for services of the California Attorney General in defending the action or proceeding].

(2) Grantor shall hold harmless, protect and indemnify Third-Party Beneficiaries and their respective directors, officers, employees, agents, contractors, and representatives and the heirs, personal representatives, successors and assigns of each of them (each a "Third-Party Beneficiary Indemnified Party" and collectively, "Third-Party Beneficiary Indemnified Parties") from and against any and all Claims arising from or in any way connected with: (i) injury to or the death of any person, or physical damage to any property, resulting from any act, omission, condition, or other matter related to or occurring on or about the Bank Property, regardless of cause and (ii) the existence or administration of this Conservation Easement. *Provided, however,* that the indemnification in this Section 9 (b) (2) shall be inapplicable to a Third-Party Beneficiary Indemnified Party with respect to any Claim due solely to the negligence of that Third-Party Beneficiary Indemnified Party or any of its employees. If any action or proceeding is brought against any of the Third-Party Beneficiary Indemnified Parties by reason of any Claim to which the indemnification in this Section 9 (b) (2) applies, then at the election of and upon written notice from the Third-Party Beneficiary Indemnified Party, Grantor shall defend such action or proceeding by counsel reasonably acceptable to the applicable Third-Party Beneficiary Indemnified Party or reimburse the Third-Party Beneficiary Indemnified Party for all charges incurred for services of the California Attorney General or the U.S. Department of Justice in defending the action or proceeding.

(c) Extinguishment.

If circumstances arise in the future that render the preservation of the Bank Property Conservation Values, [***include this phrase only if there are jurisdictional***

wetlands: including wetland functions and values,] or other purposes of this Conservation Easement impossible to accomplish, this Conservation Easement can only be terminated or extinguished, in whole or in part, by judicial proceedings in a court of competent jurisdiction.

(d) Condemnation.

[***Use the appropriate paragraph:***]

[***If CDFW or other state agency is Grantee:***] Condemnation. This Conservation Easement is a "wildlife conservation easement" acquired by a State agency, the condemnation of which is prohibited except as provided in California Fish and Wildlife Code Section 1348.3.

[***All other Grantees:***] Condemnation. The purposes of this Conservation Easement are presumed to be the best and most necessary public use as defined at California Code of Civil Procedure Section 1240.680 notwithstanding Code of Civil Procedure Sections 1240.690 and 1240.700.

10. Transfer of Conservation Easement or Bank Property.

(a) Conservation Easement.

This Conservation Easement may be assigned or transferred by Grantee upon written approval of the Signatory Agencies, which approval shall not be unreasonably withheld or delayed, but Grantee shall give Grantor and the Signatory Agencies at least sixty (60) days prior written notice of the proposed assignment or transfer. Grantee may assign or transfer its rights under this Conservation Easement only to an entity or organization: (i) authorized to acquire and hold conservation easements pursuant to California Civil Code Section 815.3 and Government Code Section 65965 (and any successor or other provision(s) then applicable), or the laws of the United States; and (ii) otherwise reasonably acceptable to the Signatory Agencies. Grantee shall require the assignee to record the assignment in the county where the Bank Property is located. The failure of Grantee to perform any act provided in this section shall not impair the validity of this Conservation Easement or limit its enforcement in any way. Any transfer under this section is subject to the requirements of Section 11.

(b) Bank Property.

Grantor agrees to incorporate the terms of this Conservation Easement by reference in any deed or other legal instrument by which Grantor divests itself of any interest in all or any portion of the Bank Property, including, without limitation, a leasehold interest. Grantor agrees that the deed or other legal instrument shall also incorporate by reference the [***insert:*** BEI ***or*** CBEI], the Development Plan, the Management Plan, and any amendment(s) to those documents. Grantor further agrees to give written notice to Grantee and the Signatory Agencies of the intent to transfer any interest at least sixty (60) days prior to the date of such transfer. Grantee or the Signatory Agencies shall have the right to prevent any transfers in which prospective subsequent claimants or transferees are not given notice of the terms, covenants, conditions and restrictions of this Conservation Easement (including the exhibits and documents incorporated by reference in it). The failure of Grantor to perform any act provided in this section shall not impair the validity of this Conservation Easement or limit its enforceability in any way. Any transfer under this section is subject to the requirements of Section 11.

11. Merger.

The doctrine of merger shall not operate to extinguish this Conservation Easement if the Conservation Easement and the Bank Property become vested in the same party. If, despite this intent, the doctrine of merger applies to extinguish the Conservation Easement then, unless Grantor, Grantee, and the Signatory Agencies otherwise agree in writing, a replacement conservation easement or restrictive covenant containing the same protections embodied in this Conservation Easement shall be recorded against the Bank Property.

12. Notices.

Any notice, demand, request, consent, approval, or other communication that Grantor or Grantee desires or is required to give to the other shall be in writing, with a copy to each of the Signatory Agencies, and served personally or sent by recognized overnight courier that guarantees next-day delivery or by first class United States mail, postage fully prepaid, addressed as follows:

To Grantor: [Grantee name]
[Grantee address]
Attn:_____

To Grantee: [***insert the appropriate Grantee information:***]

[Department of Fish and Wildlife]
[Region name] Region
[REGION ADDRESS]
[Attn: Regional Manager]

OR

[Grantee name]
[Grantee address]

[***Remove/modify the following blocks as appropriate when CDFW or the USFWS are not signatories to the BEI or CBEI or third-party beneficiaries to the CE.***]

To CDFW: [Department of Fish and Wildlife]
[Region name] Region
[REGION ADDRESS]
[Attn: Regional Manager]

With a copy to: Department of Fish and Wildlife
Office of General Counsel
1416 Ninth Street, 12th Floor
Sacramento, CA 95814-2090
Attn: General Counsel

To USFWS: United States Fish and Wildlife Service
[Field Office name] Field Office
[FIELD OFFICE ADDRESS]
Attn: Field Supervisor

[Remove/modify these blocks as appropriate when USEPA or USACE are not signatories to the BEI or CBEI or third-party beneficiaries to the CE.]

To USACE: U.S. Army Corps of Engineers
[District name] District
[DISTRICT ADDRESS]
Attn: Chief, Regulatory Branch

To USEPA: U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105
Attn: Director, Water Division

or to such other address a party or a Signatory Agency shall designate by written notice to Grantor, Grantee and the Signatory Agencies. Notice shall be deemed effective upon delivery in the case of personal delivery or delivery by overnight courier or, in the case of delivery by first class mail, three (3) days after deposit into the United States mail.

13. Amendment.

This Conservation Easement may be amended only by mutual written agreement of Grantor and Grantee and written approval of the Signatory Agencies, which approval shall not be unreasonably withheld or delayed. Any such amendment shall be consistent with the purposes of this Conservation Easement and California law governing conservation easements, and shall not affect its perpetual duration. Any such amendment shall be recorded in the official records of the county in which the Bank Property is located, and Grantee shall promptly provide a conformed copy of the recorded amendment to the Grantor and the Signatory Agencies.

14. Additional Provisions.

(a) Controlling Law.

The interpretation and performance of this Conservation Easement shall be governed by the laws of the United States and the State of California, disregarding the conflicts of law principles of such state.

(b) Liberal Construction.

Despite any general rule of construction to the contrary, this Conservation Easement shall be liberally construed to effect the purposes of this Conservation Easement and the policy and purpose of California Civil Code Section 815, *et seq.* ***[add if Grantee is nonprofit organization:*** and Government Code Section 65965]. If any provision in this instrument is found to be ambiguous, an interpretation consistent with the purposes of this Conservation Easement that would render the provision valid shall be favored over any interpretation that would render it invalid.

(c) Severability.

If a court of competent jurisdiction voids or invalidates on its face any provision of this Conservation Easement, such action shall not affect the remainder of this Conservation Easement. If a court of competent jurisdiction voids or invalidates the

application of any provision of this Conservation Easement to a person or circumstance, such action shall not affect the application of the provision to any other persons or circumstances.

(d) Entire Agreement.

This document (including its exhibits and the [*insert:* BEI *or* CBEI], the Development Plan, and the Management Plan incorporated by reference in this document) sets forth the entire agreement of the parties and the Signatory Agencies with respect to the Conservation Easement and supersedes all prior discussions, negotiations, understandings, or agreements of the parties relating to the Conservation Easement. No alteration or variation of this Conservation Easement shall be valid or binding unless contained in an amendment in accordance with Section 13.

(e) No Forfeiture.

Nothing contained in this Conservation Easement will result in a forfeiture or reversion of Grantor's title in any respect.

(f) Successors.

The covenants, terms, conditions, and restrictions of this Conservation Easement shall be binding upon, and inure to the benefit of, the parties and their respective personal representatives, heirs, successors, and assigns, and shall constitute a servitude running in perpetuity with the Bank Property.

(g) Termination of Rights and Obligations.

A party's rights and obligations under this Conservation Easement terminate upon transfer of the party's interest in the Conservation Easement or Bank Property, except that liability for acts, omissions or breaches occurring prior to transfer shall survive transfer.

(h) Captions.

The captions in this instrument have been inserted solely for convenience of reference and are not a part of this instrument and shall have no effect upon its construction or interpretation.

(i) No Hazardous Materials Liability.

(1) Grantor represents and warrants that it has no knowledge or notice of any Hazardous Materials (defined below) or underground storage tanks existing, generated, treated, stored, used, released, disposed of, deposited or abandoned in, on, under, or from the Bank Property, or transported to or from or affecting the Bank Property.

(2) Without limiting the obligations of Grantor under Section 9 (b), Grantor hereby releases and agrees to indemnify, protect and hold harmless the Grantee's Indemnified Parties (defined in Section 9 (b) (1)) from and against any and all Claims (defined in Section 9 (b)(1)) arising from or connected with any Hazardous Materials or underground storage tanks present, alleged to be present, released in, from or about, or otherwise associated with the Bank Property at any time, except any Hazardous Materials placed, disposed or released by Grantee or any of its employees. This release and indemnification includes, without limitation, Claims for (A) injury to or death of any person or physical damage to any property; and (B) the violation or alleged violation of, or other

failure to comply with, any Environmental Laws (defined below). If any action or proceeding is brought against any of the Grantee's Indemnified Parties by reason of any such Claim, Grantor shall, at the election of and upon written notice from the applicable Grantee Indemnified Party, defend such action or proceeding by counsel reasonably acceptable to the Grantee Indemnified Party [***add if CDFW is Grantee:*** or reimburse Grantee for all charges incurred for services of the California Attorney General in defending the action or proceeding].

(3) Without limiting the obligations of Grantor under Section 9 (b), Grantor hereby releases and agrees to indemnify, protect and hold harmless the Third-Party Beneficiary Indemnified Parties (defined in Section 9 (b)(2)) from and against any and all Claims arising from or connected with any Hazardous Materials or underground storage tanks present, alleged to be present, released in, from or about, or otherwise associated with the Bank Property at any time, except that this release and indemnification shall be inapplicable to a Third-Party Beneficiary Indemnified Party with respect to any Hazardous Materials placed, disposed or released by that Third-Party Beneficiary Indemnified Party or any of its employees. This release and indemnification includes, without limitation, Claims for (A) injury to or death of any person or physical damage to any property; and (B) the violation of alleged violation of, or other failure to comply with, any Environmental Laws. If any action or proceeding is brought against any of the Third-Party Beneficiary Indemnified Parties by reason of any such Claim, Grantor shall, at the election or and upon written notice from the applicable Third-Party Beneficiary Indemnified Party, defend such action or proceeding by counsel reasonably acceptable to the Third-Party Beneficiary Indemnified Party for all charges incurred for services of the California Attorney General or the U.S. Department of Justice in defending the action or proceeding.

(4) Despite any contrary provision of this Conservation Easement, the parties do not intend this Conservation Easement to be, and this Conservation Easement shall not be, construed such that it creates in or gives to Grantee or any Third-Party Beneficiaries any of the following:

(A) The obligations or liability of an "owner" or "operator," as those terms are defined and used in Environmental Laws (defined below), including, without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. § 9601, *et seq.*; hereinafter, "CERCLA"); or

(B) The obligations or liabilities of a person described in 42 U.S.C. § 9607(a)(3) or (4); or

(C) The obligations of a responsible person under any applicable Environmental Laws; or

(D) The right to investigate and remediate any Hazardous Materials associated with the Bank Property; or

(E) Any control over Grantor's ability to investigate, remove, remediate or otherwise clean up any Hazardous Materials associated with the Bank Property.

(5) The term "Hazardous Materials" includes, without limitation, (a) material that is flammable, explosive or radioactive; (b) petroleum products, including by-products and fractions thereof; and (c) hazardous materials, hazardous wastes, hazardous or toxic substances, or related materials defined in CERCLA, the Resource Conservation and Recovery Act of 1976 (42 U.S.C. § 6901, *et seq.*; hereinafter, "RCRA"); the Hazardous Materials Transportation Act (49 U.S.C. §5101, *et seq.*; hereinafter, "HTA"); the Hazardous Waste Control Law (California Health & Safety Code § 25100, *et seq.*; hereinafter, "HCL"); the Carpenter-Presley-Tanner Hazardous Substance Account Act (California Health & Safety Code § 25300, *et seq.*; hereinafter "HSA"), and in the regulations adopted and publications promulgated pursuant to them, or any other applicable Environmental Laws now in effect or enacted after the date of this Conservation Easement.

(6) The term "Environmental Laws" includes, without limitation, CERCLA, RCRA, HTA, HCL, HSA, and any other federal, state, local or administrative agency statute, ordinance, rule, regulation, order or requirement relating to pollution, protection of human health or safety, the environment or Hazardous Materials. Grantor represents, warrants and covenants to Grantee and Third-Party Beneficiaries that activities upon and use of the Bank Property by Grantor, its agents, employees, invitees and contractors will comply with all Environmental Laws.

(j) Warranty.

Grantor represents and warrants that Grantor is the sole owner of the Bank Property. Grantor also represents and warrants that, except as specifically disclosed to and approved by the Signatory Agencies pursuant to the Bank Property Assessment and Warranty signed by Grantor and attached as an exhibit to the [***insert:*** BEI ***or*** CBEI], [***choose applicable statement:*** there are no outstanding mortgages, liens, encumbrances or other interests in the Bank Property (including, without limitation, mineral interests) which may conflict or are inconsistent with this Conservation Easement ***or*** the holder of any outstanding mortgage, lien, encumbrance or other interest in the Bank Property (including, without limitation, mineral interest) which conflicts or is inconsistent with this Conservation Easement has expressly subordinated such interest to this Conservation Easement by a recorded Subordination Agreement approved by Grantee and the Signatory Agencies].

(k) Additional Interests.

Grantor shall not grant any additional easements, rights of way or other interests in the Bank Property (other than a security interest that is expressly subordinated to this Conservation Easement), nor shall Grantor grant, transfer, abandon or relinquish (each a "Transfer") any mineral, air, or water right or any water associated with the Bank Property, without first obtaining the written consent of Grantee and the Signatory Agencies. Such consent may be withheld if Grantee or the Signatory Agencies determine(s) that the proposed interest or Transfer is inconsistent with the purposes of this Conservation Easement or will impair or interfere with the Bank Property Conservation Values. This Section 14(k) shall not limit the provisions of Section 2(d) or 3(n), nor prohibit transfer of a fee or leasehold interest in the Bank Property that is subject to this Conservation Easement and complies with Section 10. Grantor shall provide a copy of any recorded or unrecorded grant or Transfer document to the Grantee and Signatory Agencies.

(l) Recording.

Grantee shall record this Conservation Easement in the Official Records of the County in which the Bank Property is located, and may re-record it at any time as Grantee deems necessary to preserve its rights in this Conservation Easement.

(m) Third-Party Beneficiary.

Grantor and Grantee acknowledge that the [***include the agencies that will be third-party beneficiaries:*** CDFW, USFWS, USACE, and USEPA] (the "Third-Party Beneficiaries") are third party beneficiaries of this Conservation Easement with the right of access to the Bank Property and the right to enforce all of the obligations of Grantor including, but not limited to, Grantor's obligations under Section 14, and all other rights and remedies of the Grantee under this Conservation Easement.

(n) Funding.

Endowment funding for the perpetual management, maintenance and monitoring of the Bank Property is specified in and governed by the [***insert:*** BEI ***or*** CBEI] and the Management Plan.

IN WITNESS WHEREOF Grantor has executed this Conservation Easement Deed the day and year first above written.

GRANTOR: [***Notarization Required***] Approved as to form:

[***Remove or modify the approval block as appropriate, i.e., Grantee's legal counsel if CDFW is not Grantee.***]

BY:_____
General Counsel

State of California

NAME:_____
_ Department of Fish and Wildlife

TITLE:_____ BY:_____

[***Insert General Counsel Representative***]

General Counsel
DATE:

CA PDT CE Template - March 3, 2010

ATTACHMENT 3-A
(to Conservation Easement)

MITIGATION EASEMENT AREA

SANTA CLARA VALLEY WATER DISTRICT
San Jose, California

PROJECT: LLAGAS CREEK **RESU File No.: 5010-229.1**

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF MORGAN HILL, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, BEING A PORTION OF PARCEL 1 AND PARCEL 3 AS SHOWN ON THAT CERTAIN PARCEL MAP FILED IN BOOK 432 AT PAGE 29 IN THE OFFICE OF THE RECORDER, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE INTERSECTION OF THE CENTERLINE OF OLIVE AVENUE (60.00 FEET WIDE) WITH THE NORTHWESTERLY LINE OF PARCEL 3 AS SHOWN ON SAID MAP;

THENCE ALONG SAID NORTHWESTERLY LINE, NORTH 61°50'14" EAST, 1,712.76 FEET TO A POINT ON THE NORTHEASTERLY LINE OF SAID PARCEL 3;

THENCE ALONG SAID NORTHEASTERLY LINE, SOUTH 70°23'40" EAST, 86.99 FEET TO THE **POINT OF BEGINNING;**

THENCE CONTINUING ALONG SAID NORTHEASTERLY LINE OF SAID PARCEL 3 AND ALONG THE NORHTWESTERLY LINE OF PARCEL 1 AS SHOWN ON SAID MAP, SOUTH 70°23'40" EAST, 132.15 FEET;

THENCE LEAVING SAID NORTHWESTERLY LINE OF SAID PARCEL 1, SOUTH 55°08'06" EAST, 189.44 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 180.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 36°35'24", AN ARC LENGTH OF 114.95 FEET;

THENCE SOUTH 18°32'42" EAST, 134.07 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 360.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 43°53'06", AN ARC LENGTH OF 275.74 FEET;

THENCE SOUTH 24°34'39" WEST, 40.66 FEET;

THENCE SOUTH 77°04'33" WEST, 552.38 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 26.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 47°08'34", AN ARC LENGTH OF 21.39 FEET;

THENCE NORTH 55°46'53" WEST, 148.90 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 180.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 94°40'37", AN ARC LENGTH OF 297.44 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT, HAVING A RADIUS OF 122.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 59°46'11", AN ARC LENGTH OF 127.27 FEET;

THENCE SOUTH 89°18'41" WEST, 13.69 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 60.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 55°22'46", AN ARC LENGTH OF 57.99 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT, HAVING A RADIUS OF 220.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 65°38'00", AN ARC LENGTH OF 252.01 FEET;

THENCE NORTH 80°26'05" WEST, 187.51 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 140.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 65°48'22", AN ARC LENGTH OF 160.79 FEET;

THENCE NORTH 14°37'42" WEST, 55.16 FEET;

THENCE NORTH 79°47'32" EAST, 69.49 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 500.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 29°02'53", AN ARC LENGTH OF 253.49 FEET;

THENCE NORTH 50°44'39" EAST, 210.95 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 1,000.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 09°37'57", AN ARC LENGTH OF 168.12 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT HAVING A RADIUS OF 1,490.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 16°04'40", AN ARC LENGTH OF 418.11 FEET TO THE BEGINNING OF A COMPOUND CURVE TO THE RIGHT, HAVING A RADIUS OF 400.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 29°31'24", AN ARC LENGTH OF 206.11 FEET TO A POINT ON THE NORTHEASTERLY LINE OF SAID PARCEL 3 TO WHICH A RADIAL BEARS NORTH 03°17'14" WEST, SAID POINT ALSO BEING THE **POINT OF BEGINNING.**

CONTAINING 15.993 ACRES OF LAND, MORE OR LESS.

BASIS OF BEARINGS:

BEARINGS ARE BASED ON AND IDENTICAL TO THAT CERTAIN PARCEL MAP FILED IN BOOK 432 OF MAPS AT PAGE 29, IN THE OFFICE OF THE RECORDER, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA.

SURVEYOR'S STATEMENT:

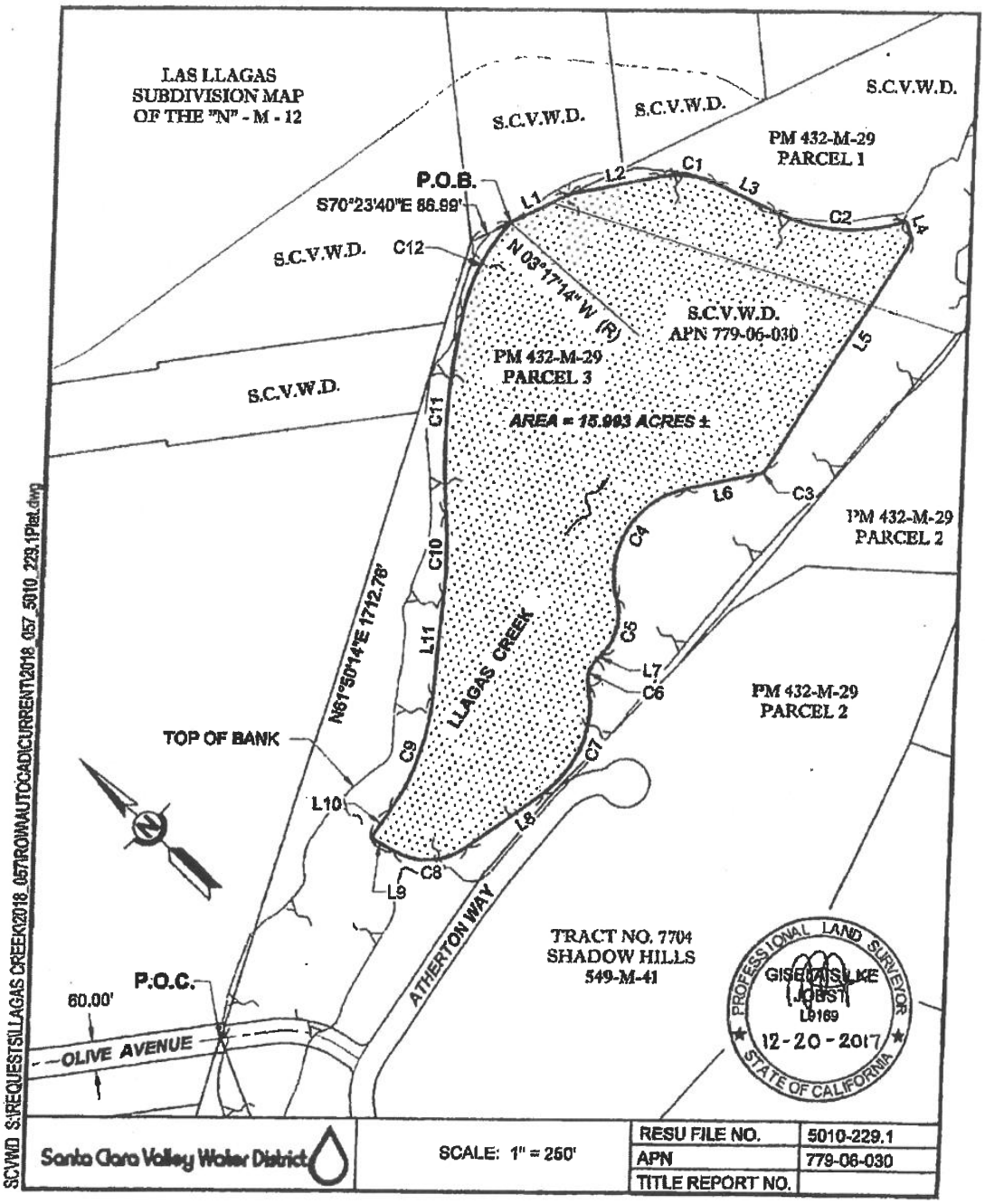
THE DESCRIPTION WAS PREPARED BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE LAND SURVEYOR'S ACT.

