# ANNUAL ROUTINE MAINTENANCE PLAN

## FISCAL YEAR 2024-2025

**Prepared by**

**The Santa Barbara County Flood Control and Water Conservation District**

**SANTA BARBARA COUNTY FLOOD CONTROL DISTRICT**
**HISTORY AND PROCESS FOR THE**
**ANNUAL ROUTINE MAINTENANCE PLAN**

## ORIGIN OF THE PROGRAM

The Santa Barbara Flood Control District's (District) Annual Routine Maintenance Program was developed after many years of environmental study and coordination with the public, environmental groups, and permitting agencies. In 1987, the Board directed District staff to prepare a Program EIR on routine maintenance activities to: *"… provide a systematic approach to reviewing future flood control activities…offer feasible mitigation and/or alternative maintenance techniques which provide adequate protection against flood damage in the least environmentally damaging way."* In May 1990, a draft Program EIR was issued for public review. A final Program EIR was issued in March 1991 which identified an Environmentally Superior Alternative. The PEIR included numerous mitigation measures (called Standard Maintenance Practices) to avoid or reduce specific impacts to botanical resources, wildlife, water quality, stream geomorphology, cultural resources, and aesthetics.

In June 1991, the Board convened an Interagency and Public Advisory Committee (IPAC) to work with the District to develop a revised Maintenance Program, based on the EIR's Environmentally Superior Alternative. The IPAC met on seven occasions and developed, through a consensus process, a revised list of Standard Maintenance Practices (SMPs) and an annual planning and project approval process. Together, these products represented the revised Environmentally Superior Alternative that was recommended to the Board. The project was ultimately approved in March 1992 when an Addendum to the 1991 Program EIR was completed.

In 2001, after successfully implementing the Maintenance Program for nine years, the District determined that the Program needed revision for the reasons described below.

- Include new information about threatened and endangered species.
- Address water quality impacts in a more sophisticated manner.
- Consider new analytic tools for assessing channel capacity and geomorphology.
- Include the Lower Santa Ynez River maintenance into the annual program.
- Replace the Standard Maintenance Practices with newly written mitigation measures that directly correlate to identify impacts.
- Improve the format and organization of the Program EIR.
- Include a variety of bank and grade stabilization measures in the program.
- Update the Habitat Restoration Plan
- Assess the Impacts of the Los Carneros Mitigation Bank.

Following public review and comment in 2001 a Final Program Environmental Impact Report for the Updated Routine Maintenance Program was approved by the Board of Supervisors on December 11, 2001.

The 2024/2025 Annual Routine Maintenance Plan marks the 33rd Annual Plan that has been implemented since the Program's inception. The District is providing the following history and process information on the Annual Routine Maintenance Plan to further explain

the Program and demonstrate the District's commitment to avoidance, minimization and compensation.

## ANNUAL ROUTINE MAINTENANCE PLAN

### OBJECTIVES

The objectives of the routine maintenance program are to maintain the capacity of key watercourses in the County, to preserve existing conveyance capacity and prevent the accumulation of obstructing vegetation and sediments that could increase existing flood hazards that could then result in damage to life, and public property and infrastructure. The extent and frequency of maintenance are dependent upon many factors including the availability of funds from individual flood zones, the degree of flood hazard, and the environmental impacts of the maintenance actions. The planning process undertaken to formulate the annual maintenance plan and the maintenance practices that are used by the District first avoids and then minimizes environmental impacts to natural habitats, water quality, sensitive species, and natural fluvial processes.

It is extremely important to understand that the implementation of the District's maintenance program, with its approach to avoidance and minimization, avoids the severe environmental impacts of increased flooding, bank erosion, habitat loss, and the associated impacts to water quality that would occur if the District did not provide routine maintenance within key watercourses throughout the county.

### PLANNING STEPS AND CRITERIA:

The District's process to determine what maintenance tasks are proposed each year follows the "A*void, Minimize, Compensate*" chain of logic. The process includes field surveys, engineering analysis, natural resource assessment, prioritization, impact assessment, and strategies to modify work methods to balance flood control objectives with environmental protection, riparian habitat health, sensitive species protection, and water quality protection. Also considered are qualitative criteria made by experienced Flood Control staff.

It is important to note that each work site is controlled by many factors, site-specific parameters, anticipated weather events, watershed processes, and overall County budget constraints.

**STEP 1: Field Survey.**

Each year in March and April, District staff inspects all of the County's maintained drainages. A total of 67 drainages are specifically inspected (36 on the south coast and 31 in North County) for a total of approximately 105 miles of inspected drainages. The staff includes the Maintenance Superintendent, Operations and Environmental Manager, District Biologist, Environmental Planner, and Maintenance staff. For situations needing engineering expertise, engineering staff or consultants may also participate in the field inspections. The staff discuss maintenance needs and objectives in the field, determines what reasonable alternatives exist, and develops avoidance/minimization/compensation measures for each maintenance task. District environmental staff reviews the sites for sensitive habitat or special status species and determine if further surveys are warranted.

For simple maintenance tasks (eg: Brushing), the standard avoid/minimize/compensate practices from the PEIR and Annual Plan Mitigation Measures are applied. For more complex maintenance tasks (eg: earth-moving or operations in sensitive habitat), District staff develop site-specific strategies to avoid/minimize/compensate for incidental impacts, relying on the PEIR mitigation measures but fine-tuning the work method for each specific site.

Each site in the field is evaluated for criteria such as: height and width of open channel, density/height/and roughness of channel vegetation, depth of accumulated sediment, location/size of fallen limbs and trees, location/size of bridges and culverts, adjacent land uses, flood threats, erosion threats, vegetative cover on banks, flow regime, hydraulics, and comparison with previous years' conditions.

> Example: For removal of obstructive vegetation: Criteria for several south-coast streams include the bank full curves developed by URS in 2002, showing the stream width recommended to maintain channel equilibrium based on the watershed size and geomorphology.
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> Criteria also include: Height of overhanging vegetation (generally woody vegetation hanging below 6 feet within the bank full width can be considered a flood risk as this material can obstruct flows, become dislodged and create debris plugs along the drainage or at culverts or bridges which can lead to flooding and increased erosion along the banks), proximity to culverts or bridges, confined channels in urban areas, known problematic areas—such as undersized culverts, bends in the creek channels, weak spots in creek banks, and areas that frequently accumulate excess sediment. While the District uses the general statement that overhanging vegetation below 6 feet within the bankfull width can be considered a flood risk, not all vegetation within this zone is removed and this type of habitat (overhanging limbs, low canopy, etc) persists within most of the creeks every year. This type of habitat is not eliminated by the District's maintenance program and the removal of overhanging vegetation depends upon individual drainages' field conditions.
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> Problem areas are known based on extensive District experience walking creeks each year and managing flood hazards that have occurred in the past. In developing a work plan for each site, the District considers the degree of native vs non-native vegetation (or bare soil), sensitive habitats, sensitive species, cultural resources, trail crossings, bridges, and water quality parameters.
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> Example: A sediment bar at a bend in an urban area of the watershed, with only non-native cover, upstream of an undersized culvert, in a reach of the creek that has overtopped its banks in recent history or is severely diverting flows towards a bank increasing erosion and threatening riparian habitat on the bank—This site may be treated by excavating and exporting the excess sediment,
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> A sediment bar with the same dimensions, but with native tree cover in the upper rural watershed with no culvert or bridge within ½ mile downstream—This site may be treated by brushing to remove a strip of vegetation to maintain the bank full width (or may not be treated at all on a given year and simply watched to see how it responds from year to year).

As this example shows, no single criterion can be applied in all cases. For each maintenance site, the whole combination of criteria, impacts, and natural resources are considered in developing a work plan. (MINIMIZATION).

**STEP 2: Prioritization.**
Once the field surveys are completed for each watershed, District staff compiles a list of all proposed tasks in each watershed. Then staff determines which watersheds are in good-enough condition overall that no maintenance will be performed for the year. In a typical year, approximately ½ of the managed watersheds are omitted from all work (AVOIDANCE) because it is determined that flood threats are minimal enough to allow the drainage to remain unmaintained until at least the following year when it will be re-evaluated. The remaining watersheds are prioritized as "High" or "Medium" priority based upon the amount of proposed work and the associated flood threats that the work would eliminate. High priority watersheds are those in which conditions definitely require maintenance for the year. Medium priority watersheds are those that have several maintenance needs, but may be able to last one more year before maintenance is required.

The District evaluates the priority list in terms of severity of maintenance need, staff resources, budget, and workload and decides which watersheds to perform routine maintenance for the year. The remaining watersheds are omitted from maintenance (AVOIDANCE).

**STEP 3: Develop Annual Plan/Further Evaluation.**

**<u>Develop Annual Plan</u>**
An Annual Routine Maintenance Plan (Annual Plan) is prepared by the District staff in May and June of each year which includes the following chapters:

1. Introduction; Introduction and List of Creeks by Supervisorial District.

2. Exempt Facilities; Notice of Exemption and description of CEQA exempt drainages.

3. Maintenance Practices Summary – Summary of common maintenance tasks and methodology for describing work proposals, impacts and associate mitigation. Individual project-specific descriptions for each drainage to be maintained, including detailed information on the site conditions, biological resources, proposed maintenance actions, impact assessment, mitigation measures, maps, and photographs.

    a. North County Creek descriptions,
    b. South County Creeks descriptions.

4. CEQA Findings; CEQA Findings for the Annual Plan.

5. District's Revegetation Plan

6. Impacts and Mitigations; In order to save paper and reduce the size of the Plan, the complete text of all impacts and mitigation measures is included once under this separate tab.

For those watersheds that are included for maintenance each year, the District then further refines the work methods. All activities that require earth-moving or equipment operating in the creek channel are assessed for access, timing, and the extent of maintenance required (MINIMIZATION). The District Biologist performs a field survey of such sites to determine if sensitive species or habitats are likely to be impacted, and then environmental staff confers with maintenance staff to develop AVOIDANCE and MINIMIZATION measures for each site. At this stage of the process, the District formulates dewatering plans, bio-monitoring requirements, and other BMPs to be applied. The BMPs are derived from the mitigation measures in the PEIR, but are tailored to each specific work site.

Routine maintenance can include brushing vegetation, herbicide application, desilting, shaping, bank protection, repair or creation of check structures, and habitat restoration. Following is a list of general terms used in the project descriptions to describe the vegetation management activities, as required in the Regional Water Quality Control Board 401B Water Quality Certification:

Brush: The cutting of live vegetation growing in the bottom of the creek within the active flow area. The stumps of the cut vegetation are generally sprayed with herbicide to inhibit regeneration of the live vegetation.
Cut: Same as Brush.
Cut Up: Used to describe cutting up "downed" or fallen (dead) vegetation within the active channel or live vegetation growing in the active channel (as in brush).
Key Woody Debris: KWD is a downed tree, or part thereof that has a length greater than or equal to the wetted channel width, or has an intact root wad. Naturally occurring KWD are intact unmodified trees that have fallen into the bankfull channel having trunk diameters greater than 4 inches.
Large Woody Debris: LWD is classified as pieces of wood measuring greater than 6-feet in length and greater than 4 inches in diameter.
Limb: the trimming or pruning (but not complete removal of the whole tree or shrub) of limbs that are projecting into the active flow area of the channel from vegetation that is growing on the creek bank or outside of the bankfull discharge width. Limbing is done to keep the flow area clear while at the same time retaining vegetation on the creek banks for shading and riparian canopy development.
Trim or Trim Back: Same as Limb.
Remove: Refers to the removal of live or dead vegetation from the active channel. Vegetation can be removed and placed on the banks or completely taken out of the channel and hauled away, depending upon access.
Seedling: A tree less than 3 feet tall and 1" DBH.
Sapling: A tree with DBH between 1"-3".

At sites where impacts to riparian vegetation within the channel invert cannot be completely avoided, the District calculates the square footage of impacts to native vegetation and then identifies a location for habitat restoration (COMPENSATION). Often, the restoration occurs at the site of temporary disturbance. At some sites, this is not possible or desired (such as vegetation removal from the floor of the channel). In these cases, an alternate restoration site is developed to offset the impacts (COMPENSATION). Restoration occurs on creek banks first at or near the site where vegetation was removed, second at an alternate site along the drainage, thirdly on a nearby drainage as appropriate and lastly by either participating in Watershed based restoration projects led by other entities as these projects become permitted or by using credits from the Los Carneros

Mitigation Bank (LCMB) which the District formalized in 2004 with the Army Corps of Engineers and began implementing in 2005. The bank has 28 acres that are slated for restoration with 10 acres of riparian vegetation and 18.41 acres of upland habitat. The LCMB Banking instrument allows for a 1:1 credit ratio for riparian habitat and .75:1 credit ratio for upland habitat for a total of 24 acres of total credit availability for the bank. When 3-year success criteria are met in a given restored area, ½ of the available credits for that area can become available and once the 5-year success criteria are met, the remaining half of the credits become available. To date, restoration has been implemented on 6.8 acres at the Bank. The table below lists the amount of restoration credits (square footage or acreage) that have been used.

| **Los Carneros Mitigation Bank Credits Used** | | |
|---|---|---|
| **Annual Plan Year** | **Credits Used (Square Feet)** | **Credits Used (Acres)** |
| 2013/2014 | 4237 | .097 |
| 2014/2015 | 1880 | .043 |
| 2015/2016 | 3895 | .089 |
| 2016/2017 | 460 | .010 |
| 2017/2018 | 1050 | .024 |
| 2018/2019 | 50 | .001 |
| 2019/2020 | 680 | .015 |
| 2020/2021 | 845 | .019 |
| 2021/2022 | 2700 | .062 |
| 2022/2023 | 1265 | .029 |
| 2023/2024 | 205 | .004 |
| 2024/2025 | 60 | .001 |
| **Total** | **17227** | **.395** |

Since 2002, the District has installed over 27 acres of restoration throughout the county directly related to the Annual Routine Maintenance Plan. This restoration has occurred in areas that were either devoid of vegetation, were infested with non-natives (giant reed, castor bean, ivy, etc.) or were sheer banks that without reshaping and protection would have remained sheer, unvegetated and would have continued to erode. This represents a vary large improvement to riparian corridor health for water quality, stream shading, wildlife habitat, and other ecological benefits. The District will continue to implement restoration to mitigate temporal impacts to native vegetation for the duration of the Annual Routine Maintenance Program at a 1:1 ratio.

In the past thirty years, outside of the Annual Routine Maintenance Plan, and in association with other projects, the District has also implemented an additional 30+ acres of riparian restoration within Santa Barbara County.

**STEP 4: Public Review.**
An Annual Plan Summary is posted on the District website during the second week of May and notifications are sent to interested individuals, public groups and the regulatory agencies to notify them that the Summary is available for review and comment. Public workshops are also held in May. During this period, additional AVOIDANCE/ MINIMIZATION measures may be submitted by comment and incorporated into project design.

After initial review and comment, the Annual Plan is finalized and submitted for permits and authorization. The USFWS and NOAA Fisheries review sites which may have listed species present. In some isolated cases, FWS and/or NOAA request additional information, site visits, or plans to further review the projects. The District incorporates agency comments to further AVOID/MINIMIZE impacts to listed species and to ensure that the work falls within the District's Biological Opinions. Specialized biological contractors may be hired to perform survey and relocation work.

**STEP 5: CEQA Compliance**

As noted above, the Annual Plan includes a description of each maintenance project to be conducted in the fall. In addition, it represents the environmental documentation under CEQA. The projects included in the Annual Plan are categorized as follows relative to CEQA:

- The project is exempt from CEQA and therefore no environmental review is necessary (CEQA Guidelines 15300 or 15061)
- No further environmental review is necessary because the project was adequately addressed in the Program EIR (CEQA Guidelines 15162).
- Considered under the 2001 Program EIR, and a project specific write-up is necessary to describe the project and ensure consistency with the Program EIR impact analysis and to apply the appropriate mitigation measures (CEQA Guidelines 15164)

As a CEQA lead agency, the District has the authority to determine which maintenance activities and projects are exempt from CEQA under the following two provisions of the CEQA Guidelines:

1. Under Section 15061(b)(3), a project or discretionary activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

2. The District may also determine that a project qualifies for CEQA Categorical Exemption Class 1 (CEQA Guidelines Section 15301, Existing Facilities):

   *"Class 1 consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination. The types of "existing facilities" itemized below are not intended to be all-inclusive of the types of projects which might fall within Class 1. The key consideration is whether the project involves negligible or no expansion of an existing use. Examples include but are not limited to: … (b) Existing facilities of both investor and publicly-owned utilities used to provide electric power, natural gas, sewerage, or other public utility services…."*

There are exceptions to Categorical Exemptions, which are listed in Section 15300.2 of the CEQA Guidelines. For example, all exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant. In addition, a categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.

Maintenance projects that are exempt from CEQA generally include the following categories of activities, as described by the District in the Annual Plan:

1. **Concrete Channels**. Maintenance activities in fully concrete lined channels without habitat.
2. **Flood Control Devices.** Cleaning, repair, and replacement of such flood control devices as check structures, drop structures, chute structures, culverts, weirs, or stream flow measuring stations.
3. **Access Ways**. Maintenance activities on access ways or roads outside of riparian corridors or estuaries.
4. **Earthen Channels.** Maintenance activities in earthen channels, which have been developed to convey urban stormwater, agricultural stormwater or tail water, and that support little to no vegetation and do not support listed species.
5. **Unvegetated Basins.** Maintenance activities in sediment, debris, and retention basins which have been constructed for such purposes and which support little to no vegetation and do not support listed species.

Non-exempt projects that were considered in the 2001 Program EIR are subject to environmental review in the Annual Plan. A project specific description is prepared by District staff for each drainage needing maintenance and includes the following elements:

**Location** – A description of the maintenance site is presented.

**Setting** – A description is presented of the environmental conditions along the drainage, including topography, vegetation, stream channel dimensions, and adjacent land use. District staff conducts a field investigation and records information on site conditions, including vegetation.

**Revegetation** – This section includes a listing of past restoration that was implemented as mitigation for maintenance since 2002 and a description of any proposed District revegetation associated with the current year's annual routine maintenance. This allows for accurate record keeping of restoration area on an ongoing basis.

**Wildlife Surveys** – The results of wildlife surveys that are conducted in April or May at the maintenance sites are summarized. The primary objective of these surveys is to identify any sensitive species at the maintenance sites. This section of the Addendum also includes a summary of all wildlife observed at or near the sites.

**Engineering Analysis** – A description of the site conditions that have caused the need for maintenance including: (1) the nature and extent of channel obstructions or damaged facilities; (2) the flooding and erosion hazards created by these conditions; and (3) the remedy for this situation. The analysis usually is based on visual observations of adverse conditions such as sediment deposits, significant in-stream vegetation, or damaged facilities. The District personnel that conduct the Annual Plan surveys is the same each year; as such, they have first-hand knowledge of site conditions along drainages in the County over many years and under various conditions. Hence, they can readily assess the maintenance needs. The District does not typically conduct quantitative field measurements or hydrologic calculations or modeling to determine the maintenance needs at all sites, however pursuant to the 2012 RWQCB 401B Technically Conditioned Water Quality Certification, a sheer stress analysis is conducted for all bank protection sites and additional geomorphologic analysis is also completed.

The Engineering Analysis section also includes reference to bankfull calculations that were quantified in 2002 as part of the Updated PEIR. The bankfull widths are used to determine and document the desired clearing width within individual creeks along the south coast in particular. In areas where bankfull calculations are unavailable, District staff use field indicators to determine clearing widths.

**Project Description** - This section includes a description of the maintenance work to be performed, including descriptions of access. Precise descriptions of the areas to be treated (e.g., sprayed with herbicide or brushed) are provided using features in the field. GIS generated maps are provided to show the limits of work and access points. Photographs of representative maintenance areas are also included in each addendum. Figures showing water diversion, bank protection diagrams, and shaping project are also included.

**Impact Analysis and Mitigation Measures** - The Addenda refer to the list of impacts associated with specific maintenance activities developed in the 2001 Updated Program EIR. The latter identified numerous significant, unmitigable impacts (Class I), significant, but mitigable to less than significant impacts (Class II), and less than significant impacts (Class III). For maintenance projects proposed and implemented since 1992, the District has been able to avoid significant impacts by designing the projects or activities to avoid such impacts, and/or by implementing appropriate mitigation measures from the Program EIR to mitigate such impacts.

This section contains a list of impacts expected to occur due to the proposed maintenance activity using the impact number, impact description, and issue area presented in the 2001 Updated Program EIR. These issue areas include the following: Water Resources (Hydrology); Water Quality; Wetlands, Riparian Habitats, and Rare Plants; Aquatic Species, Fish; and Wildlife; Air Quality; Noise; Cultural Resources; Recreation, and Visual Resources. Specific impacts are listed under each issue area.

In addition, mitigation measures derived from the Program EIR are listed under each issue area.

**STEP 6: Plan Approval**

The Annual Plan may be revised to respond to public comments, and is then presented to the Board of Directors for approval in June or July of each year. There is a public hearing to adopt the Annual Plan and the Categorical Exemptions.

## PERMITS

### Local Land Use and Coastal Development Permits

Most of the maintenance activities occur in unincorporated portions of Santa Barbara County. The District is exempt from the land use permitting requirements of the County in areas outside the Coastal Zone. Section 35.10.040(G)(1)(b)-201 of Article III Zoning Ordinance (Non-Coastal Areas) states that the Zoning Ordinance does not apply to "Development by the County or any district of which the Board is the governing body."

Some maintenance activities occur in the Coastal Zone in unincorporated portions of the County. Under Section 35-51(4) of the Article II Zoning Ordinance (Coastal Areas), the District does not require a Coastal Development Permit for maintenance projects in the Coastal Zone, except when the project occurs in an Environmentally Sensitive Habitat (ESH) area. The latter is defined in the Coastal Act and Coastal Plan and generally includes rivers, streams, wetlands, riparian corridors, and sensitive species habitats. For most work in the Coastal Zone, the County has permit authority and issues Coastal Development Permits (CDP) on individual drainages. However, there are certain areas along the coast where the California Coastal Commission (CCC) retains primary permit authority. Maintenance projects in ESH areas must be designed and implemented in a manner consistent with the development standards in Section 35-97 of the Article II Zoning Ordinance. Work in the Coastal Zone within the cities of Santa Barbara, Goleta, and Carpinteria requires a CDP from these jurisdictions.

### State and Federal Permits

Most maintenance activities occur in natural watercourses and may involve modification to the channel bed, banks, and in-channel vegetation. These activities are regulated by the California Department of Fish and Wildlife (CDFW) under Section 1601 of the Fish and Game Code. Activities that result in the discharge of dredged or fill material in natural watercourses (such as bank stabilization and channel shaping) are regulated by the Army Corps of Engineers under Section 404 of the Clean Water Act. The District also receives a Section 401B Water Quality Certification from the State Regional Water Quality Control Board for those projects that also require a 404 permit from the Army Corps of Engineers.

The District submits the Annual Plan Summary to the CDFW, ACOE, and RWQCB to satisfy notification requirements in the permits and once the plan is finalized, the ACOE and RWQCB provide a written confirmation that the Annual Plan conforms to their permit.

As early as 2004 the District consulted with the U.S. Fish and Wildlife Service (USFWS) for the California red-legged frog and a Biological Opinion was issued to the Army Corps

of Engineers in 2005. Since then, the District has continued to consult on listed species including the California red-legged frog, Tidewater goby, least Bell's vireo, southwestern willow flycatcher, La Graciosa thistle and Gambell's watercress. The most recent consultation was initiated with USFWS in 2010 and a finalized Biological Opinion was received in June 2014.

The District has also consulted with National Marine Fisheries Service since the original listing of endangered steelhead in 1997 with the most recent consultation initiated in 2010. A final Biological Opinion was issued by NMFS in March 2014 and accepted by the District in September 2016.

The development of a Vegetation Management Plan (VMP) for the Annual Routine Maintenance Plan is required by the National Marine Fisheries Service in the March 11, 2014 Biological Opinion (B.O.) for the endangered Southern California Distinct Population Segment of Steelhead (*Oncorhynchus mykiss*) and designated critical habitat for this species within the District maintenance areas. Implementation of the Reasonable and Prudent Alternative portion of the B.O. by the District would avoid the likelihood of jeopardizing the continued existence of steelhead or destroying or adversely modifying critical habitat. Specifically, the RPA states that the District shall develop and implement a Stream Vegetation Management Plan that would allow for the annual maintenance of stream vegetation yet in a manner that would restore and maintain freshwater spawning and rearing sites in areas of creeks within the action area. In accordance with the 2014 Steelhead B.O., the VMP is specifically written to address the routine vegetation management portion of the annual creeks maintenance program in the twenty-four steelhead creeks within the District's maintenance area. The VMP describes the District's creek maintenance reaches, the District's selective vegetation management strategy designed to maintain channel equilibrium, the decision criteria used for vegetation removal, and management methods for single-trunked trees.

The VMP pertains to vegetation management in the following steelhead drainages.

Arroyo Burro Creek
Arroyo Paredon Creek
Atascadero Creek
Barger Canyon Creek
Carpinteria Creek
Cieneguitas Creek
Gobernador Canyon Creek
Los Carneros Creek
Maria Ygnacio Creek
Mission Creek
Montecito/Cold Springs Creek
Rattlesnake Creek
Refugio Creek
Romero Creek
San Antonio Creek
San Antonio Creek
San Jose Creek
San Pedro Creek
San Roque Creek
San Ysidro Creek
Santa Maria River
Sycamore Creek
Tecolote Creek
Tecolotito Creek

The District takes managing flood threats for the citizens in Santa Barbara County very seriously and while District staff considers resource protection with the incorporation of mitigation measures when designing maintenance approaches, the District retains the authority to determine the level of flood protection chosen at any given site. In that context, in the course of implementing the VMP, not every maintenance need scenario can be

addressed by the plan and as such, the District continues to retain its authority to take action on maintenance needs that it deems necessary.

The Central Coast Regional Water Quality Control Board (RWQCB) issued a new 10-year Section 401B Water Quality Certification in 2017. Pursuant to the 401B Water Quality Certification, the District has made changes to the Annual Plan in order to provide information to RWQCB staff. In particular, the District provides drawings of proposed shaping, bank protection and water diversion sites. Sheer stress and geomorphological analyses are performed for bank protection sites. Where bank protection/rebuilding is implemented with a native habitat restoration component, the District also provides a pre- and post-project analysis to demonstrate increases in habitat function so the restored area can be used as mitigation for future impacts associated with the maintenance program.

The CA. Coastal Commission staff will review the Corps permit in order to issue a Coastal Zone Consistency Determination Concurrence for work performed under the Corps permit in the Coastal Zone.

The District received a 10-year Stream Alteration Agreement from the California Department of Fish and Wildlife in 2015.

**STEP 7: Work in Progress.**
Between August 1 and December 15, the maintenance work occurs. This timing allows for AVOIDANCE of the migratory bird breeding season and the wet season for most of the maintained creeks. In creeks with standing water or flowing water, the amount of water is at its lowest for the year and thus impacts to aquatic habitat are MINIMIZED or in most cases, AVOIDED.

As described in in Step 1 above, District staff who participate in creek walks include the Maintenance Superintendent, Operations and Environmental Manager, District Biologist, Environmental Planner, Engineer, and Maintenance staff. Project descriptions are also developed with input from maintenance, engineering and environmental personnel. Maintenance personnel receive a copy of the Final Annual Routine Maintenance Plan so they know exactly where and what types of maintenance activities need to occur. The maintenance crews' copy of the Annual Plan contains maps with aerial photography as the background in order for the crew members to more precisely identify maintenance areas. Prior to the commencement of each creek's maintenance, maintenance personnel meet with the Maintenance Superintendent and/or the District Biologist to discuss the overall maintenance tasks identified, limits of work, mitigation measures that will be implemented to reduce any impacts to the furthest extent possible, etc. The District Biologist also actively monitors maintenance activities while they are occurring. For drainages known or suspected to contain listed species, specific direction is given to crew members prior to and during maintenance activities. District personnel are very familiar with the Annual Plan with most of the personnel having worked at the District for over 10 years, many for over 25 years. Not only are the personnel very familiar with the District's maintenance practices overall, including listed species identification and protection, they are also very familiar with individual drainages.

If the District hires a contractor to perform routine maintenance work, a training session will be given by the District Biologist that describes the District's maintenance approach,

permit requirements, appropriate mitigation measures, sensitive species identification and protection, etc.

Bio-monitoring, surveys and relocation, BMPs, and avoidance/mitigation measures are implemented as proposed through the above process. Field modifications are made to further protect environmental resources and water quality. Where unexpected events occur, notes are made to help guide future maintenance efforts.

> Example, in 2009 FWS required dewatering of a reach of Devereux Creek prior to maintenance as part of tidewater goby protective measures. However, during the process it became obvious that dewatering resulted in anoxia and caused fish stress and mortality. The situation was noted in the follow-up report, and dewatering in the system is no longer considered a reasonable protective measure for tidewater goby at this particular location.
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> This is just one example of how the District is committed to long-term adaptive management, not one-time work, and how the process allows for revision of work methods over time to best protect aquatic resources and water quality.
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> Example: Unit II Channel near Guadalupe is an engineered facility that drains into the Santa Maria River through a levee gate. Red-legged frogs are known in this facility. Over many years, the capacity of the channel has decreased as the channel banks have accumulated sediments from desilting operations. In order to re-establish the engineered capacity of this District owned channel, the District phased the regrading of the banks over a two year period so that half of the channel and associated cover and foraging habitat for red-legged frogs that exists at the base of the banks could be retained.
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> This is an example of how the District designs and implements maintenance to protect sensitive species and their associated habitats.

**STEP 8: Reporting**

Once the Annual Routine Maintenance is completed, the District Biologist provides a Maintenance Report to all regulatory agencies in May or June of the following year. The consolidated Maintenance Report is designed to incorporate all the information that each agency has requested.

**CARRY-OVER PROJECTS**

The routine maintenance work season runs from August through the end of November for the majority of the maintenance tasks. There are occasional instances in which all of the proposed work cannot be completed within the work season, and some maintenance tasks are delayed until the following year's work season. These "carry-over" projects are identified in each year's Post-Project Report. For the 2024/25 Annual Maintenance Plan, there three carry-over tasks in the Santa Maria River. These are described as Sections 1, 2, and 3 in the previous year's (2023/24) Annual Maintenance Addenda.

**SUMMARY**

The District's planning process allows staff to determine what type of action is needed at the reach and site scale within the local physical constraints. The environmental aspects of the program identify and protect sensitive habitats and perform compensatory

restoration when required and justified. The District minimizes repeat maintenance whenever feasible, but on-going maintenance is not necessarily problematic. The Annual Routine Maintenance Program involves repeat maintenance at some locations because a minor project each year or every few years may actually have less environmental impact than a single larger project. For example, periodic sediment removal from a flat stream reach is preferable to lining the entire creek channel with concrete. The concrete lining may result in less frequent maintenance, but the environmental impacts are more substantial with that approach. The District's process involves a balance between the need for maintenance, natural creek processes and situations within creeks that the District has no control over.

The District surveys 67 drainages County-wide, amounting to approximately 105 miles of drainage for potential maintenance. Not all of the drainages are placed in the Annual Routine Maintenance Plan and for the ones that are, only a small percentage of each creek are physically touched by actual work. The 2024/2025 Annual Plan contains 30 drainages. Santa Barbara County contains over 940 miles of major drainages and the District includes only 11% of that area for potential routine maintenance to provide important flood protection through urban areas of the County.

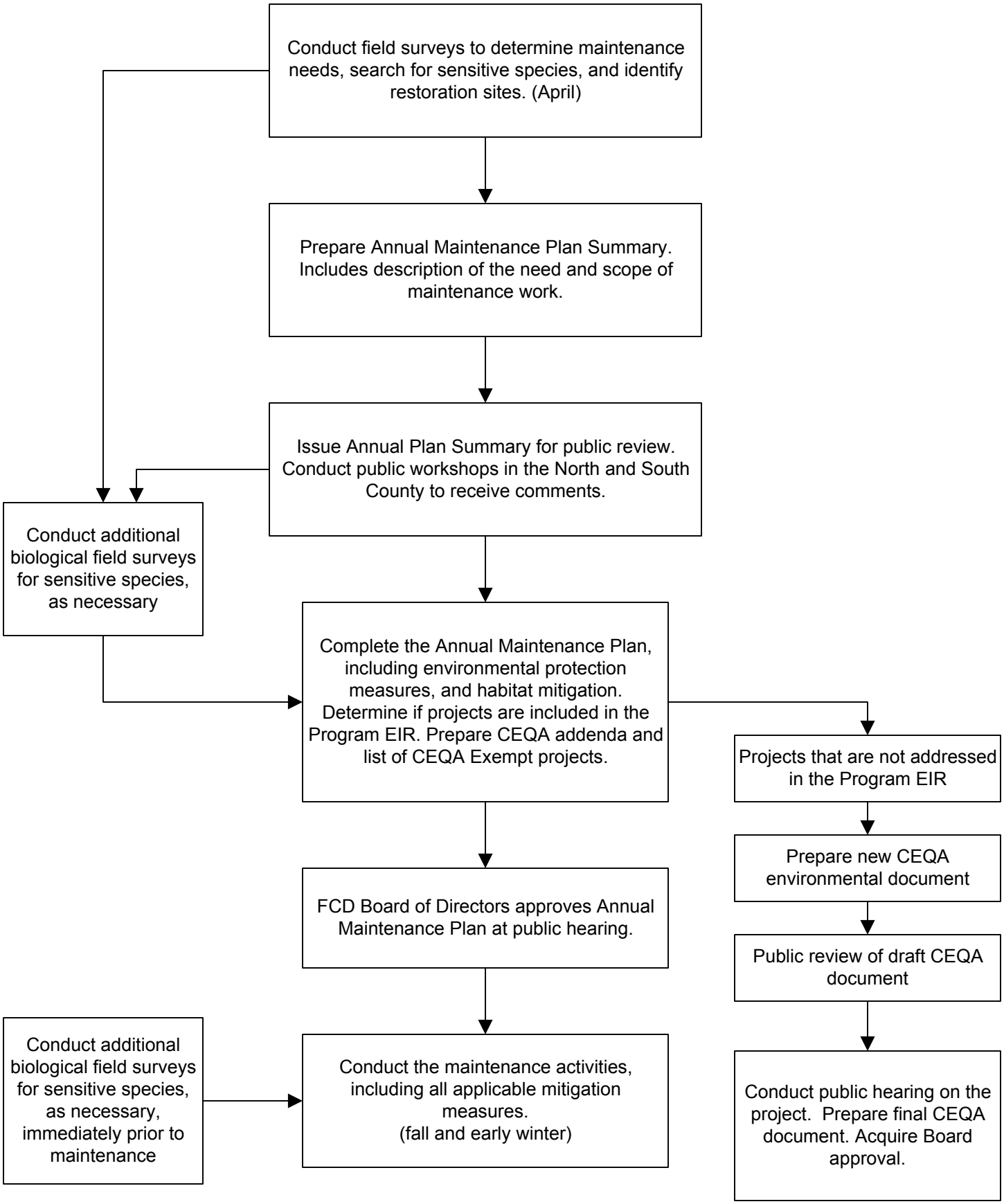



**Chart 1. Annual Maintenance Program Process**

# Supervisorial Districts
# 2024-2025

## First District

- Arroyo Paredon Creek
- Barger Creek
- Carpinteria Creek
- Mission Creek
- Romero Creek
- San Antonio Creek-Goleta
- San Ysidro Creek
- Toro Canyon Creek

## Second District

- Arroyo Burro Creek
- Barger Creek
- Las Positas Creek
- Maria Ygnacio Creek
- Mission Creek
- San Antonio Creek-Goleta
- San Jose Creek
- San Pedro Creek

## Third District

- Alamo Pintado Creek
- Cebada Canyon
- Mission Hills Basin
- Miguelito Channel
- Rodeo/San Pascual Basin
- San Jose Creek
- San Pedro Creek
- Santa Ynez River
- Winchester Canyon Creek
- Zaca Creek
- Zanja de Cota Creek

## Fourth District

- Bradley Canyon Channel
- Foxenwood 3 Basin
- Mission Hills Basin
- Orcutt/Solomon Creek
- Rodeo/San Pascual Channel
- San Antonio Creek-Los Alamos
- Santa Maria Airport Channels
- Santa Maria River
- Santa Ynez River

## Fifth District

- Orcutt/Solomon Creek
- Santa Maria River
- Tanglewood Channel
- Unit II Channels

**Santa Barbara County Flood Control District**
**Routine Maintenance in CEQA Exempt Facilities**

The following facilities are maintained by the Santa Barbara County Flood Control District (District) on a routine basis. Most facilities are maintained in the summer and fall to prepare them for the winter rains though some facilities occasionally need to be desilted after large storm events to restore capacity lost to siltation. All spoils are either deposited on adjacent farm fields, within nearby erosion holes, used on flood control access roads or made available to the public. Deposited material is placed away from drainages so it cannot re-enter waterways. The District only uses Aquamaster and Roundup herbicides on exempt facilities and these products are used in very low amounts.

CEQA Notices of Exemption will be filed for these facilities. Locations of the projects are included on the attached maps. As indicated by their exempt status under CEQA, these drainages do not contain sensitive species or habitat, are dry for the vast majority of the year, contain no vegetation, very occasional nuisance vegetation or weeds and grasses. In many cases these drainages are concrete channels or dry washes. The maintenance conducted within these drainages is very sporadic. As an example, “spot spraying” is done with a back pack sprayer and in most cases consists of less than twenty seedlings that are sprayed which are most often non-native weedy species. Very little herbicide is used county-wide to conduct this maintenance. It is essential, however, to conduct this type of maintenance so the concrete structures or drainages do not deteriorate or become plugged and unable to convey flows during the winter months. The exempt basins are essentially basins that have been built as part of developments. Most of these basins are within upland areas and are dry weedy depressions or grassy areas that are used as play areas outside of the rainy season.

# NOTICE OF EXEMPTION

TO: Santa Barbara County Clerk of the Board of Supervisors

FROM: Public Works Department/Flood Control and Water Conservation District

The project or activity identified below is determined to be exempt from further environmental review requirements of the California Environmental Quality Act (CEQA) of 1970, as defined in the State and County Guidelines for the implementation of CEQA.

APN(s) : Various Case No.: Not Applicable

Location: See project descriptions under the Exempt Facilities tab in the 2024/2025 Annual Routine Maintenance Plan.

*(Include street address and cross street (if urbanized area) or attach specific location map)*

Project Title: Routine operation and maintenance of existing public structures, facilities, or topographical features, involving negligible or no expansion of use beyond that which presently exists.

Project Description: See project descriptions in the 2024/2025 Annual Routine Maintenance Plan.

*(Include nature, purpose, and beneficiaries of project)*

Name of Public Agency Approving Project: County of Santa Barbara

Name of Person or Agency Carrying Out Project: Santa Barbara County Flood Control District

**Exempt Status**: (Check one)

___ Ministerial
___ Statutory Exemption
_X_ Categorical Exemption
___ Emergency Project
___ Declared Emergency

Cite specific CEQA and/or CEQA Guideline Section: 15301 Existing Facilities. CEQA Guideline Section 15301 (d): Class 1 consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination.

Reasons to support exemption findings: Consistent with this exemption, the project is not located in any wetland or an officially designated (by federal, state, or local government action) scenic area, or in officially mapped areas of severe geologic hazard. There are no unusual circumstances which would create a possibility that there would be a significant effect. Therefore, this project can be found to be categorically exempt from CEQA.

There is no substantial evidence that there are unusual circumstances (including future activities) resulting in (or which might reasonably result in) significant impacts which threaten the environment. The exceptions to the categorical exemptions pursuant to Section 15300.2 of the State CEQA Guidelines are:

**(a) Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.**

These facilities are maintained on an as-needed basis and therefore not maintained every year. All impacts are temporary; therefore this exception does not apply.

**(b) Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.**

The project is the maintenance of existing facilities and not located in any wetland or an officially designated (by federal, state, or local government action) scenic area, or in officially mapped areas of severe geologic hazard. Therefore, this exception does not apply.

**(c) Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.**

The projects do not involve a scenic highway or a project which may result in damage to a scenic resource, removal of trees, rock outcropping or similar resource. Therefore, this exception does not apply

**(d) Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.**

There are no hazardous wastes sites within any of the project sites. Therefore, this exception does not apply.

**(e) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.**

There are no historic resources in any of the project sites; therefore this exception does not apply.

Lead Agency Contact Person: Seth Shank Phone #: (805) 568-3443

Department/Division Representative:_____ Date: May 20, 2024

Signature: Seth Shank

_____

Acceptance Date: _____

Upon project approval, this form must be filed with the County Clerk of the Board and posted by the Clerk of the Board for a period of 30 days to begin a 35 day statute of limitations on legal challenges.

_____

Date Filed by County Clerk

## North County Facilities

The North County exempt facilities include concrete channels, earthen road-side ditches, earthen channels, basins within developments, grassy swales, and facilities that are part of the Santa Maria Valley drainage network which include retention and recharge basins. General maintenance includes periodic silt management and the control of weeds. Over the past several years the District has been utilizing mowing for weed and fire control rather than the use of herbicides, although herbicides are still used, but in much lower amounts. The most common weeds that are controlled are Russian thistle, cat ear, wild radish, cape ivy, rape seed weed, myoporum, oleander, fennel, tree tobacco, and mustard. Non-native grasses are also mowed for fire control purposes. Occasionally, the District will remove cattail or bulrush seedlings if they begin to colonize wetted areas near the outlet of a basin. Also, occasional mulefat or coyote bush seedlings are sprayed.

The District will conduct herbicide application in the facilities listed below beginning May 1st, and desilting and mowing of non-native vegetation beginning June 1st of the year following that Annual Plan's approval.

**Santa Maria/Guadalupe Area:**

**Ditches:**

1. **Blosser Ditch:** This is an asphalt or concrete ditch from Fessler Road downstream to Blosser Basin, a distance of approximately 1.5 miles. The earthen portion of this channel begins downstream of the basin and continues downstream to the Santa Maria River where it enters a flap gate through the Santa Maria River Levee. Between Alvin Road and Donavan Road (a distance of approximately 2,600 feet) the channel is asphalt and sediment tends to settle out requiring desilting. Additionally, weep holes in the concrete lined section and cracks in both the concrete lined and asphalt sections are spot sprayed with herbicide on an annual basis so the cracks don't get larger from the weeds growing in them and the weep holes remain functional. Desilting is done on a biannual basis and will not be done this year. Potential Area of impact is less than 100 square feet from spot spraying. Refer to Page 4 for the location of this facility.

2. **Bradley Ditch:** This ditch is approximately 3.5 miles long and is approximately 75% concrete and 25% earthen. From Main Street upstream to Battles Street, portions of the channel are desilted annually with equipment working from the top of the bank and within the concrete channel. From Main Street downstream to Donavan Street portions of the concrete channel are desilted approximately every 3 years. The earthern channel is sprayed on an annual basis to control silt trapping weeds and is not desilted. Potential area of impact is less than 100 square feet for spot spraying. Refer to Page 5 for the location of this facility.

3. **California Street Ditch:** This is a concrete V-ditch with earthen sides above the concrete V. This ditch flows into Foxenwood 3 Basin in the Foxenwood Subdivision. On a biannual basis portions of the ditch are desilted and the banks are mowed for fire suppression purposes. Additionally, on a biannual basis, seedlings are sprayed in the concrete V-ditch to keep the ditch from deteriorating. Potential Area of Impact from mowing is .17 acres and less than 50 square feet for

spot spraying seedlings in the V-ditch. Refer to Page 7 for the location of this facility.

4. **Crescent Avenue Ditch:** This is a concrete V-ditch with earthern sides. It is approximately .75 miles long. On a biannual basis a Kubota is used to desilt portions of the V-ditch. There are also eucalyptus trees adjacent to the ditch that occasionally begin to grow too near the concrete ditch and have to be removed and spot spray the stumps so they don't damage the concrete. Refer to Page 9 for the location of this facility.

5. **Deerfield Channel**: This is an earthen channel approximately 2,400' long. This channel flows into Deerfield Basin in the Foxenwood Subdivision. On an annual basis, seedlings are spot sprayed with herbicide in the earthen channel to keep unwanted vegetation growing in the active channel. Potential area of impact is less than 100 square feet for spot spraying. Refer to Page 10 for the location of this facility.

6. **Diaz Ditch:** This is an earthen ditch approximately 500 feet long. The District spot sprays this ditch on an annual basis to reduce silt trapping vegetation (weeds) and desilts portions of the channel approximately every 3 years. This facility will not be desilted this year. Potential Area of Impact from spot spraying is less than 50 square feet. Refer to Page 11 for the location of this facility.

7. **Dutra Ditch:** This is an earthen ditch approximately 230' long. The District spot sprays this ditch\basin on an annual basis to reduce silt trapping vegetation (weeds) and desilt portions of the channel approximately every 3 years. Potential Area of Impact from spot spraying is less than 50 square feet. Refer to Page 12 for the location of this facility.

8. **Green Canyon Spillway:** This is a concrete spillway that is part of Bradley Lake. The District spot sprays the spillway if vegetation is growing through weep holes or cracks and maintains the spillway free of woody debris. Potential area of impact is less than 50 square feet. Refer to Page 14 for the location of this facility.

9. **Industrial Parkway Ditch:** This is an earthen ditch that flows from Skyway Drive downstream into A Street Basin, a distance of approximately 1,400 feet. This ditch is sprayed with herbicide annually to keep sediment from accumulating or obstructive vegetation from colonizing the channel. The ditch is desilted approximately every 7-10 years. Potential Area of Impact from spot spraying is less than 100 square feet. Refer to Page 1 for the location of this facility.

10. **Lake Marie Ditch:** This is an earthen ditch vegetated with grasses and weeds approximately 1,000 feet long. The District mows this ditch on an annual basis to reduce silt trapping vegetation (weeds). This ditch is sprayed with herbicide annually to keep sediment from accumulating or obstructive vegetation from colonizing the channel. The District only desilts approximately 250' of this ditch on an annual basis. Potential Area of Impact from mowing grass and weeds along the banks is .01 acres. Refer to Page 17 for the location of this facility.

11. **McCoy Lane Drain**: This is an approximately 200' long earthen ditch vegetated with grasses and weeds located between Broadway and Skyway Drive. The

District mows this ditch on an annual basis to reduce silt trapping vegetation. Potential Area of Impact from mowing grass and weeds along the banks is .01 acres. Refer to Page 19 for the location of this facility.

12. **Patterson Road Ditch**: This is a concrete bottom ditch with concrete vertical walls approximately 443' long. This ditch flows though the Patterson Rd subdivision. Weep holes and cracks in the concrete lined section are spot sprayed with herbicide on an annual basis so the cracks don't get larger from the weeds growing in them and the weep holes remain functional. Potential area of impact is less than 50 square feet. Refer to Page 29 for the location of this facility.

13. **Santa Maria River Levee:** The U.S. Army Corps of Engineers constructed this levee and the District is mandated to maintain it. Maintenance consists of annually spot spraying the river side of the levee rock area. Per ACOE regulations, the District also maintains a 15'-wide vegetation free zone along the entire toe of the levee. The backside of the levee (which does not contain rock like the front of the levee does), and the lower levee roads, are mowed annually for weed control. The backside of the levee and access roads are completely outside of the drainage. Impact from mowing this area outside of the channel is 130 acres. Potential area of impact is less than 1,000 square feet for spot spraying. The District applies pre-emergent herbicide on the front side of the levee and impacts associated with pre-emergent application are 81 acres. Refer to Page 32 for the location of this facility.

14. **Sonya St. Ditch**: This is an earthen ditch approximately 1,300' long. The District spot sprays this ditch and mows the slopes on an annual basis to reduce silt trapping vegetation and for fire suppression purposes. Portions of the channel are desilted approximately every 5 years. Potential area of impact is less than 100 square feet for spot spraying. Refer to Page 34 for the location of this facility.

15. **Texaco Ditch:** This is an earthen channel approximately 2,300' long. The District spot sprays this ditch on a biannual annual basis to reduce silt trapping vegetation (weeds) and desilts portions of the channel approximately every 5 years. Refer to Page 11 for the location of this facility.

16. **Willemsen Ranch Channel:** This is an earthen ditch 720 feet long beginning just downstream of Park Circle in Santa Ynez. This ditch is spot sprayed annually to keep sediment from accumulating or obstructive vegetation from colonizing the channel. The ditch is desilted approximately every 7-10 years. Potential area of impact is less than 100 square feet for spot spraying. Refer to Page 37 for the location of this basin.

**Basins**

1. **A-Street Basin:** The basin is mowed annually and the low flow channel through the basin is spot sprayed on an annual basis. The basin is desilted approximately every 7-10 years. Potential areas of impact are less than 50 square feet from spot spraying and .25 acres from mowing. Refer to Page 1 for the location of this facility.

2. **Basin B:** This basin is also known as Orcutt Regional Detention Basin B. This basin is mowed on an annual basis for fire suppression purposes. The outlet

structure is sprayed on annual basis to eliminate vegetation from blocking the outlet structure. This basin is desilted every 5-7 years. Potential area of impact for mowing is 1.0 acres. Refer to Page 28 for the location of this facility.

3. **Blosser Basin:** The upper access road around this basin in mowed annually for fire control and volunteer woody vegetation and cattails are spot sprayed. Potential Area of Impact is .18 acres from mowing the access road around the top of the basin. See Page 4 for the location of this facility.

4. **Bradley Basin:** The outlet structure on this basin is spot sprayed annually. Willows will be brushed at the entrance to the basin. Potential area of impact is less than 50 square feet for spot spraying and 500 square feet for brushing. The basin is desilted every 3 to 5 years. Refer to Page 5 for the location of this facility.

5. **C2P2 Basin**: This is a retention basin located in an industrial area. This basin is mowed on an annual basis for fire suppression purposes. The outlet structure is sprayed on an annual basis to eliminate vegetation from blocking the outlet structure. Potential area of impact is 2.5 acres from mowing. Refer to Page 6 for the location of this facility.

6. **Country Hills Basin:** This is a retention basin located in an urban area. This basin is mowed on an annual basis for fire suppression purposes. The inlet structure is sprayed on annual basis to eliminate vegetation from blocking the inlet structure. Potential area of impact is .5 acres from mowing and less than 50 square feet for spot spraying. Refer to Page 25 for the location of this facility.

7. **Deer Field Basin:** This basin is located within the Deer Field Estates taking street drainage. The banks of this basin are mowed on an annual basis for weed and fire control. The V-ditches are spot sprayed on an annual basis. The basin is desilted every 3 to 5 years. Refer to Page 10 for the location of this basin.

8. **Diani Basin:** The banks of this basin are mowed on an annual basis for weed and fire control. The bottom of this basin is spot sprayed on an annual basis. Potential Area of Impact is less than 50 square feet from spot spraying and .25 acres from mowing. Refer to Page 13 for the location of this facility.

9. **Foxenwood Basin #2:** This basin a grassy Park within a subdivision that acts to retard runoff during the winter months but is otherwise a grassy play area. The District maintains the inlet and outlet pipes on a biannual basis by removing any accumulated sediment immediately blocking the pipes. Potential area of impact is 0.5 acres for mowing and less than 10 square feet for spot spraying. Refer to Page 7 for the location of this facility.

10. **Getty Basin:** This is a recharge basin. The upper banks of the basin are sprayed on a biannual basis and the slopes of the basin are disced on a biannual basis to retain the recharge capacity of this facility. Potential Area of Impact is .35 acres from spraying the fence line and 11 acres for discing the basin slopes. Refer to Page 13 for the location of this facility.

11. **Hummel Basin:** This is a retention basin located in an urban area. This basin is mowed on an annual basis for fire suppression purposes. The inlet structure is sprayed on annual basis to eliminate vegetation from blocking the inlet structure. Potential area of impact is 1.0 acre for mowing and less than 10 square feet for spot spraying. Refer to Page 25 for the location of this facility.

12. **Hobbs Fee Retention Basin:** Weeds in this basin are mowed every year for weed and fire control, and the area immediately adjacent to the inlet structure is sprayed to keep it from becoming blocked by cattails. Potential Area of Impact is .28 acres for mowing and less than 10 square feet for spot spraying. Refer to Page 13 for the location of this facility.

13. **K-Mart Basin:** Weeds in this basin are mowed on an annual basis for fire and weed control. The bottom of the basin is also spot sprayed on an annual basis to eliminate the woody vegetation that may begin to colonize in the basin, and the basin is desilted approximately every 7 years. Potential Area of Impact is .2 acres for mowing and less than 50 square feet for spot spraying. Refer to Page 15 for the location of this facility.

14. **Kovar Basin:** The area immediately surrounding the inlet of this basin is spot sprayed on a biannual basis. Potential area of Impact for spot spraying is less than 100 square feet. Refer to Page 13 for the location of this facility.

15. **Lakeview Basin:** This is a retention basin located in an urban area. This basin is mowed on an annual basis for fire suppression purposes. The outlet structure is sprayed on an annual basis to eliminate vegetation from blocking the outlet structure. Potential area of impact is .5 acres for mowing and less than 10 square feet for spot spraying. Refer to Page 16 for the location of this facility.

16. **Mud Lake Basin 1,2,3:** All three basins are connected together and work as retention basins. On an annual basis, these basins are mowed for weed and fire control. The bottom of Mud Lake Basin 1 is spot sprayed on an annual basis to eliminate the woody vegetation that may begin to colonize the basin. Potential area of impact is 2.5 acres for mowing and less than 100 square feet for spot spray. Refer to Page 24 for the location of this basin.

17. **Oak Knoll Basin:** On an annual basis, this basin is mowed for weed and fire control. The bottom of the basin is also spot sprayed on an annual basis to eliminate the woody vegetation that may begin to colonize the basin. Potential Area of Impact is .28 acres for mowing and less than 50 square feet for spot spraying. Refer to Page 24 for the location of this facility.

18. **Orcutt-Solomon Basin (also known as California Street Basin):** This is a sediment basin that is desilted approximately every two years. The banks of the basin are mowed on an annual basis for fire and weed control. Potential Area of Impact is 1.8 acres for mowing. See Page 27 for the location of this facility.

19. **Prell Street Basin:** The banks of this basin are mowed on an annual basis for weed and fire control. The bottom of the basin is maintained vegetation free with annual spot spray. The basin is desilted approximately every 7 years. Potential

Area of Impact is .23 acres for mowing and less than 50 square feet for spot spraying. Refer to Page 30 for the location of this facility.

20. **Quail Meadows Basin:** This Basin is a retention basin located in an urban area and is mowed on an annual basis for fire suppression purposes. The inlet structure is sprayed on an annual basis to eliminate vegetation from blocking the inlet. Potential area of impact is 0.2 acres for mowing and less than 10 square feet for spot spraying. Refer to Page 16 for the location of this facility.

21. **Simas Park Basin:** This is a retention basin located in an urban area. The bottom of the basin is maintained vegetation free with annual spot spray. The basin is desilted annually, removing debris trapping sediment from the outlet structure. Potential area of impact is less than 100 square feet for spot spraying. Refer to Page 33 for the location of this facility.

22. **Tanglewood Basin:** The ditch running through the middle of the basin is spot sprayed on a 1-2 year basis and the basin is desilted approximately every 3-5 years. Potential Area of Impact is less than 50 square feet for spot spraying. See Page 35 for the location of this facility.

23. **Union Valley Parkway Basin:** This is a retention basin located in an urban area. This basin is mowed on an annual basis for fire suppression purposes. The inlet structure is sprayed on an annual basis to eliminate vegetation from blocking the inlet. Potential area of impact is .1 acres for mowing and less than 10 square feet for spot spraying. Refer to Page 25 for the location of this facility.

24. **Village Hills Basin:** This is a retention basin located in an urban area. The basin is mowed on an annual basis for fire suppression purposes. The inlet structure is sprayed on an annual basis to eliminate vegetation from blocking the inlet. Potential area of impact is 0.1 acres for mowing and less than 10 square feet for spot spraying. Refer to Page 25 for the location of this facility.

**Los Alamos:**

**Ditches:**

1. **Los Alamos Eastside Ditch:** This is a 200' long grassy swale and is mowed annually. Potential Area of Impact is 1.5 acres from mowing the ditch. Refer to Page 18 for the location of this facility.

**Santa Ynez/Lompoc:**

**Ditches**

1. **Airey-Skytt Channel:** This is a half concrete/half earthen channel. The earthen channel is spot sprayed annually to reduce silt trapping vegetation. Potential Area of Impact is less than 50 square feet for spot spraying. Refer to Page 2 for the location of this facility.

2. **Amby Ditch:** This is an earthen ditch approximately 900 feet long and the District spot sprays the channel bottom on an annual basis. Portions of the

channel are desilted approximately every 3-5 years. Potential Area of Impact is less than 50 square feet for spot spraying. Refer to Page 3 for the location of this facility.

3. **Calvert Ditch:** This earthern ditch runs parallel to Lompoc-Casmalia Road for approximately 1000 feet and then turns to the south and flows through cultivated fields to the Santa Ynez River, a total distance of 2,240 feet. The District spot sprays the invert and mows the banks on an annual basis for weed and fire control. Potential Area of Impact is less than 100 square feet for spot spraying and .7 acres for mowing. Refer to Page 20 for the location of this facility.

4. **Cebada Canyon Channel:** This is a concrete channel approximately 1 mile long that has portions of the length desilted on an annual basis. The portions of the channel that are not desilted are spot sprayed on an annual basis Potential Area of Impact is less than 100 square feet for spot spraying. Refer to Page 8 for the location of this facility.

5. **Hoag-Santa Rita Ditch:** This is an earthen ditch, approximately .75 miles long, containing 4 concrete check structures. The District only maintains the check structures which is needed on a very infrequent basis. Maintenance, when needed, is usually fixing erosion along the edges of the structure. Refer to Page 8 for the location of this facility.

6. **Lilley-Hayes Ditch:** This is an earthen road-side ditch approximately 4,400 feet long that is a tributary to Cebada Channel. The District spot sprays the channel and mows the banks on an annual basis for weed and fire control. Potential Area of Impact is less than 50 square feet for spot spraying and 1.0 acre for mowing. Refer to Page 8 for the location of this facility.

7. **Mesa Oaks Basin:** This basin is located within the Mesa Oaks Subdivision receiving urban runoff. On an annual basis, this basin is mowed for weed and fire control. The bottom of the basin is also spot sprayed on an annual basis to eliminate the woody vegetation that may begin to colonize the basin. Potential area of impact is 0.4 acres for mowing and less than 100 square feet for spot spraying. Refer to Page 20 for the location of this basin.

8. **Miguelito Channel:** This is a concrete channel that runs through the City of Lompoc and is a tributary to the Santa Ynez River. The lower 500 feet of the channel is earthen and is spot sprayed on an annual basis to remove obstructive vegetation clumps so they don't block the channel. Garbage and other debris are periodically removed from the concrete channel with a loader on an as needed basis, sometimes several times a year. Potential Area of Impact is less than 100 square feet for spot spraying. Refer to Page 21 for the location of this facility.

9. **Mission Hills Channel:** This is an earthen channel that runs through the Mission Hills Subdivision and is approximately 1.6 miles. The District maintains 4 check structure on a very occasional basis. Maintenance of the check structure would be erosion repair around the structure. The District also mows the access road for weed and fire control on an annual basis and occasionally spot sprays the invert if it begins to become colonized with vegetation. Potential Area of

Impact is 1.5 acres for mowing the access road along the top of the channel and less than 100 square feet for spot spraying. Refer to Page 22 for the location of this facility.

10. **Rodeo Channel:** This is a concrete channel, approximately 2,100 feet long, that runs into Rodeo-San Pasqual Basin. On a biannual basis, small deposits of sediment are removed from the channel with a loader so sediment does not accumulate. Weep holes and cracks in the concrete lined section are spot sprayed with herbicide on an annual basis so the cracks don't get larger from the weeds growing in them and the weep holes remain functional. Potential area of impact is less than 100 square feet for spot spraying. Refer to Page 31 for the location of this facility.

11. **Rodeo-San Pasqual Channel:** This is a concrete channel, approximately 2.73 miles long, that runs across the Lower Lompoc Valley and is a tributary to the Santa Ynez River. On an annual basis, small deposits of sediment are removed from the channel with a loader so sediment does not accumulate. Potential Area of impact is 6 acres from driving the loader down the concrete channel. Refer to Page 31 for the location of this facility.

12. **San Pasqual Channel:** This is a concrete channel, approximately 3,500 feet long that runs into Rodeo-San Pasqual Basin. On an annual basis, small deposits of sediment are removed from the channel with a loader so sediment does not accumulate. Weep holes and cracks in the concrete lined section are spot sprayed with herbicide on an annual basin so the cracks don't get large from weeks growing in them, and weep holes remain functional. Potential area of impact is less than 100 square feet for spot spraying. Refer to Page 31 for the location of this facility.

13. **Thumbelina Ditch:** This is a concrete channel approximately 650 feet long with a short (120 feet) earthen channel portion. The concrete lined channel requires desilting approximately every 5-7 years and the earthen channel is occasionally spot sprayed, and access roads mowed on an annual basis. Potential Area of Impact is less than 50 square feet for spot spraying. Refer to Page 36 for the location of this facility.

**Basins:**

1. **Buellton Basins 1 & 2:** The banks of these basins are mowed on an annual basis for weed and fire control and the basins are desilted approximately every 3-5 years. The basins are spot sprayed annually to remove unwanted vegetation from the invert of the basin. Potential Area of Impact is 2 acres for mowing and less than 100 square feet for spot spraying. Refer to Page 3 for the location of these basins.

2. **Cemetery Debris Basin:** This basin is mowed on an annual basis and spot sprayed occasionally to remove woody vegetation if it becomes established. Potential Area of Impact is .04 acres for mowing and less than 50 square feet for spot spraying. Refer to Page 23 for the location of this facility.

3. **Fault Canyon Basin:** Weeds and grasses are mowed on an annual basis in the basin and the basin is desilted every 7-10 years and spot sprayed annually to remove woody vegetation if it becomes established. Potential Area of Impact is .04 acres for mowing and less than 50 square feet for spot spraying. Refer to Page 23 for the location of this facility.

4. **Miguelito Basin:** The edge of the basin is spot sprayed on a biannual basis so it doesn't become colonized with bulrush. The basin is desilted approximately every 5-10 years. Potential area of impact is less than 100 square feet for spot spraying. Refer to Page 21 for the location of this facility.

5. **Mission Hills Basin:** Mustard and poison hemlock are mowed annually within the basin for weed and fire control. Potential Area of Impact is 1.5 acres for mowing. Refer to Page 22 for the location of this facility.

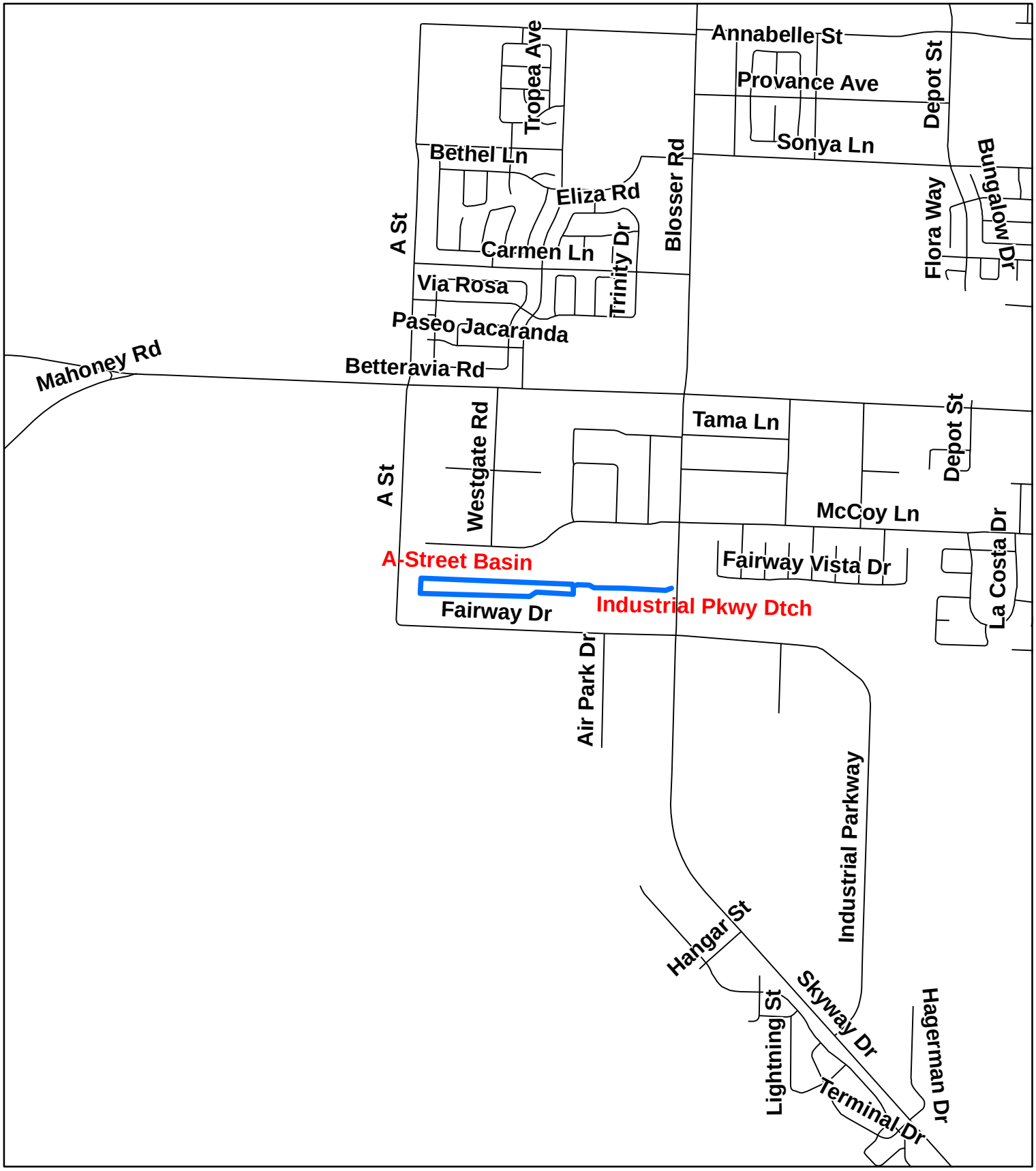
6. **Mormon Canyon Basin:** Weeds and grasses are mowed on an annual basis in the basin and the basin is desilted every 7-10 years. Potential Area of Impact is .04 acres for mowing. Refer to Page 23 for the location of this facility.

7. **R Street Basin:** Mustard and poison hemlock are mowed annually within the basin for weed and fire control. The basin is also spot sprayed every other year if woody vegetation begins to colonize the basin. Potential Area of Impact is .04 acres for mowing. Refer to Page 21 for the location of this facility.

8. **Rudolph Basin:** This basin is very occasionally mowed to control weeds. Potential Area of Impact is .04 acres for mowing. Refer to Page 23 for the location of this basin.

9. **Cherry Ave. Basin:** The inlet structure is desilted every 3-5 years removing unwanted sediment and vegetation.

10. **Hubble Basin:** This basin is annually mowed to control weeds. Potential Area of Impact is 0.5 acres for mowing. Refer to Page 23 for the location of this basin.




Department of Public Works County of Santa Barbara

# A-Street Basin
# Industrial Parkway Ditch

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N W E S

1,250 625 0 1,250 Feet

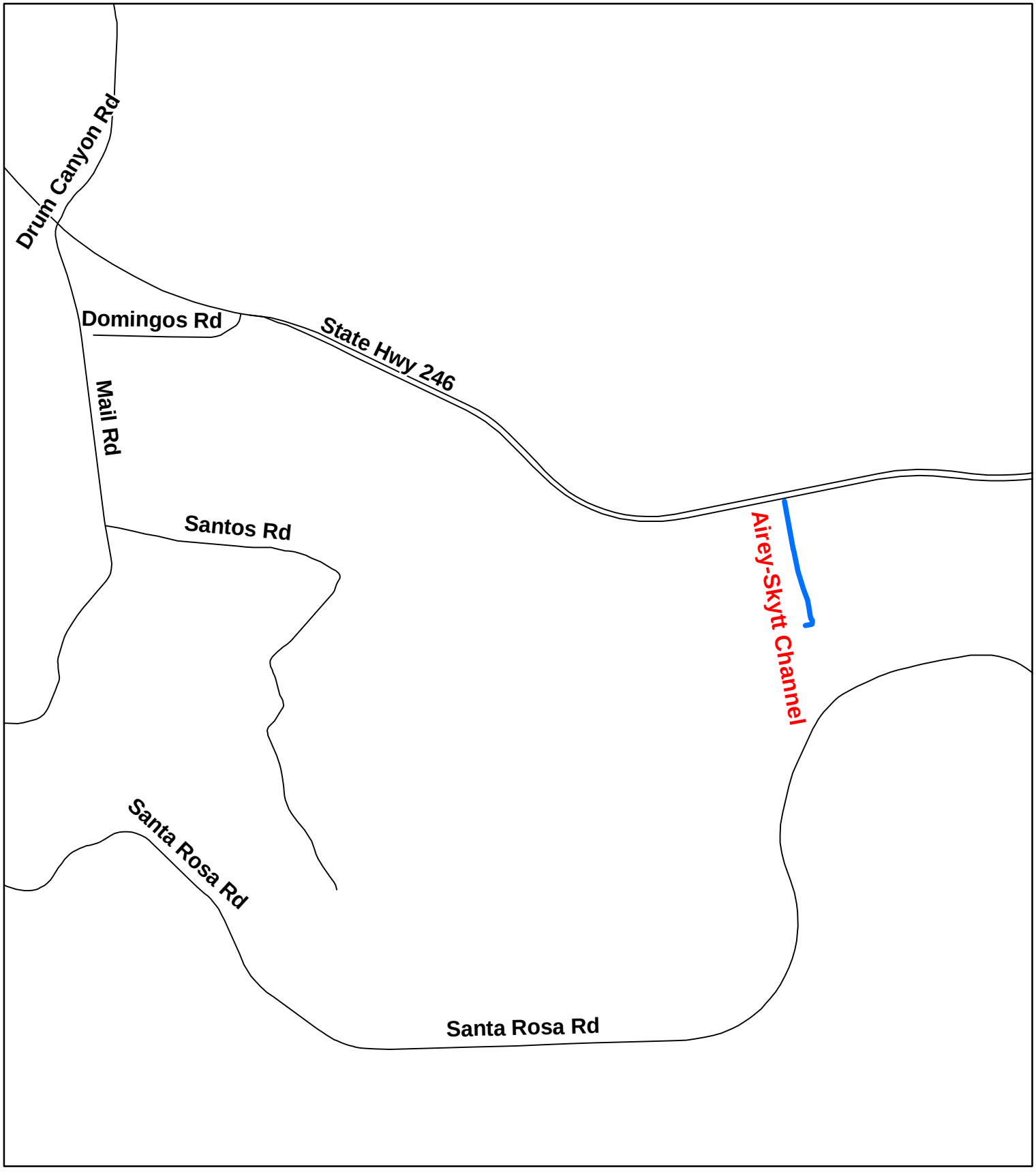
Coordinate System: State Plane California Zone V NAD 1983

Annual Routine Maintenance Plan

Santa Barbara County, California

Prepared By:
The Santa Barbara County Flood Control and Water Conservation District

Compiled by the Public Works Enterprise GIS in April 2011.




Department of Public Works County of Santa Barbara

# Airey-Skytt Channel

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N W E S

1,900 950 0 1,900

Feet

Coordinate System: State Plane California Zone V NAD 1983

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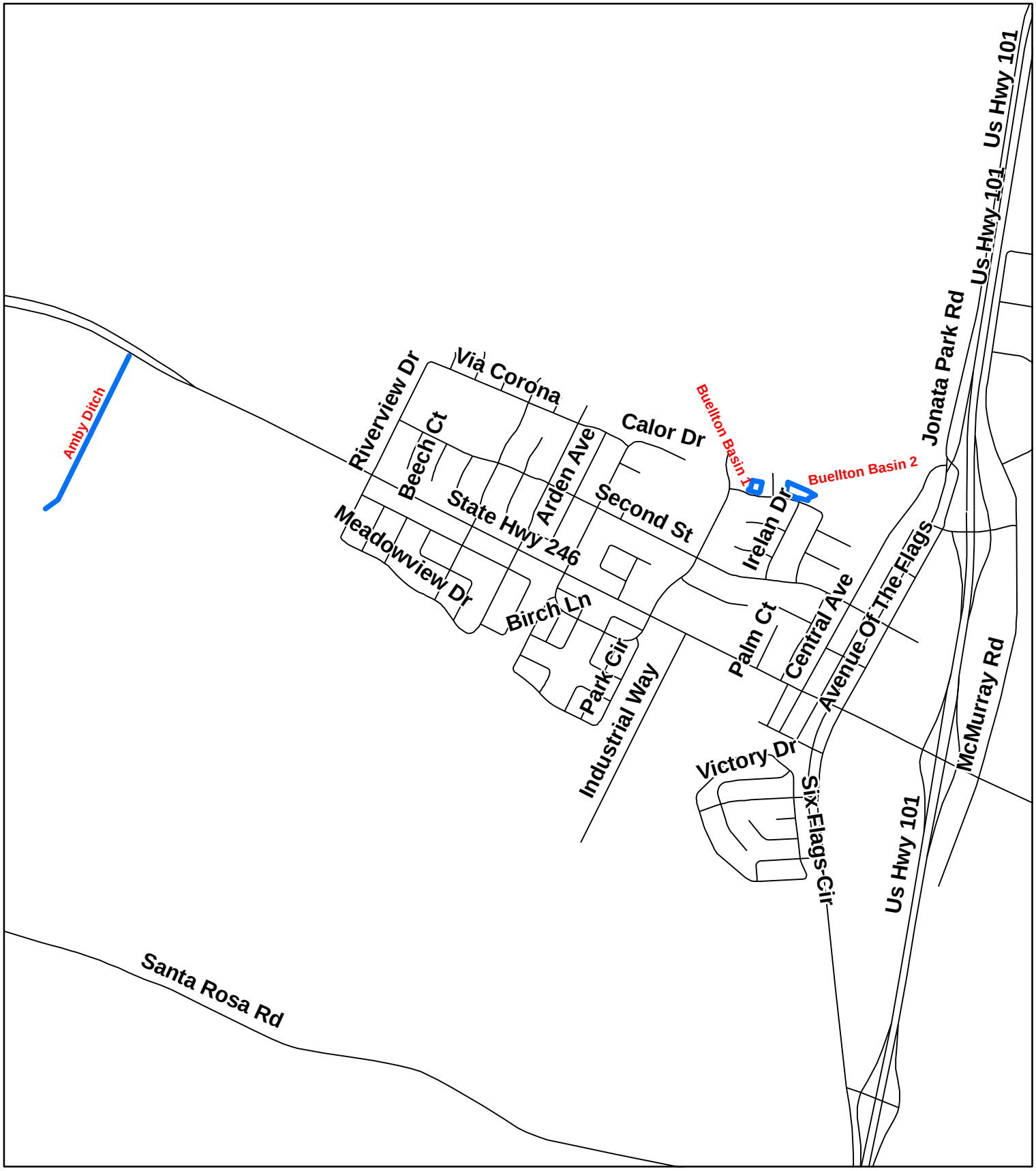


Department of Public Works County of Santa Barbara

# Amby Ditch
# Buellton Basins 1&2

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N W E S

1,100 550 0 1,100

Feet

Coordinate System: State Plane California Zone V NAD 1983

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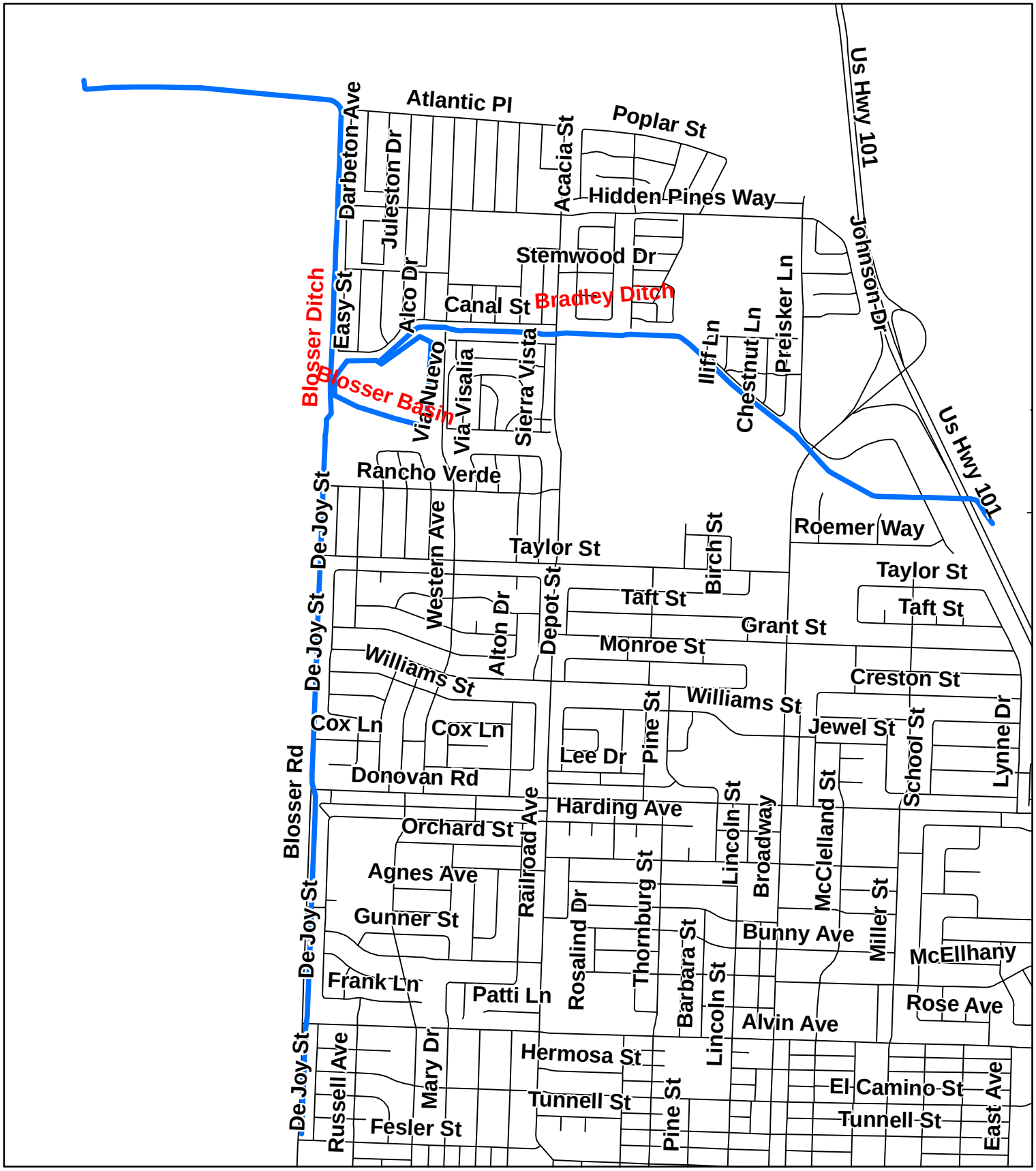


Department of Public Works County of Santa Barbara

# Blosser Basin
# Blosser Ditch

Page 4

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N W E S

1,250 625 0 1,250

Feet

Coordinate System: State Plane California Zone V NAD 1983

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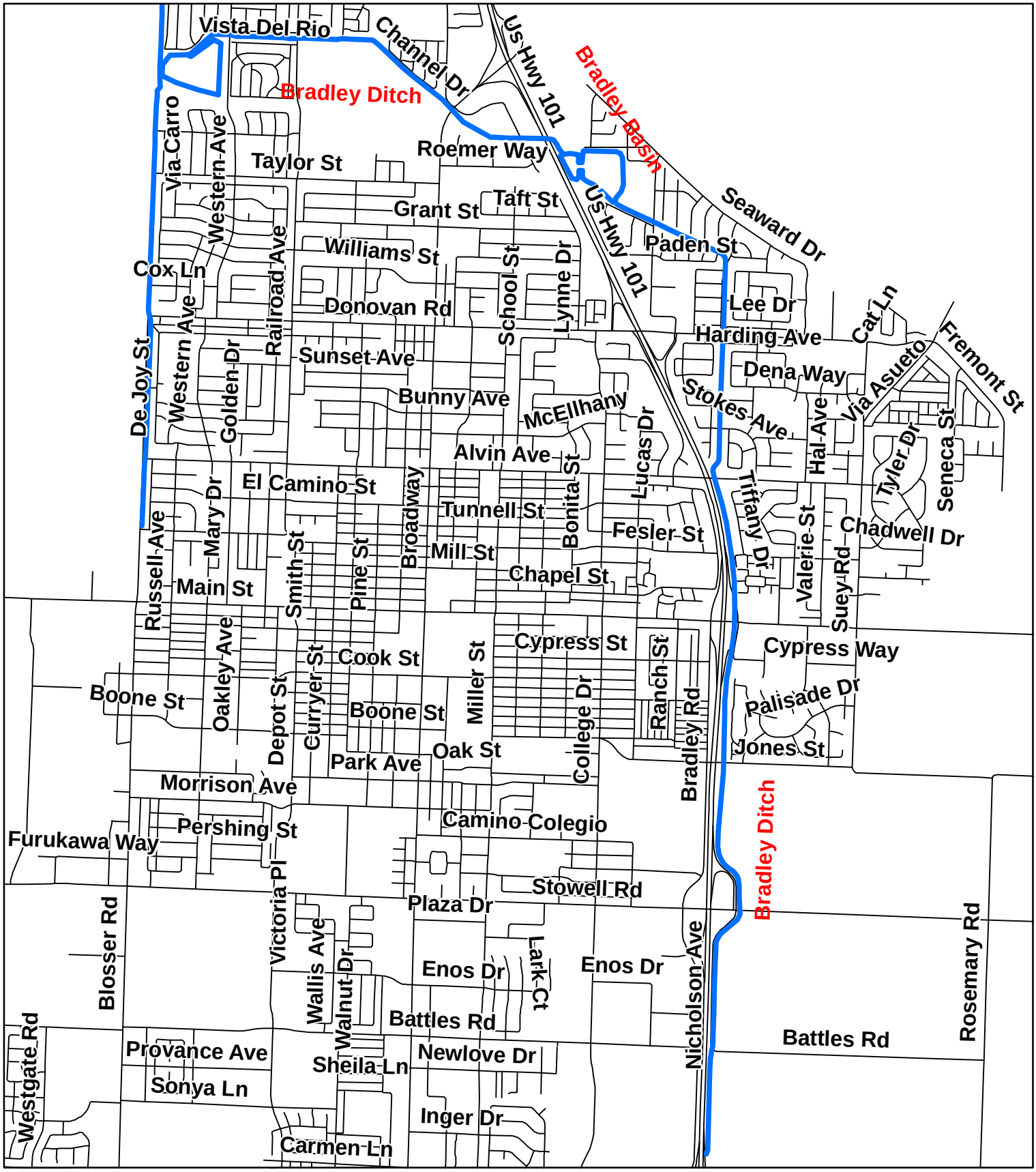


Department of Public Works County of Santa Barbara

# Bradley Ditch
# Bradley Basin

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N W E S

2,100 1,050 0 2,100 Feet

Coordinate System: State Plane California Zone V NAD 1983

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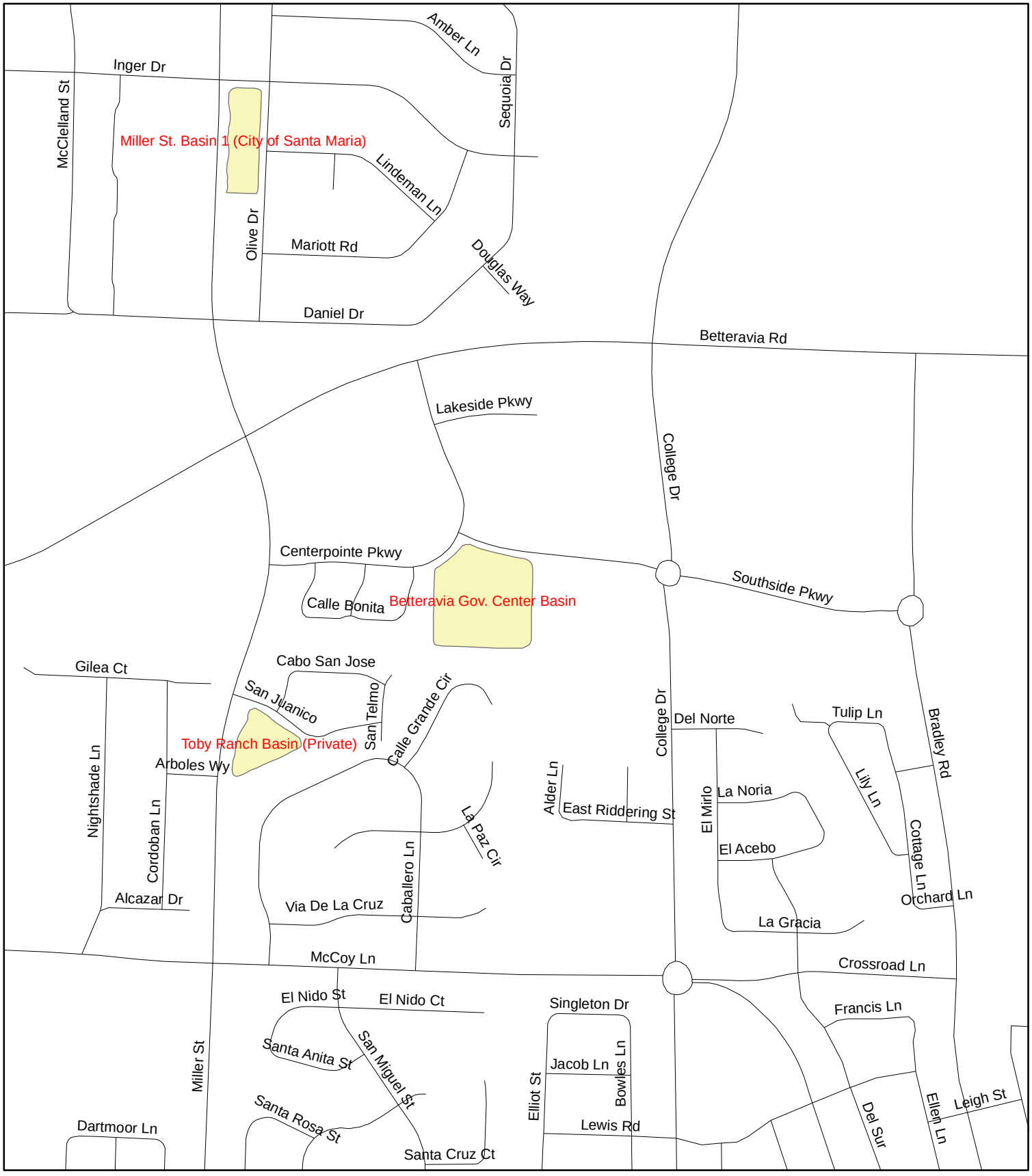


Department of Public Works County of Santa Barbara

# C2P2 Basin (Betteravia Gov. Center Basin)

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N W E S

Feet

430 215 0 430

Coordinate System: State Plane California Zone V NAD 1983

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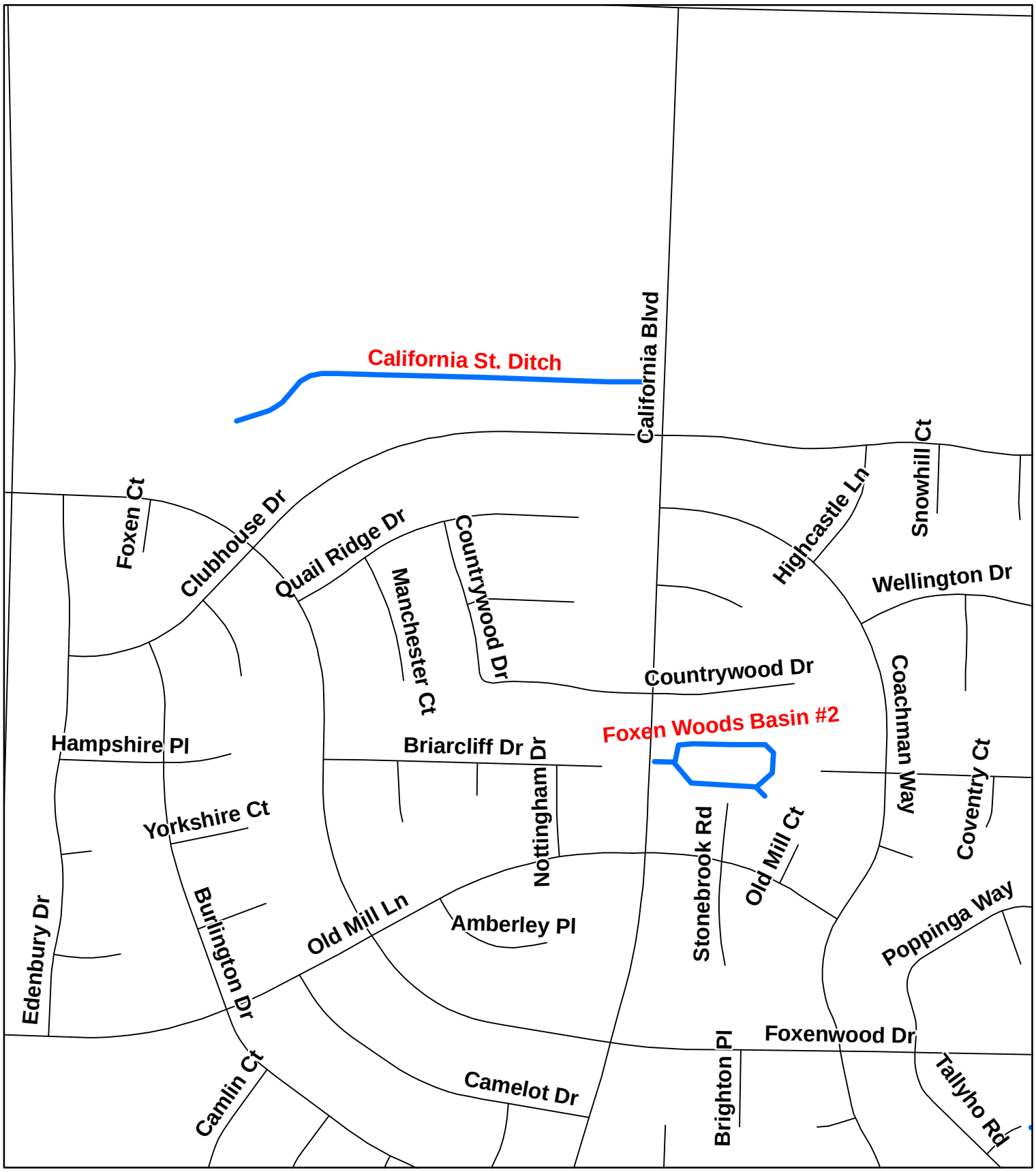


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# California St. Ditch
# Foxen Woods Basin #2

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N W E S

425 212.5 0 425

Feet

Coordinate System: State Plane California Zone V NAD 1983

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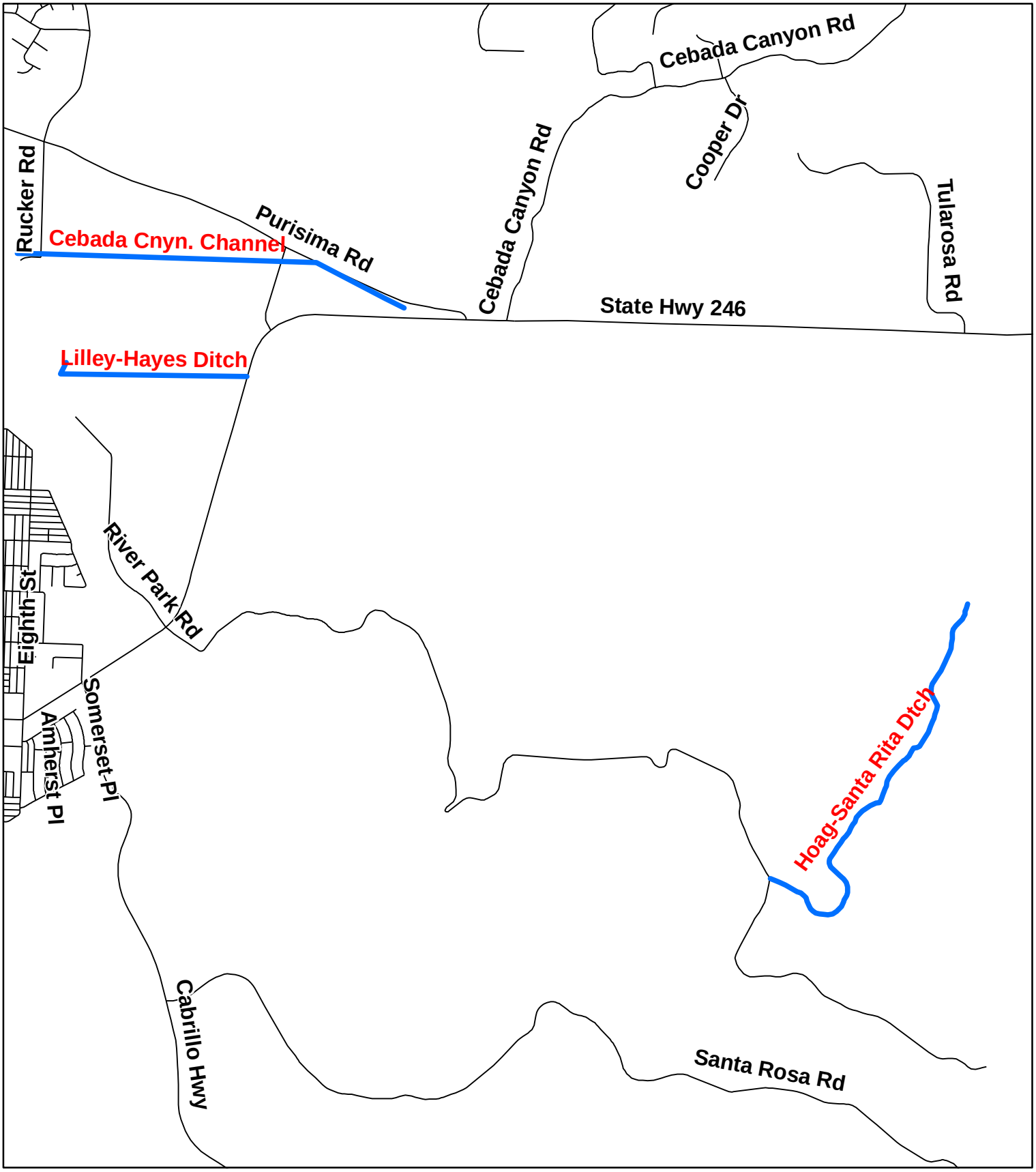


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# Cebada Canyon Channel
# Lilley-Hayes Ditch
# Hoag-Santa Rita Ditch



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N W E S

Feet

2,500 1,250 0 2,500

Coordinate System: State Plane California Zone V NAD 1983

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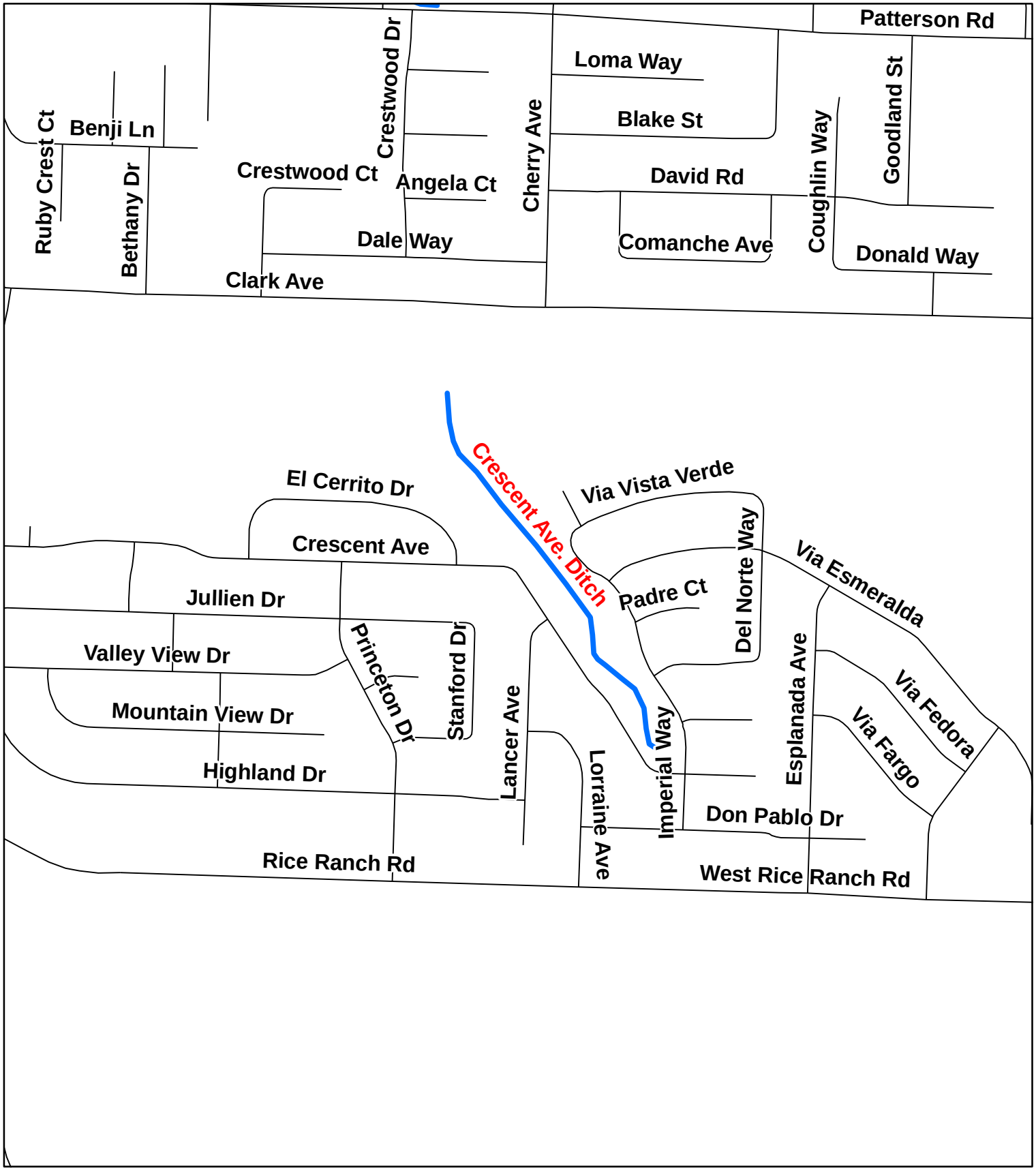


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# Crescent Avenue Ditch

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N W E S

510 255 0 510

Feet

Coordinate System: State Plane California Zone V NAD 1983

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Santa Barbara County, California

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# Deerfield Channel
# Deerfield Basin

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N W E S

490 245 0 490

Feet

Coordinate System: State Plane California Zone V NAD 1983

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Santa Barbara County, California

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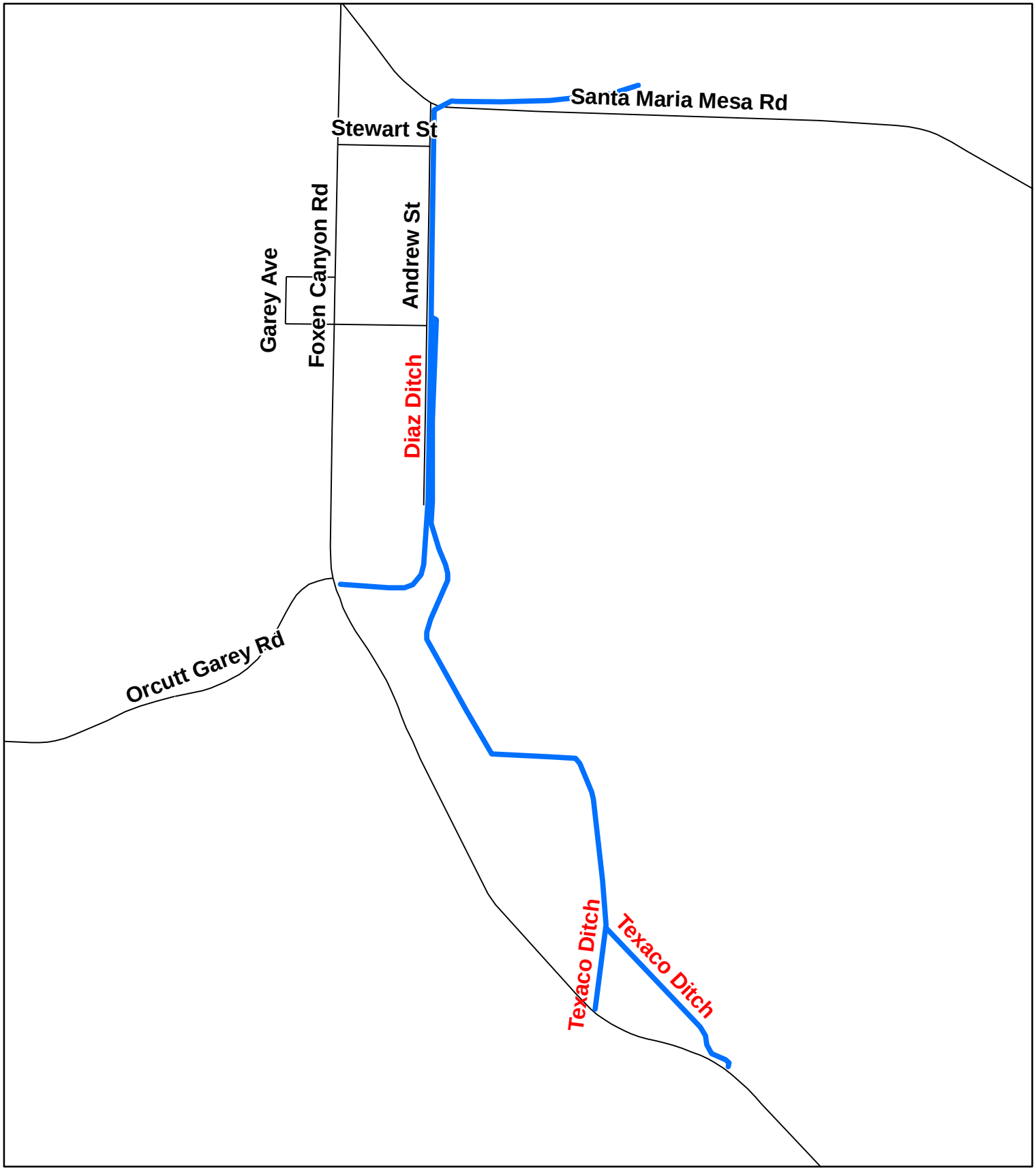


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# Diaz Ditch
# Texaco Ditch

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N
W E
S
Feet
870 435 0 870

Coordinate System: State Plane California Zone V NAD 1983

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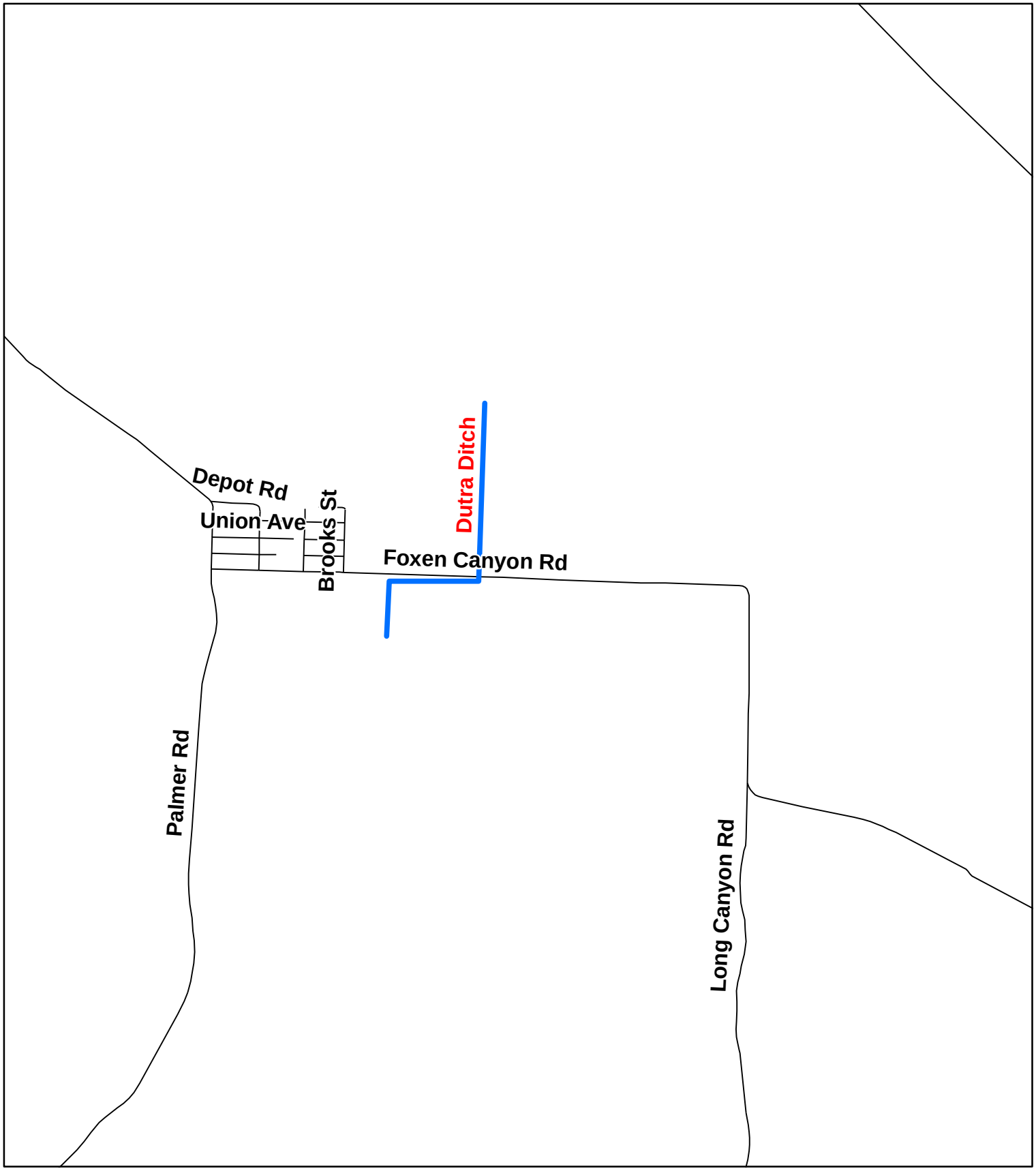


Department of Public Works County of Santa Barbara

# Dutra Ditch

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N W E S

Feet

1,100 550 0 1,100

Coordinate System: State Plane California Zone V NAD 1983

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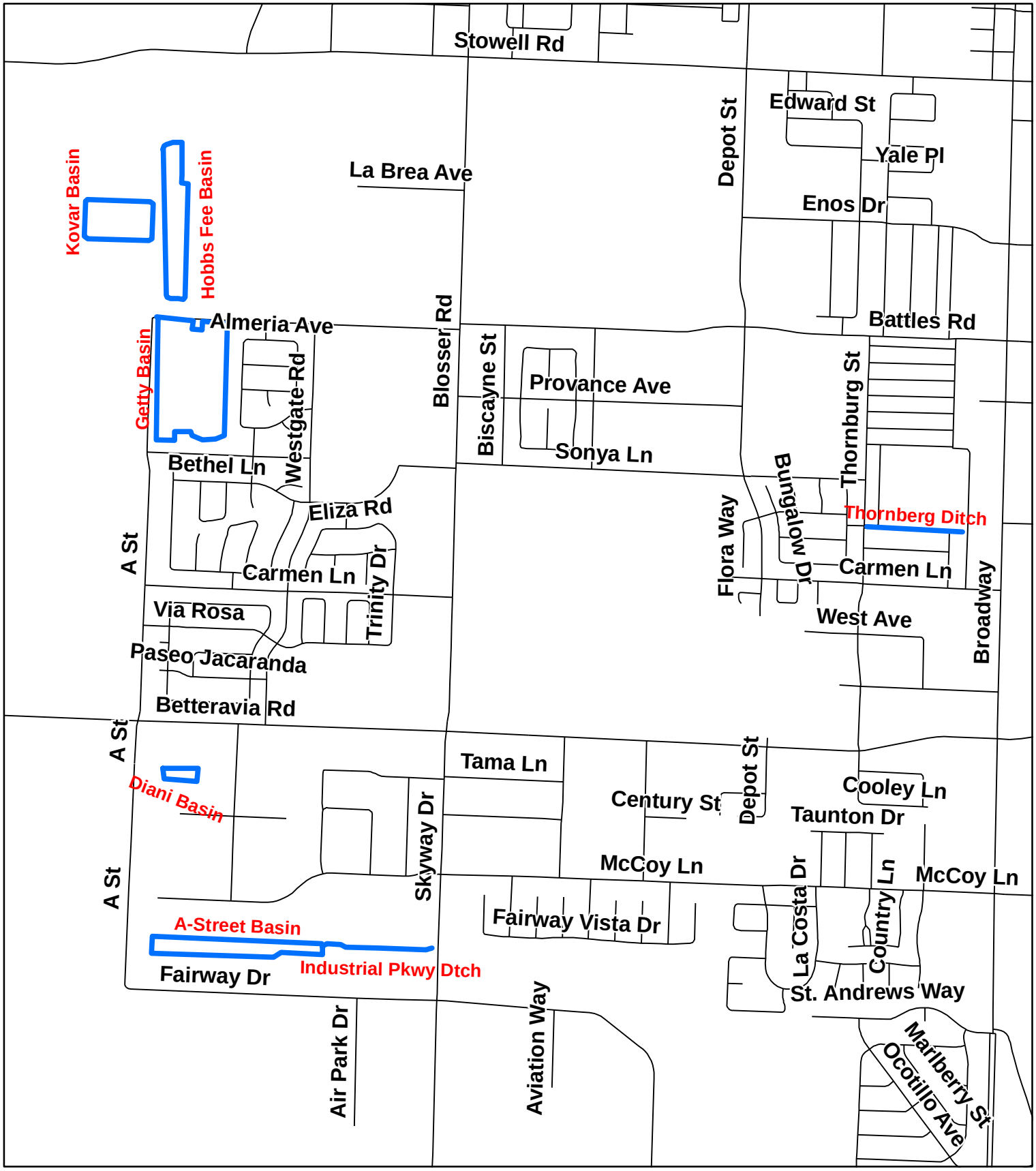


Department of Public Works County of Santa Barbara

Page 13

Getty Basin
Hobbs Fee Retention Basin
Kovar Basin
Thornberg Ditch
A-Street Basin
Industrial Parkway Ditch
Diani Basin

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N
W E
S
Feet
1,100 550 0 1,100

Coordinate System: State Plane California Zone V NAD 1983

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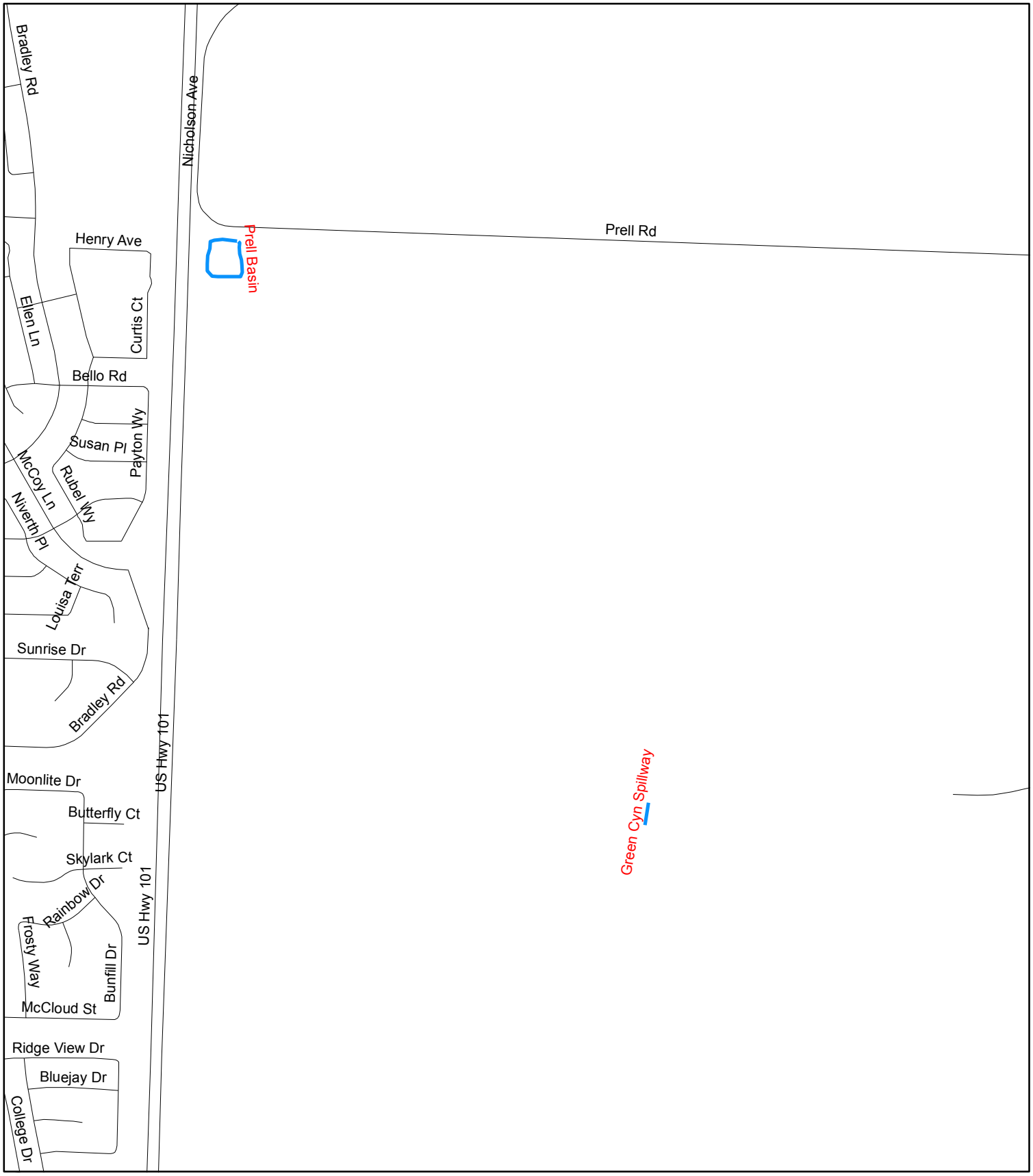


Department of Public Works County of Santa Barbara

# Green Canyon Spillway



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N W E S

790 395 0 790 Feet

Coordinate System: State Plane California Zone V NAD 1983

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Santa Barbara County, California

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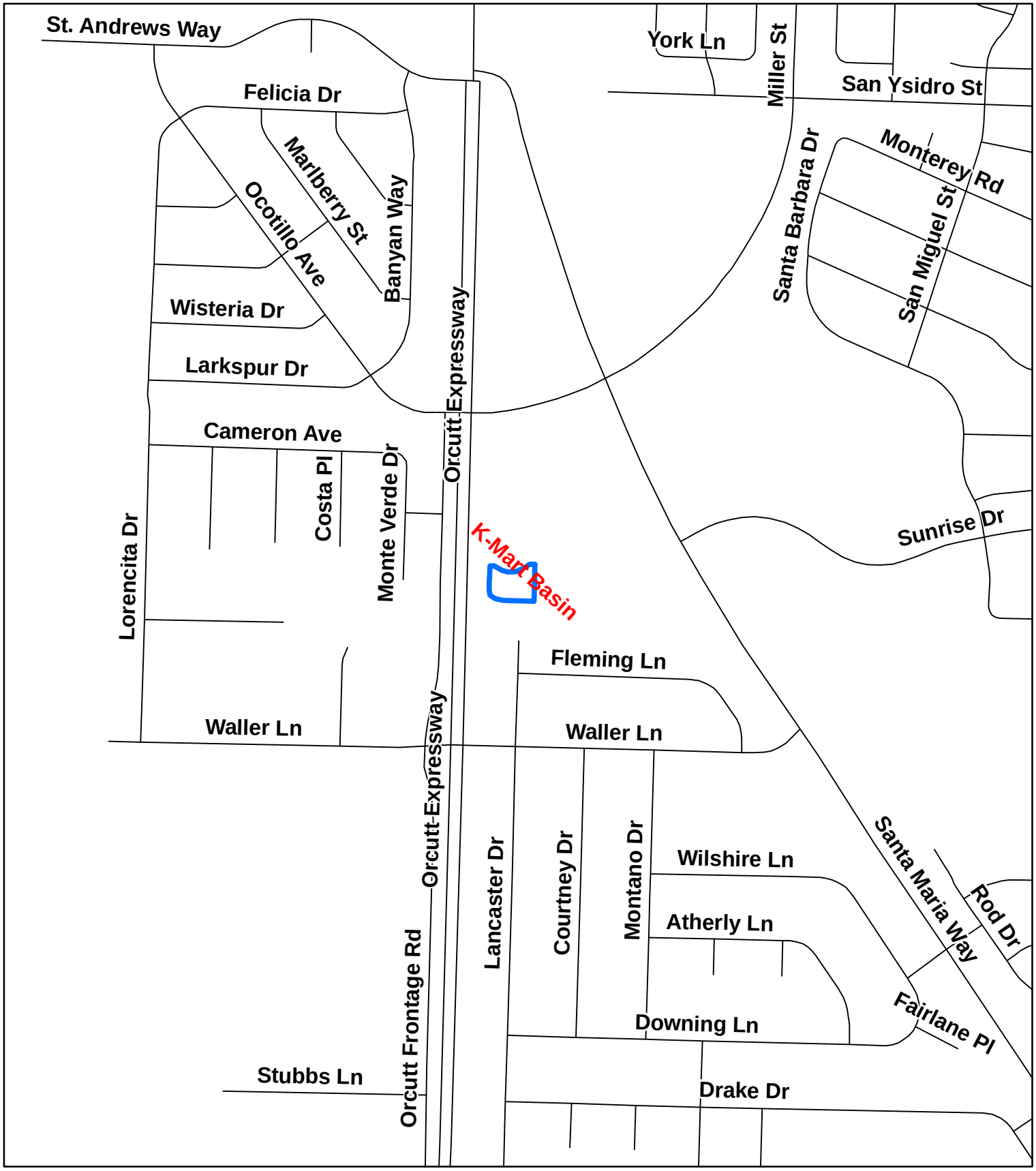


Department of Public Works County of Santa Barbara

# K-Mart Basin

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N W E S

Feet

460 230 0 460

Coordinate System: State Plane California Zone V NAD 1983

Annual Routine Maintenance Plan

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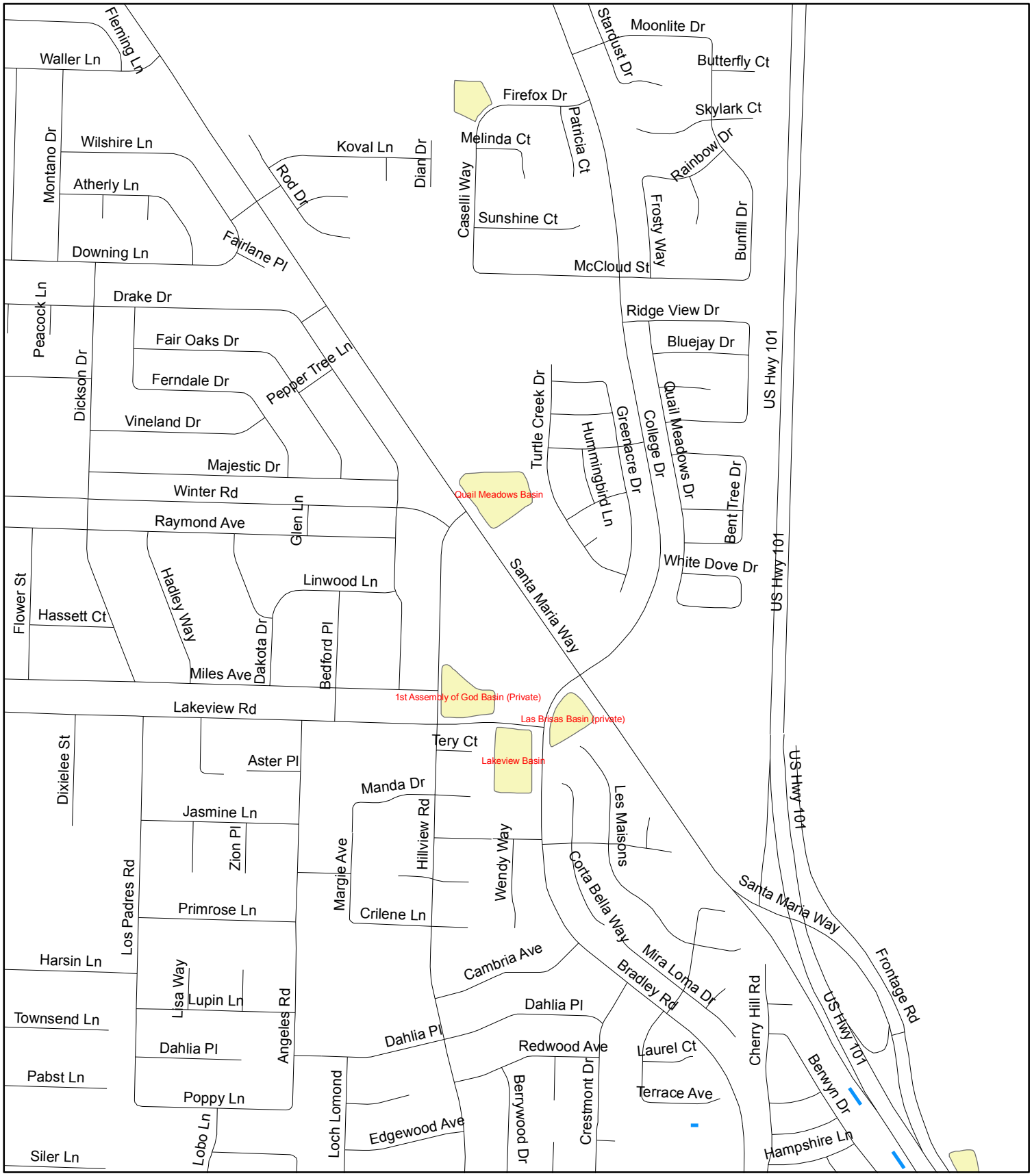


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# Lakeview Basin
# Quail Meadows Basin



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N W E S

650 325 0 650

Feet

Coordinate System: State Plane California Zone V NAD 1983

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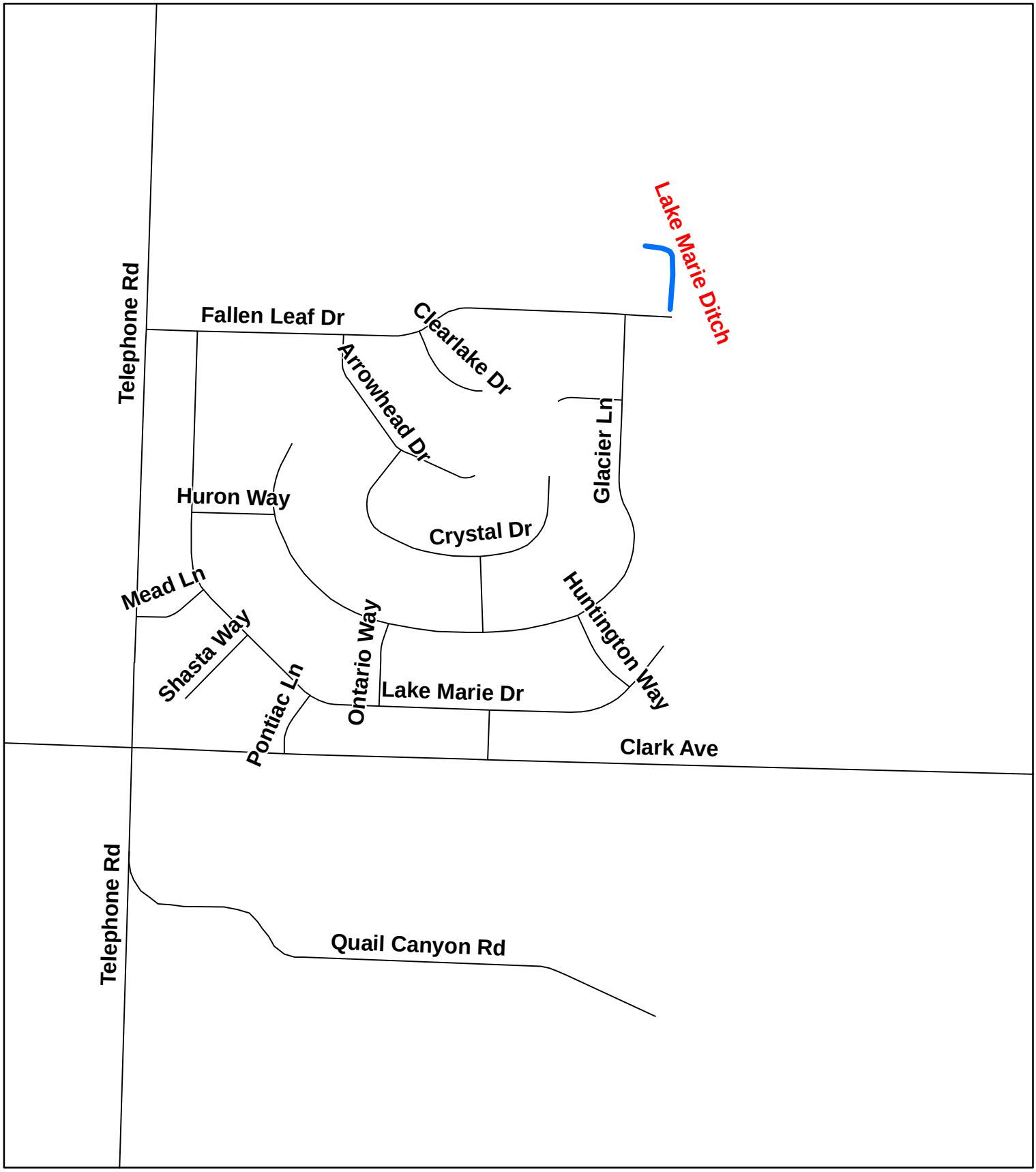


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# Lake Marie Ditch

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N W E S

560 280 0 560

Feet

Coordinate System: State Plane California Zone V NAD 1983

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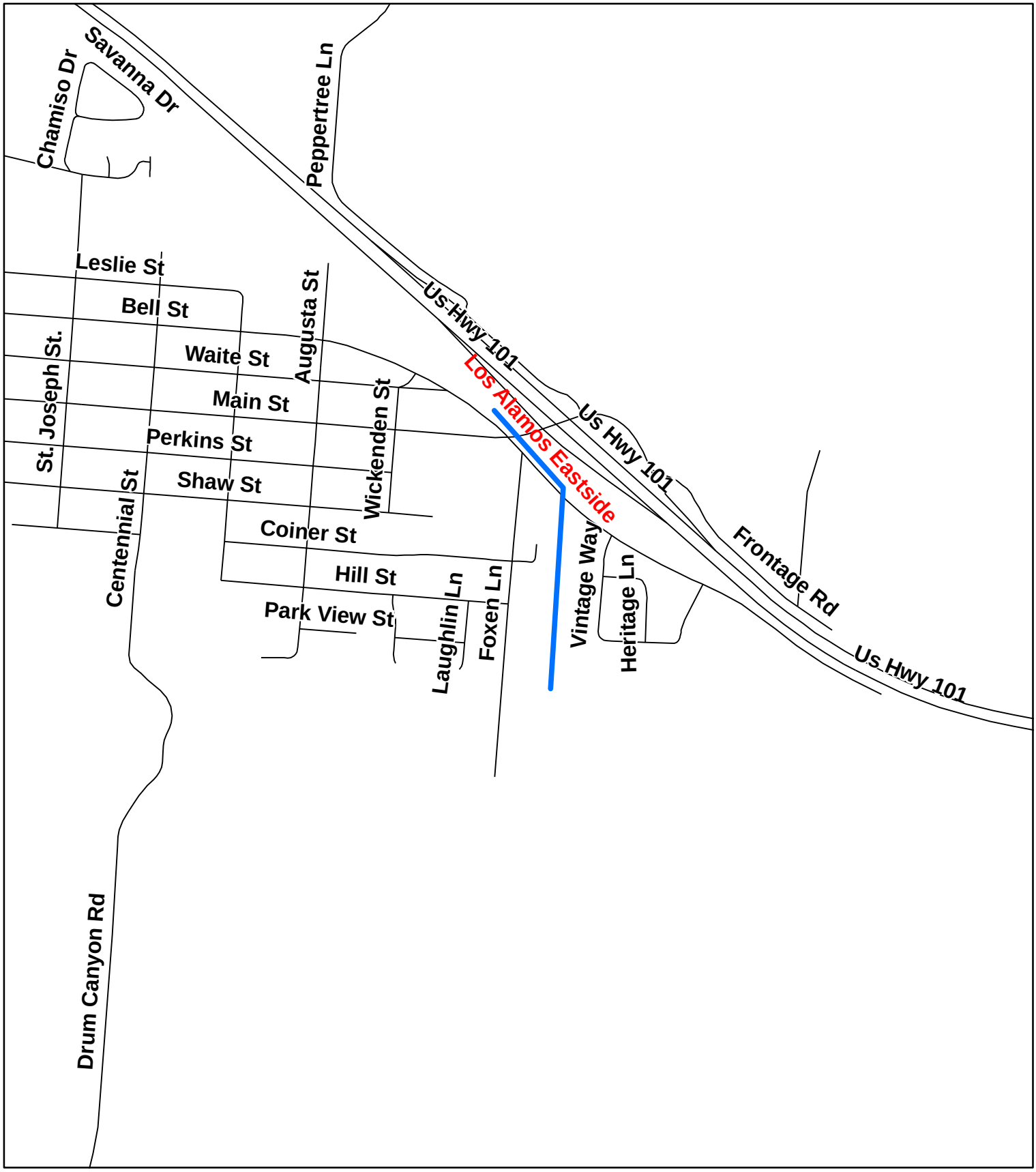


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# Los Alamos Eastside Ditch



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N
W E
S

Feet

725 362.5 0 725

Coordinate System: State Plane California Zone V NAD 1983

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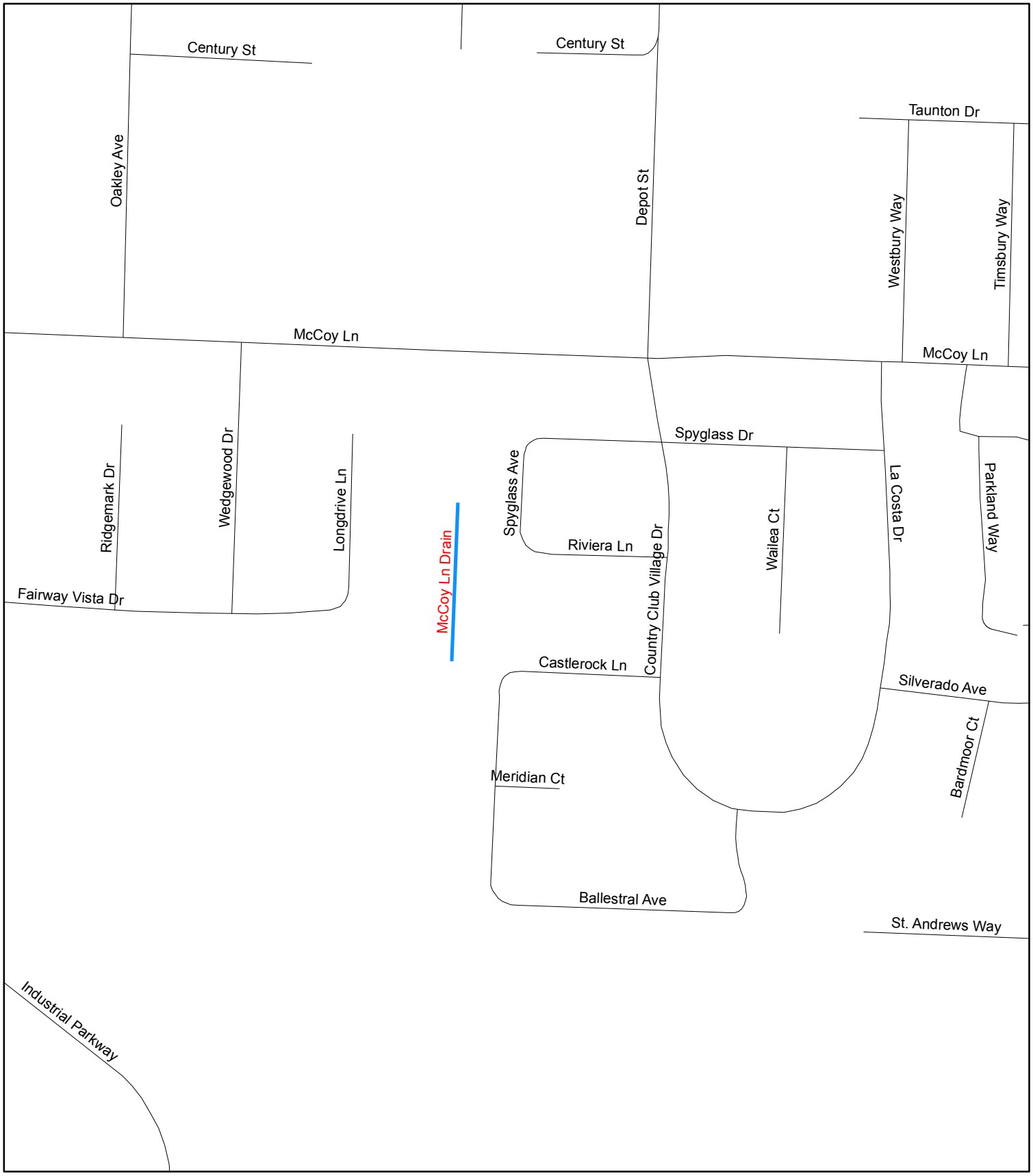


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# McCoy Lane Drain



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N W E S

Feet

275 137.5 0 275

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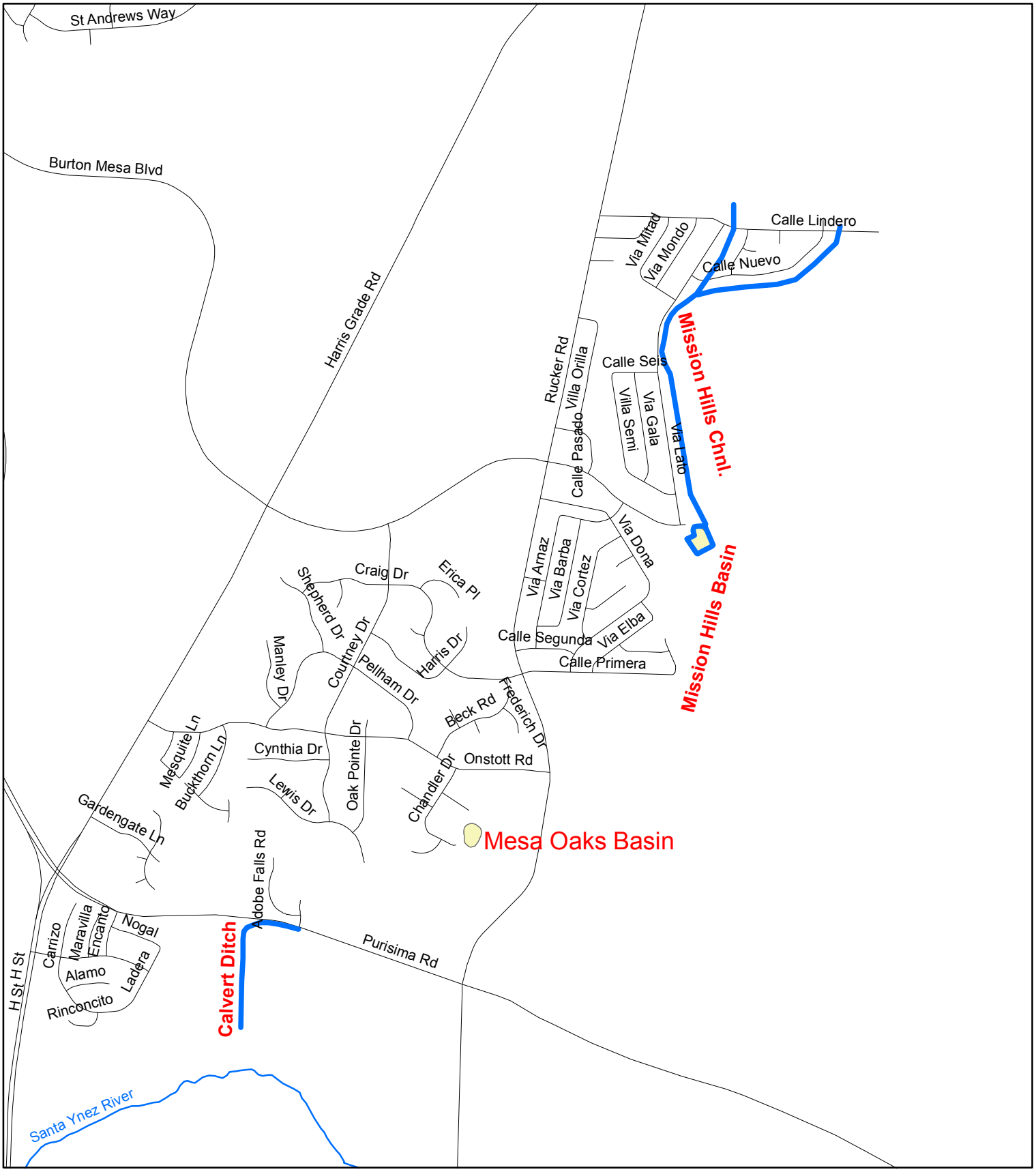


Department of Public Works County of Santa Barbara

# Mesa Oaks Basin
# Mission Hills Channel
# Mission Hills Basin
# Calvert Ditch



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N W E S

1,300 650 0 1,300

Feet

Coordinate System: State Plane California Zone V NAD 1983

**Annual Routine Maintenance Plan**
**Fiscal Year 2011-2012**

Santa Barbara County, California

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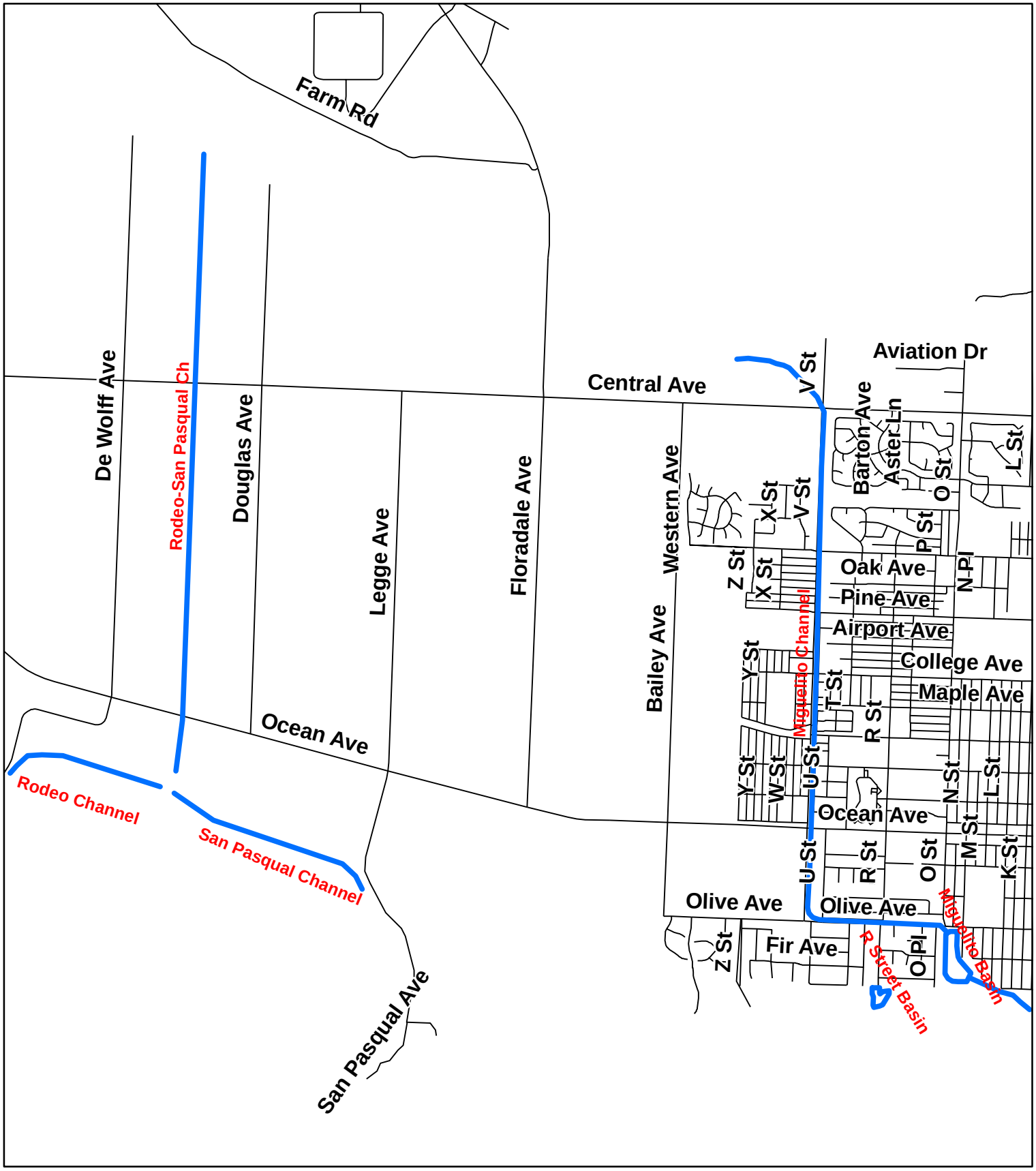


Department of Public Works County of Santa Barbara

Page 21

Miguelito Channel
Miguelito Basin
R Street Basin
Rodeo Channel
San Pasqual Channel
Rodeo-San Pascual Channel

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N
W E
S
Feet
2,100 1,050 0 2,100

Coordinate System: State Plane California Zone V NAD 1983

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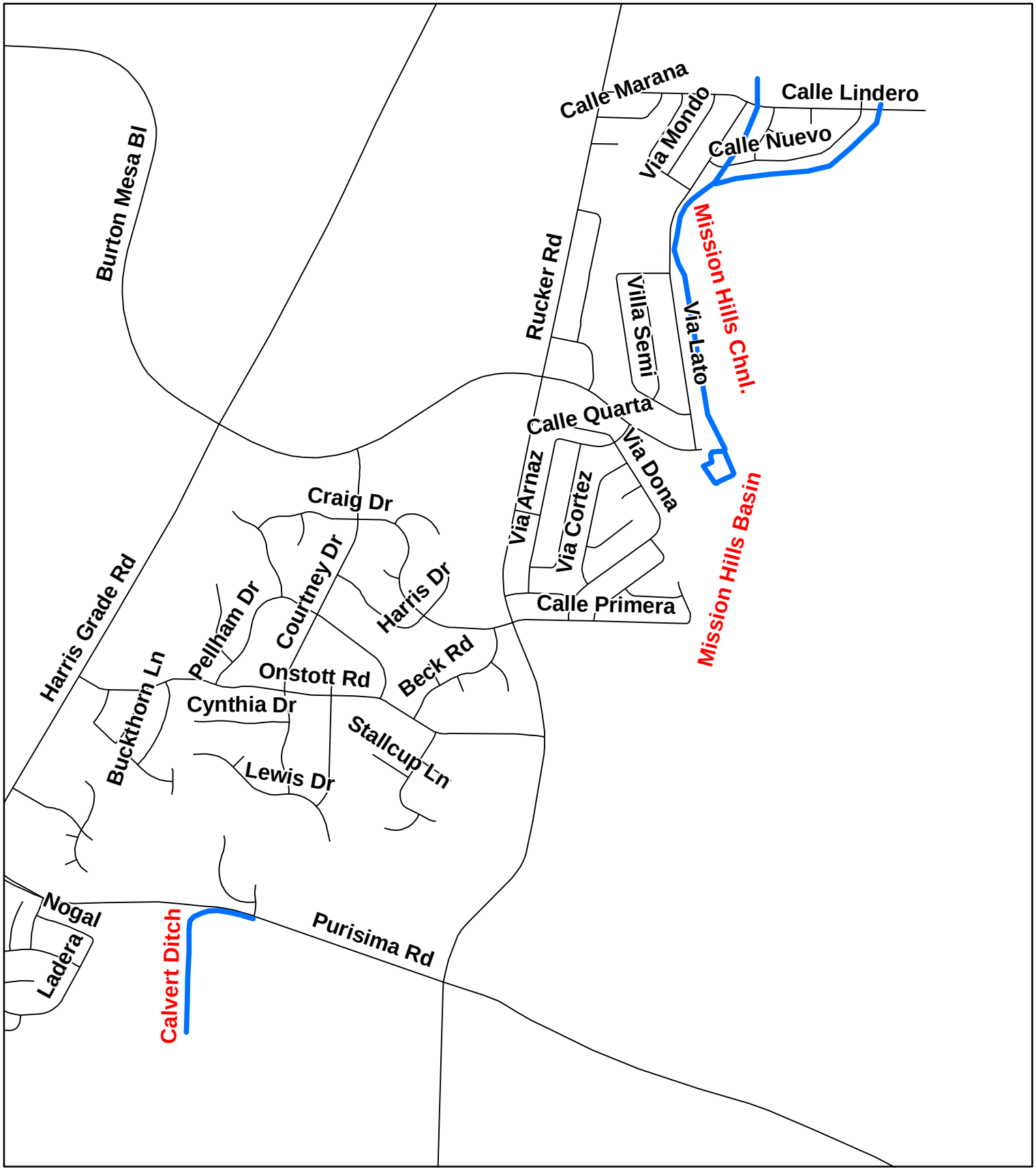


Department of Public Works County of Santa Barbara

# Mission Hills Channel
# Mission Hills Basin
# Calvert Ditch

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N W E S

1,200 600 0 1,200 Feet

Coordinate System: State Plane California Zone V NAD 1983

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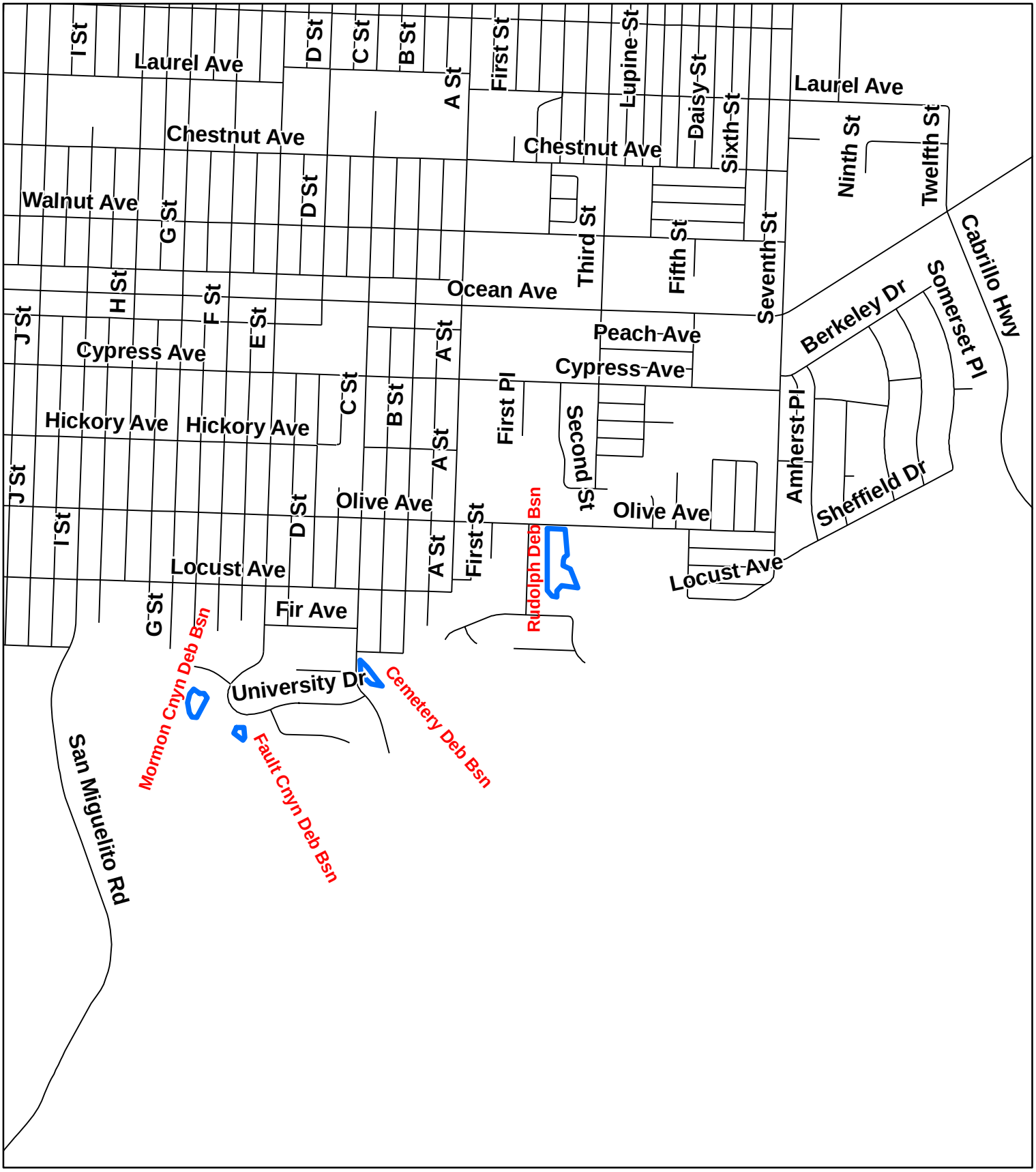


Department of Public Works County of Santa Barbara

# Mormon Canyon Debris Basin
# Fault Canyon Debris Basin
# Cemetery Debris Basin
# Rudolph Debris Basin

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N W E S

950 475 0 950

Feet

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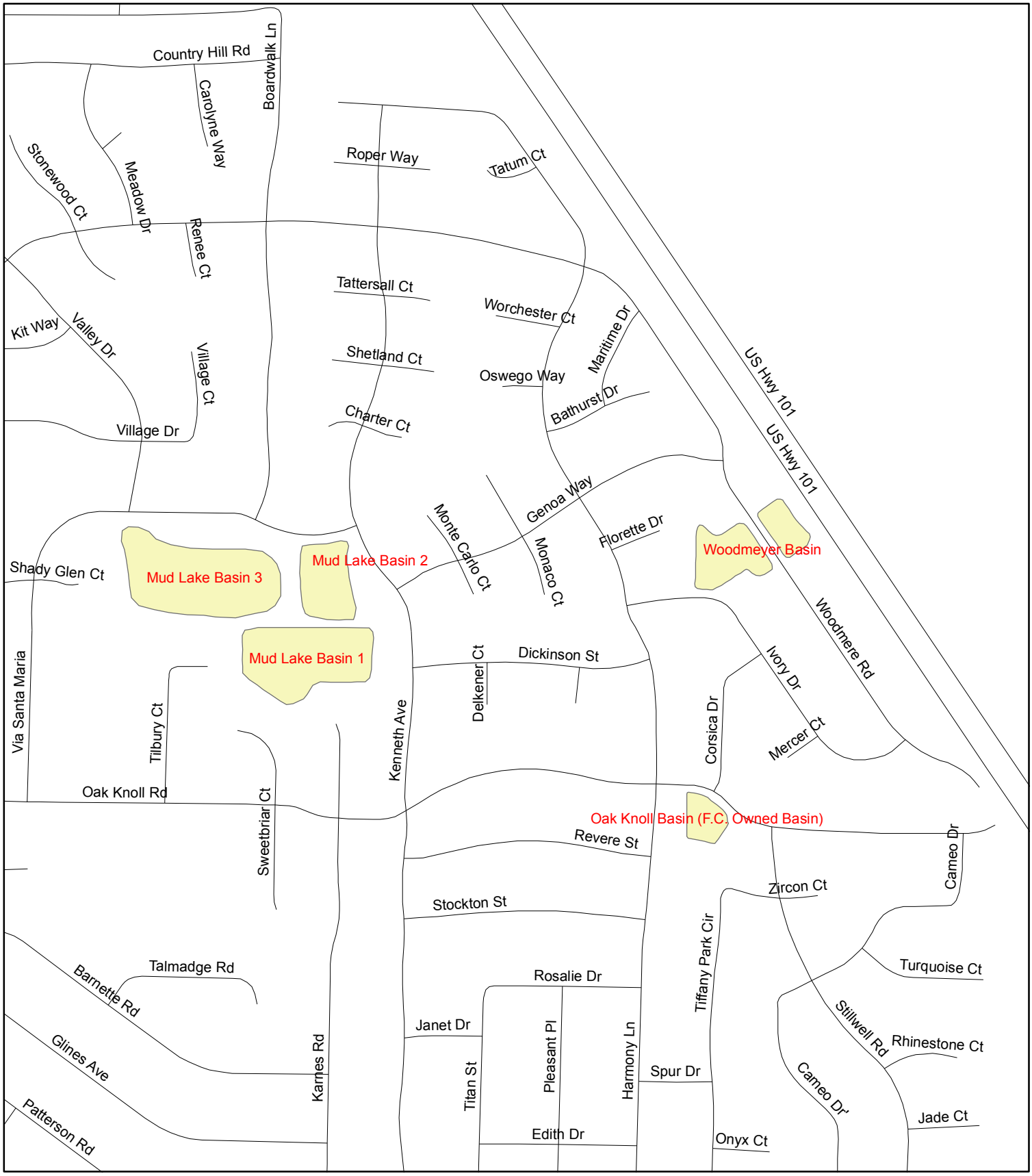


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# Mud Lake Basins 1,2,3
# Woodmeyer Basin

Page 24

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N W E S

Feet

450 225 0 450

Coordinate System: State Plane California Zone V NAD 1983

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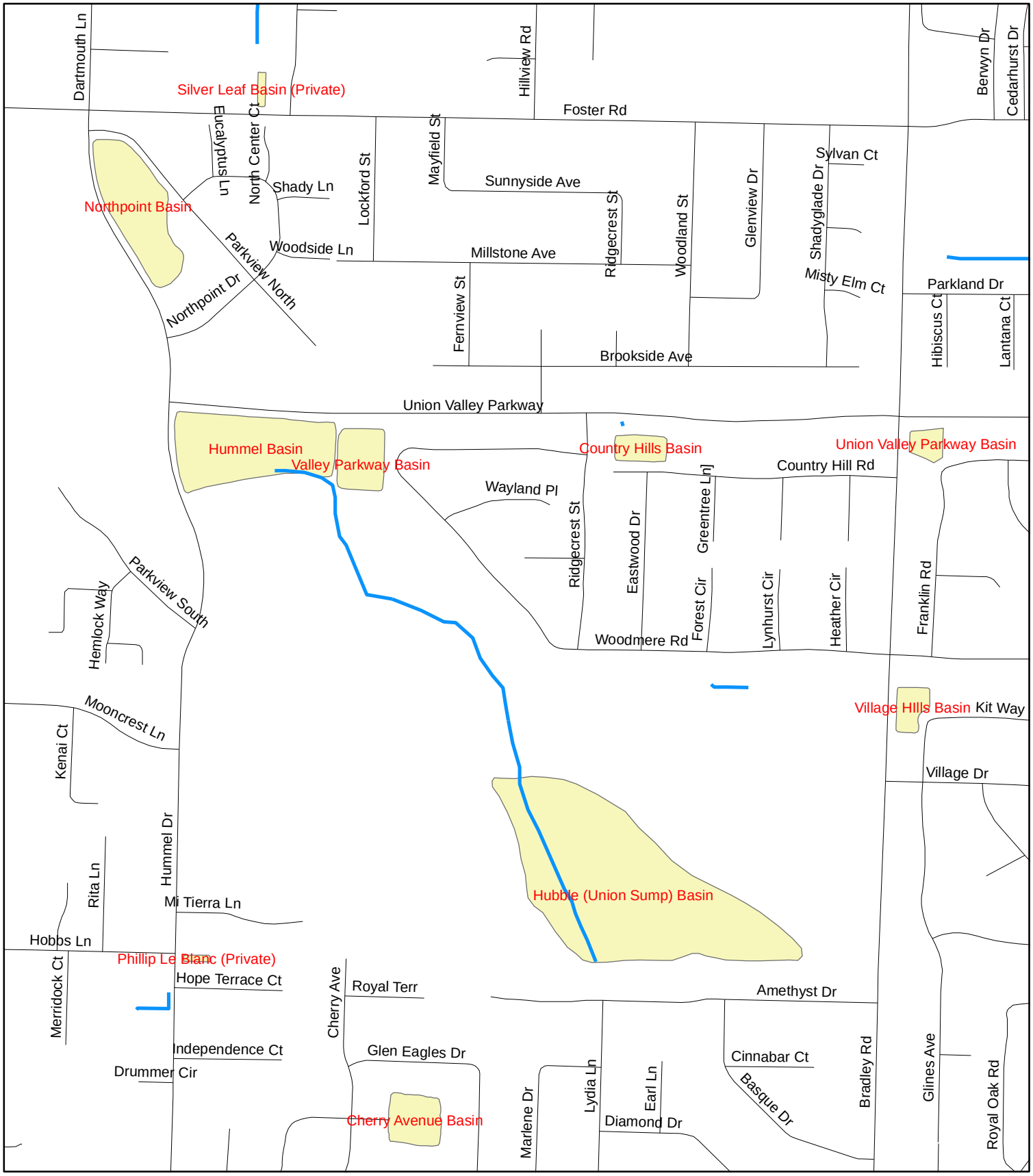


Department of Public Works County of Santa Barbara

Page 25

# Northpointe Basin
# Hummel Basin
# Valley Parkway Basin
# Country Hills Basin
# Union Valley Parkway Basin
# Village Hills Basin
# Hubble Basin
# Cherry Avenue Basin

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N W E S

Feet

490 245 0 490

Coordinate System: State Plane California Zone V NAD 1983

**Annual Routine Maintenance Plan**

Santa Barbara County, California

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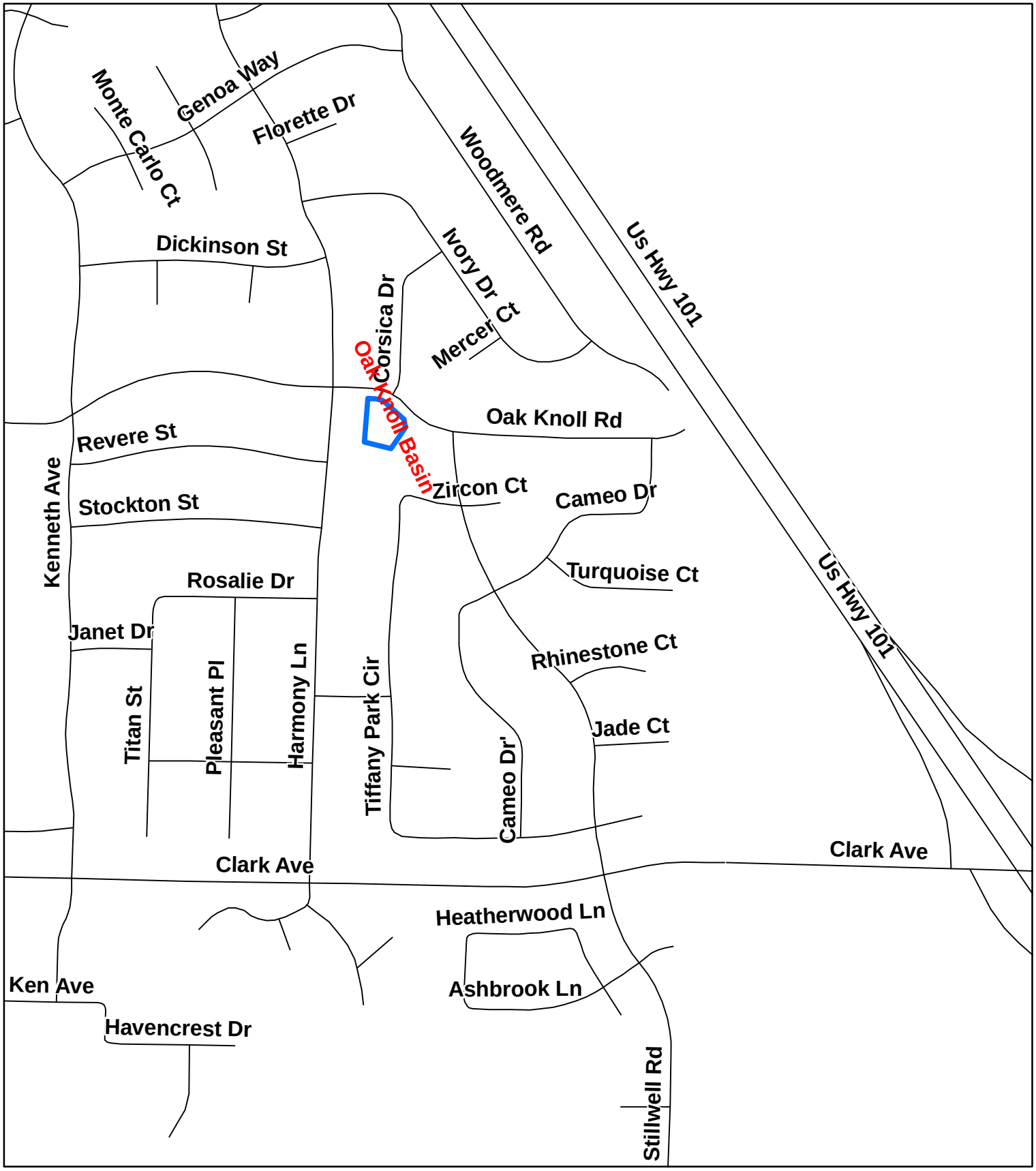


Department of Public Works County of Santa Barbara

# Oak Knoll Basin

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N W E S

460 230 0 460

Feet

Coordinate System: State Plane California Zone V NAD 1983

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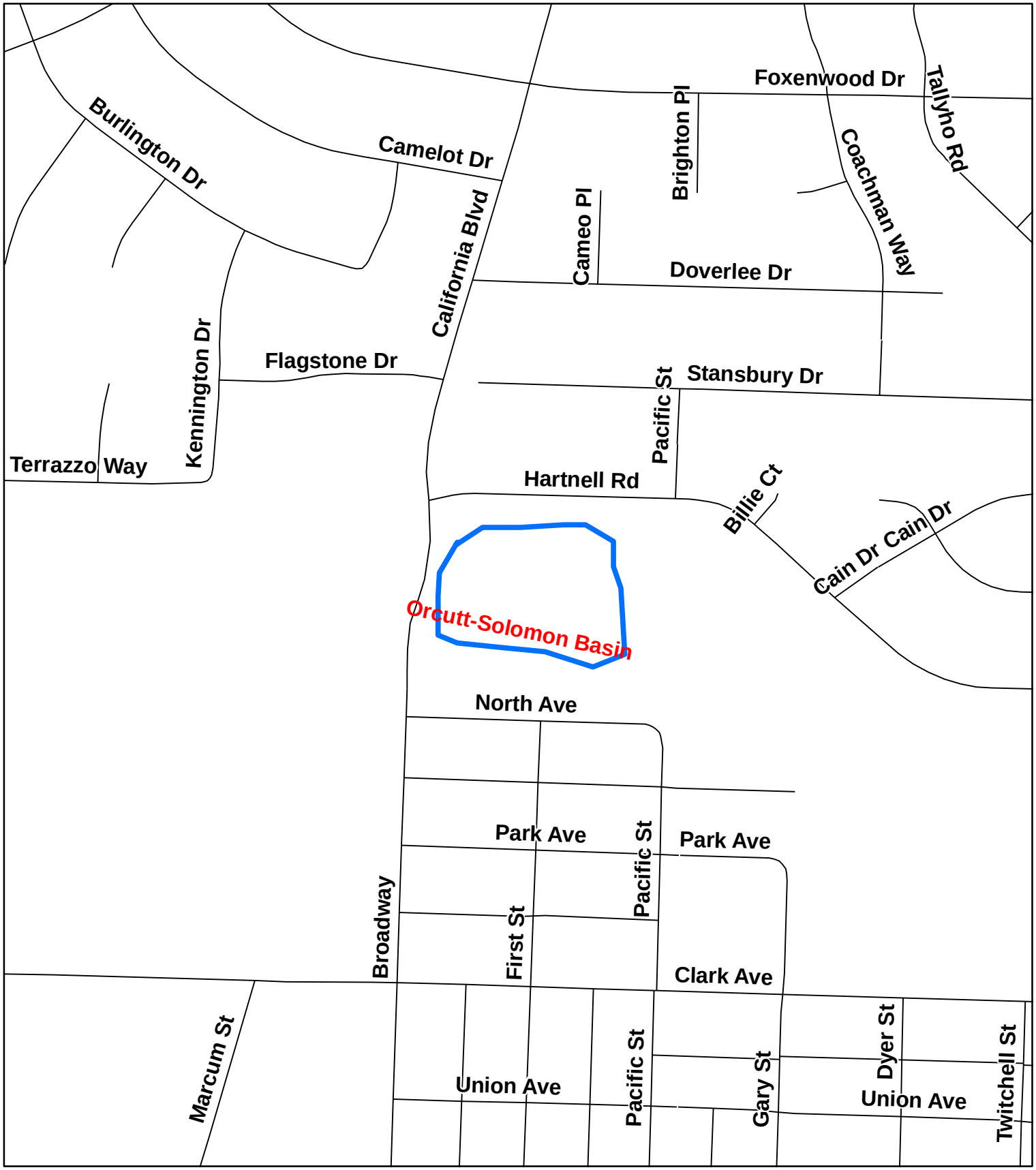


Department of Public Works County of Santa Barbara

# Orcutt-Solomon Basin

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N W E S

Feet

325 162.5 0 325

Coordinate System: State Plane California Zone V NAD 1983

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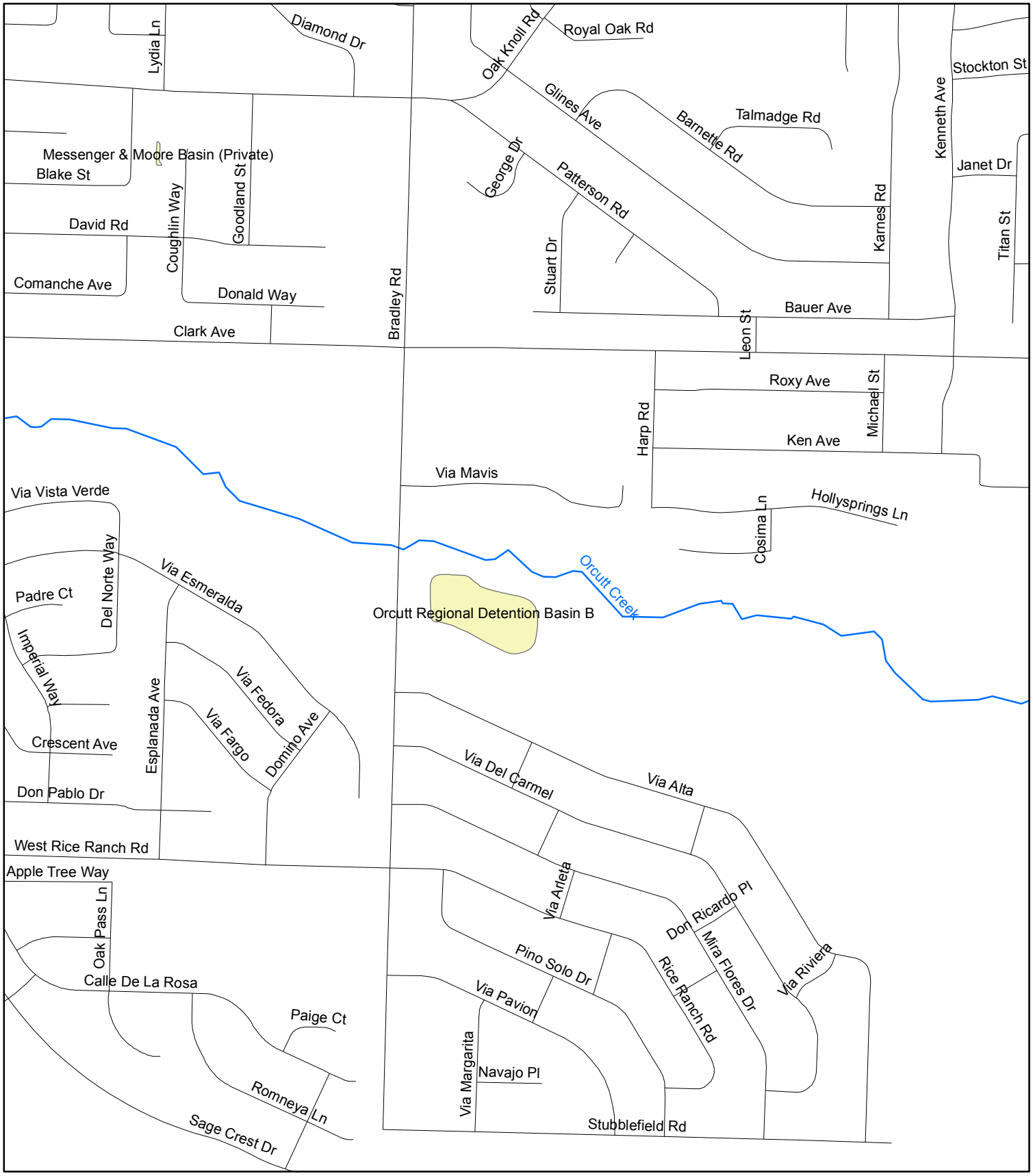


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# Orcutt Regional Detention Basin B

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N W E S

Feet

550 275 0 550

Coordinate System: State Plane California Zone V NAD 1983

## Annual Routine Maintenance Plan

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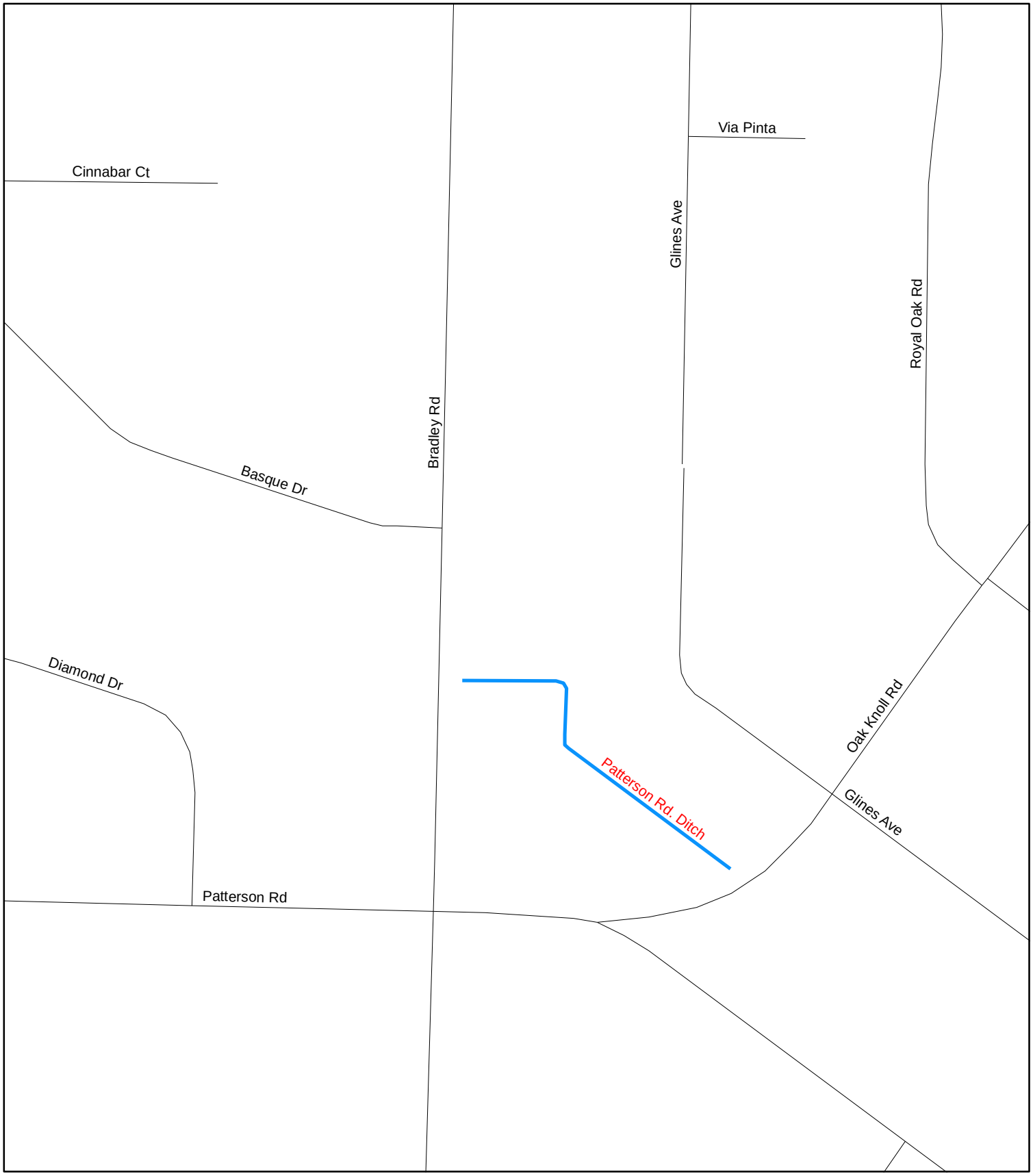


Department of Public Works County of Santa Barbara

# Patterson Rd. Ditch



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N
W E
S
Feet
130 65 0 130

Coordinate System: State Plane California Zone V NAD 1983

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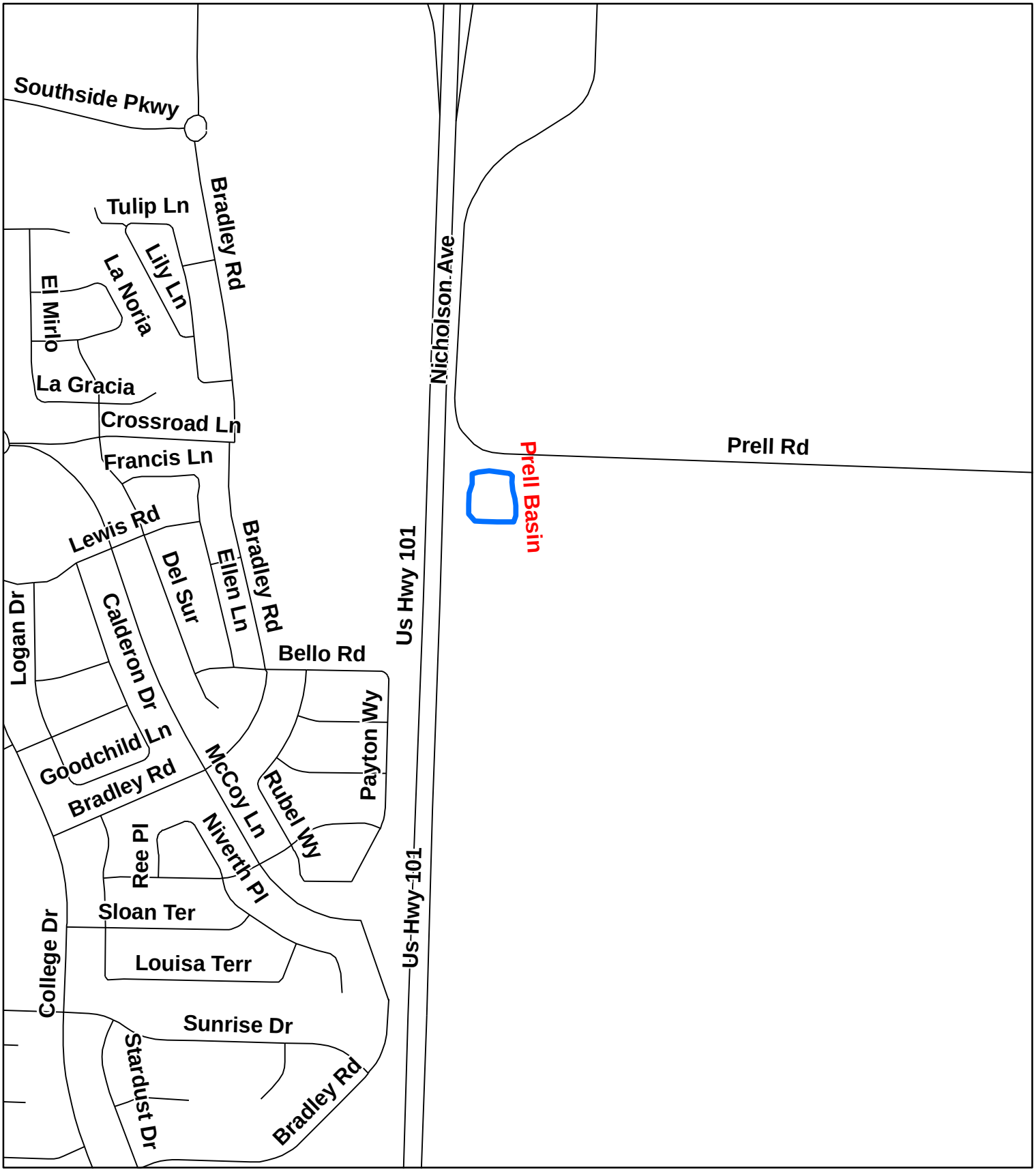