GISELA SILKE JOBST, L9169

12-20-2017
Date



S:\REQUESTS\LLAGAS CREEK\2018_057\ROW\AUTOCAD\CURRENT\2018_057_5010_229.1Legal.docx


LAS LLAGAS
SUBDIVISION MAP
OF THE "N" - M - 12
S.C.V.W.D.
S.C.V.W.D.
S.C.V.W.D.
PM 432-M-29
PARCEL 1
P.O.B.
S70°23'40"E 88.99'
L1
L2
C1
L3
C2
L4
S.C.V.W.D.
C12
N 03°17'14" W (R)
S.C.V.W.D.
APN 779-06-030
L5
PM 432-M-29
PARCEL 3
S.C.V.W.D.
AREA = 15.993 ACRES ±
C11
L6
C3
PM 432-M-29
PARCEL 2
C4
C10
N61°50'14"E 1712.78'
L11
C5
LLAGAS CREEK
L7
C6
PM 432-M-29
PARCEL 2
TOP OF BANK
C9
C7
L10
L8
C8
L9
ATHERTON WAY
TRACT NO. 7704
SHADOW HILLS
549-M-41
P.O.C.
60.00'
OLIVE AVENUE
PROFESSIONAL LAND SURVEYOR
GISELA S. LIKE JOBST
L9169
12-20-2017
STATE OF CALIFORNIA
SCVWD S:\REQUESTS\LLAGAS CREEK\2018_057\ROW\AUTOCAD\CURRENT\2018_057_5010_229.1Plat.dwg
Santa Clara Valley Water District
SCALE: 1" = 250'
RESU FILE NO. 5010-229.1
APN 779-06-030
TITLE REPORT NO.
SHEET 1 OF 2

Line Table		
Line #	Direction	Length
L1	S70°23'40"E	132.15'
L2	S55°08'06"E	189.44'
L3	S18°32'42"E	134.07'
L4	S24°34'39"W	40.66'
L5	S77°04'33"W	552.38'
L6	N55°46'53"W	148.90'
L7	S89°18'41"W	13.69'
L8	N80°26'05"W	187.51'
L9	N14°37'42"W	55.16'
L10	N79°47'32"E	69.49'
L11	N50°44'39"E	210.95'

Curve Table			
Curve #	Radius	Delta	Length
C1	180.00'	36°35'24"	114.95'
C2	360.00'	43°53'06"	275.74'
C3	26.00'	47°08'34"	21.39'
C4	180.00'	94°40'37"	297.44'
C5	122.00'	59°46'11"	127.27'
C6	60.00'	55°22'46"	57.99'
C7	220.00'	65°38'00"	252.01'
C8	140.00'	65°48'22"	160.79'
C9	500.00'	29°02'53"	253.49'
C10	1000.00'	9°37'57"	168.12'
C11	1490.00'	16°04'40"	418.11'
C12	400.00'	29°31'24"	206.11'

SCVWD S:\REQUESTS\LLAGAS CREEK\2018_057\ROW\AUTOCAD\CURRENT\2018_057_5010_229.1Plat.dwg

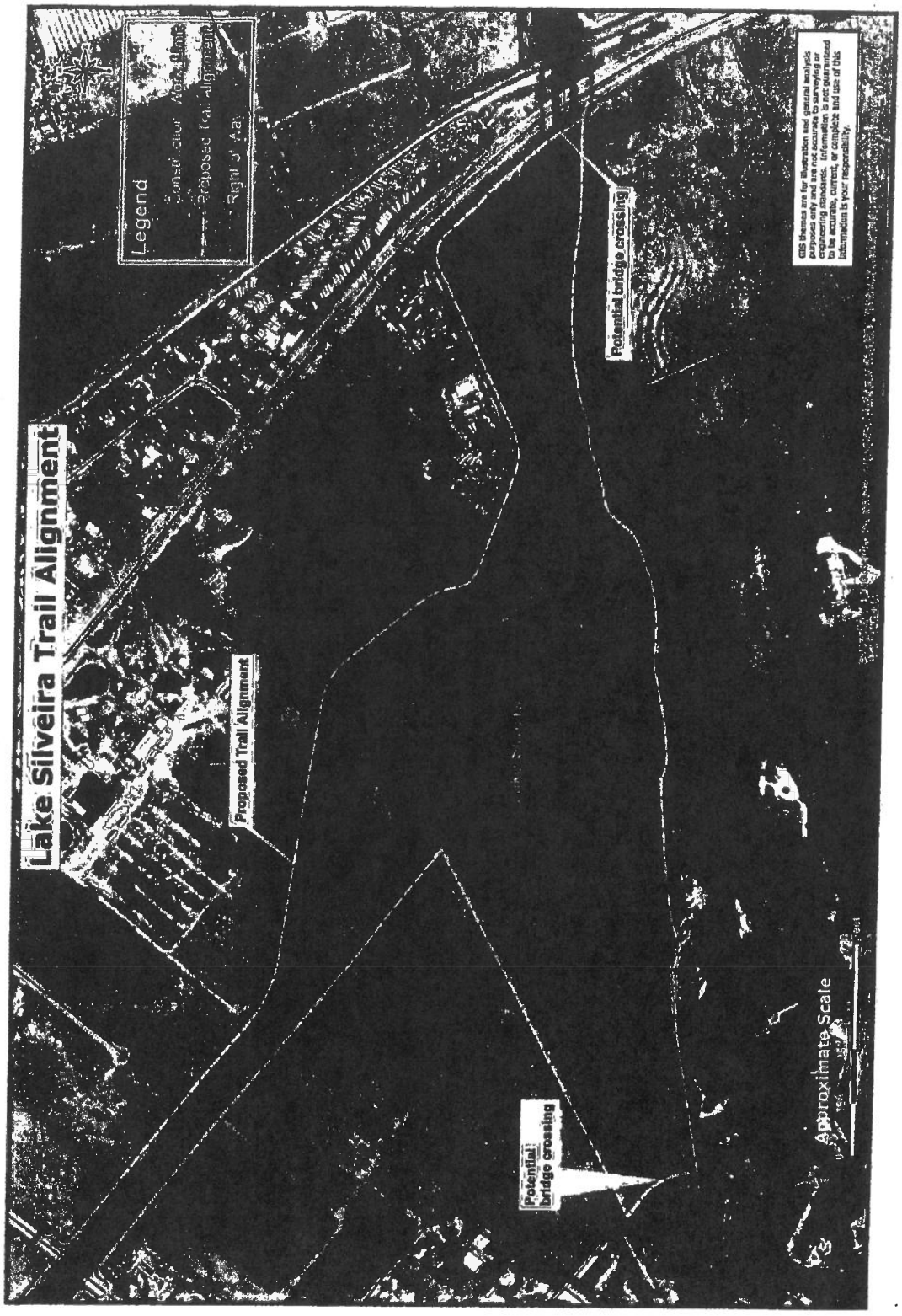
Santa Clara Valley Water District	SCALE: N.T.S.	RESU FILE NO.	5010-229.1
		APN	779-06-030
		TITLE REPORT NO.	

SHEET 2 OF 2

ATTACHMENT 4

(to Conservation Easement)

PROPOSED TRAIL ALIGNMENT


Lake Silveira Trail Alignment
Legend
Proposed Trail Alignment
Right of Way
Proposed Trail Alignment
Potential bridge crossing
Potential bridge crossing
Approximate Scale
GIS themes are for illustration and general analysis purposes only and are not accurate to surveying or engineering standards. Information is not guaranteed to be accurate, current, or complete and use of this information is your responsibility.

SCVWD ENACTED COPY
Contract Administration Unit
AGMT: A4201M FILE: N/A

File: City of Morgan Hill
Upper Llagas Creek
Flood Protection Project

JOINT USE AGREEMENT
Between
City of Morgan Hill and Santa Clara Valley Water District
For
West Little Llagas Creek between Monterey Road and Ciolino Avenue
in association with the Upper Llagas Creek Flood Protection Project

SANTA CLARA VALLEY WATER DISTRICT, a California Special District created by the California Legislature, hereinafter referred to as "District;" and CITY OF MORGAN HILL, a municipal corporation of the County of Santa Clara, hereinafter referred to as "City", AGREE as follows:

RECITALS:

A. WHEREAS, District is the owner of certain real property (hereinafter "the Premises"), shown on "Exhibit A" attached hereto, so marked and by this reference made a part hereof. The Premises are located along West Little Llagas Creek from Monterey Road northwesterly to Ciolino Avenue within the City of Morgan Hill; and

B. WHEREAS, on June 10, 2014, District's Board of Directors certified a Final Environmental Impact Report (Final EIR) and approved its Upper Llagas Creek Flood Protection Project (District Project) as lead agency pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 et. seq.); and

C. WHEREAS, District is currently proceeding with the permitting phase of its Upper Llagas Creek Flood Project (District Project), within its right-of-way. After permits are issued, District will subsequently advertise for bids and award contracts for construction of the District Project anticipated to take an estimated five (5) years to complete construction; and

D. WHEREAS, the District is required to maintain the District Project in accordance with the Resource Agency approved Mitigation and Monitoring Plan (MMP) for a 10-year period following completion of construction needed to meet required success criteria, including a 3-year mitigation planting establishment period; and

E. WHERAS, District shall grant a conservation easement to the City within a portion of the Premises in accordance with pending execution of the purchase and sale agreement by and between the District and County of Santa Clara for an approximately 53-acre property commonly known as Lake Silveira, located with the City of Morgan Hill (APN's 779-03-114, 779-06-030, 779-49-014, and 779-06-032) (Conservation Easement); and

F. WHEREAS, District shall also grant a perpetual wetlands mitigation easement to a grantee designated by the United States Army Corps of Engineers over and up to sixteen acres (Mitigation Easement) entirely within the Conservation Easement; and

G. WHEREAS, the Conservation Easement is subordinate to the Mitigation Easement; and

H. WHEREAS, City has an interest in using Premises after the construction of District Project to enable City to provide certain recreational opportunities to the public that do not unreasonably interfere with the District's mission of flood protection, water resource management, and stream stewardship; and

I. WHEREAS, the parties have previously executed the following Joint Use Agreements (JUA) along West Little Llagas Creek that will be superseded upon the execution of this Agreement:
   a. A2905M (Portion): Edmundson Avenue to LaCrosse Drive executed 12/20/2004 for a term of 25 years;
   b. A3046RE: Edes Court and Edmundson Avenue executed 7/11/2006 for a term of 25 years;
   c. A3221M: LaCrosse Drive to Watsonville Road executed 9/9/2008 for a term of 25 years;
   d. A3414M: Edes Court to Spring Avenue executed 10/26/2010 for a term of 25 years; and

J. WHEREAS, the parties find it to be in the public interest to provide for joint use of the Premises by means of an Agreement under the following terms and conditions;

Now, therefore, the parties agree as follows:

1) **Scope of the License Grant to City.** Subject to the terms and conditions of this Agreement, and contingent upon District's grant of a conservation easement to City as set forth above, District hereby grants to City a non-exclusive license to access and do any or all of the following on the Premises:

   a. To construct, operate, maintain, repair, replace, and remove City Improvements for recreational purposes on the Premises including, but not limited to, asphalt concrete surfaced pedestrian and bicycle trails, pedestrian bridges, fencing, fixture (trash receptacles, benches etc.) and signage. The construction of such City Improvements shall require prior review and approval by District as signified by issuance of a Water Resources Protection Ordinance Encroachment Permit ("District Permit"), and shall be compliant with all applicable legal and permitting requirements. It is fully understood and agreed that District in its reasonable discretion may approve or disapprove a request for any permit to construct any City Improvement on the Premises.

b. To provide non-motorized bicycling, walking, jogging and hiking activities in accordance with all applicable legal and permitting requirements to the extent such activities do not interfere with the District's mission of flood protection, water resource management, and stream stewardship.

c. To host special recreational events (e.g., races) that may include an otherwise restricted component such as allowing private vehicular access for safety purposes, so long as City first receives a District Permit to host that event.

2) **Subordination to Conservation Easement and Mitigation Easement.** To the extent this Joint Use Agreement conflicts with any provisions of the Mitigation Easement, the terms of the Mitigation Easement shall prevail. To the extent this Joint Use Agreement conflicts with any provision of the Conservation Easement, the terms of the Conservation Easement shall prevail. To the extent this Joint Use Agreement conflicts with any provisions of the MMP, the terms of the MMP shall prevail.

3) **Prohibited Uses of Trail.** City shall post notices at all trail entrances that notify users of the trail that the following activities are prohibited:

- Entry of motor vehicles (except for maintenance, emergency, and enforcement vehicles and mobility devices otherwise allowed by law)
- Unleashed dogs

Subject to the foregoing prohibitions and any other restrictions set forth in this Agreement, City shall have the sole authority to adopt any trail rules and regulations pursuant to City of Morgan Hill Municipal Code for any City Improvements on the Premises that will not interfere with District's mission of flood protection, water resource management, and stream stewardship.

4) **Trash and Litter Removal.** City will provide for trash removal on the Premises that is reasonably likely to have been generated from the public's use of the Trail or access to the Premises. City will be responsible for providing sufficient number of trash receptacles, timely maintaining, servicing, emptying trash receptacles, including removing litter/trash and rubbish removal not properly disposed in the receptacles as reasonably necessary. The District is required under the terms of the Mitigation Easement and MMP to ensure trash does not compromise the health and ecological viability of the created wetlands, so District reserves the right, at City's expense, to conduct trash removal within the Conservation Easement if the City fails to properly and routinely remove trash and debris generated from the public's use to the level required under the terms of the Mitigation Easement and MMP. District will notify City in terms of Article 20 of this Agreement prior to conducting this corrective action.

District will manage any Adopt-A-Creek program within the Premises.

5) **Vegetation Management.** If existing vegetation impacts the trail use, then City is responsible for vegetation removal and maintenance, as City deems necessary while in accordance with the terms and conditions of the Conservation Easement. City shall not conduct any vegetation removal and maintenance that is not compatible or consistent with the terms and conditions of Mitigation Easement and MMP for the District Project, per Article 2 of this Agreement.

6) **Graffiti Removal.** City will provide graffiti removal in compliance with City's graffiti abatement program, including graffiti removal from walls, signs, etc. installed in conjunction with and/or accessory to the establishment of a public pathway consistent with its implementation of the same program at comparable City facilities. City will have the primary responsibility for removal of graffiti, on the Premises, reasonably attributed to trail use. No permit from District, nor any advance notice, will be required for City to provide the routine removal of graffiti from any City or District facility within the length of the West Little Llagas Creek included within this agreement. Any and all materials used by City in the removal of graffiti within the limits of this agreement shall be approved for use in the State of California, environmentally safe products, which will not impact the West Little Llagas Creek environment in any way.

7) **Security.** The premises will be reasonably patrolled by City personnel and/or volunteers supervised by City, at the level of Public Safety that is afforded to all areas of the City. District has no obligations whatsoever to provide or pay for any such patrol services. City shall cooperate and coordinate with District in District's efforts to remove any illegal encampments on the premises, and City shall provide police security during such removal activities at no charge to District.

8) **Public Complaints.** City is responsible for responding to all public complaints and inquiries regarding City's improvements on the Premises, including the public trail, and to all inquiries regarding the public's use of the Premises.

9) **Removal or Relocation of City Improvements.** If District requires that any City improvement on Premises be removed or relocated for any District purpose, City will do so at its own expense within 90 days of receiving notice from District. If removal or relocation of City improvements, including vegetation installed by City, requires mitigation under the California Environmental Quality Act, City will be responsible for all costs required to fulfill any required mitigation responsibilities. District will inform City during preconstruction planning in the event a District project is performed on the Premises, in order to reasonably minimize District's project impact on City's improvements located on the Premises. In the event a District project is constructed, any replacement of City's trail and amenities will be the responsibility of City, subject to District approval.

10) **Water Level Fluctuations.** It is expressly understood by City that the level of water upon the Premises may fluctuate from day to day due to controlled or uncontrolled flows upon and across the same. City is responsible for the control of or limiting the public's use of Premises because of such water levels, flood flows, or for any other reason (i.e. harmful algal blooms).

City is responsible for determining the conditions under which to exercise said control or to limit the use of the Premises to ensure the health and safety of the public using the Premises.

11) **Signage.** The District is required under the terms and conditions of the Mitigation Easement to install wetland habitat "sensitive area signage". For all other signage, the parties will cooperate to create and install signage that benefits the programs of each party such as warnings, entrance signage, interpretive signs and benches, and joint uses when applicable. The Deputy Operating Officer designated by District and the Community Services Director of City or their respective designees will meet and confer on a periodic basis to plan the installation of appropriate signage which serves the needs of both parties. All signs placed on the Premises by City (except existing signs that identify the facility (e.g. Trail) by name) must include District's logo in equal size and symmetrical relationship to any other logos contained on such signs. In addition, all City signs or City publications placed on the Premises that describe water resources must be developed in conjunction with District's Watershed customer relations staff. Each party is responsible for the maintenance and upkeep of its signage installed on the Premises.

12) **Bird Nesting Season.** Construction and maintenance work during nesting season (generally between February 1st and August 31st) will be avoided whenever possible. If construction or maintenance work must be done during the nesting season, a pre-construction survey by a qualified biologist must be undertaken to determine the presence of nesting. If nesting activity is reported, the biologist is expected to recommend the City to implement adequate mitigation measures to protect the nesting area. Environmental impacts will be considered prior to all work by the responsible party, (City or District, and/or their agents) performing said work. Any and all work related to this clause will be completed by the responsible party in accordance with applicable federal, state, and local environmental health and safety regulations including but not limited to the federal Migratory Bird Treaty Act of 1918, Clean Water Act, Endangered Species Act, the California Fish and Wildlife Code and the Porter-Cologne Act and any amendments thereto.

13) **Maintenance and Repair.** District is responsible for performing routine maintenance on the Premises for flood protection and water resource management purposes in a manner consistent with its maintenance of comparable facilities or creeks. City is responsible for the maintenance and repair of recreational improvements on the Premises. City will bear the cost and expense of any security, police, preparation of traffic and pedestrian detour plans, including installation of required appurtenances, or other expenditure necessary to temporarily prohibit or control public access to the Premises that District would not ordinarily incur to complete scheduled routine maintenance pursuant to this provision. In an emergency situation or work tied to regulatory compliance (i.e. fish passage or wetlands functionality concerns), District will respond without notice to City. In non-emergency situations, City and District staff will meet, whenever necessary, for the purpose of scheduling routine maintenance, including, but not limited to:

    a. Maintenance issues related to improvements;

b. Method and timing of issues related to affected wildlife;
c. Non-emergency work requiring the use of heavy equipment, barricading, and/or restricting access to the Premises. District and City further agree to notify one another's designated representative at least ten (10) work days prior to commencement of such work, in order to minimize public impacts.

14) **Damage to City's Improvements on Premises.** District is not responsible for any damage occurring to City's improvements or structures located on the Premises that results from District's maintenance, construction or reconstruction activities, or from its water management and/or flood protection facilities located on or near the Premises, including (without limitation) any flood flows, or inundation of West Little Llagas Creek onto the Premises. Further, City is responsible for any damage occurring to either District's or City's improvements or structures located on the Premises that result from the public's use of the Premises. All such costs for repairing such damage to District's or City's improvements will be borne by City.

15) **Term of Agreement and Renewal Option.** This Agreement will become effective upon execution by both parties. However, the City acknowledges that the District Project will be constructed in phases over an estimated five (5) year period where the construction of the District Project will be given priority over proposed City improvements. City agrees to install City improvements on Premises in accordance with Article 19 of this Agreement. The term of this Agreement (including the rights and obligations contained therein) is twenty-five (25) years commencing on the Agreement Effective Date. This City, upon providing District with no less than ninety (90) days written notice, but no more than 180 days notice prior to the expiration of the initial 25-year term, may renew this Agreement for an additional 25-year period.

16) **Termination of Agreement.** A party may terminate this Agreement without cause after providing the other party with at least 180 days prior written notice of its intent to terminate this Agreement. Upon the termination or expiration of this Agreement, City must remove all City Improvements from the Premises, and leave the Premises in a condition as near as reasonably practical to its condition prior to the installation and/or development of such improvements. If the District requires the trail to be removed from the Premises due to a flood protection project or other District project, this Agreement will terminate upon District providing the City with written notice of at least 180 days. Notice of intent to renew or to terminate may be given by City's Director of Public Works. Notice of intent to terminate may be given by District's Chief Executive Officer.

17) **City's Responsibility for Public Use.** Subject to the conditions and restrictions contained in this Agreement, City has the full control and authority, for public and recreation purposes over the use of the Premises, and City may restrict, or control, regulate and/or supervise the public use thereof. City may, at its discretion, consistent with the right of District hereinafter described, and without diminution of the flood protection or water resources management function or hazard thereto of the Premises as now existing or as may hereafter be altered,

take any measures of every kind as may in the opinion of City be necessary for the health and safety of the users of the Premises for any purpose under this Agreement. City has the sole responsibility for the maintenance in usable and safe condition of every facility provided upon the Premises by City.

18) **District's Superior Rights.** It is expressly understood that District is engaged in flood protection, the protection of water resources, and stream stewardship and that the terms and conditions of this Agreement will not in any way interfere with the absolute, free and unrestricted right of District to operate and maintain for flood protection, water resource management, and stream stewardship purposes the stream bed and banks or any appurtenant works thereto, or to repair or construct any of its works, or to allow the raising or lowering of the height of the water present upon the Premises.

19) **City's Subordinate Rights.** City will have the right to build improvements on the Premises necessary, or convenient to the enjoyment of this Agreement, provided the location of the any such improvement is, in each case during the term of this Agreement, first approved by District and signified by issuance of a District permit. It is fully understood and agreed that District has the sole, unfettered discretion to approve or disapprove of such improvements.

20) **Indemnification by City.** Notwithstanding any other provision of this Agreement, City agrees to indemnify, defend and hold harmless District, its agents, officers, directors, and employees from and against any and all demands, claims, damages, losses and reasonable expenses, including but not limited to liabilities, obligations, claims, costs, reasonable expenses (including without limitation interest, penalties and reasonable attorney's fees), fines, levies, assessments, demands, damages or judgments of any kind or nature, whether in law or equity (including without limitation, death or injury to any person, property damage, administrative and judicial orders and consents, or any other loss) to the extent they arise out of, pertain to, or relate to the: (i) public use of the Premises, (ii) public's use of real property adjacent to the Premises, or (iii) negligence or willful misconduct of City's officers, agents, employees, or independent contractors. This Agreement to defend, indemnify, and hold harmless District will operate irrespective of the basis of the claim, liability, loss, damage, or injury and irrespective of whether the act, omission, or activity is a condition of Premises or any other cause of any kind or nature.

21) **Notices.** Any and all notices required to be given hereunder will be deemed to have been delivered upon deposit in the United States mail, postage prepaid, addressed to either of the parties at the address hereinafter specified or as later amended by either party in writing:

City:	**District:**
City of Morgan Hill Attention: Community Services Director 17575 Peak Avenue Morgan Hill, CA 95037	Santa Clara Valley Water District Attention: Clerk of the Board 5750 Almaden Expressway San Jose, CA 95118

w/copy to District's Community Projects Review Unit

22) **Successors and Assigns.** This Agreement, and all terms, covenants, and conditions hereof, will apply to and bind the successors and assigns of the respective parties hereto. City will neither assign nor sublet this Agreement without the prior written consent of District.

23) **Choice of Law.** This Agreement is governed by California law.

24) **Amendments.** This Agreement may not be modified or amended except in writing signed by both parties.

25) **Compliance with Laws.** Each party must, in all activities undertaken pursuant to this Agreement, comply and cause its contractors, agents, and employees to comply with all federal, state, and local laws, statues, orders, ordinances, rules, and regulations.

26) **Not Real Property Interest.** It is expressly understood that this Agreement does not in any way whatsoever grant or convey any permanent easement, fee or other interest in a party's real property to the other party.