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# Prell Basin

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N W E S

Feet

525 262.5 0 525

Coordinate System: State Plane California Zone V NAD 1983

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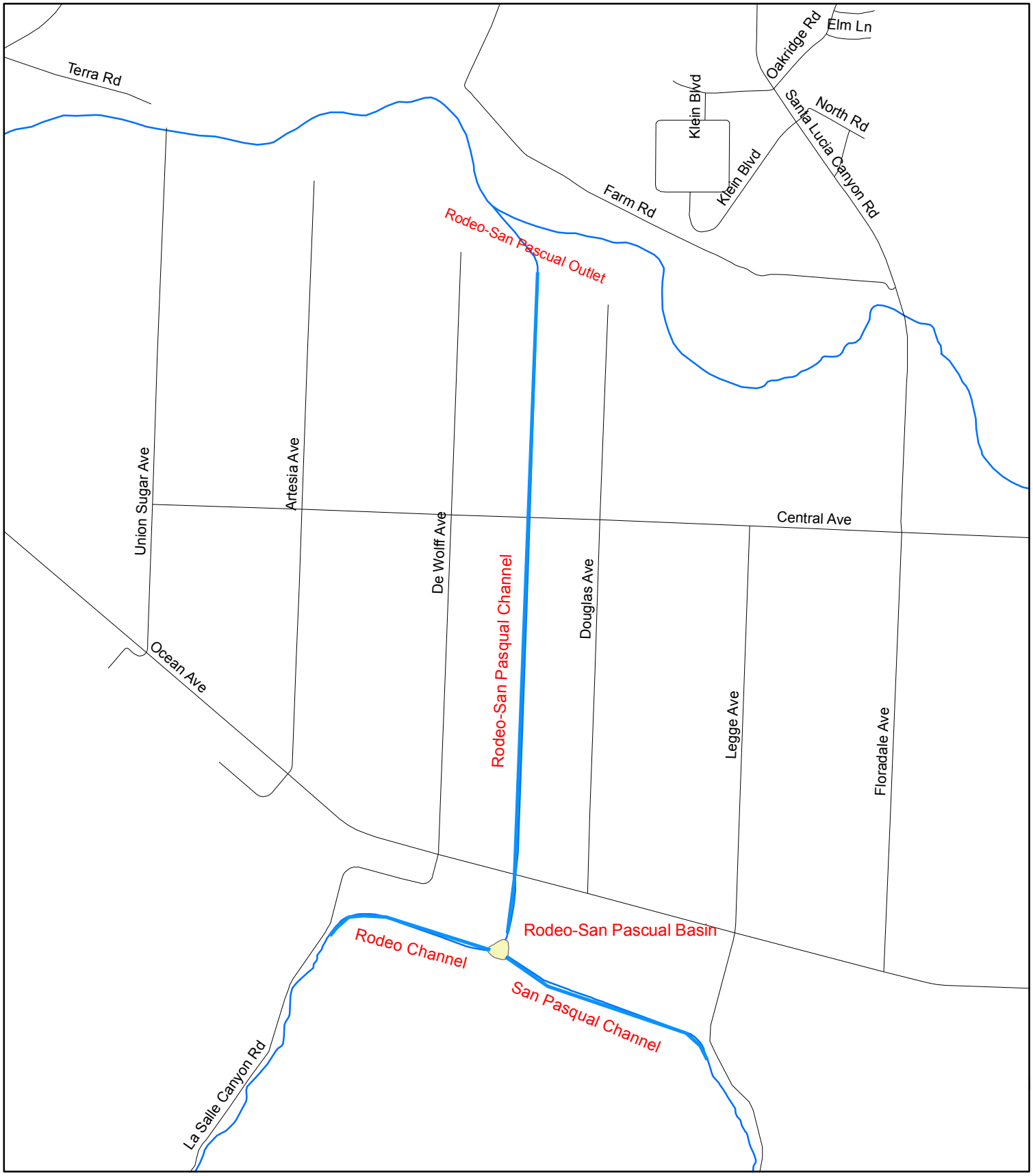


Department of Public Works County of Santa Barbara

# Rodeo Channel
# San Pascual Channel
# Rodeo-San Pascual Basin
# Rodeo-San Pascual Channel
# Rodeo-San Pascual Outlet



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N
W E
S
Feet
2,000 1,000 0 2,000

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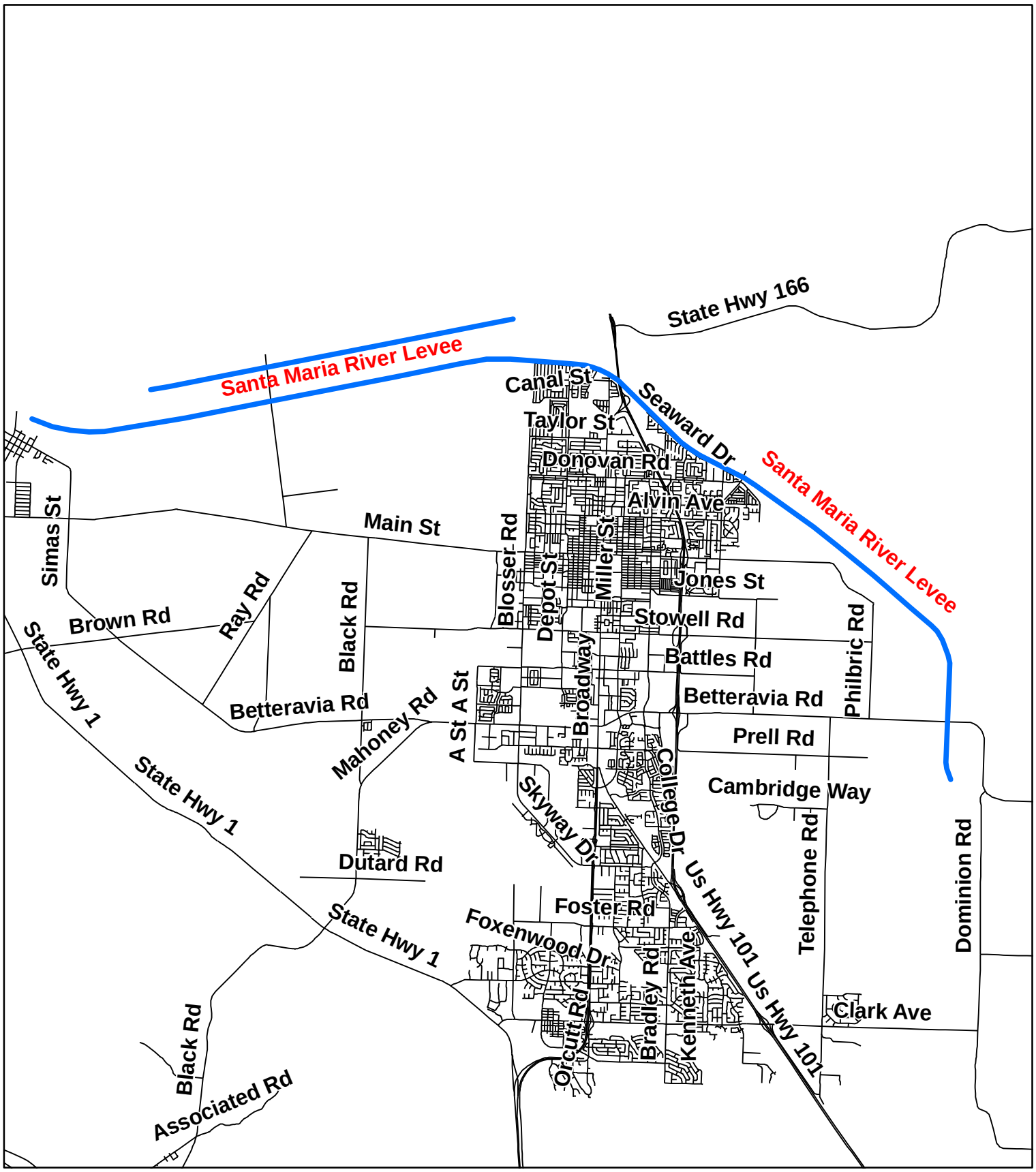


Department of Public Works County of Santa Barbara

# Santa Maria River Levee

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N W E S

Feet

7,300 3,650 0 7,300

Coordinate System: State Plane California Zone V NAD 1983

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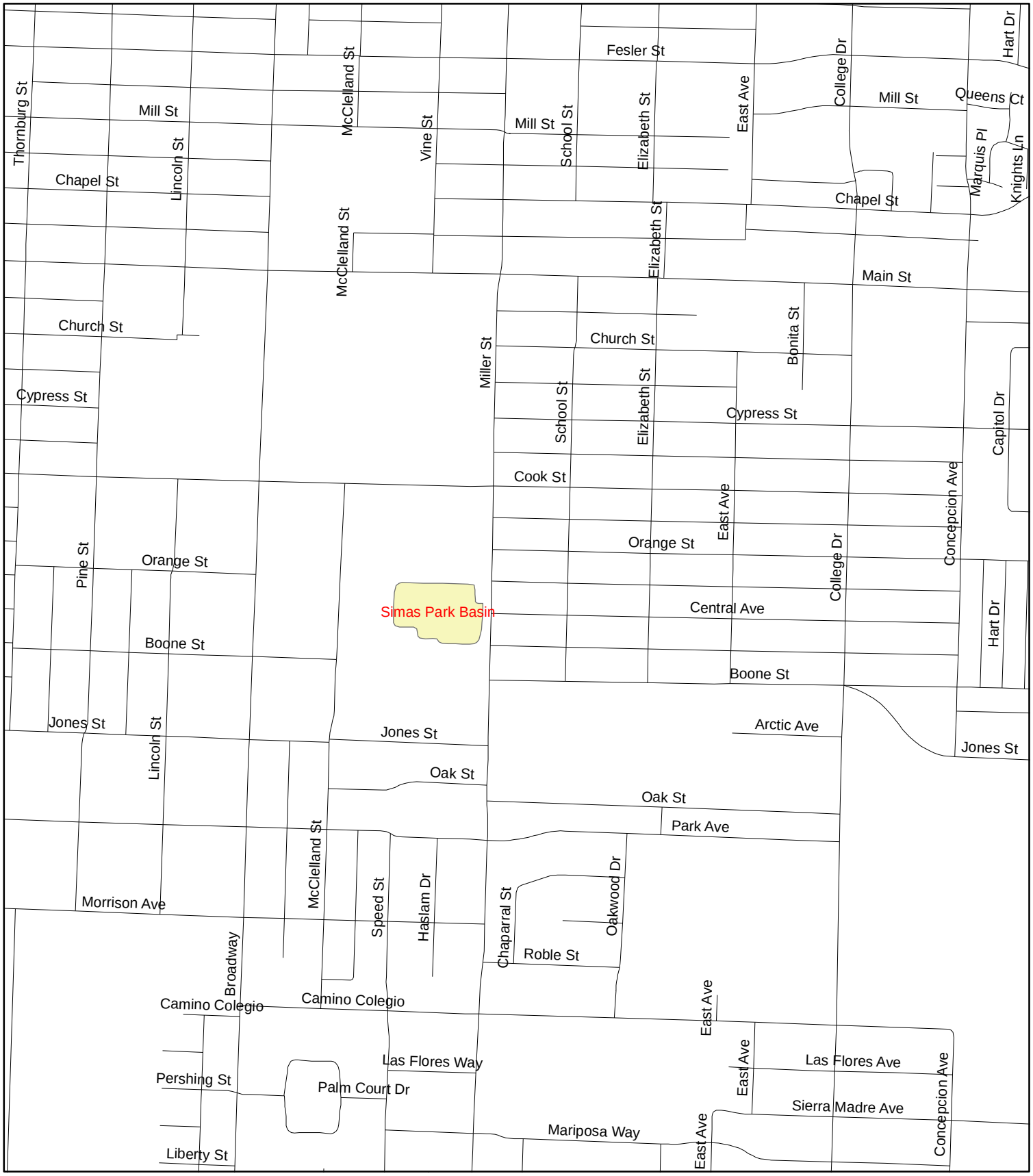


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# Simas Park Basin

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N W E S

Feet

570 285 0 570

Coordinate System: State Plane California Zone V NAD 1983

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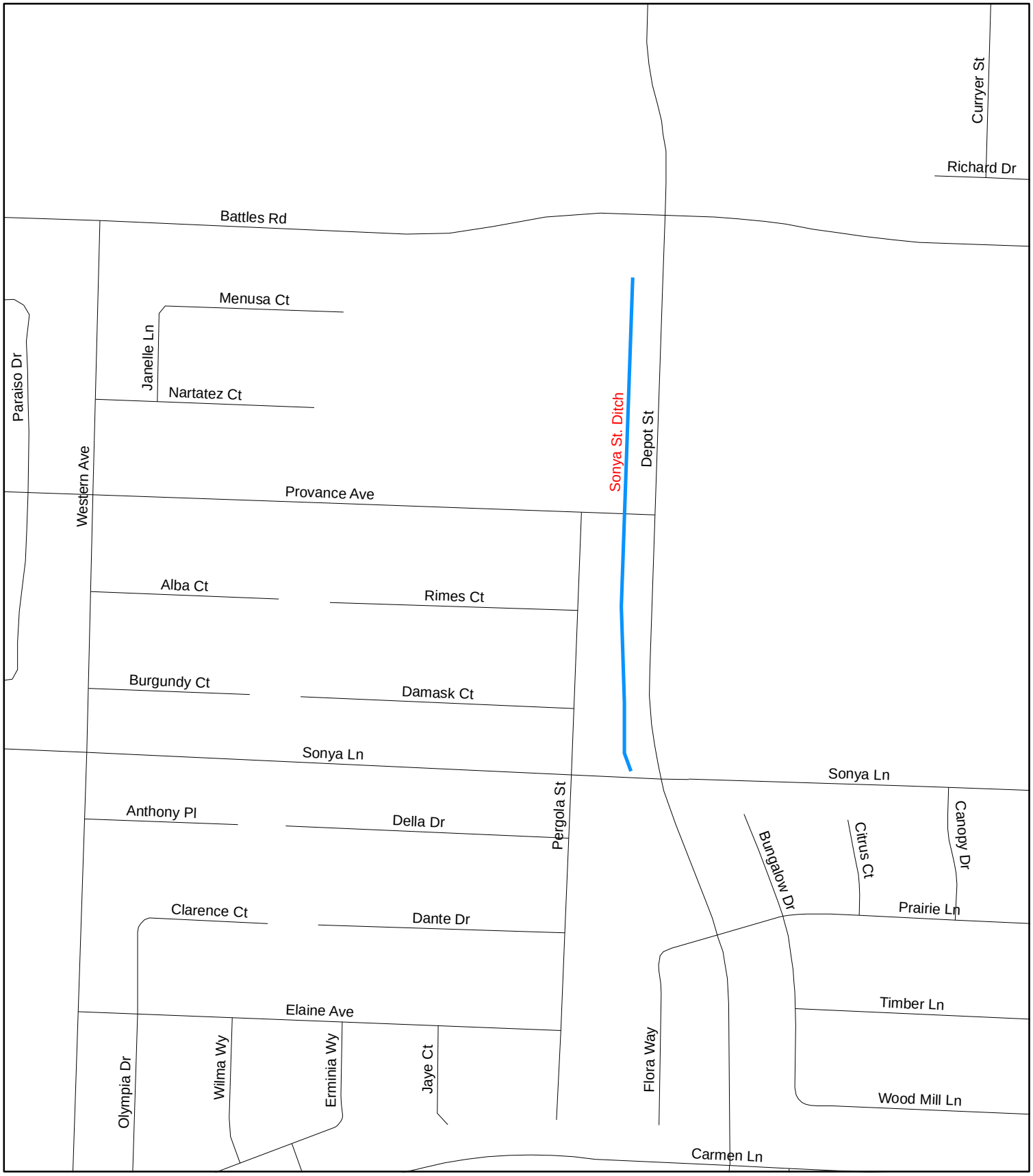


Department of Public Works County of Santa Barbara

# Sonya St. Ditch

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N W E S

Feet
270 135 0 270

Coordinate System: State Plane California Zone V NAD 1983

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Santa Barbara County, California

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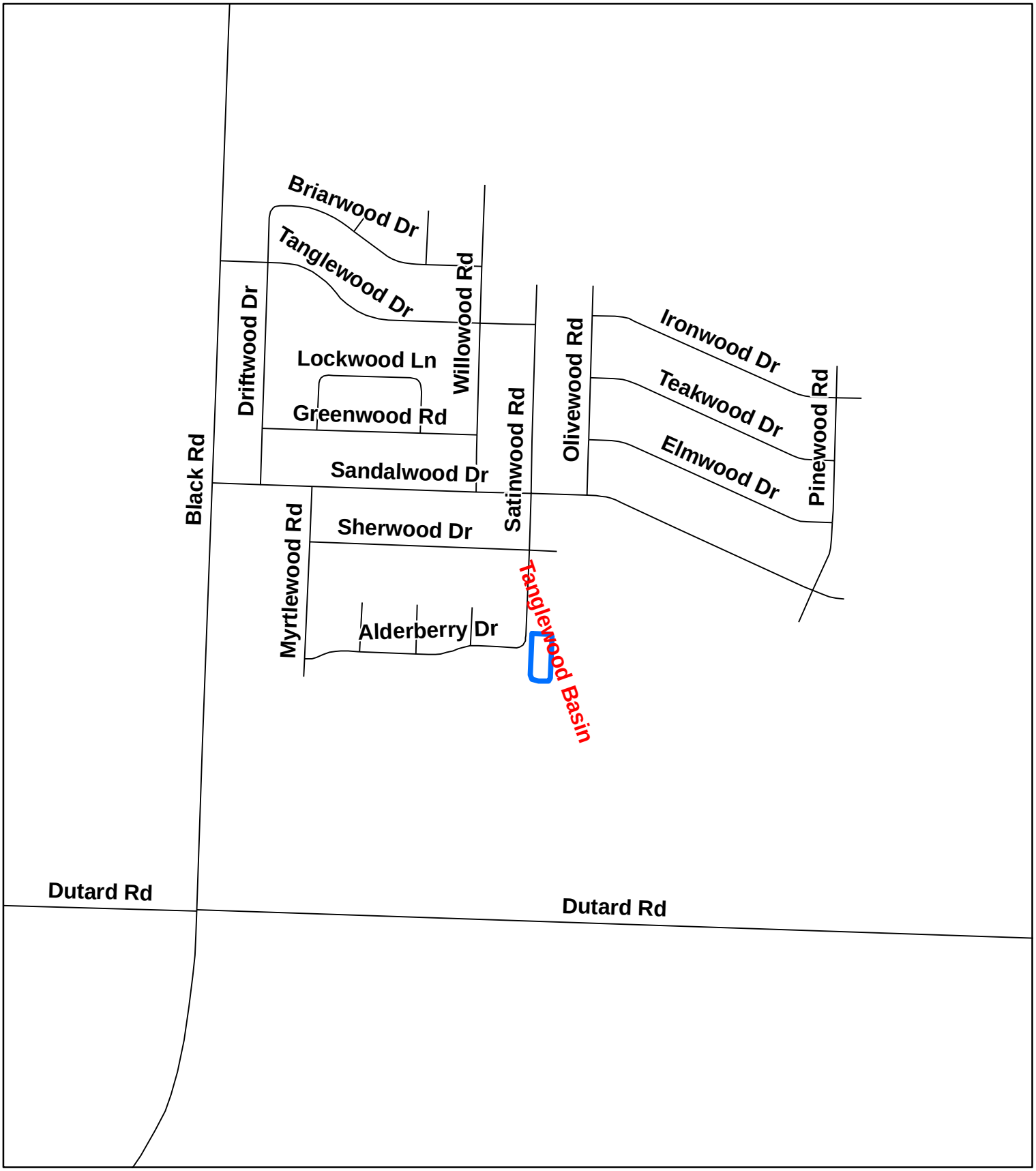


Department of Public Works County of Santa Barbara

# Tanglewood Basin

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N
W E
S
Feet
510 255 0 510

Coordinate System: State Plane California Zone V NAD 1983

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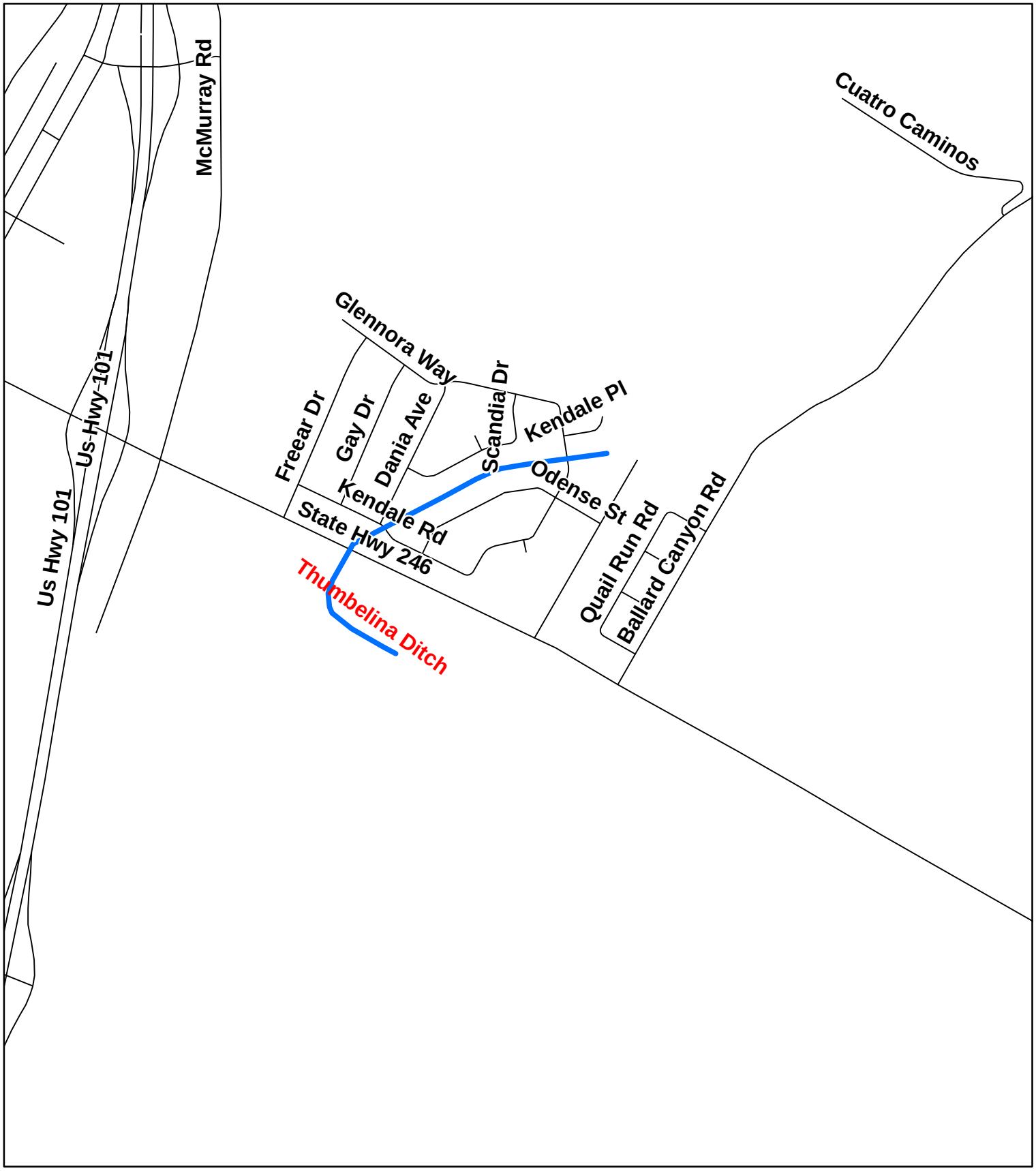


# Thumbelina Ditch

Department of Public Works County of Santa Barbara

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N
W E
S
Feet
680 340 0 680

Coordinate System: State Plane California Zone V NAD 1983

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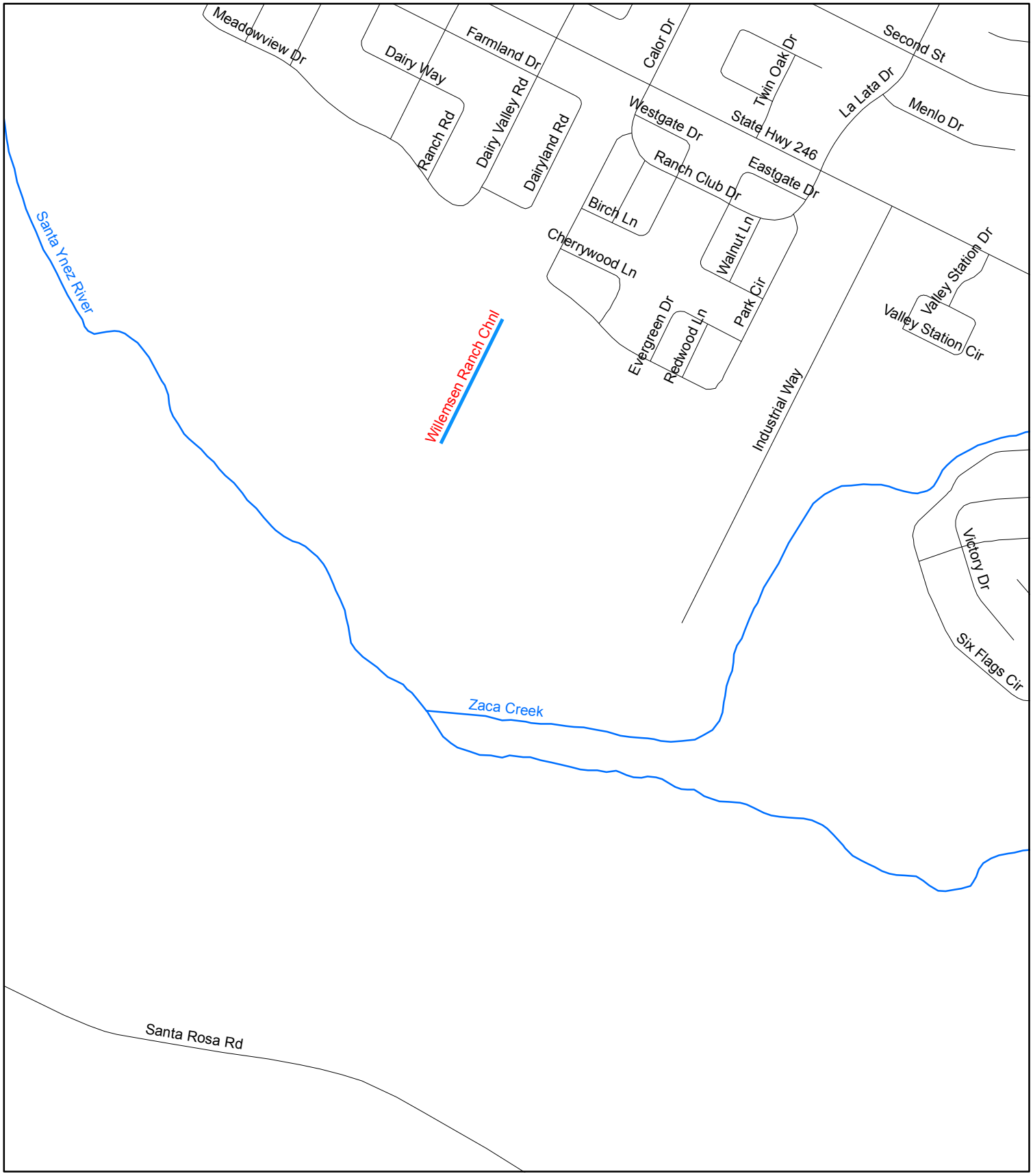


Department of Public Works County of Santa Barbara

# Willemsen Ranch Channel

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N W E S

Feet

525 262.5 0 525

Coordinate System: State Plane California Zone V NAD 1983

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Santa Barbara County, California

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**South Coast Facilities:**

Most of the South Coast facilities are concrete channels that require minor maintenance. Maintenance mainly consists of periodic inspection of the weep holes along the concrete channel and trimming of vegetation that overhangs the channel from adjacent back yards and along access roads and vegetation such as ivy that grows down the concrete itself. The District occasionally paints over graffiti.

The District will conduct herbicide application in the facilities listed below beginning May 1st, and desilting and mowing of non-native vegetation beginning June 1st of the year following that Annual Plan's approval. If the project does not specifically state that desilting will occur, then that facility will not be desilted under this year's Annual Plan.

All South Coast Facilities have a potential area of impact of less than 100 square feet from spot spraying.

**Concrete Channels:**

1. **Arroyo Burro Channel:** From the confluence with San Roque Creek downstream to Calle Real Street, approximately 1,000 feet. On an annual basis the concrete channel is spot sprayed and sediment is removed approximately every 5 years. Refer to Page 1.

2. **Atascadero Channel:** From Arroyo Road downstream to the confluence with Hospital Channel, a distance of 2,170 feet. The bottom of the channel is spot sprayed along with graffiti removal on an annual basis to eliminate the vegetation that may begin to colonize within the channel. Refer to Page 2.

3. **Cieneguitas Channel:** From the Union Pacific railroad tracks downstream to Modoc Road, a distance of 500 feet. The bottom of the channel is spot sprayed along with graffiti removal on an annual basis to eliminate the vegetation that may begin to colonize within the channel. Refer to Page 3.

4. **Derbiano Drain:** From the confluence with Hospital Creek upstream 1000'. This concrete channel consists of overhanging shrubs that protrude into the active channel. The shrubs will be cut and removed from the active channel on an annual basis. The channel is desilted every 3 to 5 years. Refer to Page 2.

5. **El Encanto Channel:** From Hollister Avenue to Phelps Road, a distance of 1,700 feet. The bottom of the channel is spot sprayed along with graffiti removal on an annual basis to eliminate the vegetation that may begin to colonize within the channel. Refer to Page 5.

6. **Encina Drain:** From Cathedral Oaks Road to Berkeley Road, a distance of 371 feet. The bottom of the channel is spot sprayed along with graffiti removal on an annual basis to eliminate the vegetation that may begin to colonize within the channel. The channel is desilted every 3 to 5 years. Refer to Page 6.

7. **Franklin Channel:** From upstream of Casitas Pass Road downstream to the Carpinteria Salt Marsh, a distance of 2.2 miles. This concrete channel consists of overhanging shrubs that protrude into the active channel. The shrubs will be cut

and removed from the active channel on an annual basis. Every 3 to 5 years sediment is removed from the channel and will be removed this year. Refer to Page 7.

8. **Fremont Channel:** From Queen Anne Road downstream 125 feet. Every 3-5 years, sediment is removed from the channel. The bottom of the channel is spot sprayed along with graffiti removal on an annual basis. Refer to Page 9.

9. **High School Drain:** On the east side of Carpinteria High School from Foothill Road upstream 500'. The bottom of the channel is spot sprayed along with graffiti removal on an annual basis to eliminate the vegetation that may begin to colonize within the channel. Refer to Page 7.

10. **Hog Canyon Channel:** From the confluence with Carpinteria Creek upstream 500'. Every 5 to 7 years, sediment is removed from the channel. Refer to Page 10.

11. **Hospital Channel:** From Hollister Avenue downstream to the confluence with Atascadero Creek, a distance of 2,060'. The bottom of the channel is spot sprayed along with graffiti removal on an annual basis to eliminate the vegetation that may begin to colonize within the channel. The channel is desilted every 3-5 years and will be desilted this year. Refer to Page 2.

12. **Las Positas Channel:** From Veronica Springs Road upstream 1000'. The bottom of the channel is spot sprayed along with graffiti removal on an annual basis to eliminate the vegetation that may begin to colonize within the channel. The channel is desilted every 3 to 5 years. Refer to Page 12.

13. **Los Carneros Channel:** From Los Carneros Road downstream to Hollister Avenue, a distance of 1,900-feet. The bottom of the channel is spot sprayed along with graffiti removal on an annual basis to eliminate the vegetation that may begin to colonize within the channel. The channel is desilted every 3-5 years and will be desilted this year. Refer to Page 13.

14. **Mission Channel:** From Los Olives to Pedregosa St and from Valerio to Canon Perdido, a total distance of 5,641'. Garbage or debris, along with graffiti removal is conducted on a yearly basis. The channel is desilted every 3 to 5 years. Refer to Page 14.

15. **Montecito Channel (Casa Dorinda Channel):** From Hot Springs Road downstream to the Montecito Debris Basin, a distance of 1000'. Every 3 to 5 years, sediment is removed from the channel. Refer to Page 15.

16. **Pace Park Drain:** Between Highway 101 and Pace Park Subdivision, a distance of 1,000'. The bottom of the channel is spot sprayed along with graffiti removal on an annual basis to eliminate the vegetation that may begin to colonize within the channel. The channel is desilted every 3 to 5 years. Refer to Page 7.

**17.** **Patterson Drain:** This concrete swale runs parallel to Patterson Road for a distance of 150'. This channel is desilted every 3 to 5 years. Refer to page 17.

18. **Patterson Estates Drain:** Is the inlet to Patterson drain located at the upper end of Patterson Estates. The inlet is weeded and spot sprayed on an annual basis. Refer to page 17.

**19.** **Placencia Drain:** This is a drain pipe that drains water from the low lying Placencia St. neighborhood into San Pedro Creek. The District maintains the inlet free of sediment and debris on an annual basis. Refer to page 18.

20. **Robin Hill Drain:** On the west side of Robin Hill Road from Hollister Avenue upstream 500'. The bottom of the channel is spot sprayed along with graffiti removal on an annual basis to eliminate the vegetation that may begin to colonize within the channel. The channel is desilted every 3 to 5 years. Refer to Page 13.

21. **Romero Channel:** From Fernald Point Road to the ocean, a distance of 600'. Every 3 to 5 years, sediment is removed from the channel. Refer to Page 19.

22. **San Jose Channel:** From Hollister Avenue downstream 4,000' to Goleta Slough. The District maintains the access road within the channel on the right side. The road is weeded and spot sprayed on an annual basis. The channel will be desilted as needed. Potential area if impact is less than 500 square feet for spot spraying. Refer to Page 22.

23. **San Pedro Channel:** Runs from Calle Real upstream 1600'. Vegetation that is overhanging or has fallen in the channel is removed and weep holes are spot sprayed. Refer to Page 20.

24. **Sandpiper Drain:** This channel is located on the west side of the Sandpiper trailer park for a distance of 200'. Debris and unwanted vegetation is removed on an annual basis. Refer to Page 7.

25. **Santa Monica Channel:** This channel runs from the Santa Monica Debris basin downstream approximately 1.2 miles to Carpinteria Salt Marsh. Debris and unwanted vegetation is removed on an annual basis. The channel is desilted every 3 to 5 years. Refer to Page 7.

26. **Serenidad Drain:** From the confluence with Las Vegas Creek upstream 350'. Every 5 to 7 years, sediment is removed from the channel. Refer to Page 20.

27. **Shirrell Drain:** This is a concrete v-ditch that drains a portion of the housing track just west of Las Vegas Creek. Vegetation that is overhanging or has fallen in the channel is removed as needed. Refer to Page 21.

28. **Via Regina Ditch:** On the east side of the homes located on Via Regina, for a distance of 700'. Every 5 to 7 years, sediment is removed from the channel. Refer to Page 23.

**29.** **Westside Storm Drain:** The District maintains the outlet structure at the Boys and Girls club. This outlet requires removal of garbage and debris from outlet grate on an as needed basis. Refer to Page 24.

**Basins:**

1. **El Encanto Basin:** Located on Mitcheltorena Street in Santa Barbara. This basin requires rock and debris (small woody debris) removal (approximately 5 cubic yards) approximately every 10 years. Refer to Page 4.

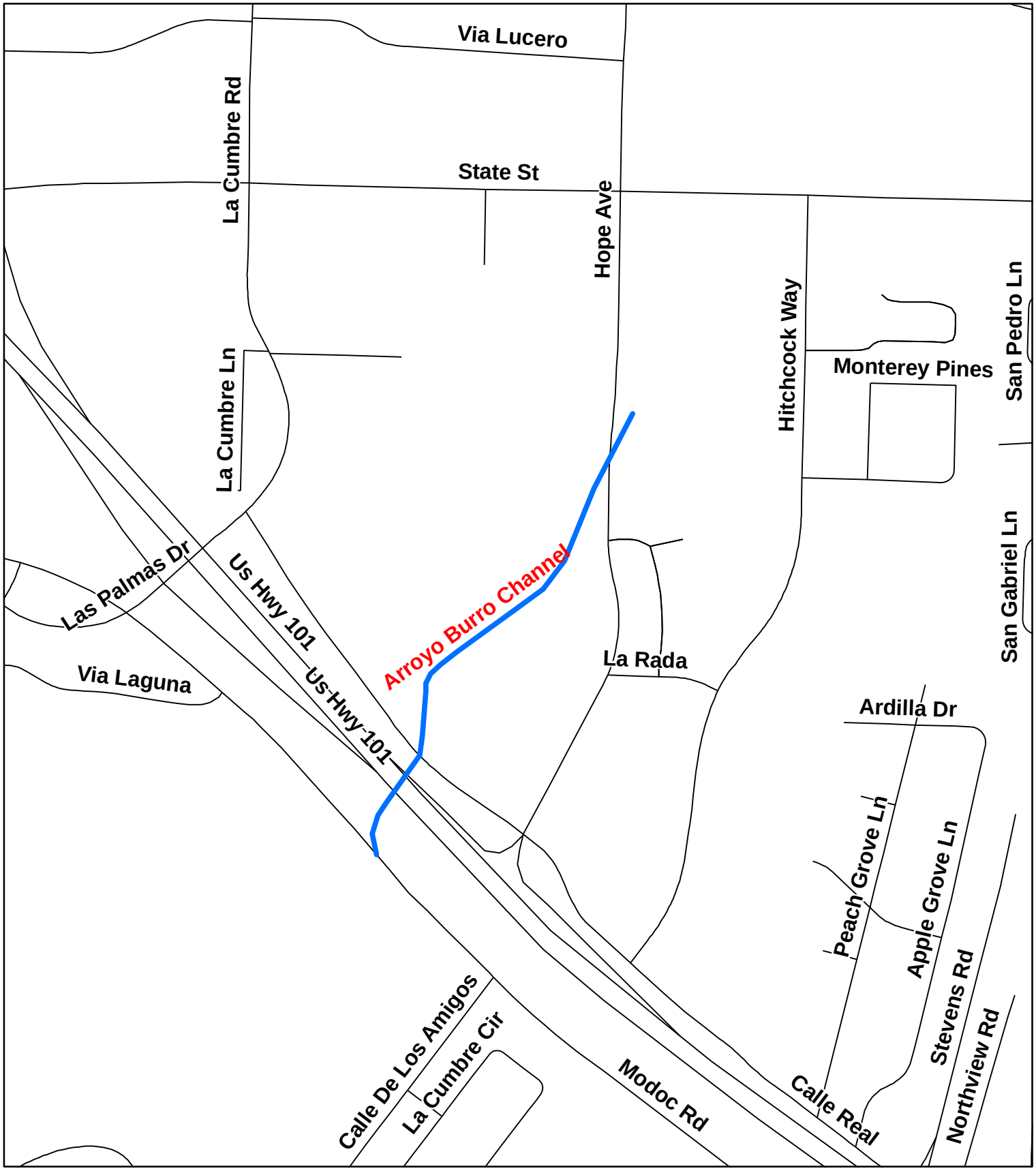
2. **Franciscan Basin:** This sediment basin is at the upstream end of Franciscan Culvert 1360 Cravens Lane in Carpinteria. This basin requires desilting approximately every 5 years to remove approximately 500 cubic yards of sediment and occasional spot spraying for weeds or cattails (approximately 5 square feet of cattails). Refer to Page 7.

**3.** **Hog Canyon Basin:** This basin requires desilting approximately every 5 years to remove between 100-200 cubic yards of sediment. Mustard and weedy vegetation are mowed annually within the basin for weed and fire control. The basin is also spot sprayed every other year if woody vegetation begins to colonize the basin. Refer to Page 11.

4. **Hospital Basin:** Immediately north of Goleta Valley Little League fields on Hollister Avenue. This basin requires desilting approximately every 5 years to remove between 100-200 cubic yards of sediment. Mustard and weedy vegetation are mowed annually within the basin for weed and fire control. The basin is also spot sprayed every other year if woody vegetation begins to colonize the basin. Refer to Page 2.

5. **Kim's Basin:** Next to Kim's Market on Via Real in Carpinteria: This basin requires desilting approximately every 10 years to remove approximately 1000 cubic yards of sediment and occasional spot spray of cattails (approximately 5 square feet of cattail removal). Refer to Page 7.

**6.** **Parma Basin:** Weedy vegetation is mowed annually within the basin it is also spot sprayed every other year if woody vegetation begins to colonize the basin. Refer to Page 16.




Department of Public Works County of Santa Barbara

# Arroyo Burro Channel

Page 1

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N W E S

Feet

380 190 0 380

Coordinate System: State Plane California Zone V NAD 1983

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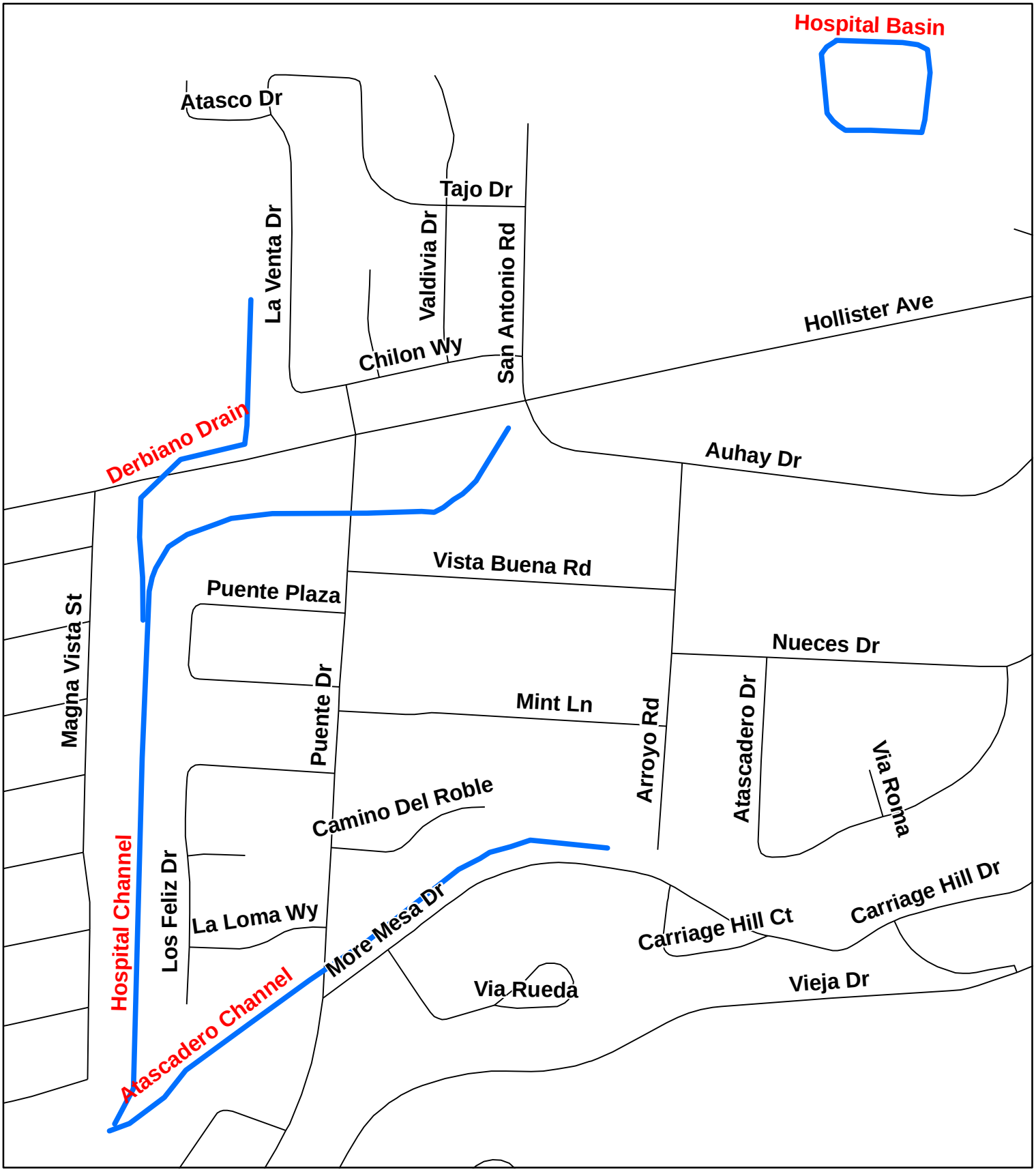


Department of Public Works County of Santa Barbara

# Atascadero Channel
# Derbiano Drain
# Hospital Channel
# Hospital Basin



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N W E S

Feet

375 187.5 0 375

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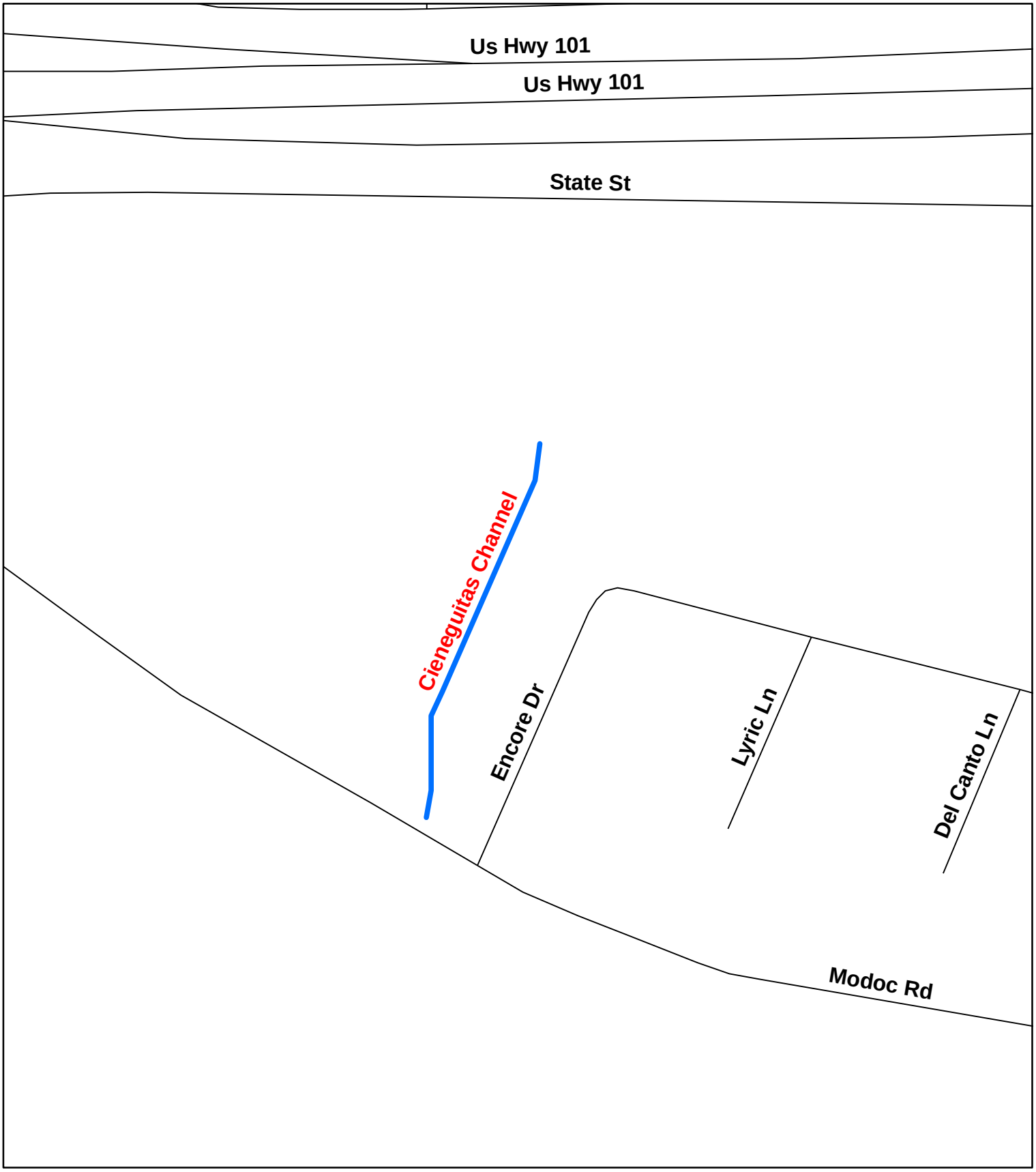


Department of Public Works County of Santa Barbara

# Cieneguitas Channel

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N W E S

Feet

140 70 0 140

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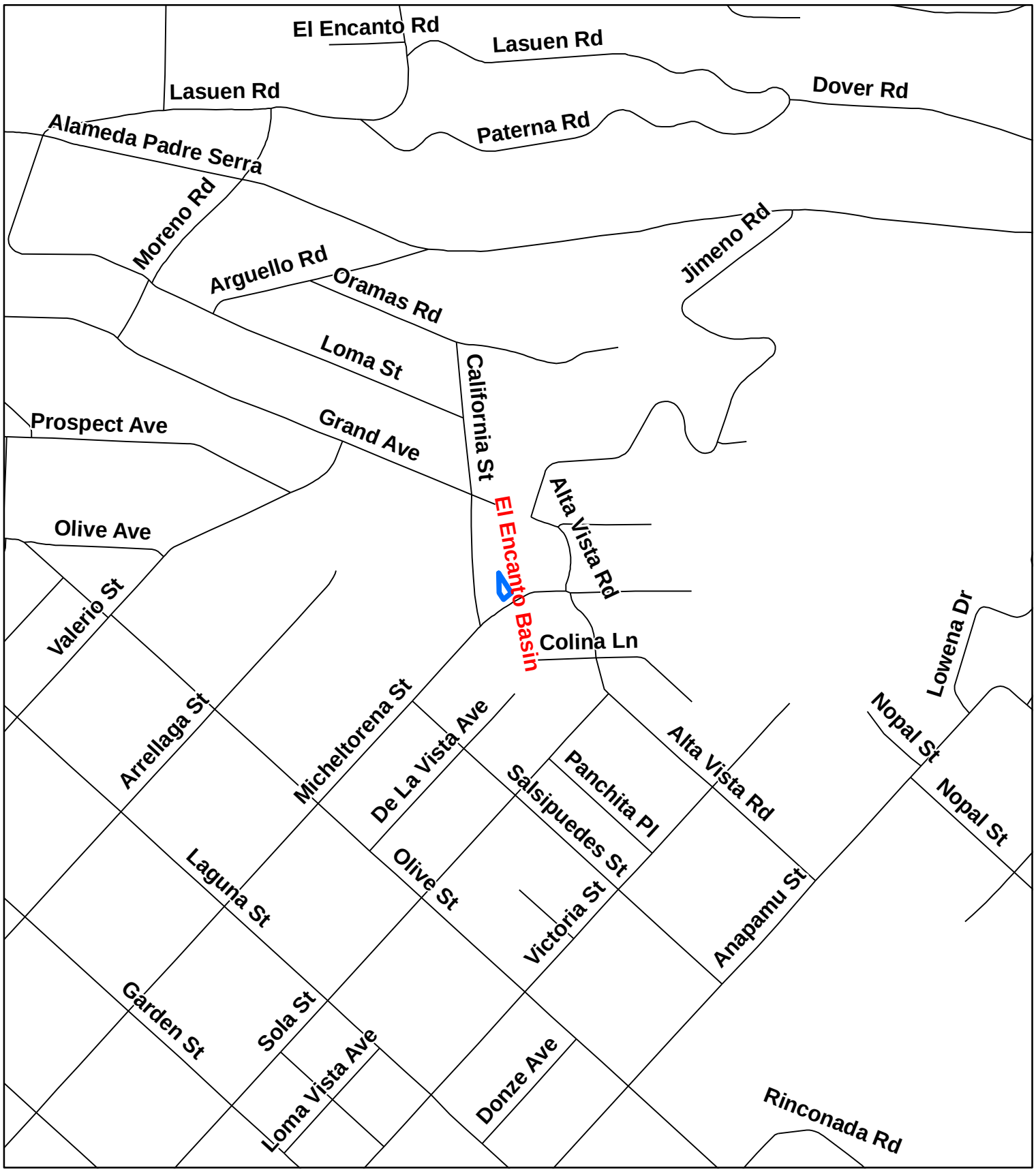


Department of Public Works County of Santa Barbara

# El Encanto Basin

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N W E S

Feet

390 195 0 390

Coordinate System: State Plane California Zone V NAD 1983

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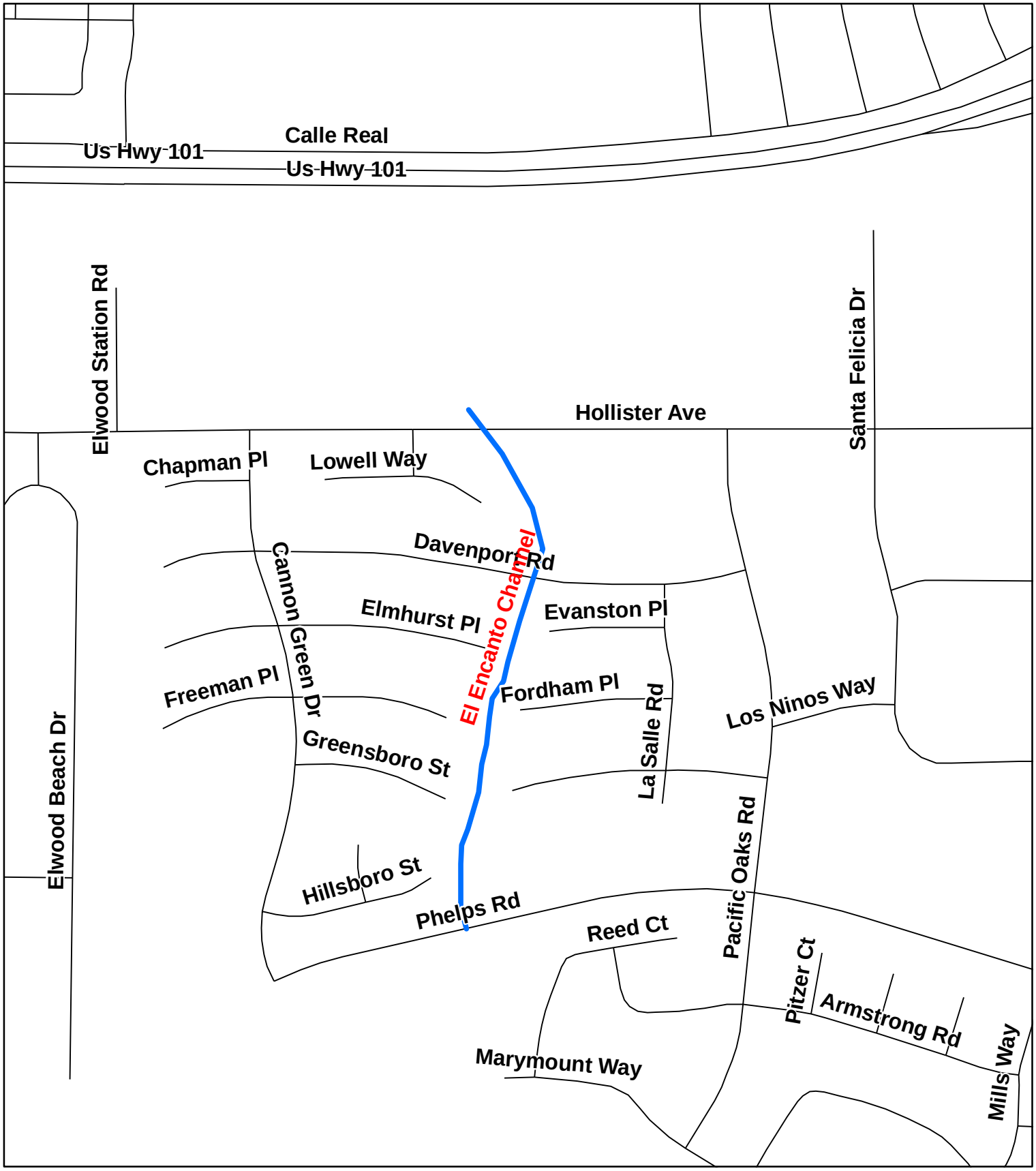


Department of Public Works County of Santa Barbara

# El Encanto Channel

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N W E S

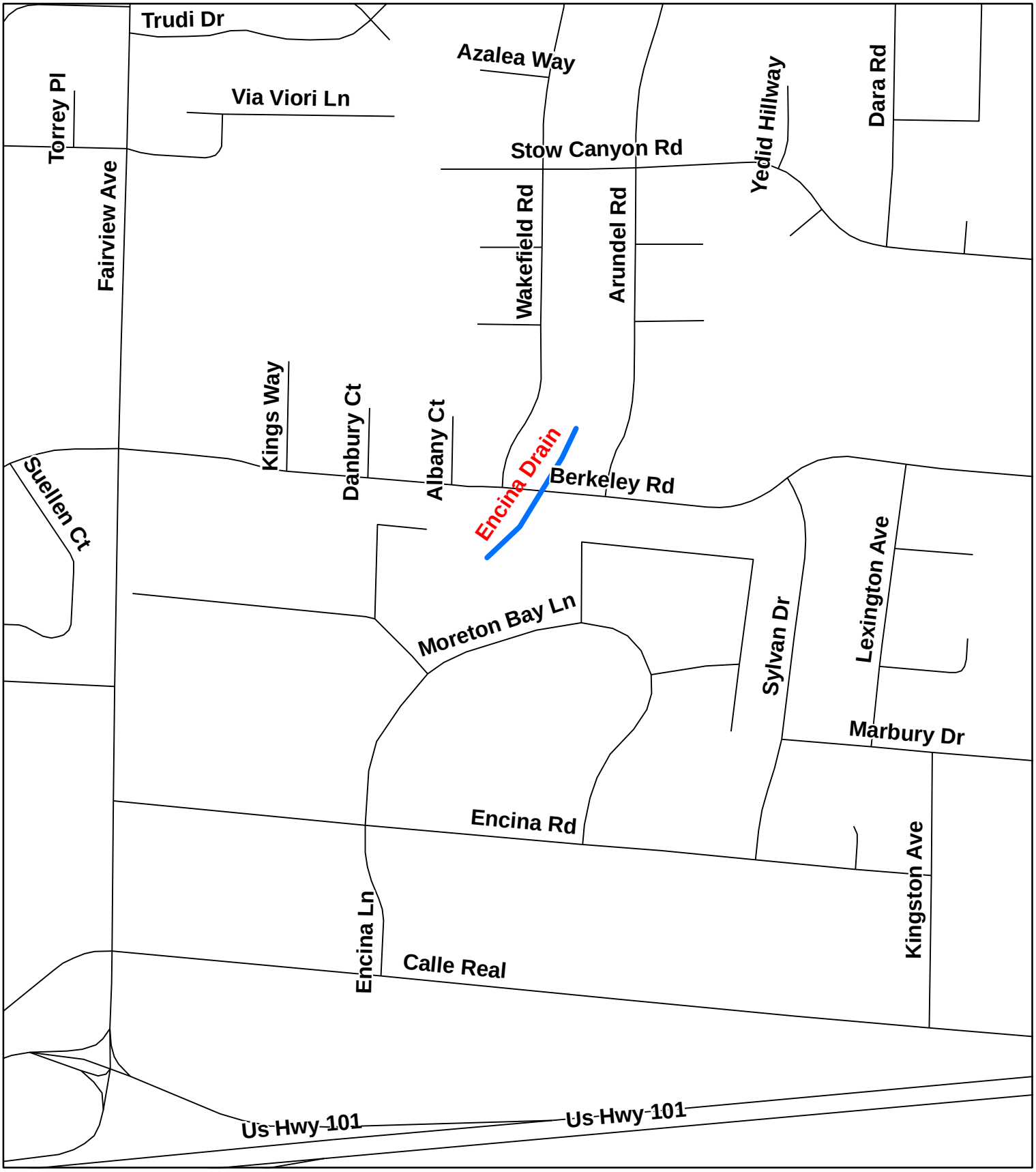
Feet 400 200 0 400

Coordinate System: State Plane California Zone V NAD 1983

Annual Routine Maintenance Plan

Santa Barbara County, California

Prepared By:
The Santa Barbara County Flood Control and Water Conservation District
Compiled by the Public Works Enterprise GIS in April 2011.




Department of Public Works County of Santa Barbara

# Encina Drain

Page 6

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N W E S

Feet

350 175 0 350

Coordinate System: State Plane California Zone V NAD 1983

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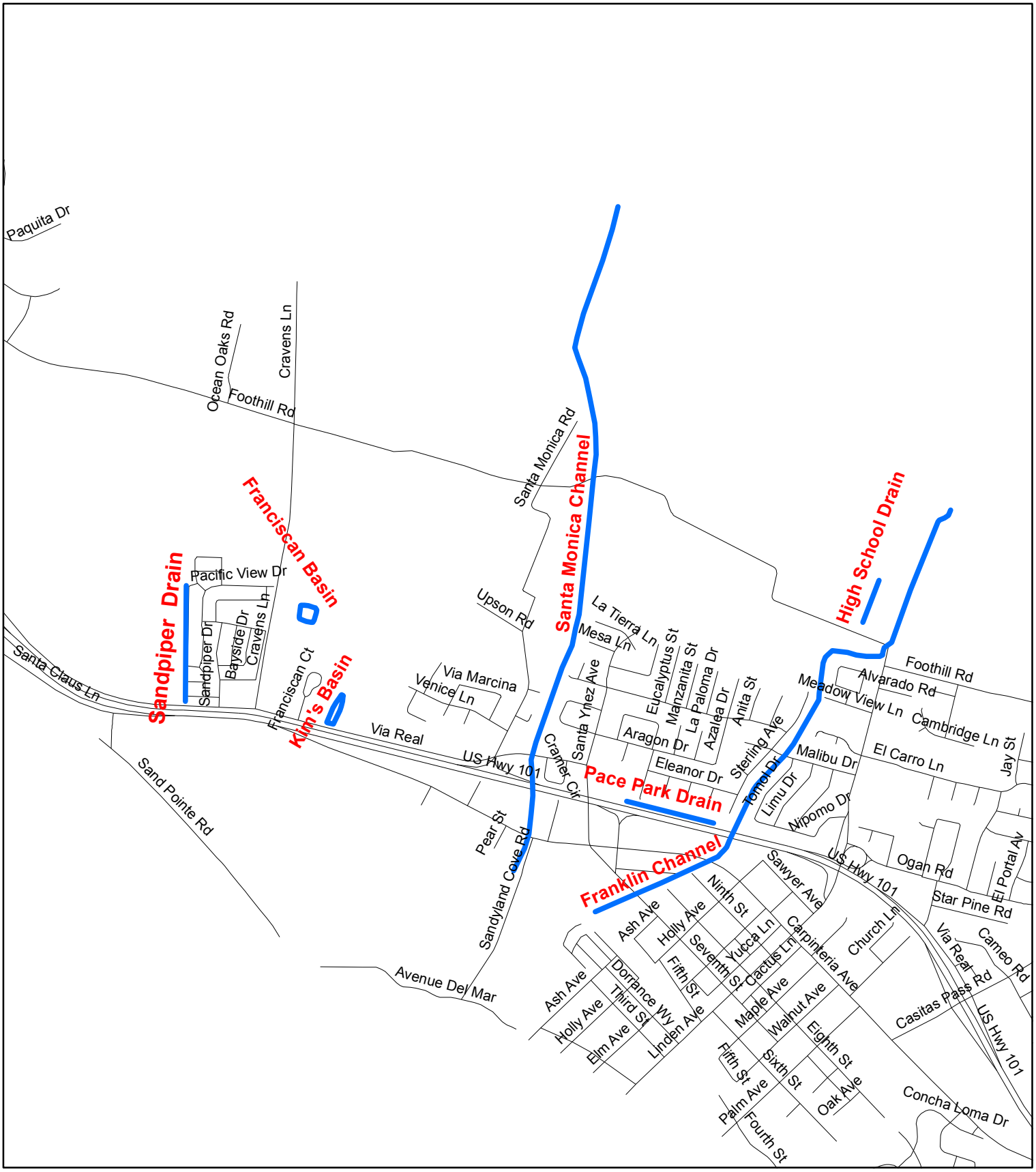


Department of Public Works County of Santa Barbara

Page 7

**Franciscan Basin**
**Sandpiper Drain**
**Kim's Basin**
**Santa Monica Channel**
**Pace Park Drain**
**High School Drain**
**Franklin Channel**

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N W E S

Feet
1,250 625 0 1,250

Coordinate System: State Plane California Zone V NAD 1983

**Annual Routine Maintenance Plan**
**Fiscal Year 2011-2012**

Santa Barbara County, California

Prepared By:
The Santa Barbara County Flood Control and Water Conservation District
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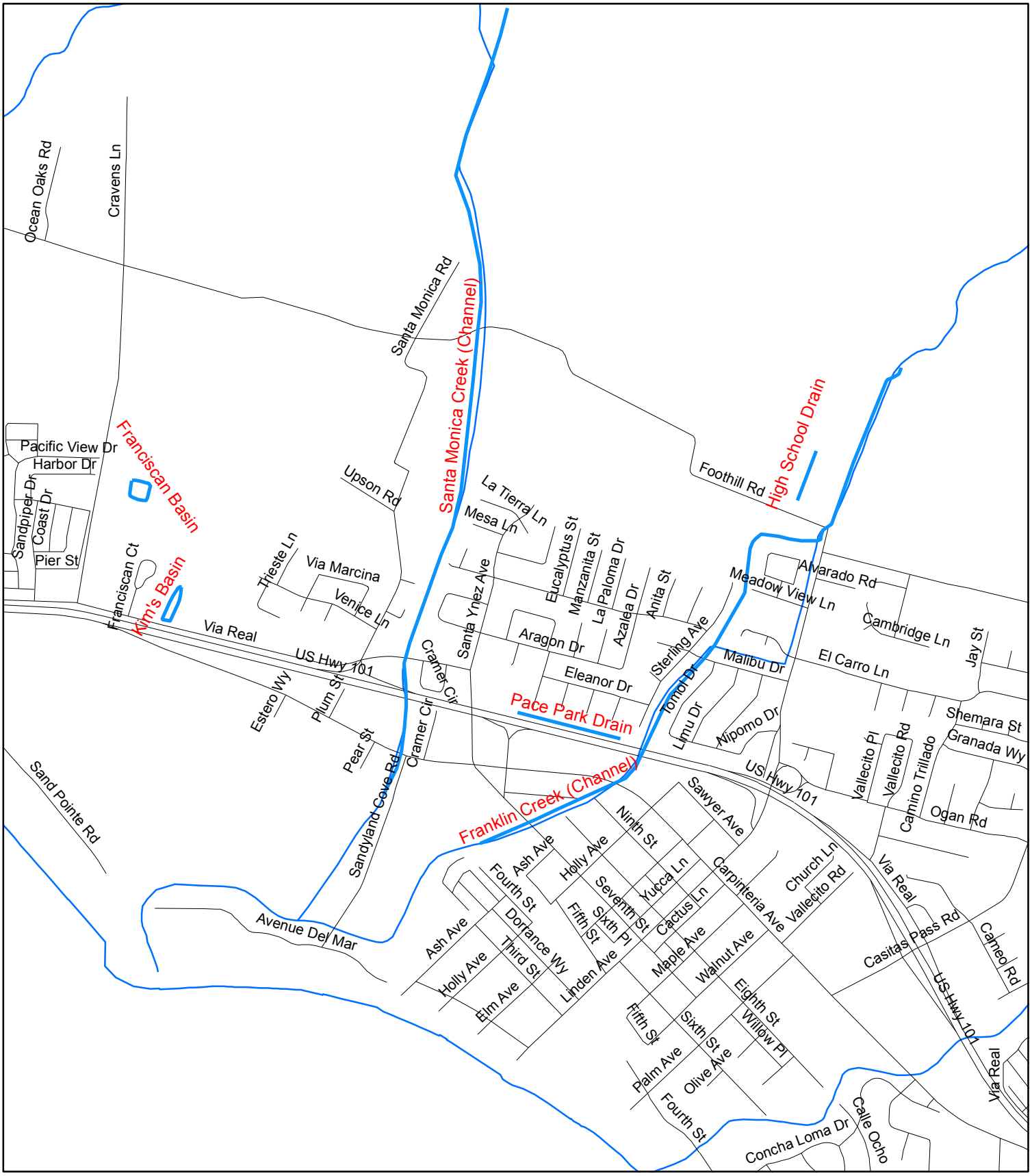


Department of Public Works County of Santa Barbara

**Franciscan Basin**
**Kim's Basin**
**Santa Monica Creek (Channel)**
**Franklin Creek (Channel)**
**High School Drain**
**Pace Park Drain**



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N W E S

Feet
1,200 600 0 1,200

Coordinate System: State Plane California Zone V NAD 1983

**Annual Routine Maintenance Plan**

Santa Barbara County, California

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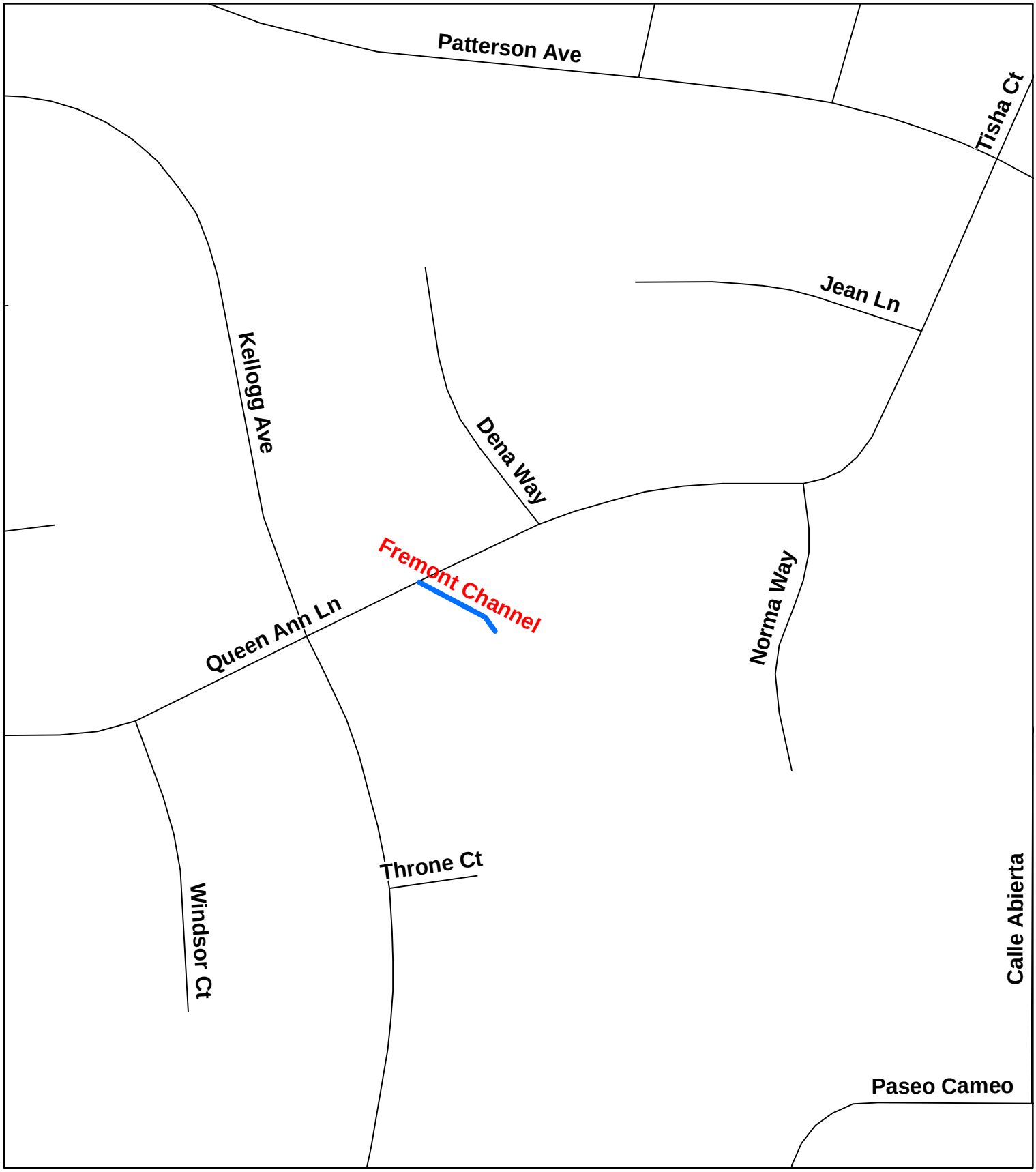


Department of Public Works County of Santa Barbara

# Fremont Channel



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N W E S

150 75 0 150

Feet

Coordinate System: State Plane California Zone V NAD 1983

Annual Routine Maintenance Plan

Santa Barbara County, California

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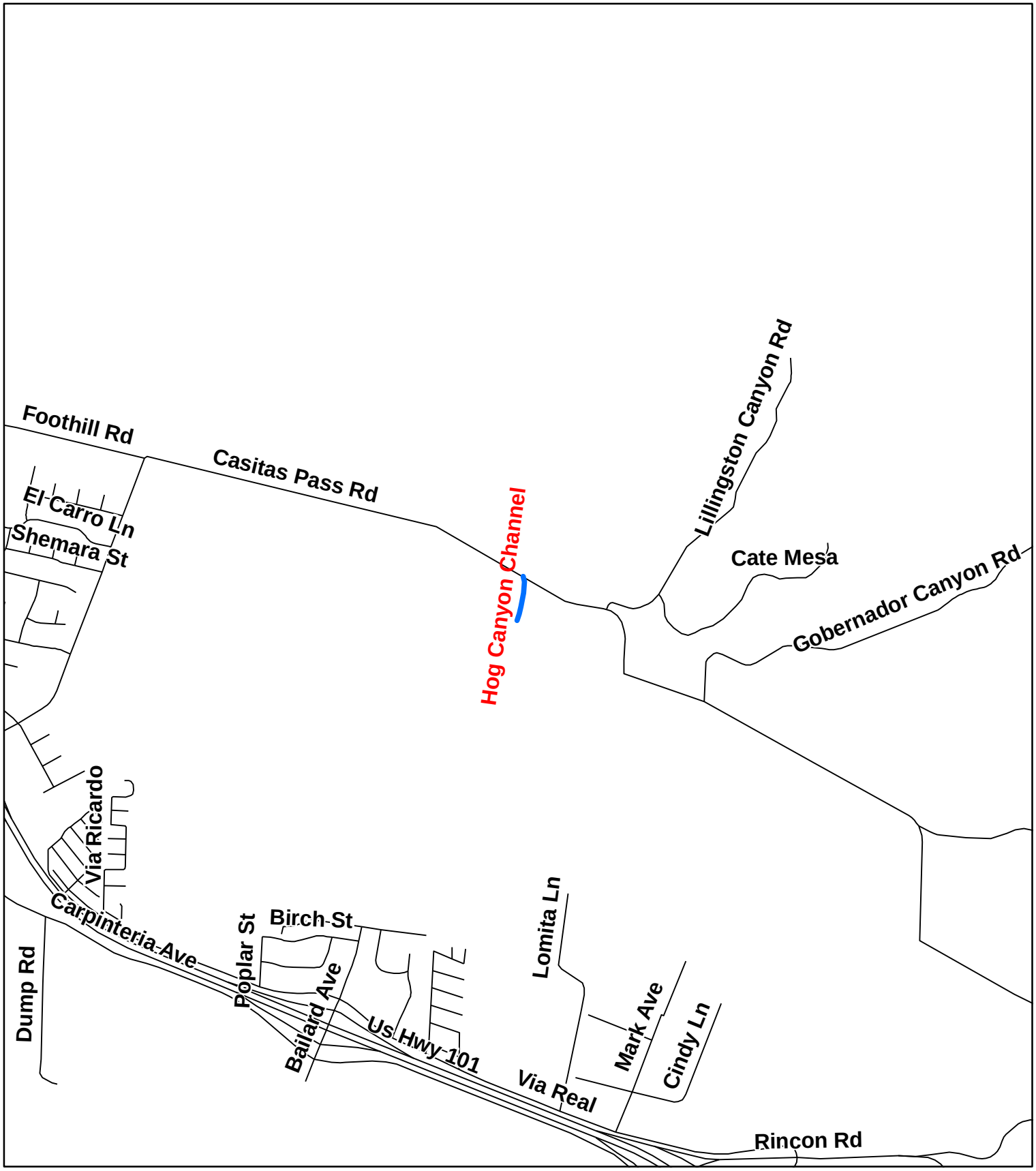


Department of Public Works County of Santa Barbara

# Hog Canyon Channel

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N W E S

Feet

1,200 600 0 1,200

Coordinate System: State Plane California Zone V NAD 1983

Annual Routine Maintenance Plan

Santa Barbara County, California

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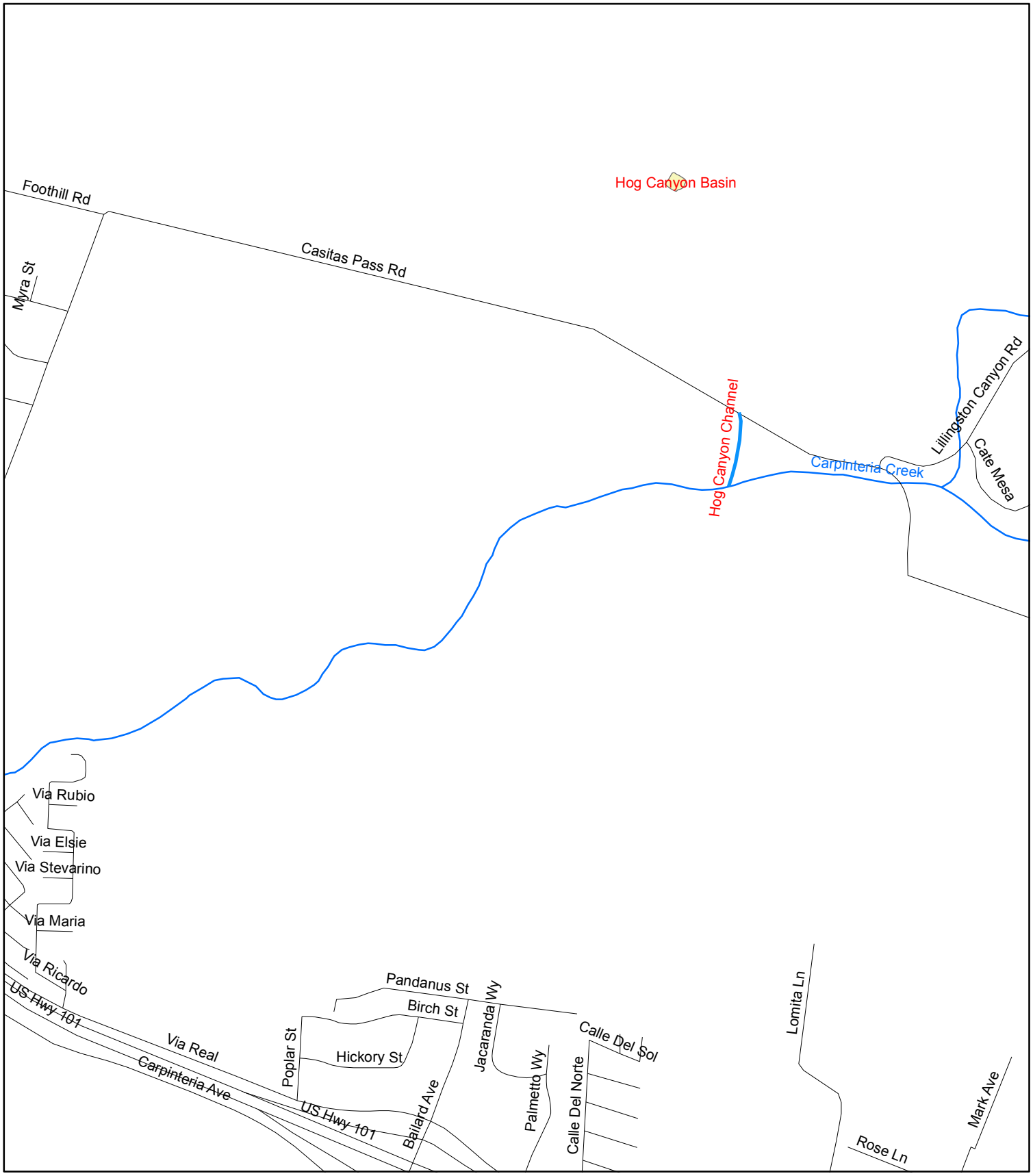


Department of Public Works County of Santa Barbara

# Hog Canyon Channel
# Hog Canyon Basin

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N W E S

Feet

750 375 0 750

Coordinate System: State Plane California Zone V NAD 1983

## Annual Routine Maintenance Plan

Santa Barbara County, California

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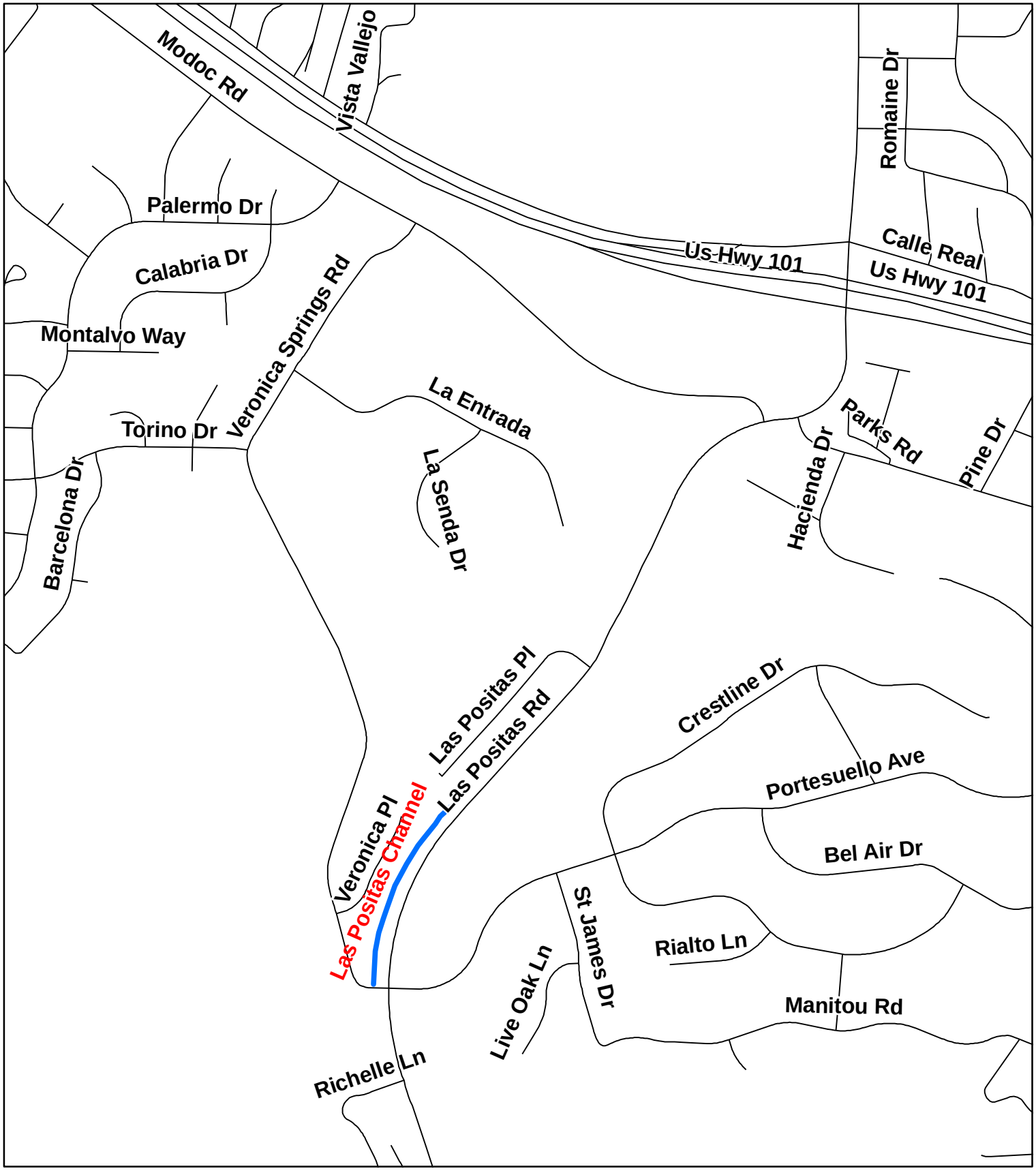


Department of Public Works County of Santa Barbara

# Las Positas Channel

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N W E S

Feet

550 275 0 550

Coordinate System: State Plane California Zone V NAD 1983

Annual Routine Maintenance Plan

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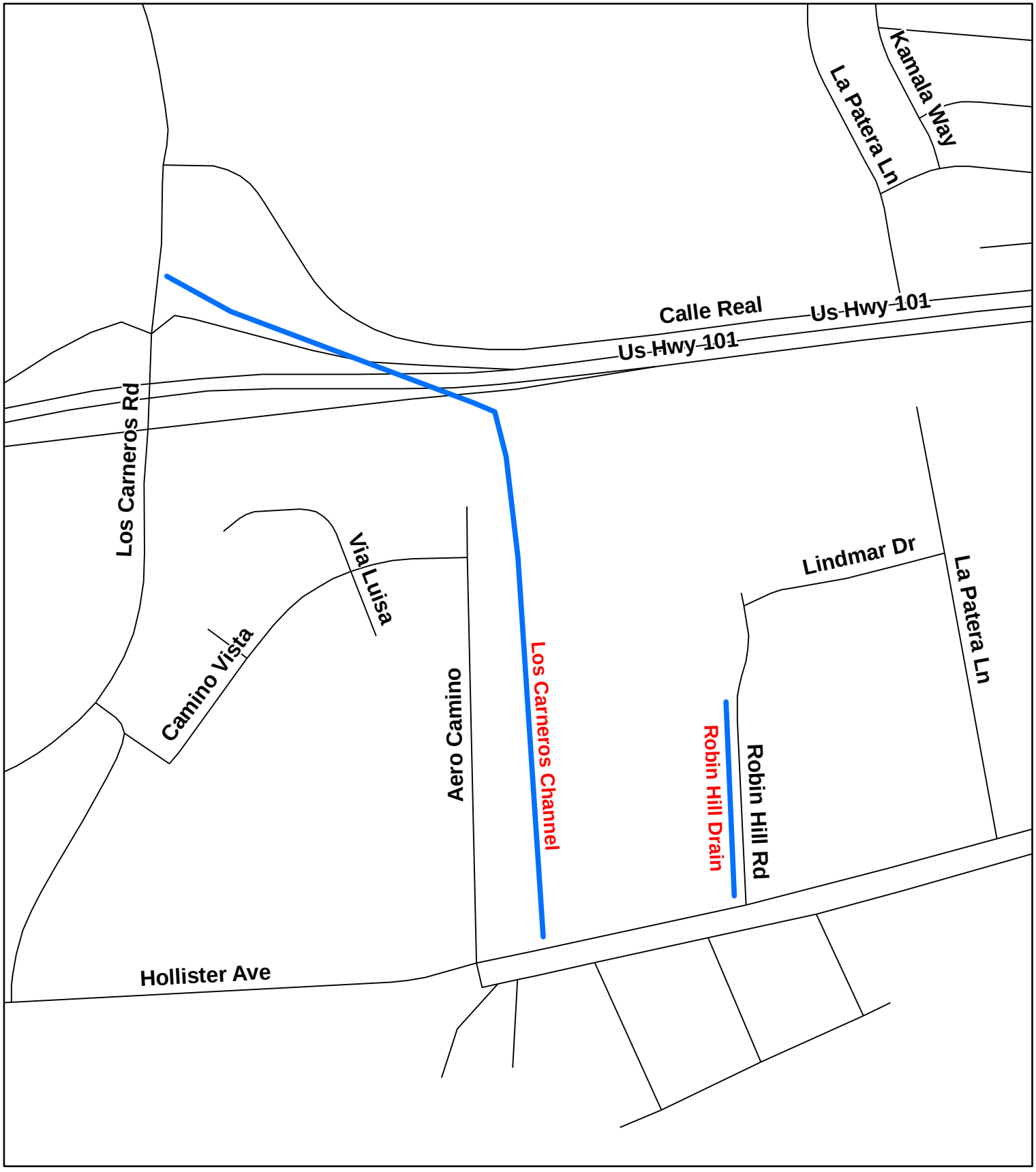
Compiled by the Public Works Enterprise GIS in April 2011.