WITNESS THE EXECUTION HEREOF,

"City"

CITY OF MORGAN HILL
A Municipal corporation of the County of Santa Clara

By: _____
Christina Turner
City Manager

ATTEST:

_____
Michelle Wilson
Deputy City Clerk

APPROVED AS TO FORM:

_____
Donald Larkin
City Attorney

"District"

SANTA CLARA VALLEY WATER DISTRICT,
a Special District, created by the California Legislature

By: _____
Norma J. Camacho
Chief Executive Officer

ATTEST:

_____
Michele L. King
Clerk of the Board of Directors

APPROVED AS TO FORM:

_____
Brian Hopper
Senior Assistant District Counsel

Exhibit A

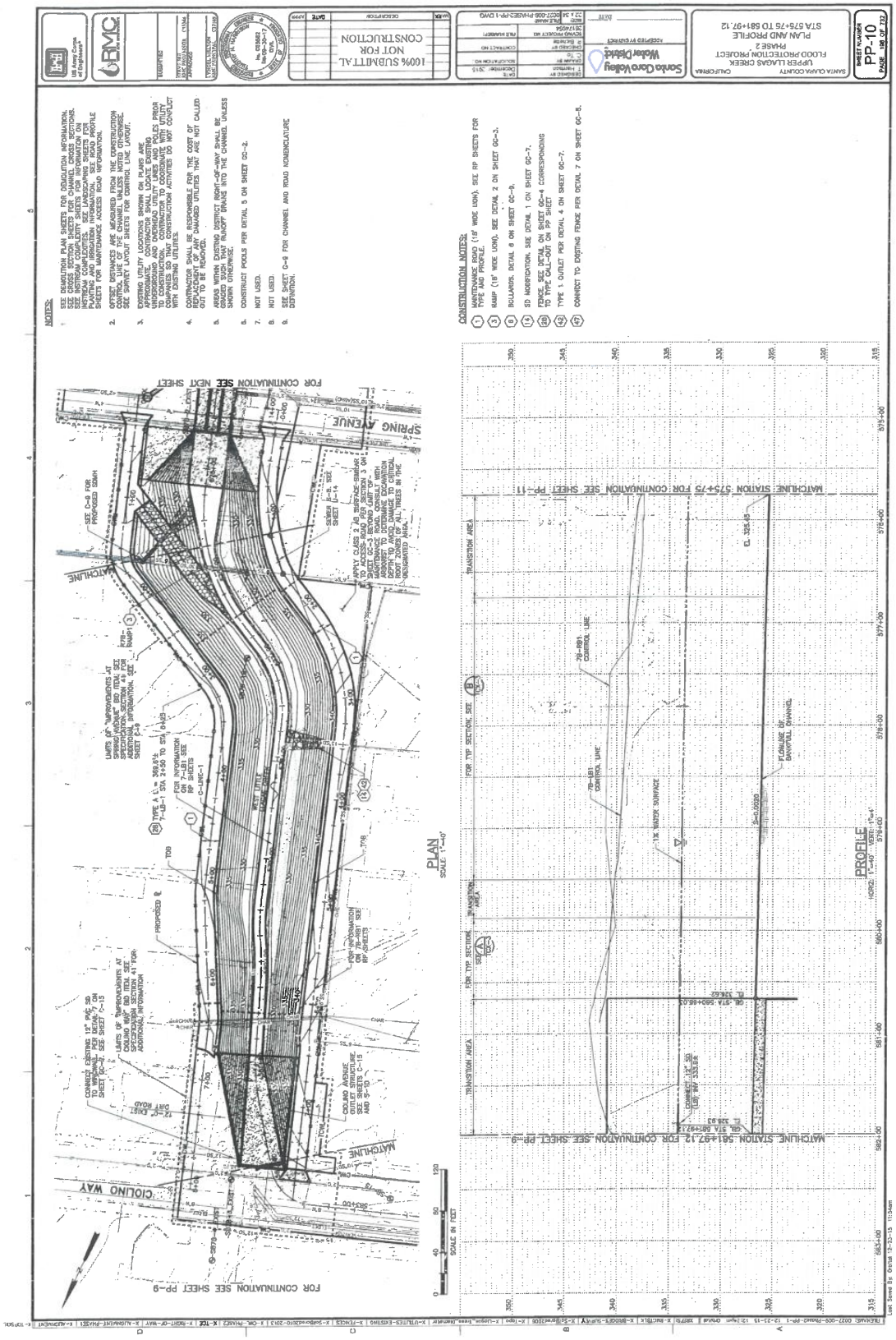

SANTA CLARA COUNTY
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PLAN AND PROFILE
PAGE 2
STA 575+75 TO 581+97.12
PP-10
100% SUBMITTAL
NOT FOR
CONSTRUCTION
NOTES:
CONSTRUCTION NOTES:
PLAN
SCALE 1"=40'
PROFILE
SPRING AVENUE
CIOLINO WAY
MATCHLINE STATION 575+75 FOR CONTINUATION SEE SHEET PP-11
MATCHLINE STATION 581+97.12 FOR CONTINUATION SEE SHEET PP-9
FOR CONTINUATION SEE NEXT SHEET
FOR CONTINUATION SEE SHEET PP-9

Exhibit A

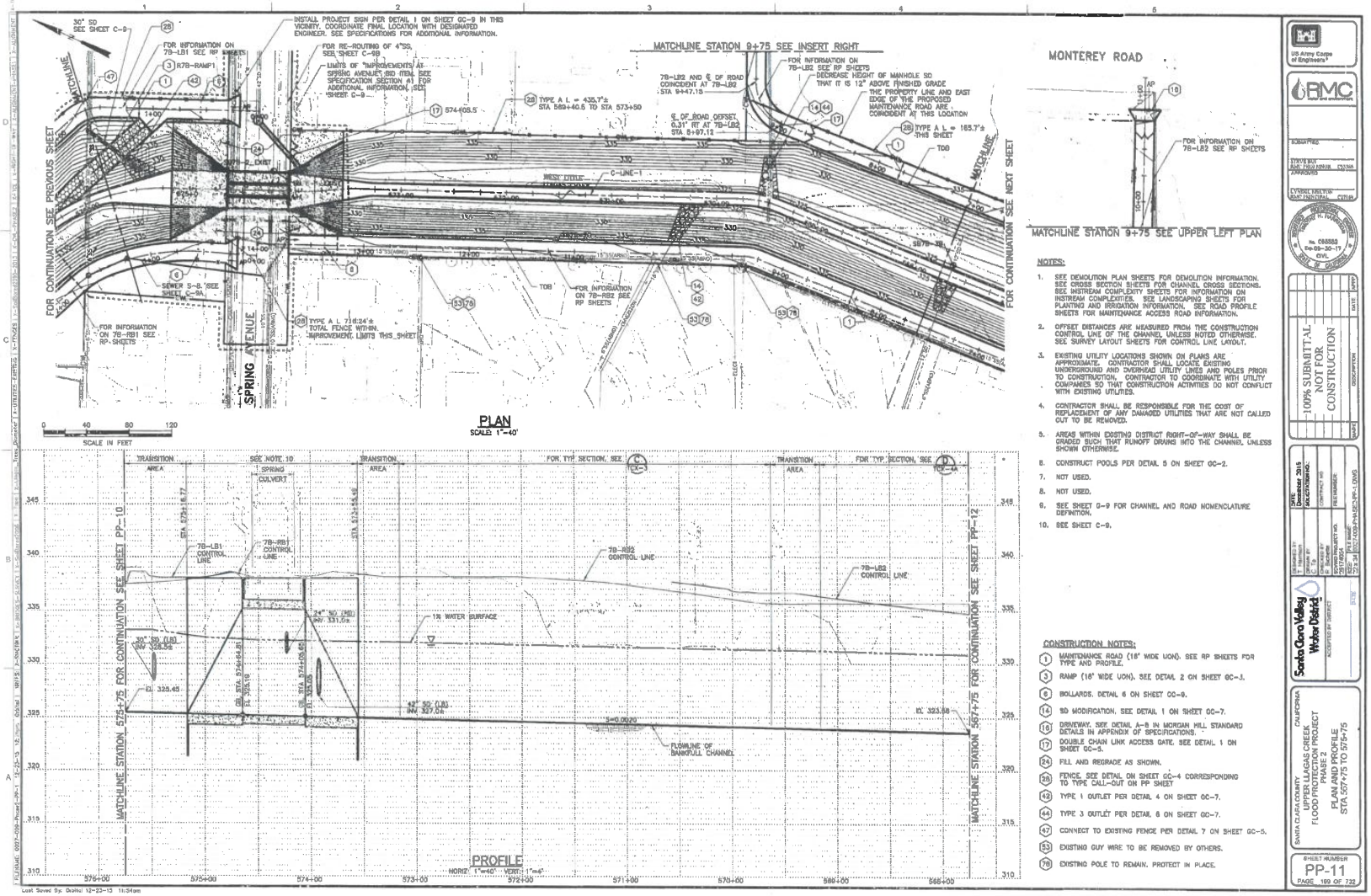

PLAN
SCALE 1"=40'
PROFILE
HORIZ 1"=40' VERT 1"=4'
MATCHLINE STATION 9+75 SEE INSERT RIGHT
MATCHLINE STATION 9+75 SEE UPPER LEFT PLAN
MONTEREY ROAD
SPRING AVENUE
FOR CONTINUATION SEE PREVIOUS SHEET
FOR CONTINUATION SEE NEXT SHEET
MATCHLINE STATION 575+75 FOR CONTINUATION SEE SHEET PP-10
MATCHLINE STATION 567+75 FOR CONTINUATION SEE SHEET PP-12
NOTES:
1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE INSTREAM COMPLEXITY SHEETS FOR INFORMATION ON INSTREAM COMPLEXITIES. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT SHEETS FOR CONTROL LINE LAYOUT.
3. EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES AND POLES PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES SO THAT CONSTRUCTION ACTIVITIES DO NOT CONFLICT WITH EXISTING UTILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF REPLACEMENT OF ANY DAMAGED UTILITIES THAT ARE NOT CALLED OUT TO BE REMOVED.
5. AREAS WITHIN DOSTING DISTRICT RIGHT-OF-WAY SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL, UNLESS SHOWN OTHERWISE.
6. CONSTRUCT POOLS PER DETAIL 5 ON SHEET GC-2.
7. NOT USED.
8. NOT USED.
9. SEE SHEET C-9 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
10. SEE SHEET C-9.
CONSTRUCTION NOTES:
1 MAINTENANCE ROAD (16' WIDE UON). SEE RP SHEETS FOR TYPE AND PROFILE.
3 RAMP (16' WIDE UON). SEE DETAIL 2 ON SHEET GC-3.
6 BOLLARDS. DETAIL 6 ON SHEET GC-9.
7A SD MODIFICATION. SEE DETAIL 1 ON SHEET GC-7.
10 DRIVEWAY. SEE DETAIL A-8 IN MORGAN HILL STANDARD DETAILS IN APPENDIX OF SPECIFICATIONS.
17 DOUBLE CHAIN LINK ACCESS GATE. SEE DETAIL 1 ON SHEET GC-5.
24 FILL AND REGRADE AS SHOWN.
28 FENCE. SEE DETAIL ON SHEET GC-4 CORRESPONDING TO TYPE CALL-OUT ON PP SHEET
42 TYPE 1 OUTLET PER DETAIL 4 ON SHEET GC-7.
44 TYPE 3 OUTLET PER DETAIL 6 ON SHEET GC-7.
47 CONNECT TO EXISTING FENCE PER DETAIL 7 ON SHEET GC-5.
53 EXISTING GUY WIRE TO BE REMOVED BY OTHERS.
78 EXISTING POLE TO REMAIN. PROTECT IN PLACE.
100% SUBMITTAL NOT FOR CONSTRUCTION
Santa Clara Valley Water District
SANTA CLARA COUNTY, CALIFORNIA
UPPER LLAGAS CREEK FLOOD PROTECTION PROJECT PHASE 2
PLAN AND PROFILE STA 567+75 TO 575+75
SHEET NUMBER PP-11
PAGE 189 OF 732

Exhibit A

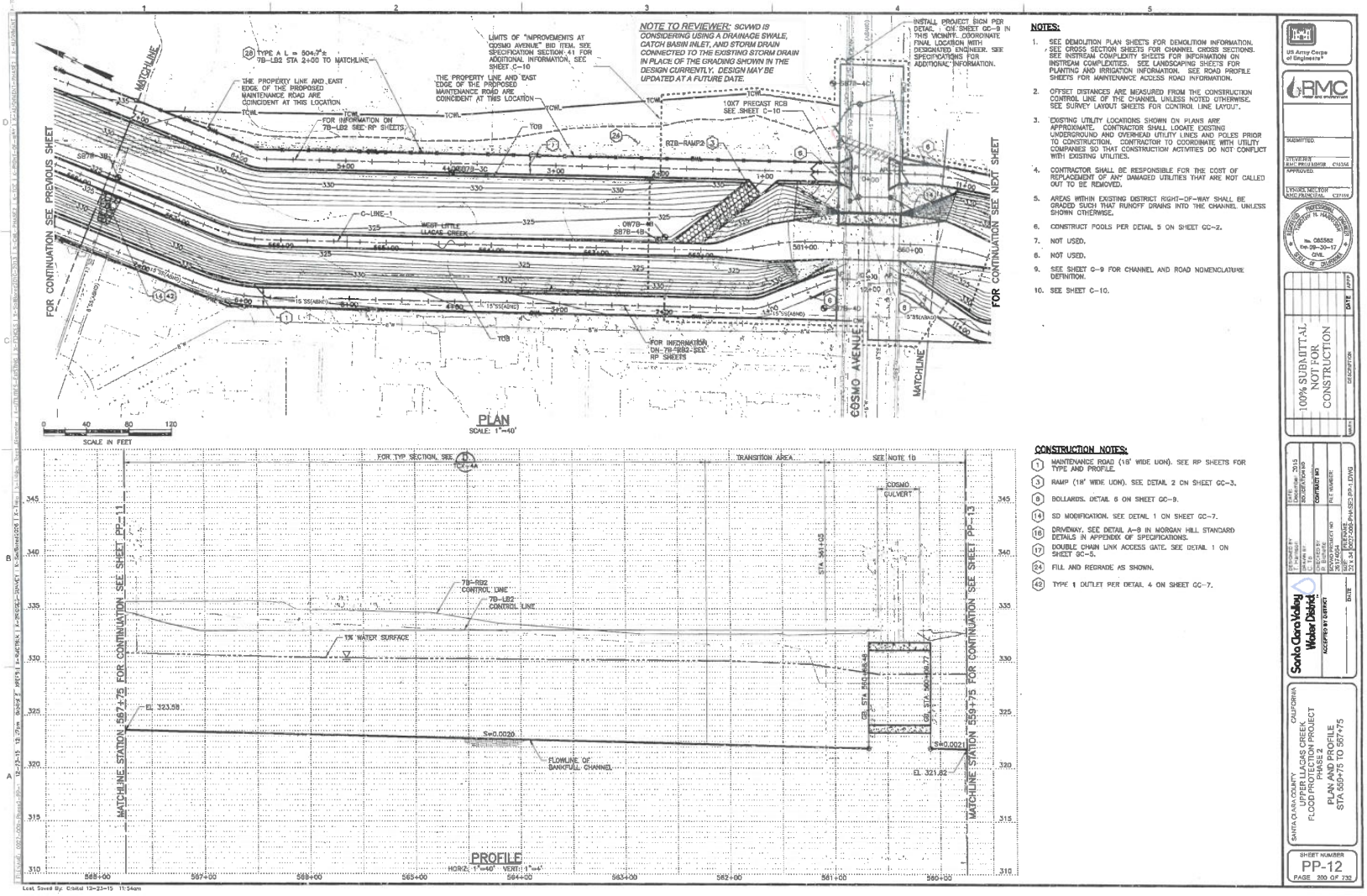

NOTE TO REVIEWER: SCVWD IS CONSIDERING USING A DRAINAGE SWALE, CATCH BASIN INLET, AND STORM DRAIN CONNECTED TO THE EXISTING STORM DRAIN IN PLACE OF THE GRADING SHOWN IN THE DESIGN CURRENTLY. DESIGN MAY BE UPDATED AT A FUTURE DATE.
NOTES:
1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE INSTREAM COMPLEXITY SHEETS FOR INFORMATION ON INSTREAM COMPLEXITIES. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT SHEETS FOR CONTROL LINE LAYOUT.
3. EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES AND POLES PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES SO THAT CONSTRUCTION ACTIVITIES DO NOT CONFLICT WITH EXISTING UTILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF REPLACEMENT OF ANY DAMAGED UTILITIES THAT ARE NOT CALLED OUT TO BE REMOVED.
5. AREAS WITHIN EXISTING DISTRICT RIGHT-OF-WAY SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS SHOWN OTHERWISE.
6. CONSTRUCT POOLS PER DETAIL 5 ON SHEET GC-2.
7. NOT USED.
8. NOT USED.
9. SEE SHEET G-9 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
10. SEE SHEET C-10.
CONSTRUCTION NOTES:
1 MAINTENANCE ROAD (16' WIDE UON). SEE RP SHEETS FOR TYPE AND PROFILE.
3 RAMP (18' WIDE UON). SEE DETAIL 2 ON SHEET GC-3.
8 BOLLARDS. DETAIL 8 ON SHEET GC-9.
14 SD MODIFICATION. SEE DETAIL 1 ON SHEET GC-7.
16 DRIVEWAY. SEE DETAIL A-9 IN MORGAN HILL STANDARD DETAILS IN APPENDIX OF SPECIFICATIONS.
17 DOUBLE CHAIN LINK ACCESS GATE. SEE DETAIL 1 ON SHEET GC-5.
24 FILL AND REGRADE AS SHOWN.
42 TYPE 1 OUTLET PER DETAIL 4 ON SHEET GC-7.
PLAN
SCALE: 1"=40'
PROFILE
HORIZ: 1"=40' VERT: 1"=4'
100% SUBMITTAL NOT FOR CONSTRUCTION
Santa Clara Valley Water District
SANTA CLARA COUNTY CALIFORNIA
UPPER LLAGAS CREEK FLOOD PROTECTION PROJECT REACH 3
PLAN AND PROFILE STA 560+75 TO 567+75
SHEET NUMBER PP-12
PAGE 200 OF 732

Exhibit A

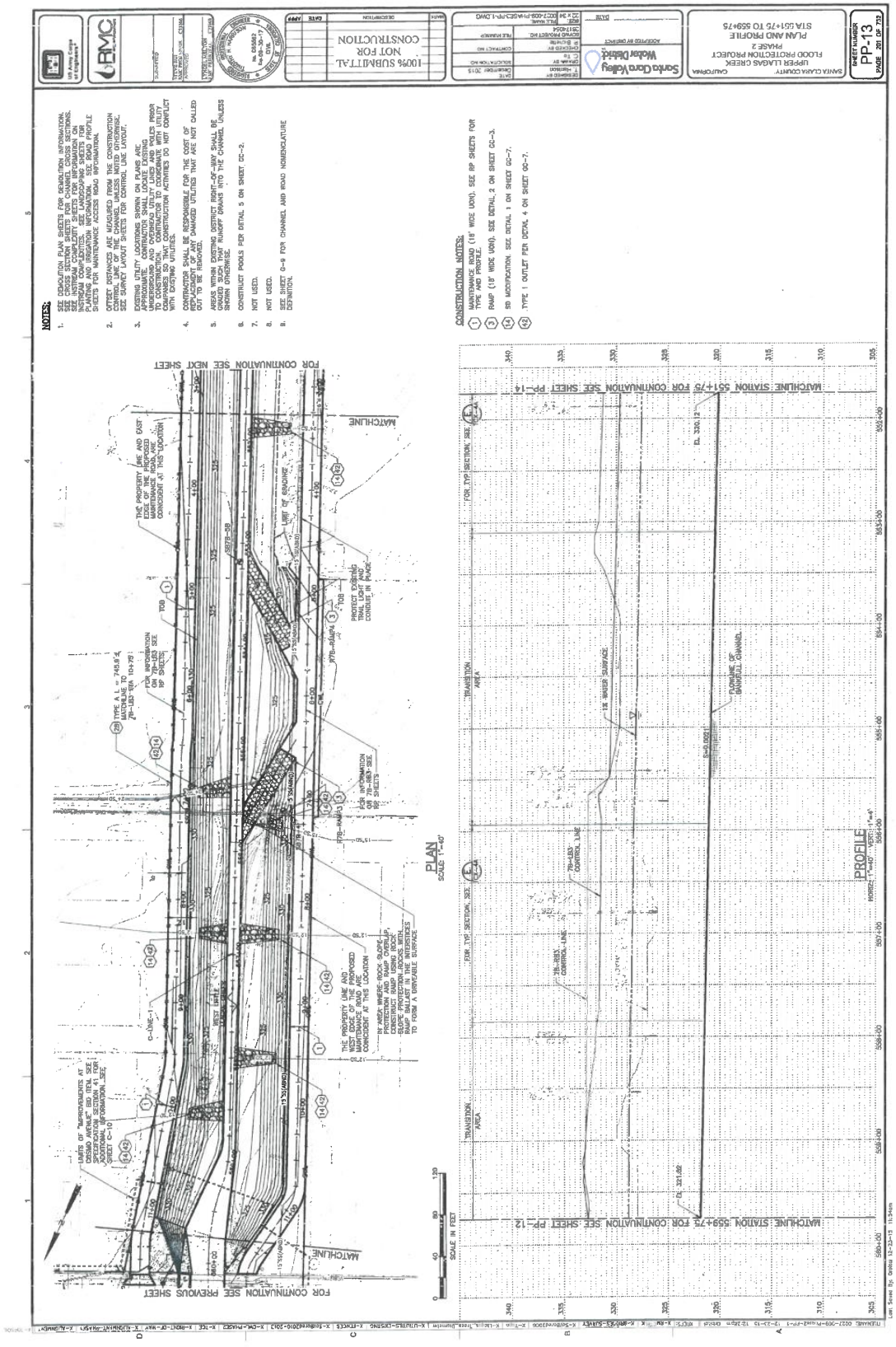

NOTES:
1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION. SEE NUTRIOSA AND MITIGATION SHEETS FOR MITIGATION INFORMATION. SEE LANDSCAPING SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT SHEETS FOR CONTROL LINE LAYOUT.
3. EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES AND POLES PRIOR TO CONSTRUCTION AND SHALL PROTECT THEM WITH UTILITY COMPANIES SO THAT CONSTRUCTION ACTIVITIES DO NOT CONFLICT WITH EXISTING UTILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF REPAIRING ANY DAMAGED UTILITIES THAT ARE NOT CALLED OUT TO BE REMOVED.
5. AREAS WITHIN EXISTING DISTRICT RIGHT-OF-WAY SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS SHOWN OTHERWISE.
6. CONSTRUCT POOLS PER DETAIL 5 ON SHEET CC-2.
7. NOT USED.
8. NOT USED.
9. SEE SHEET G-9 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
CONSTRUCTION NOTES:
1 MAINTENANCE ROAD (16' WIDE UON). SEE RP SHEETS FOR TYP. SECTION.
2 RAMP (18' WIDE UON). SEE DETAIL 2 ON SHEET CC-3.
3 SB MODIFICATION. SEE DETAIL 1 ON SHEET CC-7.
4 TYPE I OUTLET PER DETAIL 4 ON SHEET CC-7.
100% SUBMITTAL NOT FOR CONSTRUCTION
SANTA CLARA COUNTY
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PLAN AND PROFILE
STA 501+75 TO 559+75
SHEET NUMBER PP-13
PAGE 281 OF 293
Santa Clara Valley Water District
PLAN
SCALE 1"=40'
PROFILE
HORIZ. 1"=40' VERT. 1"=4'
MATCHLINE STATION 501+75 FOR CONTINUATION SEE SHEET PP-14
MATCHLINE STATION 559+75 FOR CONTINUATION SEE SHEET PP-12
FOR CONTINUATION SEE PREVIOUS SHEET
FOR CONTINUATION SEE NEXT SHEET
TRANSITION AREA
FOR TYP. SECTION SEE
LIMITS OF "IMPROVEMENTS AT DOWNSTREAM END" AS SET FORTH IN SPECIFICATION SECTION 41. FOR ADDITIONAL INFORMATION, SEE CC-10
THE PROPERTY LINE AND ISSUE LINE AS PROPOSED MAINTENANCE ROAD ARE COINCIDENT AT THIS LOCATION
RK AREA WHERE ROCK SLOPE PROTECTION AND ROCK SLOPE PROTECTION WITH GROUT ARE CONSTRUCT RAMP USING ROCK REMOVED FROM CHANNEL. RAMP BALLAST IN THE INTERSTICES TO FORM A DRIVEABLE SURFACE
TOB
TOE
LIMIT OF GRADING
PROTECT EXISTING TRAIL LIGHT AND CONDUIT IN PLACE
18" INVERT SURFACE
CENTERLINE OF BANKFULL CHANNEL
78+40RK
78+40RK
78+40RK

Exhibit A

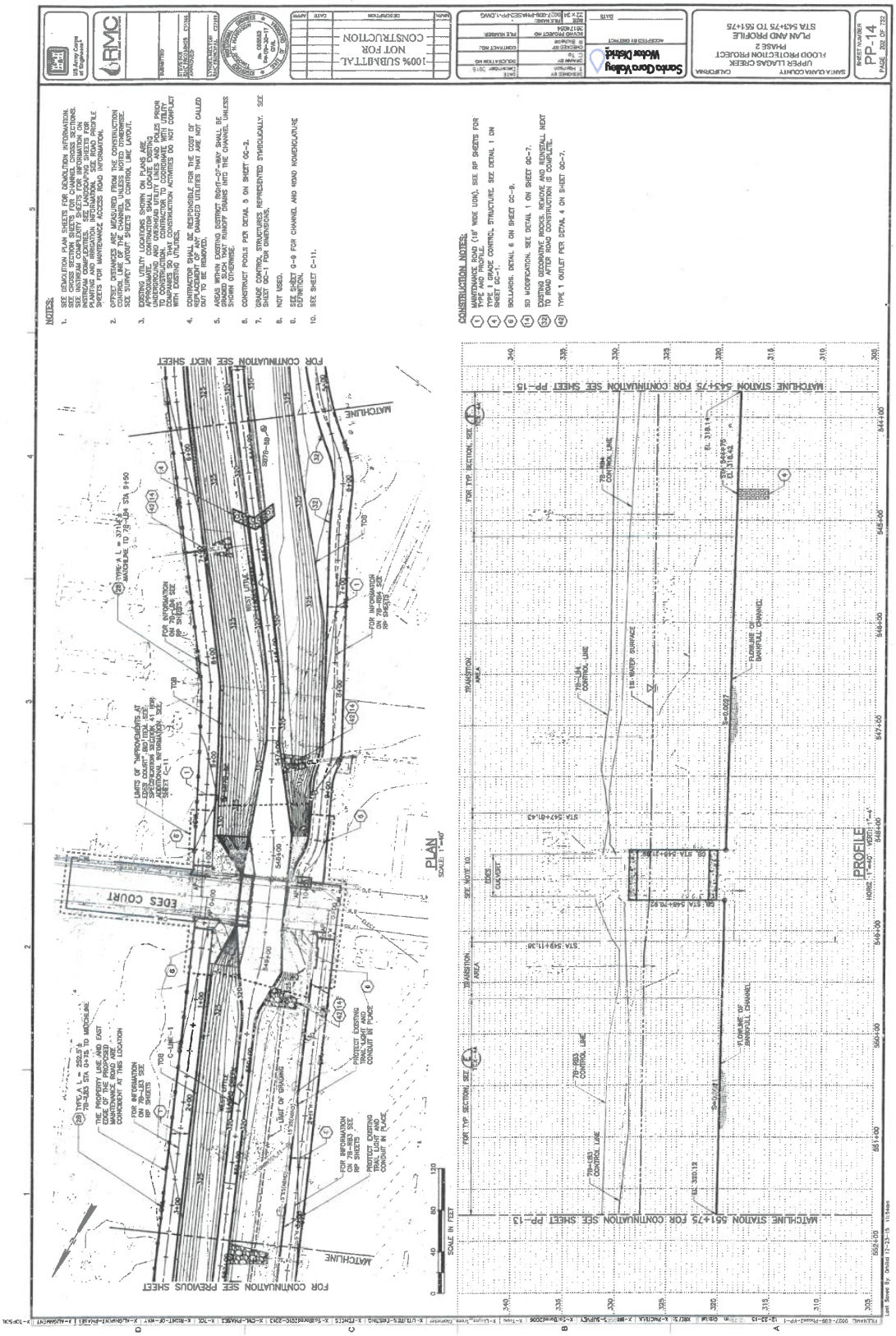

NOTES:
CONSTRUCTION NOTES:
PLAN
SCALE: 1"=40'
PROFILE
HORIZ: 1"=40' VERT: 1"=4'
SCALE IN FEET
EDES COURT
MATCHLINE
FOR CONTINUATION SEE NEXT SHEET
FOR CONTINUATION SEE PREVIOUS SHEET
MATCHLINE STATION 551+75 FOR CONTINUATION SEE SHEET PP-13
MATCHLINE STATION 545+75 FOR CONTINUATION SEE SHEET PP-15
100% SUBMITTAL
NOT FOR
CONSTRUCTION
Santa Clara Valley Water District
SANTA CLARA COUNTY
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PLAN AND PROFILE
PHASE 2
STA 543+75 TO 551+75
PP-14

Exhibit A

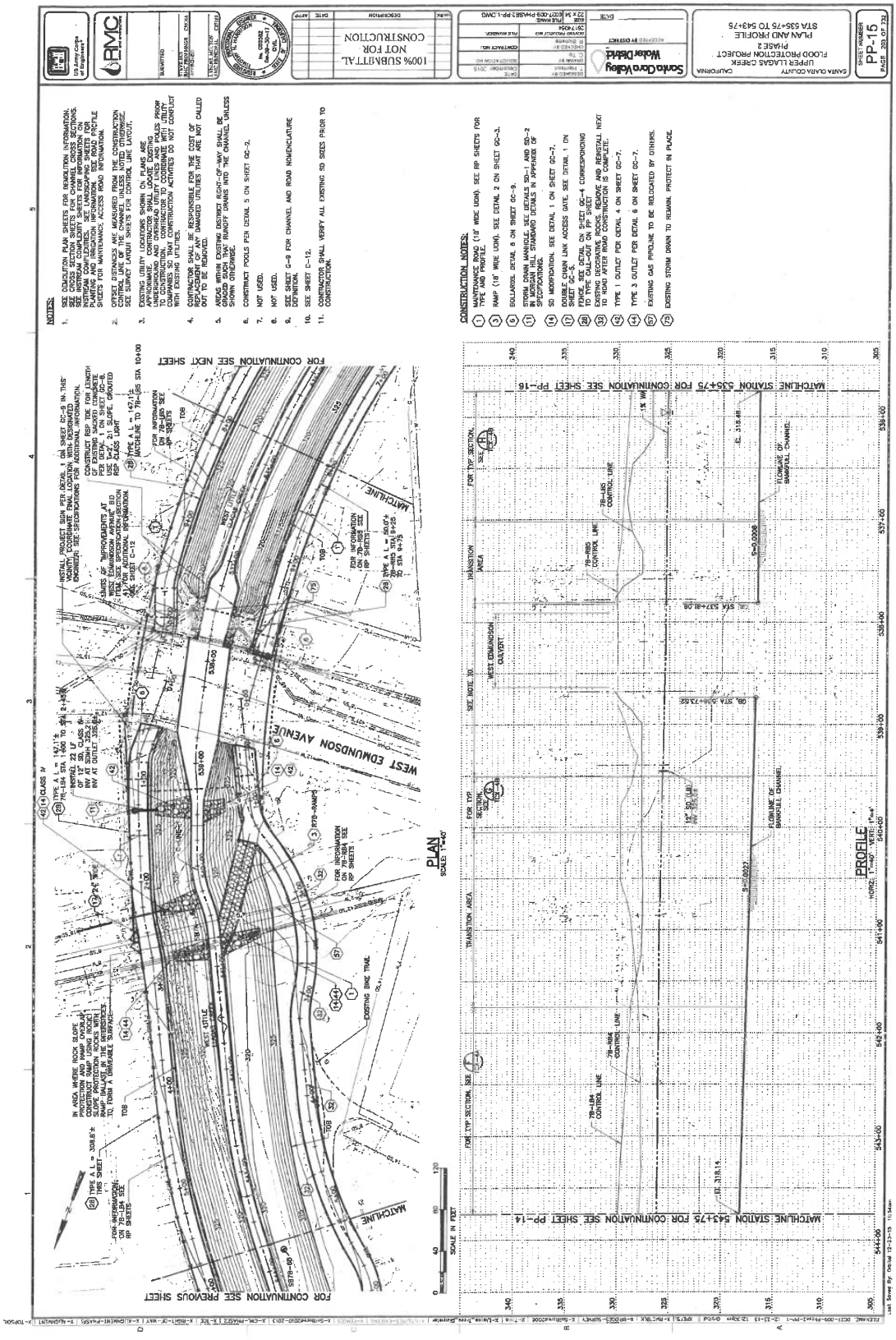
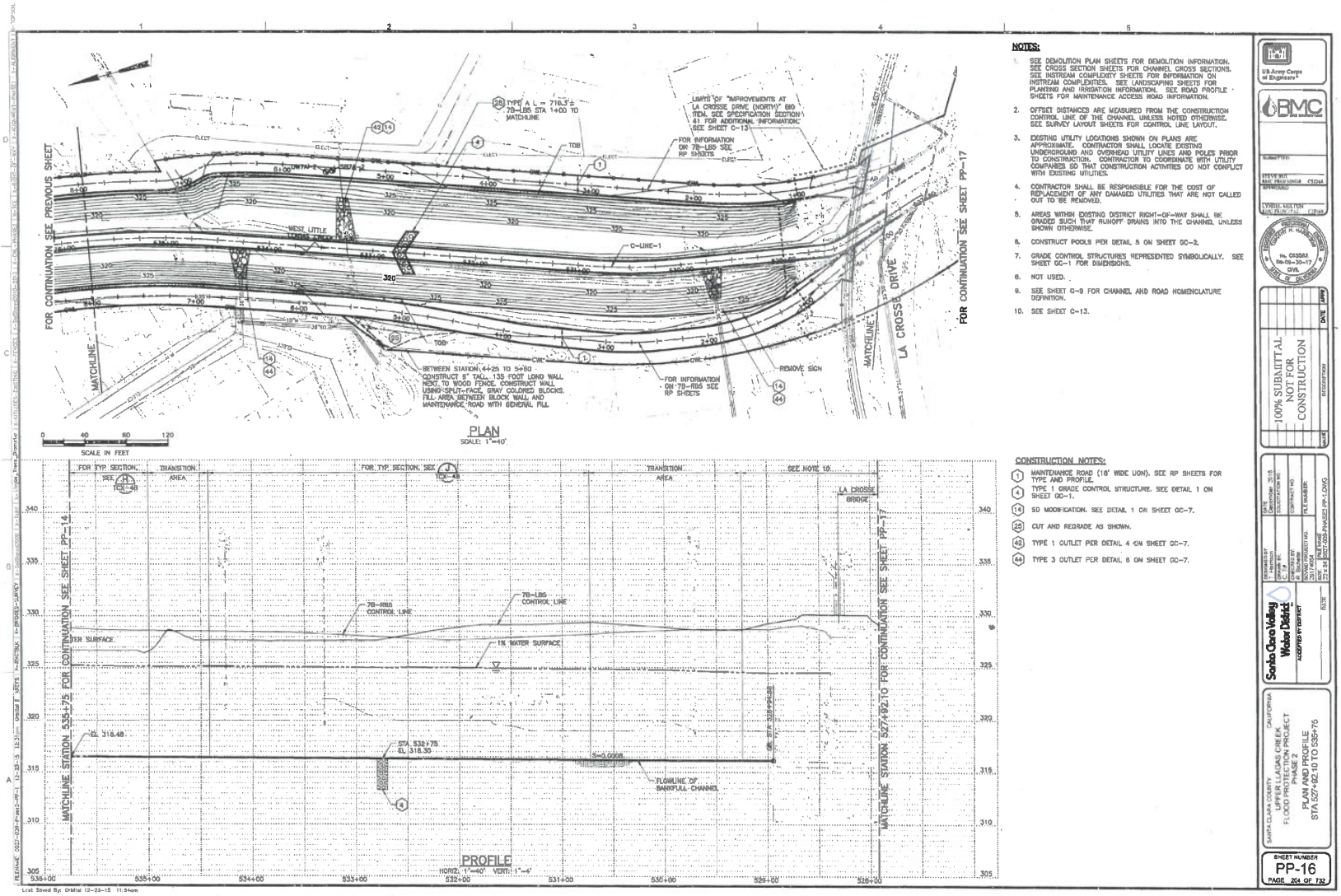

NOTES:
CONSTRUCTION NOTES:
PLAN
PROFILE
SCALE IN FEET
SANTA CLARA COUNTY
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PLAN AND PROFILE
PHASE 2
STA 535+75 TO 543+75
PP-15
100% SUBMITTAL
NOT FOR
CONSTRUCTION

Exhibit A



NOTES:

1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE INSTREAM COMPLEXITY SHEETS FOR INFORMATION ON INSTREAM COMPLEXITIES. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
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4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF REPLACEMENT OF ANY DAMAGED UTILITIES THAT ARE NOT CALLED OUT TO BE REMOVED.
5. AREAS WITHIN EXISTING DISTRICT RIGHT-OF-WAY SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS SHOWN OTHERWISE.
6. CONSTRUCT POOLS PER DETAIL 5 ON SHEET GC-2.
7. GRADE CONTROL STRUCTURES REPRESENTED SYMBOLICALLY. SEE SHEET GC-1 FOR DIMENSIONS.
8. NOT USED.
9. SEE SHEET G-9 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
10. SEE SHEET C-13.

CONSTRUCTION NOTES:

1. MAINTENANCE ROAD (18' WIDE UON). SEE RP SHEETS FOR TYPE AND PROFILE.
4. TYPE 1 GRADE CONTROL STRUCTURE. SEE DETAIL 1 ON SHEET GC-1.
14. SD MODIFICATION. SEE DETAIL 1 ON SHEET GC-7.
28. CUT AND REGRADE AS SHOWN.
42. TYPE 1 OUTLET PER DETAIL 4 ON SHEET GC-7.
44. TYPE 3 OUTLET PER DETAIL 6 ON SHEET GC-7.

U.S.Army Corps of Engineers

BMC

STEVE BOT
PROJECT ENGINEER C52244
APPROVED
LYDIA A. MILTON
DATE 12-23-15

PROFESSIONAL ENGINEER
ROBERT A. HARRIS
No. C63583
Exp 06-30-17
CIVIL
STATE OF CALIFORNIA

100% SUBMITTAL NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	APP'D

Santa Clara Valley Water District

ACCEPTED BY DISTRICT

DESIGNED
DRAWN
CHECKED
P. Bonaire
DISTRICT PROJECT MANAGER
DISTRICT ENGINEER
RCE
DATE
CONSTRUCTION NO.
CONTRACT NO.
FILE NUMBER
DISTRICT AGREEMENT NO.
3501.4654
SHEET NO.
PP-16
TOTAL SHEETS
PLOT SCALE: 1:1
PLOT DATE: 12/23/2015
DISTRICT STANDARDS (PK-1.DWG)

SANTA CLARA COUNTY CALIFORNIA
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PLAN AND PROFILE
STA 527+92.10 TO 535+75

SHEET NUMBER
PP-16
PAGE 204 OF 732

Last Saved By: Orbital 12-23-15 11:54am

Exhibit A

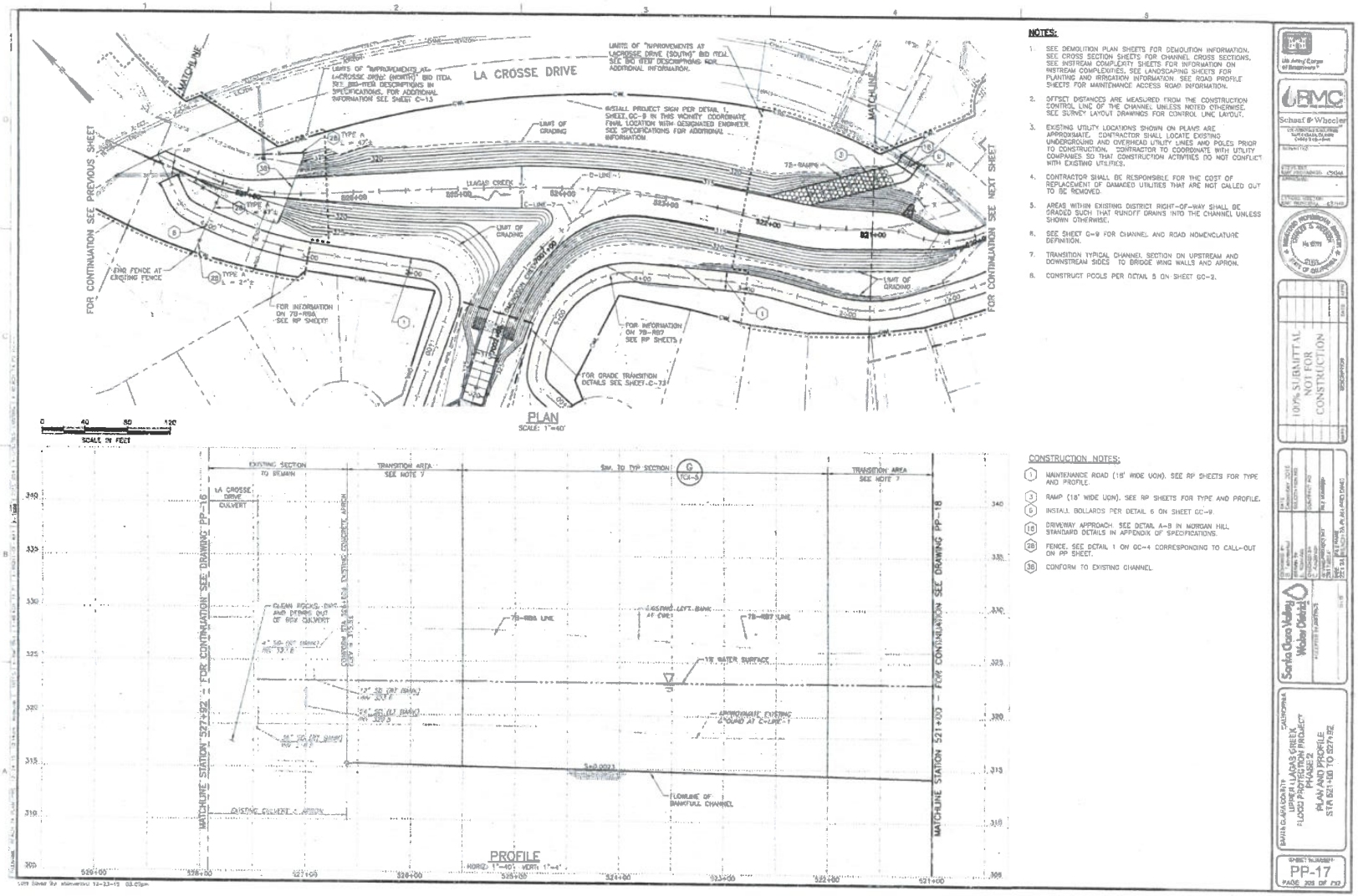

LA CROSSE DRIVE
MATCHLINE
FOR CONTINUATION SEE PREVIOUS SHEET
FOR CONTINUATION SEE NEXT SHEET
LIMITS OF "IMPROVEMENTS AT LACROSSE DRIVE (SOUTH)" BID ITEM SEE BID ITEM DESCRIPTIONS FOR ADDITIONAL INFORMATION.
LIMITS OF "IMPROVEMENTS AT LACROSSE DRIVE (NORTH)" BID ITEM SEE BID ITEM DESCRIPTIONS IN SPECIFICATIONS, FOR ADDITIONAL INFORMATION SEE SHEET C-13
INSTALL PROJECT SIGN PER DETAIL 1, SHEET GC-9 IN THIS VICINITY COORDINATE FINAL LOCATION WITH DESIGNATED ENGINEER. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION
LIMIT OF GRADING
LLAGAS CREEK
C-LINE-1
C-LINE-7
TYPE A L = 42'
TYPE A L = 2'
END FENCE AT EXISTING FENCE
FOR INFORMATION ON 78-RBA SEE RP SHEET?
FOR INFORMATION ON 78-RB7 SEE RP SHEETS ?
FOR GRADE TRANSITION DETAILS SEE SHEET C-73
78-RAMP 6
PLAN
SCALE: 1"=40'
0 40 80 120
SCALE IN FEET
NOTES:
1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE INSTREAM COMPLEXITY SHEETS FOR INFORMATION ON INSTREAM COMPLEXITIES. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT DRAWINGS FOR CONTROL LINE LAYOUT.
3. EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES AND POLES PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES SO THAT CONSTRUCTION ACTIVITIES DO NOT CONFLICT WITH EXISTING UTILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF REPLACEMENT OF DAMAGED UTILITIES THAT ARE NOT CALLED OUT TO BE REMOVED.
5. AREAS WITHIN EXISTING DISTRICT RIGHT-OF-WAY SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS SHOWN OTHERWISE.
6. SEE SHEET G-9 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
7. TRANSITION TYPICAL CHANNEL SECTION ON UPSTREAM AND DOWNSTREAM SIDES TO BRIDGE WING WALLS AND APRON.
8. CONSTRUCT POOLS PER DETAIL 5 ON SHEET GC-2.
CONSTRUCTION NOTES:
1 MAINTENANCE ROAD (18' WIDE UON). SEE RP SHEETS FOR TYPE AND PROFILE.
3 RAMP (18' WIDE UON). SEE RP SHEETS FOR TYPE AND PROFILE.
6 INSTALL BOLLARDS PER DETAIL 6 ON SHEET GC-9.
18 DRIVEWAY APPROACH. SEE DETAIL A-8 IN MORGAN HILL STANDARD DETAILS IN APPENDIX OF SPECIFICATIONS.
28 FENCE. SEE DETAIL 1 ON GC-4 CORRESPONDING TO CALL-OUT ON PP SHEET.
36 CONFORM TO EXISTING CHANNEL
EXISTING SECTION TO REMAIN
TRANSITION AREA SEE NOTE 7
SEE NOTE 7
LA CROSSE DRIVE CULVERT
CLEAN ROCKS, DIRT AND DEBRIS OUT OF BOX CULVERT
78-RBA LINE
78-RB7 LINE
1% WATER SURFACE
APPROXIMATE EXISTING GROUND AT C-LINE-1
FLOWLINE OF BANKFULL CHANNEL
EXISTING CULVERT - APRON
MATCHLINE STATION 521+00 - FOR CONTINUATION SEE DRAWING PP-18
MATCHLINE STATION 527+22 - FOR CONTINUATION SEE DRAWING PP-16
PROFILE
HORIZ 1"=40', VERT 1"=4'
10% SUBMITTAL NOT FOR CONSTRUCTION
Schaaf & Wheeler
Santa Clara Valley Water District
UPPER LLAGAS CREEK FLOOD PROTECTION PROJECT REACH 2
PLAN AND PROFILE STA 521+00 TO 527+22
PP-17
PAGE 205 OF 212

Exhibit A

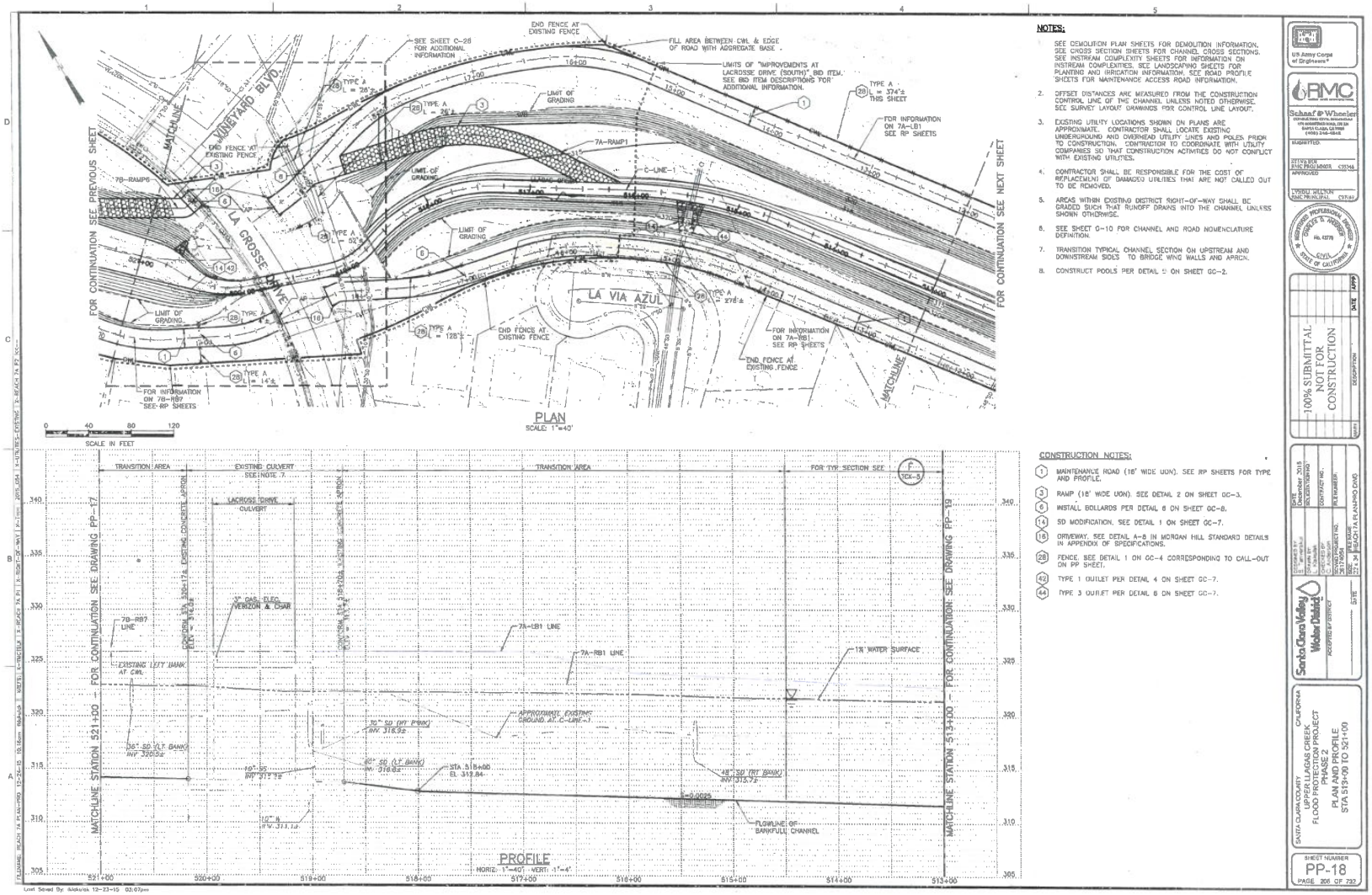

PLAN
SCALE: 1"=40'
PROFILE
HORIZ: 1"=40' VERT: 1"=4'
NOTES:
CONSTRUCTION NOTES:
SANTA CLARA COUNTY
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PLAN AND PROFILE
STA 513+90 TO 521+00
100% SUBMITTAL
NOT FOR
CONSTRUCTION
SHEET NUMBER
PP-18
PAGE 206 OF 732