Department of Public Works County of Santa Barbara

# Los Carneros Channel
# Robin Hill Drain

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N W E S

Feet

440 220 0 440

Coordinate System: State Plane California Zone V NAD 1983

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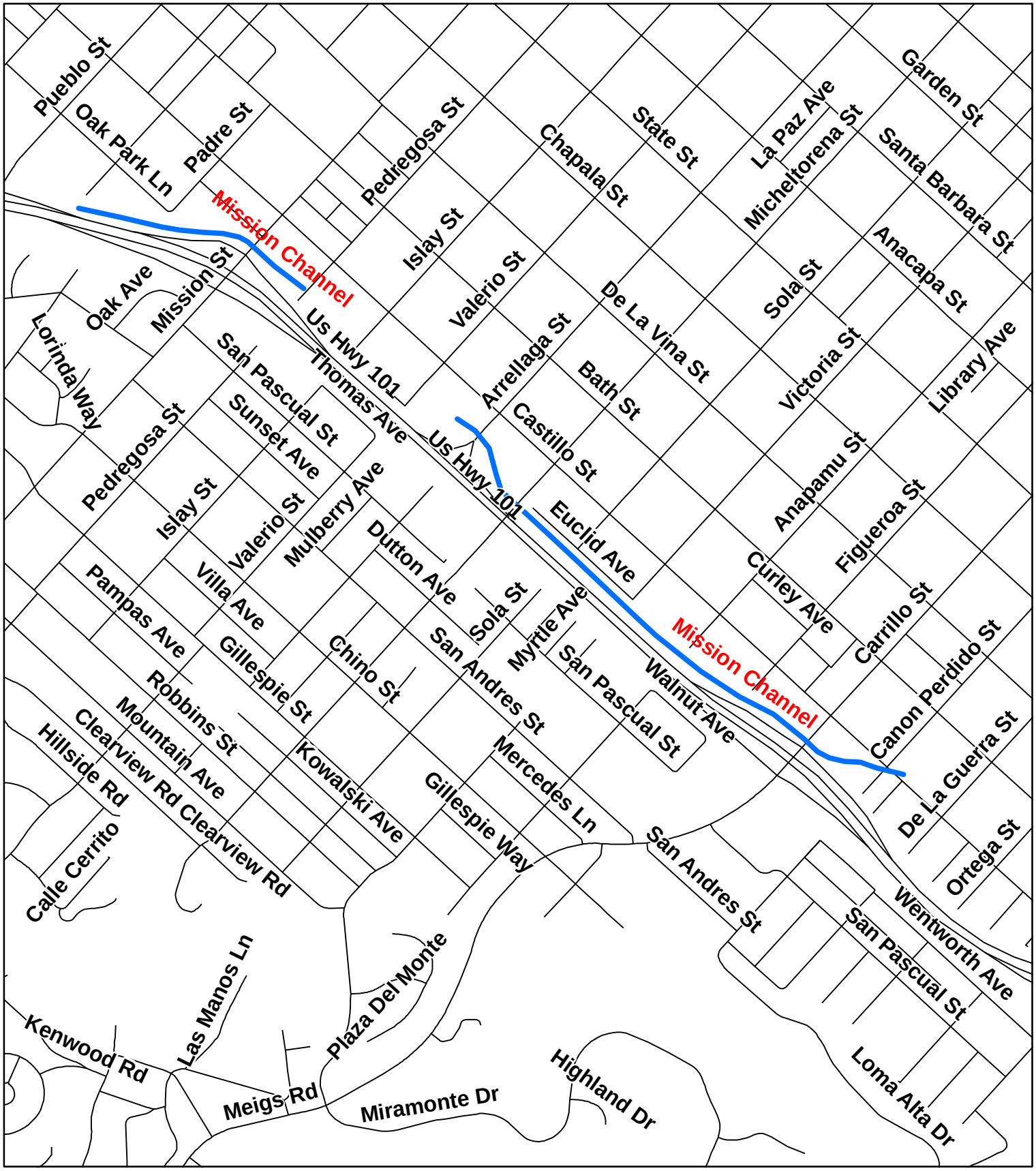


Department of Public Works County of Santa Barbara

# Mission Channel

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N W E S

Feet

730 365 0 730

Coordinate System: State Plane California Zone V NAD 1983

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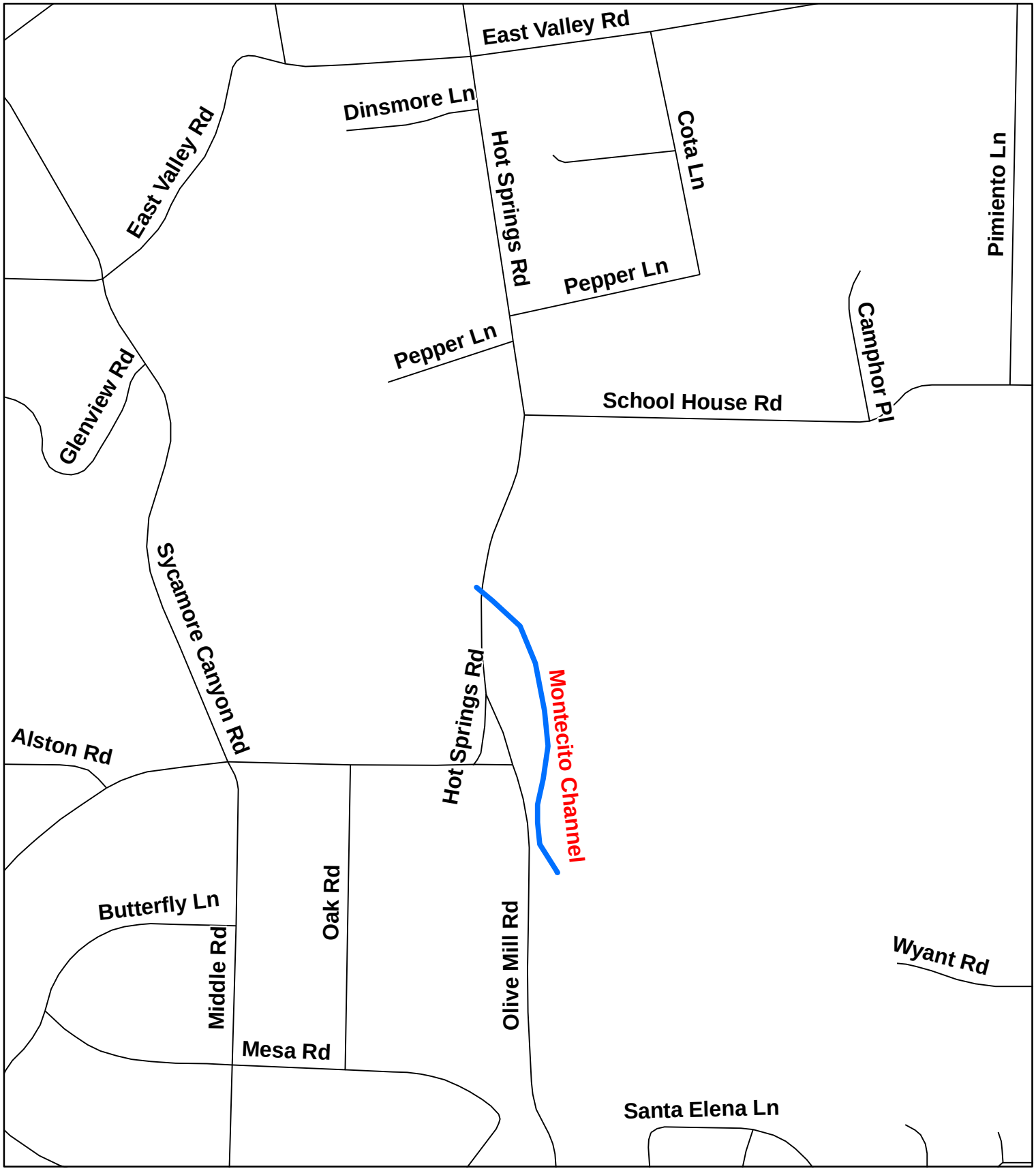


Department of Public Works County of Santa Barbara

# Montecito Channel

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N W E S

Feet

390 195 0 390

Coordinate System: State Plane California Zone V NAD 1983

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Santa Barbara County, California

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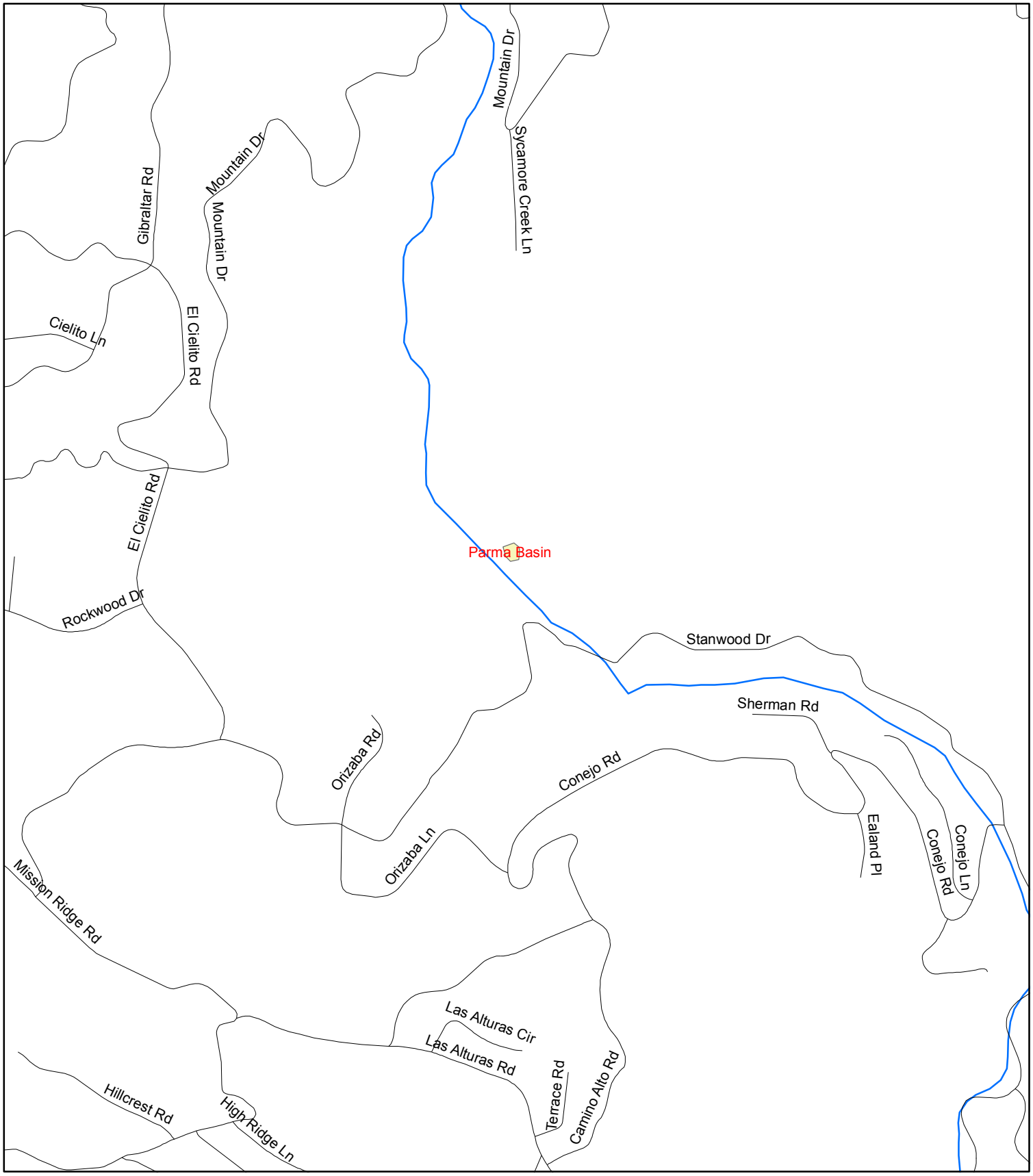


Department of Public Works County of Santa Barbara

# Parma Basin



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N W E S

Feet

580 290 0 580

Coordinate System: State Plane California Zone V NAD 1983

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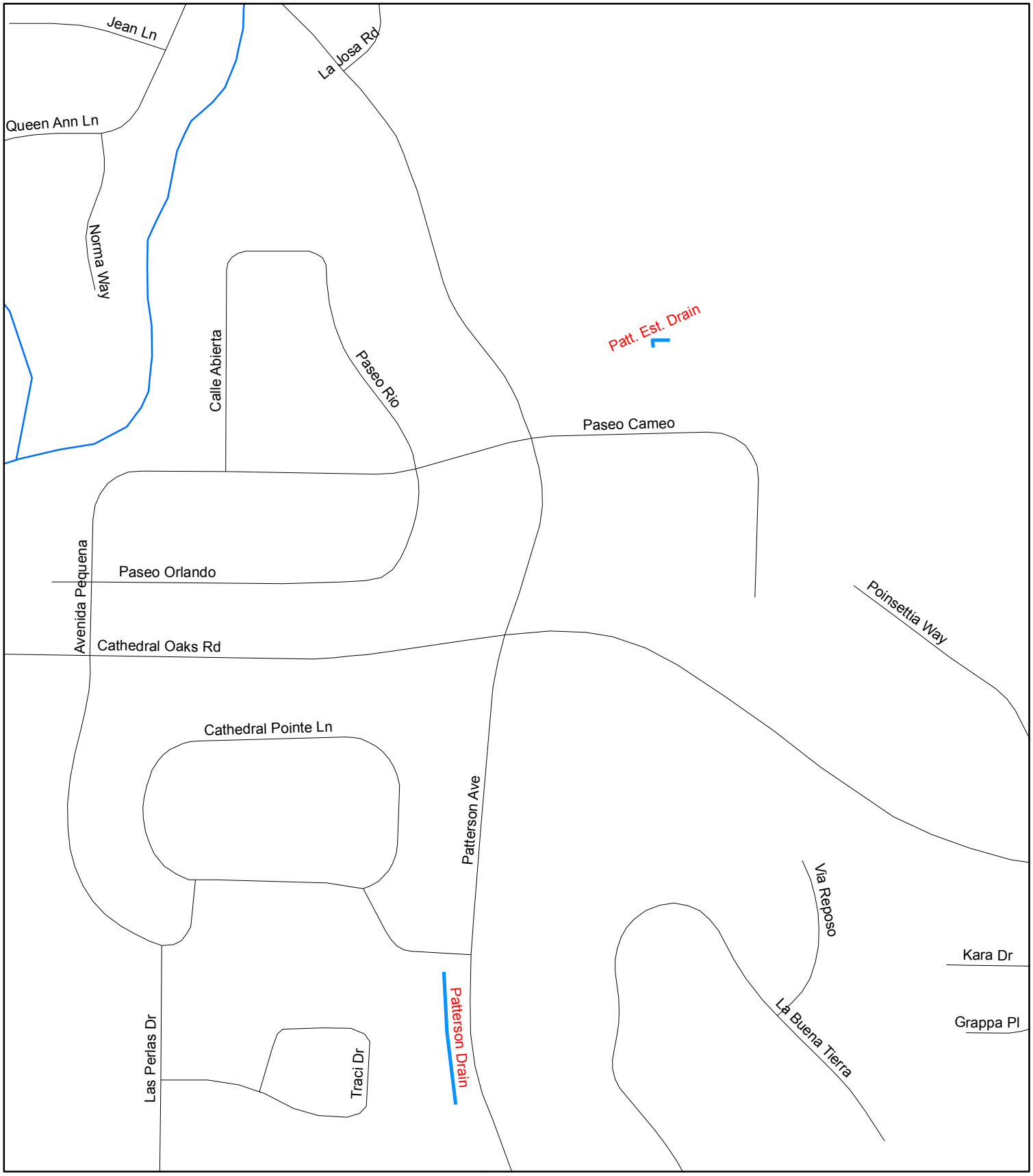


Department of Public Works County of Santa Barbara

# Patterson Drain
# Patterson Estates Drain

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N W E S

Feet

300 150 0 300

Coordinate System: State Plane California Zone V NAD 1983

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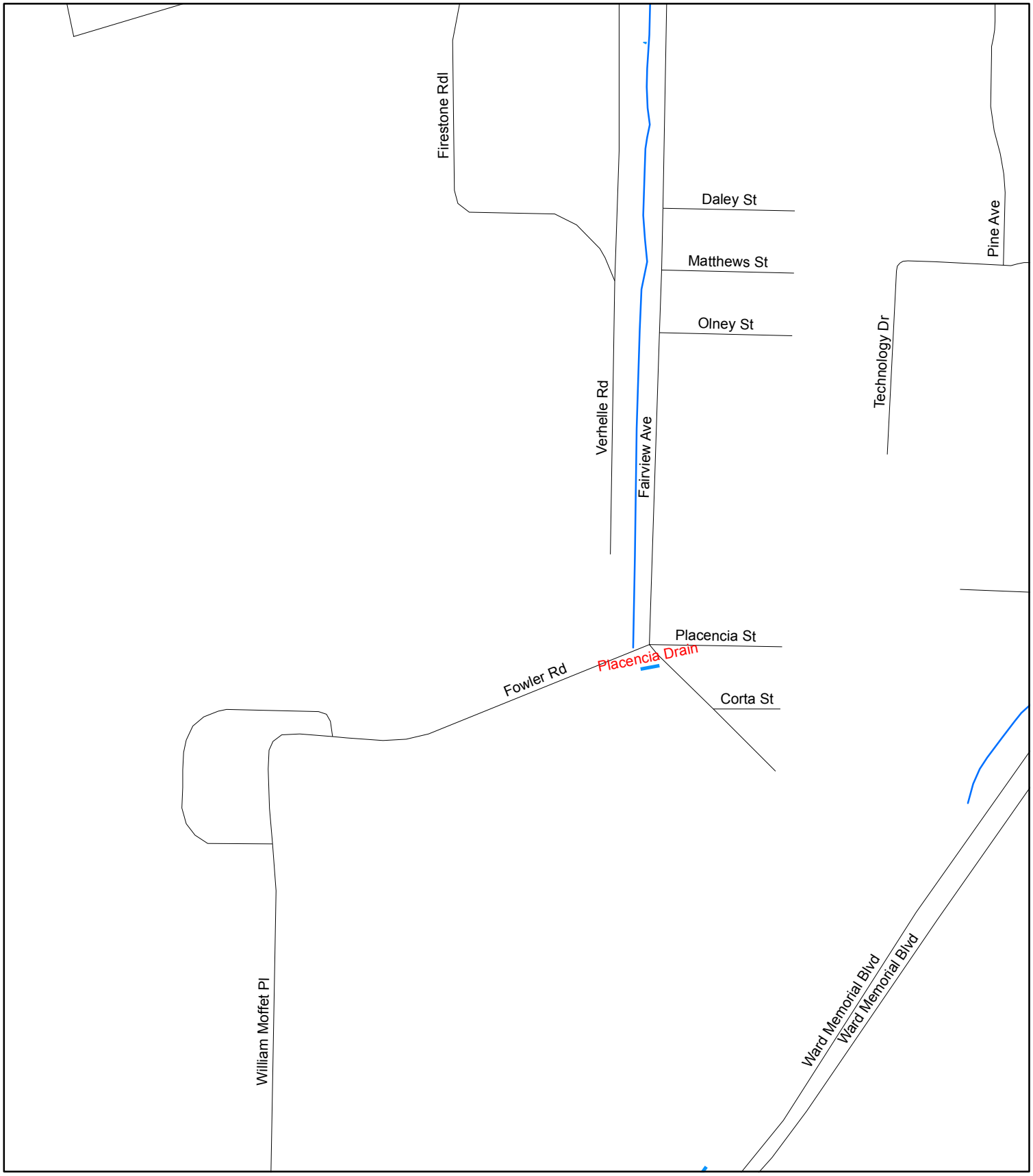


Department of Public Works County of Santa Barbara

# Placencia Drain

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N W E S

Feet

440 220 0 440

Coordinate System: State Plane California Zone V NAD 1983

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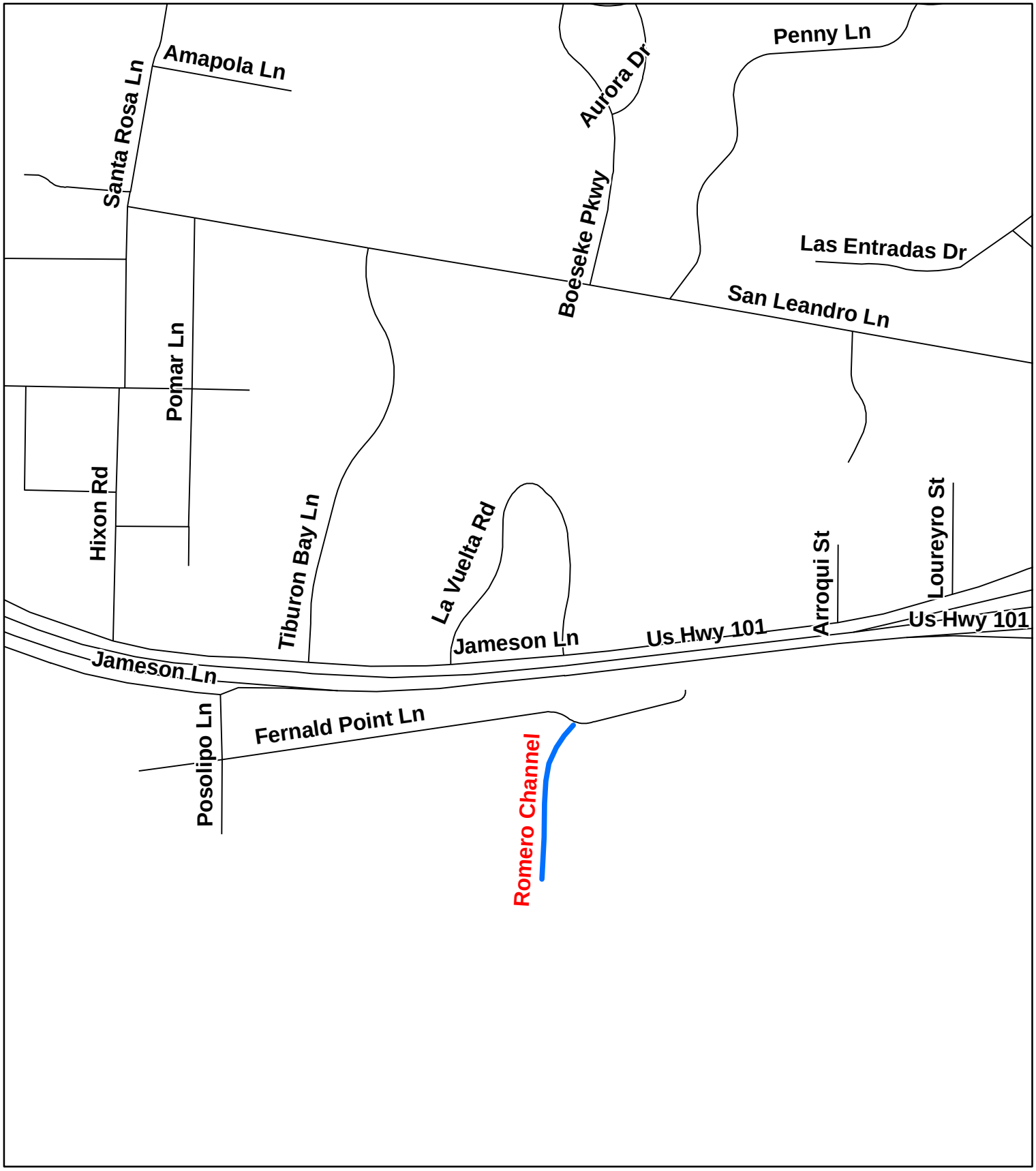


Department of Public Works County of Santa Barbara

# Romero Channel

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N W E S

Feet

420 210 0 420

Coordinate System: State Plane California Zone V NAD 1983

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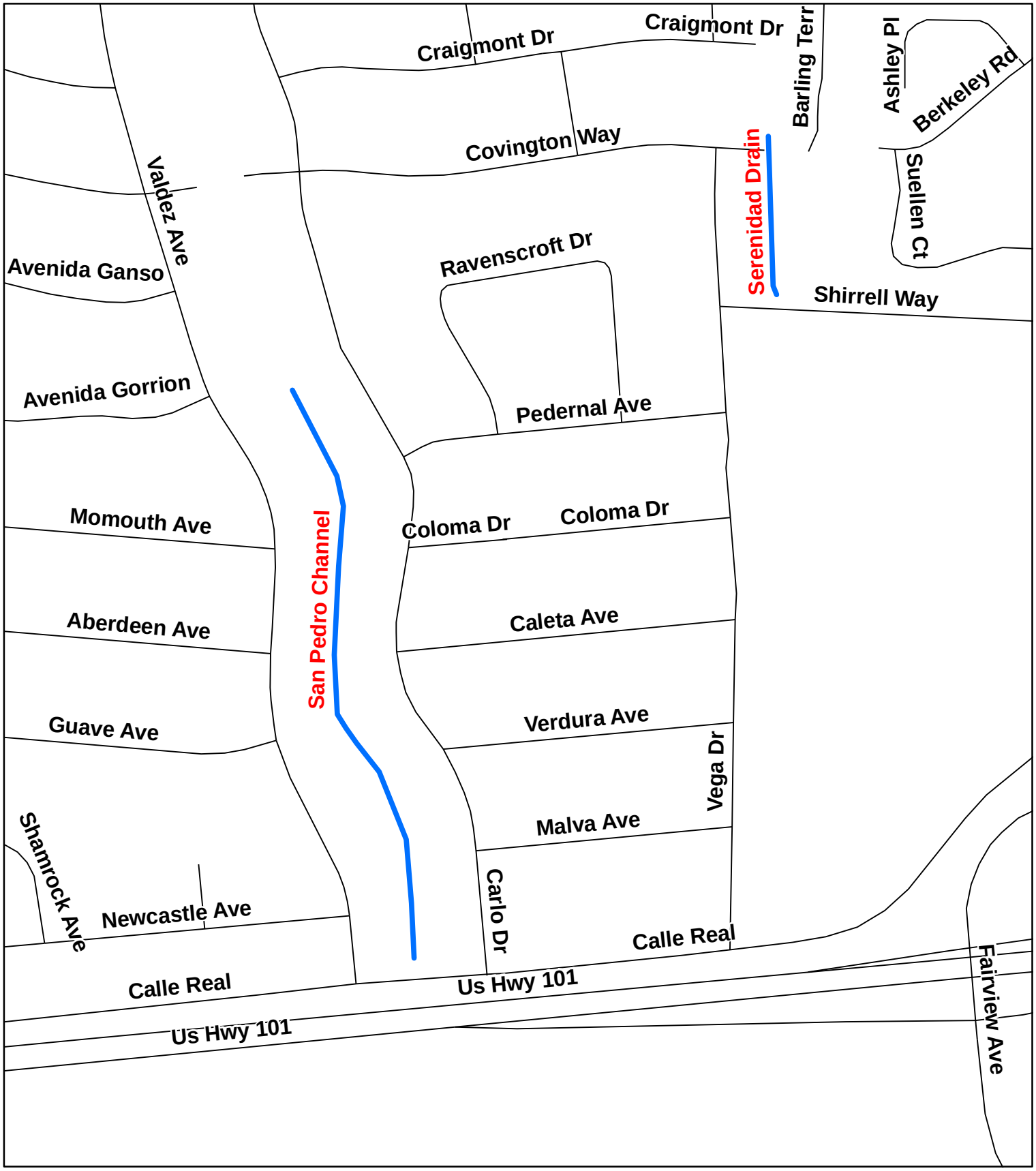


Department of Public Works County of Santa Barbara

# San Pedro Channel
# Serenidad Drain

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N
W E
S
Feet
275 137.5 0 275

Coordinate System: State Plane California Zone V NAD 1983

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Santa Barbara County, California

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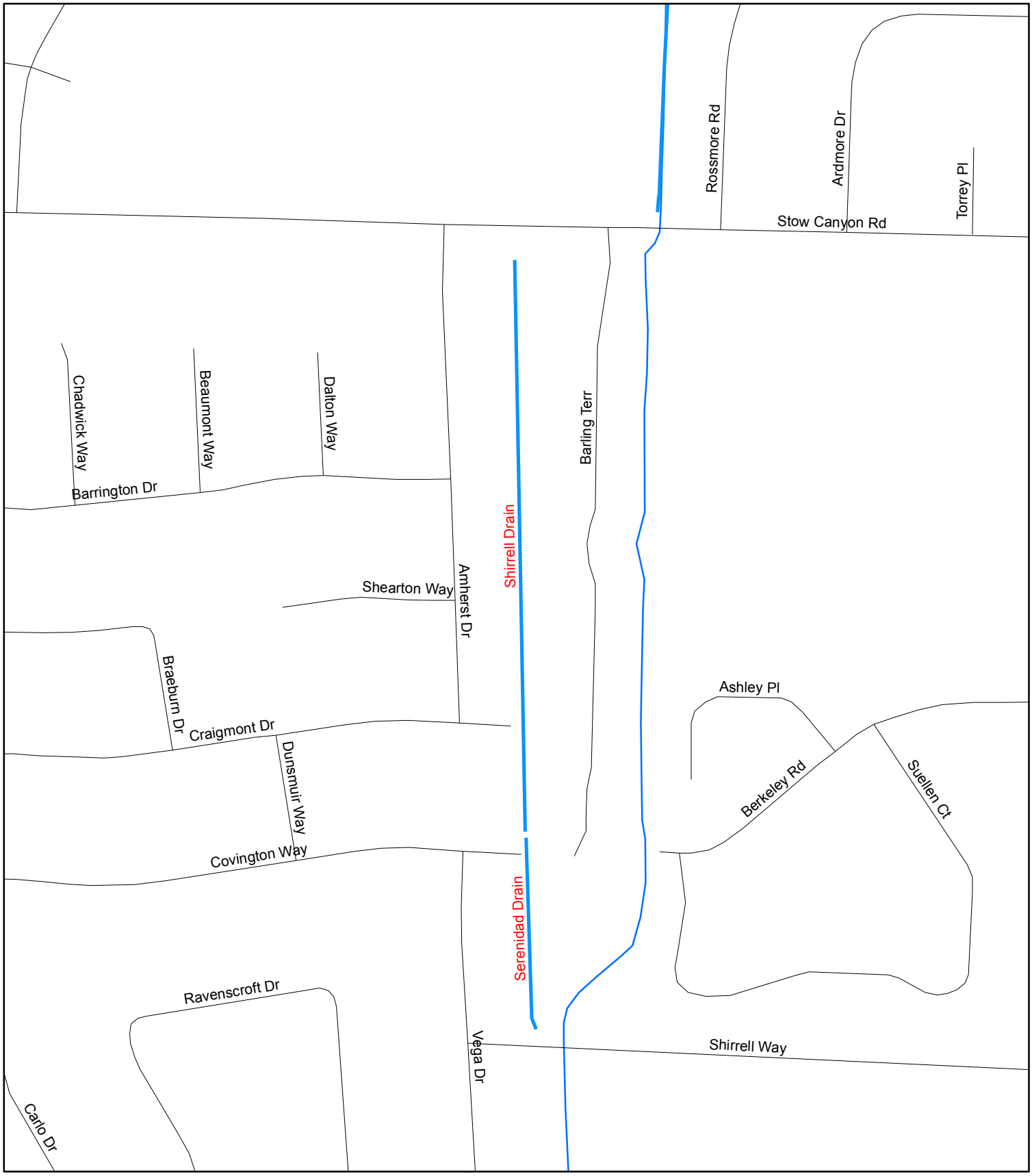


Department of Public Works County of Santa Barbara

# Shirrell Drain
# Serenidad Drain



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N W E S

Feet
250 125 0 250

Coordinate System: State Plane California Zone V NAD 1983

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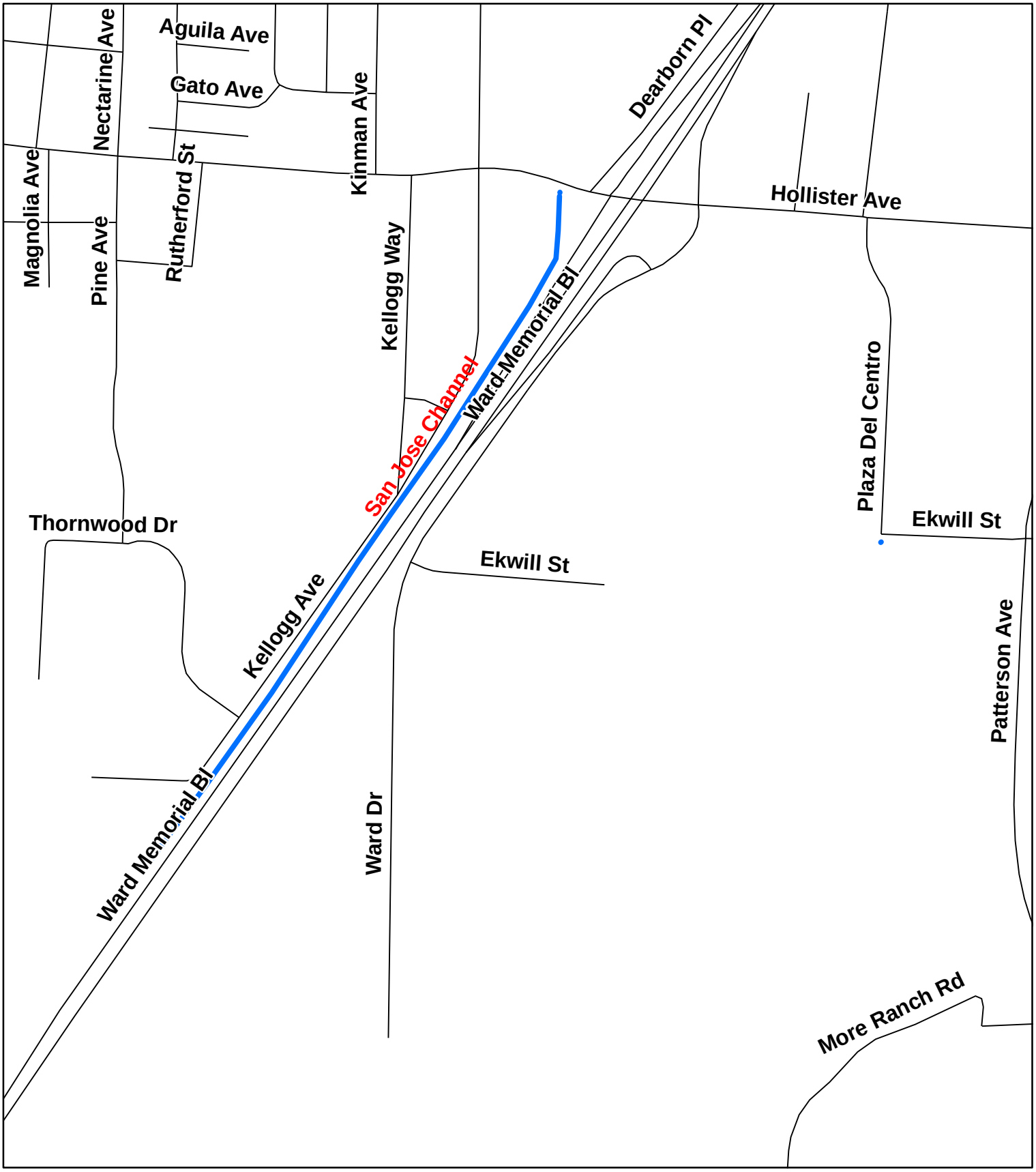


Department of Public Works County of Santa Barbara

# San Jose Channel

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N W E S

Feet

550 275 0 550

Coordinate System: State Plane California Zone V NAD 1983

Annual Routine Maintenance Plan

Santa Barbara County, California

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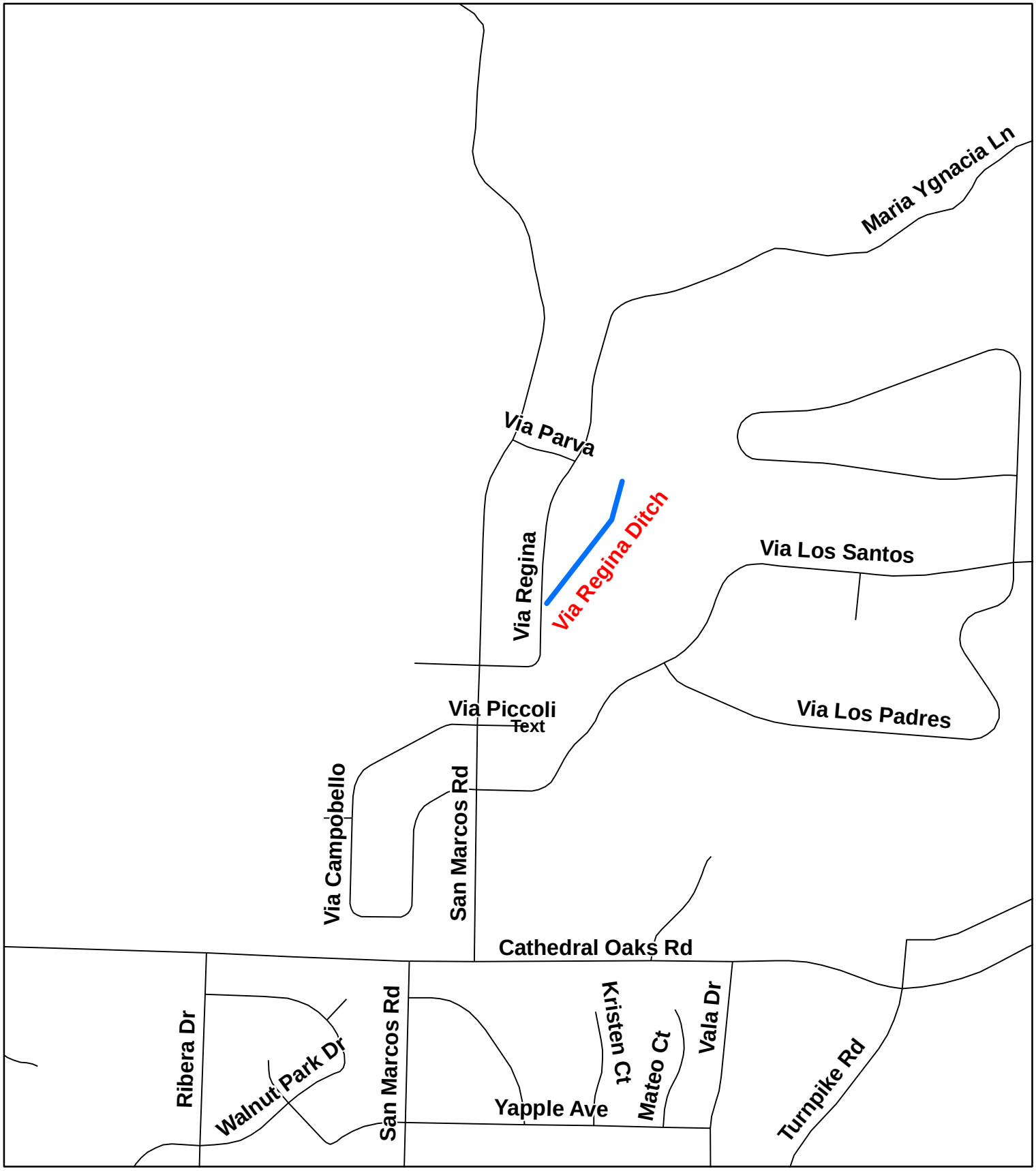


Department of Public Works County of Santa Barbara

# Via Regina Ditch

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N W E S

Feet

450 225 0 450

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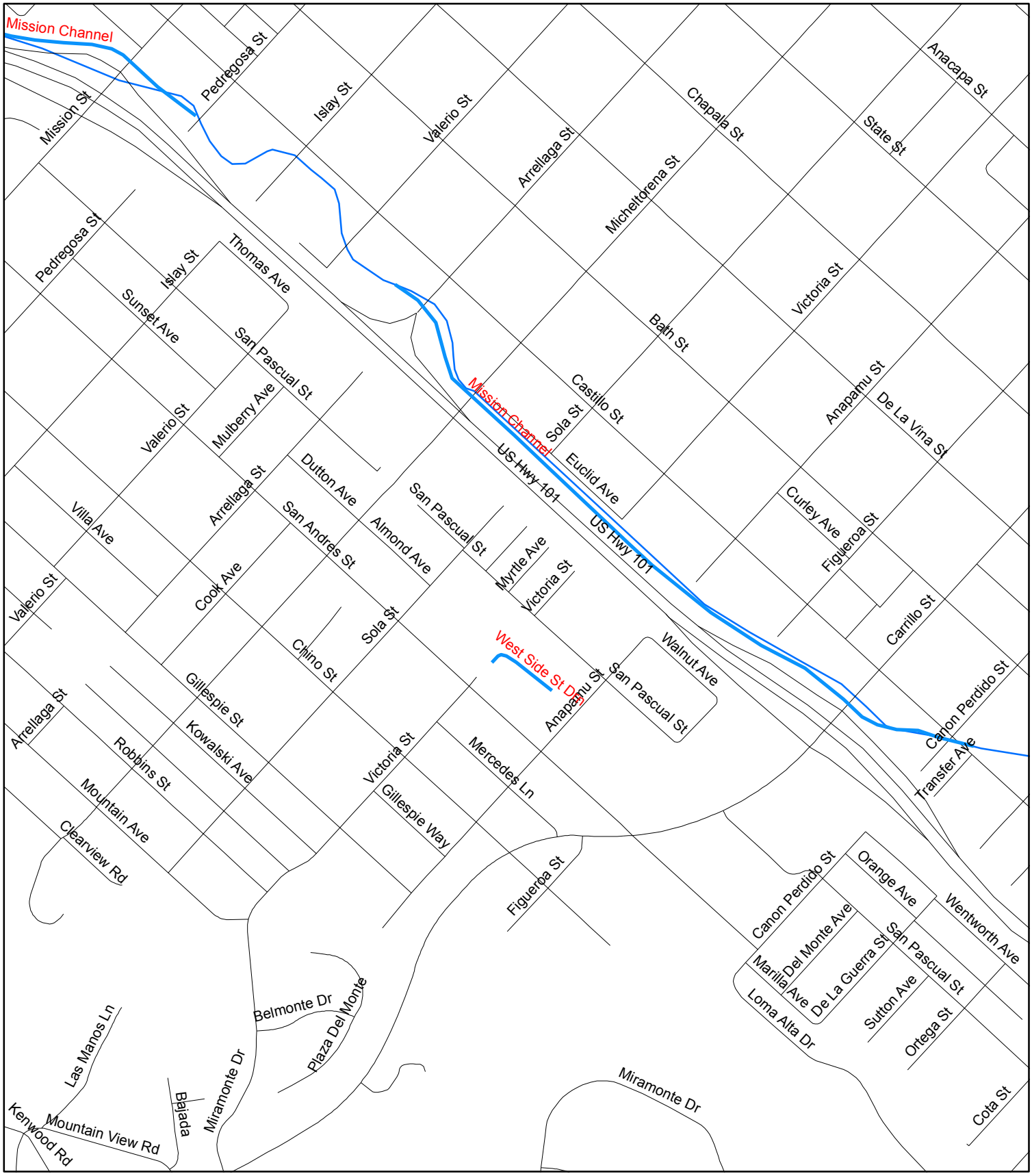


Department of Public Works County of Santa Barbara

# West Side Storm Drain

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N W E S

Feet

640 320 0 640

Coordinate System: State Plane California Zone V NAD 1983

## Annual Routine Maintenance Plan

Santa Barbara County, California

Prepared By:
The Santa Barbara County Flood Control and Water Conservation District

Compiled by the Public Works Enterprise GIS.

# Maintenance Practices

Below is an explanation of typical Annual Plan maintenance practices for vegetation management and tabulation of impacts and compensatory mitigation. These explanations are provided here for reference and are not repeated in each corresponding creek description.

Maintenance tasks for each creek are identified by a "section number" and a maintenance task. Refer to the descriptions below for typical maintenance and mitigation requirements at each section. If a particular maintenance section in the Annual Plan requires more explanation, it will be stated as "Additional Info" within each creek addendum.

Down Trees/Limbs: Fallen trees and/or limbs that have accumulated within the bankful channel width are removed from the channel, cut into smaller pieces, and either hauled offsite or left within the riparian corridor for wildlife habitat and organic material along the upper banks.

Limbing: Low limbs and overhanging branches that project into the bankful channel and below a height of 6ft are trimmed to regain flow capacity. A crew using chainsaws and loppers will remove the obstructive vegetation from the active channel. The vegetation will be cut up and hauled out of the creek or left on the upper banks, depending on access.

Brushing: A crew with chain saws and loppers will cut the obstructive vegetation near the base. The vegetation will be removed with hand tools and a glyphosate herbicide registered for aquatic use may be applied to inhibit regeneration. A follow-up application of herbicide may be done in the spring/summer if the vegetation begins to resprout and needs additional treatment. The brushing area indicates the dimensions of the total area to be treated by brushing. The entire area is not typically uniformly vegetated, but rather has sporadic sprouts and clusters of vegetation within the perimeter. Brushing and spot spray is applied selectively to target only the obstructive sprouts and clusters within the larger work area.

Impacts and Mitigation: Impacts to native vegetation due to brushing or other live vegetation removal are tabulated for mitigation according to the Revegetation Plan. If a section includes brushing or removal of native vegetation, the associated mitigation quantity will be quantified in the associated table. For sites treated with brushing, the entire work area is not typically uniformly vegetated. The District calculates the total square footage of impacts to native vegetation within the work area using visual density estimates and the CNPS Relevé protocol.

Limbing trees and removal of down trees/limbs does not result in impacts to standing live vegetation, therefore the Annual Routine Maintenance Program does not mitigate for these tasks with riparian restoration. The Maintenance Program incorporates BMPs and other mitigation measures to reduce temporal impacts to a less than significant level.

# ALAMO PINTADO CREEK ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins at State Route 154 and terminates downstream of State Route 246 at the first road crossing in the City of Solvang.

**Setting:**
Inspected on March 21, 2024.

Alamo Pintado Creek originates in the San Rafael Mountains and flows southward through pasture, cultivated fields and the towns of Los Olivos, Ballard and Solvang before flowing into the Santa Ynez River. Alamo Pintado Creek drains a 19,000-acre watershed along the western boundary of the Santa Ynez Valley capable of producing 7,400 cfs at State Route 246 during a 100-year return period precipitation event.

Surrounding land uses within the management area vary from suburban, agriculture, pasture, and open space. In some areas, the riparian corridor is wide with minimal disturbance; other reaches are degraded with almost no riparian buffer. The creek had flowing water. The creek channel was mostly open under a dense willow canopy. Other characteristic tree species include sycamore and walnut. Based on the District's observations, downed trees and limbs are relatively common in Alamo Pintado Creek in most years. The dense canopy tends to drop limbs and trees frequently in this system, creating a potential flood risk.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| Alamo Pintado Creek | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2002/2003 | 200 | 200 | 200 | 0 |
| 2004/2005 | 700 | 4,000 | 0 | -700 |
| 2005/2006 | 700 | 3,000 | 3,000 | 1,600 |
| 2007/2008 | 1,650 | 0 | 0 | -50 |
| 2008/2009 | 0 | 5,300 | 0 | -50 |
| 2009/2010 | 0 | 5,300 | 5,000 | 4,950 |
| 2010/2011 | 0 | 0 | 0 | 4,950 |
| 2011/2012 | 0 | 0 | 0 | 4,950 |
| 2012/2013 | 0 | 0 | 0 | 4,950 |
| 2013/2014 | 100 | 0 | 0 | 4,850 |
| 2014/2015 | 0 | 0 | 0 | 4,850 |
| 2015/2016 | 0 | 0 | 0 | 4,850 |

| Alamo Pintado Creek | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2016/2017 | 0 | 0 | 0 | 4,850 |
| 2017/2018 | 20 | 0 | 0 | 4,830 |
| 2018/2019 | 0 | 0 | 0 | 4,830 |
| 2019/2020 | 0 | 0 | 0 | 4,830 |
| 2020/2021 | 50 | 50 | 0 | 4,780 |
| 2021/2022 | 0 | 0 | 0 | 4,780 |
| 2022/2023 | 30 | 0 | 0 | 4,750 |
| 2023/2024 | 0 | 0 | 0 | 4,750 |
| 2024/2025 | 0 | 0 | - | 4,750 |

**Engineering Analysis:**

There are many downed trees in various places along the channel. Several public and private bridges along the course of the creek are susceptible to plugging from this downed vegetation. Removal of downed trees as well as trimming back tree limbs hanging into the active channel is necessary to prevent plugging of bridges, to prevent local scour due to diversion of flow, and to prevent debris plugs from forming on the downed vegetation.

The bankfull width as determined by field indicators is approximately 12 feet. Therefore, removal of obstructive vegetation should result in a cleared cross-section that mimics the stable channel geometry found in the vicinity of the proposed project.

**Project Description:**

The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

| Section | Down tree/limb | Brushing (area) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | x | | | | 16 | 5 | | cut into 1-foot sections |
| **Section 2** | x | | | | | | | cut into 1-foot sections |
| **Section 3** | x | | | | | | | debris plug |
| **Section 4** | x | | | | 8 | 15 | | |
| **Section 5** | x | | | willow | 8 | 15 | | |
| **Section 6** | x | | | willow | 10 | 25 | | |
| **Section 7** | x | | | willow | 10 | 15 | | |
| **Section 8** | | | x | willow | | | | |
| **Section 9** | | | | | | | | See Section 9 |
| **Section 10** | | | | | | | | See Section 10 |
| **Section 11** | | | | | | | | debris plug |
| **Section 12** | x | | | willow | 16 | 25 | | multiple trunks |
| **Section 13** | | | x | willow | | | | Multiple trunks. Push into bank. |

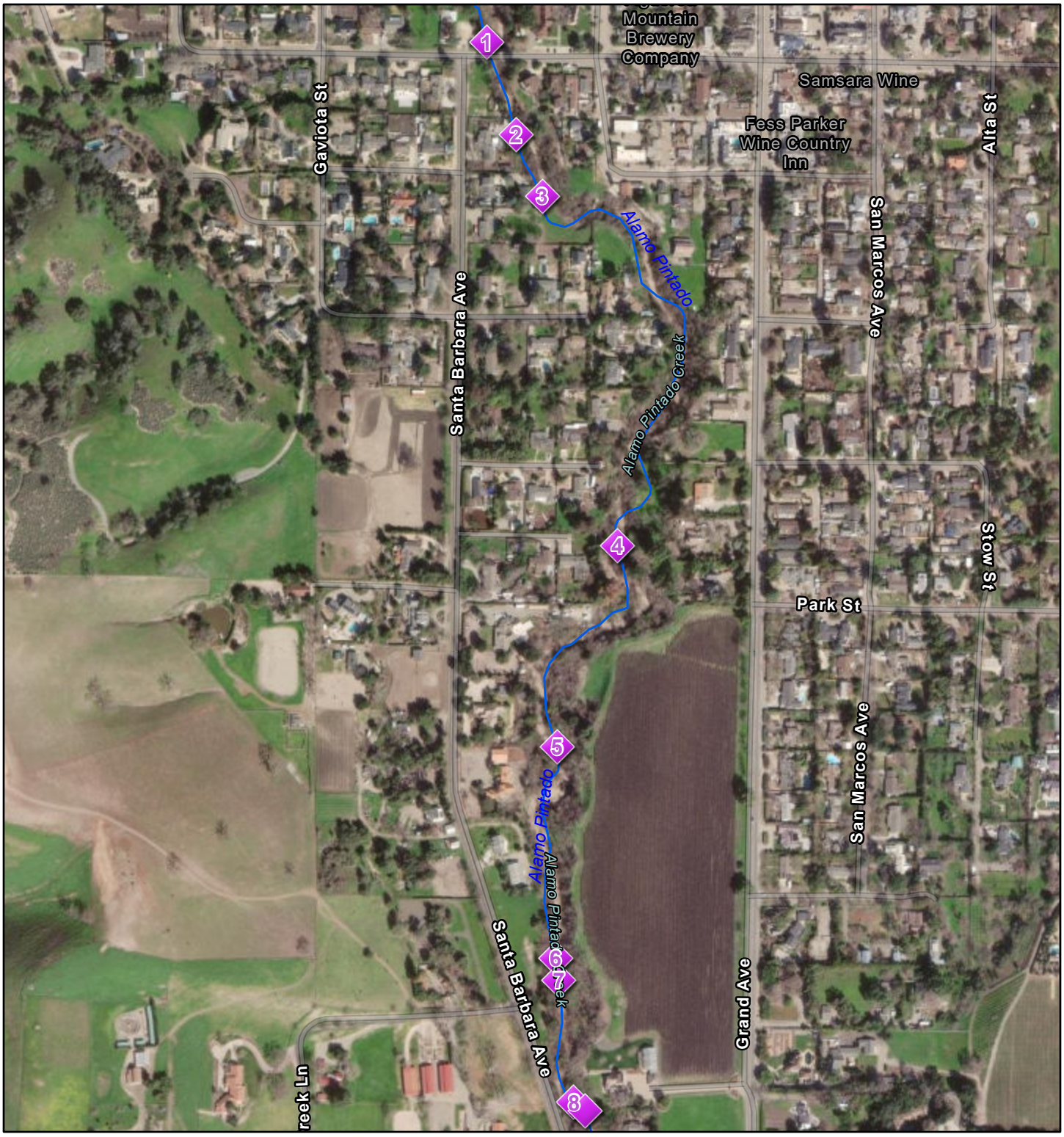
| Section | Down tree/limb | Brushing (area) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 14** | x | | | pepper tree | 6 | 25 | | |
| **Section 15** | x | | x | down willow, limb bay | 20 | 15 | | partially buried |
| **Section 16** | x | | | | 20 | 35 | | |
| **Section 17** | | | | | | | | debris plug |
| **Section 18** | x | | | willow | | | | multiple down trees |
| **Section 19** | | | x | walnut, poison oak | | | | |
| **Section 20** | x | | | willow | | | | debris plug |
| **Section 21** | x | | | willow | | | | |

Section 9:
At this location, broken pipe and wire are extending into the low flow channel. Maintenance staff will assess the condition of the pipe and wire and cut back as needed. Any cut material will be removed.

Section 10:
Intense flows this season dislodged some of the protective boulders from around the footings of Landing Bridge. Debris has built up on the now out of place boulders. A dozer will be used to return the boulders to the proper location along the bridge footings and the debris will be pushed to the banks to reestablish the low flow channel.

**Impact Analysis and Mitigation Measures:**
Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the “Impacts and Mitigation Measures” tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Alamo Pintado Creek - A




5/2/2024

1:6,608

0 0.04 0.09 0.18 mi

0 0.05 0.1 0.2 km

Sites24

APCreeks

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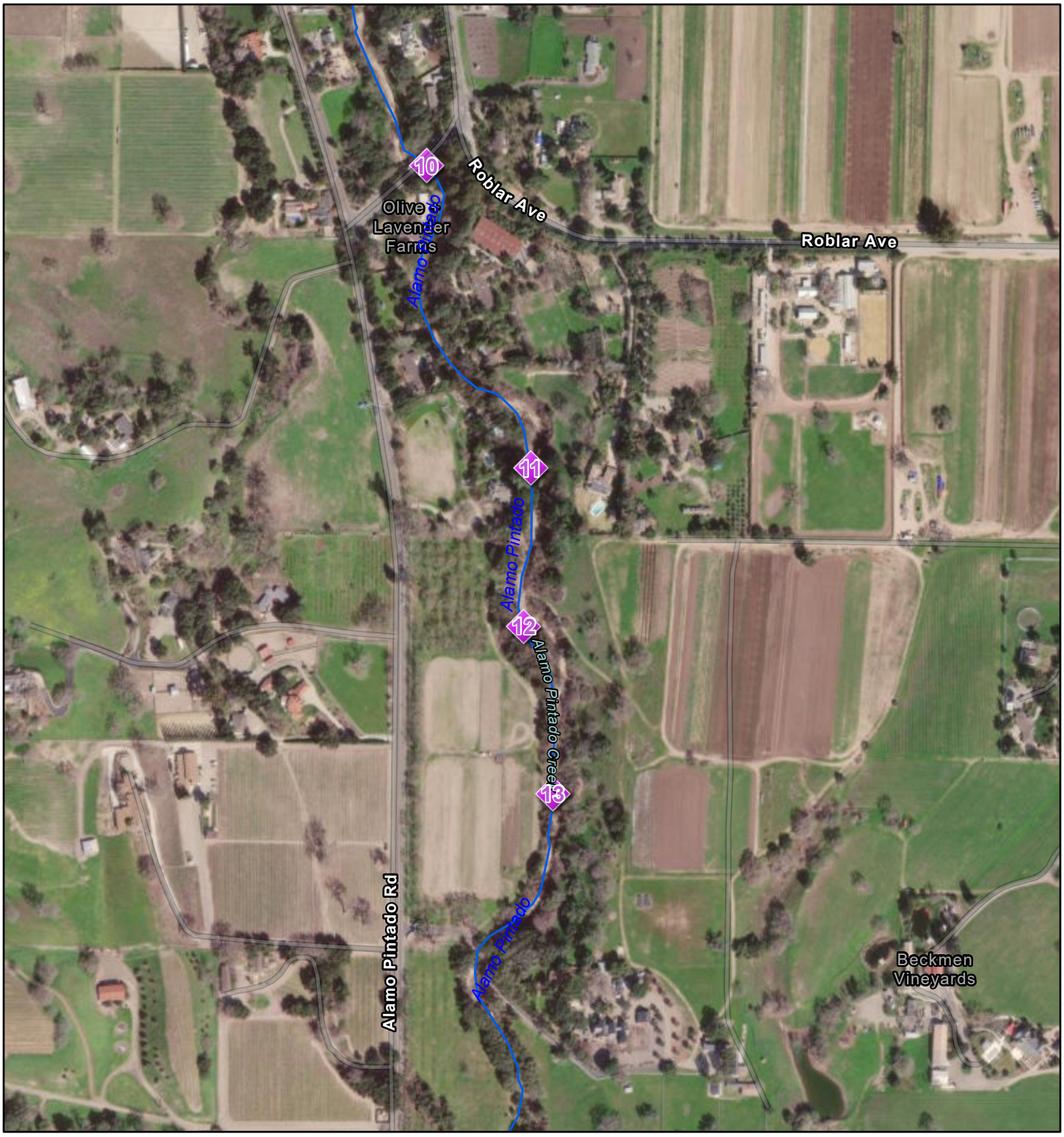
# Alamo Pintado Creek - B




5/2/2024

1:6,608

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0 0.05 0.1 0.2 km

Sites24

APCreeks

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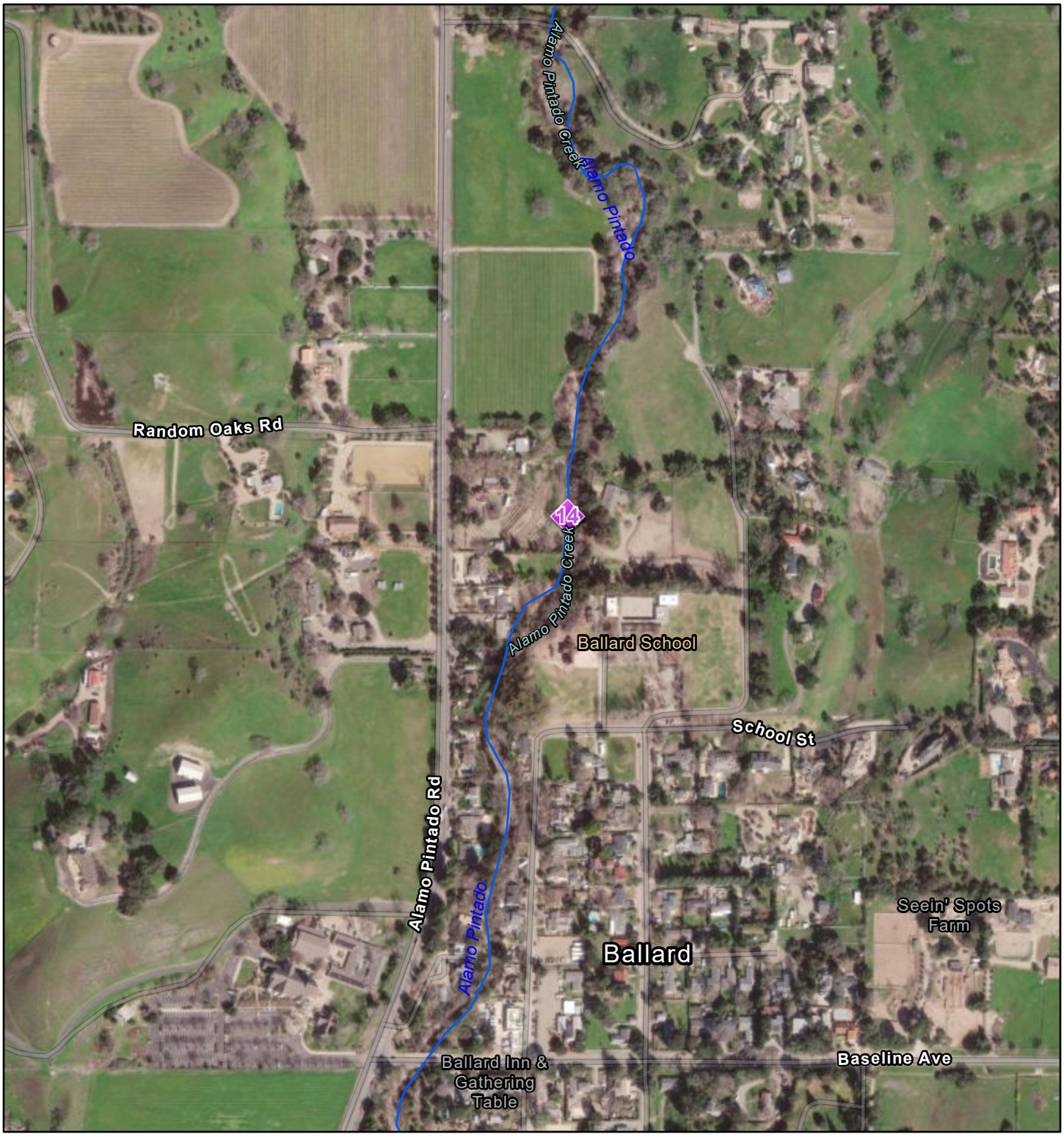
# Alamo Pintado Creek - C




5/2/2024

1:6,608

0 0.04 0.09 0.18 mi

0 0.05 0.1 0.2 km

Sites24

APCreeks

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# Alamo Pintado Creek - D




5/2/2024

1:2,254

0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

Sites24

APCreeks

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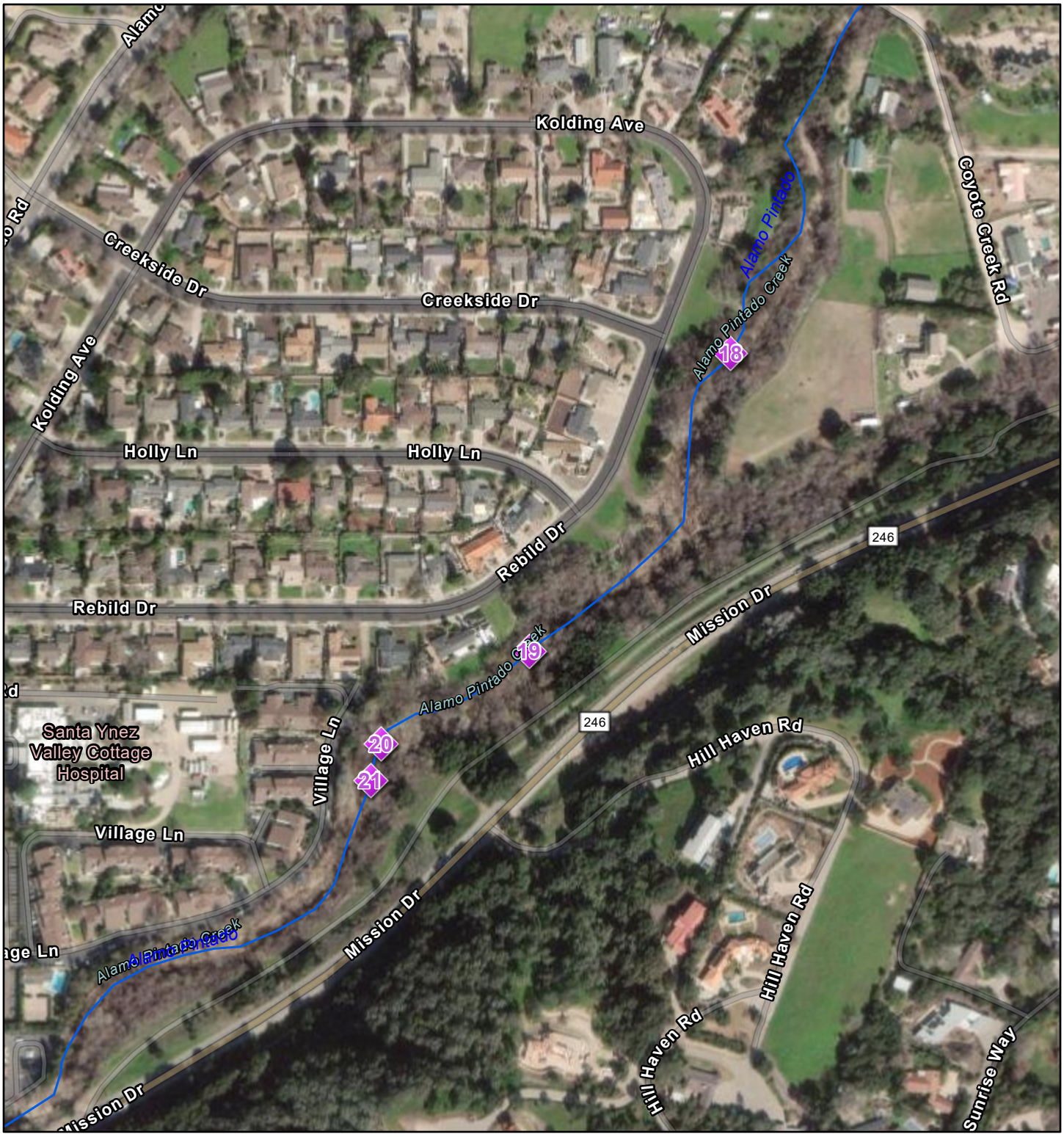
# Alamo Pintado Creek - E




5/2/2024

1:4,508

0 0.03 0.06 0.12 mi

0 0.05 0.1 0.2 km

Sites24

APCreeks

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Alamo Pintado Creek




**Section 10**




**Section 12**

# BRADLEY CANYON CHANNEL ROUTINE MAINTENANCE ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
Bradley Canyon Channel is located approximately 3.5 miles east of Santa Maria. The project begins near the intersection of Foxen Canyon Road and Dominion Road and extends to the confluence with Santa Maria River.

**Setting:**
Inspected on March 13, 2024.

Bradley Canyon Channel begins approximately 0.7 miles upstream (south) of Betteravia Road and flows northward to the Santa Maria River, a total distance of approximately 2 miles. This drainage is confined by a levee on the west side of the 100-foot wide channel and an earthen slope on the east side. An established earthen low flow channel ranging from 5 to 10 feet wide flows down the middle of the drainage, but this low-flow channel periodically is washed away during storms, leading to a situation where flow meanders through the channel eroding the levee toe. Surface water, almost entirely attributed to agriculture run-off, ranges from three feet to only a few inches in depth during the dry season. Vegetation is comprised mostly of wild radish, poison hemlock, mustards, and weedy grasses. Overstory vegetation is almost entirely lacking.

Upstream (south) of Betteravia Road, the landowner has repeatedly disked the channel and excavated a few trenches, which further diminishes the effectiveness of the low-flow channel. Downstream (north) of Betteravia Road, the low-flow channel is still evident, but is mostly filled in with sediment. As Bradley Canyon Channel bends to the west adjacent to the Santa Maria River, intermittent patches of high-density cattail and bulrush grow in the stream. An overstory comprised of arroyo willow, narrow leaved willow and mulefat occurs along some portions of this lower segment.

California red-legged frogs have been observed in the project area and are assumed to be present. Until the past few years, the channel remained wetted throughout the year in the vicinity of Betteravia Road upstream through the agricultural areas. Over the last several years, agriculture adjacent to Bradley Canyon Channel has changed from row crops that were flood irrigated to strawberries and other berries that are drip irrigated. As such, Bradley Canyon Channel has markedly less water overall and the lower portions of the channel (where most of the District maintenance occurs) dry up during the summer months where it remained wetted in previous years.

**Revegetation:**
Beginning with the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District began a new reporting and accounting program for the restoration component of the Annual Routine Maintenance Program. Since that time, the District has been tracking the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included to more easily display and track the District's restoration efforts.

| Bradley Canyon Channel | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2004/2005 | 2,000 | 2,000 | 2,000 | 0 |
| 2005/2006 | 500 | 500 | 500 | 0 |
| 2006/2007 | 0 | 0 | 0 | 0 |
| 2007/2008 | 1,000 | 42,688 | 42,688 | 41,688 |
| 2008/2009 | 14,800 | 14,800 | 0 | 26,888 |
| 2009/2010 | 0 | 0 | 0 | 26,888 |
| 2010/2011 | 0 | 0 | 0 | 26,888 |
| 2011/2012 | 0 | 0 | 0 | 26,888 |
| 2012/2013 | 0 | 0 | 0 | 26,888 |
| 2013/2014 | 0 | 0 | 0 | 26,888 |
| 2015/2016 | 210 | 0 | 0 | 26,678 |
| 2016/2017 | 100 | 0 | 0 | 26,578 |
| 2017/2018 | 1,200 | 0 | 0 | 25,378 |
| 2019/2020 | 2,000 | 2,000 | 0 | 23,378 |
| 2020/2021 | 1,750 | 0 | 0 | 21,628 |
| 2021/2022 | 0 | 0 | 0 | 21,628 |
| 2022/2023 | 0 | 0 | 0 | 21,628 |
| 2023/2024 | 0 | 0 | 0 | 21,628 |
| 2024/2025 | 0 | 0 | - | 21,628 |

**Wildlife Survey:**

As described in the project description, maintenance will involve using equipment to excavate and move sediment in the channel. This type of maintenance has the potential to impact wildlife, particularly the California red-legged frog (RLF).

RLF individuals of various age classes have been detected in segments of Bradley Canyon Channel since 2004. The District assumes that RLF may be present and implements mitigation measures and best management practices to protect the species. The District has developed a management strategy and special conditions through a Biological Opinion issued by the US Fish and Wildlife Service.

Previous observations and relocation efforts during the last several years of detected a variable number of RLF in the project area where standing water is present.

The landscape draining into Bradley Canyon has been converted from flood irrigation to more drip irrigation in recent years, resulting in less water in the channel during summer months. In fact, for the past several summers the lower end of Bradley Canyon has gone completely dry. The declining number of frogs during the last 3 years is most likely due to the low water levels in the system from a change in agriculture practices and extensive drought. The proposed project will allow a deeper channel to persist within the vegetated channel, which will enhance RLF habitat suitability.

During maintenance work that involves heavy equipment and/or disturbance of the wetted channel, the District Biologist monitors all maintenance activity. The Biologist inspects the site before work begins and flushes animals from the work area. If animals are exposed during operations, the work is paused while the animal is captured and safely relocated upstream or downstream of the work area.

No other sensitive species have been observed within this drainage. Impacts to RLF and other species addressed in the Program EIR are expected to be less than significant with the incorporation of the proposed mitigation measures and monitoring conditions specified in the Biological Opinion.

**Engineering Analysis:**

Bradley Canyon Channel is a tributary to the Santa Maria River and is an integral part of the Santa Maria River Levee Project. It drains a very large watershed south of the Santa Maria River. The Levee system was constructed in the 1960s by the Corps of Engineers and is owned and maintained by the District. The Operations & Maintenance Manual provided by the Corps requires that the channel remain clear of vegetation and that a low-flow channel be maintained. The downstream end of the channel upstream of the confluence with the Santa Maria River has experienced some sedimentation and has been colonized by vegetation. Therefore, maintaining the width and clearing with the low-flow channel by controlling the vegetation will comply with the terms and conditions of the O&M Manual.

**Project Description:**

Section 1:

Bradley Canyon is typically maintained with a narrow trench installed in the center of the wider channel to allow low-flows to drain through to the Santa Maria River. This center trench periodically becomes colonized with weedy vegetation, which traps sediment and impedes drainage.

The work area is defined as an approximately 3,800-foot long reach of the low flow channel, within which there are patchy accumulations of sediment and weedy vegetation. Using an excavator staged on the adjacent dry terrace, the District crew will desilt obstructive sediment where needed to return the low flow channel to approximately 3 feet deep and 8 feet wide. Material will be deposited behind the excavator on the flat terrace and once dry, groomed back into the existing soil. The work area is partially vegetated with a blend of non-native grasses, wild radish, and curly dock. There are no trees or riparian canopy that would be affected. The District crew will spot-treat with a registered approved product approximately every 4-6 weeks during the maintenance season. Follow-up spring/summer treatments will be made as necessary to retain the center trench. A buffer of vegetation will be left along the edge of the channel for wildlife habitat and to help the channel retain the shape of its banks.

Section 2:

The 2023/2024 rain season caused bank erosion near where the channel drains into Santa Maria River. District crew will reshape the banks to restore pre-erosion conditions. Material may need to be imported to reshape the bank.

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the “Impacts and Mitigation Measures” tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Bradley Canyon Channel




5/2/2024

1:18,031

0 0.13 0.25 0.5 mi

0 0.2 0.4 0.8 km

Sites24

Lengths24

APCreeks

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Bradley Canyon




**Section 1**




**Section 2**

# CEBADA CANYON CREEK ROUTINE MAINTENANCE ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins near the intersection of Purisima Road and State Route 246 and terminates downstream at the confluence with Santa Ynez River.

**Setting:**
Inspected on March 14, 2024.

Cebada Canyon Creek originates in the Purisima Hills approximately 2 miles north of the end of Cebada Canyon Road northeast of Lompoc. The drainage is a natural creek until the last approximately 1.6 miles of the drainage where it is a concrete U-shaped channel that eventually drains into the Santa Ynez River near the south end of Rucker Road. The channel contains flows for a limited time after a rain event but usually quickly dries up and contains no persistent pools within the maintenance reach.

The stretch of creek proposed for maintenance runs parallel to and immediately south of Purisima Road. Surrounding land use is open space and agriculture. Substrate in the creek invert is sand and gravel with evidence of sediment transport from the adjacent agricultural property. The creek banks are very well vegetated mainly with shrubby willows but also with coyote brush, elderberry, blackberries and poison oak, along with many non-native weedy species.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| Cebada Canyon Creek | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2006/2007 | 0 | 0 | 0 | 0 |
| 2007/2008 | 4,800 | 4,800 | 0 | -4,800 |
| 2009/2010 | 200 | 5,000 | 5,000 | 0 |
| 2010/2011 | 0 | 0 | 0 | 0 |
| 2014/2015 | 0 | 0 | 0 | 0 |
| 2016/2017 | 200 | 1000 | 0 | -200 |
| 2018/2019 | 0 | 0 | 0 | -200 |
| 2019/2020 | 0 | 0 | 0 | -200 |
| 2020/2021 | 0 | 500 | 500 | 300 |
| 2022/2023 | 0 | 0 | 0 | 300 |
| 2023/2024 | 0 | 0 | 0 | 300 |
| 2024/2025 | 0 | 0 | - | 300 |

**Engineering Analysis:**
The maintenance area of Cebada Canyon Channel drains culverts from Purisma Road and a traffic roundabout on State Route 246. The Channel is low-gradient and tends to collect sediment and debris, which can plug theses culverts. Low-hanging limbs and debris in the channel can further trap sediment and lead to debris plugs within the channel and downstream. Potential obstructions must be removed periodically or Purisima Road and State Route 246 will flood.

**Project Description:**
The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

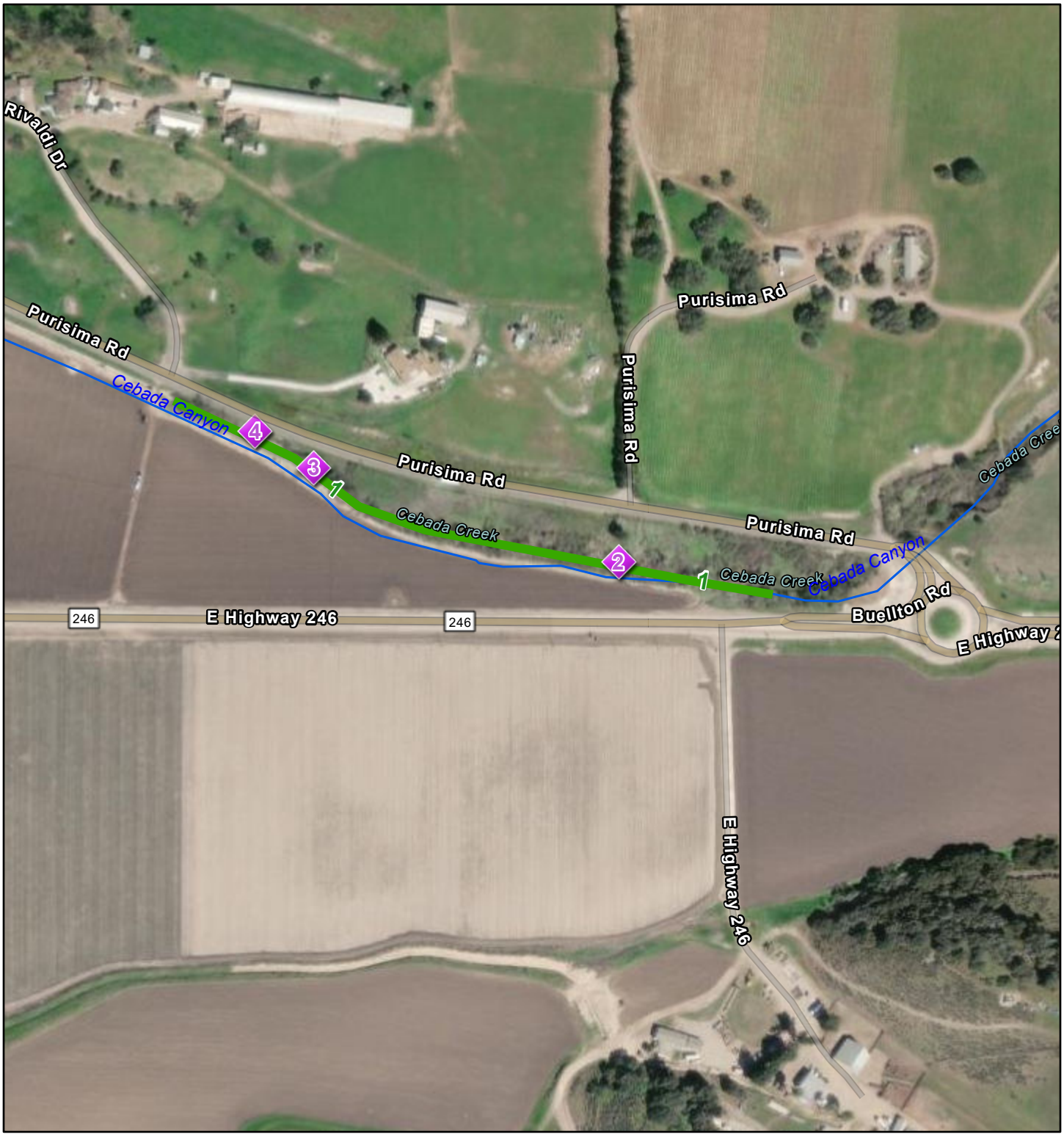
| Section | Down tree/limb | Brushing (area) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | x | | x | willow, oak | | | | See Section 1 |
| **Section 2** | x | | | willow | 8 | 30 | | |
| **Section 3** | x | | | black locust | 16 | 30 | | |
| **Section 4** | x | | | willow | 5 | 15 | | |
| **Section 5** | x | | x | willow | | | | See Section 5 |

Section 1:
This reach of the creek collects drainage from Purisima Road and the traffic roundabout drainage culvert at Highway 246. The narrow riparian corridor features low, dropping willow limbs and fallen woody material in the center of the drainage trench. District crew will limb branches, cut the fallen material, and remove from the creek channel to prevent obstructions. The work area will be completely dry during operations. The work will not result in impacts to live native vegetation.

Section 5:
Down willow trees, accumulated sediment, and accumulated debris have caused flows from Cebada Canyon Creek to flow in an upstream direction (south) into the Santa Ynez River. When the creek is dry, District crew will clear down trees, accumulated sediment, and accumulated debris to reestablish the low flow channel with the Santa Ynez River in a downstream direction. Light equipment work will be performed to complete this effort.

**Impact Analysis and Mitigation Measures:**
Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Cebada Canyon Creek - A




5/2/2024

1:4,508

0 0.03 0.06 0.12 mi

0 0.05 0.1 0.2 km

Sites24

Lengths24

APCreeks

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# Cebada Canyon Creek - B




5/2/2024

Lengths24

APCreeks

1:3,304

0 0.02 0.04 0.09 mi

0 0.04 0.07 0.14 km

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Cebada Canyon Creek




**Section 1**




**Section 5**

# FOXENWOOD 3 BASIN ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
Foxenwood 3 Basin is located within the Foxenwood Subdivision in Orcutt near the intersection of Clubhouse Drive and Foxenwood Drive.

**Setting:**
Inspected on March 25, 2024.

Foxenwood 3 Basin collects runoff from the surrounding residential development where it slowly evaporates over the summer months, rarely going completely dry due to a hard pan underlying the basin. The basin receives runoff even during the summer months from residential landscape irrigation and urban tailwater. If the basin overflows, the water exits via a concrete spillway and flows into the large surrounding open space owned by the Airport where it seeps into the ground. Water can be released via a pipe and flow to Getty Basin where it contributes to groundwater recharge of the Santa Maria Valley.

**Revegetation:**
Routine maintenance in the concrete V-ditches does not affect habitat value, while the basin itself is a man-made feature that provides aquatic habitat year-round. The District allows and encourages natural regrowth in the basin and the perimeter of the wetted area. The District also performs mowing and weed control on the banks. Willow and cattail habitat at the constructed basin serve as surplus “revegetation” for any small incidental effects due to clearing sprouts in the V-ditches. While the amount of riparian/wetland habitat created by the Basin has not been formally quantified, the extent of the created habitat far exceeds the small amount of disturbance that occurs every few years to manage the ditches.

**Wildlife Survey:**
The basin is full of water and is estimated to be approximately 6 feet deep at the deepest point. A short fringe of vegetation is present along the perimeter and a willow thicket occurs in the northeast corner of the basin. When the water depth is suitable, tule and cattail grow towards the center of the basin. Otherwise, the basin is open water with mowed grassy banks.

California red-legged frog (RLF) has been detected in the past at this facility. Depending on annual weather, this basin sometimes goes completely dry in summer (likely extirpating any local RLF), and in other years the basin may retain water for the entire year. Based on previous surveys and habitat suitability, the District presumes that RLF could be present when standing water is present for prolonged periods. The District will implement mitigation measures and special conditions described in the Biological Opinion issued by the United States Fish and Wildlife Service.

Work will be scheduled in the fall to avoid the RLF breeding season, per the Biological Opinion. Direct impacts to the individual RLFs as well as species discussed in the Program EIR are expected to be minor and temporary incidental response such as flushing away from District crews when walking through the site.

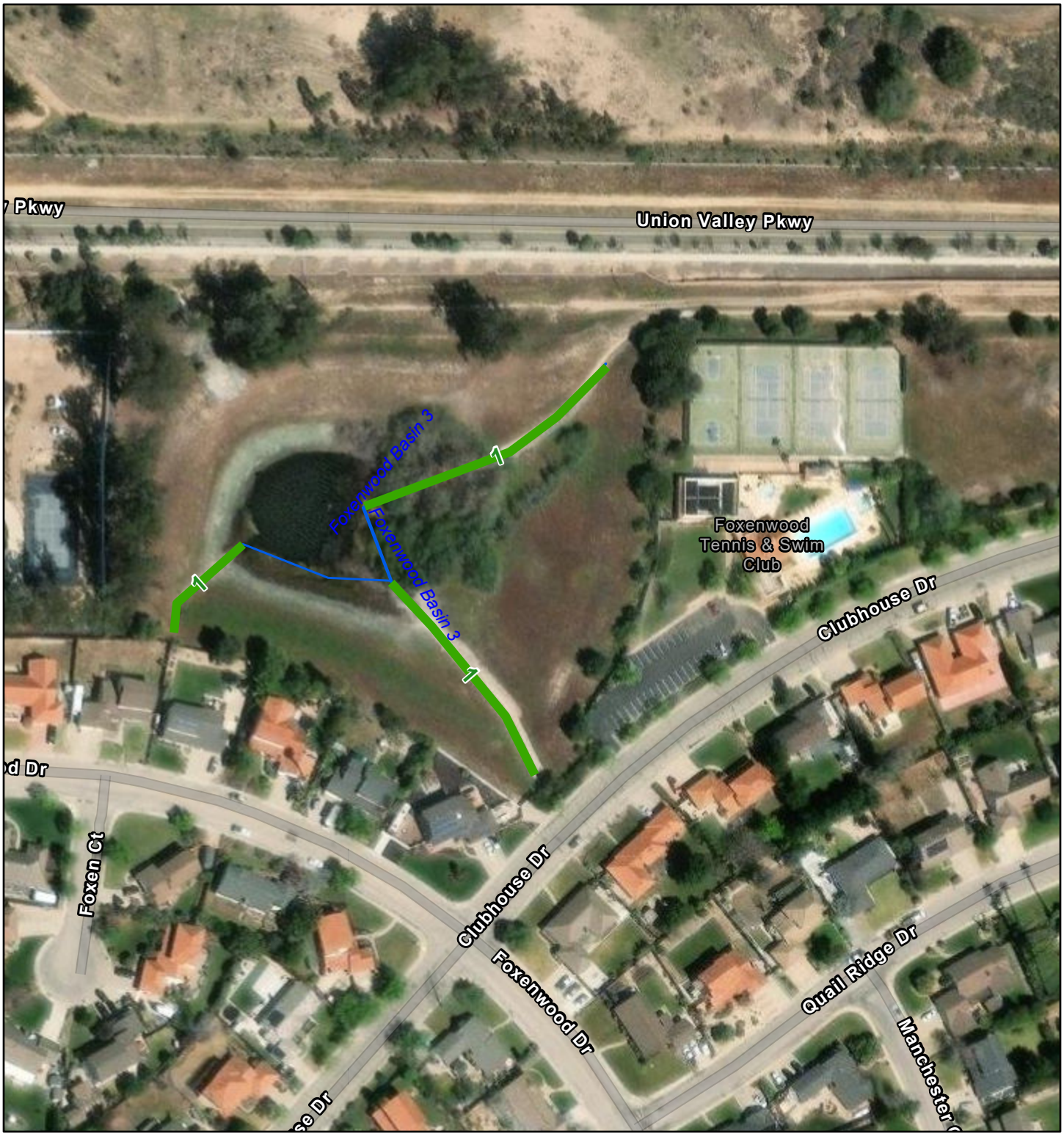
**Engineering Analysis:**
Retardation basins are engineered to reduce runoff from developed areas. Without an operable basin, downstream areas can suffer flood damages from the increased flows from development. This basin was designed to reduce the impacts of the development of the Foxenwood Tract in Orcutt.

**Project Description:**

Section 1:
Two concrete v-ditches enter the basin from the northeast and southeast. Stands of tule and cattail have grown in the ditches, blocking the flow of water. Maintenance will consist of trimming back this obstructive vegetation and spot spray of aquatic herbicide as needed.

**Impact Analysis and Mitigation Measures:**
Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Foxenwood 3 Basin




5/7/2024

1:2,254

0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

Lengths24

APCreeks

Maxar, Microsoft, Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS

Foxenwood 3 Basin




**Section 1**

# MIGUELITO CHANNEL OUTLET ROUTINE MAINTENANCE ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project is located adjacent to the Lompoc Regional Wastewater Reclamation Plant northwest of the intersection of North V Street and West Central Avenue.

**Setting:**
Inspected on March 14, 2024.

Miguelito Creek runs through Lompoc and is a tributary to the Santa Ynez River. Miguelito Creek drains an 11.6 square mile watershed capable of producing 4,200 cfs during a 100-year return period event.

The upper portions of Miguelito Channel running through the City do not contain riparian habitat, however the lowest portion of the channel (most downstream portion of the channel), proposed for maintenance, traverses the riparian corridor on the southern bank of the Santa Ynez River. Over many years, the channel has become overgrown and plugged with downed trees, other vegetation, debris and trash. Flows through Miguelito Channel are forced to slow down and spread through the riparian corridor. Because the channel is blocked with debris and vegetation, it also contains stagnant pools. The riparian corridor surrounding the channel is densely vegetated. Native plant species include willows, cottonwood, sycamore, blackberry, mugwort, stinging nettle, poison oak, creek clematis, and coyote brush.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

Miguelito Channel drains mostly urban properties into the Santa Ynez River; therefore, restoration opportunities in the River may be utilized as mitigation for impacts associated with Miguelito Channel.

| Miguelito Channel | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2019/2020 | 150 | 0 | 0 | -150 |
| 2020/2021 | 0 | 200 | 200 | 50 |
| 2021/2022 | 0 | 0 | 0 | 50 |
| 2022/2023 | 0 | 0 | 0 | 50 |
| 2023/2024 | 0 | 0 | 0 | 50 |
| 2024/2025 | 0 | 0 | - | 50 |

**Wildlife Survey:**
Miguelito Channel connects to the Santa Ynez River, an area with dense wildlife habitat. In particular, the California red-legged frog is known to occur within the adjacent Santa Ynez River. A nighttime survey of Miguelito Channel was conducted by the District Biologist on May 23, 2006 to look specifically for red-legged frogs. No red-legged frogs were seen during the survey. Species observed during the survey and creek inspections include California treefrog, raccoon tracks, deer (tracks), and mosquito fish.

Impacts to the observed species as well as those discussed in the Program EIR are expected to be less than significant with the incorporation of proposed mitigation measures. Maintenance will not involve disturbance to the wetted channel. Crews will enter the channel on foot and use only hand tools to trim fallen limbs and debris.

**Engineering Analysis:**
Miguelito Channel is an engineered facility protecting most of the City of Lompoc. For the channel to function as designed, the outlet must be open to allow these flows to be conveyed to the Santa Ynez River. The buildup of sediments and blockage of the outlet can result in overflows in the City additionally threatening the Lompoc Regional Wastewater Reclamation Plant.

**Project Description:**
Section 1:
This deep V-shaped channel has multiple down willow trees and branches that will be removed and/or limbed up to prevent the flow of water from being obstructed.

**Impact Analysis and Mitigation Measures:**
Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the “Impacts and Mitigation Measures” tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Miguelito Channel




5/2/2024

Lengths24

APCreeks

1:6,608

0 0.04 0.09 0.18 mi

0 0.05 0.1 0.2 km

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Miguelito Channel




**Section 1**

# MISSION HILLS CHANNEL AND BASIN ROUTINE MAINTENANCE ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project is located east of the Mission Hills Community Services District facilities and southeast of the intersection of Via Lato and Burton Mesa Boulevard.

**Setting:**
Inspected on March 14, 2024.

The Mission Hills Channel runs along the northeast portion of Lompoc, along the east side of the Mission Hills subdivision. The channel widens into an approximately 1-acre basin on the west side of the channel. The basin provides overflow capacity and sediment capture upstream of the Mission Hills Community Services District water treatment facility.

Surrounding land use is suburban housing, open space and agriculture. The channel drains south toward Cebada Canyon and eventually to the Santa Ynez River. The channel is generally dry and typically only conveys water during rain events. The area is typically maintained as an exempt facility via periodic mowing of the access road and spot-spraying weeds.

The Mission Hills channel and basin are prone to sedimentation and culver blockage at the basin outlet. These conditions present a flood hazard adjacent to the Mission Hills Community Services District treatment facility and the upstream neighborhoods adjacent to the basin.

**Revegetation:**
The Mission Hills Basin has not required desilting in many years. As a result of minimal maintenance, a strip of willow trees has developed along both sides of the channel. The District's typical practice in detention basins is to allow native vegetation to colonize and persist, as long as the obstructive vegetation does not interfere with proper function and drainage of the facility. When maintenance is required, vegetation may be removed, but then the site is recolonized with native vegetation again and left for several years before the next maintenance event is performed.

At Mission Hills Basin, the willow canopy will be left intact along the east side of the channel and the District will continue to allow this vegetation (approximately 4,000 square feet) to persist. Vegetation along the west channel (approximately 5,000 square feet) must be removed occasionally in order to accommodate the necessary flow capacity and desilting.

| Mission Hills Basin and Channel | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2018/2019 | 0 | 0 | 0 | 0 |
| 2019/2020 | 0 | 200 | 0 | 0 |
| 2020/2021 | 0 | 0 | 0 | 0 |
| 2021/2022 | 5,100 | 0 | 0 | -5,100 |
| 2022/2023 | 0 | 0 | 6,000 | 900 |
| 2023/2024 | 0 | 0 | 0 | 900 |
| 2024/2025 | 0 | 0 | - | 900 |

**Engineering Analysis:**

Accumulated sediment has gradually encroached, reducing the function of the basin and threatening to block the culverts through the basin. The basin must hold and drain properly to protect homes and properties in the Mission Hills Subdivision. The downstream properties, including the water treatment plant, would be subject to overtopping flows or flows breaking out of the channel if the current over-filled basin is not excavated.

**Project Description:**

The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

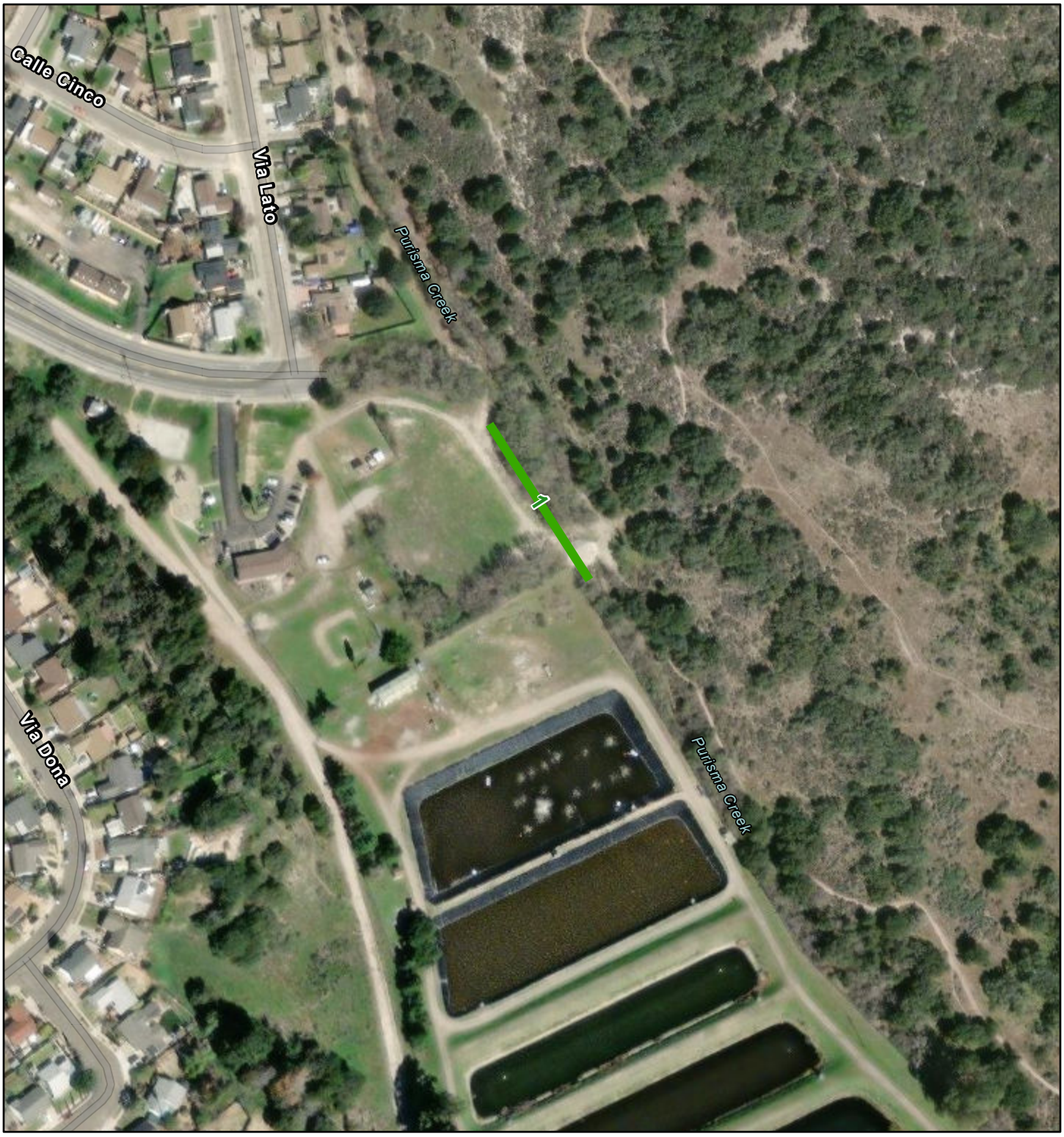
Section 1:

Sediment accumulated in the low flow channel within the basin and both sides of the culvert openings. A mini excavator and skid steer will be used to remove sediment to restore flow capacity. Removed sediment will be kept on site. The work area will most likely be dry during the maintenance season. However, if water remains the site will be monitored by the District Biologist.

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Mission Hills Channel




5/2/2024

Lengths24

1:3,304

0 0.02 0.04 0.09 mi

0 0.04 0.07 0.14 km

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Mission Hills




**Section 1**

# ORCUTT/SOLOMON CREEK ROUTINE MAINTENANCE ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:** The project begins at Stillwell Road and ends at Morgan Trail in Orcutt, with additional work locations at the Dutard Road and West Main Street road crossings.

**Setting:**
Inspected on March 25, 2024.

Orcutt/Solomon Creek originates in the Solomon Hills southeast of Santa Maria and drains a 27,357-acre watershed. The District's management area includes the semi-urban reach of the watershed running through the community of Orcutt, as well as portions of the creek near the Laguna County Sanitation District Wastewater Reclamation Plant and the downstream confluence of Orcutt Creek and the Santa Maria River.

**Revegetation:**
Beginning with the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District began a new reporting and accounting program for the restoration component of the Annual Routine Maintenance Program. Since that time, the District has been tracking the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included to more easily display and track the District's restoration efforts.

| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
|---|---|---|---|---|
| 2003/2004 | 2,600 | 4,000 | 4,000 | 1,400 |
| 2004/2005 | 8,600 | 9,000 | 9,000 | 1,800 |
| 2006/2007 | 6,000 | 6,000 | 3,000 | -1,200 |
| 2007/2008 | 350 | 800 | 800 | -750 |
| 2008/2009 | 800 | 0 | 0 | -1,550 |
| 2009/2010 | 0 | 750 | 2,000 | 450 |
| 2010/2011 | 0 | 500 | 500 | 950 |
| 2011/2012 | 800 | 880 | 600 | 750 |
| 2012/2013 | 485 | 800 | 0 | 265 |
| 2013/2014 | 20 | 0 | 0 | 245 |
| 2014/2015 | 10 | 0 | 0 | 235 |
| 2015/2016 | 580 | 0 | 0 | -345 |
| 2016/2017 | 1,760 | 0 | 0 | -2,105 |
| 2019/2020 | 0 | 0 | 4,220 | 2,115 |
| 2021/2022 | 20 | 0 | 0 | 2,095 |
| 2022/2023 | 90 | 0 | 0 | 2,005 |
| 2023/2024 | 0 | 0 | 0 | 2,005 |
| 2024/2025 | 20 | 0 | 0 | 1,985 |

**Wildlife Survey:**
California red-legged frogs (RLFs) are known to inhabit the lower reaches of Orcutt/Solomon Creek near Westrail Estates, the Laguna Sanitation Facility, and at the West Main Street crossing. The District assumes that RLF may be present in these areas whenever standing water is present. The District Biologist will monitor and inspect the project areas prior to commencement. Any RLF or other aquatic animals detected during the monitoring inspection will be flushed and/or temporarily relocated to the adjacent pools during operations. The District's existing Biological Opinion addresses these projects in this area. Any disturbance would be minor and temporary and would follow the requirements of the Biological Opinion. It is most likely that the work areas will be dry during the maintenance season and no disturbance to aquatic organisms would occur.

**Engineering Analysis:**
Maintenance of Orcutt/Solomon Creek requires vegetation and silt removal to preserve flood flow conveyance and to protect adjacent properties. Obstructive vegetation consisting primarily of downed limbs and trees, limbs projecting into the active channel, and several trees growing in the active channel, will be removed from the main channel at various locations to provide conveyance of flood waters as well as reduce the debris load which can cause debris plugs that divert flows towards banks causing erosion or raise water surface levels, and aggravate bridge and culvert plugging. The bankfull discharge width for Orcutt/Solomon Creek, based on field indicators is approximately 10 to 12 feet wide.

The gradient through Orcutt is relatively low, and combined with sandy soils, culverts in this region are easily plugged by sediment. In dry years there is not substantial enough flow to clear culverts or actively scour sediment and vegetation sprouts. In intense rain years with high flow volume, the sediment bars become washed out and minimal vegetation is able to establish in the floor of the creek channel.

**Project Description:**
The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

| Section | Down tree/limb | Brushing (area) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | | | | | | | | see Section 1 |
| **Section 2** | | | x | willow | | | | |
| **Section 3** | x | | | willow | | | | multiple |
| **Section 4** | x | | | cypress | | | | |
| **Section 5** | x | | | willow | | | | |
| **Section 6** | | | | | | | | remove stump |
| **Section 7** | | | | willow | | | | |
| **Section 8** | | 15x3 | | willow | | | 20 | remove stump |
| **Section 9** | | | x | willow | | | | |
| **Section 10** | | | | | | | | debris plug |
| **Section 11** | x | | | willow | | | | |

| Section | Down tree/limb | Brushing (area) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 12** | x | | | willow | | | | multiple |
| **Section 13** | | | | | | | | see Section 13 |
| **Section 14** | x | | | willow | | | | multiple |
| **Section 15** | x | | | willow | 8 | 20 | | |
| **Section 16** | x | | | willow | 4 | 15 | | |
| **Section 17** | x | | | willow | 5 | 20 | | |
| **Section 18** | x | | | willow | | | | multiple |
| **Section 19** | x | | | willow | 12 | 20 | | lower trunk only |
| **Section 20** | | | x | willow | | | | |
| **Section 21** | | | x | willow | | | | |
| **Section 22** | x | | | willow | 4 | 20 | | |
| **Section 23** | | | x | willow | | | | |
| **Section 24** | x | | | willow | | | | multiple |
| **Section 25** | x | | | willow | 4 | 20 | | |
| **Section 26** | x | | | willow | 7 | 25 | | |
| **Section 27** | x | | | willow | | | | debris plug |
| **Section 28** | x | | | willow | | | | multiple |
| **Section 29** | x | | x | willow | | | | multiple |
| **Section 30** | | | | | | | | see Section 30 |

Section 1:
Heavy rain during the wet season resulted in deposition of sediment in the middle of the channel and scouring of the adjacent bank. Equipment will be used to remove the built up sediment and place it along the northern bank where revegetation will be implemented.

Section 13:
Intense flows this rainy season have scoured the creek channel, exposing a sanitation line. Working with Laguna County Sanitation, equipment will be used to place rocks in two adjacent locations of the creek to allow natural sediment to deposit and aggrade and raise the depth of the channel to protect the pipe.

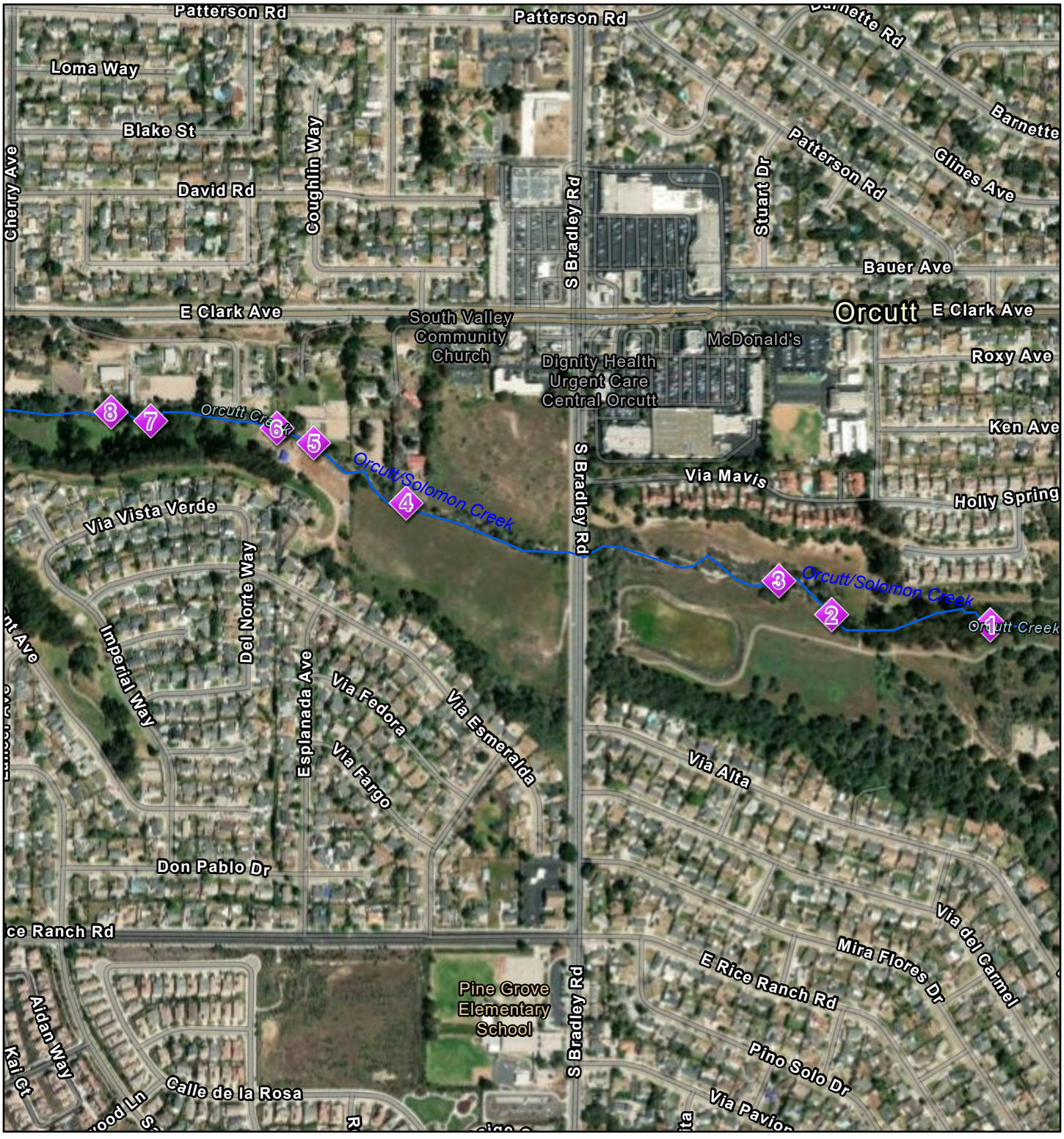
Sections 1 and 13 are expected to be dry during the required maintenance. The sites will be checked for wildlife prior to the start of work.

Section 30:
The culvert near Ray Road and the adjacent channel has become blocked with sediment. Equipment will be used to clear the deposited material and restore flow. This area may be inhabited by RLF, southwestern pond turtle, and other aquatic organisms. The District Biologist will perform a pre-project inspection and on-site biological monitoring during the excavation. Animals will be flushed out of the water area and relocated downstream during the project, according to the Biological Opinion.

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Orcutt Solomon Creek - A




5/6/2024

1:9,015

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Sites24

APCreeks

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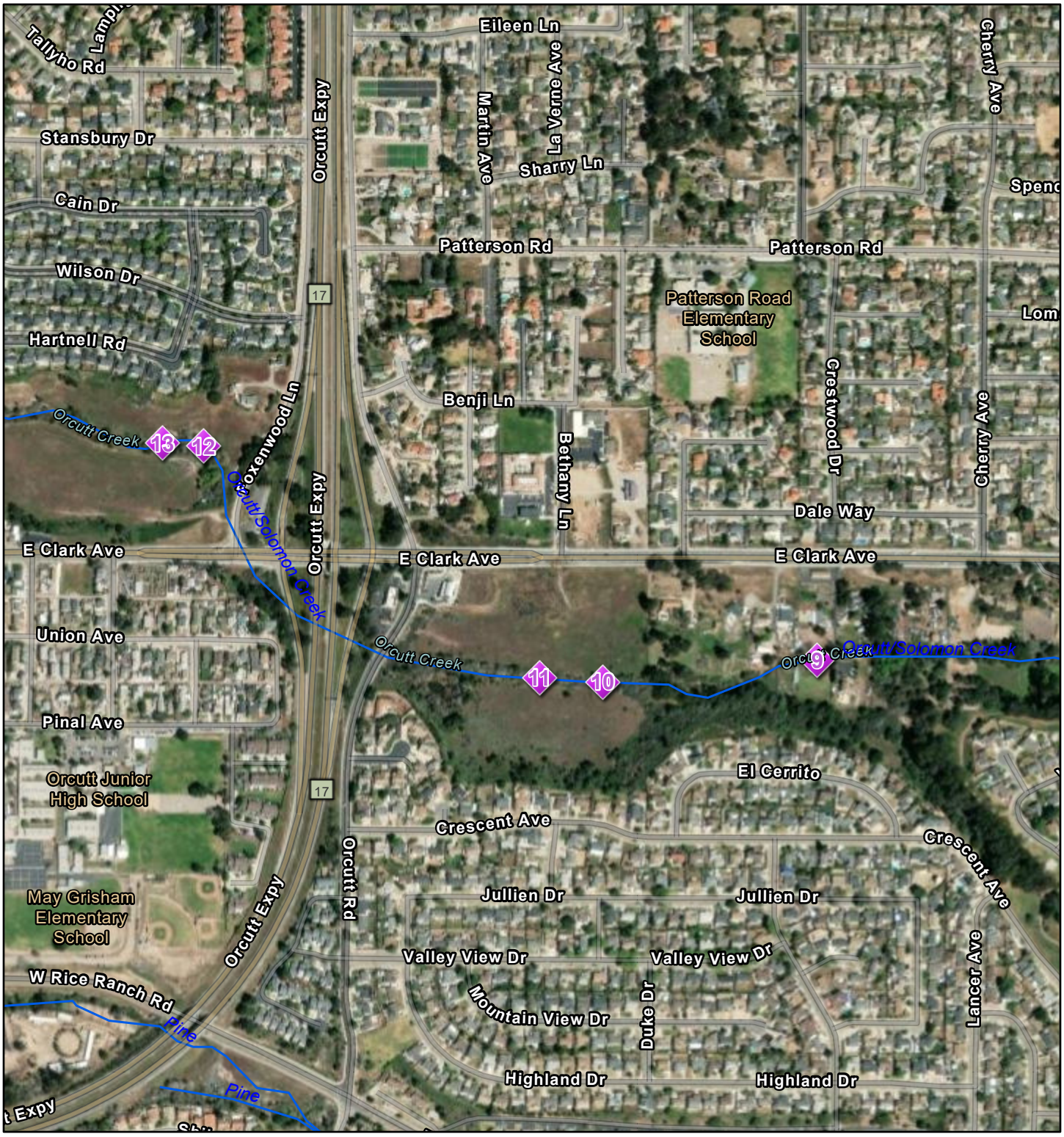
# Orcutt Solomon Creek - B




5/9/2024

1:9,015

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Sites24

APCreeks

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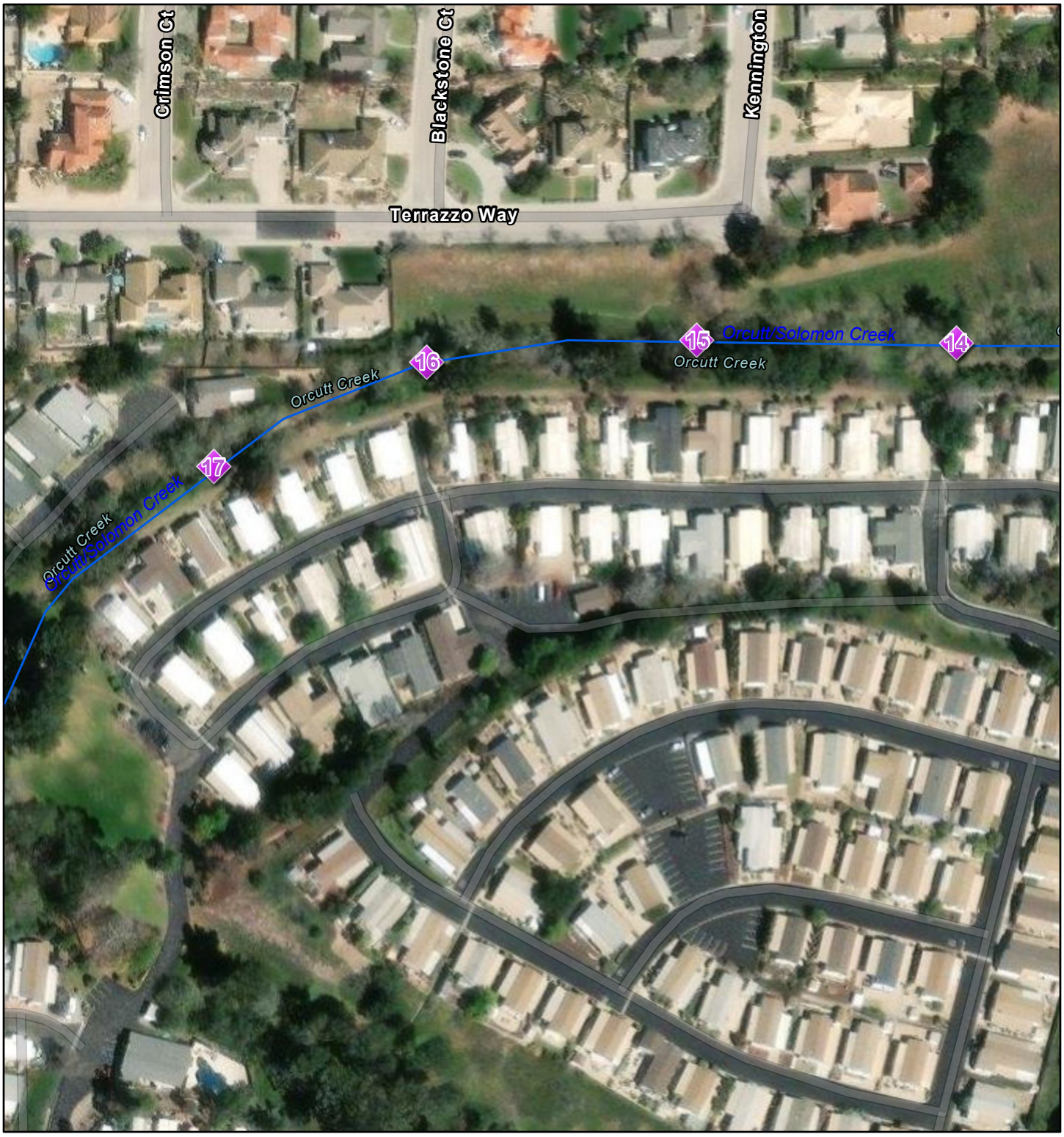
# Orcutt Solomon Creek - C




5/9/2024

1:2,254

0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

Sites24

APCreeks

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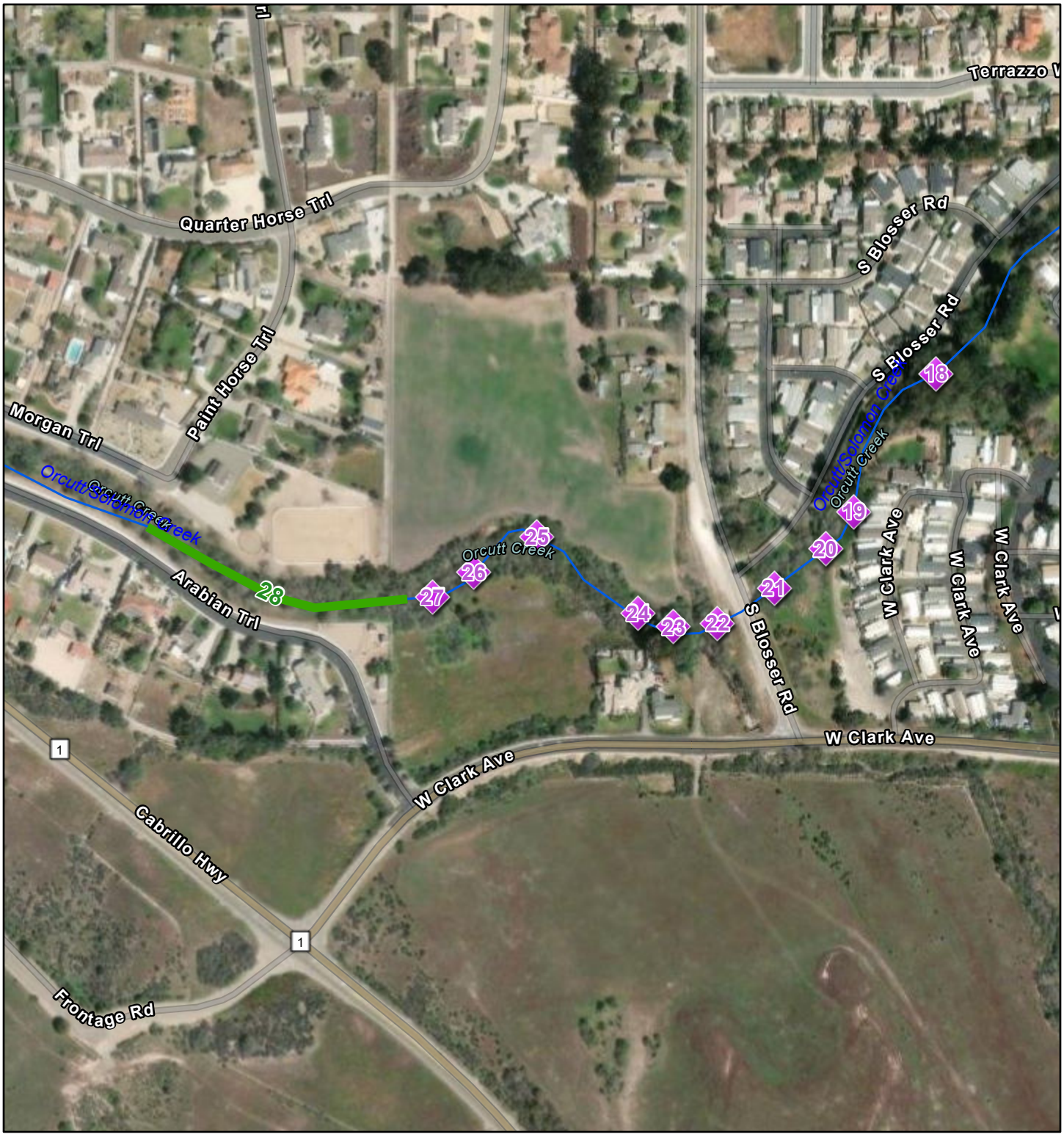
# Orcutt Solomon Creek - D




5/9/2024

1:4,508

0 0.03 0.06 0.12 mi

0 0.05 0.1 0.2 km

Sites24

Lengths24

APCreeks

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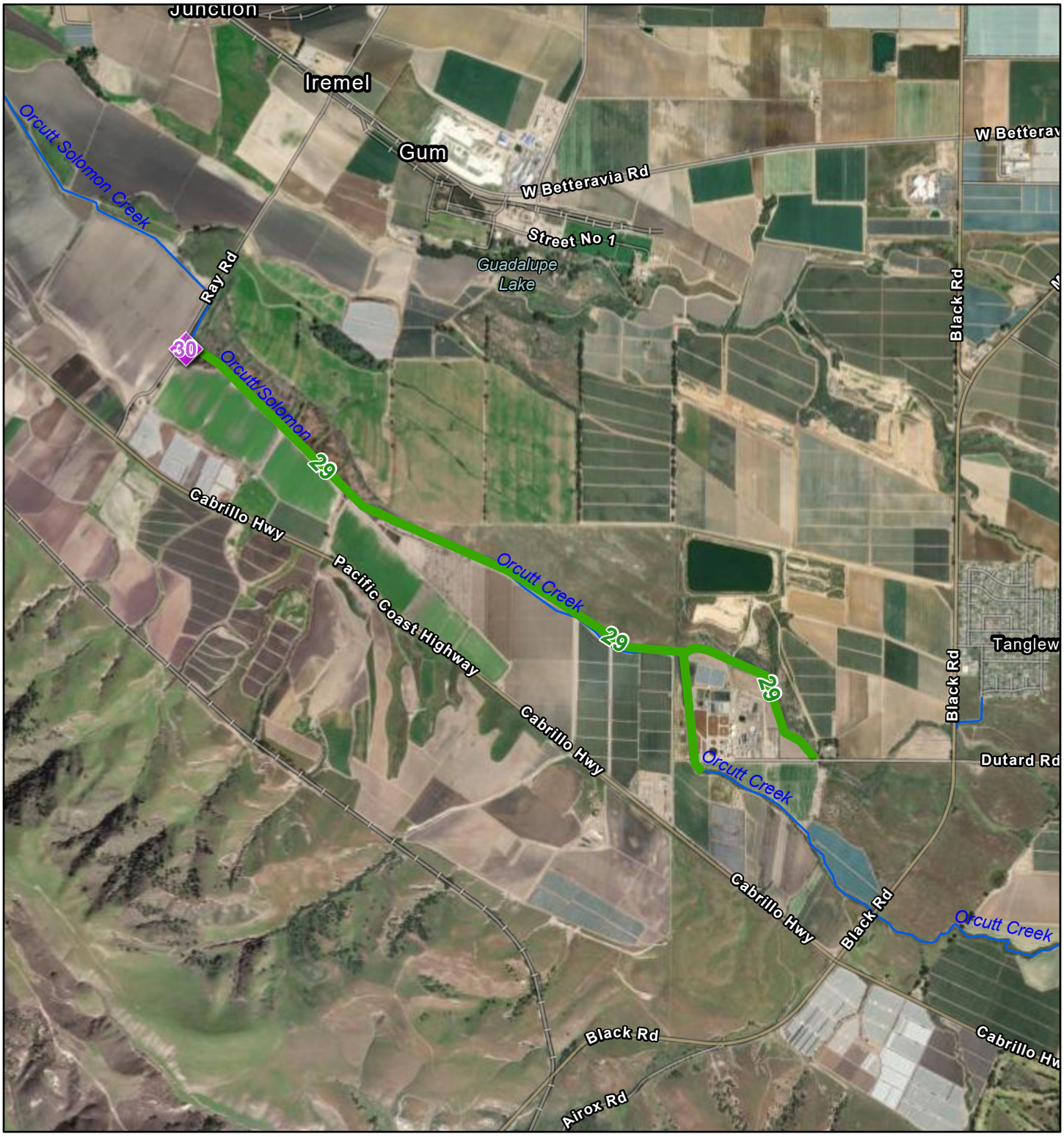
# Orcutt Solomon Creek - E




5/9/2024

1:36,062

0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

Sites24

Lengths24

APCreeks

California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS, County of San Luis Obispo, Maxar

Orcutt Solomon Creek




**Section 10**




**Section 21**

# RODEO-SAN PASCUAL CREEK AND BASIN MAINTENANCE ADDENDUM TO THE PROGRAM EIR FOR SANTA FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project is located at Rodeo-San Pascual Basin and the northern (downstream) end of the associated Rodeo-San Pascual Creek near the confluence with the Santa Ynez River, approximately two miles west of the City of Lompoc.

**Setting:**
Inspected on March 14, 2024.

The Rodeo-San Pascual Basin is formed at the confluence of Rodeo Channel (also called La Salle Canyon) coming from the west and San Pascual Channel (also called Sloan Canyon) from the east. These two canyons run through the Lompoc Foothills into concrete lined channels, meeting south of Ocean Avenue, where each tributary flows through concrete culverts under agricultural access roads. Rodeo Channel is concrete lined from approximately 2,000 feet upstream of the basin and San Pasqual Channel is concrete lined from approximately 4,600 feet above the basin. At the point of confluence, the drainages expand into a settling basin, approximately 1 acre in surface area. Flows into Rodeo-San Pascual Basin are mostly agricultural tailwater during summer months. The basin remains wetted year-round due to natural seepage and irrigation in the watersheds.

Rodeo-San Pascual Basin has an earthen floor and sides. The banks are populated with weedy species 4 to 6 feet tall, including poison hemlock, black mustard, wild radish, fennel, and Italian thistle. A few native species such as willow sprouts, equisetum, and vervain are present mixed with the weedy species.

The basin has accumulated excessive sediment, nearing capacity and threatening to fill and flood adjacent properties and roadways. Ponded water exits the basin to the north through a concrete lined channel, eventually meeting the Santa Ynez River.

Ponded water exits the basin to the north through a concrete lined channel, eventually meeting the Santa Ynez River. The concrete lined channel is maintained free of weeds and sediment. Cliff swallows utilize the water and small amounts of mud for building nests on nearby bridges and culverts. The last several hundred feet of Rodeo-San Pascual Creek, before it discharges into the Santa Ynez River (River), is earthen and contains mostly weedy vegetation on the upper banks along the first hundred feet of the earthen channel. After the first hundred feet beyond the concrete channel, the earthen channel runs through a riparian corridor that blends into the Santa Ynez River banks. The area is well vegetated with species such as willows, blackberry, stinging nettle, cottonwood and poison oak. The tree canopy over the channel is very well developed and the channel bottom is usually clear of obstructive vegetation.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance

Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| Rodeo-San Pascual Watershed | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2006/2007 | 1,000 | 1,000 | 0 | -1,000 |
| 2007/2008 | 500 | 1,500 | 0 | -1,500 |
| 2010/2011 | 0 | 1,500 | 0 | -1,500 |
| 2011/2012 | 0 | 1,500 | 1,500 | 0 |
| 2012/2013 | 70 | 0 | 100 | 30 |
| 2013/2014 | 0 | 0 | 0 | 30 |
| 2014/2015 | 0 | 0 | 0 | 30 |
| 2017/2018 | 0 | 0 | 0 | 30 |
| 2018/2019 | 0 | 0 | 0 | 30 |
| 2020/2021 | 0 | 0 | 0 | 30 |
| 2021/2022 | 0 | 0 | 0 | 30 |
| 2022/2023 | 0 | 0 | 0 | 30 |
| 2023/2024 | 0 | 0 | 0 | 30 |
| 2024/2025 | 0 | 0 | - | 30 |

**Wildlife Survey:**

District Biologists have conducted wildlife surveys of Rodeo-San Pascual Basin several times since 2010. A few adult California red-legged frogs (RLF) were detected in the basin in 2010. RLF had also been observed in the lower channel and Santa Ynez River in 2017.

The District presumes that RLF may be present in the basin and lower channel. The basin was desilted in 2010, which involved relocation of several RLF and extermination of non-native crawfish from the entire basin during dewatering and desilting. The following year, over 100 RLF metamorphs were observed in the basin, strongly suggesting that breeding had occurred on site and that the extermination of non-native crawfish resulted in RLF recolonizing the site from upstream.

Further wildlife surveys in 2012 and 2014 indicated that crawfish had returned to the basin, as well as non-native bullfrogs, several of which were observed in the basin. RLF have not been detected in the basin since and no egg masses, tadpoles, metamorphs, or adult RLF were observed in 2017 through summer 2023.

The District will continue to inspect the area for RLF and will implement protective measures as needed to protect native aquatic organisms; however, for the current season it is likely that RLF are no longer present in the basin at the site due to extreme predation. RLF may be present further downstream at the channel outlet and the confluence with the Santa Ynez River.

**Engineering Analysis:**

Rodeo/San Pasqual Channel and Basin were built by the Soil Conservation Service to manage flows and sediment across the lower Lompoc Valley and maintenance of this facility is essential

in providing flood protection to thousands of acres of agriculture. This basin periodically fills with sediment and must be desilted prior to the next rainy season. Removing the accumulated sediment in a staged approach will allow the majority of the basin to remain outside of the impact area and will also allow the retention of ponded water is other areas within the basin as the dewatering system is in operation.

Sediment has accumulated within the natural bottom portion of Rodeo-San Pasqual Channel between the concrete-lined channel and the confluence with the Santa Ynez River. The build-up of sediment impedes flows from the Rodeo-San Pascual Channel as they enter the River. This condition interrupts the sediment transport function of the channel and the River, slows flows down which raises water surface elevations, and reduces conveyance capacity within the Rodeo-San Pascual Channel, all of which exacerbates sediment accumulation within this channel. Additionally, downed vegetation is also obstructing flows through this facility. Maintaining an obstruction free channel at the outlet of the Rodeo-San Pascual Channel is also a required element of the maintenance of this federally funded project.

**Project Description:**

Section 1:

Desilting Rodeo-San Pascual Basin:

**Dewatering Plan:** The first step of the project will be to reduce the amount of water in the basin and allow the sediment to begin drying. The incoming channels have sporadic pulses of water depending on the irrigation uses upstream. Incoming water will be diverted from each incoming channel via a temporary soil dam. Flexible pipes will be installed along the perimeter of the basis for this purpose. The pipes will capture water from the channels and lead along the perimeter basin to the outlet channel. After the diversions are in place, water will flow along the perimeter the basin and the sediments will start to dry. Water diversion will continue in this manner for approximately 7 to 21 days, allowing water to percolate out of the sediment gradually and maintaining habitat for aquatic organisms.

After the diversion pipes are operational and the sediment has begun to dry along the edges of the basin, the District will prepare for pumping. A temporary pit will be excavated at the edge of the basin to allow the pump to be completely submerged. The temporary pit allows moisture from the adjacent sediment to percolate out so that water can be pumped downstream. As water percolates, the District may need to use an excavator to dig additional pits to place the pump at other locations. The pump will be arranged to send water into the downstream irrigation channel which drains eventually to the Santa Ynez River. The pump inlet is fitted with screening and inspected daily when pumping. As the pump operates, the District periodically moves the intake and clears debris from the filter. The temporary pump pits may need to be re-excavated to allow the pump clearance and depth to operate.

Dewatering via the flexible pipes and pump is a gradual, iterative process that takes several weeks. This will encourage any remaining wildlife to move upstream or downstream. District Environmental Staff will monitor the site for special-status species and will relocate individuals downstream within the riparian corridor of Rodeo-San Pascual channel.

Due to the slow dewatering process and the limited work window, the District prefers to begin mobilization and installation of the diversion/dewatering system in advance of the August 1 work window. The advance start date will facilitate the District crew to place diversion pipes, install temporary soil dams, pumping pits, and to begin pumping after June 1. The early mobilization

also allows District Environmental Staff more time to monitor and relocate special-status species, if present, because the diversion/dewatering process will be more gradual and strategic. The actual maintenance work of excavating the sediment will be more streamlined because the site will have more time to dry out over the course of the summer. The actual work of excavating the sediment would not occur until after August 1, within the standard maintenance season. The District submitted a notice to RWQCB for the early-mobilization request, in accordance with Section C.1.b of the Water Quality Certification.

**Turbidity Control:** The pumping operation will involve intermittent pulses of turbidity when the pump is first placed in each location, however as the pump runs the turbidity is expected to dissipate.

The pump inlet pipe will be attached to floatation buoys to suspend the opening of the inlet just below the water surface to avoid the pump from taking up sediment on the bottom of the basin. The pump outlet pipe will be placed into the downstream concrete lined channel. A turbidity filter will be placed approximately 20 feet downstream of the pump outlet, consisting of haybales stacked and wrapped in filter fabric, arranged in a V-shape, to filter the discharge water as it continues to flow downstream. A filtration “sock” may be attached to the pump outlet if needed for additional filtration. The turbidity controls will be assessed by the Environmental Monitor and maintained/adjusted as needed throughout the course of the project. The downstream channel is a concrete-lined irrigation ditch that runs for approximately 2 miles before meeting the receiving water body downstream at the Santa Ynez River. Any residual turbidity would be expected to settle as the water travels downstream, before reaching the Santa Ynez River confluence. The concrete-lined channel is cleared of sediment once per year when the channel goes dry.

**Desilting:** An excavator or Gradall with bucket extension will scoop out accumulated sediment and stockpile on the adjacent dirt road. A second excavator may work at the same time to speed up the desilting process. The District Biologist will monitor excavation and will capture and relocate RLF as necessary. If present, RLF will be relocated upstream to suitable wetted habitat or downstream of the San Pascual Channel near the confluence with the Santa Ynez River where water is present year-round. This method of desilting with onsite monitoring has been implemented successfully for several years in the District’s maintained drainages with RLF.

Dewatering would begin in June or later, depending on the presence and density of RLF tadpoles and metamorphs. Desilting would begin after August 1 during the routine maintenance season. Excavated sediment will be trucked to nearby farm fields along Ocean Avenue in the Lompoc Valley.

Rodeo-San Pascual Basin is bare/unvegetated with exposed sediment and gravel. A strip of weedy vegetation persists along the edges of the basin. The project will not result in impacts to native vegetation.

<u>Section 2:</u>
Channel Outlet:

This section addresses the gap between the concrete lined section of Rodeo-San Pascual Creek and the willow canopy downstream (north). This reach is approximately 200 feet long.

The concrete liner ends and sediment laden water spreads over the floor of the earthen channel. This site frequently collects excess fine sediment.

The District will use an excavator or Gradall to remove the wedge of sediment, approximately 12 feet wide, 200 feet long, and 2 to 3 feet deep. The site is bare exposed sediment. Some material at the edge of the concrete liner will also be removed to provide a smooth transition. Approximately 150 cubic yards of material would be removed. The District Biologist will inspect the work area for RLF. If RLF are detected, the animals will be flushed or rescued and relocated downstream to the wetted channel.

The project will not result in impacts to native vegetation. The channel is bare exposed mud, standing water, and a fringe of roadside weeds.

Section 3:
Confluence with Santa Ynez River:

Down willows and debris have caused a plug at the confluence of Rodeo-San Pascual Creek and the Santa Ynez River. District maintenance crews will use hand tools to cut the down willows and remove debris to reestablish the low flow channel into the Santa Ynez River. The District Biologist will inspect the work area for RLF. If RLF are detected, the animals will be flushed or rescued and relocated downstream to the wetted channel.

**Impact Analysis and Mitigation Measures:**
Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the “Impacts and Mitigation Measures” tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Rodeo - San Pascual




5/2/2024

1:26,432

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

Sites24

Lengths24

APCreeks

California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS, Maxar

Rodeo San Pascual




**Section 1 Basin**



**Section 3 Channel**

# SAN ANTONIO CREEK- LOS ALAMOS
# ROUTINE MAINTENANCE ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins at Santa Ynez Boulevard and ends approximately four miles downstream of Bell Street.

**Setting:**
Inspected on Mar 28, 2024.

San Antonio Creek, located in northwestern Santa Barbara County is near the unincorporated area of Los Alamos. The area where maintenance will occur is an approximately 5-mile portion of San Antonio Creek. San Antonio Creek through the maintenance area is low gradient, with sand and gravel substrate, running through low density urban areas of Los Alamos and agricultural fields downstream. Riparian vegetation is generally quite dense along the entire maintenance area, dominated by medium and large willow trees.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) | Lg Tree Impacts | Tree mitigation installed |
|---|---|---|---|---|---|---|
| 2002/2003 | 2,690 | 5,100 | 1,500 | -1,190 | | |
| 2003/2004 | 1,925 | 4,000 | 0 | -3,115 | | |
| 2004/2005 | 3,800 | 7,600 | 0 | -6,915 | | |
| 2005/2006 | 0 | 7,000 | 0 | -6,915 | | |
| 2006/2007 | 800 | 7,800 | 7,800 | 85 | | |
| 2007/2008 | 760 | 2,400 | 0 | -675 | | |
| 2008/2009 | 350 | 4,670 | 0 | -1,025 | | |
| 2009/2010 | 0 | 4,670 | 4,670 | 3,645 | | |
| 2010/2011 | 1,400 | 2,150 | 2,150 | 4,395 | | |
| 2011/2012 | 0 | 500 | 1,000 | 5,395 | | |
| 2013/2014 | 160 | 0 | 0 | 5,235 | | |
| 2015/2016 | 200 | 0 | 0 | 5,035 | | |
| 2016/2017 | 20 | 0 | 0 | 5,015 | | |
| 2019/2020 | 25 | 0 | 0 | 4,990 | 1 willow 6" dbh | 10 willows |
| 2020/2021 | 75 | 0 | 0 | 4,915 | | |
| 2022/2023 | 30 | 0 | 0 | 4,885 | | |
| 2024/2025 | 70 | 0 | 0 | 4,815 | | |

**Engineering Analysis:**
Maintenance of San Antonio Creek requires removal of debris and downed or overhanging vegetation to preserve flood flow conveyance and to protect adjacent properties. Obstructive vegetation consisting primarily of downed limbs and trees as well as limbs projecting into the active channel will be removed from the main channel at various locations to provide conveyance of flood waters as well as reduce the debris load which can aggravate bridge and culvert plugging.

**Project Description:**
The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

| Section | Down tree/limb | Brushing (area) | Limbing | Species | DBH (inches) | Length (feet) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | | 6'x6' | | sandbar willow | | | 20 | |
| **Section 2** | | 50'x5' | | sandbar willow | | | 25 | |
| **Section 3** | x | | | willow | 12 | 25 | | |
| **Section 4** | x | | | willow | 6 | 10 | | |
| **Section 5** | x | | | willow | 4 | 10 | | |
| **Section 6** | x | | | willow | | | | multiple |
| **Section 7** | x | | | willow | 5 | 20 | | |
| **Section 8** | x | | | walnut | | | | |
| **Section 9** | | | x | willow | | | | multiple |
| **Section 10** | x | | | willow | 5 | 12 | | |
| **Section 11** | x | | | willow | 7 | 15 | | |
| **Section 12** | | | x | willow, box elder | | | | |
| **Section 13** | x | | | willow | | | | |
| **Section 14** | x | | | willow | | | | |
| **Section 15** | x | | | willow | | | | debris jam |
| **Section 16** | x | 5'x5' | | willow saplings | | | 25 | |
| **Section 17** | x | | | willow | | | | |
| **Section 18** | x | | | willow | 14 | 25 | | |
| **Section 19** | x | | | willow | | | | |
| **Section 20** | | | | | | | | debris jam |
| **Section 21** | x | | | willow | | | | multiple |
| **Section 22** | x | | | willow | | | | |

**Impact Analysis and Mitigation Measures:**
Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions

of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# San Antonio Creek - A




5/2/2024

1:9,015

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Sites24

APCreeks

Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS, Maxar

# San Antonio Creek - B




5/2/2024

1:18,031

0 0.13 0.25 0.5 mi

0 0.2 0.4 0.8 km

Sites24

APCreeks

Esri Community Maps Contributors, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS, Maxar

San Antonio Creek Los Alamos




**Section 4**




**Section 11**

# SANTA MARIA AIRPORT/ABEX CHANNELS
# ROUTINE MAINTENANCE ADDENDUM
# TO THE PROGRAM EIR FOR SANTA BARBARA
# COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The Santa Maria Airport/Abex channels are located along the northeast side of the Santa Maria Municipal Airport. See attached map for specific locations.

**Setting:**
Inspected on March 25, 2024.

Airport Ditch begins a short distance to the west of the intersection of Skyway Drive and Lakeview Road northeast of the Santa Maria Airport. The ditch is a trapezoidal channel reinforced with hard bank structures (i.e., concrete rip-rap) in some locations. The ditch trends northwest along Skyway Drive for approximately 1 mile. After passing beneath Skyway Drive, the ditch runs generally westward along the south side of the former Sunset Ridge Golf Course. Runoff is directed from north and west of the golf course to a weir structure in corner of the channel adjacent to the golf course. The weir enables water to be diverted into a natural, westward-trending channel that leads to Betteravia Lakes. A three-quarter mile segment of the Airport Ditch between Air Park Lane and the point where Skyway Drive turns north is concrete lined.

Vegetation along portions of the ditch varies in composition. Emergent aquatic species such as cattail, bulrush and sedges occur in the streambed along with bare sand and gravel. The banks of the channel are sparsely vegetated with predominantly non-native, ruderal species, including patches of exotic pampas grass. The District is working on removing exotic vegetation and replacing native willows and riparian trees. The restoration areas have created a willow canopy that helps minimize dense obstructive vegetation in the channel. The District continues to replant species in the restoration areas and remove pampas grass. Both native and non-native trees are present along some segments. Arroyo willow is the most common native tree species.

Abex Channel is a combination of concrete-lined and earthen ditch that is located adjacent to the Santa Maria Airport and is a tributary to Airport Ditch. The Santa Maria Airport property is located to the south and west, industrial buildings and a large paved lot are located to the north. The earthen portion of this channel is located at the confluence with Airport Ditch and is approximately 500 feet long. The remaining length of Abex Channel (upstream of the earthen portion) is concrete lined, conveys water amongst industrial and office buildings located northeast of the airport, and contains poor habitat for native plants and animals. Portions of the concrete-lined channel are underground within culverts. The District typically performs maintenance tasks only in the earthen segment of Abex Channel. This reach often becomes colonized with patches of cattail and bulrush which constrict the flow capacity of the drainage. Adjacent vegetation is mostly weedy species such as wild radish, black mustard and telegraph weed along the banks.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance

Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| Santa Maria Airport/Abex Channels | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2004/2005 | 14,000 | 14,000 | 14,000 | 0 |
| 2005/2006 | 5,500 | 5,500 | 5,500 | 0 |
| 2008/2009 | 90 | 90 | 0 | -90 |
| 2009/2010 | 0 | 1,600 | 1,600 | 1,510 |
| 2012/2013 | 1,250 | 3,000 | 2,650 | 2,910 |
| 2013/2014 | 3,000 | 1,000 | 3,400 | 3,310 |
| 2014/2015 | 200 | 0 | 0 | 3,110 |
| 2020/2021 | 200 | 0 | 0 | 2,910 |
| 2021/2022 | 150 | 0 | 0 | 2,760 |
| 2022/2023 | 150 | 0 | 0 | 2,610 |
| 2023/2024 | 50 | 0 | 0 | 2,560 |
| 2024/2025 | 35 | 0 | 0 | 2,525 |

**Wildlife Survey:**

The California red-legged frog (RLF) has been detected in both the Santa Maria Airport Ditch and Abex Channel. RLFs were observed in the wetted portions during surveys in 2003 and seen during maintenance monitoring intermittently since then. In dryer years, RLFs are generally not detected in the channel.

Similarly, RLFs were observed in the Abex Channel sporadically since 2003. It is expected that RLFs are likely to be present in the drainage when standing water is present, therefore work in the channel is postponed until the dry season.

The District presumes that RLFs may still be present in the channels and implements protective measures and monitoring as required. The District has developed a management strategy and special conditions for RLFs through a Biological Opinion issued by the U.S. Fish and Wildlife Service.

Proposed maintenance in Airport and Abex Channels will use a Gradall with a mower attachment to mow non-native vegetation, leaving enough residue to serve as wildlife cover. The District Biologist will monitor equipment work and will capture/relocate RLFs that are flushed from vegetation during the work. This strategy has been successfully deployed for several years in RLF habitat.

If standing water is present, the District Biologist will monitor sediment-moving operations. RLFs will be flushed from the work site and relocated out of the work area into adjacent habitat downstream of the weir. Impacts to RLFs and other species discussed in the Program EIR are expected to be less than significant with the incorporation of proposed mitigation measures, monitoring, and special conditions in the Biological Opinion.

**Engineering Analysis:**

The Airport/Abex channels are engineered drainages designed to convey storm flows from portions of Orcutt and the City of Santa Maria through the industrial areas of the Airport area. Reduction in capacity, as a result of excessive vegetation and/or sedimentation, subjects the surrounding areas to frequent flooding. The Santa Maria River valley is very flat and all of the drainage courses are prone to sedimentation. Vegetation in the channel bed aggravates this situation. Obstructive vegetation in these drainages can severely restrict channel capacity resulting in flooding of roads, commercial/industrial properties as well as the airport. Vegetation lowers velocities and increases the potential for sedimentation and the attendant reduction in channel capacity. Therefore, controlling vegetation to minimize the potential for sedimentation will maintain the design capacity of the channels.

**Project Description:**

**Santa Maria Airport Ditch**

Section 1:

The areas upstream and downstream of the weir structure in corner of the Santa Maria Airport channel adjacent to the former Sunset Ridge Golf Course has filled in with sediment from the very wet rainy season this year. To reclaim the depth needed to maintain proper drainage, this area will be desilted. District crew will use a Gradall with bucket attachment or an excavator working from the adjacent access road to remove material and desilt the area upstream and downstream of the weir. Approximately 200 cubic yards will be desilted from the weir area.

The culvert under the access road has accumulated sediment from urban runoff in the associated ditches upstream. Using an excavator or Gradall stationed along the adjacent access road, sediment will be scooped out of the ends of the culvert. A drag-sled or small walk behind skid steer will be used if needed to remove additional sediment from within the culvert box. Approximately 10 cubic yards of material will be excavated.

The material will be placed behind the machinery on the access road to dry, and then staged for Airport staff and contractors to use elsewhere on the property for grading or landscaping. The work area will likely be dry during maintenance. The District Biologist will perform a pre-project assessment. If standing water remains, the District Biologist will be onsite for bio-monitoring. Any RLF will be flushed from the work site or temporarily captured and relocated to wetted habitat elsewhere in the same drainage ditch, per the terms of the Biological Opinion.

The work area is mostly vegetated with weeds. Some patches of native vegetation will be impacted (10 square feet) in the work area.

Section 2:

This reach is lined with a well-developed willow corridor. Lower limbs of the willows that are dangling and projecting into the channel will be trimmed up. A few small willow saplings on the access road (south) side of the channel will be removed entirely, impacting 25 square feet of native vegetation. Once the lower limbs are trimmed, a Gradall with mower attachment will be used to mow tule and cattail in the active channel. The mower will leave approximately 6 to 12-inches of vegetation as cover.

**Abex Channel**

Section 1:

This section of the ditch previously had a narrow but well-established willow corridor along the south bank. At some point in 2016, the willows and shrubby vegetation were damaged by an

unknown party, exposing the ditch to sunlight and potential erosion. The ditch is therefore subject to obstructive weedy growth and bank failure.

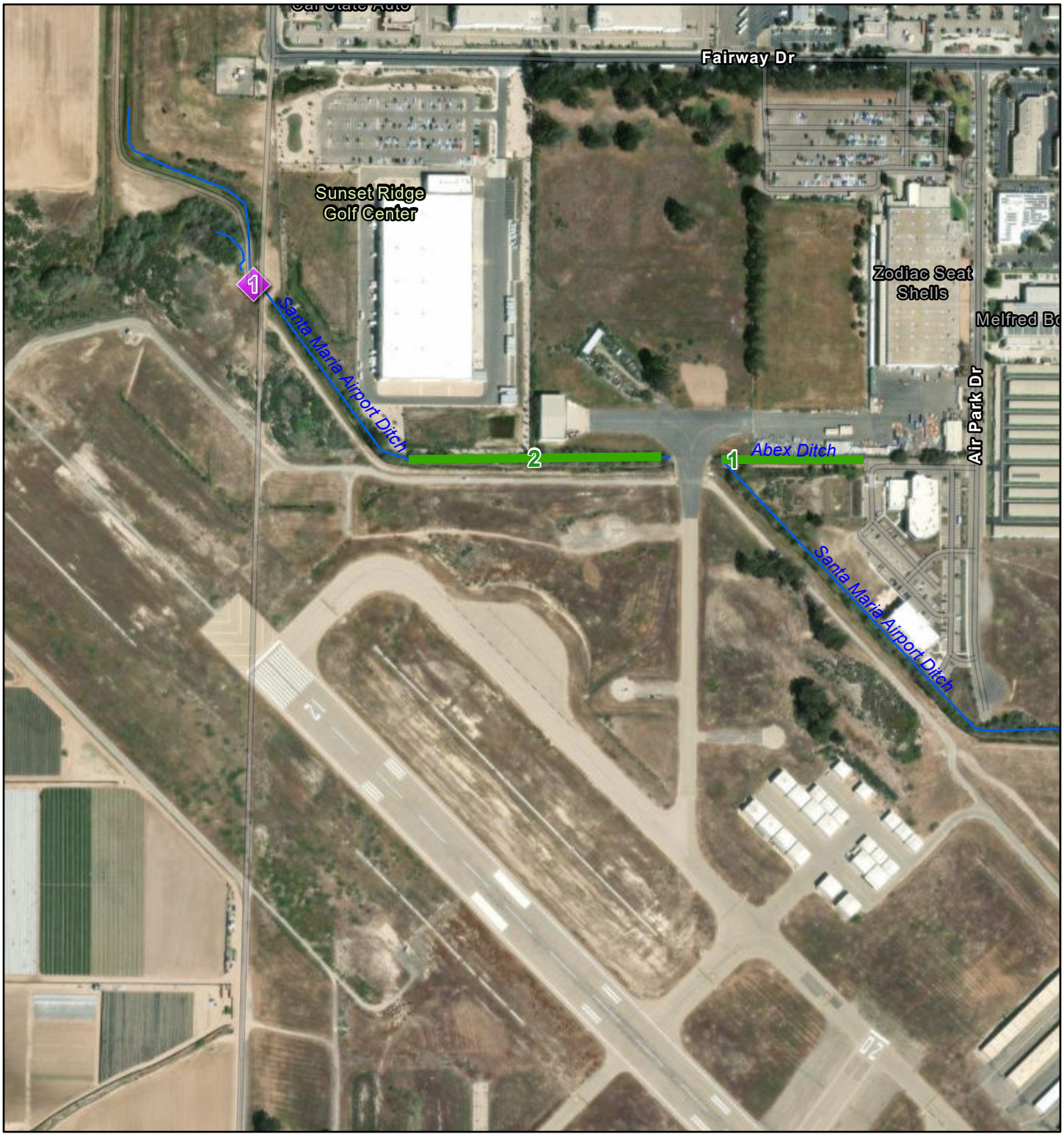
The weedy upper slope of the ditch will be mowed for the entire approximately 4 foot by 450-foot length. A Gradall using a mower attachment will drive along the adjacent access road and reach into the ditch to mow the weedy vegetation on the floor of the channel and the north bank. The mower will leave approximately 6-12 inches of vegetation as wildlife cover.

The strip of bulrush along the south toe will not be mowed, but will be left behind as wildlife cover. A follow-up application of aquatic herbicide may be done in the spring/summer if vegetation begins to resprout in the floor of the channel. Spot-spray will be suspended during February/March/April for the RLF breeding season. This area is mostly non-native ruderal species but includes a few patches of native cattails.

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the “Impacts and Mitigation Measures” tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Santa Maria Airport - A




5/2/2024

1:6,608

0 0.04 0.09 0.18 mi

0 0.05 0.1 0.2 km

Sites24

Lengths24

APCreeks

County of San Luis Obispo, Maxar, Esri Community Maps Contributors, County Of San Luis Obispo, California State Parks, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS




**ABEX Section 1**




**Santa Maria Airport Ditch Section 1**

# SANTA MARIA RIVER ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins near the confluence with Bradley Canyon Channel and extends to downstream of State Route 1.

**Setting:**
Inspected on March 22, 2024.

The Santa Maria River originates in the Los Padres National Forest and drains a 1,600 square mile watershed capable of producing 100,000 cfs during a 100-year return period precipitation event. Two main tributaries, the Sisquoc River and Cuyama River, join east of the City of Santa Maria and continue westward to the Pacific Ocean. Approximately 26 miles of the Santa Maria River are bounded by a levee along portions of the north and south banks to protect farms, and the cities of Santa Maria and Guadalupe. Between the levees, the Santa Maria River is a wide sandy corridor with a series of active and inactive braided channels. Willows as well as scrub and shrub species populate the sand and gravel substrate, while much of the channel is bare sediment. Sediment is chiefly sand and fines from deposition.

At several locations along the southern and northern levees, urban runoff and agricultural tailwater is channeled through the levee via culverts. The culverts empty into the river system just up from the toe of the levee, while the active flow channel of the Santa Maria River might be several hundred feet away. In the summer months, tailwater dries up before joining the active channel. Most of the lower Santa Maria River goes completely dry during the summer.

Santa Maria River is designated critical habitat for the Southern California Distinct Population Segment of steelhead (*Oncorhynchus mykiss*). The District developed a Vegetation Management Plan in 2016, as required by the National Marine Fisheries Service (NMFS), which describes the District's approach to vegetation management as it relates to the consideration of steelhead while providing flood protection.

**Santa Maria River Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

The Santa Maria River Levee Operation and Maintenance manual, which prescribes standard procedures and maintenance requirements for the Federally constructed *Santa Maria Valley Levees and Channel Improvements*, states "The flood flow channel…was cleared of brush, trees, and obstacles under the terms of the contract for construction of the project." The manual also says that the agency responsible for operation and maintenance (Santa Barbara County Flood Control District) "shall maintain the channel or floodway clear of debris, weed and wild growth." A

section of the Code of Federal Regulations that governs maintenance of the levee project states: “Where practicable, measures shall be taken to retard bank erosion by planting of willows or other suitable growth on areas riverward of the levees.”

| Santa Maria River | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2003/2004 | 0 | 435,600 | 65,000 | 65,000 |
| 2006/2007 | 52,000 | 0 | 0 | 13,000 |
| 2007/2008 | 551,000 | 485,700 | 588,000 | 50,000 |
| 2008/2009 | 26,100 | 0 | 26,000 | 49,900 |
| 2009/2010 | 0 | 0 | 0 | 49,900 |
| 2010/2011 | 72,150 | 100,000 | 0 | -22,250 |
| 2011/2012 | 800 | 0 | 0 | -23,050 |
| 2012/2013 | 325 | 0 | 0 | -23,375 |
| 2013/2014 | 100 | 0 | 74,000 | 50,525 |
| 2014/2015 | 1,800 | 43,560 | 13,000 | 61,725 |
| 2015/2016 | 0 | 0 | 0 | 61,725 |
| 2016/2017 | 0 | 0 | 0 | 61,725 |
| 2017/2018 | 400 | 0 | 0 | 61,325 |
| 2018/2019 | 0 | 0 | 0 | 61,325 |
| 2019/2020 | 0 | 0 | 0 | 61,325 |
| 2020/2021 | 0 | 0 | 0 | 61,325 |
| 2021/2022 | 60 | 2000 | 0 | 61,265 |
| 2022/2023 | 625 | 0 | 0 | 60,640 |
| 2023/2024 | 0 | 40,000 | 60,000 | 120,640 |
| 2024/2025 | 3,000 | 0 | - | 117,640 |

Over the years the District has allowed and encouraged growth of willows and shrub/scrub vegetation in the river channel. From Fugler Point (where Foxen Canyon Road transitions from north-south to east-west), where the levee starts, to the terminus at State Route 1 in Guadalupe, the levee system encompasses approximately 4,100 acres of land of which nearly 1,800 acres are covered by varying densities of the shrub/scrub type of habitat. The vegetated areas have various densities of natives such as mulefat, bush lupine, sandbar willow, coyote bush, mugwort, and a variety of non-native plant species including wild radish, pearly everlasting, malva, black mustard, bromes, and morning glory, to name just a few. The U.S. Army Corps of Engineers has agreed that this vegetation that has been allowed to colonize the channel can be used as mitigation acreage for the temporal disturbance during pilot channel construction and other maintenance-related impacts. This type of habitat is of relatively low quality; the diversity, density and wildlife habitat is essentially identical between the areas to be cleared and the colonized vegetation on the adjacent terraces. In contrast, disturbance in higher-quality willow woodland has historically been mitigated by the District through compensatory restoration sites with new plantings.

In 2010, the Regional Water Quality Control Board requested that the District develop additional mitigation and restoration measures for incidental impacts to vegetation within the Santa Maria River System. The District would performed riparian plantings at a 1:1 ratio for impacts that occurred in shrub/scrub or mixed willow/riparian habitats, while the District would not be required to mitigate for impacts occurring over bare substrate or weedy growth.

**Santa Maria River Engineering Analysis:**

The Santa Maria River Levee was constructed by the U.S. Army Corps of Engineers to a design capacity of the Standard Project Flood (SPF). The SPF flow rate is 150,000 cubic feet per second.

Obstructive vegetation must be removed in order to maintain flow through the channels and to prevent sediment accumulation and loss of the pilot channel structure. Loss of the pilot channels could lead to damage to the levee and bridge infrastructure, flooding of adjacent homes and land within the Santa Maria Valley.

**Santa Maria River Emergency Project Revegetation:**

This separate mitigation table is included for the Santa Maria River Emergency Project downstream of State Route 1 to display and track the District's restoration efforts.

| Santa Maria River Emergency Project | | | |
|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (acres) | Proposed Restoration (acres) | Restoration Implemented (acres) |
| 2023/2024 | 7 | 14 | 14 |
| 2024/2025 | 0 | 0 | - |

As part of the Santa Maria River Revegetation Plan Executive Final (February 2024), the District installed container plants and cuttings within approximately 14 acres downstream of State Route 1 within two different revegetation treatments; approximately 7-acres of Mixed Willow Riparian and approximately 7-acres of Mixed Shrub.

During February and March 2024, approximately equal amounts of arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), sandbar willow (*Salix exigua*), and mulefat (*Baccharis salicifolia*) cuttings, from onsite source material, were installed within the Mixed Willow Riparian revegetation treatment area. Cuttings were installed with an average of 10 to 15-foot centers no lower than 10-feet from the toe of berm, as intended to leave the lower slope of the berm and central channel from becoming a dense willow thicket. Cuttings were installed in an irregular pattern, some clusters of denser cuttings, and some more scattered to provide fringe and transitional habitat. The District has native seed mix that will be applied to appropriate areas within the Mixed Willow Riparian revegetation treatment area.

During January through March 2024, approximately equal amounts of arroyo willow, red willow, sandbar willow, and mulefat cuttings, from onsite source material, and 1,916 native container plants were installed within the Mixed Shrub revegetation treatment area. Cuttings were installed with an average of 20 to 30-foot centers no lower than 10-feet from the toe of berm. Cuttings were installed in an irregular pattern, some clusters, and some more scattered to provide fringe and transitional habitat. Native container plants were installed with an average of 5 to 15-foot centers no lower than 10-feet from the toe of berm. The District has native seed mix that will be applied

to appropriate areas within the Mixed Shrub revegetation treatment area.

**Project Description:**

Section 1:

Willows have established in the low flow channel from Bonita School Road northwest towards the Santa Maria River low flow channel. The District will mow vegetation (area approximately 10-feet wide by 300-feet long) and excavate a pilot channel to approximately 2-foot depth extending through the mowed area towards the Santa Maria River low flow channel. The excavated pilot channel/low flow channel will divert Unit II Tailwater Channel water away from the Levee to the Santa Maria River low flow channel. Approximately 3,000 square feet of willows will be impacted during mowing. Impacts area accounted for above in the Santa Maria River impacts and mitigation table.

Section 2:

Pursuant to the Santa Maria River Emergency Project Revegetation Plan (February 2024), the following will be performed as needed.

- Weed management
- Repair irrigation
- Manage irrigation regimes and locations
- Replace perished plants
- Install native container plants and cuttings
- Perform supplemental seeding
- Willow thicket clearing to maintain unobstructed flow
- Monitor

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Santa Maria River - A




5/7/2024

1:36,062

0 0.25 0.5 1 mi

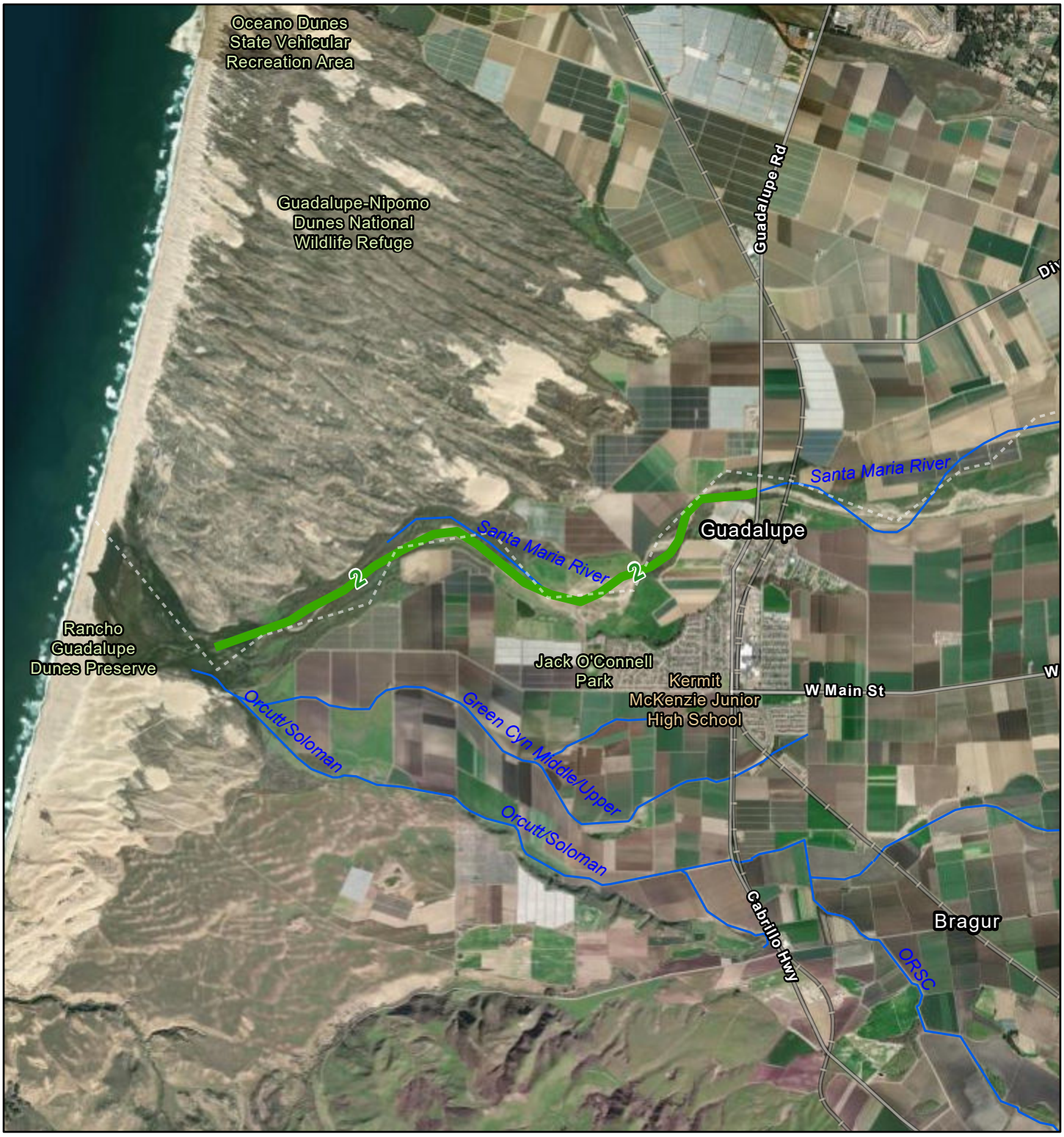
0 0.4 0.8 1.6 km

Lengths24

APCreeks

California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS, County of San Luis Obispo, Maxar

# Santa Maria River - B




5/7/2024

1:72,124

0 0.5 1 2 mi

0 0.75 1.5 3 km

Lengths24

APCreeks

California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS, County of San Luis Obispo, Earthstar Geographics

Santa Maria River




**Section 1**




**Section 2**

# SANTA YNEZ RIVER ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project within the Santa Ynez River begins at the Lompoc Regional Wastewater Reclamation Plant and continues downstream to Vandenberg Space Force Base.

**Setting:**
Inspected on April 12, 2024.

The Santa Ynez River is one of the largest rivers in Santa Barbara County. The River is approximately 78 miles long and drains a watershed of 789 square miles. The River runs from east to west along the north slopes of the Santa Ynez Mountain Range. The lower watershed is on federal and private property. The river upstream of the Lompoc Regional Wastewater Reclamation Plant flows intermittently during the wet season, depending on rainfall and releases from the Bradbury Dam upstream. The river most often dries up during the summer months upstream of the City of Lompoc. Just downstream of the Wastewater Reclamation Plant, the River is perennial due to outflow from the facility. The facility treats up to 5 million gallons of water per day and releases the treated effluent into the Santa Ynez River adjacent to the project reach. Portions of the project area are within a part of the River that is intermittently dry during summer months.

The Santa Ynez River has the highest quality riparian habitat of any other drainage system throughout Santa Barbara County and several listed species are either known to historically or currently occur at least nearby the proposed project reach. The California red-legged frog is known to occur and breed in the project reach, the river is designated as critical habitat for Southern California steelhead, willow flycatchers are known to nest near the project reach although no focused surveys have been done for this species since the 1990s. The least Bell's vireo is known to nest in the upper Santa Ynez River drainage and was heard within the river in the lower Lompoc Valley outside of the current proposed project, in the late 1980s. No focused surveys have been done for this species.

The riparian vegetation contains well developed, multi successional stages of willow riparian woodland and areas of specimen cottonwood and sycamore trees. The understory is densely vegetated almost to the point of being impenetrable. Understory vegetation consists of large stands of California blackberry, clematis, poison oak, elderberry, stinging nettle and nightshade while the flow areas of the river are dominated by young willows intermixed with areas of cattail and bulrush.

**Revegetation:**
After a 100-foot wide clearing project in December 1997/January 1998, the District implemented 18 acres of restoration along the Santa Ynez River in three separate locations to compensate for the 16 acres of riparian vegetation that was removed. One location is just upstream of H-Street along the south side of the River in a fallow field, another site was located at Riverbend Park near Rucker Road on the south side of the River and the third site was located beginning just upstream of Riverbend Park. The maintenance performed in September and October 2023 was within the same areas that were maintained previously and therefore no additional restoration was proposed.

**Wildlife Survey:**

The Santa Ynez River has the highest quality riparian habitat of any other drainage system throughout Santa Barbara County and several listed species are either known to historically or currently occur at least nearby the proposed project reach. The California red-legged frog is known to occur and breed in parts of the project reach.

The California Department of Fish and Wildlife California Natural Diversity Database (CNDDB) shows historical observations of steelhead trout and California red-legged frog in the project region. The river is designated as critical habitat for Southern California steelhead, willow flycatchers are historically known to nest within the river corridor but not within the project reach. The least Bell's vireo is known to nest in the upper Santa Ynez River drainage and was heard within the lower Lompoc Valley (outside of the current proposed project), in the late 1980s.

Protocol level surveys for Southwestern willow flycatcher and least Bell's vireo were performed in spring 2013, 2014, 2015, and spring 2017. The current work area overlaps the 2014 survey area, and no listed bird species were detected in this zone. While nesting birds frequently inhabit parts of the Santa Ynez River watershed, the work window has been delayed until late October/November to avoid the nesting season. Nesting birds would not be disturbed. The disturbance to vegetation is limited to the 2023 maintenance area and the edges of this area, while not disturbing the remaining riparian habitat along both sides.

A focused California red-legged frog survey was not conducted; however, California red-legged frogs are known to occur within this region of the river and could potentially be present in standing water during maintenance operations. The vegetation maintenance program maintains a 25-foot minimum buffer from the wetted channel and any ponded water, which will avoid any California red-legged frog habitat and work will be performed outside of the California red-legged frog breeding season. The District Biologist will monitor vegetation removal operations and will provide a training session so crew members are aware of sensitive species issues and how to minimize disturbance to animal present on site. The District has successfully cleared vegetation for the past several maintenance seasons without harming any sensitive wildlife species.

**Engineering Analysis:**

As described in the 2001 Updated Routine Maintenance PEIR, the objectives for clearing obstructive vegetation within the Santa Ynez River is to maintain a 100-foot wide swath (or its equivalent in two swaths with a minimum width of 30 feet for each swath) along the project reach with non-obstructive vegetation to allow sufficient channel capacity for certain flood flows. The last time vegetation was cleared within the river at this location was during the 2011/2012 Maintenance Season and since that time vegetation had regrown and was obstructing flow areas. Over time the 100-foot wide channel had been reduced. The 2023 maintenance (approximately 50-feet wide by 2.75 miles long) restored capacity through this area allowing floodwaters to enter and flow through the Santa Ynez River.

**Project Description:**

The maintenance tasks proposed in the drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

Section 1:

The September and October 2023 mowing (approximately 50-feet wide by 2.75 miles long), included in the 2023/2024 Annual Plan, exposed areas of giant reed (*Arundo donax*). Since the

areas of giant reed are now exposed and accessible by crews, the District will perform giant reed removal within the mowing area and along the edges with follow-up monthly spray on the cut stumps starting around August.

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the “Impacts and Mitigation Measures” tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Santa Ynez River




5/2/2024

Lengths24

APCreeks

1:13,216

0 0.07 0.15 0.3 mi

0 0.13 0.25 0.5 km

Esri Community Maps Contributors, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS, Maxar

Santa Ynez River



**Section 1**

# TANGLEWOOD CHANNEL ROUTINE MAINTENANCE ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
Tanglewood Channel is located within the Tanglewood Subdivision on Black Road west of the Santa Maria Airport. Maintenance will occur starting at the end of Myrtlewood Road and continue downstream approximately 330 feet.

**Setting:**
Inspected on May 1, 2024.

Tanglewood Channel begins at the end of Myrtlewood Avenue in the Tanglewood Subdivision. The channel begins as a storm drain outlet that receives run-off from the subdivision streets. Along with run-off from the subdivision, the ditch also collects street trash such as papers, soda cans, bottles, metal debris, and miscellaneous litter. This ditch runs approximately 330 feet to the south and then takes a 90-degree turn to the west for a distance of 460 feet where it flows under Black Road and eventually down to some ponded wetlands. The drainage meets with Orcutt Creek, although surface water is typically only present during the rainy season in the lower 460 feet of the drainage while the upper 330 feet of the drainage retains stagnant water year-round.

Approximately 80 feet of the ditch immediately upstream of Black Road is a concrete lined spillway that takes the ditch down to the elevation of Black Road. The earthen portion of the ditch is approximately 50-feet wide with a wetted flow area approximately 10 feet wide. During most years, most of the ditch dries out but the upper 1/3 or so remains wet from irrigation and urban drool from the subdivision. Vegetation consists of sedges, rushes, non-native grasses and weedy species within the wet areas and immediately adjacent, however beyond the 10-foot wetted corridor the banks are annual grasses, occasional coyotebrush, goldenbush, and other sage shrubs. There are no trees growing along this ditch. Land use beyond the ditch is open pasture to south, east and west with the Tanglewood subdivision to the north.

**Revegetation:**
Beginning with the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District began a new reporting and accounting program for the restoration component of the Annual Routine Maintenance Program. Since that time, the District has been tracking the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. A table is being included in the 2010/2011 Annual Routine Maintenance Plan.

| Tanglewood Channel | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2007/2008 | 200 | 1,800 | 0 | -200 |
| 2010/2011 | 0 | 1,800 | 0 | -200 |
| 2012/2013 | 1,400 | 3,600 | 0 | -1,600 |
| 2017/2018 | 0 | 0 | 0 | -1,600 |
| 2019/2020 | 0 | 2,250 | 0 | -1600 |

| Tanglewood Channel | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2020/2021 | 0 | 2,250 | 2250 | 650 |
| 2021/2022 | 0 | 0 | 0 | 650 |
| 2022/2023 | 300 | 0 | 0 | 350 |
| 2023/2024 | 0 | 0 | 0 | 350 |
| 2024/2025 | 0 | 0 | 0 | 350 |

**Engineering Analysis:**

The Tanglewood Channel is designed to convey storm flows from the subdivision. Reduction in channel capacity, as a result of excessive vegetation and/or sedimentation, subjects the surrounding areas to frequent flooding because the storm drains and Tanglewood Basin will not be able to drain if the channel is not clear of obstructions. The Santa Maria River valley, including most of the Orcutt and Tanglewood area, is very flat and all of the drainage courses are prone to sedimentation. Vegetation in the channel bed aggravates this situation by lowering velocities and encouraging sedimentation which in turn reduces the channel capacity. Controlling vegetation to minimize the potential for sedimentation as well as removing recently accumulated sediment will maintain the design capacity of the channel.

**Project Description:**

Section 1:

Beginning 30 feet downstream of the end of Myrtlewood Avenue, the District will spot-spray vegetation sprouts along the right edge of the center of the channel. Cattail, bulrush, and weedy growth threaten to obstruct this channel. Spot-treatment of ½ of the channel will allow drainage to continue while preserving wildlife habitat along the left edge. Spot-spray will be suspended during Feb/March/April during amphibian breeding season. The District's herbicide management program has determined that periodic small treatments are more effective and use less herbicide product that a single larger treatment per season. This area has previously been mitigated for impacts to native vegetation.

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Tanglewood




5/2/2024

Lengths24

APCreeks

1:1,652

0 0.01 0.02 0.04 mi

0 0.02 0.04 0.07 km

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Tanglewood Ditch



**Section 1**

# UNIT II, UNIT II TAILWATER, EAST, AND WEST MAIN CHANNELS ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project is within the network of drainages located immediately west of the City of Santa Maria: Unit II, Unit II Tailwater, East, and West Main Channels. See attached map for specific locations.

**Setting:**
Inspected on March 13, 2024.

West Main Channel:
West Main Channel is a degraded unlined trapezoidal roadside ditch that runs from west of Blosser Road in Santa Maria parallel to West Main Street for a distance of approximately 1.5 miles where it flows under West Main Street through a culvert and enters Unit II Channel. Dirt access roads run parallel to the channel on either side. Beyond the channel to the south are row crops and light industrial land use. To the north is West Main Street, light industrial property and row crops. West Main Street Channel receives runoff from the west end of the City of Santa Maria and surrounding agriculture fields and flows year-round. The channel banks are vegetated with weedy species such as black mustard, wild radish, cheeseweed, and telegraph weed. No trees grow on along this drainage.

Unit II Channel:
Unit II Channel is a constructed trapezoidal channel that trends north from West Main Street to the Santa Maria River Levee, a distance of about 2 miles, where it enters the Unit II Tailwater Channel. Dirt access roads run parallel to the channel on either side. Row crops surround the channel beyond the access roads. This channel transports highly turbid runoff from the surrounding agriculture fields as well as runoff from the west end of the City of Santa Maria. Weedy species such as black mustard, wild radish, cheeseweed, telegraph weed, watercress, and annual grasses occur along the entire length of the channel. The District's maintenance program typically allows this vegetation to grow thicker at the toe of the bank along at least one side of the channel (to provide wildlife cover), while the higher banks are periodically mowed to keep the weeds to a minimum for the surrounding farmers. No trees grow along this drainage.

Unit II Tailwater Channel:
Unit II Tailwater Channel is an unlined, trapezoidal channel that transports highly turbid irrigation and storm water runoff from agricultural fields south of the Santa Maria River. The channel trends westward for about 1.5 miles parallel to the Santa Maria River Levee and discharges into the Santa Maria River just west of Bonita School Road. Dirt access roads run parallel to the channel on both sides. Vegetation within the bottom of the channel is relatively sparse and the banks of the channel are vegetated with weedy species such as black mustard, wild radish, cheeseweed, and annual grasses. There are no trees along this drainage, except occasional willows isolated at the intersection with Bonita School Road. Water level is highly variable and can vary from 2-plus feet deep to completely dry, depending upon the surrounding crops and irrigation schedules.

East Channel:
The segment of East Channel that is maintained by the District is an approximately 0.5-mile portion of the ditch that runs parallel to the Santa Maria River on the south side of the levee. The East Channel runs along agricultural fields and drains into Unit II Tailwater Channel, then through the Levee into the River via culvert. Vegetation in the bottom of the channel is relatively sparse due to infrequent flow; the banks are vegetated with weedy species such as black mustards, wild radish, cheeseweed, and annual grasses. There are no trees along this ditch. Water flow is highly variable and depends on runoff from the surrounding crops. Most of the year, East Channel is dry.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| **Unit 2, Unit 2 Tailwater, East, and West Main Channels** | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2004/2005 | 0 | 0 | 0 | 0 |
| 2005/2006 | 415 | 415 | 415 | 0 |
| 2006/2007 | 0 | 0 | 0 | 0 |
| 2007/2008 | 50 | 50 | 50 | 0 |
| 2008/2009 | 0 | 0 | 0 | 0 |
| 2011/2012 | 150 | 500 | 0 | -150 |
| 2012/2013 | 300 | 0 | 0 | -450 |
| 2013/2014 | 0 | 0 | 0 | -450 |
| 2014/2015 | 0 | 0 | 0 | -450 |
| 2015/2016 | 0 | 0 | 0 | -450 |
| 2016/2017 | 0 | 0 | 0 | -450 |
| 2017/2018 | 0 | 0 | 0 | -450 |
| 2018/2019 | 0 | 0 | 0 | -450 |
| 2019/2020 | 0 | 2,500 | 1,250 | 800 |
| 2020/2021 | 0 | 200 | 0 | 800 |
| 2021/2022 | 0 | 0 | 0 | 800 |
| 2022/2023 | 500 | 0 | 0 | 300 |
| 2023/2024 | 0 | 0 | 0 | 300 |
| 2024/2025 | 0 | 0 | - | 300 |

**Wildlife Survey:**
As described in the project description below, proposed maintenance in this series of drainage ditches will require equipment reaching into the channel from the tops of the banks. This maintenance has the potential to impact wildlife, particularly the California red-legged frog.

The California red-legged frog has been detected in Unit II Channel and Unit II Tailwater, as well as the West Main Channel, regularly since 2003. California red-legged frogs have not been found in East Channel, but this drainage completely dries in most years and minimal maintenance (and surveys) has been performed.

The District has developed a management strategy and special conditions through a Biological Opinion issued by the U.S. Fish and Wildlife Service. The District has successfully conducted maintenance on these four drainages during the last several years, has not injured any red legged frogs, and the population persists in the maintenance area when water is present.

As adjacent agricultural practices have switched from flood-irrigation to drip irrigation over the past several years, the amount of tail water in these channels has noticeably reduced. That, coupled with extreme drought, has resulted in less standing water and fewer red-legged frog present in these drainages in past years.

Southwestern pond turtles (a state species of special concern) have been observed in Unit 2 Channel where the culvert meets the Santa Maria River Levee. Biomonitoring and relocation for California red-legged frog will also serve to protect the southwestern pond turtle.

The District assumes California red-legged frogs may be present wherever standing water occurs in these channels. The District implements mitigation measures and best management practices as appropriate. Impacts to California red-legged frogs and other species address in the Program EIR are expected to be less than significant with the incorporation of the protective measures and monitoring conditions specified in the Biological Opinion.

The channel has many rodents and existing burrows available that may be attractive to burrowing owls. In fall and winter 2017, burrowing owls were observed in Unit 2 Channel, at the northern end of the channel near the Santa Maria River Levee. The owls were observed foraging on the ground and flying over the adjacent agricultural fields. Inhabited burrows were detected in 2015, 2017, and 2018, although all burrowing owl sightings were in the non-breeding season and no nesting or breeding behavior has been detected in the area. Weekly site inspections by consultant field biologists noted burrowing owls through mid-March 2018, but no sightings from March through the spring/summer nesting season. Surveys during the breeding season have not detected burrowing owls or signs of occupied burrows in the vicinity. It appears the site is favored by overwintering burrowing owl individuals, due to remote location and bare/exposed sloping soils near the levee.