Exhibit A

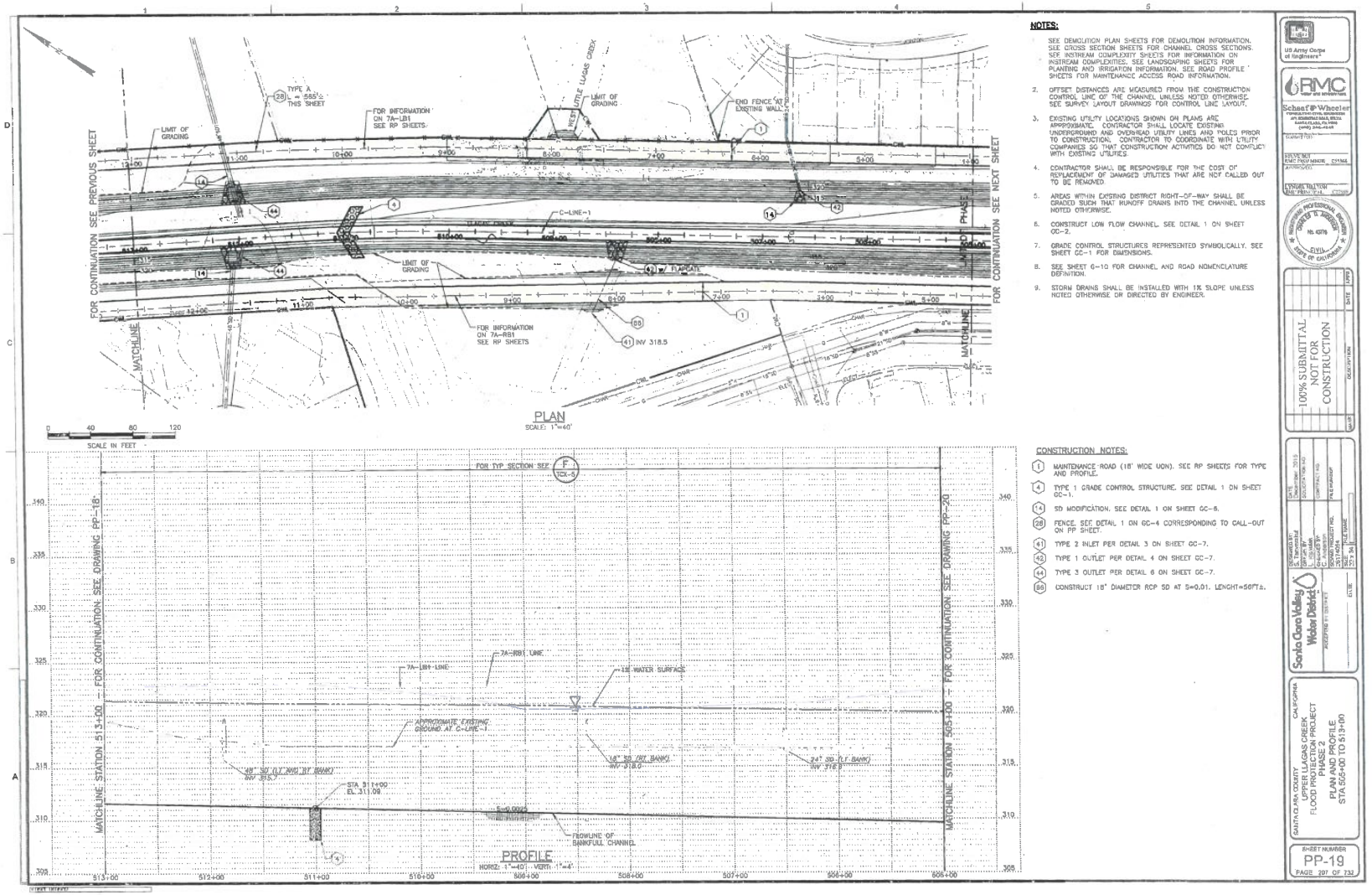

NOTES:
1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE INSTREAM COMPLEXITY SHEETS FOR INFORMATION ON INSTREAM COMPLEXITIES. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT DRAWINGS FOR CONTROL LINE LAYOUT.
3. EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES AND POLES PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES SO THAT CONSTRUCTION ACTIVITIES DO NOT CONFLICT WITH EXISTING UTILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF REPLACEMENT OF DAMAGED UTILITIES THAT ARE NOT CALLED OUT TO BE REMOVED.
5. AREAS WITHIN EXISTING DISTRICT RIGHT-OF-WAY SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS NOTED OTHERWISE.
6. CONSTRUCT LOW FLOW CHANNEL. SEE DETAIL 1 ON SHEET GC-2.
7. GRADE CONTROL STRUCTURES REPRESENTED SYMBOLICALLY. SEE SHEET GC-1 FOR DIMENSIONS.
8. SEE SHEET G-10 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
9. STORM DRAINS SHALL BE INSTALLED WITH 1% SLOPE UNLESS NOTED OTHERWISE OR DIRECTED BY ENGINEER.
PLAN
SCALE: 1"=40'
SCALE IN FEET
CONSTRUCTION NOTES:
1 MAINTENANCE ROAD (18' WIDE UON). SEE RP SHEETS FOR TYPE AND PROFILE.
4 TYPE 1 GRADE CONTROL STRUCTURE. SEE DETAIL 1 ON SHEET GC-1.
14 SD MODIFICATION. SEE DETAIL 1 ON SHEET GC-8.
28 FENCE. SEE DETAIL 1 ON GC-4 CORRESPONDING TO CALL-OUT ON PP SHEET.
41 TYPE 2 INLET PER DETAIL 3 ON SHEET GC-7.
42 TYPE 1 OUTLET PER DETAIL 4 ON SHEET GC-7.
44 TYPE 3 OUTLET PER DETAIL 6 ON SHEET GC-7.
88 CONSTRUCT 18" DIAMETER RCP SD AT S=0.01. LENGHT=56FT±.
PROFILE
HORIZ: 1"=40' VERT: 1"=4'
100% SUBMITTAL NOT FOR CONSTRUCTION
SANTA CLARA COUNTY
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PLAN AND PROFILE
STA 505+00 TO 513+00
SHEET NUMBER
PP-19
PAGE 297 OF 732

Exhibit A

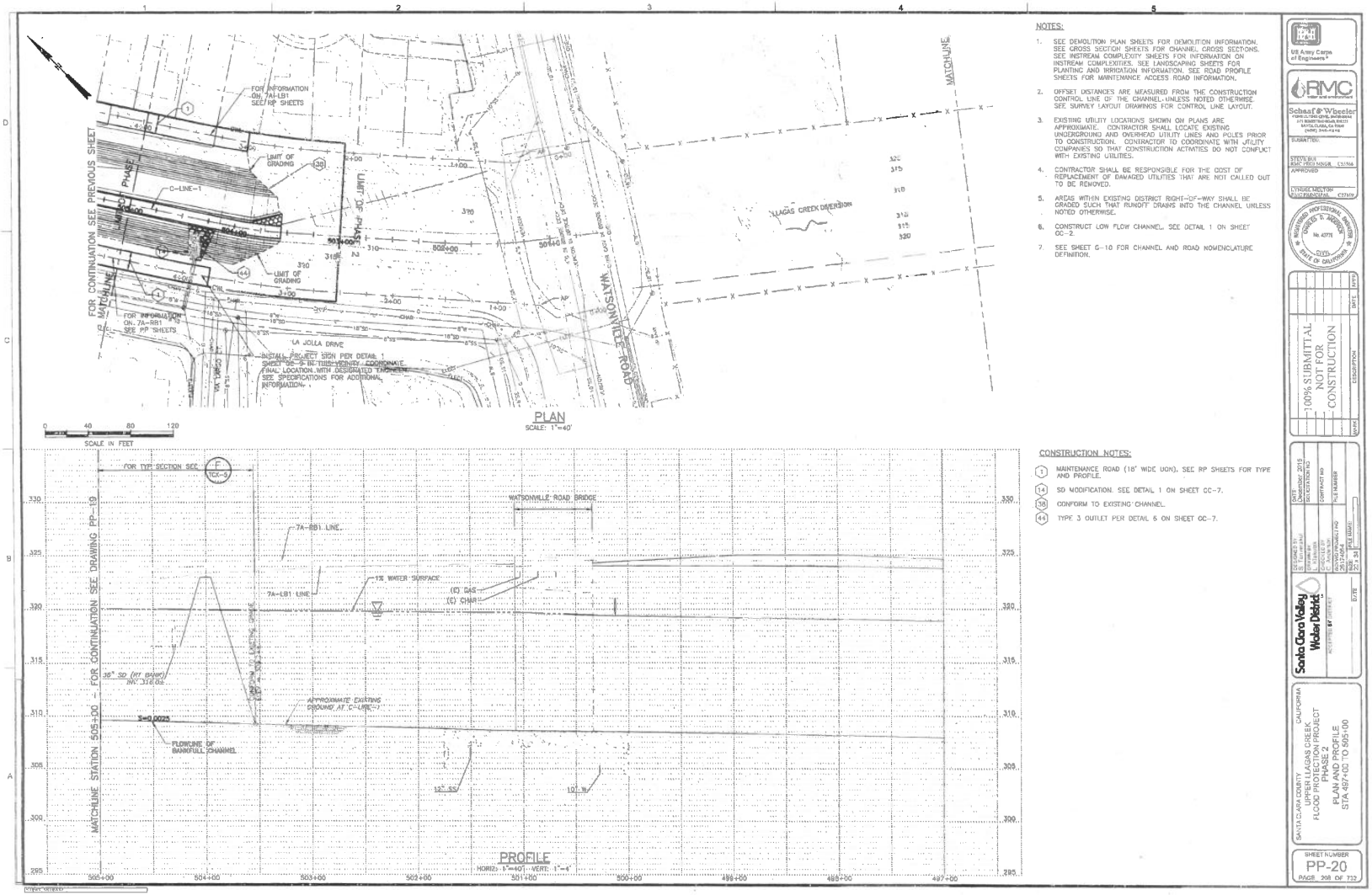

NOTES:
1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE GROSS SECTION SHEETS FOR CHANNEL GROSS SECTIONS. SEE INSTREAM COMPLEXITY SHEETS FOR INFORMATION ON INSTREAM COMPLEXITIES. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT DRAWINGS FOR CONTROL LINE LAYOUT.
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5. AREAS WITHIN EXISTING DISTRICT RIGHT-OF-WAY SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS NOTED OTHERWISE.
6. CONSTRUCT LOW FLOW CHANNEL. SEE DETAIL 1 ON SHEET CC-2.
7. SEE SHEET G-10 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
PLAN
SCALE: 1"=40'
SCALE IN FEET
CONSTRUCTION NOTES:
1 MAINTENANCE ROAD (18' WIDE UON). SEE RP SHEETS FOR TYPE AND PROFILE.
14 SD MODIFICATION. SEE DETAIL 1 ON SHEET CC-7.
38 CONFORM TO EXISTING CHANNEL.
44 TYPE 3 OUTLET PER DETAIL 6 ON SHEET CC-7.
PROFILE
HORIZ: 1"=40' - VERT: 1"=4'
100% SUBMITTAL NOT FOR CONSTRUCTION
Santa Clara Valley Water District
SANTA CLARA COUNTY CALIFORNIA
UPPER LLAGAS CREEK FLOOD PROTECTION PROJECT PHASE 2
PLAN AND PROFILE STA 497+00 TO 505+00
SHEET NUMBER PP-20
PAGE 308 OF 732

Exhibit A

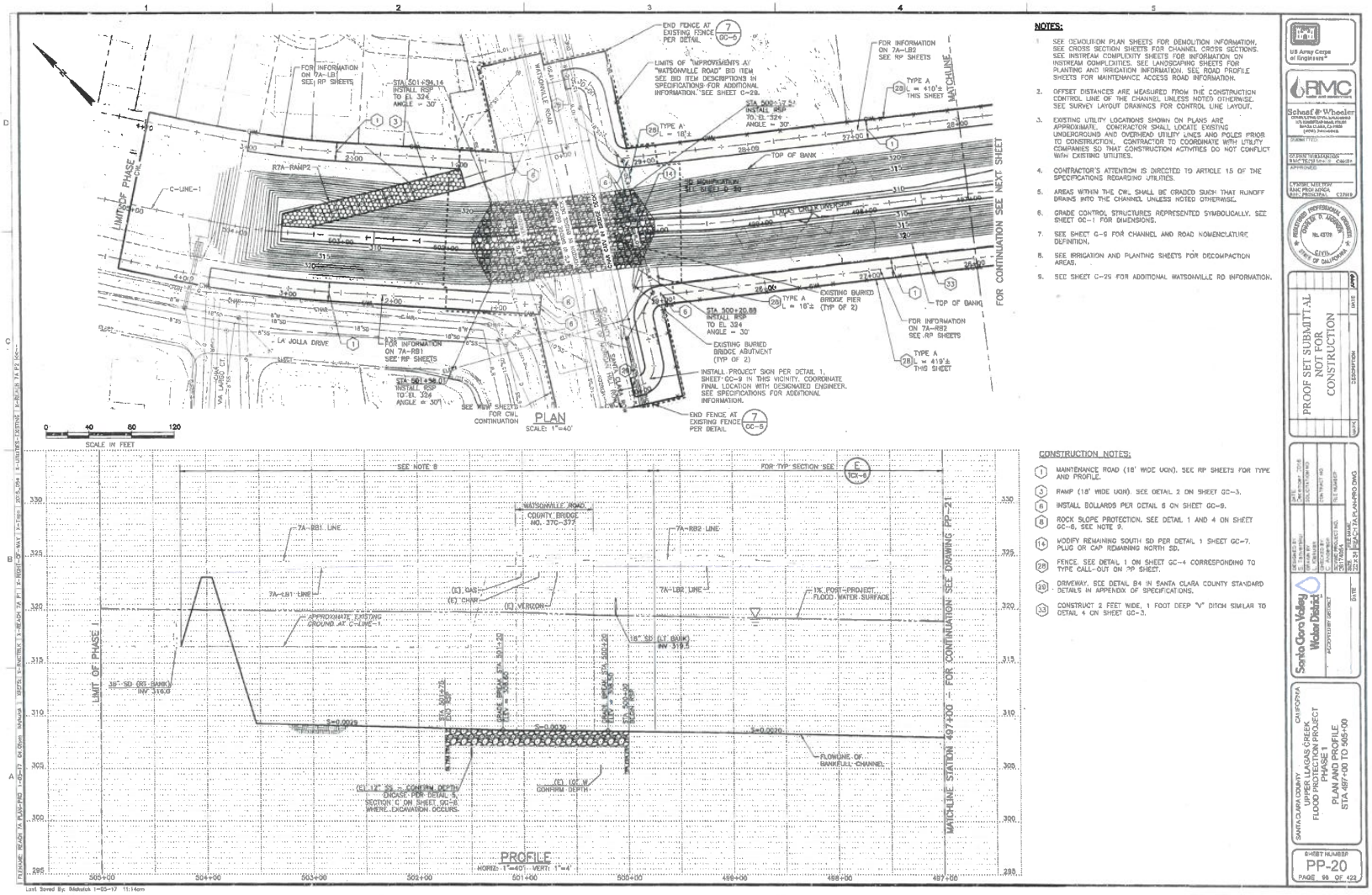

PLAN
SCALE: 1"=40'
PROFILE
HORIZ: 1"=40' VERT: 1"=4'
NOTES:
CONSTRUCTION NOTES:
PROOF SET SUBMITTAL NOT FOR CONSTRUCTION
Santa Clara Valley Water District
SANTA CLARA COUNTY UPPER LLAGAS CREEK FLOOD PROTECTION PROJECT PHASE 1
PLAN AND PROFILE STA 497+00 TO 505+00
PP-20
PAGE 98 OF 422

Exhibit A

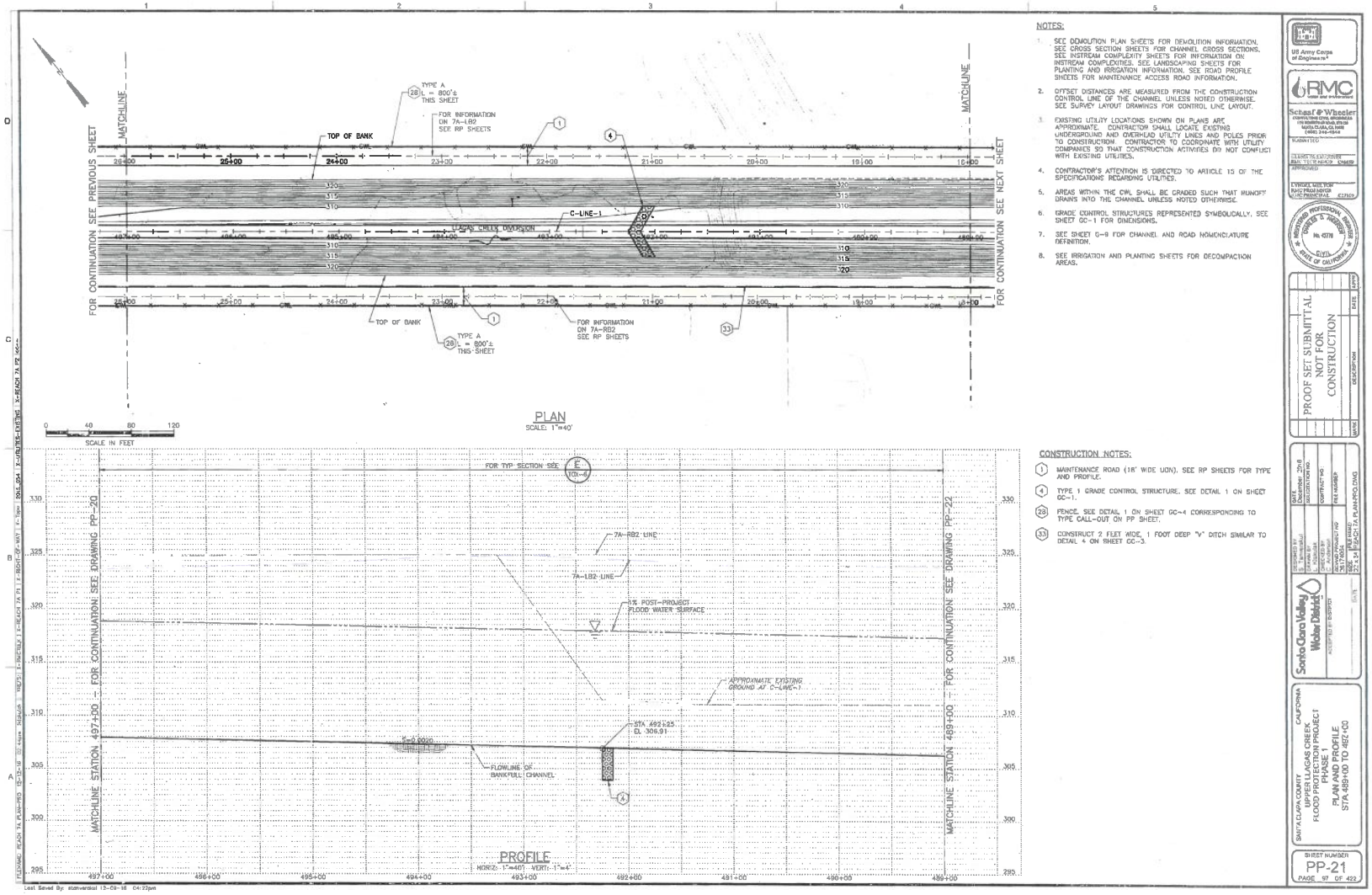

NOTES:
1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE INSTREAM COMPLEXITY SHEETS FOR INFORMATION ON INSTREAM COMPLEXITIES. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT DRAWINGS FOR CONTROL LINE LAYOUT.
3. EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES AND POLES PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES SO THAT CONSTRUCTION ACTIVITIES DO NOT CONFLICT WITH EXISTING UTILITIES.
4. CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 15 OF THE SPECIFICATIONS REGARDING UTILITIES.
5. AREAS WITHIN THE CWL SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS NOTED OTHERWISE.
6. GRADE CONTROL STRUCTURES REPRESENTED SYMBOLICALLY, SEE SHEET GC-1 FOR DIMENSIONS.
7. SEE SHEET G-8 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
8. SEE IRRIGATION AND PLANTING SHEETS FOR DECOMPACTION AREAS.
MATCHLINE
SEE PREVIOUS SHEET
FOR CONTINUATION
SEE NEXT SHEET
TOP OF BANK
TYPE A
L = 800'±
THIS SHEET
FOR INFORMATION
ON 7A-LB2
SEE RP SHEETS
C-LINE-1
LAGAS CREEK DIVERSION
PLAN
SCALE: 1"=40'
SCALE IN FEET
CONSTRUCTION NOTES:
1 MAINTENANCE ROAD (18' WIDE UON). SEE RP SHEETS FOR TYPE AND PROFILE.
4 TYPE 1 GRADE CONTROL STRUCTURE. SEE DETAIL 1 ON SHEET GC-1.
28 FENCE. SEE DETAIL 1 ON SHEET GC-4 CORRESPONDING TO TYPE CALL-OUT ON PP SHEET.
33 CONSTRUCT 2 FEET WIDE, 1 FOOT DEEP "V" DITCH SIMILAR TO DETAIL 4 ON SHEET GC-3.
FOR TYP SECTION SEE
7A-RB2 LINE
7A-LB2 LINE
1% POST-PROJECT FLOOD WATER SURFACE
APPROXIMATE EXISTING GROUND AT C-LINE-1
STA 492+25
EL 309.91
S=0.0020
FLOWLINE OF BANKFULL CHANNEL
MATCHLINE STATION 497+00
MATCHLINE STATION 489+00
FOR CONTINUATION SEE DRAWING PP-20
FOR CONTINUATION SEE DRAWING PP-22
PROFILE
HORIZ: 1"=40' VERT: 1"=4'
PROOF SET SUBMITTAL NOT FOR CONSTRUCTION
Santa Clara Valley Water District
SANTA CLARA COUNTY CALIFORNIA
UPPER LAGAS CREEK FLOOD PROTECTION PROJECT PHASE 1
PLAN AND PROFILE STA 489+00 TO 492+00
SHEET NUMBER PP-21
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Exhibit A