Burrowing owls may forage along the adjacent slopes and banks of the channel, but the species does not inhabit the wetted channel or riparian vegetation. Burrowing owls prefer sparsely vegetated dry slopes and hilltops. Vegetation maintenance such as mowing and desilting obstructive vegetation is limited to time periods outside burrowing owl nesting. Mowing is generally compatible with burrowing owl. All work is proposed in late summer and fall, outside of the burrowing owl nesting season.

**Engineering Analysis:**

The Unit II/West Main Channel system, including Unit II Tailwater Channel and East Channel are engineered drainages designed to convey storm flows from the City of Santa Maria and adjacent agricultural areas. Reduction in capacity as a result of excessive vegetation and/or sedimentation subjects the surrounding areas to frequent flooding. It is necessary to maintain the proper gradient throughout the system to ensure that water reaches the Santa Maria River. In fact, portions of this system are in a leveed section, which is required to make the necessary

gradient to the river. Overflows from this leveed section could have devastating results. The Santa Maria River valley is very flat and all of the drainage courses south of the levee and into the River are prone to sedimentation. Vegetation in the channel bed aggravates this situation. Sediment accumulation in these drainages can severely impede flows toward the Santa Maria River Levee and into the River. If the sediment is not removed, flows from the ditches will not flow into the river and will accumulate on the south side of the levee resulting in flooding of adjacent prime farmlands. In addition, sedimentation or vegetative debris can wedge open the levee flap gates. In such a case, flows from the river could back-flow through the gates and further add to flooding on the landward side of the Levee.

The County owns and operates the Santa Maria River Levee as well as Unit II Channel. By agreement, the U.S. Army Corps of Engineers built the Levee and the County maintains the system. The flap gates and the drainages that flow through the Levee are an integral component to the Levee. Therefore, sediment and vegetation removal are necessary to allow flows to freely drain into the river and to maintain the design capacity.

**Project Description:**

The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

**West Main Channel:**

Section 1:

Non-native vegetation on the banks will be mowed along the entire length of both banks of the channel. A strip of vegetation will be left along the toe of the bank.

Periodic spot spraying may be necessary to maintain the design capacity of the channel and prevent obstructions within the floor of the channel. Within the floor of the wetted channel, a 1-foot buffer strip will be left along the edge of one side. The buffer strip will not be spot sprayed at all. The remaining floor of the channel and the opposite side will be spot sprayed only as needed to control dense clusters of vegetation or vegetation that has become tall or dense enough to form an obstruction.

Spot-spray will be minimized during the months of February/March/April for California red-legged frog breeding. Later in summer (May through August) period spot spray may resume as needed in the channel to prepare for the next year's Annual Plan maintenance. The vegetation that sprouts along the channel is mostly ruderal/weeds such as wild radish, black mustard, poison hemlock, watercress and tumbleweeds, with occasional cattail sprouts. This area has been maintained previously and the impacts already tabulated for mitigation. There will be no impact to native vegetation.

**Unit II Channel:**

Section 1:

Non-native vegetation on the banks will be mowed along the entire length of both banks of the channel. The mower will leave a height of 6 to 12 inches remaining as wildlife cover. A strip of vegetation will be left along the toe of the bank, above the water level for 1-2 feet up the slope of the bank.

Periodic spot spraying may be necessary to maintain the design capacity of the channel and prevent weedy obstructions within the floor of the channel. Within the floor of the wetted channel, a 1-foot buffer strip will be left along the edge of the wetted channel. The buffer strip will not be spot sprayed at all. The remaining floor of the channel side will be spot sprayed only

as needed to control dense clusters of vegetation or vegetation that has become tall or dense enough to form an obstruction.

Spot-spray will be minimized during the months of February/March/April for California red-legged breeding. Later in summer (May through August) period spot spray may resume as needed in the channel to prepare for the next year's Annual Plan maintenance. The vegetation that sprouts along the channel is mostly ruderal/weeds such as wild radish, black mustard, poison hemlock, watercress, and tumbleweeds. There will be no impact to native vegetation.

Section 2:
A washout has formed near the culvert outlet. Sediment will be imported from another District work area and equipment will be operated from the access road to rebuild the slope.

The District biologist will monitor the work and any California red-legged frogs will be flushed and relocated from the work area per the District's Biological Opinion. The work will not result in impacts to native vegetation.

**Unit II Tailwater:**
Section 1:
Sediment will be removed to reestablish the flow line within Unit II Tailwater Channel near the intersection with East Channel, Unit II Channel, and the Santa Maria River Levee. A Gradall will work from the access road south of Unit II Tailwater Channel loading a bobtail on the north side of the channel. The bobtail will place the sediment in the flat area on the north side of the Santa Maria River Levee just north of the work area. The desilting area is unvegetated. The sediment placement area is dominated by non-native vegetation. The work will not result in impacts to native vegetation.

Section 2:
Sediment will be removed to reestablish the flow line within Unit II Tailwater, approximately 4 to 6 feet wide by 1 to 2 feet deep, east of Bonita School Road. Equipment will work from the adjacent access road. Sediment will be placed between the Unit II Tailwater Channel and the Santa Maria River Levee and bladed in with the existing surface. The vegetation that sprouts along the channel is mostly ruderal/weeds such as wild radish, black mustard, and non-native grasses. There will be no impact to native vegetation.

**East Channel:**
Section 1:
Non-native vegetation on the banks will be mowed along the entire length of both banks of the channel. The mower will leave a height of 6 to 12 inches remaining as wildlife cover. A strip of vegetation will be left along the toe of the bank.

Periodic spot spraying may be necessary to maintain the design capacity of the channel and prevent weedy obstructions within the floor of the channel. Within the floor of the wetted channel, a 1-foot buffer strip will be left along the edge of the wetted channel. The buffer strip will not be spot sprayed at all. The remaining floor of the channel side will be spot sprayed only as needed to control dense clusters of vegetation or vegetation that has become tall or dense enough to form an obstruction.

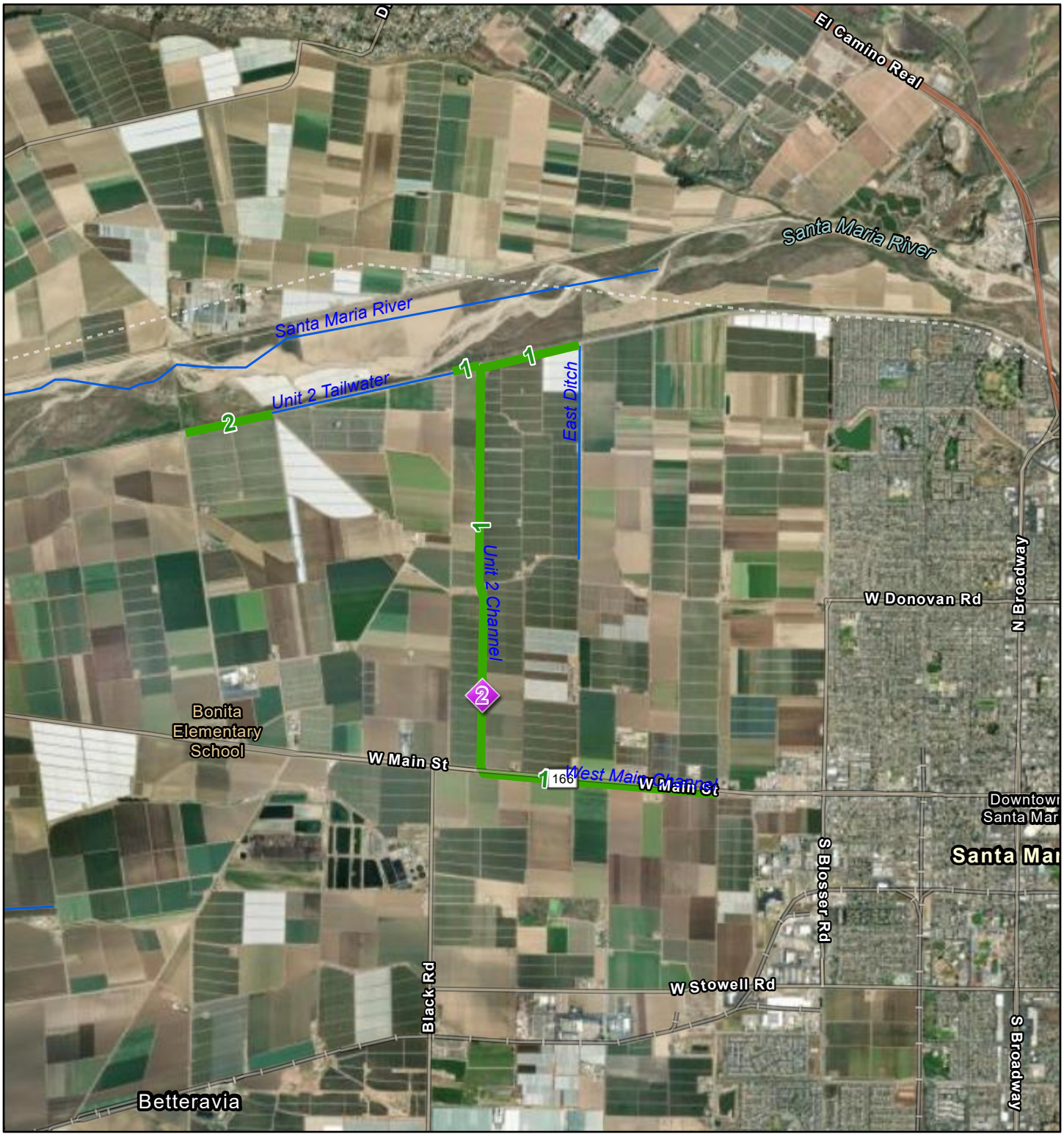
Spot-spray will be minimized during the months of February/March/April for California red-legged frog breeding. Later in summer (May through August) period spot spray may resume as needed in the channel to prepare for the next year's Annual Plan maintenance. The vegetation

that sprouts along the channel is mostly ruderal/weeds such as wild radish, black mustard, and non-native grasses. There will be no impact to native vegetation.

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the “Impacts and Mitigation Measures” tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Unit II, Unit II Tailwater, East Ditch, West Main




5/7/2024

1:56,726

0 0.4 0.8 1.6 mi

0 0.5 1 2 km

Sites24

Lengths24

APCreeks

California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS, County of San Luis Obispo, Earthstar Geographics




**Unit 2 Section 2**




**Unit 2 Tailwater Section 1**

# ZACA CREEK ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL MAINTENANCE

**Location:**
The project begins at 2nd Street and continues to 300 feet downstream of Zaca Street in Buellton.

**Setting:**
Inspected on March 28, 2024.

Zaca Creek is a tributary to the Santa Ynez River and runs through the central portion of the city of Buellton. The District routinely maintains Zaca Creek from just upstream of Highway 101 to the Santa Ynez River. Zaca Creek drains a 21,000-acre watershed capable of producing 4,600 cfs during a 100-year return period precipitation event.

Flows within Zaca Creek occur during storm events and don't persist long after the rainfall ceases as it is a small watershed with very sandy substrate. The quality of the habitat varies greatly along the creek with portions of the creek within a concrete box culvert upstream of Highway 246. The banks are vegetated with willows and mostly non-native ornamental species through the residential and commercial developments. The invert does not typically contain riparian or emergent vegetation but does grow grasses or other non-native weedy species.

**Revegetation:**
Beginning with the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District began a new reporting and accounting program for the restoration component of the Annual Routine Maintenance Program. Since that time, the District has been tracking the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| Zaca Creek | | | | | |
|---|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Restoration Bank Credits Utilized* | Surplus Restoration (ft2) |
| 2003/2004 | 500 | 700 | 700 | | 200 |
| 2008/2009 | 600 | 4,000 | 0 | | -400 |
| 2010/2011 | 0 | 2,000 | 0 | | -400 |
| 2012/2013 | 50 | 2,100 | 0 | | -450 |
| 2014/2015 | 0 | 0 | 0 | 450 | 0 |
| 2015/2016 | 495 | 0 | 0 | 495 | 0 |
| 2016/2017 | 400 | 0 | 0 | 400 | 0 |
| 2017/2018 | 30 | 0 | 0 | 30 | 0 |
| 2024/2025 | 90 | 0 | 0 | 90 | 0 |

*The District has undertaken a large bioswale/restoration project in Santa Ynez. The surplus square footage at this site is used to offset small impacts in nearby watersheds (Zaca, Zanja de Cota, and Adobe Creeks)

**Wildlife Survey:**
No sensitive species are known or likely to occur at the project area.

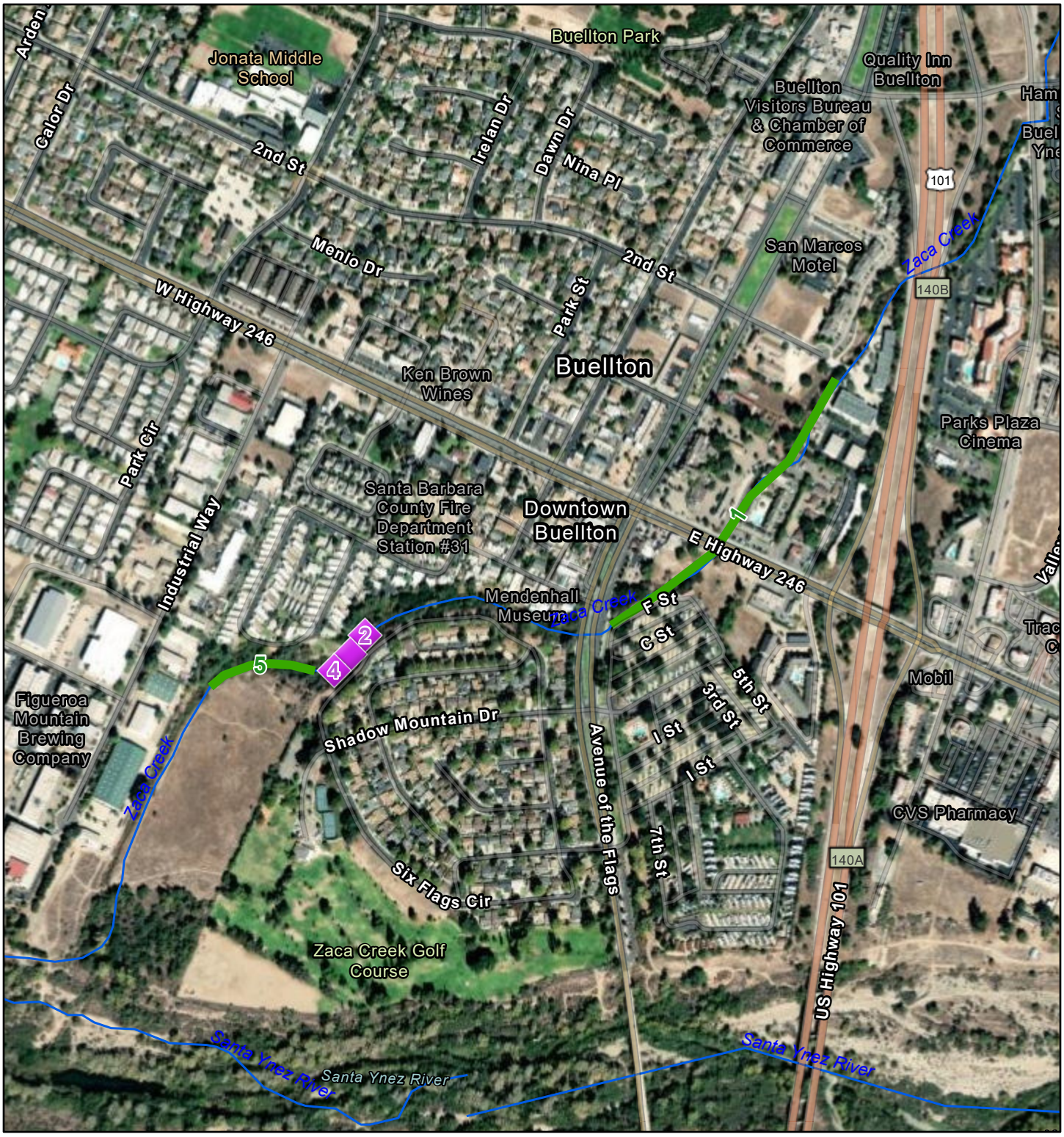
**Engineering Analysis:**
Zaca Creek flows directly through the City of Buellton. Several culverts exist on the creek that can be prone to plugging. These culverts must remain clear and able to drain into Zaca Creek so the surrounding properties and roadways are not subject to severe inundation. Additionally, obstructive and downed vegetation must be controlled within the channel because if left unabated, obstructive vegetation will reduce the conveyance capacity of the creek, contribute to debris plugs, potentially cause flows to be directed towards banks that could lead to erosion and loss of property and additional riparian vegetation, and threaten adjacent properties and roadways. The main channel must remain free and clear of obstructive vegetation and deposited sediment to preserve channel conveyance.

**Project Description:**
The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

| Section | Down tree/limb | Brushing (length by width, feet) | Limbing | Species | DBH (in) | Length (ft) | Mitigation (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| Section 1 | | | x | mulefat, sandbar willow | | | | |
| Section 2 | | | x | willow | | | | |
| Section 3 | | x | | willow | | | 40 | willow near bridge |
| Section 4 | | | | | | | | debris jam |
| Section 5 | x | 5'x100' | x | willow, cottonwood, mulefat | | | 50 | |

**Impact Analysis and Mitigation Measures:**
Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Zaca Creek




5/2/2024

1:9,015

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Sites24

Lengths24

APCreeks

Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS, Maxar

Zaca Creek




**Section 4**




**Section 5**

# ZANJA DE COTA CREEK ROUTINE MAINTENANCE ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The maintenance area begins just upstream of Faraday Street in the community of Santa Ynez and ends at Edison Street.

**Setting:**
Inspected on March 28, 2024.

Zanja de Cota Creek is a small, intermittent drainage that runs through the community and back yards of Santa Ynez. The drainage collects mostly stormwater from the residential lots on both sides of the surrounding watershed. The channel is shallow, generally only a few feet lower than the adjacent yards. The channel has little to no riparian canopy, only occasional oaks and willows mixed with grassy lawns and landscape vegetation along the entire length of both banks. Downstream of the suburban development in Santa Ynez, the Creek drains though a narrow riparian corridor and meets the Santa Ynez River.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Restoration Bank Credits Utilized* | Surplus Restoration (ft2) |
|---|---|---|---|---|---|
| 2012/2013 | 100 | 0 | 0 | 0 | -100 |
| 2015/2016 | 150 | 0 | 0 | 250 | 0 |
| 2017/2018 | 50 | 0 | 0 | 50 | 0 |
| 2021/2022 | 0 | 0 | 0 | 0 | 0 |
| 2022/2023 | 50 | 0 | 0 | 50 | 0 |
| 2024/2025 | 0 | 0 | 0 | 0 | 0 |

*The District has undertaken a large bioswale/restoration project in Santa Ynez. The surplus square footage at this site is used to offset small impacts in nearby watersheds (Zaca, Zanja de Cota, and Adobe Creeks)

**Engineering Analysis:**
Zanja de Cota is a very narrow and shallow drainage that passes through the back yards of many residences as well as through culverts and bridges within the community of Santa Ynez. Most of the drainage flows directly through the back yards of residential areas and is approximately 5-feet wide. Obstructive vegetation impedes flows and adds to the debris load generated during high runoff. Vegetation can plug bridges, downstream culverts, and divert flows out of the

narrow/shallow channel and cause flooding to adjacent properties. Removing obstructive vegetation and debris from the active channel can reduce the potential for flooding.

**Project Description:**

The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

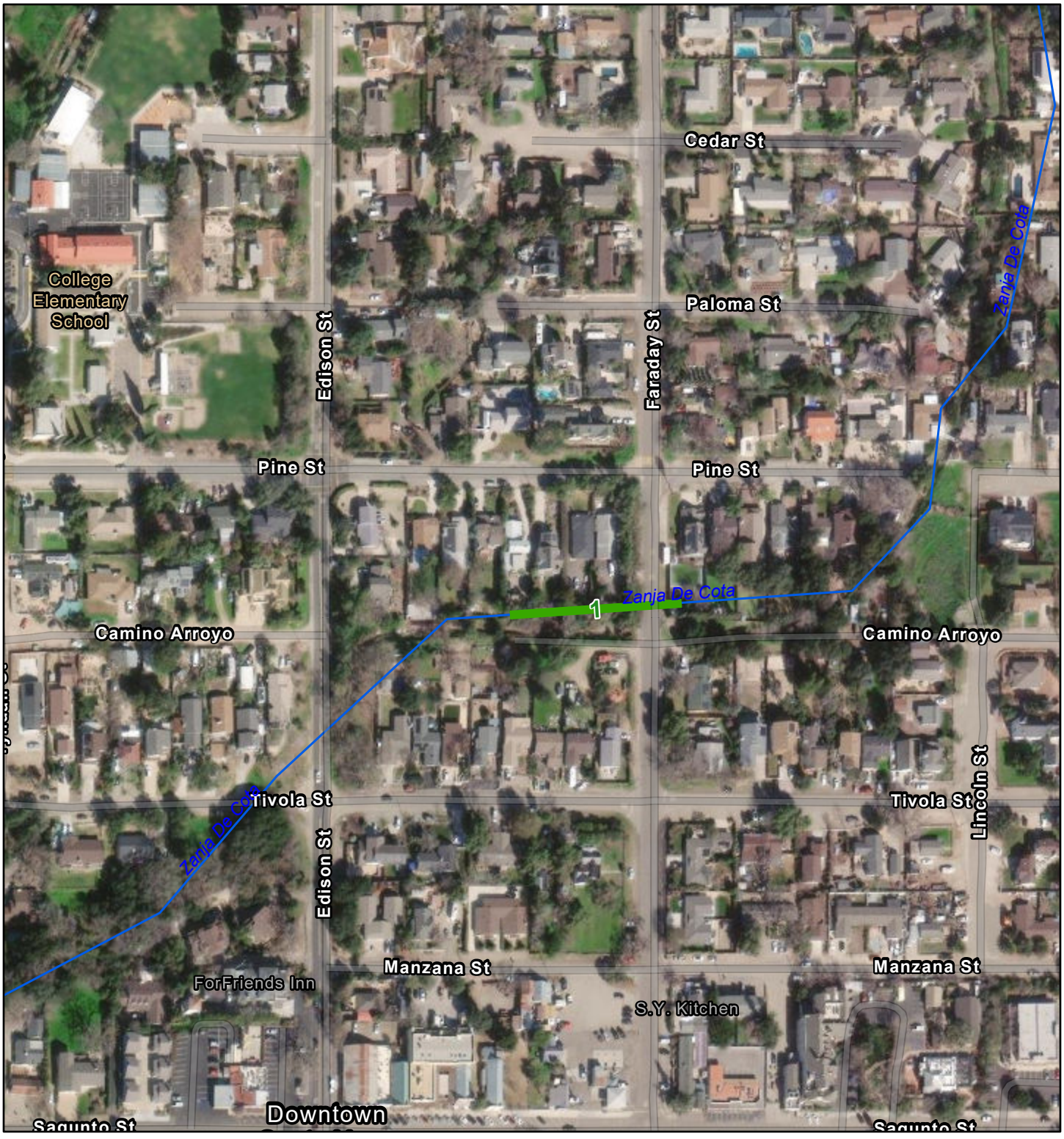
Section 1:

A 300-foot length of creek at Faraday Street requires limbing and trimming back of overhanging obstructive vegetation consisting of blackberry, mulefat, and willow.

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the “Impacts and Mitigation Measures” tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Zanja De Cota Creek




5/2/2024

Lengths24

APCreeks

1:3,304

0 0.02 0.04 0.09 mi

0 0.04 0.07 0.14 km

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Zanja de Cota Creek




**Section 1**

# ARROYO BURRO CREEK ROUTINE MAINTENANCE ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins at Torino Drive and terminates at Cliff Drive.

**Setting:**
Inspected on April 10, 2024.

There are several sections of Arroyo Burro Creek which are owned and in the process of being restored by the City of Santa Barbara. Due to irrigation installation limiting access and direction from City Staff not to maintain these areas, the District will no longer maintain the stretches of creek from Calle De Los Amigos to Torino Drive and from Stonecreek Road to the end of Alan Road. These sections are also displayed on the maps below.

Arroyo Burro Creek originates in the foothills of the Santa Ynez Mountains and drains a 5,559-acre watershed capable of producing 5,400 cfs during a 100-year return period precipitation event. Land use adjacent to the creek is residential and open space.

The creek flows year-round downstream of U.S. Highway 101 and contains pool and riffle sequences. From Modoc Road downstream, Arroyo Burro Creek is characterized by extremely steep banks with an average channel depth of approximately 50 feet. Downstream of Veronica Springs Road there are numerous landslides coming off of Campanil Hill on the west bank of the creek.

The banks are very well vegetated with species such as poison oak, mustard, introduced grasses, eucalyptus, occasional oaks, many willows and sycamore. There are numerous large stands of *Arundo donax* in the lower portion of Arroyo Burro Creek. Long stretches of the creek have Arundo growing on the creek banks that hang over into the creek, impeding flow and contributing to debris plugs in the creek. Efforts have been made by the County and volunteer organizations to remove some of the stands of *Arundo donax.* The City of Santa Barbara Creeks Restoration and Water Quality Improvement Division has removed several stands of Arundo and developed plans for further removal over the next several years.

Arroyo Burro Creek is designated critical habitat for the Southern California Distinct Population Segment of steelhead (*Oncorhynchus mykiss*). The District developed a Vegetation Management Plan in 2016, as required by the National Marine Fisheries Service (NMFS), which describes the District's approach to vegetation management as it relates to the consideration of steelhead while providing flood protection.

The District's Environmental, Engineering, and Maintenance Staff have reviewed the maintenance areas within steelhead creeks to determine areas that may have more flexibility for vegetation management. Based on decades of experience in these watersheds through several major flood seasons, District staff has determined certain reaches that are particularly sensitive to obstructions and flood hazards. These reaches tend to be narrow, shallow, with many constrictions, culverts, adjacent structures, and bridges. These areas have little to no tolerance for consideration of obstructive/woody vegetation retention within the bankfull width, including Large Woody Debris, (LWD) and Key Woody Debris (KWD) and retention of large live

trees in the center of the channel. The emphasis for management approach in these areas will be to maintain the bankfull width free of obstructions. The zones where LWD/KWD and the retention of live trees within the bankfull width may be considered are generally wider, deeper, and are less sensitive to constrictions. The District retains final discretion on all decisions regarding vegetation management including when and where KWD/LWD is left behind and/or installed in the channel.

Arroyo Burro Creek is within the mapped zone where KWD, LWD and live trees in the middle of the bankfull width may be considered.

**Revegetation:**

Beginning with the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District began a new reporting and accounting program for the restoration component of the Annual Routine Maintenance Program. Since that time, the District has been tracking the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

The District and the City of Santa Barbara are engaged in *Arundo donax* removal projects which will periodically result in temporarily exposed soil and associated restoration. As clusters of arundo are removed, restoration that is performed with District involvement will be allotted for the County's restoration tables, while any restoration performed solely by the City staff/funds will not be indicated under the District maintenance program.

| Arroyo Burro | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2004/2005 | 1,250 | 1,250 | 1,250 | 0 |
| 2008/2009 | 375 | 2,000 | 0 | -375 |
| 2009/2010 | 0 | 2,000 | 1,500 | 1,125 |
| 2012/2013 | 200 | 0 | 0 | 925 |
| 2013/2014 | 265 | 200 | 200 | 860 |
| 2014/2015 | 240 | 0 | 0 | 620 |
| 2016/2017 | 30 | 0 | 0 | 590 |
| 2020/2021 | 30 | 0 | 0 | 560 |
| 2021/2022 | 230 | 0 | 0 | 330 |
| 2022/2023 | 5 | 0 | 0 | 325 |
| 2023/2024 | 300 | 0 | 0 | 25 |
| 2024/2025 | 0 | 0 | 0 | 25 |

**Engineering Analysis:**

Removing obstructive vegetation from the bankfull channel cross-section (active channel) is important to reduce the debris load associated with higher flows. Additionally, Obstructive vegetation growing in the active channel as well as growing along the banks and projecting into the active channel, which is what is occurring with the *Arundo donax* stands, can become mobilized during flood flows, raising the water surface elevation as well as plugging bridges and culverts located downstream. The bankfull discharge* for Arroyo Burro Creek is approximately 572 cfs with a typical depth of 2.5 feet deep. The width of clearing should be between 15-20 feet to maintain channel equilibrium.

*As defined in "Regional Curves for Bankfull Channel Dimensions-Selected South Coast Streams", URS Corporation-March 2002.

**Project Description:**

The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

| Section | Down tree/limb | Brushing (Area) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | | | x | willow | | | | |
| **Section 2** | x | | | eucalyptus | | 35 | | Trim upper, leave lower trunk |
| **Section 3** | | | x | willow | | | | |
| **Section 4** | x | | | willow eucalyptus | 10 | 25 | | |
| **Section 5** | x | | | oak | | | | |
| **Section 6** | | | x | willow | | | | |
| **Section 7** | x | | | oak, eucalyptus | 14 | 30 | | |
| **Section 8** | | | x | willow eucalyptus | | | | |
| **Section 9** | | | x | eucalyptus | | | | |
| **Section 10** | x | | | willow | | | | |
| **Section 11** | x | | | willow | | | | multiple |
| **Section 12** | | | x | willow | | | | |
| **Section 13** | x | | x | willow | | | | |
| **Section 14** | x | | | eucalyptus | 18 | 25 | | debris plug |
| **Section 15** | | 75x10 | | cattails | | | 0 | previously mitigated |
| **Section 16** | | | x | willow | | | | |
| **Section 17** | | | x | willow | | | | |
| **Section 18** | x | | | willow | | | | multiple |
| **Section 19** | | | x | willow arundo | | | | |
| **Section 20** | x | | | | | | | multiple |
| **Section 21** | | | x | willow | | | | |
| **Section 22** | | spot | | arundo | | | | See Section 22 |
| **Section 23** | x | | | eucalyptus | | | | See Section 23 |

Section 22:

Some remnant sections of arundo have resprouted and require follow up spot treatment with herbicide in the area between Jerry Harwin Parkway and Cliff Drive.

Section 23:
A large eucalyptus tree has fallen adjacent to the creek channel in Arroyo Burro Open Space. Further analysis will be conducted to determine if removal or trimming back is required. Otherwise the down tree will be left in place as a habitat feature.

Arundo Removal (on going restoration)
The District, Agricultural Commissioner's Office, and the City of Santa Barbara Creeks Division partnered on a multi-year arundo removal effort in the Arroyo Burro watershed. The removal portion of the project has been completed and the City will continue to re-treat any areas of regrowth.

Arundo re-growth will be retreated with herbicide as needed through the remaining spring and summer after a visual inspection of the infested sites. Re-treatment will not occur with 72 hours of a predicted rain event. The total amount of arundo is approximately 6.5-acres. Access to the arundo sites will be gained from the end of Alan Road, and the City owned Veronica Meadows Property, as well as Las Positas Road. Retreatment surveys will be accessed from Modoc Road, the La Cumbre Country Club, Hidden Valley Park, and Veronica Springs Road. Sites where arundo was removed were re-vegetated with native plants in the rainy season. Willow cuttings were primarily used to re-vegetate, but oaks, sycamore, elderberry, and other riparian species were planted in suitable locations that are not subject to creek flows.

**Impact Analysis and Mitigation Measures:**
Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Arroyo Burro Creek - A




5/2/2024

1:4,508

0 0.03 0.06 0.12 mi

0 0.05 0.1 0.2 km

Sites24

Lengths24

APCreeks

Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS, Maxar

# Arroyo Burro Creek - B




5/3/2024

1:2,254

0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

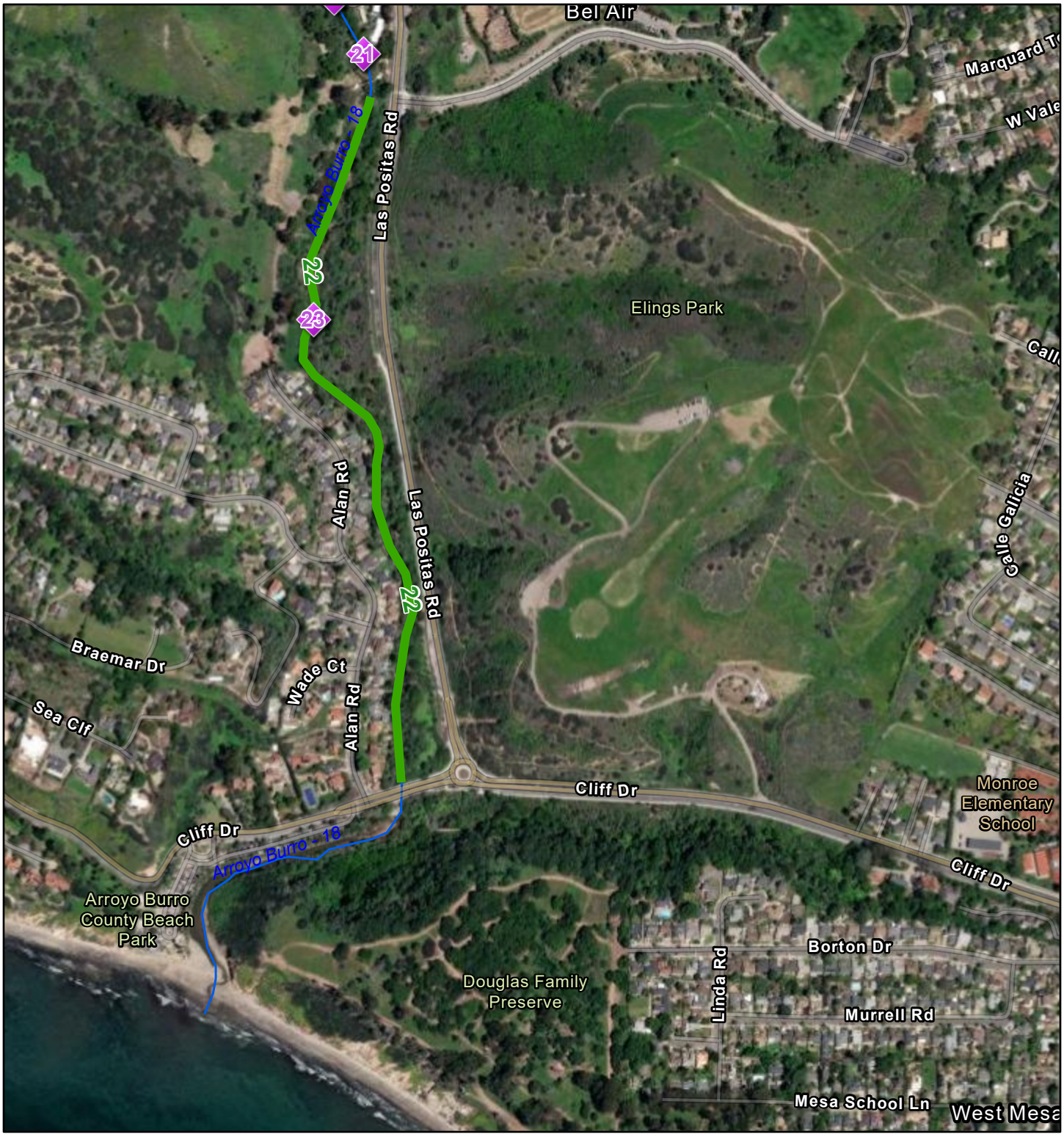
Sites24

Lengths24

APCreeks

Maxar, Microsoft, Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS

# Arroyo Burro Creek - C




5/9/2024

1:9,015

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Sites24

Lengths24

APCreeks

Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS, Maxar

Arroyo Burro Creek




**Section 4**




**Section 20**

# ARROYO PAREDON CREEK ROUTINE MAINTENANCE ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins at State Route 192 and terminates at U.S. Highway 101.

**Setting:**
Inspected on March 19, 2024.

Arroyo Paredon Creek originates in the foothills of the Santa Ynez Mountains and drains a 2,995-acre watershed capable of producing 3,500 cfs during a 100-year precipitation event.

The creek features an intact riparian canopy of mature willow, sycamore, black cottonwood, Fremont cottonwood, coast live oak, and occasional eucalyptus stands. Cape ivy, blackberry, clematis, and garden nasturtium are common components of the understory. The creek channel is covered in fine sediment deposits overlying cobbles and boulders.

Adjacent land is predominantly agriculture, nurseries and greenhouses with several access roads and trails along the banks. The creek was flowing during the inspection.

Arroyo Paredon Creek is designated critical habitat for the Southern California Distinct Population Segment of steelhead (*Oncorhynchus mykiss*). The District developed a Vegetation Management Plan in 2016, as required by the National Marine Fisheries Service (NMFS), which describes the District's approach to vegetation management as it relates to the consideration of steelhead while providing flood protection.

The District's Environmental, Engineering, and Maintenance Staff have reviewed the maintenance areas within steelhead creeks to determine areas that may have more flexibility for vegetation management. Based on decades of experience in these watersheds through several major flood seasons, District staff has determined certain reaches that are particularly sensitive to obstructions and flood hazards. These reaches tend to be narrow, shallow, with many constrictions, culverts, adjacent structures, and bridges. These areas have little to no tolerance for consideration of obstructive/woody vegetation retention within the bankfull width, including Large Woody Debris, (LWD) and Key Woody Debris (KWD) and retention of large live trees in the center of the channel. The emphasis for management approach in these areas will be to maintain the bankfull width free of obstructions. The zones where LWD/KWD and the retention of live trees within the bankfull width may be considered are generally wider, deeper, and are less sensitive to constrictions. The District retains final discretion on all decisions regarding vegetation management including when and where KWD/LWD is left behind and/or installed in the channel.

Arroyo Paredon Creek is within the mapped zone where KWD, LWD and live trees in the middle of the bankfull width cannot be tolerated due to a small drainage corridor with shallow banks and undersized culvert.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| Arroyo Paredon Creek | | | | | |
|---|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Carp Valley CDFW Bank Utilized (ft2) | Surplus Restoration (ft2) |
| 2003/2004 | 900 | 2,400 | 2,400 | | 1,500 |
| 2004/2005 | 3,250 | 3,000 | 3,000 | | 1,250 |
| 2005/2006 | 200 | 0 | 0 | | 1,050 |
| 2007/2008 | 600 | 0 | 0 | | 450 |
| 2009/2010 | 200 | 1,600 | 1,600 | | 1,850 |
| 2011/2012 | 0 | 0 | 0 | | 1,850 |
| 2013/2014 | 310 | 0 | 0 | | 1,540 |
| 2015/2016 | 50 | 0 | 0 | | 1,490 |
| 2016/2017 | 0 | 0 | 0 | | 1,490 |
| 2018/2019 | 0 | 0 | 0 | | 1,490 |
| 2019/2020 | 925 | 0 | 0 | | 565 |
| 2020/2021 | 1025 | 0 | 0 | 460 | 0 |
| 2021/2022 | 320 | 0 | 0 | 320 | 0 |
| 2022/2023 | 0 | 0 | 0 | 0 | 0 |
| 2023/2024 | 0 | 0 | 0 | 0 | 0 |
| 2024/2025 | 0 | 9000 | - | 0 | 0 |

**Engineering Analysis:**
The culvert on Arroyo Paredon Creek at Via Real is susceptible to plugging causing significant flooding of the adjacent agricultural areas as well as Via Real and Highway 101. In an effort to reduce the potential for plugging the culvert, downed trees and obstructive vegetation that could be mobilized during high flows should be removed. The bankfull discharge* for Arroyo Paredon Creek downstream of Foothill Road is approximately 273 cfs. With a velocity of approximately 6 fps and a typical depth of 2.5', the width of clearing should be 18' to maintain channel equilibrium.

*As defined in "Regional Curves for Bankfull Channel Dimensions-Selected South Coast Streams", URS Corporation-March 2002.

**Project Description:**
The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

| Section | Down tree/limb | Brushing (Area) | Limbing | Species | DBH (in) | Length (ft) | Mitigation (sqft) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | | | x | walnut | | | | |
| **Section 2** | | | x | arundo, willow | | | | |
| **Section 3** | | | x | willow, oak | | | | |
| **Section 4** | x | | | eucalyptus | 18 | 30 | | |
| **Section 5** | x | | | eucalyptus | 12 | 20 | | |
| **Section 6** | | | x | arundo, willow | | | | |
| **Section 7** | | | x | arundo, willow | | | | See Section 7 |

Section 7:

In addition to trimming back overhanging willow limbs at Section 7, the District will remove several large stands of arundo that have colonized the creek bank and are beginning to obstruct the channel. An excavator will be used to remove the entire root mass of the arundo stand and repair and reshape the bank to prepare for installation of native plants. Approximately 9000 square feet of arundo will be removed and replanted with native vegetation. For the smaller arundo stands growing interspersed with native vegetation, hand tools will be used to remove the stalks and the cut surface of the stumps will be treated with herbicide to prevent regrowth. Retreatment is likely to be required at intervals throughout the year.

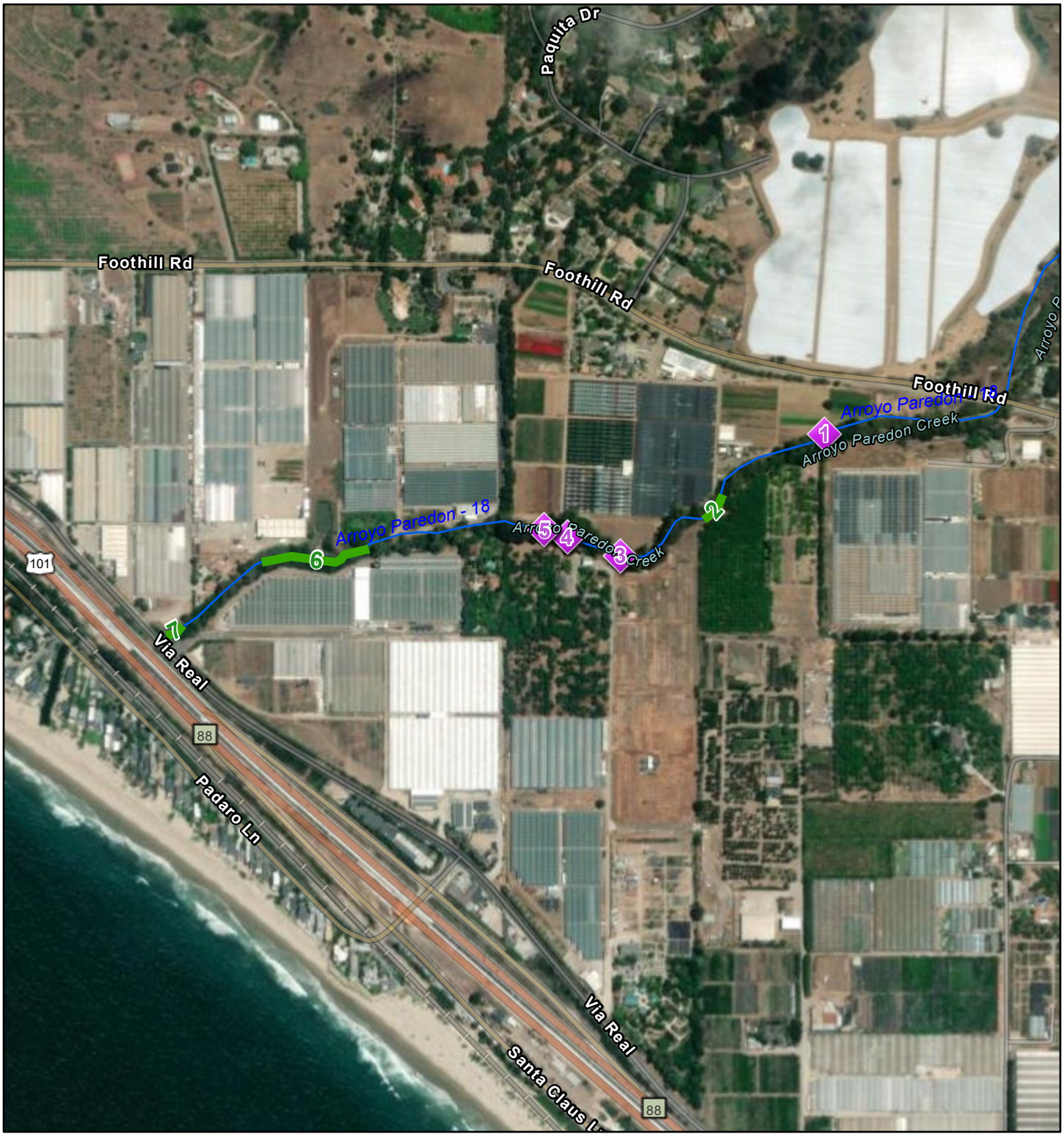
Tidewater goby has been detected immediately downstream of Section 7. Surveys in the work zone will be conducted according to the Biological Opinion. Block nets will be installed to prevent goby from entering the work area after any clearing from the site. Turbidity controls will be implemented and work will be conducted at the end of the dry season to minimize impacts on downstream fish and avoid goby breeding seasons.

After completion of the arundo removal, the bank will be regraded and reshaped to a more stable slope. A variety of native plant species will be installed to stabilize the bank and restore the riparian habitat. The area will be maintained with irrigation and weed removal until the new plantings are established.

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the “Impacts and Mitigation Measures” tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Arroyo Paredon




5/2/2024

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0 0.1 0.2 0.4 km

Sites24

Lengths24

APCreeks

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Arroyo Paredon Creek




**Section 4**




**Section 7**

# BARGER CANYON CREEK ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins just downstream of Brenner Drive and terminates just downstream of State Street at the confluence with San Roque Creek and Arroyo Burro Creek.

**Setting:**
Inspected on April 3, 2024.

Barger Canyon Creek originates in the foothills of the Santa Ynez Mountains and drains a 1,034-acre watershed capable of producing 1,800 cfs during a 100-year return period precipitation event. Land use adjacent to the creek is residential and commercial. The creek is one of the main tributaries to Arroyo Burro Creek, joining into Arroyo Burro Creek at the South Hope Avenue Bridge.

Barger Canyon Creek flows through a developed portion of Santa Barbara and although the deeply incised creek lends itself to large bank areas, the residential back yards are immediately adjacent to the top of the bank with ornamental vegetation extending onto the bank slopes. The banks are vegetated with mostly non-native understory such as vinca, castor bean, nasturtium and grasses; however, the majority of large trees are native such as sycamore, oak, and bay, many of which exceed 36-inch DBH. As the creek flows under State Street it enters a highly developed commercial area containing little native habitat. The creek bottom is rocky soil and gravel.

Barger Canyon Creek is designated critical habitat for the Southern California Distinct Population Segment of steelhead (Oncorhynchus mykiss). The District developed a Vegetation Management Plan in 2016, as required by the National Marine Fisheries Service (NMFS), which describes the District's approach to vegetation management as it relates to the consideration of steelhead while providing flood protection.

The District's Environmental, Engineering, and Maintenance Staff have reviewed the maintenance areas within steelhead creeks to determine areas that may have more flexibility for vegetation management. Based on decades of experience in these watersheds through several major flood seasons, District staff has determined certain reaches that are particularly sensitive to obstructions and flood hazards. These reaches tend to be narrow, shallow, with many constrictions, culverts, adjacent structures, and bridges. These areas have little to no tolerance for consideration of obstructive/woody vegetation retention within the bankfull width, including Large Woody Debris, (LWD) and Key Woody Debris (KWD) and retention of large live trees in the center of the channel. The emphasis for management approach in these areas will be to maintain the bankfull width free of obstructions. The zones where LWD/KWD and the retention of live trees within the bankfull width may be considered are generally wider, deeper, and are less sensitive to constrictions. The District retains final discretion on all decisions regarding vegetation management including when and where KWD/LWD is left behind and/or installed in the channel.

Barger Canyon Creek is within the mapped zone where KWD, LWD and live trees in the middle of the bankfull width cannot be tolerated due to flooding and/or erosion concerns. The creek corridor is urbanized, narrow, and incised with several culvert crossings and barriers.

**Revegetation:**

Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| Barger Canyon Creek | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2005/2006 | 0 | 1,700 | 1,250 | 1,250 |
| 2007/2008 | 0 | 0 | 0 | 1,250 |
| 2009/2010 | 40 | 0 | 0 | 1,210 |
| 2010/2011 | 0 | 0 | 0 | 1,210 |
| 2011/2012 | 0 | 0 | 0 | 1,210 |
| 2013/2014 | 40 | 0 | 0 | 1,170 |
| 2015/2016 | 40 | 0 | 0 | 1,130 |
| 2016/2017 | 80 | 100 | 20 | 1,070 |
| 2017/2018 | 0 | 0 | 0 | 1,070 |
| 2019/2020 | 0 | 0 | 0 | 1,070 |
| 2020/2021 | 10 | 0 | 0 | 1,060 |
| 2021/2022 | 0 | 0 | 0 | 1,060 |
| 2022/2023 | 0 | 0 | 0 | 1,060 |
| 2023/2024 | 0 | 0 | 0 | 1,060 |
| 2024/2025 | 300 | 0 | - | 760 |

**Engineering Analysis:**

Although Barger Canyon Creek is deeply incised in some areas, there are several very small bridges and culverts. Removing downed trees and obstructive vegetation and other obstructions that lead to bank erosion, will reduce the potential for plugging the bridges and culverts and the associated damage from flooding.

**Project Description:**

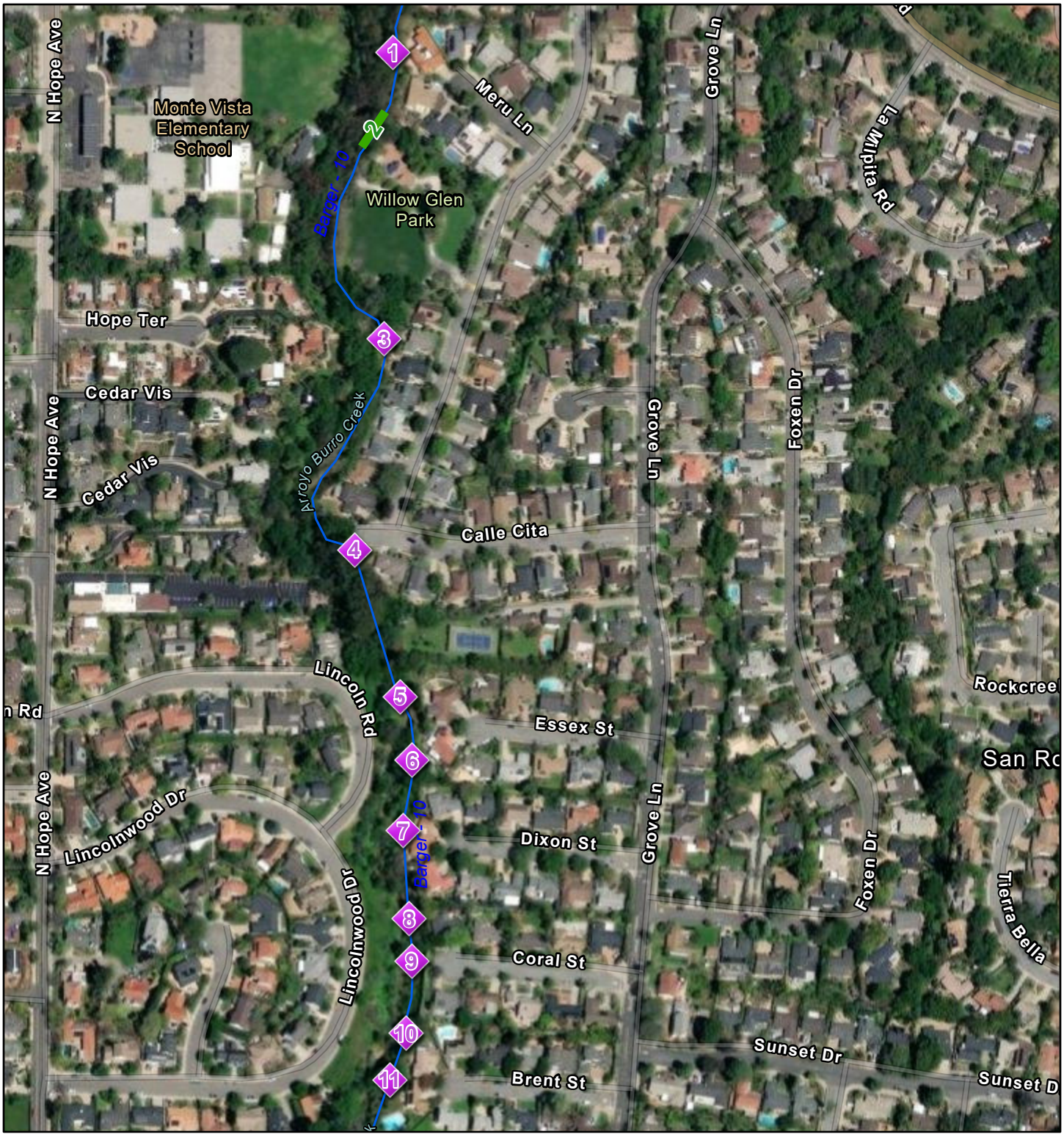
The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

| Section | Down tree/limb | Brushing (Area) | Limbing | Species | DBH (in) | Length (ft) | Mitigation (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | | | x | eucalyptus, ivy, poison oak | | 25 | | |
| **Section 2** | x | | | eucalyptus, oak | | | | multiple trees |
| **Section 3** | x | | | unknown | 8 | 12 | | |
| **Section 4** | | | x | toyon | | | | |
| **Section 5** | x | | | eucalyptus | 6 | 15 | | |
| **Section 6** | | | x | elderberry | | | | |
| **Section 7** | x | | | willow | 8 | 10 | | |
| **Section 8** | x | | | willow | 10 | 12 | | |
| **Section 9** | | | x | willow | | | | |
| **Section 10** | x | | | willow | 10 | 20 | | |
| **Section 11** | x | | | willow | | | | 2 willows |
| **Section 12** | x | | | willow | 6 | 10 | | |
| **Section 13** | x | | | willow | 16 | 35 | | |
| **Section 14** | x | | | willow | 6 | 12 | | |
| **Section 15** | x | | | willow | | | | |
| **Section 16** | x | | | ivy, acacia | | | | limb ivy, assess down acacia |
| **Section 17** | x | | | eucalyptus | | | | |
| **Section 18** | x | | | willow | | | | |
| **Section 19** | x | | | elm, willow | | | | debris plug |
| **Section 20** | x | | | willow | | | | multiple trees |
| **Section 21** | | x | | palm | | | | 3 palms |
| **Section 22** | x | | | willow | | | | multiple down trees and debris plug |
| **Section 23** | x | | | willow | 12 | 30 | | |
| **Section 24** | | | x | willow | | | | |
| **Section 25** | | 20'x30' | | willow, ash | | | 300 | see below |

Section 25:
Vegetation has established at the confluence of Barger Canyon Creek and San Roque Creek and sediment has accumulated restricting flows. District maintenance crews will brush an approximately 20-feet wide by 30-feet long area of willows, ash, and bottlebrush. The roots of the vegetation will be disturbed to encourage flows to move the sediment downstream during winter storm flows. No sediment will be removed from the area. This will result in 300 square feet of impacts to native vegetation.

**Impact Analysis and Mitigation Measures:**
Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Barger Creek - A




5/6/2024

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Sites24

Lengths24

APCreeks

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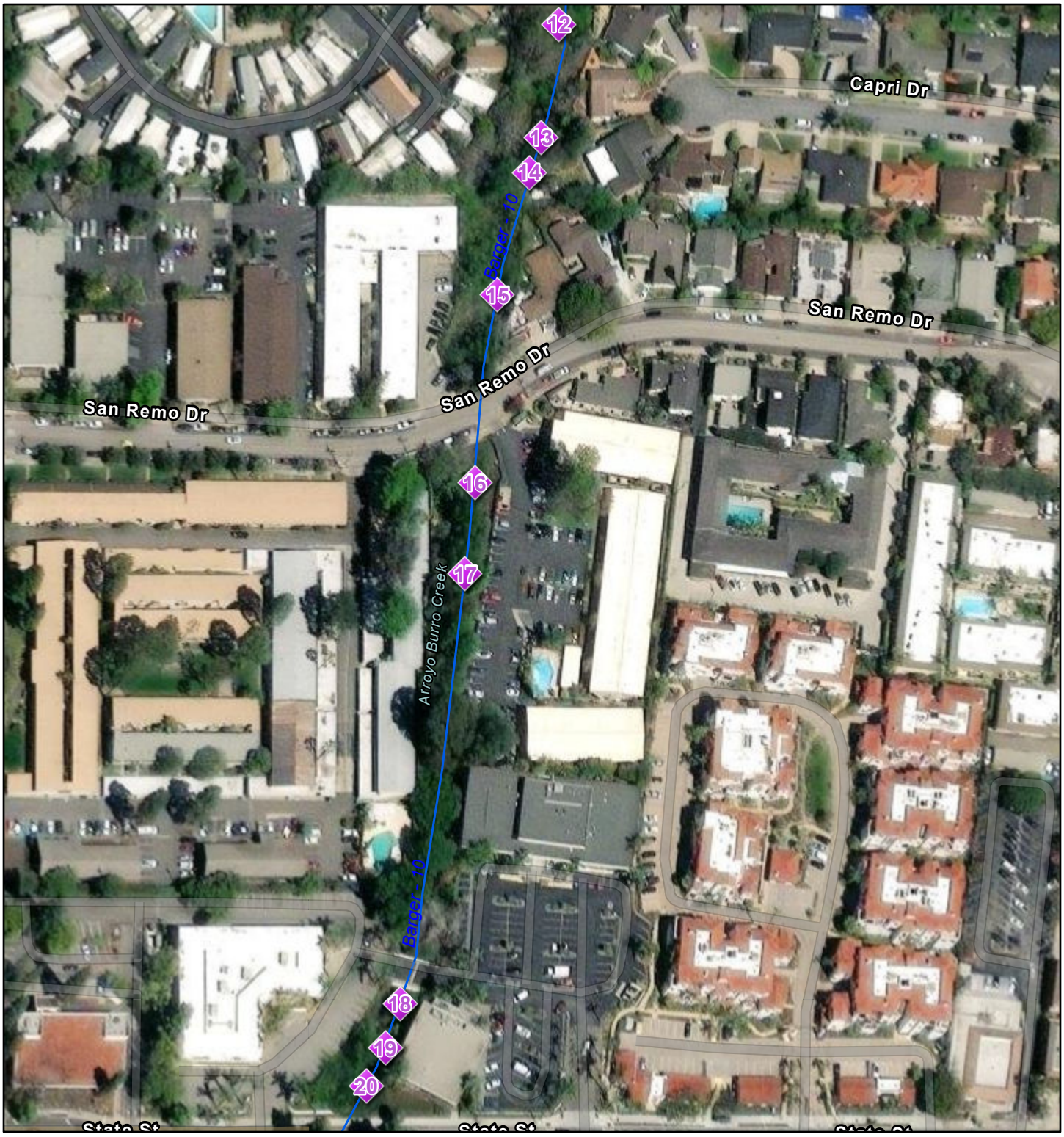
# Barger Creek - B




5/6/2024

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Sites24

APCreeks

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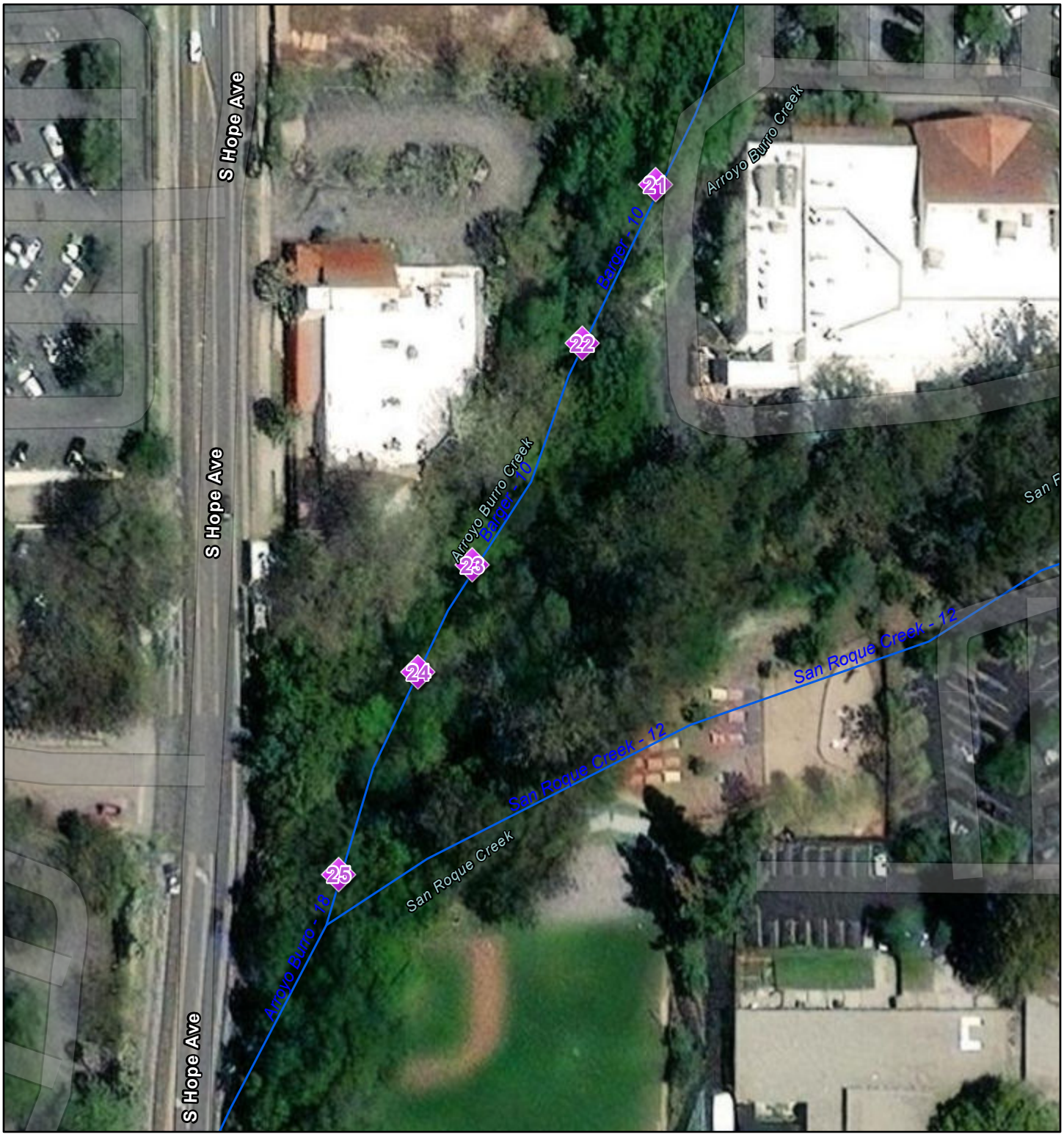
# Barger Creek - C




5/6/2024

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0 0.01 0.03 0.05 km

Sites24

APCreeks

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Barger Creek




**Section 3**




**Section 21**

# CARPINTERIA CREEK ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins approximately where Carpinteria Creek runs under State Route 192 and terminates downstream of the 8th Street Bridge in the City of Carpinteria.

**Setting:**
Inspected March 19, 2024.

Carpinteria Creek originates in the foothills of the Santa Ynez Mountains and drains a 9,680-acre watershed capable of producing 8,900 cfs during a 100-year return period precipitation event.

The portion of Carpinteria Creek proposed for maintenance flows through agriculture and low-density residential areas above U.S. Highway 101 and high-density residential areas below U.S. Highway 101. Upstream of U.S. Highway 101, the creek supports a relatively narrow yet well-developed canopy of riparian vegetation with dense mature stands of arroyo and yellow willow. Stands of sycamore, Fremont cottonwood and black cottonwood are scattered along the top of the bank. Occasional coast live oaks are also scattered along the entire length of the creek. Woody riparian understory vines and shrubs include species such as poison oak, coyote bush, blackberry, mugwort and many non-native species as well. Small drier areas along the top of the bank support shrubs typical of the coastal sage scrub habitat. Avocado and citrus orchards are common along the tops of banks.

Large residential lots border the creek in the lower reaches of the watershed and invasive non-native vegetation is more abundant than in the largely agricultural areas upstream. Much of the riparian canopy in the urban portion of the creek has been removed beyond the top of the bank for apartments, businesses and roads. Mature cottonwood, white alder and western sycamore trees occur in scattered patches along the lower portions of the project reach. In general, the understory component consists of species such as mugwort, mustard, nettle, monkey flower and ivy.

Carpinteria Creek is designated critical habitat for the Southern California Distinct Population Segment of steelhead (*Oncorhynchus mykiss*). The District developed a Vegetation Management Plan in 2016, as required by the National Marine Fisheries Service (NMFS), which describes the District's approach to vegetation management as it relates to the consideration of steelhead while providing flood protection.

The District's Environmental, Engineering, and Maintenance Staff have reviewed the maintenance areas within steelhead creeks to determine areas that may have more flexibility for vegetation management. Based on decades of experience in these watersheds through several major flood seasons, District staff has determined certain reaches that are particularly sensitive to obstructions and flood hazards. These reaches tend to be narrow, shallow, with many constrictions, culverts, adjacent structures, and bridges. These areas have little to no tolerance for consideration of obstructive/woody vegetation retention within the bankfull width, including Large Woody Debris, (LWD) and Key Woody Debris (KWD) and retention of large live trees in the center of the channel. The emphasis for management approach in these areas will be to maintain the bankfull width free of obstructions. The zones where LWD/KWD and the

retention of live trees within the bankfull width may be considered are generally wider, deeper, and are less sensitive to constrictions. The District retains final discretion on all decisions regarding vegetation management including when and where KWD/LWD is left behind and/or installed in the channel.

Carpinteria Creek is within the mapped zone where KWD, LWD and live trees in the middle of the bankfull width may be considered.

**Revegetation:**

Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| Carpinteria Creek | | | | | |
|---|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Carp Valley DFW Bank Utilized (ft2) | Surplus Restoration (ft2) |
| 2002/2003 | 2,710 | 4,750 | 3,610 | | 900 |
| 2003/2004 | 900 | 0 | 0 | | 0 |
| 2008/2009 | 1,250 | 16,750 | 0 | | -1,250 |
| 2009/2010 | 1,500 | 6,750 | 6,750 | | 4,000 |
| 2010/2011 | 650 | 1,400 | 0 | | 3,350 |
| 2012/2013 | 5,200 | 1,800 | 1,800 | | -50 |
| 2013/2014 | 565 | 600 | 0 | 615 | 0 |
| 2014/2015 | 520 | 0 | 0 | 520 | 0 |
| 2016/2017 | 350 | 0 | 0 | 350 | 0 |
| 2018/2019 | 0 | 0 | 0 | | 0 |
| 2020/2021 | 1,845 | 0 | 0 | 1,845 | 0 |
| 2021/2022 | 1,895 | 0 | 0 | 1,895 | 0 |
| 2024/2025 | 0 | 0 | 0 | 0 | 0 |

**Engineering Analysis:**

Vegetation tends to colonize the streambed during years when there is insufficient flow to scour the active channel. In an effort to reduce the potential for plugging downstream bridges and the creation of debris plugs and bank erosion, downed trees/limbs and obstructive vegetation that could be mobilized during high flows should be removed.

The bankfull discharge* for Carpinteria Creek downstream of Casitas Pass Road is approximately 625 cfs. With a velocity of approximately 6 fps and a typical depth of 3-feet, the width of clearing should be 35-feet to maintain channel equilibrium.

*As defined in "Regional Curves for Bankfull Channel Dimensions-Selected South Coast Streams", URS Corporation-March 2002.

**Project Description:**

Section 1:

This site is composed of two different facilities, a partially buried gas line with concrete encasement, and a concrete wall on top of the gas line encasement that served as a USGS stream gauge. The site has deteriorated over time and has led to the worsening of a fish

passage barrier. The USGS gauge is no longer in service and the gas line has been placed out of service due to erosion damage. Preliminary support has been received from Southern California Gas Company and the USGS. The work must be sequenced deliberately to be compatible with So Cal Gas's safety and operational objectives. By partnering with both entities, the District will coordinate and lead the environmental effort to removed the barriers and restore the creek with natural streambed material and no fish passage barrier.

The scope of work includes demolition and removal of the concrete wall composing the USGS gauge. The concrete scrap and rebar will be removed from the creek, exposing the gas line and concrete encasement. Working closely with So Cal Gas, the line concrete cap will be demolished and removed. The pipe will then be cut and sealed at each end, and the pipe section crossing the creekbed will be removed. Boulders and mixed grade streambed material will be backfilled to match existing grade and contours. The work will be performed in the late fall. If any residual creek flow is present, a temporary diversion system will be implemented to retain downstream flow.

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Carpinteria Creek




5/6/2024

1:1,127

0 0.01 0.01 0.03 mi

0 0.01 0.03 0.05 km

Sites24

APCreeks

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Carpinteria Creek




**Section 1**




**Section 1**

# LAS POSITAS CREEK ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins at Modoc Road and continues downstream to Los Positas Place, where the concrete lined section begins.

**Setting:**
Inspected on March 20, 2024.

Las Positas Creek originates in the foothills of the Santa Ynez Mountains and drains a 506-acre watershed capable of producing 900 cfs during a 100-year return period precipitation event. The east bank contains many places that are reinforced with pieces of concrete stacked upon each other. To the east is Las Positas Road and to the west are homes. At the time of the field inspection the creek was still flowing and had small pools of water along the project reach. Both banks are densely vegetated mainly with willows, however the riparian corridor is narrow, as is a common occurrence along the urban drainages surrounded by development.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| Las Positas Creek | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft) |
| 2006/2007 | 0 | 0 | 0 | 0 |
| 2008/2008 | 0 | 0 | 0 | 0 |
| 2011/2012 | 0 | 0 | 0 | 0 |
| 2017/2018 | 0 | 0 | 0 | 0 |
| 2019/2020 | 0 | 0 | 0 | 0 |
| 2022/2023 | 0 | 0 | 0 | 0 |
| 2023/2024 | 0 | 0 | 0 | 0 |
| 2024/2025 | 0 | 0 | - | 0 |

**Engineering Analysis:**
Vegetation within these sections can become uprooted in high flows and be carried downstream. Veronica Springs Road has two 60-inch culverts that are especially vulnerable to plugging from this vegetation. The potential for this type of flooding is minimized by trimming the low branches from the trees on the banks and by clearing the invert of debris, rubble, trash and vegetation.

**Project Description:**
The maintenance tasks proposed in this drainage are provided below. Descriptions of each type

of maintenance task are provided in the Maintenance Practices Summary section.

| Section | Down tree/limb | Brushing (Area) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | x | | | ash | | | | |
| **Section 2** | | | | | | | | bank repair; see below |

Section 2:
Bank erosion behind a concrete sack wall has occurred in Las Positas Creek just upstream of the Las Positas Place bridge at Los Positas Road. District maintenance will fill the erosion hole with approximately 1 cubic yard of fill material. On river left/east side of the creek, rock will be placed at the concrete wingwall. Approximately three 2-foot rocks will be placed to help protect the wingwall from erosion.

**Impact Analysis and Mitigation Measures:**
Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Las Positas Creek




5/2/2024

1:3,304

0 0.02 0.04 0.09 mi

0 0.04 0.07 0.14 km

Sites24

APCreeks

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Las Positas Creek




**Section 1**



**Section 2**

# MARIA YGNACIO CREEK ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins at Giorgi Park and terminates at South Patterson Avenue.

**Setting:**
Inspected on April 2, 2024.

Maria Ygnacio Creek originates in the foothills of the Santa Ynez Mountains and drains a 4,535-acre watershed capable of producing 7,200 cfs during a 100-year return period precipitation event.

Maria Ygnacio Creek is characterized by steep banks vegetated with native and ornamental species such as willow, mulefat, sunflower, periwinkle and pepper trees. Portions of the banks are denuded of vegetation and do not provide riparian habitat while other portions of the creek contain high quality habitat with a mature canopy comprised of willow, oak, sycamore and cottonwoods. Land use adjacent to the creek is residential and agriculture with varying setbacks from the riparian corridor. In some cases, backyards extend to the base of the creek banks, while other areas (downstream of Hollister Avenue) the riparian corridor is fairly wide and intact. In the upper reaches of the creek, the channel bottom contains cobbles interspersed with gravel and silt while other areas are sandy silt without larger cobbles or rocks.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

The District has 1.18 acres of surplus restoration on Maria Ygnacio Creek associated with several large restoration sites installed since 2003.

| Maria Ygnacio Creek | | | | | | |
|---|---|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) | Lg Tree Impacts | Tree mitigation installed |
| 2002/2003 | 1,060 | 7,500 | 7,500 | 6,440 | | |
| 2003/2004 | 2,170 | 0 | 0 | 4,270 | | |
| 2005/2006 | 1,425 | 0 | 0 | 2,845 | | |
| 2006/2007 | 800 | 50,910 | 50,910 | 52,955 | | |
| 2007/2008 | 375 | 0 | 0 | 52,580 | | |
| 2009/2010 | 1,975 | 0 | 0 | 50,605 | | |
| 2011/2012 | 0 | 0 | 0 | 50,605 | | |
| 2013/2014 | 345 | 0 | 0 | 50,260 | | |
| 2014/2015 | 0 | 0 | 80 | 50,340 | | |

| Maria Ygnacio Creek | | | | | | |
|---|---|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) | Lg Tree Impacts | Tree mitigation installed |
| 2015/2016 | 340 | 0 | 0 | 50,000 | | |
| 2017/2018 | 150 | 0 | 0 | 49,850 | | |
| 2018/2019 | 50 | 0 | 0 | 49,800 | 1 willow 7" dbh | |
| 2019/2020 | 100 | 0 | 0 | 49,700 | | 10:1 willows |
| 2020/2021 | 750 | 0 | 0 | 48,950 | | |
| 2021/2022 | 135 | 100 | 0 | 48,815 | | |
| 2022/2023 | 30 | 150 | 0 | 48,785 | | |
| 2023/2024 | 40 | 0 | 0 | 48,745 | | |
| 2024/2025 | 0 | 0 | 0 | 48,745 | | |

**Engineering Analysis:**

Removing obstructive vegetation from the bankfull channel cross-section (active channels) is important to reduce the debris load associated with higher flows. Obstructive vegetation growing in the active channel as well as limbs projecting into the active channel and downed trees can become mobilized during flood flows, raising the water surface elevation as well as plugging bridges and culverts located downstream. The bankfull discharge* for Maria Ygnacio Creek is approximately 363 cfs. With a velocity of approximately 6 fps and a typical depth of 3 feet, the width of clearing should be 20 feet to maintain channel equilibrium.

*As defined in “Regional Curves for Bankful Channel Dimensions-Selected South Coast Streams”, URS Corporation-March 2002.

**Project Description:**

The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

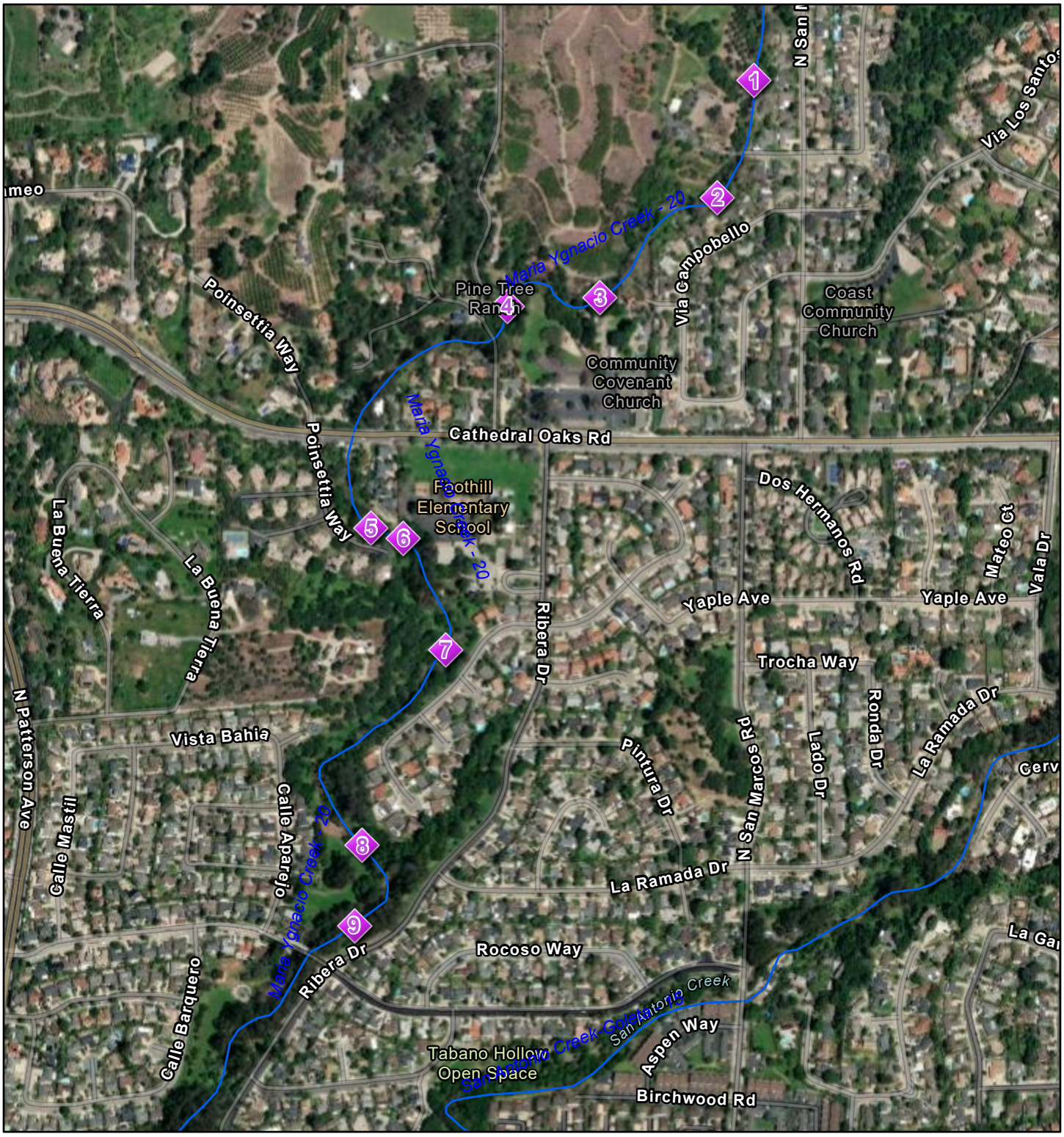
| Section | Down tree/limb | Brushing (area) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | | | x | willow | | | | |
| **Section 2** | x | | | cottonwood | 10 | 15 | | |
| **Section 3** | x | | | willow | | | | limb off top, leave rest in place as LWD |
| **Section 4** | x | | | willow | 8 | 15 | | |
| **Section 5** | x | | | eucalyptus | | | | multiple trees |
| **Section 6** | | | | | | | | debris plug |
| **Section 7** | x | | | cottonwood | 30 | 40 | | |
| **Section 8** | x | | | eucalyptus | 24 | 25 | | |
| **Section 9** | | | x | willow | | | | |
| **Section 10** | | | x | willow | | | | |
| **Section 11** | x | | | sycamore | | | | |

| Section | Down tree/limb | Brushing (area) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 12** | x | | | willow | | | | multiple |
| **Section 13** | x | | | willow | 10 | 20 | | |
| **Section 14** | x | | | willow | 10 | 20 | | multiple |
| **Section 15** | x | | | willow | 5 | 12 | | |
| **Section 16** | x | | | willow | 8 | 15 | | |
| **Section 17** | | | x | willow | | | | |
| **Section 18** | | | x | willow | | | | |
| **Section 19** | x | | | willow | 4 | 15 | | |
| **Section 20** | x | | | willow, arundo | | | | |

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Maria Ygnacio - A




5/2/2024

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Sites24

APCreeks

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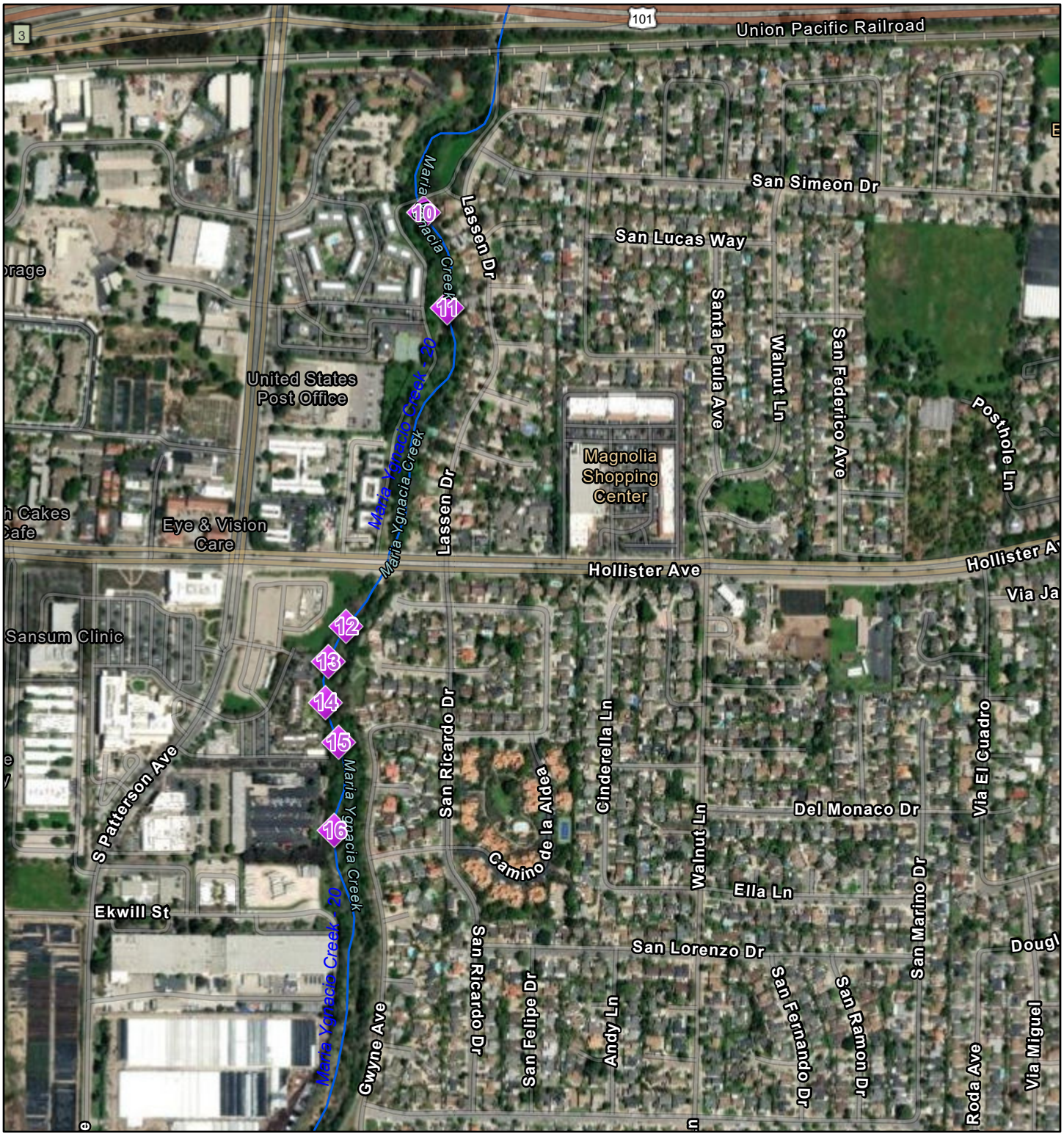
# Maria Ygnacio - B




5/2/2024

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Sites24

APCreeks

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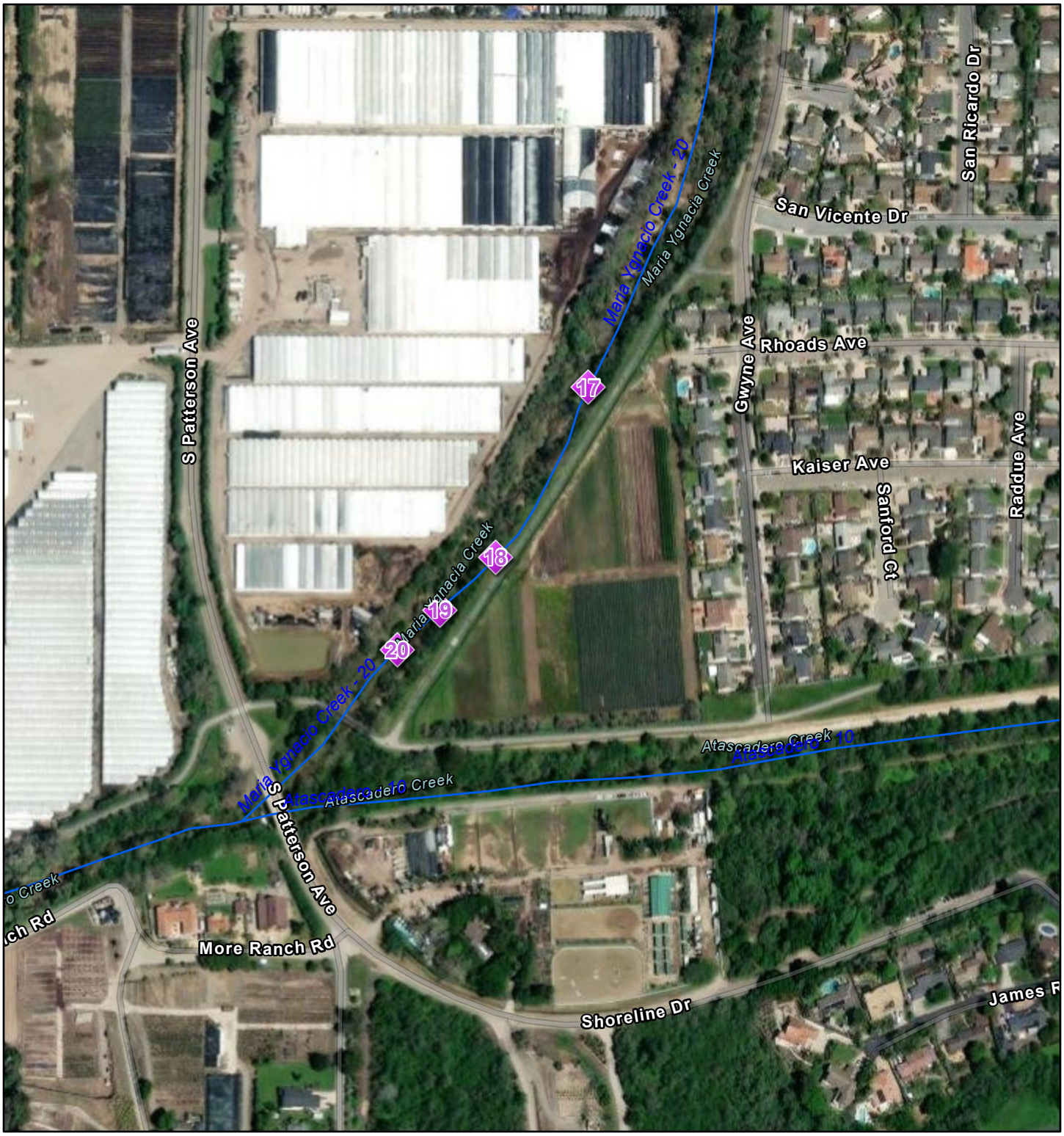
# Maria Ygnacio - C




5/2/2024

1:4,508

0 0.03 0.06 0.12 mi

0 0.05 0.1 0.2 km

Sites24

APCreeks

Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS, Maxar

Maria Ygnacio Creek




**Section 7**




**Section 13**

# MISSION CREEK ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins in Rocky Nook Park and terminates at West Yanonali Street.

**Setting:**
Inspected on April 4, 2024.

Mission Creek originates in the foothills of the Santa Ynez Mountains and drains a 7,589-acre watershed capable of producing between 5,800 and 7,500 cfs during a 100-year return period precipitation event.

The maintenance area of Mission Creek begins at Rocky Nook Park and continues downstream through the Santa Barbara Museum of Natural History, residential areas and the downtown corridor of Santa Barbara. The creek network includes several road crossings, bridges, culverts, and storm drains within the maintenance area. Adjacent land use includes medium and high density residential, commercial, and parks.

Within Rocky Nook Park and the Museum property, riparian vegetation is a mix of native willows, bay, sycamore, elderberry, ash, and patches of non-native ivy, arundo, and other non-native species. Substrate is large cobbles and boulders. As Mission Creek enters the urban areas of downtown Santa Barbara, non-native species become more predominant with nasturtium and other landscape species encroaching into the creek from adjacent residences. Portions of the creek are lined with hard bank protection on one or both sides.

At Arrellaga Street and downstream to Canon Perdido Street, Mission Creek enters a concrete lined channel that does not typically require extensive maintenance or management. From Canon Perdido to the Santa Barbara train station, Mission Creek passes under several bridges and partially lined channels. At several bridges, cattails, bulrush, sedges, and watercress have colonized the creek invert, in some cases with nearly 100% cover.

The lower portions of Mission Creek are degraded with trash, debris, human waste, and invasive species without much riparian canopy. However, the condition of the creek is improving, most likely due to efforts by the City of Santa Barbara and the County's Project Clean Water. Mission Creek features several restoration projects and arundo removal areas along the maintenance area.

The creek was wet through the entirety of the maintenance areas during the assessment.

Mission Creek is designated critical habitat for the Southern California Distinct Population Segment of steelhead (*Oncorhynchus mykiss*). The District developed a Vegetation Management Plan in 2016, as required by the National Marine Fisheries Service (NMFS), which describes the District's approach to vegetation management as it relates to the consideration of steelhead while providing flood protection.

The District's Environmental, Engineering, and Maintenance Staff have reviewed the maintenance areas within steelhead creeks to determine areas that may have more flexibility for vegetation management. Based on decades of experience in these watersheds through several major flood seasons, District staff has determined certain reaches that are particularly sensitive to obstructions and flood hazards. These reaches tend to be narrow, shallow, with many constrictions, culverts, adjacent structures, and bridges. These areas have little to no tolerance for consideration of obstructive/woody vegetation retention within the bankfull width, including Large Woody Debris, (LWD) and Key Woody Debris (KWD) and retention of large live trees in the center of the channel. The emphasis for management approach in these areas will be to maintain the bankfull width free of obstructions. The zones where LWD/KWD and the retention of live trees within the bankfull width may be considered are generally wider, deeper, and are less sensitive to constrictions. The District retains final discretion on all decisions regarding vegetation management including when and where KWD/LWD is left behind and/or installed in the channel.

With the possible exception of areas within Oak Park and near the Natural History Museum, Mission Creek is within the mapped zone where KWD, LWD and live trees in the middle of the bankfull width cannot be tolerated due to flooding and/or erosion concerns. The creek is very urban in the maintenance reach with low banks and undersized culverts.

**Revegetation:**

Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| Mission Creek | | | | | | | |
|---|---|---|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | LCMB Bank Utilized (ft2) | Surplus Restoration (ft2) | Lg Tree Impacts | Tree mitigation installed |
| 2002/2003 | 3,425 | 7,500 | 0 | | -3,425 | | |
| 2005/2006 | 4,917 | 1,000 | 0 | | -8,342 | | |
| 2006/2007 | 0 | 0 | 0 | | -8,342 | | |
| 2008/2009 | 1,060 | 17,625 | 12,000 | | 2,598 | | |
| 2009/2010 | 1,080 | 0 | 0 | | 1,518 | | |
| 2012/2013 | 1,710 | 0 | 0 | | -192 | | |
| 2013/2014 | 1,520 | 0 | 0 | 652 | -1,060 | | |
| 2014/2015 | 480 | 0 | 0 | 480 | -1,060 | | |
| 2015/2016 | 1,400 | 0 | 0 | 2,460 | 0 | | |
| 2016/2017 | 105 | 0 | 0 | 105 | 0 | 1 willow 8" DBH | |
| 2017/2018 | 0 | 0 | 0 | | 0 | | |
| 2018/2019 | 175 | 0 | 0 | | 0 | | |
| 2019/2020 | 60 | 0 | 0 | 235 | 0 | 0 | 10:1 willows |
| 2020/2021 | 215 | 80 | 0 | 215 | 0 | | |
| 2021/2022 | 180 | 0 | 0 | 180 | 0 | | |
| 2022/2023 | 0 | 0 | 0 | 0 | 0 | | |
| 2023/2024 | 185 | 0 | 0 | 185 | 0 | | |
| 2024/2025 | 10 | 500 | - | 10 | 0 | | |

**Engineering Analysis:**

Removing obstructive/silt trapping vegetation from the bankfull channel cross-section (active channel) is important to reduce the debris load associated with higher flows. Obstructive vegetation growing in the active channel as well as limbs projecting into the active channel and downed trees can become mobilized during flood flows, raising the water surface elevation as well as plugging bridges and culverts located downstream.

The bankfull discharge* for Mission Creek upstream of U.S. Highway 101 is approximately 351 cfs. With a velocity of approximately 6 fps and a typical depth of 2.5 feet, the width of clearing should be 24 feet to maintain channel equilibrium.

*As defined in "Regional Curves for Bankfull Channel Dimensions-Selected South Coast Streams", URS Corporation-March 2002.

**Project Description:**

The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

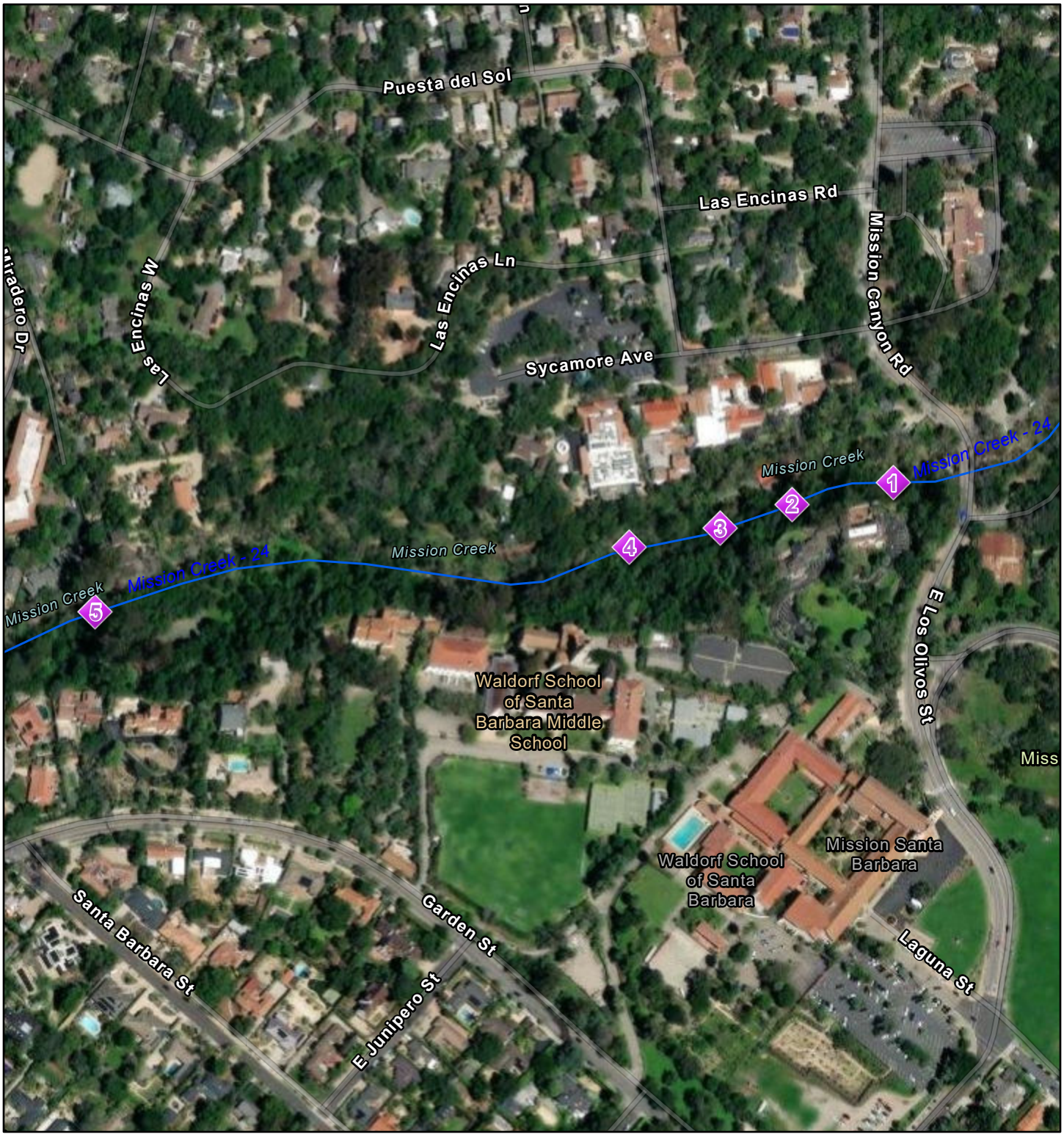
| Section | Down tree/limb | Brushing (area) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | x | | | oak | | | | |
| **Section 2** | x | | | alder | 4 | 20 | | |
| **Section 3** | | 5'x15' | | cottonwood | | | 0; previously mitigated | |
| **Section 4** | | | x | willow | | | | |
| **Section 5** | x | | | eucalyptus | | | | cut off root wad |
| **Section 6** | x | | | willow | | | | |
| **Section 7** | | 2'x5' | | willow | | | 10 | |
| **Section 8** | | 5'x35' | | tree of heaven | | | 0; non-native | |
| **Section 9** | | | x | elm | | | | |
| **Section 10** | | 10'x10' | | castorbean | | | 0; non-native | |
| **Section 11** | | | x | oak | | | | |
| **Section 12** | x | | | willow | | | | |
| **Section 13** | | | x | willow | | | | |
| **Section 14** | | | x | arundo | | | | |
| **Section 15** | | x | | tree of heaven | | | 0; non-native | |
| **Section 16** | x | | | willow | | | | |
| **Section 17** | | 4'x30' | | willow | | | 0; previously mitigated | |
| **Section 18** | x | | | willow<br>tree of heaven | | | | |
| **Section 19** | | | | | | | | See Section 19 |
| **Section 20** | | 5'x60' | | willow<br>cattail | | | 0; previously mitigated | |
| **Section 21** | | | | willow, cattail | | | | see Section 21 |

Section 19:
Bank erosion has occurred in Mission Creek downstream of West Haley Street. District maintenance will perform bank repair along an approximately 50-foot length of the creek with an approximate height of 10-feet. Approximately 25 yards of 2 to 3-foot boulders will be imported and toed-in and placed at a 1.5:1 slope for flood control bank protection. Miscellaneous small rocks and dirt will be used to match the slope of upstream and downstream banks. Willow cuttings will be incorporated into backfill and no hardscape will be part of the project. This will result in 500 square feet of surplus mitigation.

Section 21:
This section of the channel is concrete lined and has accumulated sediment and obstructive weedy vegetation has sprouted. The vegetation will be brushed.

**Impact Analysis and Mitigation Measures:**
Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Mission Creek - A




5/7/2024

1:4,508

0 0.03 0.06 0.12 mi

0 0.05 0.1 0.2 km

Sites24

APCreeks

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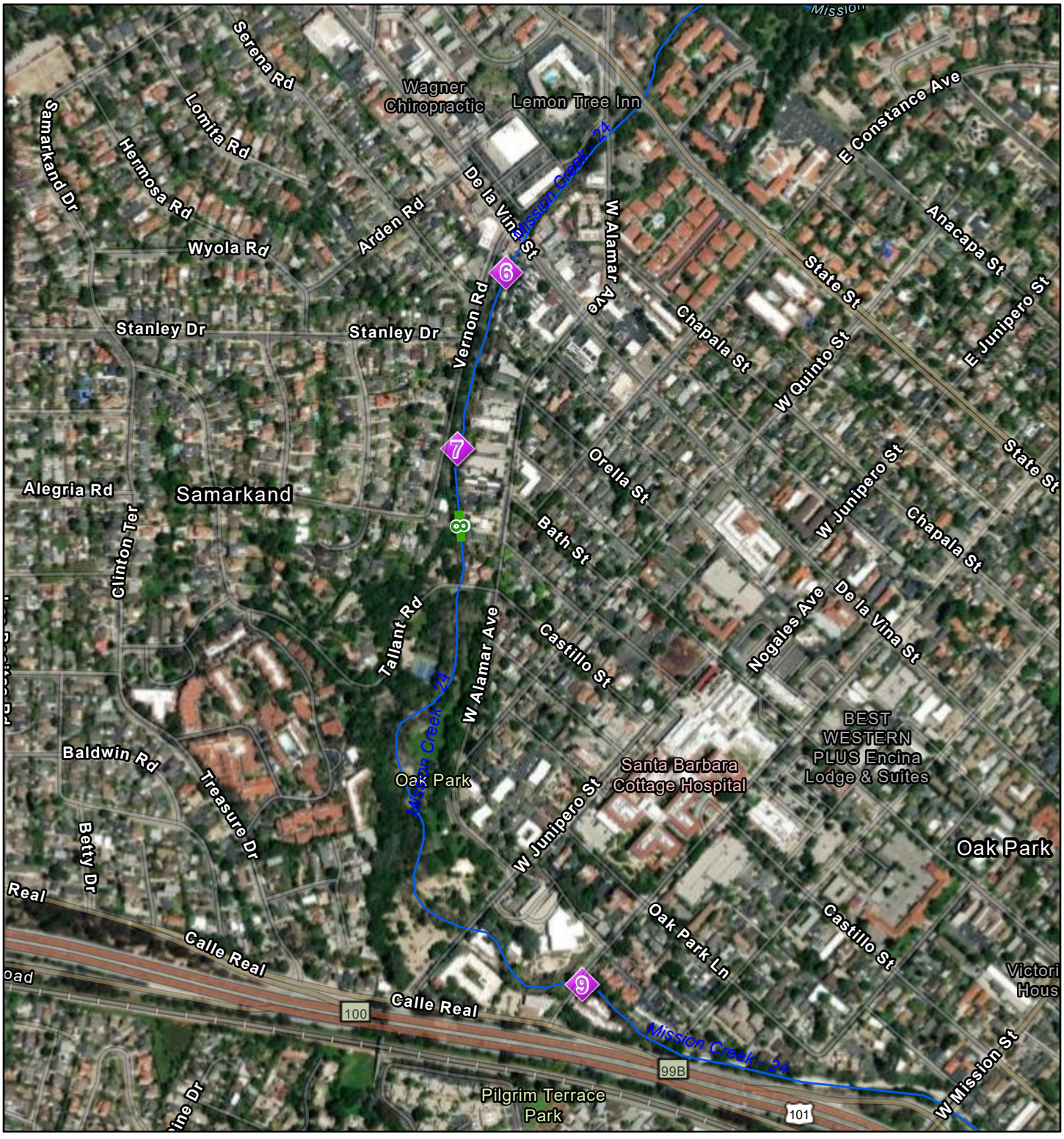
# Mission Creek - B




5/7/2024

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Sites24

Lengths24

APCreeks

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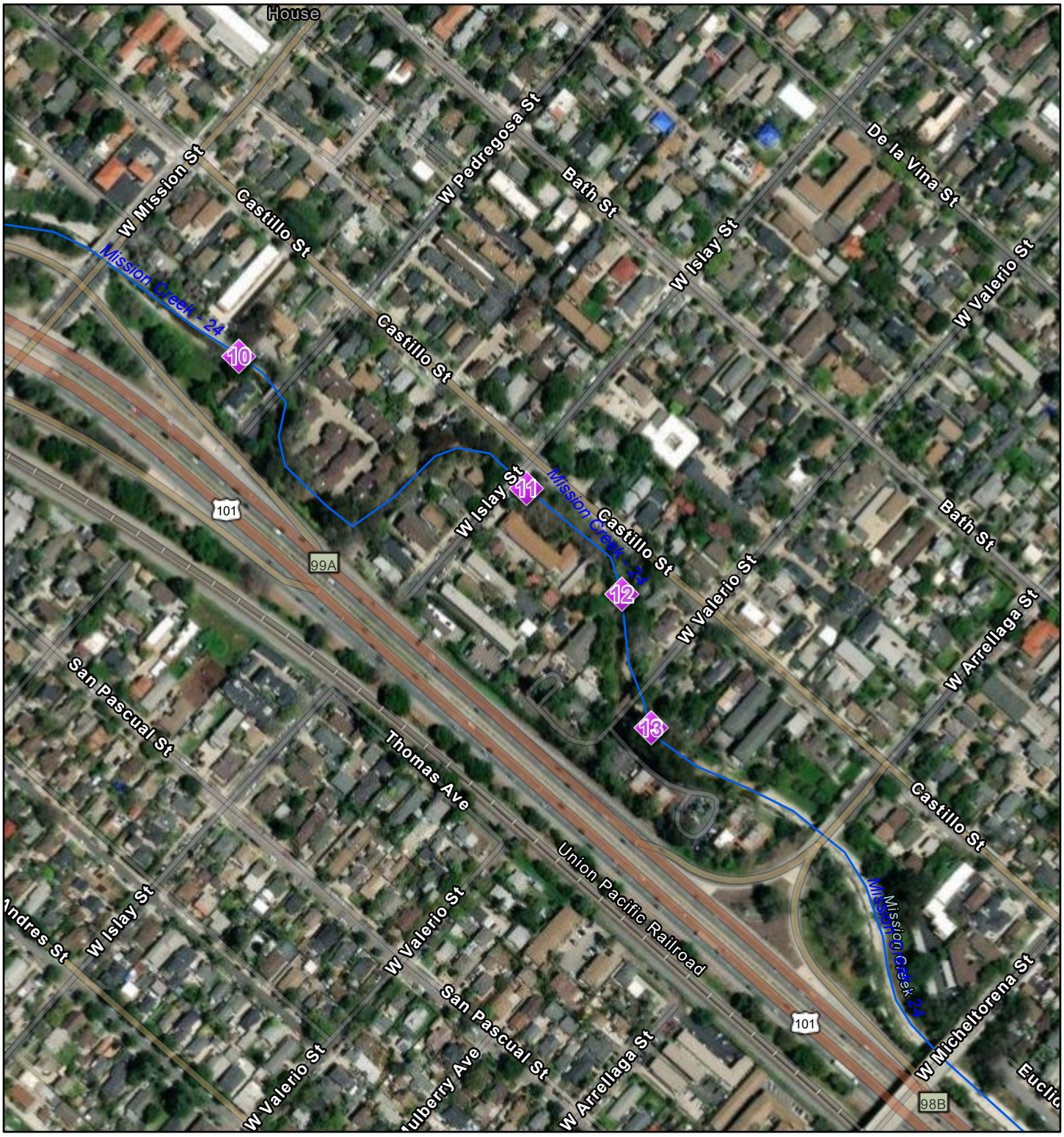
# Mission Creek - C




5/7/2024

1:4,508

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0 0.05 0.1 0.2 km

Sites24

APCreeks

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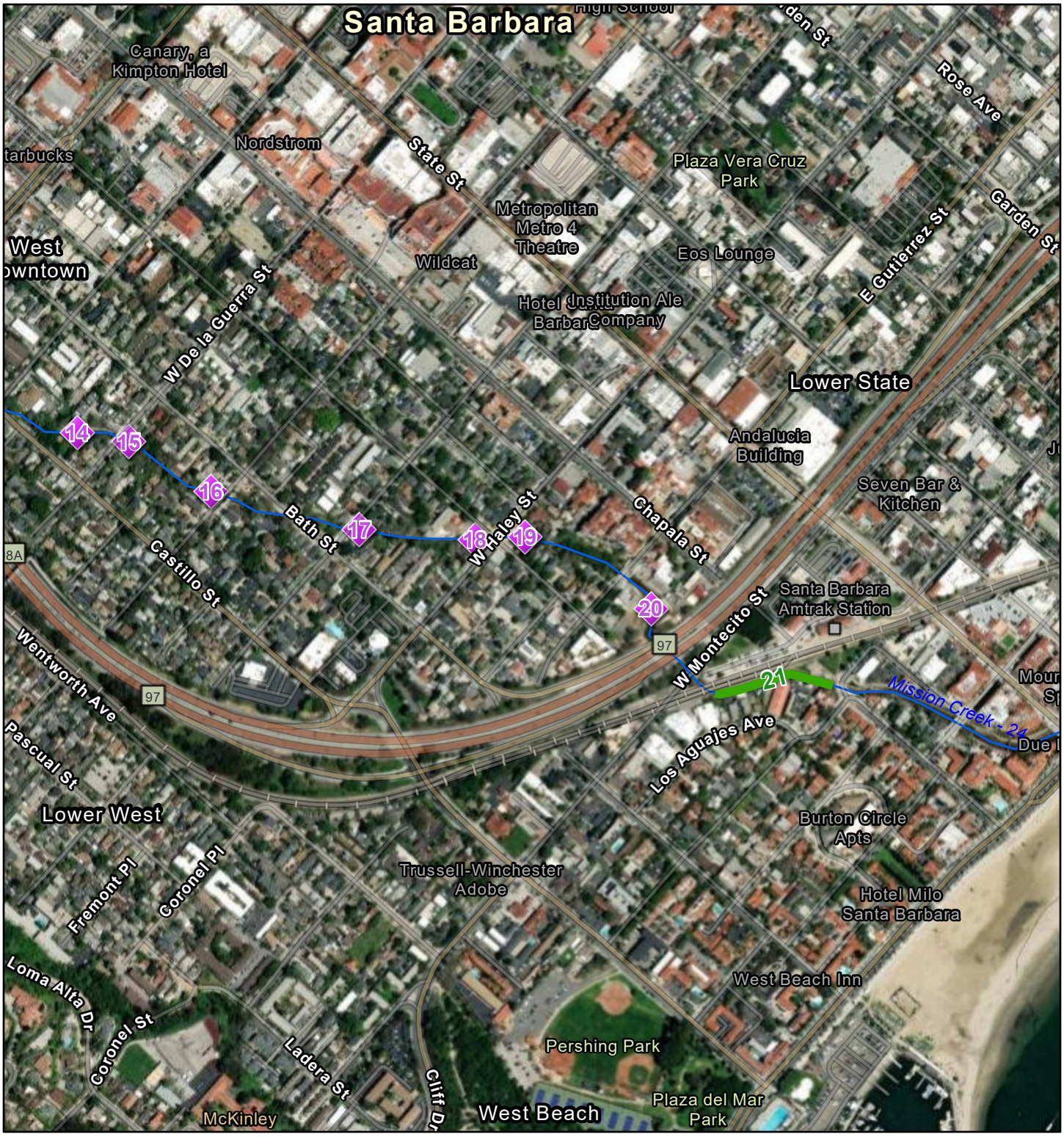
# Mission Creek - D




5/7/2024

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0 0.1 0.2 0.4 km

Sites24

Lengths24

APCreeks

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Mission Creek




**Section 5**




**Section 21**

# ROMERO CREEK ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins downstream of the intersection of Birnam Woods Drive and Sheffield Drive and terminates approximately 300 feet upstream of North Jameson Lane.

**Setting:**
Inspected on April 8, 2024.

Romero Creek originates in the foothills of the Santa Ynez Mountains and drains a 3,301-acre watershed capable of producing 4,900 cfs during a 100-year return period precipitation event. The maintenance area of Romero Creek runs along the east side of Sheffield Drive and downstream to Highway 101 in Montecito. The creek channel is incised with steep banks along many sections along Sheffield Drive. Riparian vegetation is a mix of native sycamore, willow, alder, bays, and non-native landscape specimens, nasturtium, ironweed, and watercress.

The maintenance area is within the lower watershed, which typically carries water year-round. Riffles and step pools are common along this length. Large cobbles and boulders along the creek invert are populated with islands of young willow sprouts. Adjacent land use is predominantly low-density suburban with large lots and encroaching landscape species mixed with the native riparian community.

Romero Creek is designated critical habitat for the Southern California Distinct Population Segment of steelhead (*Oncorhynchus mykiss*). The District developed a Vegetation Management Plan in 2016, as required by the National Marine Fisheries Service (NMFS), which describes the District's approach to vegetation management as it relates to the consideration of steelhead while providing flood protection.

The District's Environmental, Engineering, and Maintenance Staff have reviewed the maintenance areas within steelhead creeks to determine areas that may have more flexibility for vegetation management. Based on decades of experience in these watersheds through several major flood seasons, District staff has determined certain reaches that are particularly sensitive to obstructions and flood hazards. These reaches tend to be narrow, shallow, with many constrictions, culverts, adjacent structures, and bridges. These areas have little to no tolerance for consideration of obstructive/woody vegetation retention within the bankfull width, including Large Woody Debris, (LWD) and Key Woody Debris (KWD) and retention of large live trees in the center of the channel. The emphasis for management approach in these areas will be to maintain the bankfull width free of obstructions. The zones where LWD/KWD and the retention of live trees within the bankfull width may be considered are generally wider, deeper, and are less sensitive to constrictions. The District retains final discretion on all decisions regarding vegetation management including when and where KWD/LWD is left behind and/or installed in the channel.

Romero Creek is within the mapped zone where KWD, LWD and live trees in the middle of the bankfull width cannot be tolerated due to flooding and/or erosion concerns. Romero has a

small, shallow, narrow urban creek corridor and culvert at Highway 101 that is prone to plugging.

**Revegetation:**

Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| Romero Creek | | | | | |
|---|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | LCMB Bank Utilized (ft2) | Surplus Restoration (ft2) |
| 2007/2008 | 10 | 10 | 10 | | 0 |
| 2009/2010 | 40 | 0 | 0 | | -40 |
| 2010/2011 | 0 | 0 | 0 | | -40 |
| 2011/2012 | 0 | 0 | 0 | | -40 |
| 2013/2014 | 170 | 0 | 0 | 210 | 0 |
| 2014/2015 | 280 | 0 | 0 | 280 | 0 |
| 2015/2016 | 25 | 0 | 0 | 25 | 0 |
| 2016/2017 | 5 | 0 | 0 | 5 | 0 |
| 2017/2018 | 0 | 0 | 0 | | 0 |
| 2019/2020 | 0 | 0 | 0 | | 0 |
| 2020/2021 | 0 | 0 | 0 | | 0 |
| 2022/2023 | 445 | 0 | 0 | 445 | 0 |
| 2023/2024 | 0 | 0 | 0 | | 0 |
| 2024/2025 | 0 | 840 | - | | 0 |

**Engineering Analysis:**

Obstructive vegetation, woody debris and downed trees require removal from Romero Creek in order to protect adjacent homes, private property and access roads. The obstructive vegetation restricts the creek's ability to convey flood flows and increases the flood hazard to adjacent development. In addition, the downed trees and woody debris can be mobilized in future storm events posing a significant plugging threat to downstream public and private bridge structures. The bankfull width as determined by field indicators is approximately 15-feet. Therefore, removal of obstructive vegetation should result in a cleared cross-section that mimics the stable channel geometry found in the vicinity of the proposed project.

**Project Description:**

The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

| Section | Down tree/limb | Brushing (Area) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | | 10'x250' | | willow, sycamore | | | 0; previously mitigated | |
| **Section 2** | x | | | eucalyptus | | | | debris plug |
| **Section 3** | x | | | castor bean | | | | |
| **Section 4** | x | | | sycamore | 20 | 20 | | |
| **Section 5** | | | | | | | | bank repair; see below |
| **Section 6** | | | x | willow | | | | |
| **Section 7** | x | | | unknown | 10 | 25 | | |
| **Section 8** | | | x | willow | | | | |
| **Section 9** | x | | | willow | 6 | 20 | | |
| **Section 10** | | 5'x130' | | willow, cottonwood | | | 0; previously mitigated | |
| **Section 11** | x | | | oak | 18 | 15 | | multiple limbs |
| **Section 12** | x | | | unknown | 10 | 15 | | multiple limbs |
| **Section 13** | x | | | eucalyptus | 10 | 25 | | |
| **Section 14** | | | x | willow | | | | |
| **Section 15** | x | | | unknown | 10 | 25 | | |
| **Section 16** | x | | | eucalyptus | 4 | 25 | | multiple limbs |
| **Section 17** | x | | | eucalyptus | 14 | 25 | | |

Section 5:
Bank repair will be performed to protect an exposed HDPE pipe in an area approximately 60-feet in length and 18-feet from the top of bank to the toe of slope incorporating approximately 4-foot of footing of rock. Approximately 160 cubic yards of material including boulders and mixed grade sediment will be imported and sloped to match upstream and downstream banks. Willow cuttings will be incorporated into backfill and no hardscape will be part of the project. If water is present, a water diversion will be implemented to avoid water contact. District biologists will monitor the work to ensure a water diversion is implemented, if needed, and environmental impacts minimized. This will result in 840 square feet of surplus mitigation.

**Impact Analysis and Mitigation Measures:**
Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the

Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Romero Creek - A




5/2/2024

1:9,015

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Sites24

Lengths24

APCreeks

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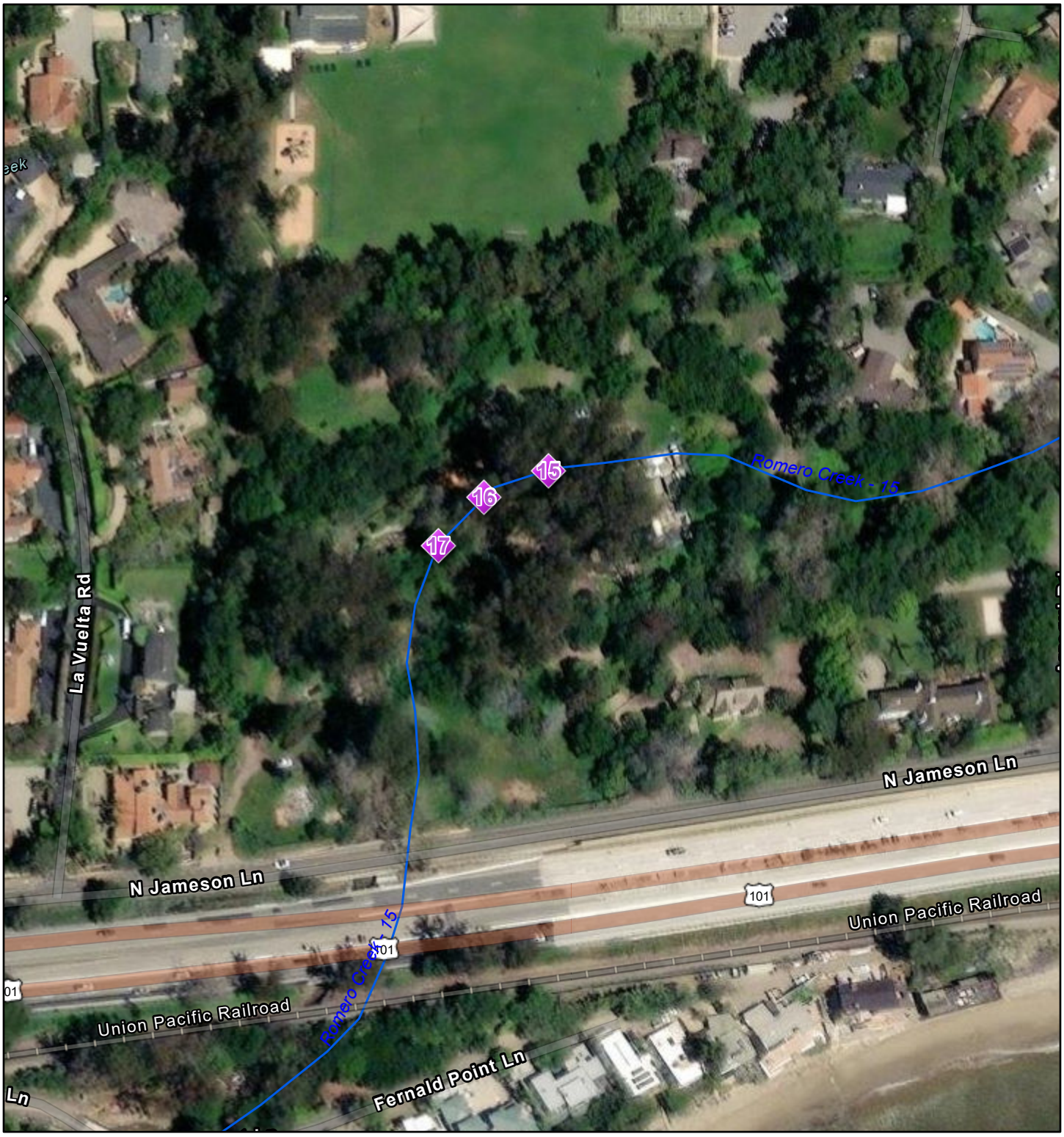
# Romero Creek - B




5/2/2024

1:2,254

0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

Sites24

APCreeks

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Romero Creek




**Section 2**



**Section 5**

# SAN ANTONIO CREEK ROUTINE MAINTENANCE ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins just downstream of the crossing in Tucker's Grove Park and continues downstream to U.S. Highway 101, at the confluence with Maria Ygnacio Creek.

**Setting:**
Inspected on March 20, 2024.

San Antonio Creek originates in the foothills of the Santa Ynez Mountains and drains a 3,230-acre watershed capable of producing 3,700 cfs during a 100-year return period precipitation event.

From San Antonio Debris Basin downstream to Cathedral Oaks Road, the creek flows through County-owned parks and open space. Common native species of the creek corridor and adjacent banks are coast live oak, sycamore, willow, elderberry, California wild rose, blackberry, and mugwort. Downstream of Cathedral Oaks Road, the condition of the creek corridor is degraded with residences and yards running up to the top of the bank. Native riparian canopy is sparse, while landscape species, vinca, and eucalyptus trees are common. Near the confluence with Maria Ygnacio Creek, the corridor is better vegetated with a native canopy of willow shrubs and trees.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| San Antonio Creek | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2002/2003 | 660 | 6,000 | 6,000 | 5,340 |
| 2006/2007 | 1,500 | 3,750 | 3,750 | 7,590 |
| 2008/2009 | 1,130 | 0 | 0 | 6,460 |
| 2009/2010 | 900; (check structure construction = 300 sq. ft at 3:1 replacement ratio) | 0 | 0 | 5,560 |
| 2012/2013 | 2,015 | 0 | 0 | 3,545 |
| 2015/2016 | 130 | 0 | 0 | 3,415 |
| 2018/2019 | 25 | 0 | 0 | 3,390 |
| 2022/2023 | 130 | 0 | 0 | 3,260 |
| 2023/2024 | 20 | 0 | 0 | 3,240 |
| 2024/2025 | 9 | 0 | - | 3,231 |

**Engineering Analysis:**
Removing obstructive vegetation from the bankfull channel cross-section (active channel) is important to reduce the debris load associated with higher flows. Obstructive vegetation growing in the active channel as well as limbs projecting into the active channel and downed trees can become mobilized during flood flows, create debris plugs, raise the water surface elevation as well as plug bridges and culverts located downstream. The bankfull discharge for this section of San Antonio Creek is approximately 270 cfs. With a velocity of approximately 6 fps and a typical depth of 3 feet, the width of clearing should be 15 feet to maintain channel equilibrium.

*As defined in "Regional Curves for Bankfull Channel Dimensions-Selected South Coast Streams", URS Corporation-March 2002.

**Project Description:**
The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

| Section | Down tree/limb | Brushing (Area) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | | | x | oak | | | | |
| **Section 2** | | | x | mulefat | | | | |
| **Section 3** | | | | | | | | see below |
| **Section 4** | x | | | cottonwood | 12 | 35 | | |
| **Section 5** | | 3'x3' | | sycamore | | | 9 | |
| **Section 6** | x | | | oak | 14 | 25 | | |
| **Section 7** | x | | | oak | 12 | 20 | | |
| **Section 8** | | 5'x2' | | mulefat | | | 0; previously mitigated | See 22/23 Annual Plan, San Antonio Creek, Section 6 |
| **Section 9** | | | x | oak | | | | |
| **Section 10** | x | | | oak | | | | |
| **Section 11** | x | | | oak | | | | |
| **Section 12** | | 30'x5' | | willow | | | 0; previously mitigated | See 22/23 Annual Plan, San Antonio Creek, Sections 17 and 19 |

Section 3:
Subsequent to the 2019 Cave Fire, a temporary pipe debris rack was installed in San Antonio Creek downstream of the San Antonio Creek Debris Basin within Tuckers Grove County Park, several hundred feet upstream of Cathedral Oaks Road. This debris rack was placed at the same location as the temporary debris rack installed subsequent to the 2009 Jesusita Fire. The debris rack was installed in trenched slurry to secure the rack. The 2019 notification that included the temporary debris rack states that the rack will be removed 3-5 years after installation, once the watershed has recovered. Per observations, the watershed has recovered to a point that the debris rack is no longer needed and should be removed.

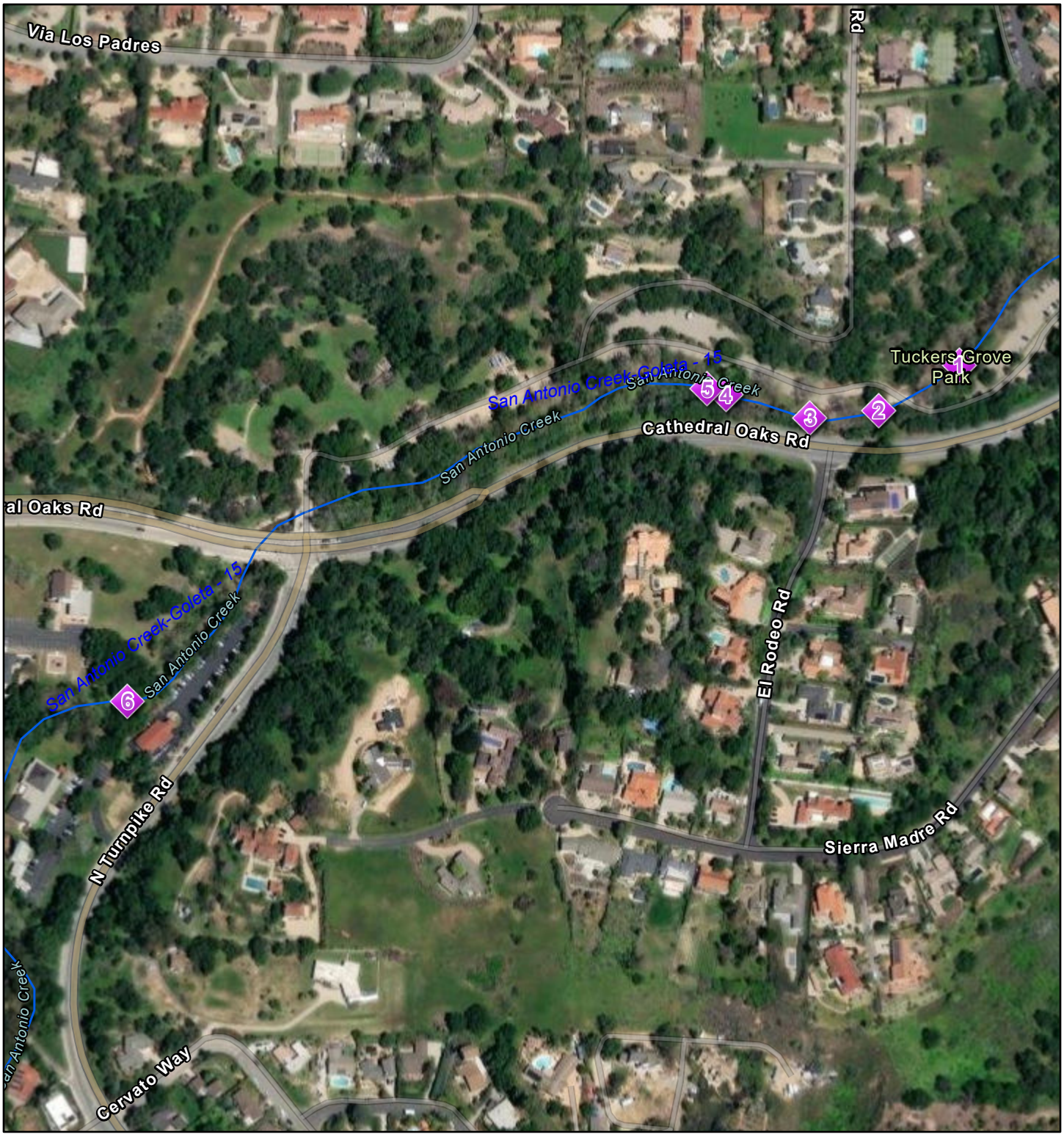
District maintenance will remove the pipe debris rack and trenched slurry and haul off site. The creek bottom will be roughened to match the upstream and downstream creek bed and

streambed material will be imported if necessary. Bank repair will be performed on the adjacent river right bank/north side of the creek. Material will be imported to reestablish the bank and the bank will be sloped to match upstream and downstream slopes. District crew will potentially revegetate the bank with native plant species.

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the “Impacts and Mitigation Measures” tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# San Antonio Creek - A




5/2/2024

1:4,508

0 0.03 0.06 0.12 mi

0 0.05 0.1 0.2 km

Sites24

APCreeks

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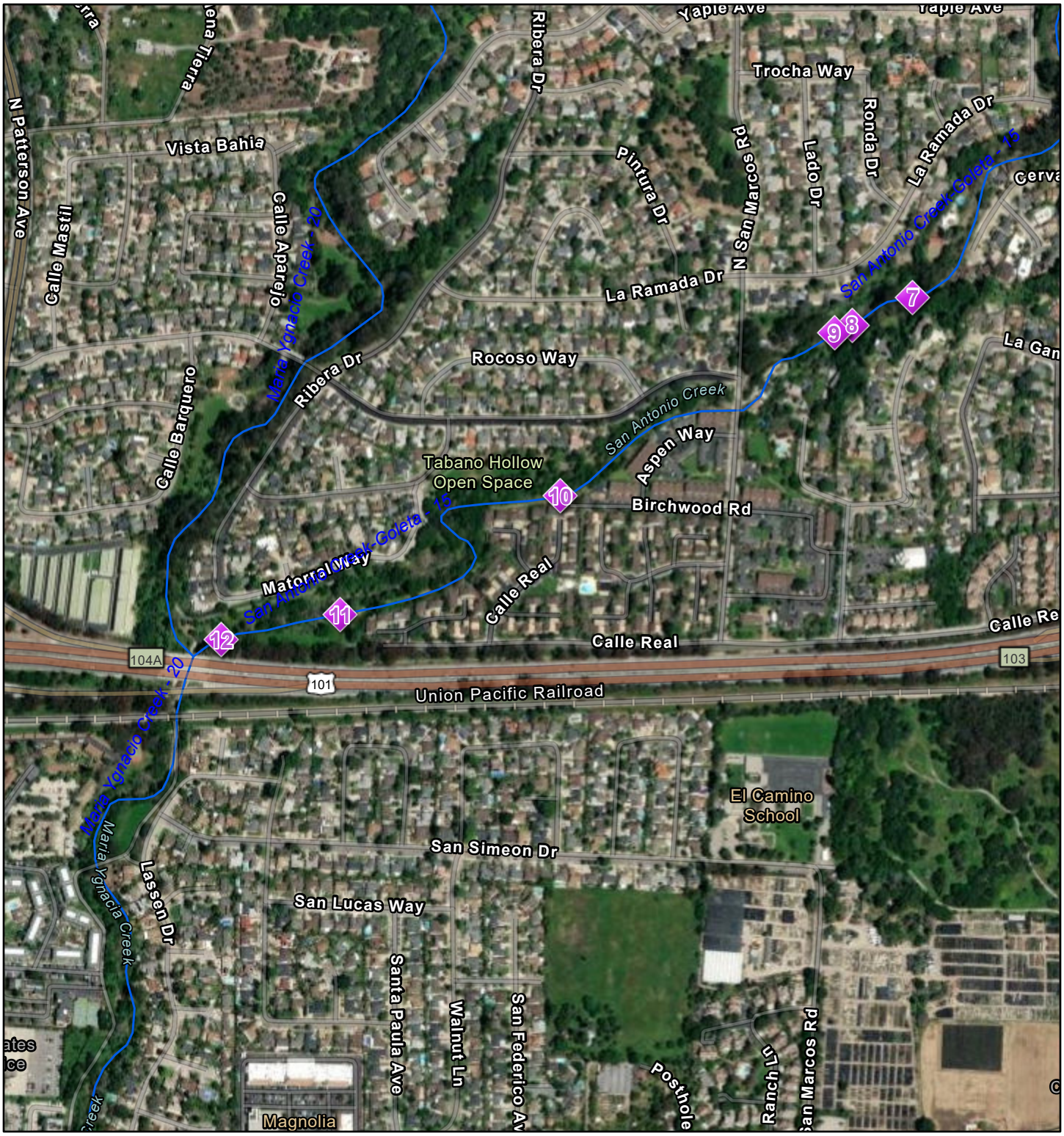
# San Antonio Creek - B




5/2/2024

1:9,015

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0 0.1 0.2 0.4 km

Sites24

APCreeks

Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS, Maxar

San Antonio Creek Goleta




**Section 3**




**Section 6**

# SAN JOSE CREEK ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins at Vineyard Road and terminates just downstream of Hollister Avenue.

**Setting:**
Inspected on April 9, 2024.

San Jose Creek originates in the foothills of the Santa Ynez Mountains and drains a 5,503-acre watershed capable of producing 5,300 cfs during a 100-year return period precipitation event.

San Jose Creek is characterized by a relatively deep channel with banks vegetated with many mature sycamores, cottonwoods, oaks and willows and a well-developed understory of poison oak, blackberry, wild rose and numerous non-native species such as nasturtium and grasses. San Jose Creek contains some of the best riparian habitat on the south coast due to the buffer zones left between the creek and residential areas. Downstream of U.S. Highway 101, the creek becomes somewhat degraded with development, lawns, or pavement all the way to the tops of the banks in some areas, along with a much narrower riparian corridor.

Downstream of Hollister Avenue, San Jose Creek transitions into a concrete lined channel and then into the Goleta Slough system.

San Jose Creek is designated critical habitat for the Southern California Distinct Population Segment of steelhead (*Oncorhynchus mykiss*). The District developed a Vegetation Management Plan in 2016, as required by the National Marine Fisheries Service (NMFS), which describes the District's approach to vegetation management as it relates to the consideration of steelhead while providing flood protection.

The District's Environmental, Engineering, and Maintenance Staff have reviewed the maintenance areas within steelhead creeks to determine areas that may have more flexibility for vegetation management. Based on decades of experience in these watersheds through several major flood seasons, District staff has determined certain reaches that are particularly sensitive to obstructions and flood hazards. These reaches tend to be narrow, shallow, with many constrictions, culverts, adjacent structures, and bridges. These areas have little to no tolerance for consideration of obstructive/woody vegetation retention within the bankfull width, including Large Woody Debris, (LWD) and Key Woody Debris (KWD) and retention of large live trees in the center of the channel. The emphasis for management approach in these areas will be to maintain the bankfull width free of obstructions. The zones where LWD/KWD and the retention of live trees within the bankfull width may be considered are generally wider, deeper, and are less sensitive to constrictions. The District retains final discretion on all decisions regarding vegetation management including when and where KWD/LWD is left behind and/or installed in the channel.

San Jose Creek is within the mapped zone where KWD, LWD and live trees in the middle of the bankfull width may be considered.

**Revegetation:**

Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| San Jose Creek | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2002/2003 | 1,380 | 12,600 | 12,600 | 11,220 |
| 2003/2004 | 2,650 | 6,200 | 6,200 | 14,770 |
| 2006/2007 | 0 | 0 | 0 | 14,770 |
| 2008/2009 | 1,525 | 0 | 0 | 13,245 |
| 2010/2011 | 1,000 | 1,000 | 1,000 | 13,245 |
| 2011/2012 | 0 | 0 | 0 | 13,245 |
| 2013/2014 | 1,145 | 0 | 0 | 12,100 |
| 2014/2015 | 200 | 0 | 0 | 11,900 |
| 2015/2016 | 135 | 0 | 4,600 | 16,365 |
| 2016/2017 | 85 | 0 | 2,300 | 18,580 |
| 2017/2018 | 0 | 0 | 0 | 18,580 |
| 2018/2019 | 0 | 6,500 | 6,500 | 25,080 |
| 2019/2020 | 70 | 0 | 3,000 | 28,010 |
| 2020/2021 | 260 | 0 | 0 | 27,750 |
| 2021/2022 | 0 | 0 | 0 | 27,750 |
| 2022/2023 | 50 | 0 | 0 | 27,700 |
| 2023/2024 | 20 | 0 | 0 | 27,680 |
| 2024/2025 | 10 | 0 | - | 27,670 |

**Engineering Analysis:**

Removing obstructive vegetation from the bankfull channel cross-section (active channel) is important to reduce the debris load associated with higher flows. Obstructive vegetation growing in the active channel as well as limbs projecting into the active channel and downed trees can become mobilized during flood flows, raising the water surface elevation as well as plugging bridges and culverts located downstream. The bankfull discharge for this portion of San Jose Creek is approximately 375 cfs. With a velocity of approximately 6 fps and a typical depth of 3 feet, the width of clearing should be 21 feet to maintain channel equilibrium.

*As defined in "Regional Curves for Bankful Channel Dimensions-Selected South Coast Streams", URS Corporation-March 2002.

**Project Description:**

The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

| Section | Down tree/limb | Brushing (Area) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | x | | | bay | 12 | 25 | | debris plug |
| **Section 2** | | | x | arundo | | | | |
| **Section 3** | | | x | arundo | | | | |
| **Section 4** | | | x | willow | | | | |
| **Section 5** | | | x | arundo | | | | |
| **Section 6** | x | | | willow | 8 | 25 | | |
| **Section 7** | | | x | arundo | | | | |
| **Section 8** | x | | | willow | | | | |
| **Section 9** | | | x | willow, arundo | | | | |
| **Section 10** | x | | | cottonwood | | | | |
| **Section 11** | x | | | eucalyptus | | | | |
| **Section 12** | | 5'x10' | | willow | | | 10 | |
| **Section 13** | x | | | sycamore | 8 | 25 | | |
| **Section 14** | | | x | willow | | | | |
| **Section 15** | x | | | willow | 10 | 25 | | |
| **Section 16** | x | | | ash | 20 | 12 | | |
| **Section 17** | x | | | willow | 10 | 12 | | |
| **Section 18** | | | x | arundo | | | | |
| **Section 19** | x | | | willow | 10 | 20 | | |
| **Section 20** | | | x | willow | | | | |
| **Section 21** | x | | x | willow, arundo | | | | |
| **Section 22** | | | x | willow; ash | | | | |
| **Section 23** | | | x | arundo | | | | |
| **Section 24** | | | x | willow | | | | |
| **Section 25** | | | x | arundo | | | | |
| **Section 26** | x | | | unknown | 10 | 12 | | |
| **Section 27** | | | | | | | | see below |
| **Section 28** | x | | | willow | | | | |
| **Section 29** | x | | | ash | 10 | 25 | | |

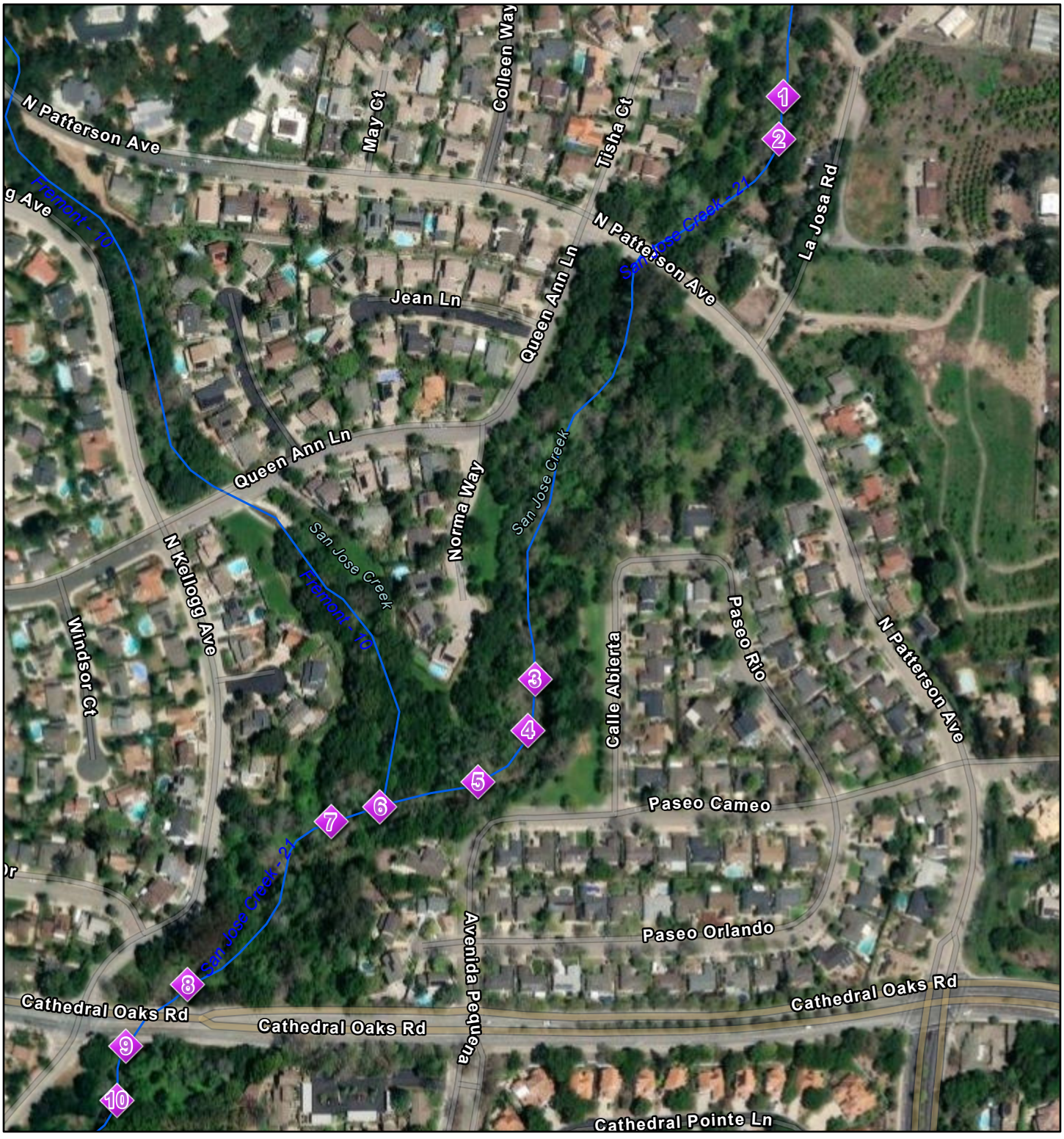
Section 27:

The pipe and wire immediately upstream of Calle Real has become exposed and the downstream portion of the pipe and wire is broken and catching debris. District maintenance will asses the pipe and wire and cut out sections as needed.

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the “Impacts and Mitigation Measures” tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# San Jose Creek - A




5/3/2024

1:4,508

0 0.03 0.06 0.12 mi

0 0.05 0.1 0.2 km

Sites24

APCreeks

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# San Jose Creek - B




5/3/2024

1:4,508

0 0.03 0.06 0.12 mi

0 0.05 0.1 0.2 km

Sites24

APCreeks

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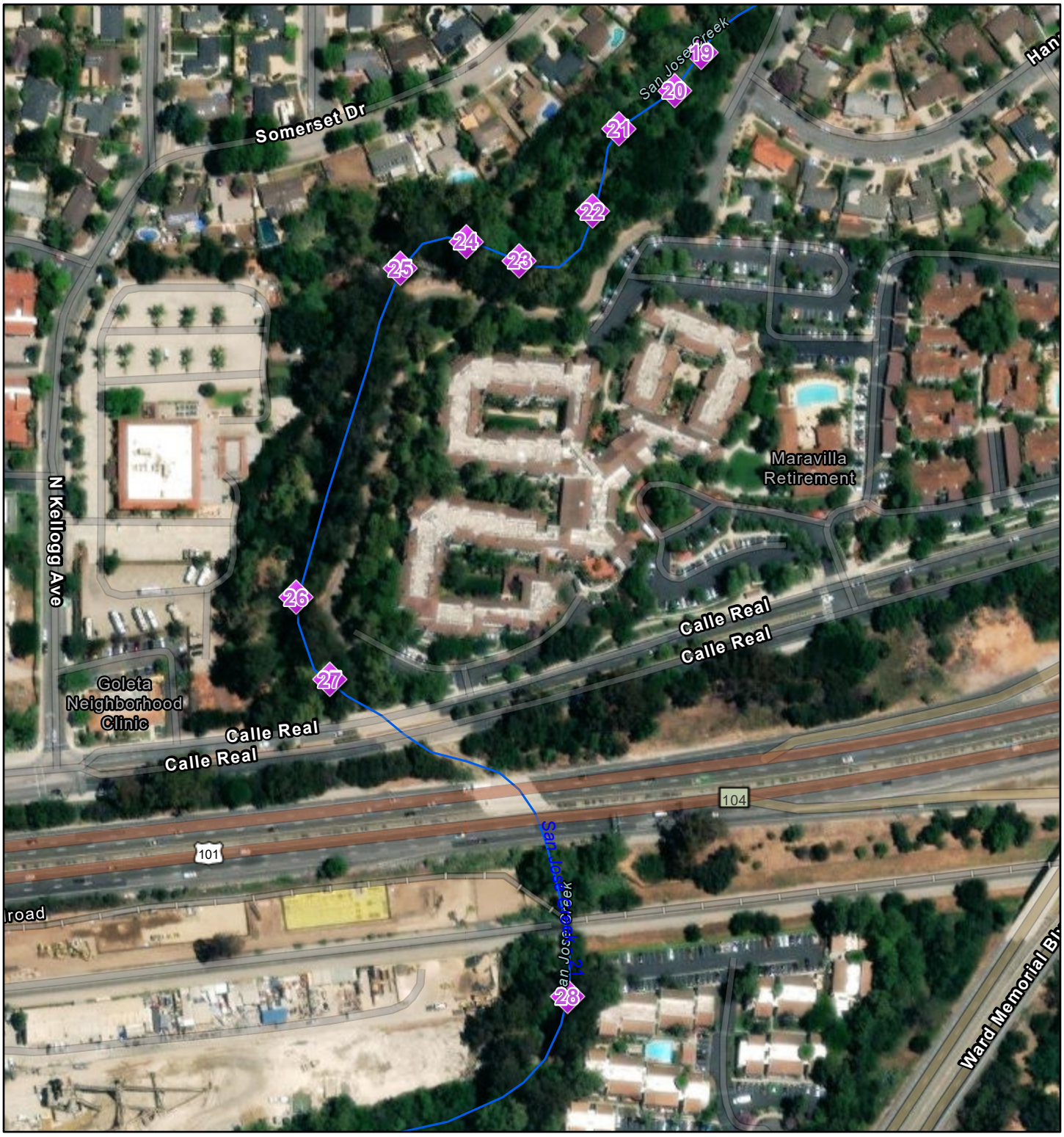
# San Jose Creek - C




5/3/2024

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Sites24

APCreeks

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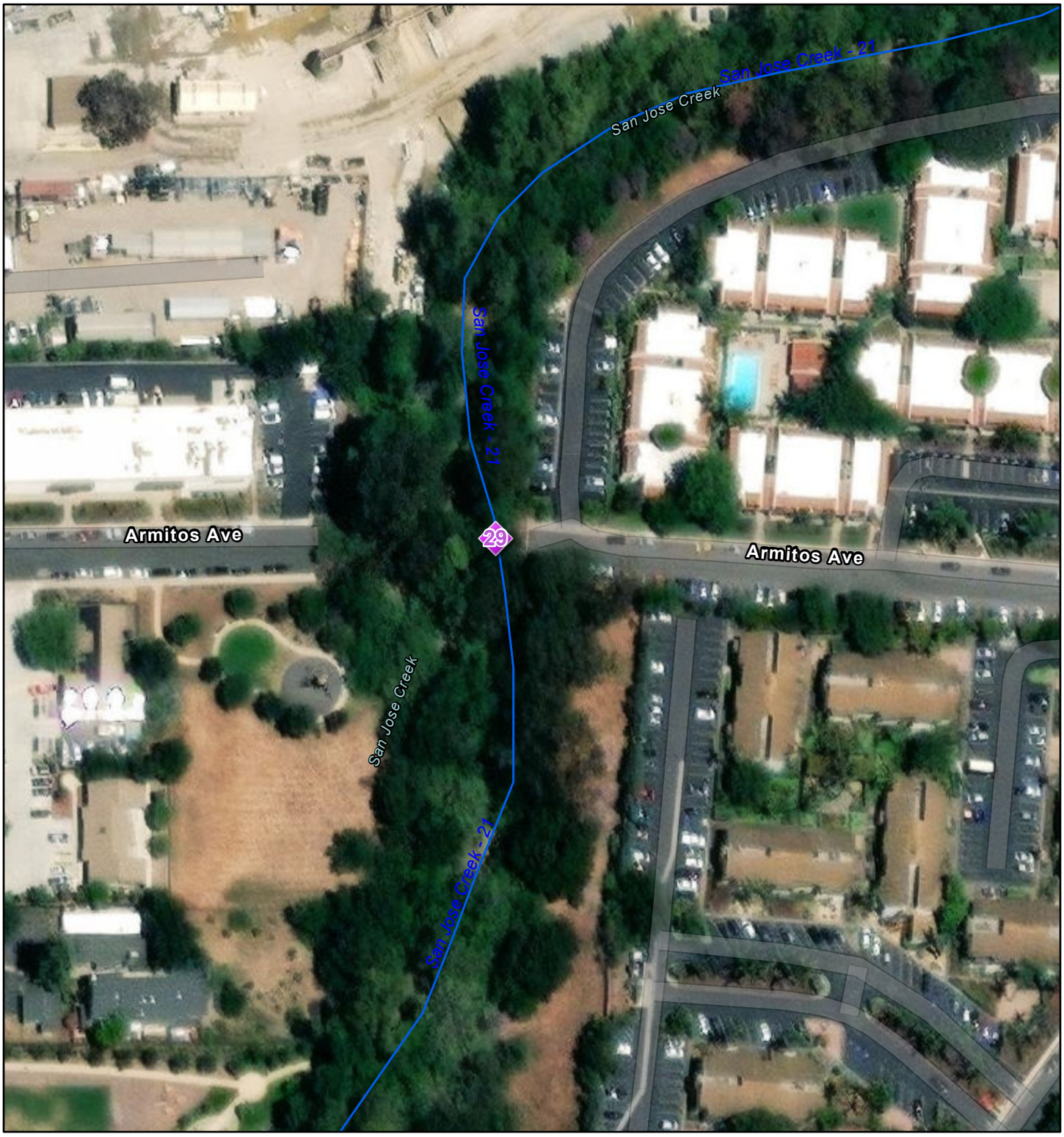
# San Jose Creek - D




5/3/2024

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0 0.02 0.04 0.07 km

Sites24

APCreeks

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San Jose Creek




**Section 11**




**Section 27**

# SAN PEDRO CREEK ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project starts at Cathedral Oaks Road and terminates near the intersection of Fairview Road and Matthews Street.

**Setting:**
Inspected on April 3 and May 22 2024.

San Pedro Creek originates in the foothills of the Santa Ynez Mountains and drains a 4,555-acre watershed capable of producing 6,200 cfs during a 100-year return period precipitation event.

The maintenance area of San Pedro Creek runs from Cathedral Oaks Blvd near Carlo Drive, through residential Goleta, under U.S. Highway 101, and along Fairview Avenue near the Santa Barbara Airport. The upper portion of the maintenance area near Cathedral Oaks Blvd is characterized by steep banks with a well-developed canopy of willow, cottonwood, and sycamore along with some non-native eucalyptus and pepper trees. Several hundred feet downstream of Covington Way, the natural bottom of the creek feeds into a concrete trapezoidal channel for several hundred feet. After flowing under U.S. Highway 101, the channel bottom returns to a natural bottom. From the railroad bridge downstream to Hollister Avenue and beyond, the creek banks are sparsely vegetated with willows and cottonwoods.

San Pedro Creek is designated critical habitat for the Southern California Distinct Population Segment of steelhead (*Oncorhynchus mykiss*). The District developed a Vegetation Management Plan in 2016, as required by the National Marine Fisheries Service (NMFS), which describes the District's approach to vegetation management as it relates to the consideration of steelhead while providing flood protection.

The District's Environmental, Engineering, and Maintenance Staff have reviewed the maintenance areas within steelhead creeks to determine areas that may have more flexibility for vegetation management. Based on decades of experience in these watersheds through several major flood seasons, District staff has determined certain reaches that are particularly sensitive to obstructions and flood hazards. These reaches tend to be narrow, shallow, with many constrictions, culverts, adjacent structures, and bridges. These areas have little to no tolerance for consideration of obstructive/woody vegetation retention within the bankfull width, including Large Woody Debris, (LWD) and Key Woody Debris (KWD) and retention of large live trees in the center of the channel. The emphasis for management approach in these areas will be to maintain the bankfull width free of obstructions. The zones where LWD/KWD and the retention of live trees within the bankfull width may be considered are generally wider, deeper, and are less sensitive to constrictions. The District retains final discretion on all decisions regarding vegetation management including when and where KWD/LWD is left behind and/or installed in the channel.

San Pedro Creek is within the mapped zone where KWD, LWD and live trees in the middle of the bankfull width may be considered.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| San Pedro Creek | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2002/2003 | 6,680 | 8,620 | 8,620 | 1,940 |
| 2003/2004 | 100 | 0 | 0 | 1,840 |
| 2004/2005 | 320 | 2,400 | 2,400 | 3,920 |
| 2005/2006 | 350 | 1,600 | 1,600 | 5,170 |
| 2007/2008 | 120 | 0 | 0 | 5,050 |
| 2008/2009 | 225 | 0 | 0 | 4,825 |
| 2009/2010 | 200 | 1,000 | 1,000 | 5,625 |
| 2010/2011 | 0 | 320 | 320 | 5,945 |
| 2012/2013 | 600 | 0 | 0 | 5,345 |
| 2013/2014 | 100 | 0 | 0 | 5,245 |
| 2015/2016 | 320 | 0 | 0 | 4,925 |
| 2016/2017 | 100 | 0 | 0 | 4,825 |
| 2017/2018 | 50 | 0 | 0 | 4,775 |
| 2018/2019 | 0 | 0 | 700 | 5,475 |
| 2019/2020 | 100 | 0 | 500 | 5,875 |
| 2020/2021 | 350 | 0 | 0 | 5,525 |
| 2021/2022 | 100 | 0 | 0 | 5,425 |
| 2023/2024 | 110 | 0 | 0 | 5,315 |
| 2024/2025 | 0 | 0 | 0 | 5,315 |

**Engineering Analysis:**
The culvert on San Pedro Creek at Calle Real is susceptible to plugging causing significant flooding of the adjacent residential areas. In an effort to reduce the potential for plugging the culvert, obstructive vegetation that could be mobilized during high flows should be removed. The bankfull discharge* for San Pedro Creek downstream of Cathedral Oaks Road is approximately 234 cfs. With a velocity of approximately 6 fps and a typical depth of 2.5 feet, the width of clearing should be 16 feet to maintain channel equilibrium.

The creek downstream of the UPRR track is relatively flat and prone to sedimentation. The area in the vicinity of Fairview and Hollister Avenue is very prone to siltation and flooding (including major portions of Old Town Goleta) so maintaining maximum hydraulic capacity is essential. Maintaining the channel bed clear of vegetation including breaking up any root mass that develops will help maintain capacity as well as provide for efficient sediment transport. Due to lower velocities associated with the relatively flat slope in this section, the bankfull channel width is approximately 20 feet upstream of Hollister. The bankfull channel width is approximately 34 feet downstream of Hollister due to the increase in watershed area including Las Vegas Creek.

As defined in "Regional Curves for Bankfull Channel Dimensions-Selected South Coast Streams", URS Corporation-March 2002.

**Project Description:**

The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

| Section | Down tree/limb | Brushing (area) | Limbing | Species | DBH (in) | Length (ft) | Mitigation (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | | 100'x15' | | cottonwood sprouts | | | 0 | previously mitigated, 2023-2024 |
| **Section 2** | x | | | willow | | | | |
| **Section 3** | | 60'x5' | | cottonwood | | | 0 | previously mitigated, 2023-2024 |
| **Section 4** | | | x | willow | | | | |
| **Section 5** | x | | | sycamore | 36 | 35 | | multiple trunks |
| **Section 6** | x | | | willow | 10 | 20 | | |
| **Section 7** | | x | | willow sprouts | | | 0 | Previously mitigated as part of Las Vegas / San Pedro improvement project |
| **Section 8** | | | | | | | Previously mitigated 23-24 AP Section 5 | see below |

Section 5:

This Section is a recurring project that is performed nearly every year as part of routine maintenance. Beginning at the UPRR Bridge and continuing downstream to Matthews Street, the channel bed will be disced to improve sediment transport through this reach. Discing involves a tractor or light dozer pulling a blade over the compacted sediment to loosen accumulated rocks and sediment. Upstream of the confluence with Las Vegas creek, the channel bed will be disced a width of approximately 20 feet. Just downstream of the confluence, the disced width will be 40 feet and then gradually tapers back down to 20 feet towards Matthews Street. The creek widens into a sediment-retention basin immediately downstream of James Fowler Road and dislodging sediment in this section will facilitate sediment transport to the basin where it can be effectively managed, as part of the Goleta Slough Dredging Program, to prevent backing up the Goleta Slough system.

While the channel is mostly dry during the summer months some water is released by the discing operation so turbidity will be managed by creating a temporary diversion trench along one side of the channel to contain any water before discing begins. Haybales, geotextile fabric and/or silt fabric will be placed at the downstream end of the project area to retain water. The haybales/silt fabric will be left in place at least one day after the completion of the project to allow suspended sediments to settle out of the water column.

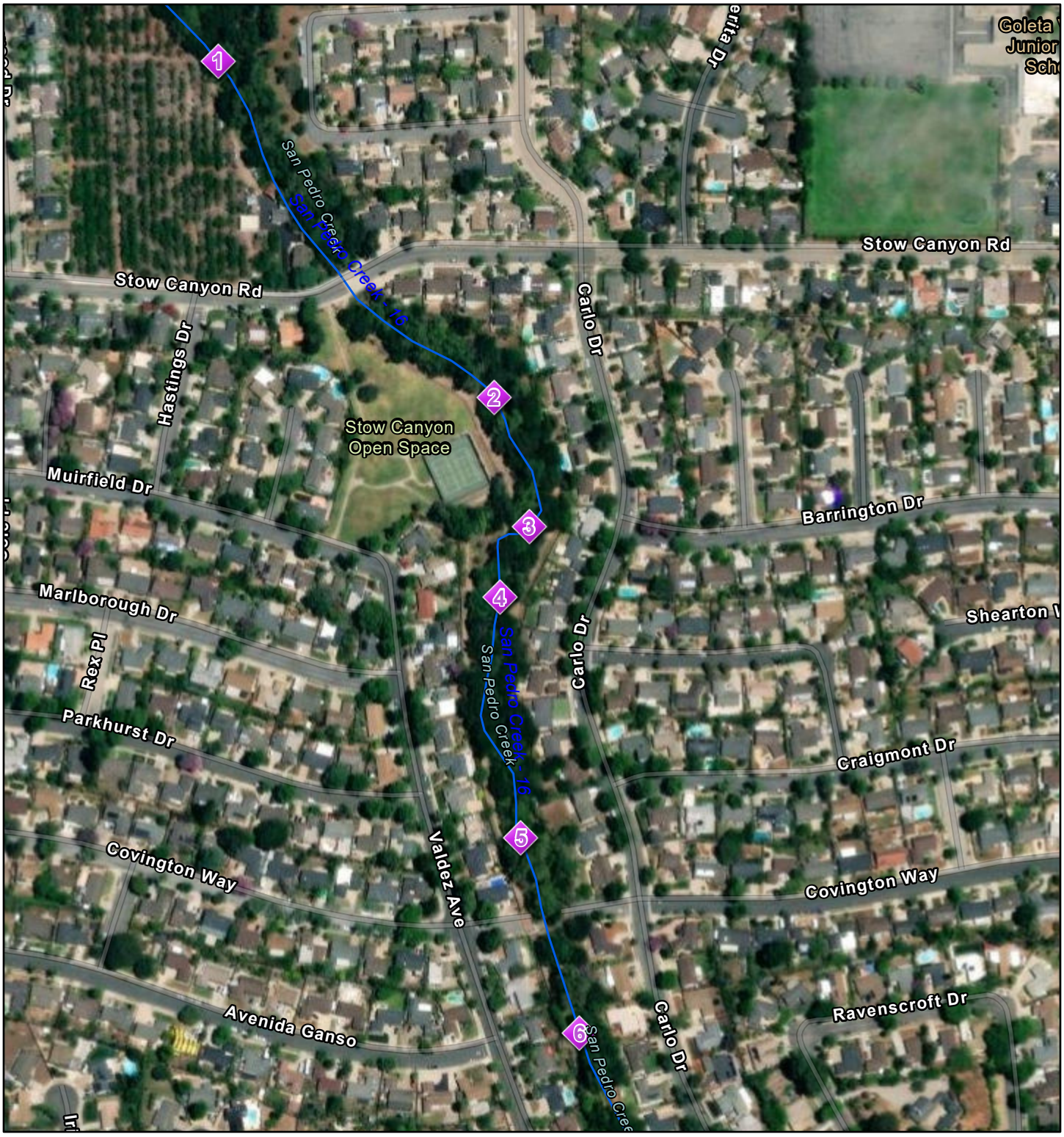
An herbicide registered for aquatic use may be applied to silt trapping vegetation in the streambed to inhibit regeneration. Herbicide may be applied in the spring and summer. The creek bed consists of recently deposited sandy sediment with almost no vegetation. A few patches of non-native rabbitsfoot grass are present, and some willows and cocklebur have sprouted around a culvert outlet connection to the channel. Less than 1 percent of the work area has native vegetation present. The work will result in a total of up to 40 square feet of temporal impacts to native vegetation.

This area is typically maintained every year as standard practice to facilitate drainage under Highway 101, Hollister Avenue, and the Union Pacific Railroad tracks.

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the “Impacts and Mitigation Measures” tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# San Pedro Creek - A




5/6/2024

1:4,508

0 0.03 0.06 0.12 mi

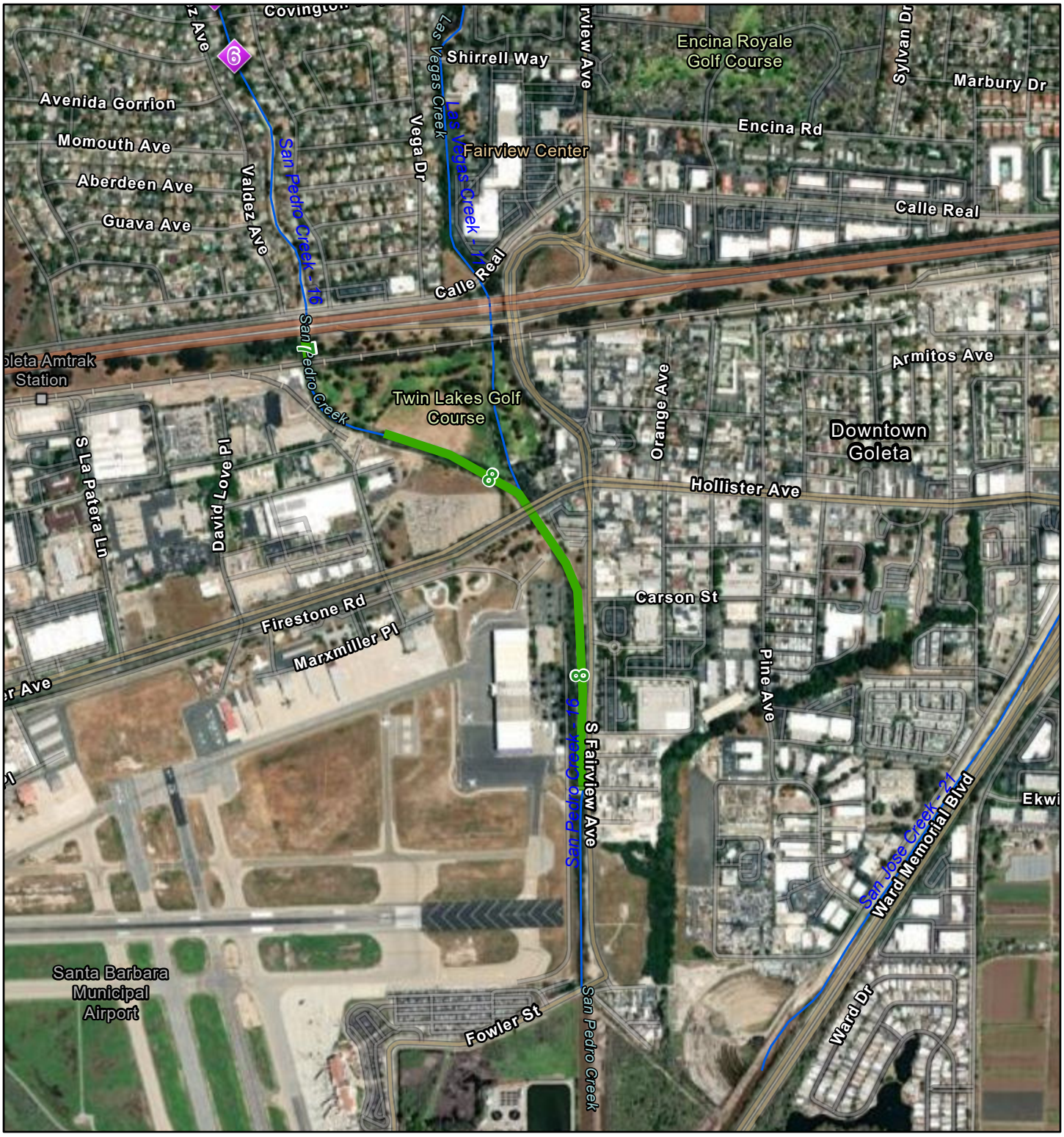
0 0.05 0.1 0.2 km

Sites24

APCreeks

Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS, Maxar

# San Pedro Creek - B




5/22/2024

Lengths24

Sites24

APCreeks

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0 0.1 0.2 0.4 mi

0 0.15 0.3 0.6 km

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San Pedro Creek




**Section 5**




**Section 7**

# SAN YSIDRO CREEK ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins within Randall Road Debris Basin and terminates at U.S. Highway 101.

**Setting:**
Inspected on April 8, April 29, and May 16, 2024.

San Ysidro Creek originates in the foothills of the Santa Ynez Mountains and drains a 2,621-acre watershed capable of producing 3,500 cfs during a 100-year return period precipitation event.

At the time of the field visit, flowing water was present through the entire maintenance area of the creek. It is expected that most of the maintenance area will dry up during the summer months.

The channel and lower banks are mostly denuded of any mature, established vegetation due to the January 9, 2018 debris flow and subsequent extreme flooding in 2023 and 2024, although some native vegetation is beginning to resprout.

The substrate consists of small to moderate sized boulders mixed with sand and silt. The land surrounding the project reach is slightly disturbed open space, agriculture fields that are part of the Ennisbrook subdivision and other light density development. In many cases, the overbank area provides excellent oak/sycamore riparian corridor habitat with a diverse understory.

San Ysidro Creek is designated critical habitat for the Southern California Distinct Population Segment of steelhead (*Oncorhynchus mykiss*). The District developed a Vegetation Management Plan in 2016, as required by the National Marine Fisheries Service (NMFS), which describes the District's approach to vegetation management as it relates to the consideration of steelhead while providing flood protection.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| San Ysidro Creek | | | | | |
|---|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | LCMB Bank Utilized (ft2) | Surplus Restoration (ft2) |
| 2004/2005 | 4,200 | 4,200 | 4,200 | | 0 |
| 2008/2009 | 490 | 1,000 | 0 | | -490 |
| 2010/2011 | 100 | 1,000 | 0 | | -590 |
| 2011/2012 | 0 | 0 | 1,000 | | 410 |
| 2012/2013 | 910 | 0 | 0 | | -500 |
| 2013/2014 | 0 | 0 | 0 | 400 | -100 |
| 2014/2015 | 135 | 0 | 0 | 135 | -100 |
| 2015/2016 | 0 | 0 | 0 | 100 | 0 |

| San Ysidro Creek | | | | | |
|---|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | LCMB Bank Utilized (ft2) | Surplus Restoration (ft2) |
| 2016/2017 | 40 | 0 | 0 | 40 | 0 |
| 2019/2020 | 50 | 0 | 0 | 50 | 0 |
| 2020/2021 | 65 | 0 | 0 | 65 | 0 |
| 2021/2022 | 1,465 | 0 | 0 | 1,465 | 0 |
| 2023/2024 | 0 | 0 | 0 | 0 | 0 |
| 2024/2025 | 0 | 0 | 0 | 0 | 0 |

## Engineering Analysis:

Several culverts on San Ysidro Creek at susceptible to plugging causing significant flooding of the adjacent areas as well as U.S. Highway 101. In an effort to reduce the potential for plugging the culverts, downed trees, boulders, sediment, and obstructive vegetation that could be mobilized during high flows should be removed. The bankfull discharge* for San Ysidro Creek downstream of the Glenn Oaks subdivision (downstream of Each Valley Road) is approximately 258 cfs. With a velocity of approximately 6 fps and a typical depth of 2.5 feet, the width of clearing should be 17 feet to maintain channel equilibrium.

*As defined in "Regional Curves for Bankfull Channel Dimensions-Selected South Coast Streams", URS Corporation-March 2002.

## Project Description:

The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

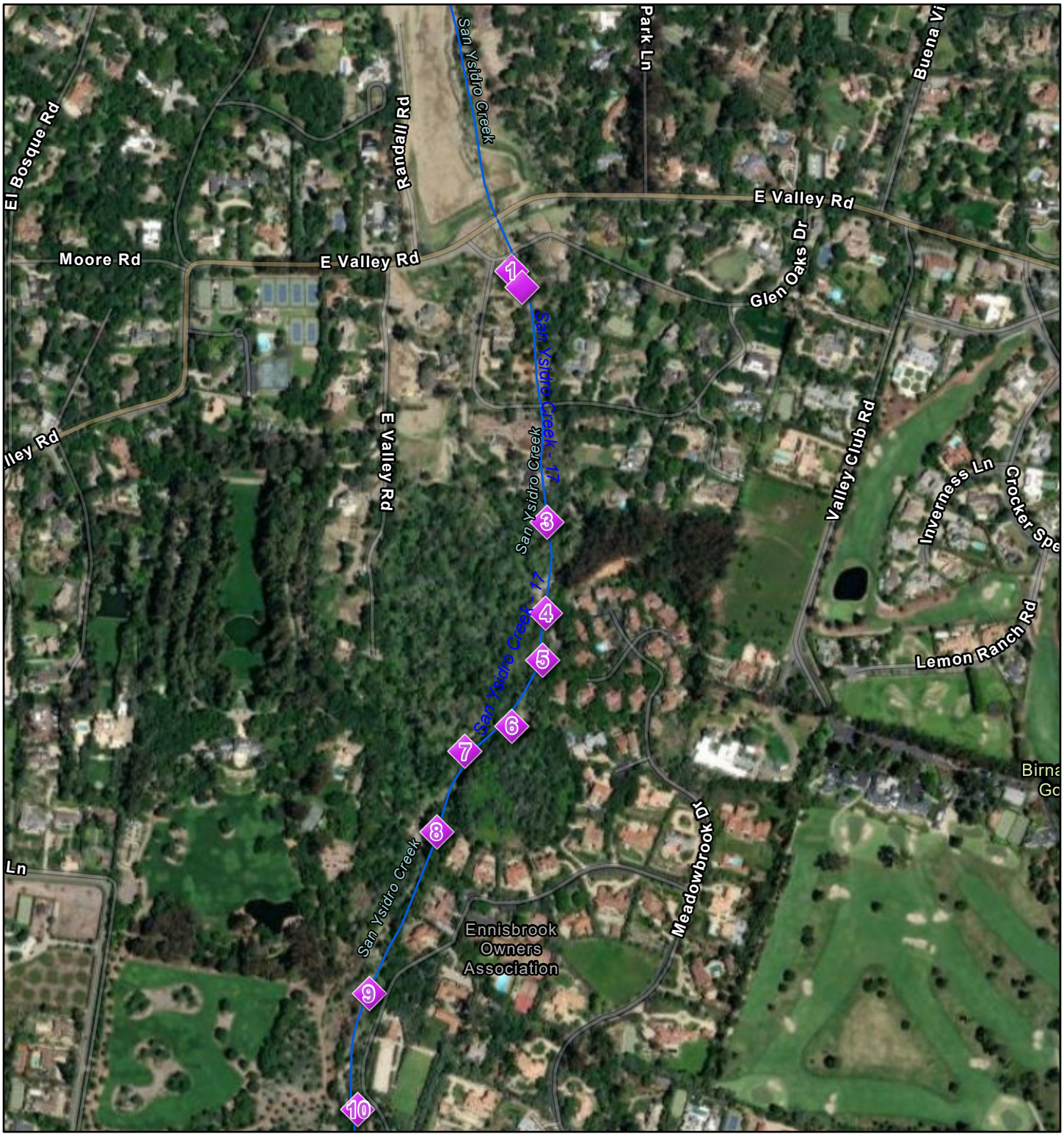
| Section | Down tree/limb | Brushing (Area) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | x | | | willow | | | | |
| **Section 2** | | | x | laurel sumac | | | | |
| **Section 3** | x | | | eucalyptus | | | | |
| **Section 4** | | | x | willow | 3 | 15 | | |
| **Section 5** | x | | | acacia | 14 | 35 | | leave root wad and partial tree if feasible |
| **Section 6** | x | | | willow | 12 | 15 | | |
| **Section 7** | x | | | oak | 16 | 20 | | |
| **Section 8** | | | x | willow | | | | |
| **Section 9** | | | x | willow | | | | |
| **Section 10** | | | x | willow | | | | |
| **Section 11** | x | | | laurel sumac | | | | |
| **Section 12** | | | x | laurel sumac, willow | | | | |
| **Section 13** | x | | | sycamore | | | | debris plug |
| **Section 14** | x | | | willow | | | | |
| **Section 15** | | | | | | | | see below |
| **Section 16** | x | | | willow | | | | 2 willows |

Section 15:
Maintenance will be done in a section upstream of Jameson Lane and U.S. Highway 101 near La Vuelta Road. The work will consist of shaping sediment (boulders and cobble) that has built up in the channel at a constricted reach. The work area is approximately 17 feet wide and approximately 120 feet long, and does not involve any import or export of material or vegetation. Sediment in the center of the channel will be re-graded and shaped to restore a 10-foot wide roughened channel in the center of the creek corridor. The sediment will be moved from the center of the channel to the western bank at a 2:1 slope. Some boulders may be placed to fill eroded pockets on the banks of the west or east side of the channel. The work will be performed by an excavator staged on dry land and the movement of boulders and cobble will not require intrusion into the wetted channel, if water persists during the late summer work season it will be avoided. The channel will be left in a roughened-rock condition using the existing streambed material.

Access will be taken from an existing road on the west side of the creek. The District Biologist will conduct pre-project surveys, inspect for fish, and monitor the work. The work area consists of bare sediment, boulders, and cobble, there will be no impacts to native vegetation. The project will be accomplished in approximately 2-3 days.

**Impact Analysis and Mitigation Measures:**
Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# San Ysidro Creek - A




5/16/2024

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Sites24

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# San Ysidro Creek - B




5/16/2024

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Sites24

APCreeks

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San Ysidro Creek




**Section 15**

# TORO CANYON CREEK ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins at East Valley Road and terminates at Via Real.

**Setting:**
Inspected on April 9, 2024.

East and West Toro Canyon Creeks originate in the foothills of the Santa Ynez Mountains, drain 869 and 986-acre watersheds respectively, and are capable of producing 1800 and 1900 cfs respectively during a 100-year return period precipitation event.

The maintenance area runs from upper Toro Canyon Road at Highway 192, downstream to the Highway 101 culvert. The west fork joins Toro Creek within the maintenance area. Toro Creek featured a dense and well-developed canopy of mature willows, sycamore, oak, and alder prior to the January 9, 2018 debris flow. Post debris flow, the banks were mostly devoid of any mature native vegetation. Native species such as canyon sunflower, blackberry, and mugwort have grown back along with non-native and landscape species encroaching from the adjacent residences and agricultural properties. The native over story vegetation remains mostly intact. The substrate consists of large cobble and boulders.

**Revegetation:**
Since the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District has been tracking and reporting the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included in the Annual Routine Maintenance Plan addenda to more easily display and track the District's restoration efforts.

| Toro Creek | | | | | |
|---|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | LCMB Bank Utilized (ft2) | Surplus Restoration (ft2) |
| 2002/2003 | 985 | 4,020 | 4,020 | | 3,035 |
| 2003/2004 | 400 | 0 | 0 | | 2,635 |
| 2006/2007 | 4,070 | 2,500 | 0 | | -1,435 |
| 2009/2010 | 200 | 2,000 | 2,000 | | 365 |
| 2011/2012 | 0 | 0 | 0 | | 365 |
| 2013/2014 | 200 | 0 | 0 | | 165 |
| 2014/2015 | 110 | 0 | 0 | | 55 |
| 2015/2016 | 0 | 0 | 0 | | 55 |
| 2017/2018 | 40 | 0 | 0 | | 15 |
| 2019/2020 | 0 | 0 | 0 | | 15 |
| 2020/2021 | 90 | 0 | 0 | 75 | 0 |
| 2022/2023 | 460 | 0 | 0 | 460 | 0 |
| 2023/2024 | 0 | 0 | 0 | 0 | 0 |
| 2024/2025 | 50 | 0 | 0 | 50 | 0 |

**Engineering Analysis:**

Removing obstructive vegetation from the bankfull* channel cross-section (active channels) is important to reduce the debris load associated with higher flows. Obstructive vegetation growing in the active channel as well as limbs projecting into the active channel and downed trees can become mobilized during flood flows, raising the water surface elevation as well as plugging bridges and culverts located downstream. The bankfull discharge for this portion of Toro Creek is approximately 140 cfs. With a velocity of approximately 6 fps and a typical depth of 1.5 feet, the width of clearing should be 16 feet to maintain channel equilibrium.

*As defined in "Regional Curves for Bankfull Channel Dimensions-Selected South Coast Streams", URS Corporation-March 2002.

**Project Description:**

The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary section.