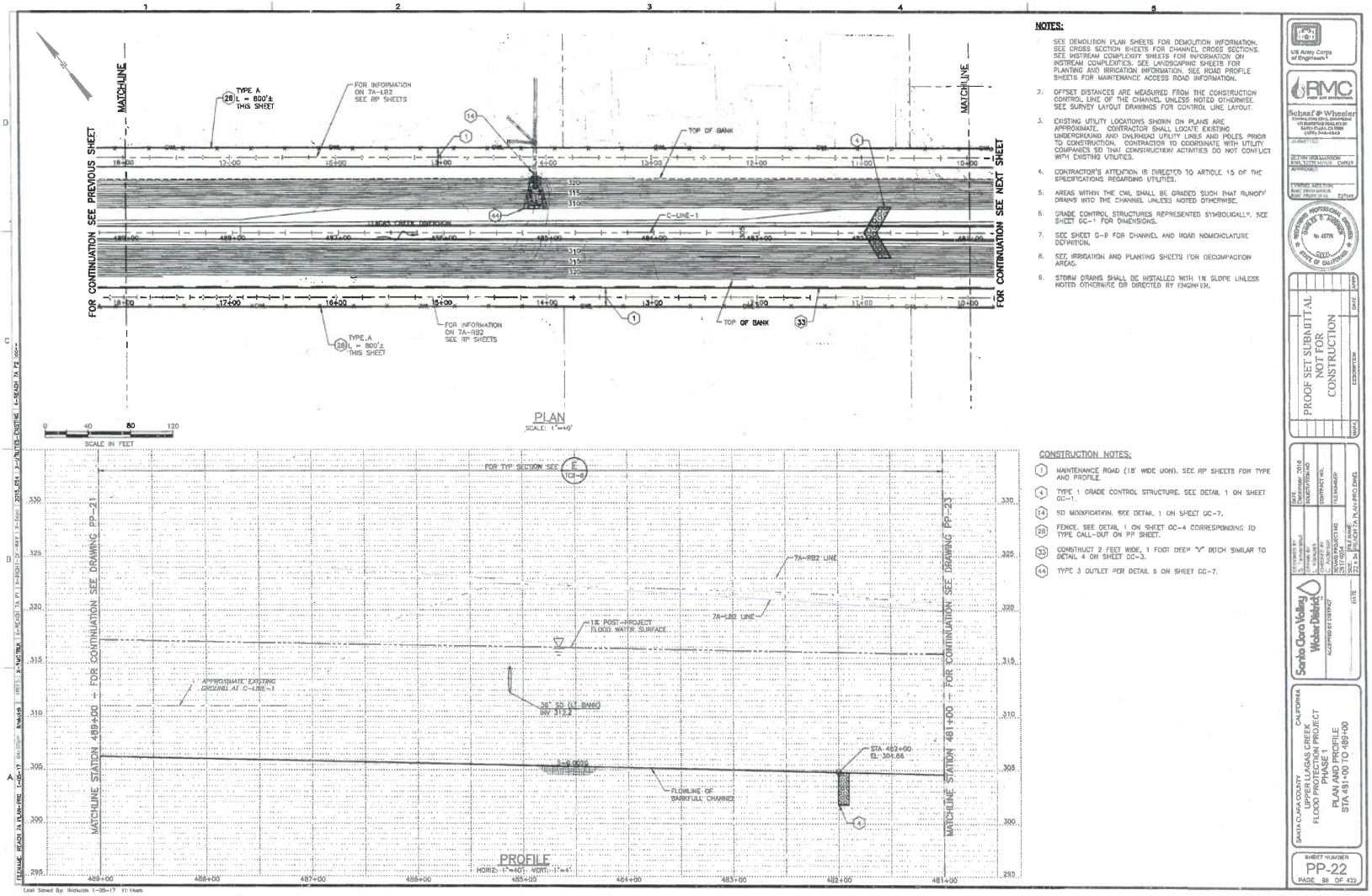

NOTES:
1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE INSTREAM COMPLEXITY SHEETS FOR INFORMATION ON INSTREAM COMPLEXITIES. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT DRAWINGS FOR CONTROL LINE LAYOUT.
3. EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES AND POLES PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES SO THAT CONSTRUCTION ACTIVITIES DO NOT CONFLICT WITH EXISTING UTILITIES.
4. CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 15 OF THE SPECIFICATIONS REGARDING UTILITIES.
5. AREAS WITHIN THE CWL SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS NOTED OTHERWISE.
6. GRADE CONTROL STRUCTURES REPRESENTED SYMBOLICALLY. SEE SHEET GC-1 FOR DIMENSIONS.
7. SEE SHEET G-9 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
8. SEE IRRIGATION AND PLANTING SHEETS FOR DECOMPACTION AREAS.
9. STORM DRAINS SHALL BE INSTALLED WITH 1% SLOPE UNLESS NOTED OTHERWISE OR DIRECTED BY ENGINEER.
MATCHLINE
FOR CONTINUATION SEE PREVIOUS SHEET
FOR CONTINUATION SEE NEXT SHEET
TYPE A (28) L = 800'± THIS SHEET
FOR INFORMATION ON 7A-RB2 SEE RP SHEETS
TOP OF BANK
C-LINE-1
PLAN
SCALE: 1"=40'
0 40 80 120
SCALE IN FEET
CONSTRUCTION NOTES:
1 MAINTENANCE ROAD (18' WIDE UON). SEE RP SHEETS FOR TYPE AND PROFILE
4 TYPE 1 GRADE CONTROL STRUCTURE. SEE DETAIL 1 ON SHEET GC-1.
14 SD MODIFICATION. SEE DETAIL 1 ON SHEET GC-7.
28 FENCE. SEE DETAIL 1 ON SHEET GC-4 CORRESPONDING TO TYPE CALL-OUT ON PP SHEET.
33 CONSTRUCT 2 FEET WIDE, 1 FOOT DEEP "V" DITCH SIMILAR TO DETAIL 4 ON SHEET GC-3.
44 TYPE 3 OUTLET PER DETAIL 6 ON SHEET GC-7.
FOR TYP SECTION SEE TCH-6
7A-RB2 LINE
1% POST-PROJECT FLOOD WATER SURFACE
APPROXIMATE EXISTING GROUND AT C-LINE-1
36" SD @1.84MO INV. 312.2
STA 482+00 EL. 304.86
FLOWLINE OF BANKFULL CHANNEL
MATCHLINE STATION 489+00 – FOR CONTINUATION SEE DRAWING PP-21
MATCHLINE STATION 481+00 – FOR CONTINUATION SEE DRAWING PP-23
PROFILE
HORIZ. 1"=40' VERT. 1"=4'
PROOF SET SUBMITTAL NOT FOR CONSTRUCTION
US Army Corps of Engineers
RMC
Schaaf & Wheeler
Santa Clara Valley Water District
SANTA CLARA COUNTY CALIFORNIA
UPPER LLAGAS CREEK FLOOD PROTECTION PROJECT PHASE 1
PLAN AND PROFILE STA 481+00 TO 489+00
SHEET NUMBER PP-22
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Exhibit A

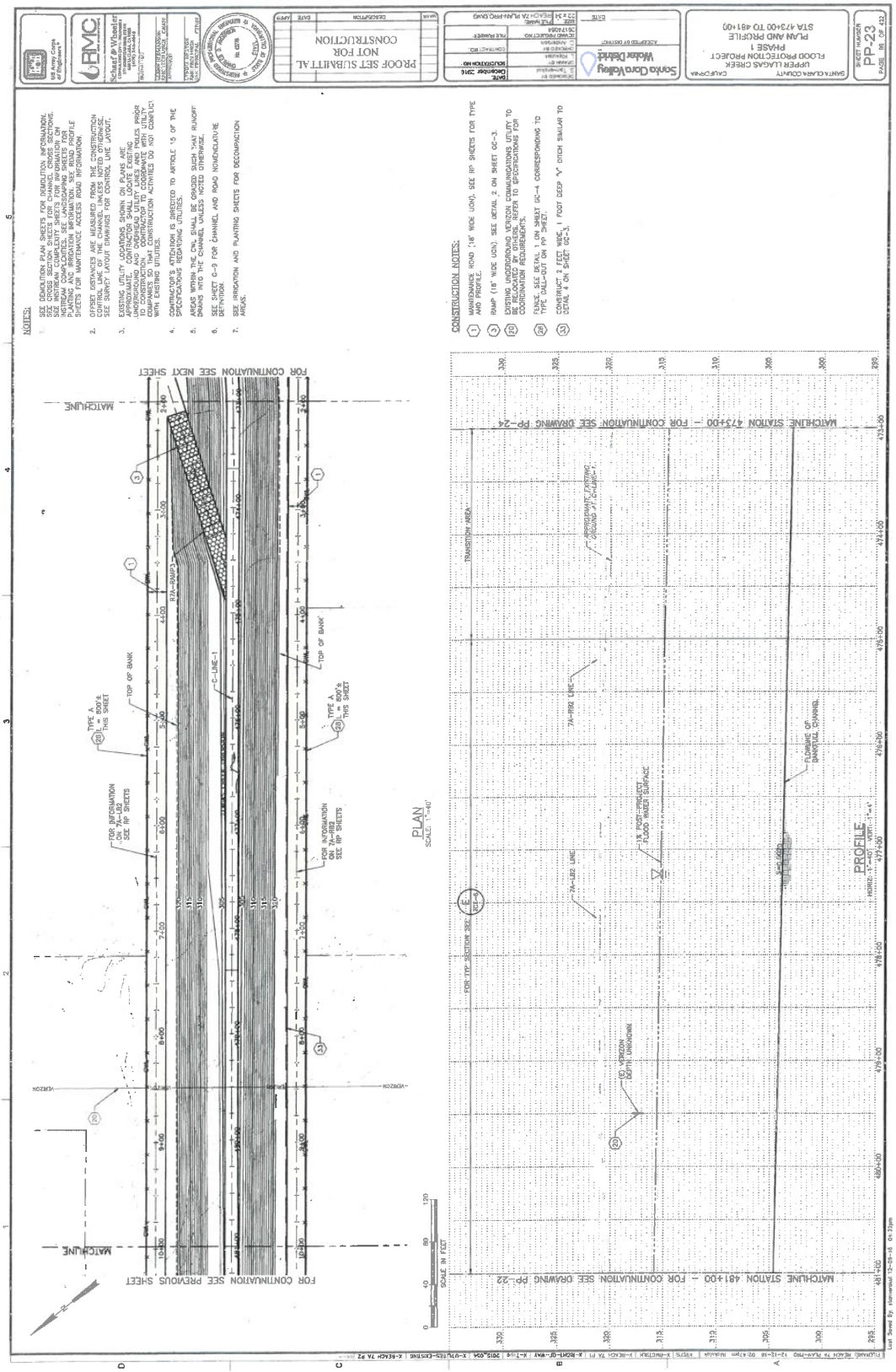

NOTES:
CONSTRUCTION NOTES:
PLAN
SCALE: 1"=40'
PROFILE
HORIZ: 1"=40'
VERT: 1"=4'
MATCHLINE STATION 473+00 - FOR CONTINUATION SEE DRAWING PP-24
MATCHLINE STATION 481+00 - FOR CONTINUATION SEE DRAWING PP-22
FOR CONTINUATION SEE NEXT SHEET
FOR CONTINUATION SEE PREVIOUS SHEET
MATCHLINE
TOP OF BANK
TYPE A
L = 850'±
THIS SHEET
FOR INFORMATION ON 7A-LB2 SEE NP SHEETS
FOR INFORMATION ON 7A-RB2 SEE NP SHEETS
7A-RB2 LINE
7A-LB2 LINE
7A POST-PROJECT FLOOD WATER SURFACE
FLOWLINE OF CHANNEL CHANNEL
APPROXIMATE EXISTING GROUND AT C-LINE-1
C-LINE-1
7A-RAMP3
TRANSITION AREA
FOR TYP. SECTION SEE
SCALE IN FEET
PROOF SET SUBMITTAL
NOT FOR
CONSTRUCTION
Sonoma County Water Agency
SANTA CLARA COUNTY
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PHASE 1
PLAN AND PROFILE
STA 473+00 TO 481+00
PP-23
SHEET NUMBER
PAGE 86 OF 432

Exhibit A

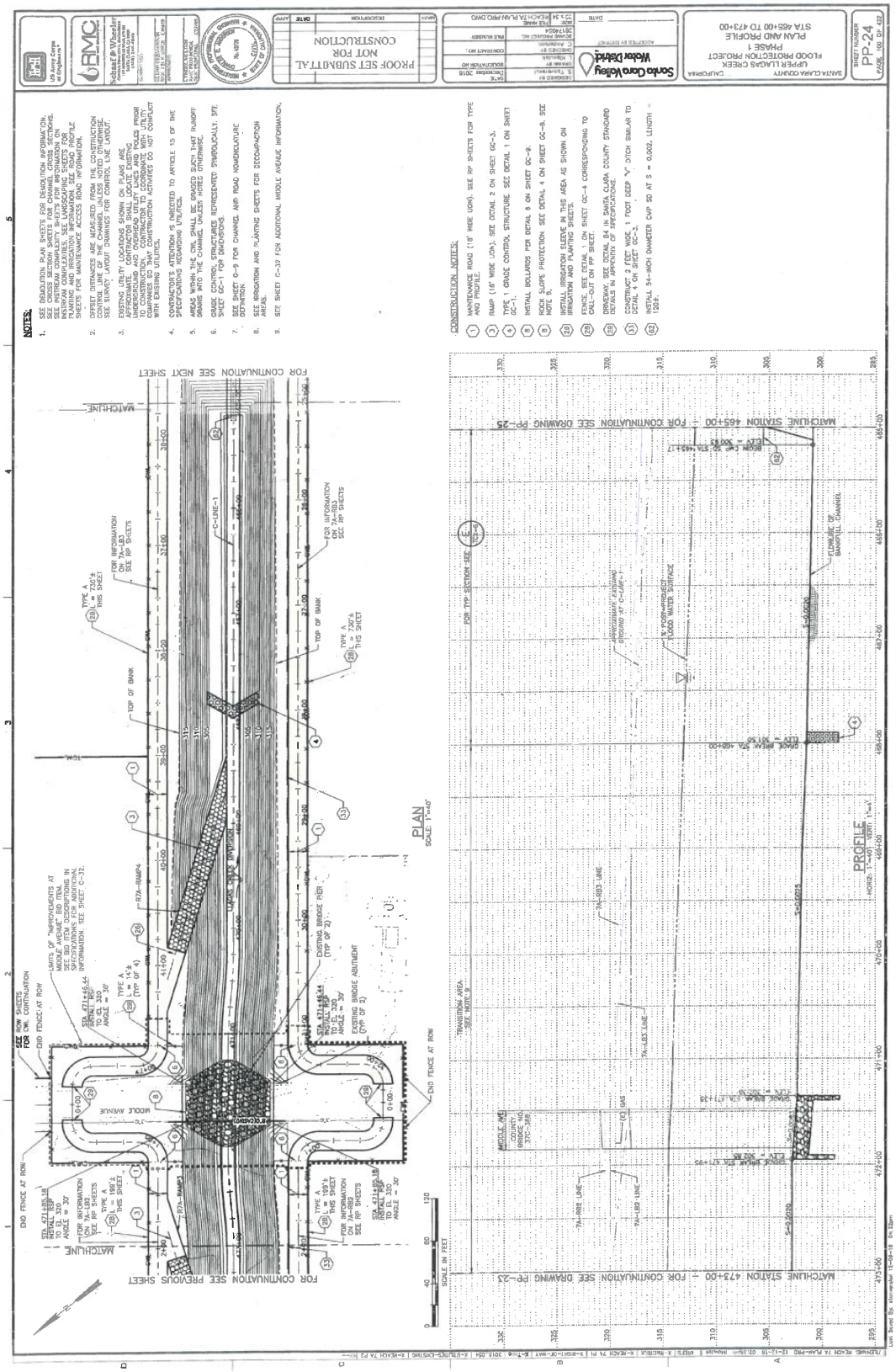

NOTES:
1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE TYPICAL CROSS SECTIONS SHEET FOR ADDITIONAL INFORMATION ON CROSS SECTIONS. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR ADDITIONAL ROADWAY PROFILE INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT DRAWINGS FOR CONTROL LINE LAYOUT.
3. EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL POTHOLE ALL UTILITIES UNDERGROUND AND OVERHEAD UTILITY LINES AND POLES PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES SO THAT CONSTRUCTION ACTIVITIES DO NOT CONFLICT WITH EXISTING UTILITIES.
4. CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 15 OF THE SPECIFICATIONS REGARDING UTILITIES.
5. AREAS WITHIN THE CHL SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS NOTED OTHERWISE.
6. GRADE CONTROL STRUCTURES REPRESENTED SYMBOLICALLY. SEE SHEET C-1 FOR LOCATIONS.
7. SEE SHEET G-9 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
8. SEE IRRIGATION AND PLANTING SHEETS FOR DECOMPACTION AREAS.
9. SEE SHEET C-32 FOR ADDITIONAL MIDDLE AVENUE INFORMATION.
PROOF SET SUBMITTAL NOT FOR CONSTRUCTION
Santa Clara Valley Water District
SANTA CLARA COUNTY CALIFORNIA
UPPER LLAGAS CREEK FLOOD PROTECTION PROJECT PHASE 1 PLAN AND PROFILE STA 465+00 TO 473+00
SHEET NUMBER PP-24
PLAN
SCALE: 1"=40'
PROFILE
HORIZ. SCALE: 1"=40'
VERT. SCALE: 1"=4'
MATCHLINE STATION 473+00 - FOR CONTINUATION SEE DRAWING PP-23
MATCHLINE STATION 465+00 - FOR CONTINUATION SEE DRAWING PP-25
FOR CONTINUATION SEE PREVIOUS SHEET
FOR CONTINUATION SEE NEXT SHEET
MATCHLINE
END FENCE AT ROW
MIDDLE AVENUE
TOP OF BANK
EXISTING BRIDGE ABUTMENT (TYP OF 2)
EXISTING BRIDGE PIER (TYP OF 2)
TRANSITION AREA SEE SHEET C-32
7A-LBR LINE
7A-RBR LINE
7A-LBS LINE
7A-RBS LINE
7A-183 LINE
C-LINE-1
CONSTRUCTION NOTES:
1 MAINTENANCE ROAD (16' WIDE UON). SEE RP SHEETS FOR TYPE AND PROFILE.
3 RAMP (16' WIDE UON). SEE DETAIL 2 ON SHEET GC-3.
4 TYPE 1 GRADE CONTROL STRUCTURE SEE DETAIL 1 ON SHEET GC-1.
6 INSTALL BOLLARDS PER DETAIL 8 ON SHEET GC-9.
8 ROCK SLOPE PROTECTION. SEE DETAIL 4 ON SHEET GC-8. SEE NOTE 2.
28 INSTALL IRRIGATION SLEEVE IN THIS AREA AS SHOWN ON IRRIGATION AND PLANTING SHEETS.
29 FENCE. SEE DETAIL 1 ON SHEET GC-4 CORRESPONDING TO CAL-OUT ON PP SHEET.
30 DRIVEWAY. SEE DETAIL B4 IN SANTA CLARA COUNTY STANDARD DETAILS IN APPENDIX OF SPECIFICATIONS.
33 CONSTRUCT 2 FEET WIDE, 1 FOOT DEEP "V" DITCH SIMILAR TO DETAIL 4 ON SHEET GC-2.
62 INSTALL 54-INCH DIAMETER CMP SD AT S = 0.0052, LENGTH = 185'.
TYPE A, L = 160' THIS SHEET
TYPE A, L = 189' THIS SHEET
FOR INFORMATION ON 7A-183 SEE RP SHEETS
FOR INFORMATION ON 7A-LBR2 SEE RP SHEETS
STA 471+85.18 INSTALL RSP TYPE VL 135 ANGLE = 30°
STA 471+85.44 INSTALL RSP TYPE VL 135 TO EL 320 ANGLE = 30°
STA 471+85.44 INSTALL RSP TYPE VL 135 TO EL 320 ANGLE = 30°
STA 471+85.18 INSTALL RSP TYPE VL 135 ANGLE = 30°
R27A-RAMP4
R27A-RAMP3
LIMITS OF "IMPROVEMENTS AT MIDDLE AVENUE" AS DEFINED IN SECTION 01 11 00 SUMMARY OF WORK FOR BID ITEM DESCRIPTIONS IN SPECIFICATIONS FOR ADDITIONAL INFORMATION. SEE SHEET C-32.
SEE ROW SHEETS FOR CWL CONTINUATION
SCALE IN FEET
0 40 80 120

Exhibit A

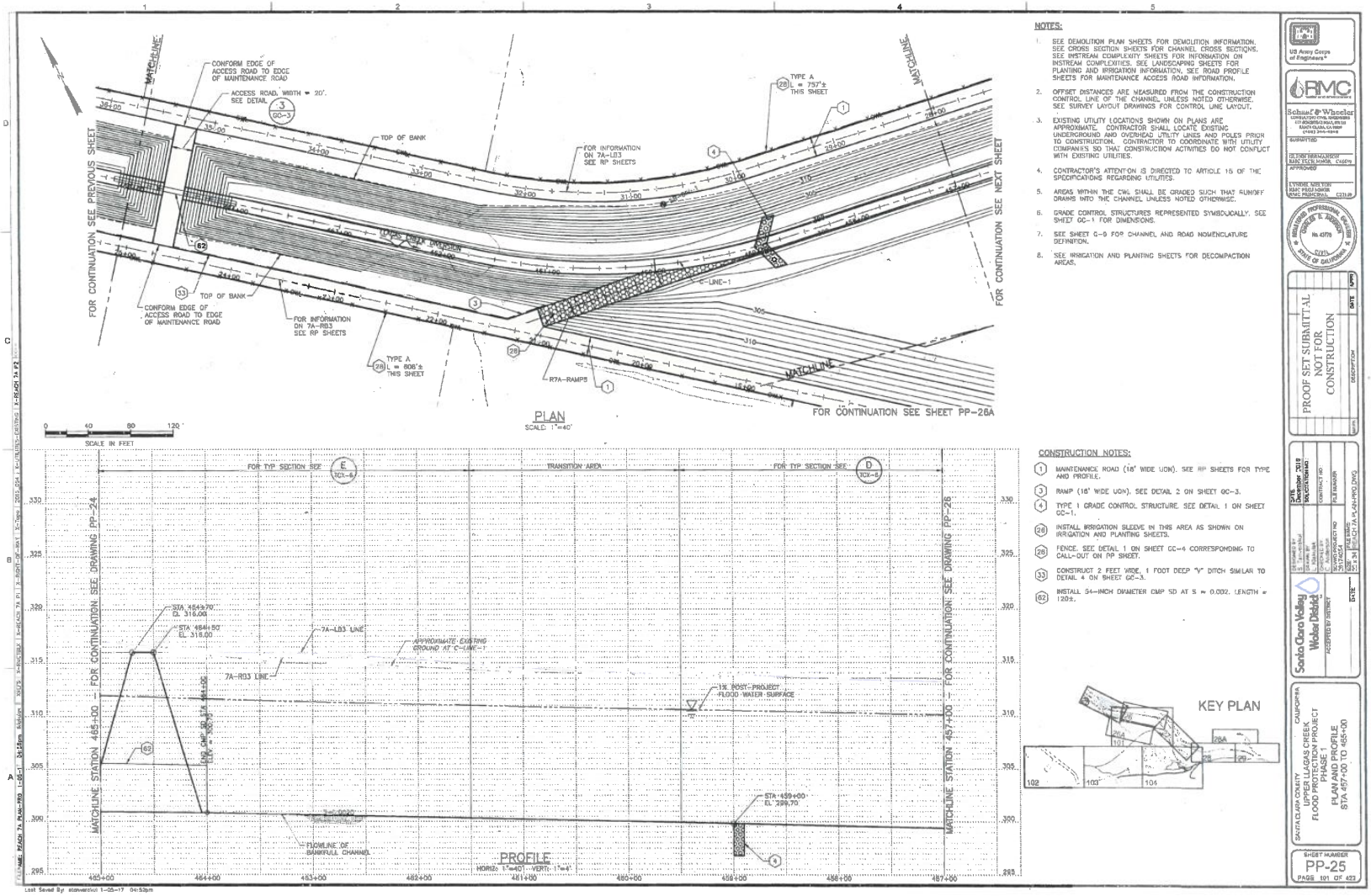

PLAN
SCALE: 1"=40'
PROFILE
HORIZ. 1"=40' VERT. 1"=4
KEY PLAN
NOTES:
CONSTRUCTION NOTES:
PROOF SET SUBMITTAL NOT FOR CONSTRUCTION
Santa Clara Valley Water District
SANTA CLARA COUNTY, CALIFORNIA
UPPER LLAGAS CREEK FLOOD PROTECTION PROJECT
PLAN AND PROFILE STA 457+00 TO 465+00
SHEET NUMBER PP-25
PAGE 101 OF 423

Exhibit A

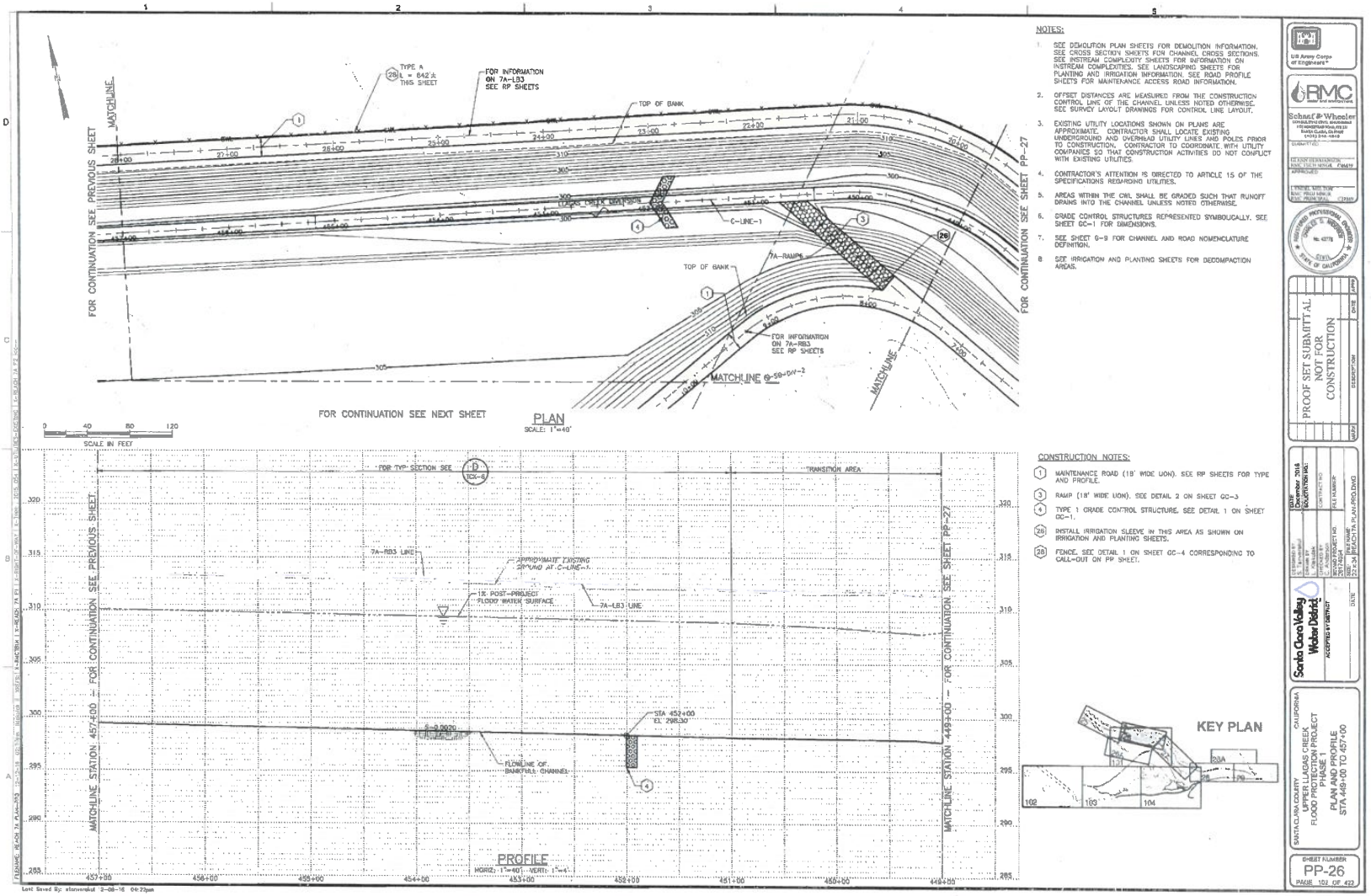

NOTES:
1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE INSTREAM COMPLEXITY SHEETS FOR INFORMATION ON INSTREAM COMPLEXITIES. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT DRAWINGS FOR CONTROL LINE LAYOUT.
3. EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES AND POLES PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES SO THAT CONSTRUCTION ACTIVITIES DO NOT CONFLICT WITH EXISTING UTILITIES.
4. CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 15 OF THE SPECIFICATIONS REGARDING UTILITIES.
5. AREAS WITHIN THE CWL SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS NOTED OTHERWISE.
6. GRADE CONTROL STRUCTURES REPRESENTED SYMBOLICALLY. SEE SHEET GC-1 FOR DIMENSIONS.
7. SEE SHEET G-9 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
8. SEE IRRIGATION AND PLANTING SHEETS FOR DECOMPACTION AREAS.
FOR CONTINUATION SEE PREVIOUS SHEET
MATCHLINE
TYPE A
28 L = 642'±
THIS SHEET
FOR INFORMATION
ON 7A-LB3
SEE RP SHEETS
TOP OF BANK
C-LINE-1
7A-RAMP2
FOR INFORMATION
ON 7A-RB3
SEE RP SHEETS
MATCHLINE @ 59+04
FOR CONTINUATION SEE NEXT SHEET
FOR CONTINUATION SEE PP-27
PLAN
SCALE: 1"=40'
0 40 80 120
SCALE IN FEET
FOR TYP. SECTION SEE D TCX-6
TRANSITION AREA
7A-RB3 LINE
APPROXIMATE EXISTING GROUND AT C-LINE-1
1% POST-PROJECT FLOOD WATER SURFACE
7A-LB3 LINE
STA 452+00
EL 298.30
S=0.0020
FLOWLINE OF BANKFULL CHANNEL
MATCHLINE STATION 457+00
MATCHLINE STATION 449+00
PROFILE
HORIZ: 1"=40' VERT: 1"=6'
CONSTRUCTION NOTES:
1 MAINTENANCE ROAD (18' WIDE UON). SEE RP SHEETS FOR TYPE AND PROFILE.
3 4 RAMP (18' WIDE UON). SEE DETAIL 2 ON SHEET GC-3
TYPE 1 GRADE CONTROL STRUCTURE. SEE DETAIL 1 ON SHEET GC-1
28 INSTALL IRRIGATION SLEEVE IN THIS AREA AS SHOWN ON IRRIGATION AND PLANTING SHEETS.
28 FENCE. SEE DETAIL 1 ON SHEET GC-4 CORRESPONDING TO CALL-OUT ON PP SHEET.
KEY PLAN
102
103
104
U.S Army Corps of Engineers
RMC
Schaaf & Wheeler
PROOF SET SUBMITTAL
NOT FOR
CONSTRUCTION
Santa Clara Valley Water District
SANTA CLARA COUNTY CALIFORNIA
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
PLAN AND PROFILE
STA 449+00 TO 457+00
SHEET NUMBER
PP-26
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Exhibit A

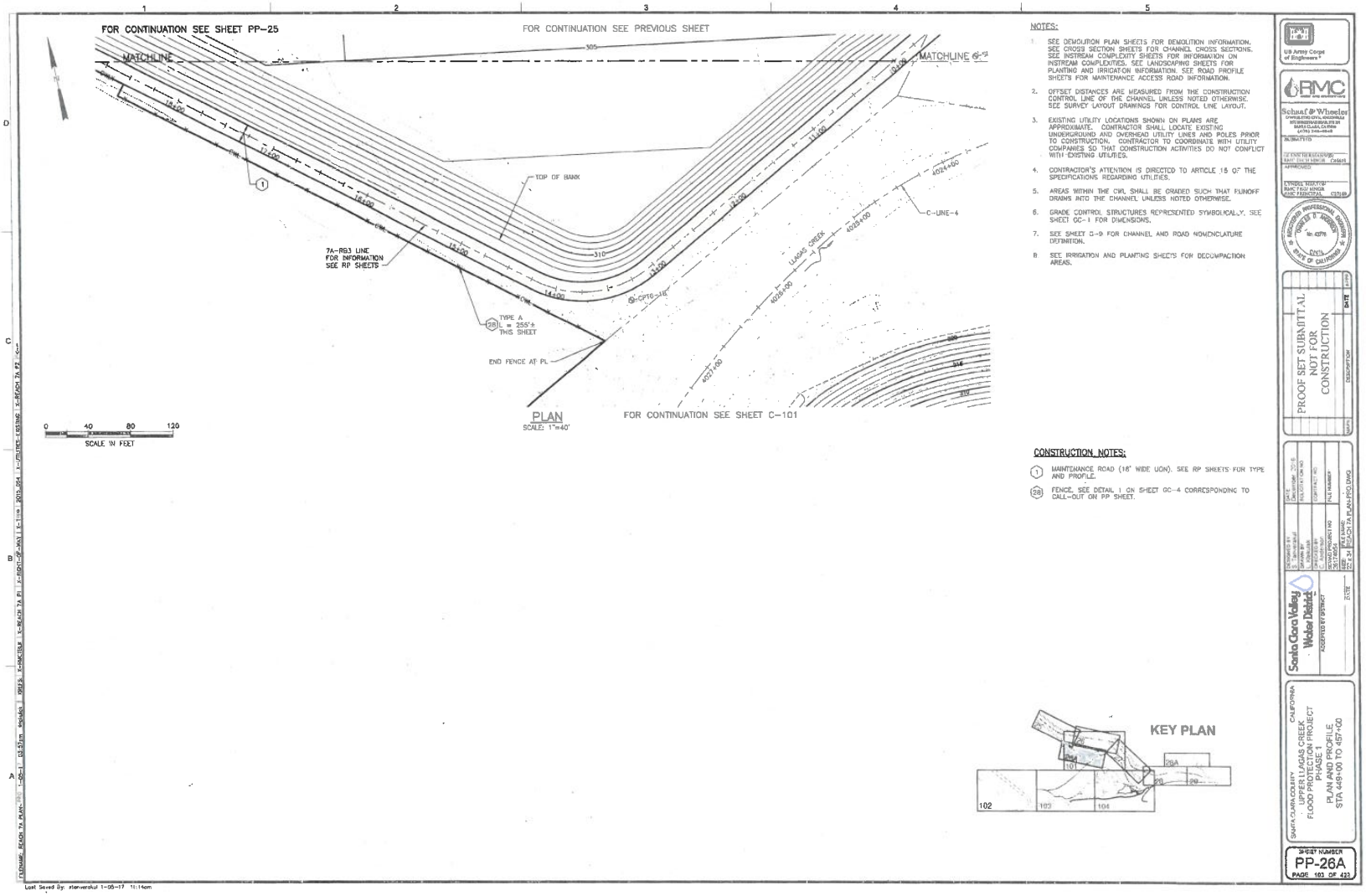

FOR CONTINUATION SEE SHEET PP-25
FOR CONTINUATION SEE PREVIOUS SHEET
MATCHLINE
MATCHLINE
TOP OF BANK
C-LINE-4
LLAGAS CREEK
7A-RB3 LINE
FOR INFORMATION
SEE RP SHEETS
TYPE A
28L = 255'±
THIS SHEET
END FENCE AT PL
PLAN
SCALE: 1"=40'
FOR CONTINUATION SEE SHEET C-101
0 40 80 120
SCALE IN FEET
NOTES:
1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE INSTREAM COMPLEXITY SHEETS FOR INFORMATION ON INSTREAM COMPLEXITIES. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT DRAWINGS FOR CONTROL LINE LAYOUT.
3. EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES AND POLES PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES SO THAT CONSTRUCTION ACTIVITIES DO NOT CONFLICT WITH EXISTING UTILITIES.
4. CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 15 07 THE SPECIFICATIONS REGARDING UTILITIES.
5. AREAS WITHIN THE CWL SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS NOTED OTHERWISE.
6. GRADE CONTROL STRUCTURES REPRESENTED SYMBOLICALLY. SEE SHEET GC-1 FOR DIMENSIONS.
7. SEE SHEET G-9 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
8. SEE IRRIGATION AND PLANTING SHEETS FOR DECOMPACTION AREAS.
CONSTRUCTION NOTES:
1 MAINTENANCE ROAD (18' WIDE UON). SEE RP SHEETS FOR TYPE AND PROFILE.
28 FENCE. SEE DETAIL 1 ON SHEET GC-4 CORRESPONDING TO CALL-OUT ON PP SHEET.
KEY PLAN
PROOF SET SUBMITTAL
NOT FOR
CONSTRUCTION
Santa Clara Valley Water District
UPPER LLAGAS CREEK
FLOOD PROTECTION PROJECT
REACH 7A
PLAN AND PROFILE
STA 449+00 TO 457+00
SHEET NUMBER
PP-26A
PAGE 183 OF 423

Exhibit A

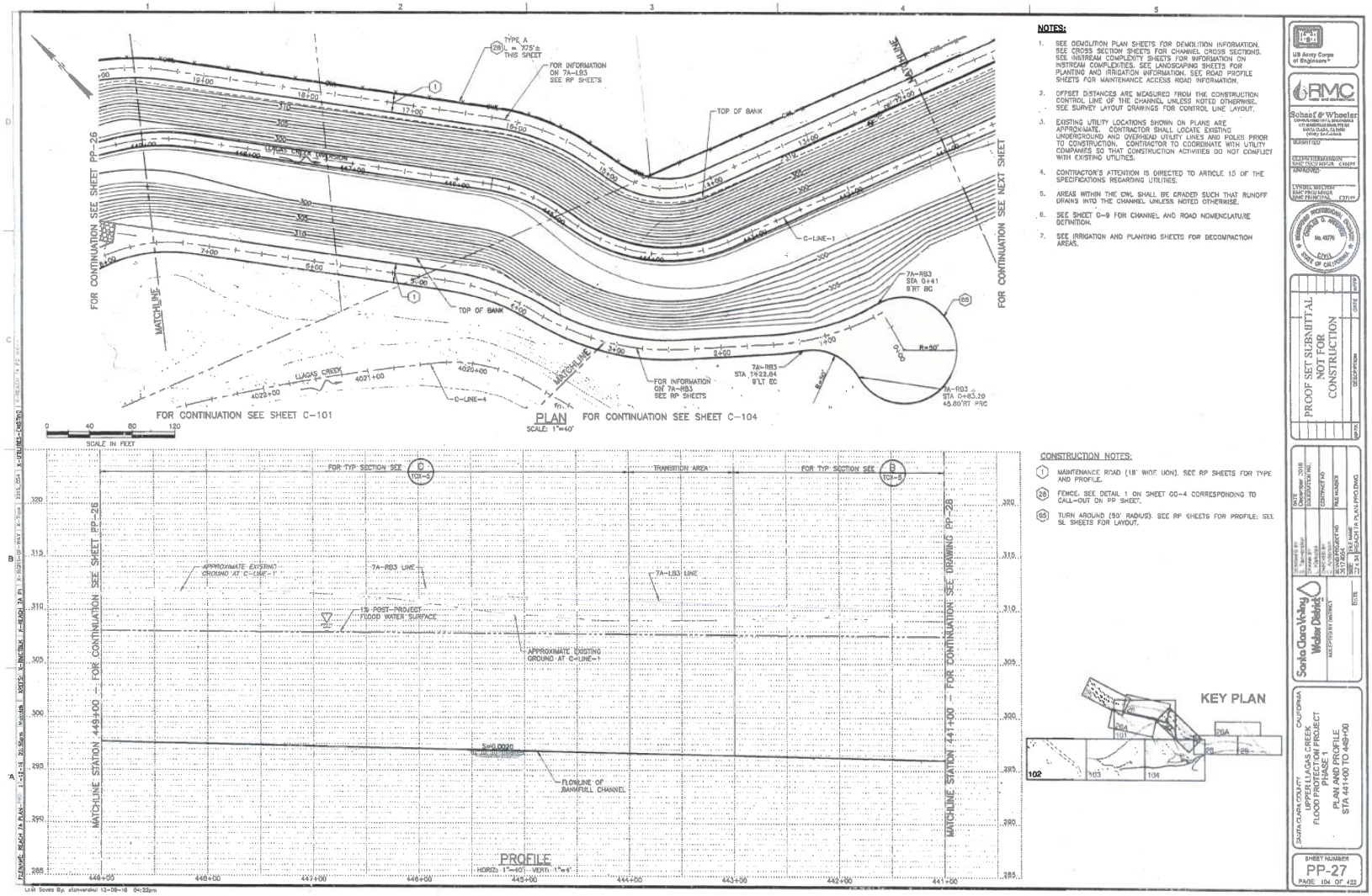

NOTES:
1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE INSTREAM COMPLEXITY SHEETS FOR INFORMATION ON INSTREAM COMPLEXITIES. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT DRAWINGS FOR CONTROL LINE LAYOUT.
3. EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES AND POLES PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES SO THAT CONSTRUCTION ACTIVITIES DO NOT CONFLICT WITH EXISTING UTILITIES.
4. CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 15 OF THE SPECIFICATIONS REGARDING UTILITIES.
5. AREAS WITHIN THE CWL SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS NOTED OTHERWISE.
6. SEE SHEET G-9 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
7. SEE IRRIGATION AND PLANTING SHEETS FOR DECOMPACTION AREAS.
FOR CONTINUATION SEE SHEET PP-26
FOR CONTINUATION SEE NEXT SHEET
FOR CONTINUATION SEE SHEET C-101
FOR CONTINUATION SEE SHEET C-104
PLAN
SCALE: 1"=40'
SCALE IN FEET
CONSTRUCTION NOTES:
1 MAINTENANCE ROAD (18' WIDE UON). SEE PP SHEETS FOR TYPE AND PROFILE.
28 FENCE. SEE DETAIL 1 ON SHEET GG-4 CORRESPONDING TO CALL-OUT ON PP SHEET.
65 TURN AROUND (50' RADIUS). SEE PP SHEETS FOR PROFILE; SEE SL SHEETS FOR LAYOUT.
KEY PLAN
PROFILE
HORIZ: 1"=40' VERT: 1"=4'
PROOF SET SUBMITTAL NOT FOR CONSTRUCTION
UPPER LLAGAS CREEK FLOOD PROTECTION PROJECT
PLAN AND PROFILE STA 441+00 TO 448+00
SHEET NUMBER PP-27
PAGE 104 OF 422

Exhibit A

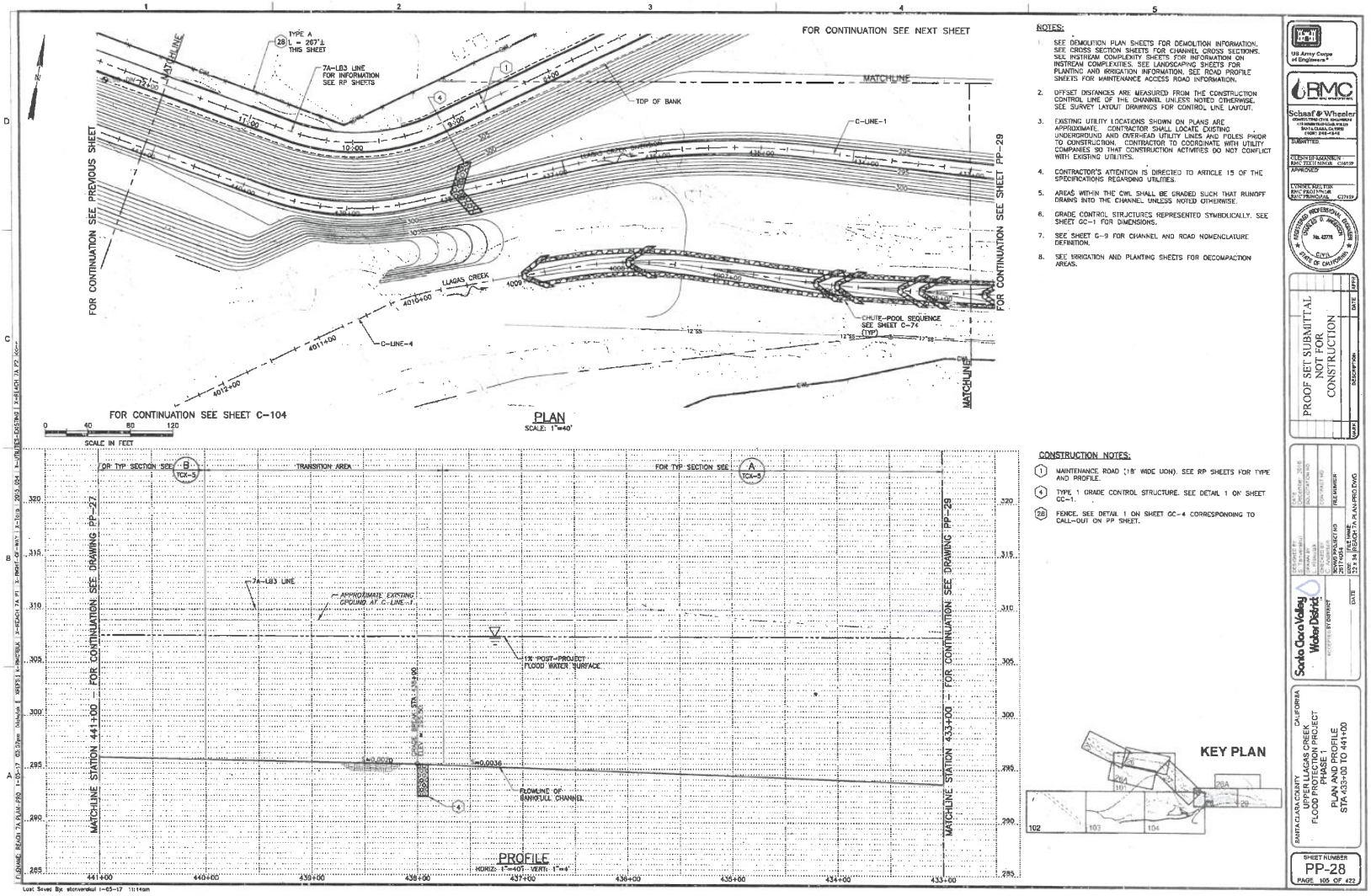

FOR CONTINUATION SEE NEXT SHEET
FOR CONTINUATION SEE PREVIOUS SHEET
FOR CONTINUATION SEE SHEET PP-29
FOR CONTINUATION SEE SHEET C-104
MATCHLINE
TOP OF BANK
C-LINE-1
C-LINE-4
LLAGAS CREEK
CHUTE-POOL SEQUENCE SEE SHEET C-74
TYPE A
28 L = 267'± THIS SHEET
7A-LB3 LINE FOR INFORMATION SEE RP SHEETS
PLAN
SCALE: 1"=40'
SCALE IN FEET
NOTES:
1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE INSTREAM COMPLEXITY SHEETS FOR INFORMATION ON INSTREAM COMPLEXITIES. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT DRAWINGS FOR CONTROL LINE LAYOUT.
3. EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES AND POLES PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES SO THAT CONSTRUCTION ACTIVITIES DO NOT CONFLICT WITH EXISTING UTILITIES.
4. CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 15 OF THE SPECIFICATIONS REGARDING UTILITIES.
5. AREAS WITHIN THE CWL SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS NOTED OTHERWISE.
6. GRADE CONTROL STRUCTURES REPRESENTED SYMBOLICALLY. SEE SHEET GC-1 FOR DIMENSIONS.
7. SEE SHEET G-9 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
8. SEE IRRIGATION AND PLANTING SHEETS FOR DECOMPACTION AREAS.
CONSTRUCTION NOTES:
1 MAINTENANCE ROAD (18' WIDE MIN). SEE RP SHEETS FOR TYPE AND PROFILE.
4 TYPE 1 GRADE CONTROL STRUCTURE. SEE DETAIL 1 ON SHEET GC-1.
28 FENCE. SEE DETAIL 1 ON SHEET GC-4 CORRESPONDING TO CALL-OUT ON PP SHEET.
FOR TYP SECTION SEE B TCX-5
TRANSITION AREA
FOR TYP SECTION SEE A TCX-5
MATCHLINE STATION 441+00 — FOR CONTINUATION SEE DRAWING PP-27
MATCHLINE STATION 433+00 — FOR CONTINUATION SEE DRAWING PP-28
7A-LB3 LINE
APPROXIMATE EXISTING GROUND AT C-LINE-1
1% POST-PROJECT FLOOD WATER SURFACE
FLOWLINE OF BANKFULL CHANNEL
S=0.0020
S=0.0036
PROFILE
HORIZ: 1"=40' VERT: 1"=4'
KEY PLAN
PROOF SET SUBMITTAL NOT FOR CONSTRUCTION
Santa Clara Valley Water District
SANTA CLARA COUNTY CALIFORNIA
UPPER LLAGAS CREEK FLOOD PROTECTION PROJECT PHASE 1
PLAN AND PROFILE STA 433+00 TO 441+00
SHEET NUMBER PP-28
PAGE 105 OF 422

Exhibit A

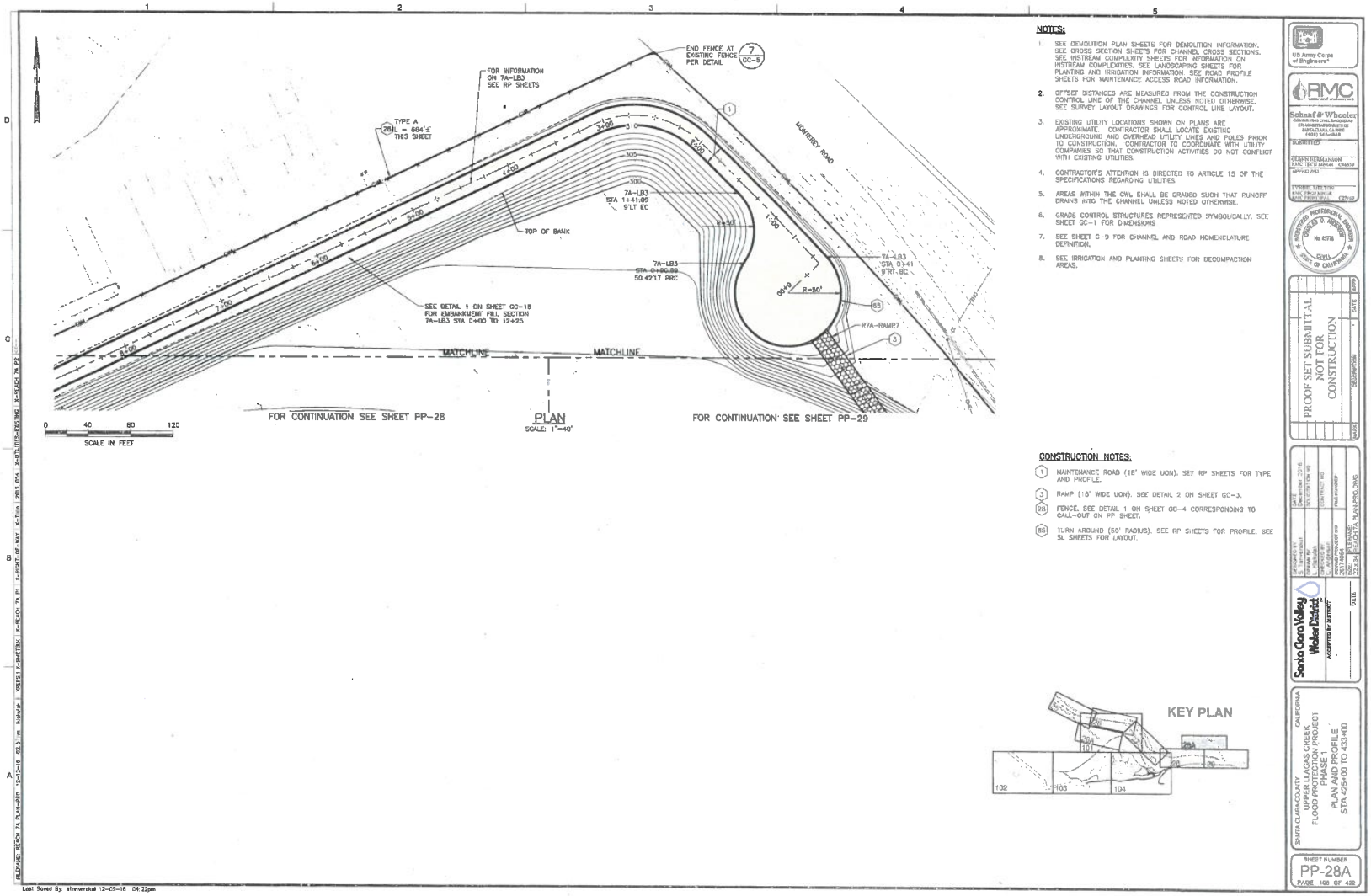
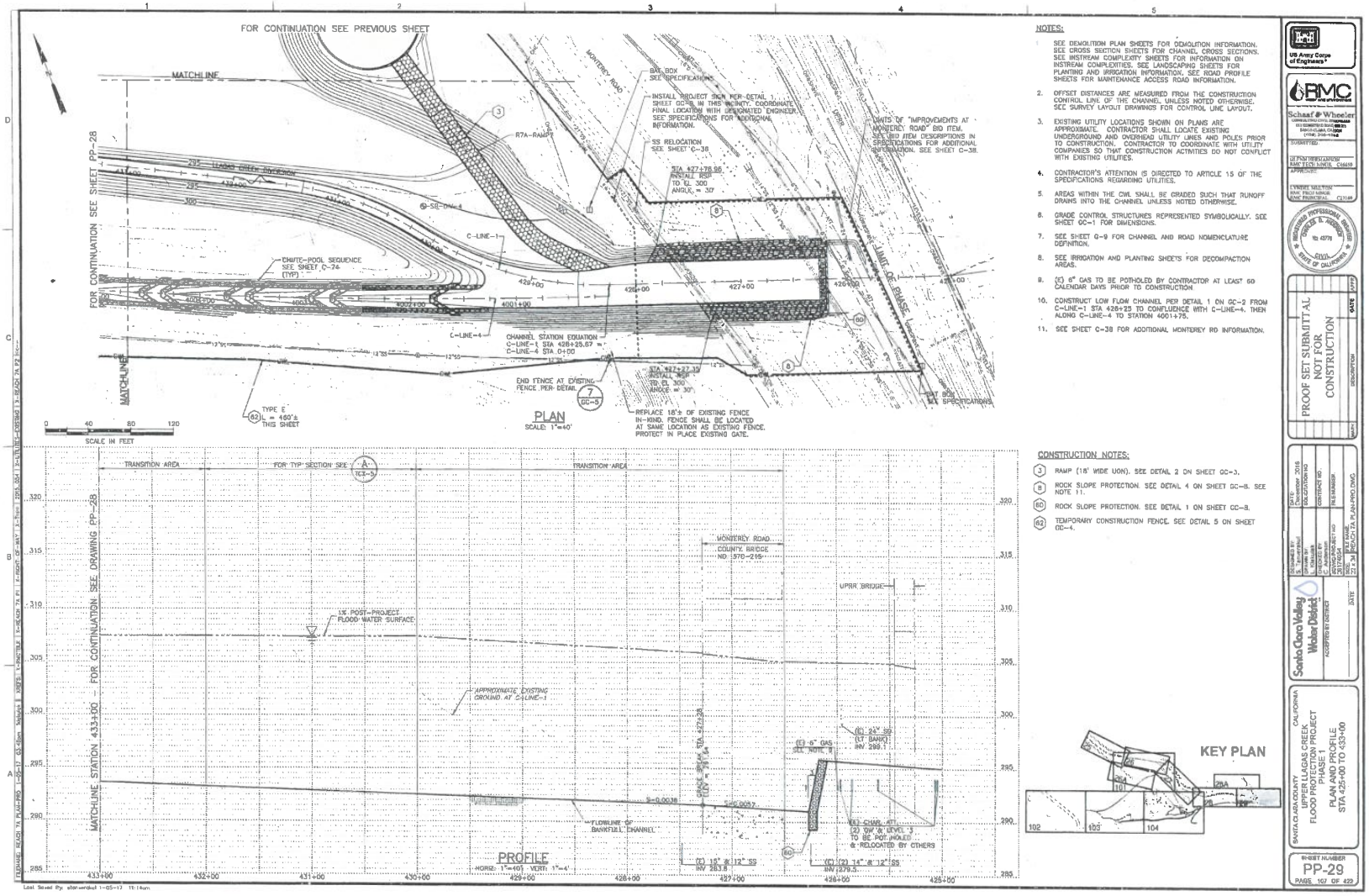

NOTES:
1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE INSTREAM COMPLEXITY SHEETS FOR INFORMATION ON INSTREAM COMPLEXITIES. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT DRAWINGS FOR CONTROL LINE LAYOUT.
3. EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES AND POLES PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES SO THAT CONSTRUCTION ACTIVITIES DO NOT CONFLICT WITH EXISTING UTILITIES.
4. CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 15 OF THE SPECIFICATIONS REGARDING UTILITIES.
5. AREAS WITHIN THE CWL SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS NOTED OTHERWISE.
6. GRADE CONTROL STRUCTURES REPRESENTED SYMBOLICALLY. SEE SHEET GC-1 FOR DIMENSIONS
7. SEE SHEET C-9 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
8. SEE IRRIGATION AND PLANTING SHEETS FOR DECOMPACTION AREAS.
CONSTRUCTION NOTES:
1 MAINTENANCE ROAD (18' WIDE UON). SET RP SHEETS FOR TYPE AND PROFILE.
2 RAMP (18' WIDE UON). SEE DETAIL 2 ON SHEET GC-3.
28L FENCE. SEE DETAIL 1 ON SHEET GC-4 CORRESPONDING TO CALL-OUT ON PP SHEET.
85 TURN AROUND (50' RADIUS). SEE RP SHEETS FOR PROFILE. SEE SL SHEETS FOR LAYOUT.
END FENCE AT EXISTING FENCE PER DETAIL 7 GC-5
FOR INFORMATION ON 7A-LB3 SEE RP SHEETS
TYPE A 28L - 604'± THIS SHEET
MONTEREY ROAD
7A-LB3 STA 1+41.09 9'LT EC
TOP OF BANK
7A-LB3 STA 0+41 9'RT. BC
7A-LB3 STA 0+80.58 50.42'LT PRC
R=50'
R7A-RAMP7
SEE DETAIL 1 ON SHEET GC-18 FOR EMBANKMENT FILL SECTION 7A-LB3 STA 0+00 TO 12+25
MATCHLINE
MATCHLINE
FOR CONTINUATION SEE SHEET PP-28
PLAN
SCALE: 1"=40'
FOR CONTINUATION SEE SHEET PP-29
0 40 80 120
SCALE IN FEET
KEY PLAN
US Army Corps of Engineers
RMC
Schaaf & Wheeler
PROOF SET SUBMITTAL NOT FOR CONSTRUCTION
Santa Clara Valley Water District
SANTA CLARA COUNTY, CALIFORNIA
UPPER LLAGAS CREEK FLOOD PROTECTION PROJECT PHASE 1
PLAN AND PROFILE STA 425+00 TO 433+00
SHEET NUMBER PP-28A
PAGE 106 OF 422

Exhibit A



NOTES:

1. SEE DEMOLITION PLAN SHEETS FOR DEMOLITION INFORMATION. SEE CROSS SECTION SHEETS FOR CHANNEL CROSS SECTIONS. SEE INSTREAM COMPLEXITY SHEETS FOR INFORMATION ON INSTREAM COMPLEXITIES. SEE LANDSCAPING SHEETS FOR PLANTING AND IRRIGATION INFORMATION. SEE ROAD PROFILE SHEETS FOR MAINTENANCE ACCESS ROAD INFORMATION.
2. OFFSET DISTANCES ARE MEASURED FROM THE CONSTRUCTION CONTROL LINE OF THE CHANNEL, UNLESS NOTED OTHERWISE. SEE SURVEY LAYOUT DRAWINGS FOR CONTROL LINE LAYOUT.
3. EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES AND POLES PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES SO THAT CONSTRUCTION ACTIVITIES DO NOT CONFLICT WITH EXISTING UTILITIES.
4. CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 15 OF THE SPECIFICATIONS REGARDING UTILITIES.
5. AREAS WITHIN THE CWL SHALL BE GRADED SUCH THAT RUNOFF DRAINS INTO THE CHANNEL UNLESS NOTED OTHERWISE.
6. GRADE CONTROL STRUCTURES REPRESENTED SYMBOLICALLY. SEE SHEET GC-1 FOR DIMENSIONS.
7. SEE SHEET G-9 FOR CHANNEL AND ROAD NOMENCLATURE DEFINITION.
8. SEE IRRIGATION AND PLANTING SHEETS FOR DECOMPACTION AREAS.
9. (E) 6" GAS TO BE POTHOLED BY CONTRACTOR AT LEAST 60 CALENDAR DAYS PRIOR TO CONSTRUCTION.
10. CONSTRUCT LOW FLOW CHANNEL PER DETAIL 1 ON GC-2 FROM C-LINE-1 STA 428+25 TO CONFLUENCE WITH C-LINE-4, THEN ALONG C-LINE-4 TO STATION 400+75.
11. SEE SHEET C-38 FOR ADDITIONAL MONTEREY RD INFORMATION.

CONSTRUCTION NOTES:

(3) RAMP (18' WIDE UON). SEE DETAIL 2 ON SHEET GC-3.
(8) ROCK SLOPE PROTECTION. SEE DETAIL 4 ON SHEET GC-8. SEE NOTE 11.
(60) ROCK SLOPE PROTECTION. SEE DETAIL 1 ON SHEET GC-8.
(62) TEMPORARY CONSTRUCTION FENCE. SEE DETAIL 5 ON SHEET GC-4.

US Army Corps of Engineers
BMC
Schaaf & Wheeler
SUBMITTED
DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED
PROOF SET SUBMITTAL NOT FOR CONSTRUCTION
DATE
DESCRIPTION
Santa Clara Valley Water District
ACCEPTED BY DISTRICT
DATE
SANTA CLARA COUNTY, CALIFORNIA
UPPER LUCAS CREEK FLOOD PROTECTION PROJECT PHASE 1
PLAN AND PROFILE STA 425+00 TO 433+00
SHEET NUMBER PP-29
PAGE 107 OF 422

Exhibit A


Lake Silveira Trail Alignment
Starswept Ln
Crowder Ave
Legend
Construction_Work_Limit
Proposed Trail Alignment
Right-of-Way
Proposed Trail Alignment
Monterey Rd
Country Ln
Lake Silveira
Potential bridge crossing
Olive Ave
Potential bridge crossing
Atherton Way
Easy St
Atherton Cir
Approximate Scale
GIS themes are for illustration and general analysis purposes only and are not accurate to surveying or engineering standards. Information is not guaranteed to be accurate, current, or complete and use of this information is your responsibility.
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Attachment 3

Summary and Explanation of Encumbrances

MONETARY LIENS

There are no Monetary Liens on the Easement Property

0 acres of Easement Property subject to a lien

15.993 acres of Easement Property *not* subject to a lien

EASEMENTS AND RIGHTS OF WAY

There are currently no easements or rights of way granted within the Easement Property.

15.993 acres of Easement Property subject to easement

0 acres of Easement Property *not* subject to easement

LEASES

There are no Leases on the Easement Property

15.993 acres of Easement Property subject to lease

0 acres of Easement Property *not* subject to lease

COVENANTS, CONDITIONS, RESTRICTIONS AND RESERVATIONS

There is currently a pending condition on the Easement Property. Santa Clara Valley Water District (Property Owner), as a condition of the purchase of the larger Property from the County of Santa Clara (County), shall separately grant an open space easement (Open Space Easement) to the City of Morgan Hill (City) and County for park purposes of trail connectivity. This Open Space Easement is to be recorded on the larger Property immediately following recordation of the Mitigation Conservation Easement (Easement Property).

- Preliminary Report Exception or Exclusion #: Not applicable
- Date: Not applicable
- Grantor/Property Owner: Santa Clara Valley Water District
- Grantee(s): City of Morgan Hill, County of Santa Clara
- Holder: Land Trust of Santa Clara Valley
- Description: The Property Owner shall separately grant an Open Space Easement to the County and the City for park purposes of trail connectivity through linkage of the site to the regional system of trails within the geographic boundary of Santa Clara County, scenic viewshed protection, habitat conservation and open space preservation consistent with the 1995 Countywide Trails Master Plan, as amended from time to time. This Open Space Easement shall be subordinate to the Mitigation Conservation Easement (Easement Property). See **Attachment 2**, for Deed #24172724, recorded May 7, 2019 describing this Open Space Easement.
- Analysis: This Open Space easement will not affect the Conservation Easement (Easement Property) or the Conservation Values to the Easement Property since the Open Space Easement shall be subordinate to the Easement Property.

15.993 acres of Easement Property subject to exception/exclusion

0 acres of Easement Property *not* subject to exception/exclusion

OTHER INTERESTS (INCLUDING MINERAL OR OTHER SEVERED INTERESTS)
There is currently one agreement encompassing the Conservation Easement that is not recorded on Title.

- Preliminary Report Exception or Exclusion #: Not applicable
- Date: August 28, 2018
- Grantor: Santa Clara Valley Water District (Property Owner), a special district organized and existing under the laws of the State of California
- Grantee(s): City of Morgan Hill, a municipal corporation of the State of California
- Holder: Not applicable
- Description: The Property Owner's Board of Directors approved on August 28, 2018 the execution of a Joint Use Agreement (JUA) #A4201M between the City and the Property Owner for West Little Llagas Creek between Monterey Road and Ciolino Avenue in association with the Upper Llagas Creek Flood Protection Project.
- Analysis: This Agreement will not affect the Conservation Easement or the Conservation Values to the Easement Property since this JUA agreement (Article 2) is subordinate to the terms of the Conservation Easement. In addition, either party may terminate the JUA without cause (Article 16). See **Attachment 2**, for a copy of the Joint Use Agreement (#A4201M) between the Property Owner and the City.

There are no other interests on the Easement Property

15.993 acres of Easement Property subject to interest

0 acres of Easement Property *not* subject to interest

Attachment 4
Easement Property Legal Plat and Description

SANTA CLARA VALLEY WATER DISTRICT
San Jose, California

PROJECT: LLAGAS CREEK RESU File No.: 5010-229.1

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF MORGAN HILL, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, BEING A PORTION OF PARCEL 1 AND PARCEL 3 AS SHOWN ON THAT CERTAIN PARCEL MAP FILED IN BOOK 432 AT PAGE 29 IN THE OFFICE OF THE RECORDER, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE INTERSECTION OF THE CENTERLINE OF OLIVE AVENUE (60.00 FEET WIDE) WITH THE NORTHWESTERLY LINE OF PARCEL 3 AS SHOWN ON SAID MAP;

THENCE ALONG SAID NORTHWESTERLY LINE, NORTH 61°50'14" EAST, 1,712.76 FEET TO A POINT ON THE NORTHEASTERLY LINE OF SAID PARCEL 3;

THENCE ALONG SAID NORTHEASTERLY LINE, SOUTH 70°23'40" EAST, 86.99 FEET TO THE **POINT OF BEGINNING**;

THENCE CONTINUING ALONG SAID NORTHEASTERLY LINE OF SAID PARCEL 3 AND ALONG THE NORHTWESTERLY LINE OF PARCEL 1 AS SHOWN ON SAID MAP, SOUTH 70°23'40" EAST, 132.15 FEET;

THENCE LEAVING SAID NORTHWESTERLY LINE OF SAID PARCEL 1, SOUTH 55°08'06" EAST, 189.44 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 180.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 36°35'24", AN ARC LENGTH OF 114.95 FEET;

THENCE SOUTH 18°32'42" EAST, 134.07 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 360.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 43°53'06", AN ARC LENGTH OF 275.74 FEET;

THENCE SOUTH 24°34'39" WEST, 40.66 FEET;

THENCE SOUTH 77°04'33" WEST, 552.38 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 26.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 47°08'34", AN ARC LENGTH OF 21.39 FEET;

THENCE NORTH 55°46'53" WEST, 148.90 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 180.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 94°40'37", AN ARC LENGTH OF 297.44 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT, HAVING A RADIUS OF 122.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 59°46'11", AN ARC LENGTH OF 127.27 FEET;

THENCE SOUTH 89°18'41" WEST, 13.69 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 60.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 55°22'46", AN ARC LENGTH OF 57.99 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT, HAVING A RADIUS OF 220.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 65°38'00", AN ARC LENGTH OF 252.01 FEET;

THENCE NORTH 80°26'05" WEST, 187.51 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 140.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 65°48'22", AN ARC LENGTH OF 160.79 FEET;

THENCE NORTH 14°37'42" WEST, 55.16 FEET;

THENCE NORTH 79°47'32" EAST, 69.49 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 500.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 29°02'53", AN ARC LENGTH OF 253.49 FEET;

THENCE NORTH 50°44'39" EAST, 210.95 FEET TO THE BEGINNING OF A CURVE TO THE LEFT, HAVING A RADIUS OF 1,000.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 09°37'57", AN ARC LENGTH OF 168.12 FEET TO THE BEGINNING OF A REVERSE CURVE TO THE RIGHT HAVING A RADIUS OF 1,490.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 16°04'40", AN ARC LENGTH OF 418.11 FEET TO THE BEGINNING OF A COMPOUND CURVE TO THE RIGHT, HAVING A RADIUS OF 400.00 FEET;

THENCE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 29°31'24", AN ARC LENGTH OF 206.11 FEET TO A POINT ON THE NORTHEASTERLY LINE OF SAID PARCEL 3 TO WHICH A RADIAL BEARS NORTH 03°17'14" WEST, SAID POINT ALSO BEING THE **POINT OF BEGINNING.**

CONTAINING 15.993 ACRES OF LAND, MORE OR LESS.

BASIS OF BEARINGS:

BEARINGS ARE BASED ON AND IDENTICAL TO THAT CERTAIN PARCEL MAP FILED IN BOOK 432 OF MAPS AT PAGE 29, IN THE OFFICE OF THE RECORDER, COUNTY OF SANTA CLARA, STATE OF CALIFORNIA.

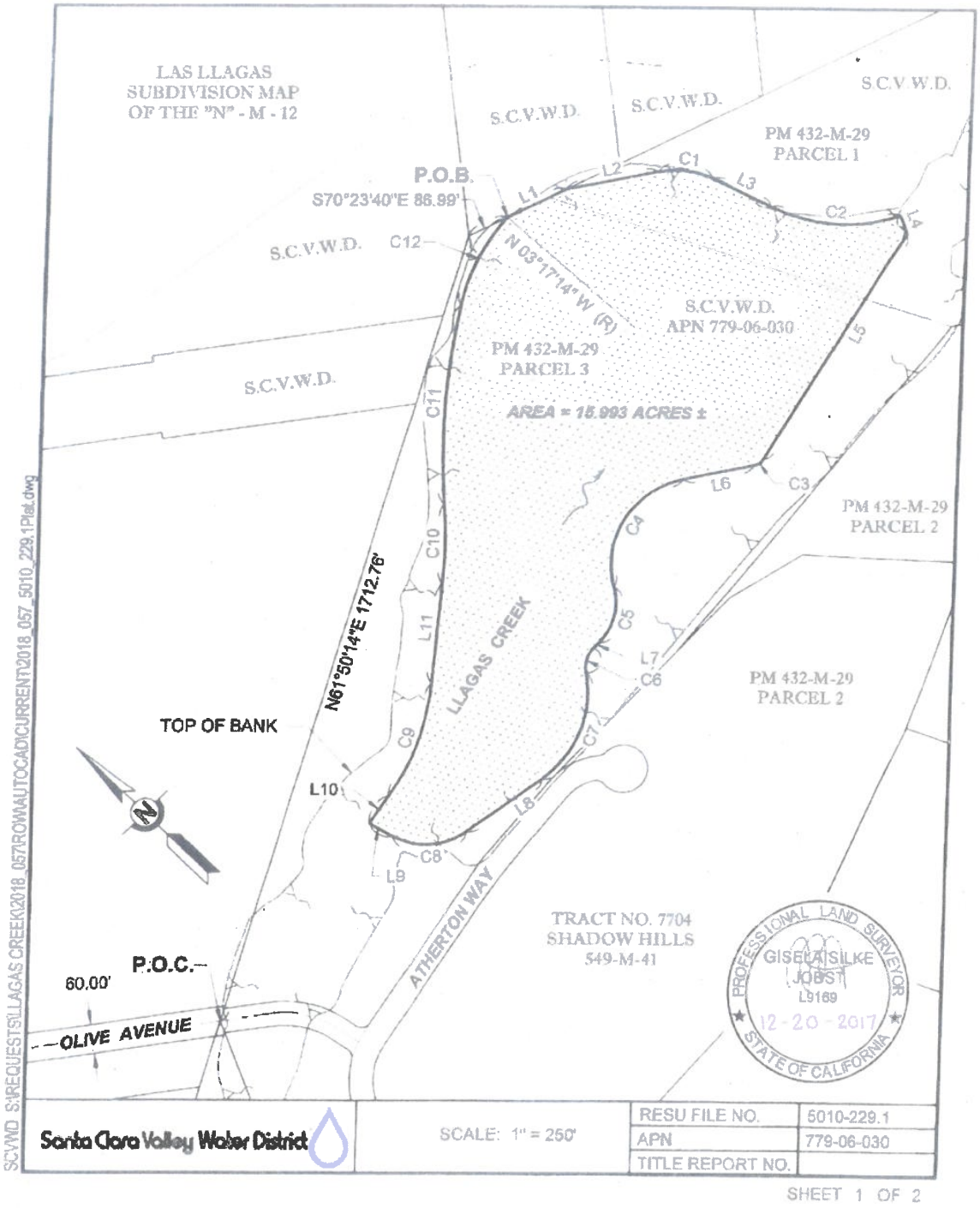
SURVEYOR'S STATEMENT:

THE DESCRIPTION WAS PREPARED BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE LAND SURVEYOR'S ACT.

GISELA SILKE JOBST, L9169 Date



S:\REQUESTS\LLAGAS CREEK\2018_057\ROW\AUTOCAD\CURRENT\2018_057_5010_229.1Legal.docx


LAS LLAGAS
SUBDIVISION MAP
OF THE "N" - M - 12
S.C.V.W.D.
S.C.V.W.D.
S.C.V.W.D.
PM 432-M-29
PARCEL 1
P.O.B.
S70°23'40"E 86.99'
L1
L2
C1
L3
C2
L4
S.C.V.W.D.
C12
N 03°17'14" W (R)
S.C.V.W.D.
APN 779-06-030
PM 432-M-29
PARCEL 3
L5
S.C.V.W.D.
C11
AREA = 15.993 ACRES ±
L6
C3
PM 432-M-29
PARCEL 2
C4
C10
N61°50'14"E 1712.76'
LLAGAS CREEK
C5
L11
L7
C6
PM 432-M-29
PARCEL 2
TOP OF BANK
C9
C7
L10
L8
C8
L9
ATHERTON WAY
TRACT NO. 7704
SHADOW HILLS
549-M-41
P.O.C.
60.00'
OLIVE AVENUE
PROFESSIONAL LAND SURVEYOR
GISELA SILKE JOBST
L9189
12-20-2017
STATE OF CALIFORNIA
SCVWD S:\REQUEST\LLAGAS CREEK\2018_057\ROW\AUTOCAD\CURRENT\2018_057_5010_229.1Plat.dwg
Santa Clara Valley Water District
SCALE: 1" = 250'
RESU FILE NO. 5010-229.1
APN 779-06-030
TITLE REPORT NO.
SHEET 1 OF 2

Line Table		
Line #	Direction	Length
L1	S70°23'40"E	132.15'
L2	S55°08'06"E	189.44'
L3	S18°32'42"E	134.07'
L4	S24°34'39"W	40.66'
L5	S77°04'33"W	552.38'
L6	N55°46'53"W	148.90'
L7	S89°18'41"W	13.69'
L8	N80°26'05"W	187.51'
L9	N14°37'42"W	55.16'
L10	N79°47'32"E	69.49'
L11	N50°44'39"E	210.95'

Curve Table			
Curve #	Radius	Delta	Length
C1	180.00'	36°35'24"	114.95'
C2	360.00'	43°53'06"	275.74'
C3	26.00'	47°08'34"	21.39'
C4	180.00'	94°40'37"	297.44'
C5	122.00'	59°46'11"	127.27'
C6	60.00'	55°22'46"	57.99'
C7	220.00'	65°38'00"	252.01'
C8	140.00'	65°48'22"	160.79'
C9	500.00'	29°02'53"	253.49'
C10	1000.00'	9°37'57"	168.12'
C11	1490.00'	16°04'40"	418.11'
C12	400.00'	29°31'24"	206.11'

SCVWD S:\REQUESTS\LLAGAS CREEK\2018_057\ROW\AUTOCAD\CURRENT\2018_057_5010_229.1Plat.dwg

Santa Clara Valley Water District

SCALE: N.T.S.

RESU FILE NO.	5010-229.1
APN	779-06-030
TITLE REPORT NO.	

SHEET 2 OF 2