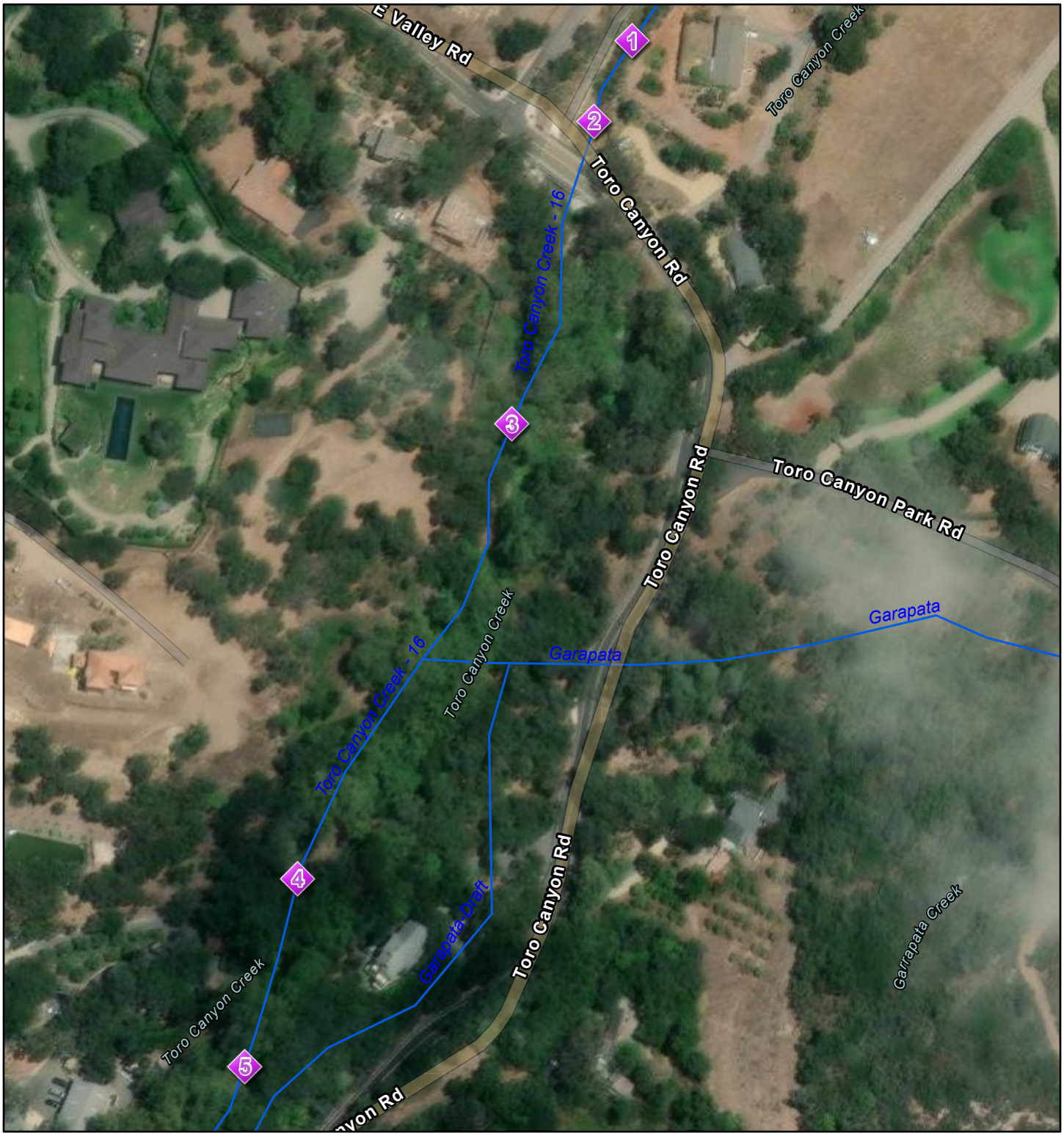
| Section | Down tree/limb | Brushing (length by width, feet) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | x | | | oak | | | | |
| **Section 2** | | 30'x5' | | willow | | | 50 | |
| **Section 3** | x | | | oak | 4 | 10 | | |
| **Section 4** | x | | | oak | 8 | 10 | | |
| **Section 5** | x | | | sycamore | 6 | 14 | | |
| **Section 6** | x | | | oak | 8 | 15 | | |
| **Section 7** | x | | | willow | | | | multiple |
| **Section 8** | x | | | oak | | | | |
| **Section 9** | x | | | oak | | | | multiple |
| **Section 10** | x | | | oak | 8 | 12 | | |

| Section | Down tree/limb | Brushing (length by width, feet) | Limbing | Species | DBH (in) | Length (ft) | Impacts to be Mitigated (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 11** | x | | | sycamore | 18 | 15 | | |
| **Section 12** | x | | | ceanothus | | | | leave root wad |
| **Section 13** | x | | | oak | | | | |
| **Section 14** | x | | | oak sycamore | | | | multiple |
| **Section 15** | x | | | willow | | | | |
| **Section 16** | x | | | eucalyptus | | | | |
| **Section 17** | x | | | willow | | | | |
| **Section 18** | x | | | willow | | | | |

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Toro Canyon Creek - A

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Sites24

APCreeks

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# Toro Canyon Creek - B




5/6/2024

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Sites24

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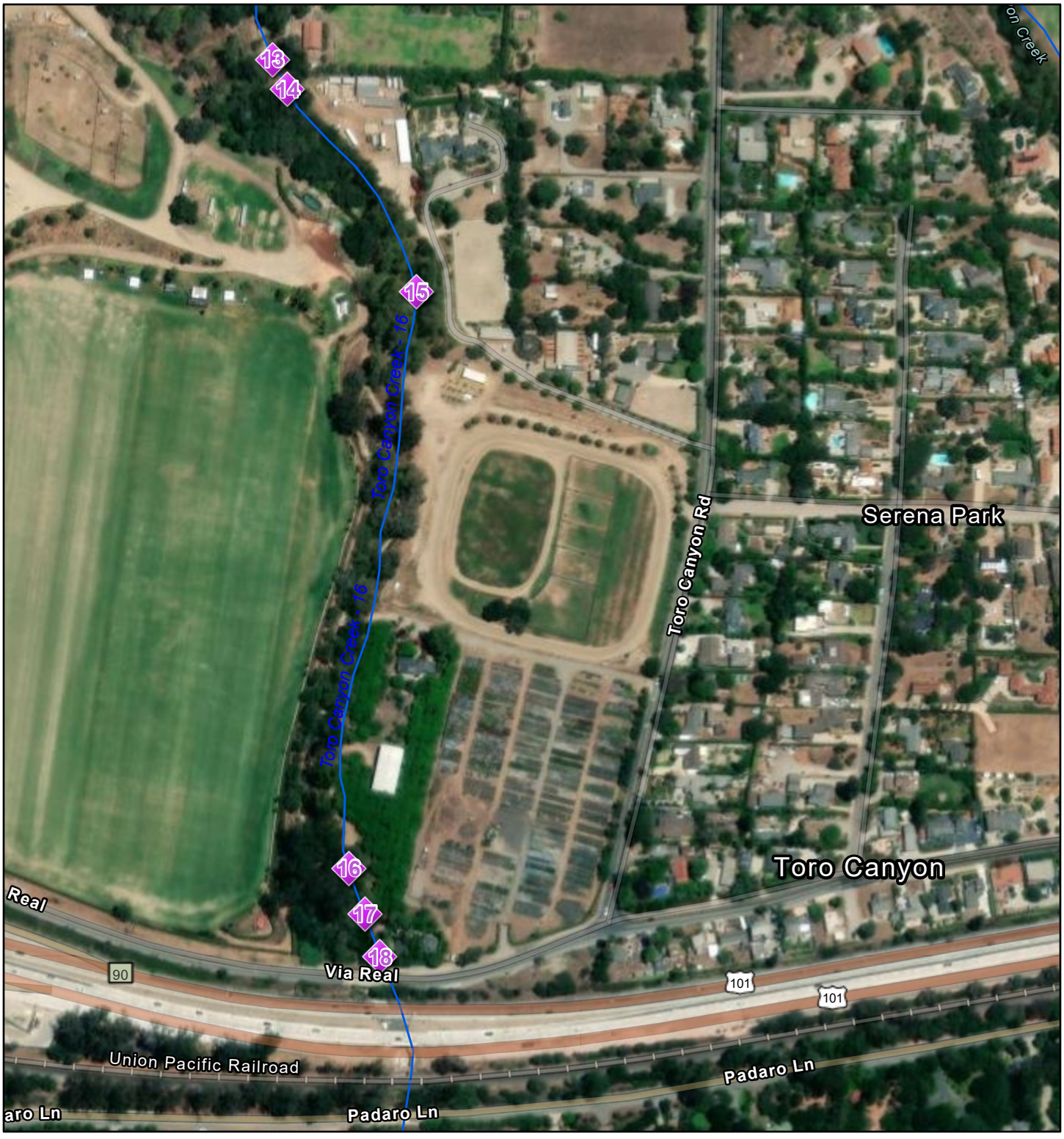
# Toro Canyon Creek - C

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Sites24

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Toro Canyon Creek




**Section 12**




**Section 14**

# WINCHESTER CREEK ROUTINE MAINTENANCE
# ADDENDUM TO THE PROGRAM EIR FOR SANTA BARBARA COUNTY FLOOD CONTROL ROUTINE MAINTENANCE

**Location:**
The project begins in Ellwood Creek at the end of Langlo Ranch Road and continues downstream past the confluence with Winchester Canyon Creek to Winchester Canyon Road, approximately 2,300 feet.

**Setting:**
Inspected on March 11, 2024.

Ellwood and Winchester Canyon Creeks originate in the foothills of the Santa Ynez Mountains. Ellwood Creek drains a 2,486-acre watershed capable of producing 3,300 cfs during a 100-year return period precipitation event. Winchester Canyon Creek drains a 1,125-acre watershed capable of producing 2,000 cfs during a 100-year return period event.

Water was present the entire reach. The channel cobble bottomed is interspersed with silt and cobble areas. The channel banks are well vegetated with both native and non-native species such as hemlock, canyon sunflower, phacelia, blackberry and many specimen oaks and sycamores. The creek bed is vegetated with herbaceous species such as cattail and watercress. Land use adjacent to the creek is residential along the east side of the creek while the remaining area is essentially agriculture and open space.

**Revegetation:**
Beginning with the 2002/2003 Annual Routine Maintenance Plan, which was tiered off the 2001 EIR for the Updated Routine Maintenance Program, the District began a new reporting and accounting program for the restoration component of the Annual Routine Maintenance Program. Since that time, the District has been tracking the impacts and associated restoration on creeks included in each Annual Routine Maintenance Plan. The following table is being included to more easily display and track the District's restoration efforts.

| Winchester | | | | |
|---|---|---|---|---|
| Annual Plan Year | New Temporal Impacts to Native Vegetation (ft2) | Proposed Restoration (ft2) | Restoration Implemented (ft2) | Surplus Restoration (ft2) |
| 2003/2004 | 0 | 2,400 | 2,400 | 2,400 |
| 2005/2006 | 350 | 0 | 0 | 2,050 |
| 2014/2015 | 0 | 0 | 0 | 2,050 |
| 2016/2017 | 0 | 0 | 0 | 2,050 |
| 2017/2018 | 0 | 0 | 0 | 2,050 |
| 2020/2021 | 40 | 0 | 0 | 2,010 |
| 2024/2025 | 4 | 0 | - | 2,006 |

**Engineering Analysis:**
Maintenance on Winchester Creek is comprised of the removal of obstructive vegetation. Several trees and limbs have fallen into the creek and *Arundo donax* is growing over and into the active

channel all of which can obstruct and divert flows. Additionally, downed trees/limbs can become mobilized during flood flows, raising the water surface elevation as well as plugging culverts located downstream. Removal of downed limbs, trees, and overhanging vegetation will help keep the active channel open, maintain channel equilibrium, and reduce channel erosion. The bankfull discharge width based on field indicators is approximately 10 feet wide.

**Project Description:**

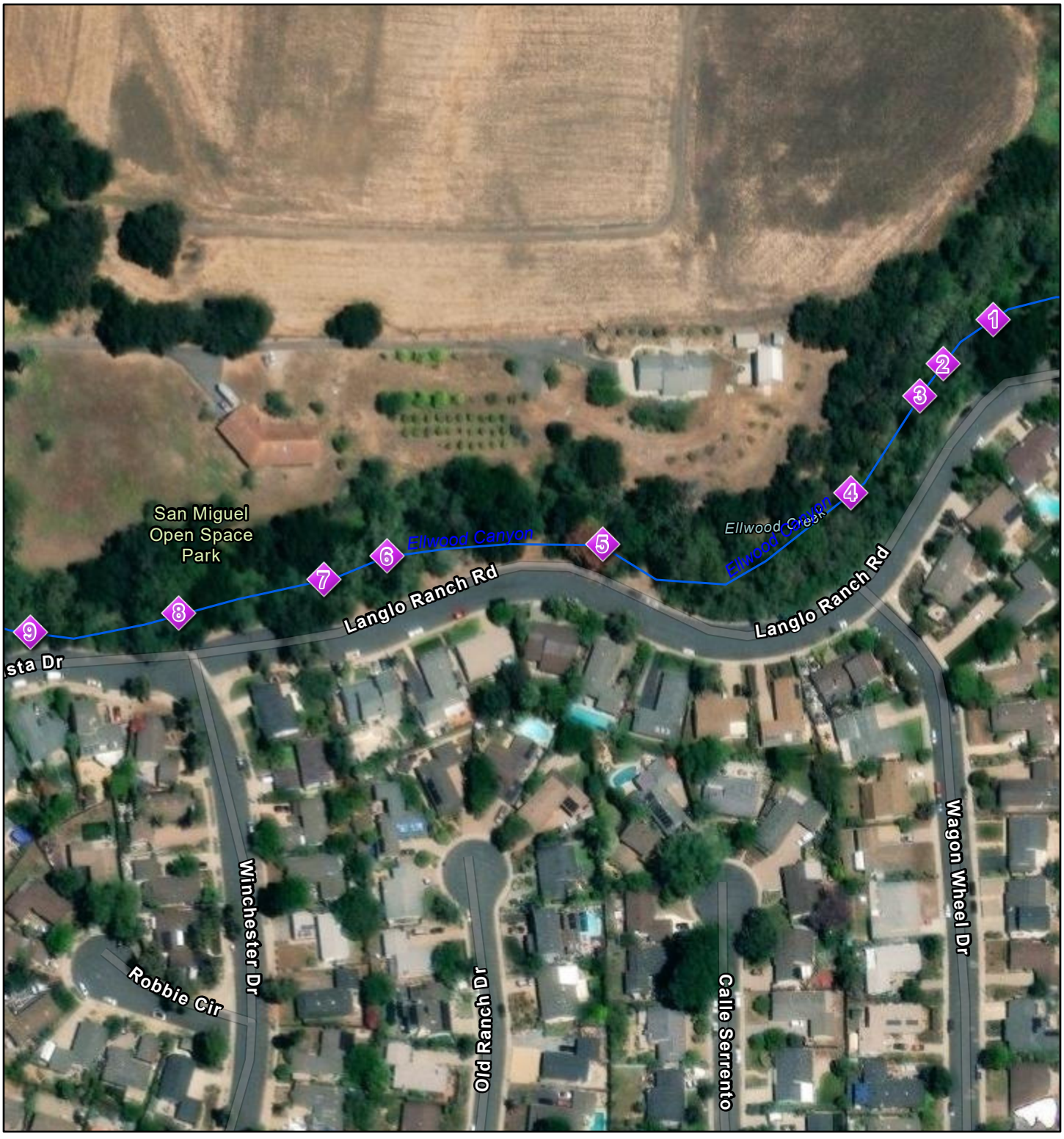
The maintenance tasks proposed in this drainage are provided below. Descriptions of each type of maintenance task are provided in the Maintenance Practices Summary Section.

| Section | Down tree/limb | Brushing (area) | Limbing | Species | DBH (in) | Length (ft) | Mitigation (ft2) | Additional Info |
|---|---|---|---|---|---|---|---|---|
| **Section 1** | x | | | willow arundo | 4 | 40 | | |
| **Section 2** | x | | | willow | | 10 | | |
| **Section 3** | | | x | willow | | | | multiple branches |
| **Section 4** | x | | | sycamore, willow | 6 | 15 | | |
| **Section 5** | | 30'x5' | | arundo | | | 0 | |
| **Section 6** | x | | | willow | 6 | 20 | | |
| **Section 7** | x | | | willow | 6 | 20 | | |
| **Section 8** | x | | | sycamore | 12 | 25 | | |
| **Section 9** | | 2'x2' | | willow | | | 4 | |
| **Section 10** | x | | | willow | | 30 | | |
| **Section 11** | x | | | willow | 6 | 20 | | |
| **Section 12** | | | x | willow, arundo | | 20 | | |
| **Section 13** | | 2'x2' | | palm | | | 0 | |
| **Section 14** | | | x | willow | | 20 | | |

**Impact Analysis and Mitigation Measures:**

Impacts and mitigation measures associated with this project have been identified in the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01). Impacts and Mitigation measures can be found in the appendix to the Annual Plan under the "Impacts and Mitigation Measures" tab. Some of the impacts identified in the Program EIR are considered Class I (unavoidable significant) under the worst-case scenario assumptions of the Program EIR. However, due to the limited scope of the proposed maintenance actions and the current state of the creek, the projects covered in this addendum would not be considered a worst-case scenario. Therefore, the impacts associated with this addendum are considered Class II (significant but mitigable). Mitigation measures are the Adopted Standard Practices which were derived from the Preferred Alternative section of the Updated Program EIR for Santa Barbara County Flood Control Routine Maintenance Activities (01-EIR-01).

# Winchester Canyon Creek - A

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Sites24

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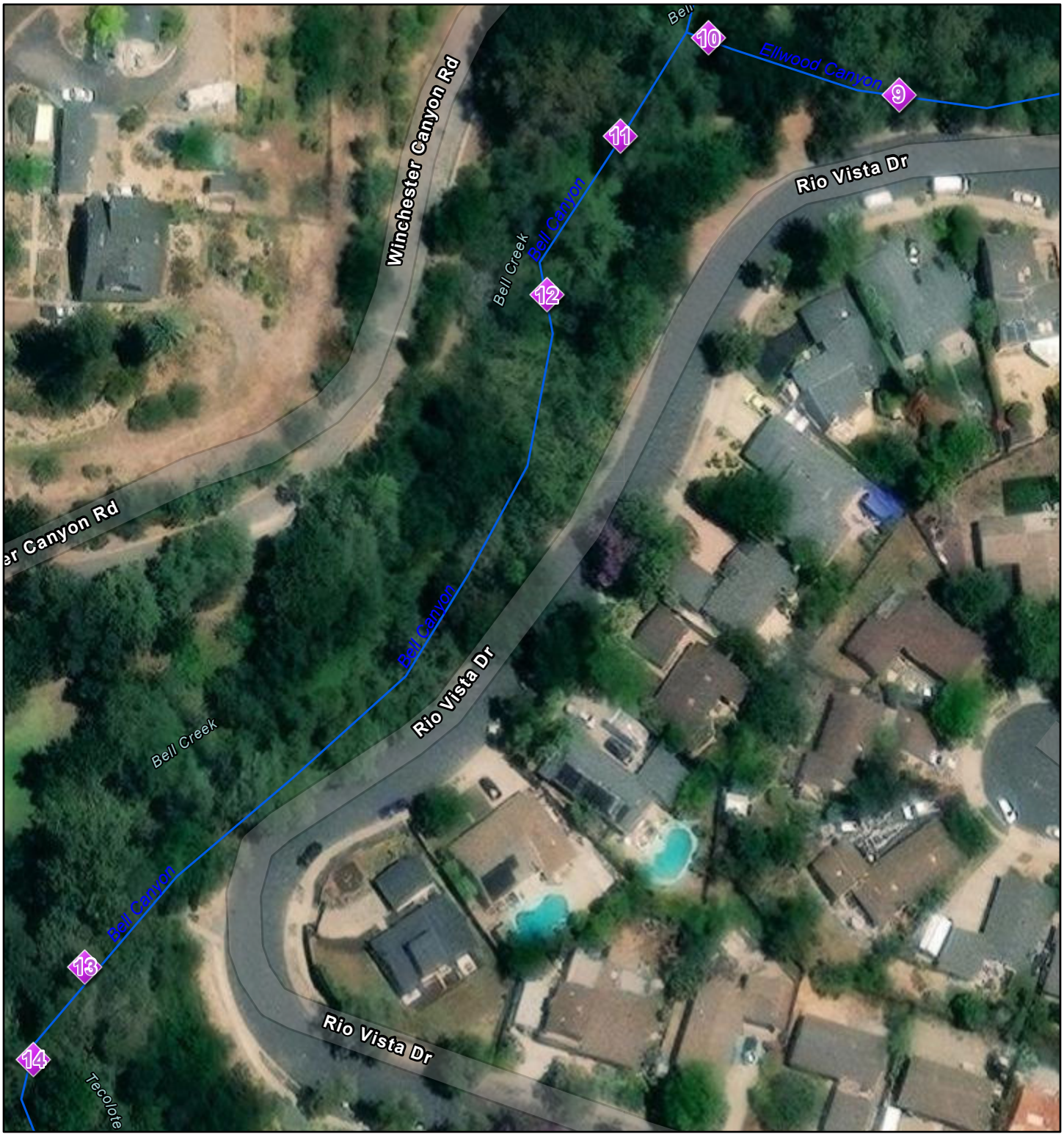
# Winchester Canyon Creek - B

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Winchester Creek




**Section 2**




**Section 8**

# FINDINGS

## 1.0 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) FINDINGS

### 1.1 CONSIDERATION OF THE ADDENDA AND FULL DISCLOSURE

The Board of Directors has considered the Addenda in the 2024/2025 Annual Routine Maintenance Plan prepared for the Santa Barbara County Flood Control District, together with the previously certified Program EIR (01-EIR-01) prepared for the Santa Barbara County Flood Control's Updated Routine Maintenance Program. The Addenda reflect the independent judgment of the Board of Directors and have been completed in compliance with CEQA. The Addenda, together with the prior PEIR are adequate for this proposal. On the basis of the whole record, including the Addenda, the previously certified CEQA document, and any public comments received, the Board of Directors finds that the projects described in the 2024/2025 Annual Routine Maintenance Plan Addenda will not create any new significant effects or a substantial increase in the severity of previously identified significant effects on the environment. Therefore, since there are no substantial changes proposed in the project which will require major revisions to the Updated Routine Maintenance PEIR, no substantial changes have occurred with respect to the circumstances under which the project is undertaken, and there is no new information of substantial importance, no subsequent environmental review shall be prepared according to CEQA Guidelines Sections 15162 and 15168 (c)(2).

### 1.2 LOCATION OF DOCUMENTS

The documents and other materials which constitute the record of proceedings upon which this decision is based are in the custody of the Santa Barbara County Flood Control District located at 130 E. Victoria Street, Suite 200, Santa Barbara, CA 93101.

### 1.3 ENVIRONMENTAL REPORTING AND MONITORING PROGRAM

Public Resources Code Section 21081.6 and CEQA Guidelines Section 15091(d) require the District to adopt a reporting and monitoring program for the project and conditions of the project adopted to mitigate or avoid significant effects on the environment. The approved project descriptions, mitigation measures, with their corresponding permit monitoring requirements, are hereby adopted as the reporting and monitoring program for these projects. The District will provide the monitoring and reporting to ensure compliance during project implementation.

# REVEGETATION PLAN FOR
# SANTA BARBARA COUNTY FLOOD CONTOL DISTRICT
# MAINTENANCE PROGRAM

The purpose of this plan it to outline the Santa Barbara County Flood Control and Water Conservation District's (District) plan for designing, implementing, and monitoring the restoration associated with the Annual Routine Maintenance Plan. The District's maintenance practices often require mitigation in the form of restoration. As a result, the District has gained a great deal of revegetation experience over the past 10 years and has planted more than one hundred restoration sites along creek corridors throughout Santa Barbara County.

This Plan addresses seven phases of the revegetation process: 1) Identification of native plants and potential revegetation sites, 2) Use of bio-technical approaches to bank stabilization, 3) Determination of appropriate plant quantities, 4) Plant collection and propagation, 5) Revegetation of the riparian corridor, 6) Maintenance of restoration sites, and 7) Post-project monitoring.

## Identification of Native Plants and Revegetation Sites

During annual creek inspections, District personnel determine maintenance needs and associated restoration opportunities on individual creeks. In general, the District implements restoration in four different situations:

1. Denuded banks
2. Areas containing large amounts of non-native invasive species such as *Arundo donax*, castor bean, mustard or poison hemlock
3. Areas with an established healthy canopy but lacking a well-developed understory, or vice versa, due to the invasion of non-natives
4. Eroded banks that have been stabilized or rebuilt

Each creek addendum included in the Annual Routine Maintenance Plan will identify appropriate restoration that mitigates the impacts of the proposed maintenance project. The identified areas will be at densities recommended in this revegetation guide.

## Bio-technical Bank Protection

Bio-technical approaches to bank stabilization use woody, readily sprouting plant species which are inserted into the banks or anchored in various other ways to create structure and stabilization by providing direct protection from erosive flows and quickly developing root systems and above ground growth to further stabilize the bank.

Bio-technical bank stabilization is not appropriate in all circumstances and is most suitable for creek restoration projects where the purpose is to reduce bank erosion, establish native vegetation on the bank, and not protect expensive structures or roads. The District will evaluate the erosion problems and flow conditions at potential revegetation sites to determine whether bio-technical techniques are appropriate and if so, the combination of techniques that would be best suited for the specific site characteristics. Common types of bio-technical bank protection are briefly described below. The District has consulted directly with Ms. Ann Riley for bio-technical design as

well as referring to her book, Restoring Streams in Cities. Some examples of bio-technical techniques are shown in Figures1 through 4.

1. Anchored Cuttings. This technique employs large numbers of cuttings arranged in layers or bundles, which are secured to creek banks and partially buried. They provide direct protection from erosive flows, prevent overbank erosion, promote sediment capture, and quickly develop roots.

2. Live Stakes. This is the simplest form of bio-technical slope protection in which live cuttings of willows, mulefat, or cottonwood trees are tamped into the banks to root, grow and form a thicket of new trees.

3. Live Fascines. Fascines are dormant branch cuttings of willows bound together into long cylindrical bundles that are placed in shallow trenches parallel to the bank and buried. The branches will sprout and create a mass of new woody plants.

4. Brush Mattress. A combination of live willow stakes, fascines and individual branch cuttings are interwoven and pinned to the bank with jute cord or wire held in place with stakes. The "mattress" is then covered with soil to facilitate sprouting of the willows.

5. Tree revetment. A row of downed trees are laid parallel to the base of the bank and anchored together, and to the bank with steel cable. The trees reduce flow velocities along the base of the slope, trap sediment, and provide substrate for plant establishment.

6. Coconut Fiber Roll. Cylindrical structures composed of coconut husk fibers bound together with twine woven from coconut material are placed parallel to the slope to reduce erosion and trap sediment.

7. Reed Rolls. Soil and rootballs of herbaceous plants are placed into burlap rolls and partially buried and staked along the bank.

8. Brush Layers. Cuttings of willow are placed into trenches cut into the bank so that the branches stick outward from the bank. Alternating layers of cuttings and soils are placed up the bank.

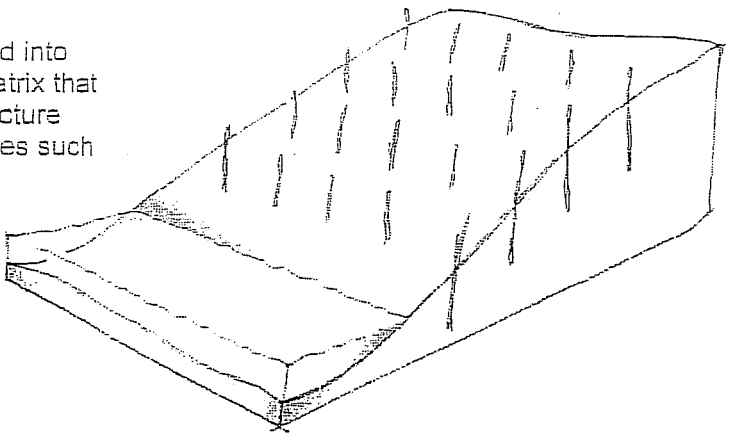
9. Geotextiles consist of plastic or biodegradable materials that hold soils in place to allow plants to become established through the mesh. There are many types of geotextiles available, designed for various flow conditions. For banks in low flow conditions geotextiles are placed across the face of a slope and cuttings or container plants are installed through the mesh. In more erosive conditions, geotextiles are placed between brush layers that are buried in trenches on the bank.

10. Joint Planting. Easily sprouting species such as willow or cottonwood are planted amongst ungrouted rip-rap or "A-jacks" at the base of eroded slopes.

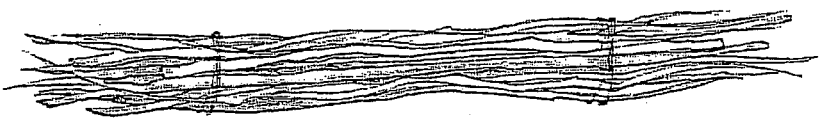
11. Live Cribwalls. Hollow box-like interlocking arrangements of timber are placed at the base of a slope and are filled with alternating layers of soil and live branch

## Live Stakes

Live woody cuttings are pushed or tamped into the soil to root, grow and create a root matrix that stabilizes the soil. The above-ground structure that results reduces overland erosive forces such as raindrops or sheet flow across the site.



## Willow Wattle (Fascine)



## Live Fascines

Branch cuttings bound together in sausage-like bundles and placed in shallow trenches on slopes to reduce erosion and shallow sliding.

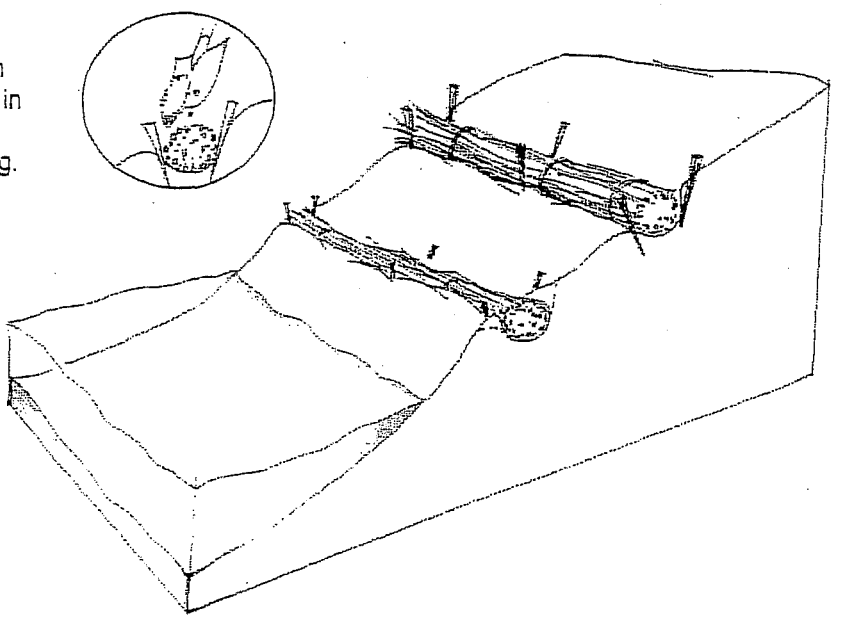
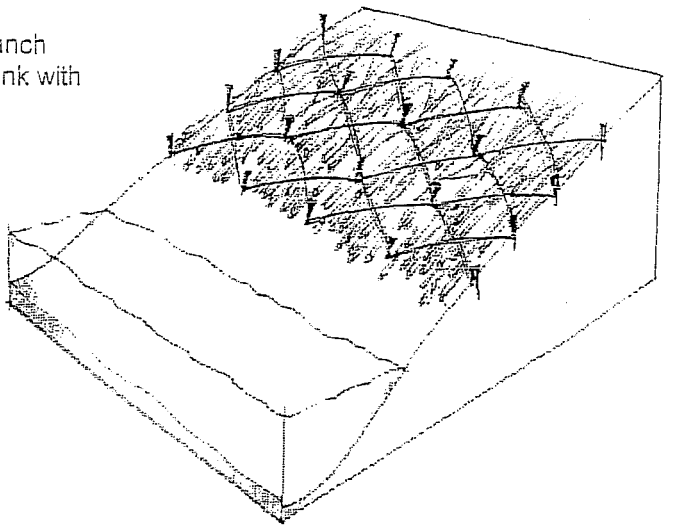


Figure 1. Examples of Bio-technical Techniques

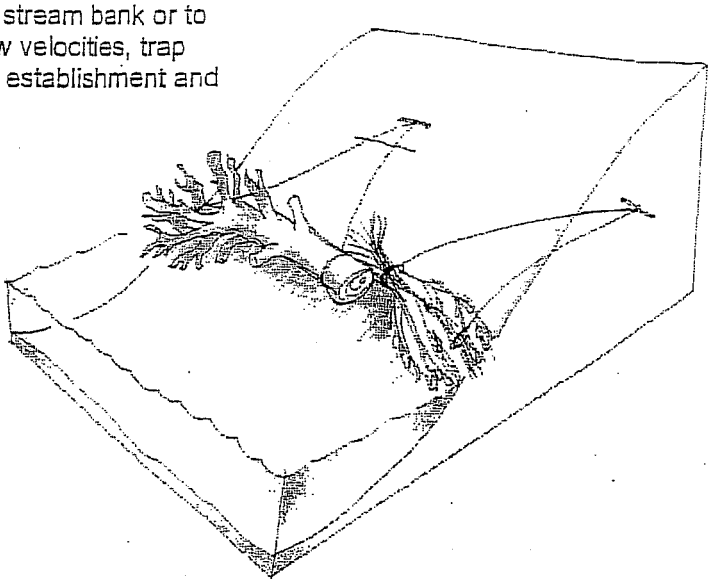
## Brush Mattress

Live willow stakes, facines and individual branch cuttings are interwoven and pinned to the bank with jute cord or wire held in place with stakes.



## Tree Revetment

A row of live or dead trees attached to the stream bank or to deadmen in the stream bank to reduce flow velocities, trap sediment and provide a substrate for plant establishment and erosion control.



## Tree Revetment

A large root wad and stump is anchored within the stream bank to reduce flow velocities and provide structure and hiding places for aquatic species.

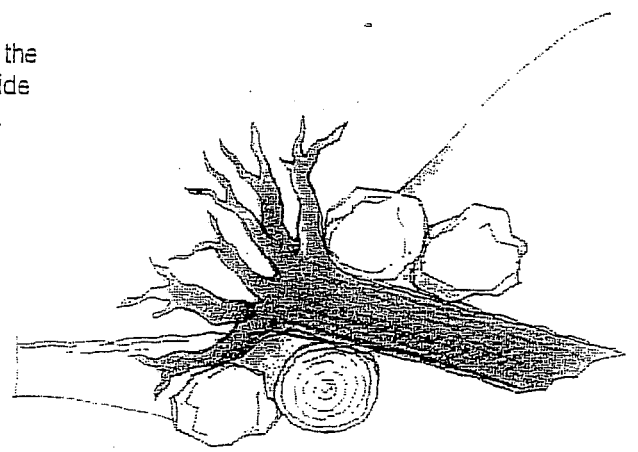
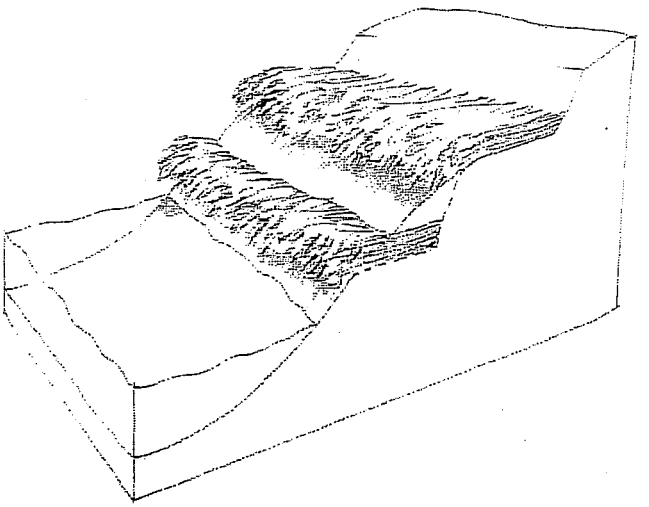


Figure 2. Examples of Bio-technical Techniques

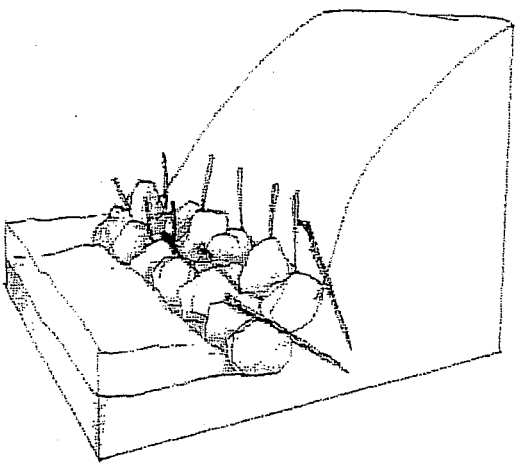
## Brush Layering

Live cuttings of willow or cottonwood are placed into trenches cut into the bank so that branches stick outward from the bank. Brush layering provides live material that will root and go along with a structural component to reduce flow velocities along the bank.



## Joint Planting Newly Installed

Live cuttings such as willow or cottonwood are planted among ungrouted rip-rap. Cuttings can also be placed horizontally in a trench below the rocks.



## Joint Planting Three Years Later

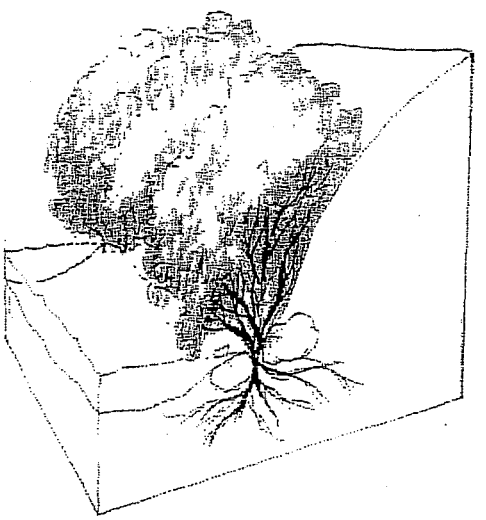
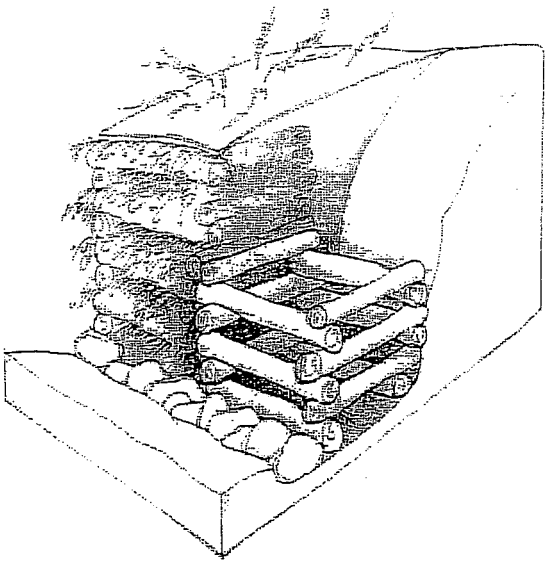


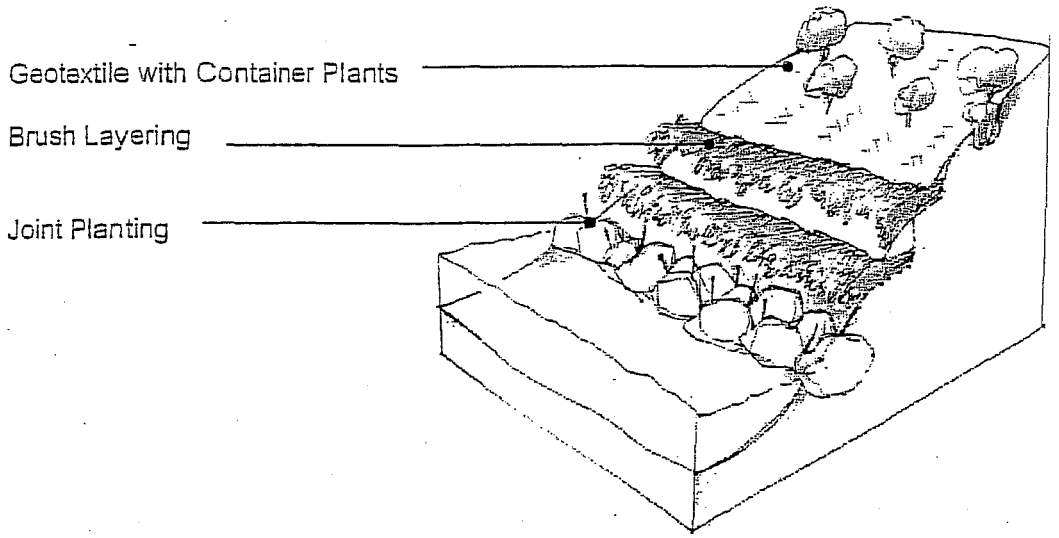
Figure 3. Examples of Bio-technical Techniques

## Live Crib Wall

Hollow, box-like interlocking arrangements of logs or timber filled with alternative layers of soil material and live branch cuttings.



## Combined Bio-Technical Bank Protection Techniques



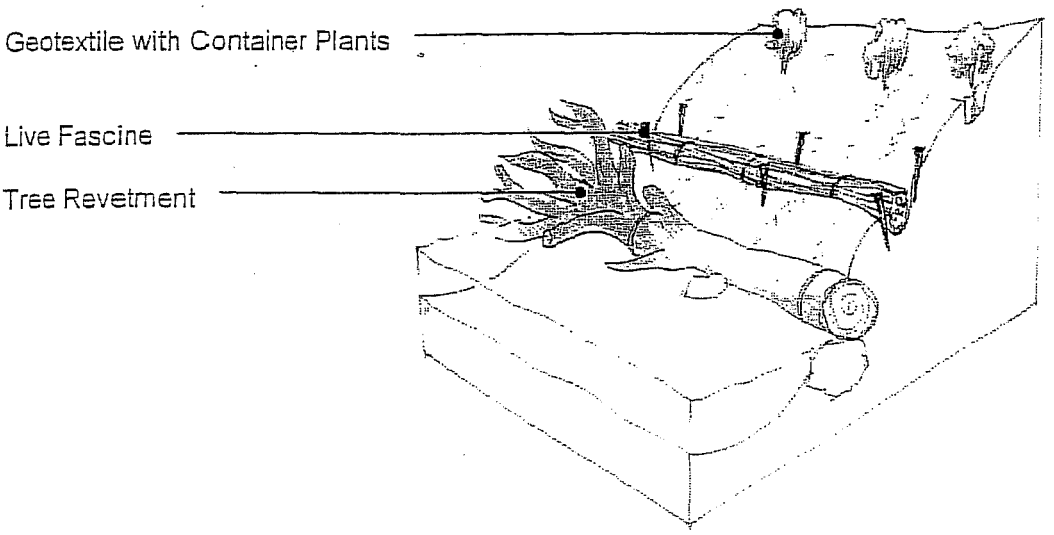




Figure 4. Examples of Bio-technical Techniques

cuttings. Live Cribwalls should be reserved for the particularly difficult projects in urban settings that require a substantial structural solution.

## Determination of Appropriate Plant Quantities

After revegetation sites are identified the actual revegetation areas will be calculated. The District does not generally place understory species within three feet of the toe of the bank because even minor flows could remove these plants. Revegetation along the toe of the bank generally consists of willow or cottonwood cuttings or natural colonization.

Planting locations and densities will be determined by the District Biologist using guidance from Martha Blane, a consulting botanist, who provided planting density recommendations that the District has referred to since 1992. Most often, the District Biologist uses Ms. Blane's recommendations as a starting point for figuring plant numbers and then adjusts the numbers as appropriate for each site. It is the District's goal to increase species diversity at each of the revegetation sites as feasible depending upon site characteristics, species occurring in the watershed, and plant availability. Once a plant mix is determined, plant quantities are calculated. The District always includes the possibility of at least 30% plant mortality when calculating final plant numbers for each site. Generally, the District chooses from the following species for restoration projects, although other species are sometimes used depending upon site location:

| | |
|---|---|
| *Salix sp.* | Willow |
| *Platanus racemosa* | Sycamore |
| *Populus trichocarpa* | Black cottonwood |
| *Sambucus mexicana* | Elderberry |
| *Quercus agrifolia* | Coast live oak |
| *Umbellularia californica* | California bay laurel |
| *Baccharis salicifolia* | Mulefat |
| | |
| *Artemesia douglasiana* | Mugwort |
| *Clematis ligusticifolia* | Creek Clematis |
| *Elymus condensatus* | Giant ryegrass |
| *Hereromeles arbutifolia* | Toyon |
| *Lonicera suspicata* | Santa Barbara honeysuckle |
| *Rhamnus californica* | Coffeeberry |
| *Ribes amarum* | Gooseberry |
| *Ribes speciosum* | Fushia flowered gooseberry |
| *Rosa californica* | California rose |
| *Rubus ursinus* | Blackberry |

PLANTING DENSITY RECOMMENDATIONS

| SPECIES | # PER ACRE | SPACING |
|---|---|---|
| *Salix sp.* | 1,000 | 6' – 7' |
| *Platanus racemosa* | 50 | 30' |
| *Quercus agrifolia* | 50 | 30' |
| *Populus sp.* | 70 | 25' |
| *Alnus rhombifolia* | 70 | 25' |
| *Umbellularia californica* | 70 | 25' |
| *Sambucus mexicana* | 200 | 15' |
| *Baccharis pilularis* | 200 | 15' |
| *Rhus sp.* | 450 | 10' |
| *Rosa californica* | 450 | 10' |
| *Ribes sp.* | 450 | 10' |
| *Heteromeles arbutifolia* | 450 | 10' |
| *Rhamnus californica* | 450 | 10' |
| *Lonicera subspicata* | 450 | 10' |
| *Rubus ursinus* | 1740 | 5' |
| *Clematis ligusticifolia* | 1740 | 5' |
| *Artemesia douglasiana* | 1740 | 5' |

## Plant Collection and Propagation

When feasible, to maintain genetic integrity of the species in each creek, all material (saplings, cuttings and seeds) will be collected as close to the revegetation site as possible. Once the District identifies the creeks needing maintenance for any given year and the associated revegetation requirements, the District biologist will coordinate the plant material collecting and propagation of the species and quantities needed to fulfill the mitigation requirements for that year. Seeds will be collected year round depending upon the species. Many species of trees, shrubs and vines can also be grown from cuttings. In many cases cuttings can be collected year round and grown in a nursery setting to produce a 1-gallon size plant that is ready to be planted by the winter or early spring. The District will work with a nursery to propagate the needed plants for each given maintenance year. For the past several years, the District has used the Tree of Life Nursery, in San Juan Capistrano, to grow plants for several District projects. The District also uses local plant growers as feasible. The District most often uses 1-gallon size plants but occasionally will use 5-gallon size plants. Occasionally, the District will use willow cuttings planted directly at the revegetation site depending upon water availability and site conditions. The District has had the greatest success with container plants as opposed to cuttings planted directly at the site.

## Revegetation of the Riparian Corridor

Beginning in the winter and continuing into spring, the District Biologist will coordinate the installation of the plants at the revegetation sites identified in the Annual Routine Maintenance Plan. The District hires a landscaping company with experience in native plant restoration to plant, water and maintain most ofl the revegetation sites.

The District Biologist identifies the species and plant numbers for each revegetation site (allowing for a 30% mortality) and places the color-coded flags to identify where each plant will be installed. The plants are planted at irregular intervals or appropriate groupings to simulate the appearance of a natural creek. Only as many plants that can be planted and watered in one day are delivered to the site.

Actual plantings will follow the digging of holes as rapidly as possible so that the excavated hole does not dry out. The excavated soil will be used as the backfill and will be tamped firmly to eliminate all voids and obtain contact between the root systems and native soils. Excess soil will be used to form a basin around the plant to hold either rainwater or watered delivered to the plant by a drip or hand watering system. The District will often include a slow release fertilizer tablet and some soil amendment in the planting hole at the time of plant installation, depending upon site conditions.

The District will sometimes use unrooted cuttings of easy to root natives such as Salix sp. or Populus sp. In particular, bio-technical techniques utilize cuttings in several planting methods. Standard live stakes are generally from ¾" to 1 ½ " in diameter, approximately 2 to 3 feet long and generally straight. Cuttings are prepared the day they are to be planted although a one to two day delay can be tolerated if the cuttings are kept wet. When the cuttings are prepared, the top of each cutting is cut square with a leaf bud and the base of each cutting is cut below a leaf bud at an approximate 45-degree angle. All the leaves and branches are trimmed off flush with the stem. The cuttings are either pushed into ground that is soft or into holes that have been excavated and backfilled with loose soil that is tamped firmly against the stem to eliminate any air pockets.

## Maintenance of Restoration Sites

All newly planted plants are watered immediately. In most cases, the District hand-waters the revegetation sites using a water truck fitted with a hose. Occasionally, a site will be near a water source and a drip system can be installed. In yet other instances, a large site will have a drip system installed and will be watered from the water truck. In all cases, newly installed plants are watered with 5 gallons of water once a week for approximately the first year after installation, which usually takes the site into the next rainy season. If the rainy season is particularly dry or the storms are far apart, watering continues uninterrupted. The sites are evaluated the following spring and the watering schedule is adjusted to meet the plant needs. Most commonly, the sites are watered every other week for the second year. Watering amounts differ at each site depending upon the plant needs. Occasionally, instead of a bi-weekly watering scheme, the District Biologist will direct the contractor to deep water certain plants on a monthly basis to promote deep root growth. Ultimately, the goal is to have each revegetation site self-sustaining once the second rainy season is met.

In addition to watering the restoration sites, the revegetation contractor is responsible for weeding the sites. Each site is unique; however, all sites have a 3-foot diameter weed free zone maintained around each plant for at least the first year following installation. This eliminates the competition for water and sunlight. Beyond the 3-foot weed free zone, the site is allowed to have some weeds such as grasses or other low growing herbaceous species that help reduce erosion. The more noxious weeds such as castor bean, giant reed, poison hemlock, fennel, wild radish, and mustard are removed from the

site repeatedly until the restoration plants are established and will not be out competed by the weeds. Noxious weeds can be selectively sprayed with Rodeo or Roundup herbicides but are most commonly removed by hand. Herbicides will be administered under the supervision of a Pest Control Advisor and the applicator will use care in avoiding natives.

## Post-project Monitoring

Post-project monitoring will consist of determining water and weeding regimes, identifying areas of high mortality, and scheduling subsequent revegetation for those areas experiencing a greater than 30% mortality.

The revegetation sites will be checked at least once every three months to monitor the mortality rates and weed growth. As previously mentioned, the sites will be watered using different methods and schedules depending upon site conditions and age of the plants. The District Biologist will monitor the health and establishment of the plants and determine the ongoing watering and weeding needs at each site. Photos will be taken of each site at least once a year until they are established and do not need any further weeding, watering or replanting.

If a site experiences more than 30% mortality, additional plants will be installed during the next maintenance planting season and the watering and weeding schedule will be adjusted to accommodate the new, smaller plants.

References

Riley, Ann. 1998. Restoring Streams in Cities: a guide for planners, policymakers, and citizens.

URS Corporation. 2000. Creek Inventory and Assessment Study, City of Santa Barbara

# IMPACTS AND MITIGATION MEASURES*

# ALPHABETICAL LIST OF DEFINITIONS

## A

### Impacts

AQ = Air Quality

AQ-A. Equipment Emissions. Temporary emissions of reactive organic compounds (ROC), particulate matter, and NOx associated with gasoline and diesel-powered heavy-duty maintenance equipment, as well as employee vehicles and trucks transporting excavated materials to and from maintenance sites. (Class II Impact)

AQ-B. Fugitive Dust Emissions. Temporary emissions of fugitive dust (particulate matter) due to earth moving activities during maintenance, including channel shaping, desilting, bank stabilization by placing fill or grading banks, bank protection construction or repair, pilot channel construction, and access ramp construction. (Class II Impact)

### Mitigation Measures

A-1 – Reduce Emissions. Implement the following Santa Barbara County APCD-approved measures for each piece of heavy-duty diesel construction equipment to minimize $NO_x$ emissions: (1) The engine size of construction equipment shall be the minimum practical size; (2) Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated clean diesel engines) should be utilized wherever feasible; (3) The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest number is operating at any one time; (4) Construction equipment operating onsite shall be equipped with two to four degree engine timing retard or precombustion chamber engines; (5) Catalytic converters shall be installed on gasoline-powered equipment, if feasible; (6) Diesel catalytic converters shall be installed, if available; and (7) Diesel powered equipment should be replaced by electrical equipment, whenever feasible.

A-2 – Reduce Fugitive Dust. Implement the following Santa Barbara County APCD-approved measures to minimize fugitive dust emissions: (1) After clearing, grading, earth moving or excavation is complete, the disturbed area must be treated with watering, or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur; (2) During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this shall include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency shall be required whenever the wind speed exceeds 15 mph. Reclaimed water shall be

* Extracted from the Final Program Environmental Impact Report, Updated Routine Maintenance Program, November 2001

used whenever possible; (3) Minimize the amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less; (4) Gravel pads should be installed at all access points to prevent tracking of mud onto public roads; (5) If importation, exportation, and stockpiling of fill material is involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation; (6) Trucks transporting fill material to and from the site shall be tarped; and (6) Dust control requirements shall be shown on all grading plans.

# B

## Mitigation Measures

B-1 - Compensatory Habitat Mitigation. The District shall provide compensatory habitat mitigation for the removal of riparian and wetland habitat associated with brushing, herbicide spraying, channel shaping, bank stabilization by placing fill or grading banks, pilot channel construction, bank protection installation, access ramp construction, and channel desilting. The mitigation shall be required for all vegetated habitat, with the exception of areas dominated by aggressive, noxious non-native weeds (e.g., giant reed). The restoration treatment shall occur either on-site (i.e., along suitable portions of the drainage and its tributaries where the project is located) or off-site (Los Carneros Mitigation Bank) in accordance with the updated restoration plan described in the updated Program EIR, using a 1:1 acreage replacement ratio. A 2:1 ratio shall be used for impacts due to new grade stabilizers and non-vegetated bank protection, as described in the updated Program EIR. Prior to the use of the Los Carneros Mitigation Bank, the District shall consult with other organizations with expertise in habitat restoration (e.g., Wetlands Recovery Project) to determine if they have any knowledge of any on-site opportunities. Mitigation for specific affected areas shall only occur once during the next ten years of the maintenance program. That is, once habitat mitigation has been achieved for a portion of a drainage, no further mitigation is required for future maintenance of that reach or site over the next ten years regardless of the type of maintenance activity, provided the previous habitat mitigation has been successfully implemented, and the District continues to minimize habitat impacts to the extent feasible. After ten years, the habitat mitigation requirement shall begin again, regardless of previous habitat mitigation. Native trees with a diameter at breast height of 6 inches or more that are removed shall be replaced at a 10:1 ratio at the restoration site, independent of the replacement of habitat based on acreage. To the extent feasible, habitat restoration opportunities shall be sought on the tops of banks and landward of the creek that could provide a bio-filtering benefit for overland stormwater runoff. In addition, the District will seek opportunities to use regionally rare plants in the restoration plans, as feasible.

B-2 – Minimize Vegetation Removal from Channel Bottom. The District shall minimize vegetation removal from the channel bottom to the least amount necessary to achieve the specific maintenance objectives for the reach (i.e., removing obstructive vegetation or silt-trapping vegetation). Brushing and herbicide application for vegetation control on the channel bottom shall be conducted in a non-continuous, mosaic-like manner, to the extent feasible, allowing small patches of in-channel native vegetation to persist.

B-3 - Construction Monitoring During Maintenance Activities. The District Biologist shall monitor maintenance activities daily to ensure that the appropriate methods and limits are used. Results of the monitoring shall be documented in the annual post-maintenance report. These activities include brushing, herbicide application, channel shaping, desilting, bank stabilization by placing fill or grading banks, bank protection construction or repair, grade stabilizer construction or repair, pilot channel construction, and access ramp construction.

B-4 - Restore Temporarily Disturbed Areas. The District shall restore channel banks containing riparian or wetland vegetation that are temporarily disturbed by maintenance or construction activities associated with the following: channel shaping, placement of bank protection, ramp construction, and repair or construction of bank protection and grade stabilizers. Restoration objectives, methods, plant species, maintenance, and monitoring shall follow the guidelines in the updated restoration plan described in the Program EIR. The restoration of channel bed habitats shall only occur if it would not conflict with the maintenance needs in the affected reach.

B-5 – Pre-Construction Biological Surveys and Avoidance Measures. A District biologist shall inspect all maintenance areas in creeks and basins during the annual spring field assessments (April and May) to determine if any sensitive plants, fish, or wildlife species are present, or habitats for these species are present. If the species are present, the District shall modify maintenance activities to avoid removal or substantial disturbance of the key habitat areas or features. Avoidance and impact minimization measures shall be described in the Annual Plan for each maintenance project. If a rare plant could be affected, the District shall relocate the plant by cultivation or seeding methods to a suitable nearby site. If a sensitive fish or wildlife species will be present at a maintenance site during the work period, the District shall schedule the work to avoid the species, if possible. If avoidance is not feasible, the District shall attempt to relocate the species or population with approval from the California Department of Fish and Game, US Fish and Wildlife Service or National Marine Fisheries Service, as appropriate. This measure applies to all currently known sensitive species that occur in maintained drainages and basins, as well as species that are determined to be sensitive in the future. Endangered species experts with handling permits shall be consulted during relocation efforts to provide additional assurances that relocation is effective. Such consultation shall include assistance in field efforts, as warranted.

B-6 – Construction Monitoring for Sensitive Species. The District Biologist shall monitor, on a daily basis, earth and vegetation disturbing maintenance activities located at and adjacent to locations where sensitive species are known to occur. The need for monitoring and the areas to be monitored shall be determined during the annual field assessment in the spring. The objective of the monitoring is to ensure that key habitat features or species locations are avoided.

B-7 – Post Maintenance Channel Bed Treatment. The District shall roughen the channel bed after channel desilting maintenance to create microtopography that will encourage re-establishment of aquatic habitats over time. Pools and riffles shall be recreated in the work area if they were removed during maintenance, to the extent feasible. Modifications of the creek bed shall be consistent with geomorphological considerations identified through mitigation measure H-1.

# C

## Impacts

CR=Cultural Resources

CR-A. Disturb Cultural Resources. There is a remote potential for certain earth-disturbing maintenance activities to disturb buried prehistoric and historic archeological sites and isolated artifacts. This impact would occur only on undisturbed upland sites outside watercourse channels and basins due to incidental excavation grading banks for stabilization, installing or repairing bank protection, and constructing access ramps. (Class II Impact).

## Mitigation Measures

C-1 - Unexpected Archeological Finds. If cultural materials are unexpectedly uncovered during maintenance activities, the District shall immediately consult with a qualified archeologist who shall inspect the material and coordinate with the District to halt or redirect earth-disturbing maintenance work until the significance of the material is determined, and the location is cleared for further work.

C–2 – Archeological Surveys. The District shall conduct an archeological field investigation in maintenance areas that may be disturbed by excavation activities associated with routine maintenance when such work occurs in upland areas outside watercourses and basins that: (1) appear to represent undisturbed ground not subject to previous excavations or significant grading; and (2) contain known significant archeological sites. The investigation shall be conducted by a qualified cultural resource specialist.

# F

## Impacts

FAW = Fish Aquatic Species and Wildlife

FAW-A. Displace Wildlife due to Vegetation Removal in the Channel Bottom. Removal and/or thinning of vegetation from channel bottom due to brushing, herbicide application, desilting, and channel shaping cause a temporary reduction in vigor and/or cover of successional riparian habitats and emergent wetlands. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. These actions could reduce foraging and loafing habitat for certain riparian and wetland dependent bird species. It can also reduce habitat heterogeneity for reptiles and small mammals, and degrade aquatic habitats by removing protective cover and increasing temperatures. While the long term functions and values of the habitat temporarily disturbed by maintenance would be replaced through the District's updated habitat restoration program, there will be a temporal impact to wildlife that cannot be fully mitigated. (Class I Impact)

FAW-B. Adverse Effects of Maintenance on Aquatic Habitat. Channel shaping, bank stabilization by placing fill or grading banks, sandbar removal, excessive removal and/or thinning of in-channel vegetation, and pilot channel construction could reduce vegetation cover, pools and gravel beds, organic input from overhanging vegetation supporting aquatic productivity, and instream cover and debris providing micro-habitat. In addition, fish and aquatic organisms could be directly displaced. These impacts are temporary and reversible. (Class I Impact)

FAW-C. Displace Wildlife for Hard Bank Protection. Placement of "hard" bank stabilization without native vegetation would permanently reduce the amount of existing and future bank riparian vegetation. This action could also adversely affect nesting and foraging habitat for riparian-dependent bird species, as well as cover for riparian amphibians, reptiles, and mammals. (Class II Impact)

FAW-D. Displace Wildlife for New Access Ramps. Construction or maintenance of access ramps could temporarily reduce the amount of riparian habitat. This action could adversely affect nesting, cover, and foraging habitat for riparian-dependent bird species, as well as cover for riparian amphibians, reptiles, and mammals. (Class II Impact)

FAW-E. Displace or Remove Sensitive Fish and Wildlife. Disturbance of channel banks and bed from heavy equipment during channel shaping, placement of bank protection, channel shaping, desilting operations, ramp construction, and repair of bank protection and grade stabilizers could remove and displace sensitive fish and wildlife species, depending upon location and time of year. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. Species that could be directly affected include the southern steelhead trout, arroyo chub, southwestern pond turtle, two-striped garter snake, San Diego horned lizard, California red-legged frog, silvery legless lizard, and tri-colored blackbird. Species that could be indirectly affected due to habitat modification include southwestern willow flycatcher, least Bell's vireo, yellow warbler, yellow breasted chat, purple martin, warbling vireo, Wilson's warbler, Swainson's thrush, blue grosbeak. (Class II Impact)

FAW-F. Fish and Wildlife Exposure to Herbicide The analyses presented in Section 5.2.3 indicated that the application of herbicides to control emerging vegetation on the channel bed is not expected to introduce substantial amounts of herbicide to the water in the drainage where fish, aquatic organisms, and humans could be exposed, because of reasons: (1) no herbicide is directly applied to open water; (2) overspray is minimized by precise spraying by trained field crews; (3) most spraying occurs in the fall when flows are absent in drainages; (4) glyphosate is strongly absorbed by soil particles and not easily mobilized once it has contact with soils or wet sediments; and (5) residual herbicide in soils or sediments are subject to microbial degradation. However, there is a potential, albeit very remote, that adverse herbicide concentrations may be temporarily present in aquatic areas immediately after spraying due to excessive or poor application. (Class II Impact)

FAW-G. Fish Passage Impacts from New Grade Stabilizers .New grade stabilizers may be installed to stabilize the bed of a channel that is being lowered due to headcutting. A new or reconstructed stabilizer could create a vertical drop, which may become a fish passage impediment or barrier over time, depending on the height of the vertical drop. (Class II Impact)

FAW-H. Increased Water Temperatures in Aquatic Habitats. Brushing and spraying cause the removal of vegetation in the channel bed which could increase the temperature of water present due to greater solar radiation. The higher temperatures could adversely affect the quality of aquatic habitats in the channel bottom, if present. (Class III Impact)

FAW-I. Effects of Sediments and Turbidity on Aquatic Organisms. The following activities could cause a temporary increase in sediment and turbidity levels: brushing, mowing, and spraying channel bed vegetation; channel shaping, desilting, bank stabilization by placing fill or grading banks, pilot channel construction, equipment movement on the channel bed, and pilot channel clearing in basins. The higher levels could adversely affect fish and aquatic organisms present in any aquatic habitats. (Class III Impact)

FAW-J. Impact of Accidental Releases on Aquatic Organisms. There is a very low potential for the accidental discharge of fuel, oil, and herbicides to a channel or debris basin during routine maintenance. Such spills may affect fish and aquatic organisms, if present. (Class III Impact)

### Mitigation Measures

F-1 – Assist Others with Fish Passage Impediment Removal Projects. Subject to available resources, the District shall provide technical and regulatory assistance to other parties (agencies and non-governmental organizations) seeking to remove or modify fish passage impediments along reaches maintained by the District. Assistance shall include review and recommendation concerning project plans; and identifying a CEQA lead agency and assisting in the preparation of a CEQA document for the proposed project; and general assistance in acquiring access easements and permits.

## H

### Impacts

H = Hydrology

H-A. Preventing a Build up of Channel Resistance May Increase Velocities. Channel resistance is reduced by brushing, mowing, spraying, and discing to remove obstructive and/or silt-trapping vegetation; and by removing storm debris and obstructive sandbars. These actions can result in higher velocities, which in turn could theoretically cause minor and localized channel degradation that contributes to bank erosion in the affected reach. This impact is expected to occur very infrequently, if at all, and would only have localized hydraulic impacts. To ensure that this impact is avoided under the current program, the District would conducts an “engineering analysis” (Mitigation Measure H-1) to determine the need, nature, and extent of maintenance activities each year along maintained drainages, and give full consideration of incidental adverse hydraulic effects associated with channel maintenance. (Class II Impact)

H-B. Reduced Bank Stability due to Giant Reed Removal. The District may periodically remove giant reed plants from stream banks for habitat restoration purposes if the

stands are large and appear to represent a significant threat to the local riparian vegetation. Removal of large stands could destabilize banks and result in increased local bank erosion and downstream sedimentation. Hydraulic impacts would be localized. In addition, large stands of giant reed on banks that are vulnerable to erosion are few in number. (Class II Impact)

H-C. Unintended Bank Erosion from Hard Bank Protection. Installation of hard bank protection could cause local bank erosion and channel bed degradation on the opposite banks due to increased flow velocities. This impact is expected to occur rarely, if at all, and would only have localized hydraulic impacts. (Class II Impact)

H-D. Effect of Equipment on Channel Bed. For large maintenance projects, the movement of equipment in the channel bed can disrupt any armored layer on the channel bed and loosen sediments. It may also reduce the channel topographic diversity, which imparts a certain resistance to flow, thereby increasing flow velocities and sediment transport capacity. (Class II Impact)

H-E. Impact of Removing Channel Obstructions (Excessive Desilting). Excessive desilting could result in lowering the channel bed below its previous invert elevation, which could contribute to oversteepened banks that are prone to failure. This impact is expected to occur very infrequently, if at all, and would only have localized hydraulic impacts. (Class III Impact)

H-F. Altered Channel Sinuosity and Slope. Creation of a straight pilot channel could theoretically reduce sinuosity, increase channel slope, and cause channel bed degradation. This impact is expected to occur very infrequently, if at all, and would only have localized hydraulic impacts. (Class III Impact)

H-G. New Grade Stabilizer. The District may occasionally need to stabilize the bed of a channel that is being degraded. A new grade stabilizer will prevent channel bed degradation, which in turn, leads to oversteepened banks. However, it could create a scour pool beneath the grade stabilizer and cause a need for repeated repairs. (Class III Impact)

H-H. Steep or Exposed Access Ramps. Creating an overly steep and unstabilized access ramp can cause increased local bank erosion. (Class III Impact)

H-I. Impacts of Reduced Sediments. Periodic removal of the sediments from the basins contributes to the reduction in overall sediment supply to the downstream reaches of the drainages. Reduced sediment supply can result in channel degradation over time. (Class III Impact)

## Mitigation Measures

H-1 - Maintenance Need Analysis. The District shall evaluate relevant hydraulic factors when determining the need, type, and extent of channel maintenance for non-exempt watercourses where natural geomorphic processes are largely intact. Key factors that shall be included in the evaluation include: (1) hydraulic benefits of maintaining the bankful channel (if present) dimensions, natural sinuosity, and natural channel bed roughness; and (2) potential adverse hydraulic effects of excessive brushing, channel shaping, equipment activity in the channel, and bank hardening. Hydraulic principles of

creating and maintaining channel stability and sediment transport equilibrium shall be applied, if applicable. The analyses and determinations relevant to this issue shall be documented in the Annual Plan. Clear maintenance objectives with attainable benefits for the protection of life, property, and habitat shall be established for each project and presented in the Annual Plan. A primary objective of this measure is to minimize maintenance activities to the extent feasible, consistent with District's program objectives.

H-2 - Extent of Desilting. The depth of channel desilting shall not cause bank undercutting or channel headcutting. The District shall make a field determination of the maximum depth of desilting based on channel capacity objectives, an evaluation of channel invert elevation and slope through the project reach, and a consideration of the maximum allowable bank length and slope that would cause bank instability. To the extent feasible, banks and bank vegetation shall not be disturbed or reconstructed during desilting to avoid destabilizing the banks.

H-3 - Post Desilting Restoration. After desilting, the District shall restore the channel geometry at the desilting site to a more natural state, as feasible, based on the channel shape, dimension, and slope upstream and downstream of the project site. The channel geometry shall be designed to enhance post-maintenance sediment transport through the desilted reach. If banks are disturbed during desilting, they should be set at a slope that matches existing undisturbed banks and stabilized, to the extent feasible and taking into account available right of way.

H-4 - Pilot Channel Construction. If it is necessary to construct a pilot channel or substantially modify an existing low flow channel, the District shall attempt to maintain the low flow channel length, width, slope, substrate, and sinuosity that are characteristic of the project reach, as determined by field observations of undisturbed low flow channels upstream and downstream of the project reach.

H-5 - Bank Protection Methods. The construction of bank protection shall be limited to situations where bank stabilization is necessary because the banks are vulnerable to continued erosion which could cause a threat to critical public infrastructure, valuable habitat, or otherwise in the public interest and it has been determined that natural slope settling would not achieve the necessary stability. The District shall evaluate different types of bank protection methods, then select one that is most suitable based on the following order of decreasing preference: (1) vegetation stabilization only; (2) bio-technical methods in which vegetation is incorporated with natural type structural components such as woody branches, natural rock, logs, natural fibers and geotextiles, and biodegradable temporary geotextiles; (3) ungrouted rip rap with vegetation; (4) pipe and wire revetment while retaining vegetation; (5) grouted rip rap; and (6) concrete sackwalls, gabion walls, soil cement, and gunite. Only native plants common to the region shall be used in all bank protection projects. Hard bank protection such as grouted and ungrouted rip-rap, pipe and wire revetment, gunite, concrete sackwalls, gabion walls, and soil cement shall only be used if the District has determined that the above methods will not achieve the desired results, are not cost effective, are logistically or technically infeasible, and/or would create greater incidental environmental impacts. Incorporation of plant material into bank protection, and maintenance and monitoring of such plantings, shall follow the guidelines in the updated Routine Maintenance Program Restoration Plan. The installation of new bank protection shall not adversely affect the stability of nearby banks. Bank protection projects that exceed 150 linear feet at any one

single location would be considered a separate project, not included in the routine maintenance program.

H-6 – Removal of Giant Reed from Banks. If the District will remove a stand of mature giant reed from the bank for habitat restoration purposes, the following measures shall be implemented to ensure that the bank will remain stable after treatment. To the extent feasible, the least invasive method of giant reed removal shall be used, and the removal of native vegetation from the banks shall be minimized. The District shall stabilize the banks after giant reed removal using biotechnical methods that include native plants. This measure shall also apply if similarly large stands of other non-native plants are removed from banks.

H-7 – New or Repaired Grade Stabilizers. Prior to installing a new grade stabilizer to control channel bed degradation, the District shall conduct the hydraulic analysis described in H-1. In addition, the District shall first consider stabilizer designs that use native ungrouted rock. The new structure shall not create a passage impediment for fish. This measure also applies to the repair or reconstruction of existing stabilizers. Detailed plans for new and repaired grade stabilizers shall be presented in Annual Plans, including a consideration of alternative designs and justification for the selected design.

H-8 – Access Ramps. The distance between access ramps shall be determined by balancing the impacts of driving equipment on the channel bed versus creating extra access points. Access ramps shall be placed in areas with minimum potential for erosion. Access ways shall be sited, constructed, and maintained in a manner that minimizes disturbance to native vegetation, wildlife, and aquatic organisms. The width of all new ramps shall be minimized to the extent feasible. Unneeded access ramps shall be removed and restored to a natural condition. For ramps that will be used infrequently (e.g., every three years or more), the District shall seed or plant the ramp after each use with native species, compatible with adjacent vegetation and resistant to occasional vehicle use, to prevent infestations of noxious weeds. Permanent and frequently used ramps shall be stabilized with vegetation, as feasible, and designed to minimize unauthorized vehicle access.

H-9 - Landowner Information Regarding Bank Protection. The District shall provide information to landowners along creeks that wish to stabilize eroding banks on their property. The District shall prepare a guide for landowners that describes methods of bank protection, with an emphasis on bio-technical solutions. The booklet shall be written for an educated layperson and include clear diagrams about materials and installation methods. It shall also include discussions of hydraulic and biological impacts when considering bank protection, and permits required from local, state, and federal agencies. The District shall also make staff available to conduct site visits with property owners to provide guidance on an as-needed basis.

# N

## Impacts

N = Noise

N-A. Maintenance Equipment Noise. Maintenance activities that require the use of heavy equipment, such as channel shaping and desilting, could temporarily increase the ambient indoor and outdoor noise levels for noise-sensitive receptors located in close proximity to the watercourse where maintenance work is conducted. This impact would be limited to weekdays between 8 AM and 5 PM, with a limited duration of several days at any one location. Increased ambient noise levels could cause a nuisance to noise sensitive receptors, such as residences, schools, nursing homes, and day care centers. (Class II Impact)

**Mitigation Measures**

N-1 – Minimize Noise. Routine maintenance work shall be limited to weekdays and the hours of 7:30 AM and 4:30 PM. Equipment and haul trucks shall be equipped with functioning and properly maintained muffler systems, including intake silencers where necessary. Additional reductions in noise emissions shall be provided, as feasible, by performing noisy operations, such as chipping and loading spoils into dump trucks on the banks, as far away as practicable from sensitive receptors.

# P

P = Public Health and Safety

PH-A. Excessive Herbicide Release and Exposure. Excessive application of herbicide to vegetation on the bottom of a channel or debris basin, including substantial application to the bed itself and open water, could result in increased concentrations in downstream water, which could affect the public. Excessive application of herbicide to vegetation could also adversely affect hikers using the watercourse as a trail or for recreation. This situation would arise from poor application methods or procedures, and is expected to occur rarely, if at all. (Class III Impact)

# R

## Impacts

R = Recreation

R-A. Potentially Adverse Herbicide Concentrations. The application of herbicides to control emerging vegetation on the channel bed is not expected to introduce substantial amounts of herbicide to the water in the drainage where fish, aquatic organisms, and humans could be exposed. However, there is a potential for localized elevated concentrations of glyphosate in drainages due to excessive application of herbicides or poor application methods that result in overspray which would degrade water quality, and affect recreational users along creeks. This impact would be localized and temporary. (Class II Impact)

R-B. Impacts of Reduced Sediment Supply to Beaches. Periodic removal of the sediments from the basins contributes to the reduction in overall sediment supply to local beaches. (Class II Impact)

R-C. Temporary Disruption of Trail and Park Use. Maintenance activities near a public trail may disrupt the use of the trail for a short period of time, and/or disrupt the use of the creek for informal recreation. (Class III Impact)

R-D. Reduced Beach Sand Supply. The periodic removal of sediments from debris basins contributes to the cumulative loss of beach sand supply. (Class III Impact)

## Mitigation Measures

R–1 - Minimize Impacts to Trail and Park Users. To the extent feasible, the District shall provide temporary detours for hikers using public trails that must be closed for maintenance work. All work areas shall be marked by signs, and by flagging if necessary to protect the public from hazardous conditions. The District shall notify appropriate County and City parks departments prior to initiating maintenance work in public parks. The work area shall be visibly marked, and measures taken to prevent public entry. If feasible, work shall be restricted to off-peak park hours.

R-2 – Disposal of Sediments at Beaches. Sediments removed from debris basins or creeks on the South Coast during long-term maintenance of the basins and during routine maintenance of creeks, respectively, shall be disposed at local beaches to the extent feasible. Only suitably sized sediments shall be disposed at the beaches, as permitted by applicable regulatory agencies.

## V

## Impacts

V= Visual

V-A. Visual Impacts in Channels. Certain maintenance activities could reduce the visual quality of riparian corridors that are visible from both private viewpoints (e.g., private roads, backyards of private residences) and public viewpoints (e.g., public parks roads). These channel maintenance activities include channel shaping, bank protection construction or repair, bank stabilization, and desilting. An adverse visual impact would occur if such activities remove substantial amounts of riparian vegetation or very large specimen trees (such as oaks, sycamores) and/or substantially modifies the banks and bed of a watercourse such that the affected reach is clearly characterized as a man-altered landscape feature. (Class II Impact)

V-B. Visual Impacts in Basins. The grading of a pilot channel in the middle of a debris basin would reduce the amount of vegetation in the basin. The removal of vegetation and accumulated sediment from debris basins will periodically reduce the amount of riparian vegetation in the basin. These impacts would be minor because they are temporary and affect a very small area; the basin (i.e., visual setting) is a man-made feature; and public access to the basin and/or nearby public viewing locations is generally prohibited. (Class III Impact)

## Mitigation Measures

V–1 - Minimize Visual Impacts in Channels. The District shall minimize brushing in the channel bottom (per Mitigation Measure B-1), minimize remove of bank vegetation (per Mitigation Measure H-2), incorporate natural channel dimensions during channel reshaping (per Mitigation Measure H-1), restore all temporarily disturbed areas with native riparian trees and shrubs (per Mitigation Measure B-4), and use biotechnical methods with riparian vegetation for bank protection and repair, as feasible (per Mitigation Measure H-4). Implementation of these measures will reduce short and long-term visual impacts.

# W

## Impacts

WQ = Water Quality

WQ-A. Potentially Reduce the Amount of Natural Biofiltering. Removal and/or thinning of vegetation from channel bottom due to brushing, herbicide application, desilting, and channel shaping cause a temporary reduction in vigor and/or cover of successional riparian habitats and emergent wetlands. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. It could potentially reduce the bio-filtration effects (if any) of emergent wetlands present along the wetted channel and debris basin bottom. As such, maintenance activities could contribute to an overall decrease in water quality. (Class I Impact)

WQ-B. Potentially Adverse Herbicide Concentrations. The application of herbicides to control emerging vegetation on the channel bed is not expected to introduce substantial amounts of herbicide to the water in the drainage where fish, aquatic organisms, and humans could be exposed because of the following reasons: (1) no herbicide is directly applied to open water; (2) overspray is minimized by precise spraying by trained field crews; (3) most spraying occurs in the fall when flows are absent in drainages; (4) glyphosate is strongly absorbed by soil particles and not easily mobilized once it has contact with soils or wet sediments; and (5) residual herbicide in soils or sediments are subject to microbial degradation. However, there is a potential for localized elevated concentrations of glyphosate in drainages due to excessive application of herbicides or poor application methods that result in overspray which would degrade water quality. While this impact would be localized and temporary, it is considered a significant, but mitigable cumulative impact because of the wide use of herbicides throughout the county. (Class II Impact)

WQ-C. Accidental Spills and Leaks. Accidental leakage or spill of fuel and/or oil from heavy equipment working within or directly adjacent to the watercourse or in a debris basin can cause discharge of pollutants to the creek, which would degrade water quality. This impact is anticipated to be highly localized because most accidental spills are limited in quantity (e.g., less than 50 gallons) and would occur in the dry season when flows are absent. Potential accidental spills of herbicides from applicators. (Class II Impact)

WQ-D. Temporary Sedimentation and Turbidity. Channel shaping, desilting, bank stabilization by placing fill or grading banks, bank protection construction or repair, pilot channel construction, access ramp construction, and excessive removal and/or thinning of in-channel vegetation could cause localized increases in suspended sediments and turbidity which could temporarily degrade water quality. This impact would also occur due to debris basin desilting and to a lesser degree, to pilot channel and outlet works clearing. (Class III Impact)

WQ-E. Increase Water Temperatures. Brushing and spraying remove of vegetation from the channel bed which could redcue shade and increase water temperatures. The magnitude of the impact is low because most of the vegetation affected under the program does not occur in standing water nor provide critical shading. The District does not remove bank vegetation, which provides most of the shade along creeks, as part of the program. (Class III Impact)

WRR = Wetland, Riparian Habitat and Rare Plants

WRR-A. Reduce Amount and Quality of Channel Bottom Habitat. Removal and/or thinning of vegetation from channel bottom due to brushing, herbicide application, desilting, and channel shaping cause a temporary reduction in vigor and/or cover of successional riparian habitats and emergent wetlands. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. Although the functions and values of the habitat temporarily disturbed by maintenance would be replaced through the District's habitat restoration program, there is a potentially adverse cumulative effect of annual habitat disturbances throughout the County. (Class I Impact)

WRR-B. Remove Bank Habitat. The District may place "hard" bank protection (i.e., grouted rip-rap) to stabilize a severely eroded bank. Under the updated maintenance program, the use of hard bank protection would only be allowed if no other alternatives using biotechnical methods are available or feasible. This impact would occur very rarely and typically involve a limited reach (e.g., less than 200 feet). Use of hard bank protection would permanently reduce the amount of existing and future bank riparian vegetation. (Class II Impact)

WRR-C. Access Ramp Habitat Impacts. Construction or maintenance of access ramps could temporarily reduce the amount of riparian habitat. (Class II Impact)

WRR-D. Temporary Habitat Disturbance. Disturbance of channel banks and bed from heavy equipment during channel shaping, placement of bank protection, desilting operations, ramp construction, and repair of bank protection and grade stabilizers could temporarily remove wetland, riparian and aquatic habitats in work areas. (Class II Impact)

WRR-E. Displace Sensitive Plants. Disturbance of channel banks and bed from heavy equipment during channel shaping, placement of bank protection, channel shaping, desilting operations, ramp construction, and repair of bank protection and grade stabilizers could remove regionally rare plant species This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. This impact is expected to occur infrequently because so few sensitive plants occur in the areas maintained. (Class II Impact)

WRR-F. Facilitate Weed Colonization. Disturbance of channel banks and bed from heavy equipment during channel shaping, placement of bank protection, desilting operations, ramp construction, and repair of bank protection and grade stabilizers could facilitate colonization of disturbed areas by non-native invasive weeds. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. (Class III Impact)

## Mitigation Measures

W-1 - Reduce Sedimentation. The District shall minimize the amount of surface disturbance and vegetation removal to the extent feasible during all maintenance activities in order to reduce the area of disturbed soils that could be eroded during winter runoff. No stockpiles or dewatering operations shall be established in the channel bed or basin bottom. All fill shall be compacted to reduce erosion. All disturbed banks and terraces above the low flow channel shall be seeded with appropriate riparian grasses and herbs and/or planted with willows, mulefat, or other woody plant species. The objectives of the seeding and/or planting are to stabilize these areas and reduce erosion. The selection of species to be used and the density of seeding or planting shall balance the need for maintaining channel capacity while meeting these objectives. If work must occur in a wetted channel that has continuous flow downstream of the work site, the District shall either temporarily divert streamflow around the work site, or provide temporary sediment containment downstream of the site. In addition, the District shall check silt fencing, diversions, and settling ponds twice a day.

W-2 – Responsible Herbicide Application. To the extent feasible, the primary herbicide application each year shall occur during the months of August through November, when stream flows are minimal. In some instances, a follow-up application will be made in the spring to reduce the frequency of maintenance. Herbicides shall be applied by hand-held sprayers rather than from truck mounted sprayers to the extent feasible. The dilution and application of herbicides shall be conducted in strict accordance with all label recommendations, including all restrictions related to public health, worker safety, and the protection of aquatic organisms. Herbicides shall not be applied when winds at the application site exceed 5 miles per hour, within 12 hours of a forecasted rain event, or when vegetation surfaces are covered with water from recent rainfall or dew. Herbicides shall be applied carefully to plant surfaces in minimal effective amounts, minimizing drift to non-target plants and overspray onto the ground or to open water. Signs shall be placed to warn the public if herbicides are applied within 50 feet of any public recreation location, such as a trail, picnic spot, or other site of regular human activity. The signs shall remain for 48 hours after the application of the herbicide. The District shall also notify residences and businesses located adjacent to drainages to be treated with herbicides. Notification shall occur by mail within 7 days of the planned maintenance work.

W-3 - Maintain Biofiltering by Reseeding Channel Bottom Areas. To the extent feasible and consistent with the maintenance objectives, the District shall avoid removal of emergent herbaceous wetland vegetation on the channel bottom that is rooted in or adjacent to the low flow channel or a pond. This same type of vegetation shall be protected, to the extent feasible, during the removal of taller obstructive woody vegetation on the channel bottom. In addition, the District shall re-seed desilted channel areas that formerly contained emergent vegetation, provided that suitable native seeds

from plants that provide biofiltration are available and that the new vegetation will not significantly affect channel conveyance or significantly increase the need for future maintenance. Seeding shall occur after the major winter runoff has occurred and stream flows have receded to prevent loss of seeds.

W-4 - Prevent Accidental Spills and Leaks. The mixing and dispensing of herbicides and equipment fueling or maintenance shall not occur within a channel or a basin. Spill containment and clean-up procedures for herbicides and vehicle fuels and oils shall be developed by the District. All field personnel shall be trained and all field vehicles shall be equipped with appropriate materials.

W-5 - Water Quality Monitoring During Herbicide Application for Large Projects. The District shall monitor concentrations of glyphosate downstream of large maintenance projects that involve herbicide application. Large projects are defined as projects that involve continuous or near-continuous herbicide application along reaches of more than 250 feet where there is flowing water along the entire reach. Water samples shall be collected from the flowing water at the following locations: Site A - above the work site, representing the ambient water quality conditions; Site B - immediately downstream of the work site; and Site C - approximately 200 feet downstream of the work site. Samples shall be collected using the following protocol: (1) Prior to herbicide application – samples at Site A, and Sites B and C if there is a storm drain outlet or similar feature within the maintenance reach that may contribute off-site flow and possible herbicides to the water samples; (2) 24 and 96 hours after herbicide application – samples at Sites A, B, and C. If glyphosate concentrations exceed 15 mg/l in the 24-hour sample or 10 mg/l in the 96-hour sample, the District shall modify the spray program at all remaining maintenance sites to be sprayed. Modification may include reducing the rate of herbicide application and/or using hand removal techniques. The District shall continue to apply herbicides only if the glyphosate concentrations are consistently below the 24 and 96-hour thresholds. If the 24 and/or 96-hour thresholds are exceeded five times during the maintenance year, regardless of location, the District shall cease application of herbicides in aquatic situations until the program can be modified to reduce concentrations to the acceptable range.

W-6 – Public Education Regarding Creek Water Quality. The District shall prepare information brochures for residents located along maintained drainages that explain: (1) how the District applies herbicides in a responsible manner, and provides guidelines on how landowners can use herbicides for residential and commercial uses in a similarly responsible manner to minimize water quality impacts to the creeks; and (2) how landowners can reduce pollution to the creek from their activities by employing best management practices for landscape fertilization; disposal of household paints, hazardous materials and petroleum products; management of trash and landscaping debris; and handling of pet wastes. The brochure shall be prepared in coordination with Project Clean Water and mailed to affected areas on a 3-year rotating basis. It shall include the Project Clean Water phone numbers for technical assistance and for reporting illegal dumping. The brochure shall also include information on how landowners can make their land available for habitat restoration under the routine maintenance program.

W-7 – Reporting Water Quality Incidents. The District shall train its maintenance crews to identify and report incidents or materials observed in the creeks during routine maintenance work that could cause significant water quality impacts, including illegal

dumping of trash, pet waste, and green waste; homeless encampments; and drain outlets with evidence of poor water quality. The staff shall contact appropriate authorities in the County or affected municipalities.

W-8 - Reduce Overall Herbicide Use. The District shall make every feasible effort to reduce the overall amount of herbicides used in the maintenance program over the next ten years through more restrictive and selective applications, greater use of manual clearing, actions to reduce in channel obstructive vegetation through shading by new canopy trees, and coordination with the the County's Integrated Pest Management Strategy to identify more environmentally friendly pesticides. The IPM Strategy was adopted by the Board of Supervisors to promote the maintenance of the County's landscapes in way that protects and enhances natural resources and public health, while providing a framework for evaluating pesticide use by County Departments in pursuit of their missions.

# 2001 PEIR CLASS I, II AND III IMPACTS WITH ASSOCIATED MITIGATION MEASURES SANTA YNEZ RIVER PROJECT

## Class I Impacts

No Class I Impacts are identified for the Santa Ynez River Routine Maintenance Project.

## WATER QUALITY
## CLASS II IMPACTS

SY-WQ-A. Equipment Leaks and Spills. Accidental leakage or spill of fuel and/or oil from the mowing equipment working within the channel can cause discharge of pollutants and degrade water quality.

Mitigation:
SY-H-1. - *Prevent Equipment Leaks and Spills.* Equipment fueling or maintenance shall not occur within the river channel. Spill containment and clean-up procedures for vehicle fuels and oils shall be developed by the District. All field personnel shall be trained and all field vehicles shall be equipped with appropriate materials.

## WATER QUALITY
## CLASS III IMPACTS

SY-WQ-B. Temporary Sedimentation and Turbidity. Mowing activities would generate vegetative debris that is discharged to the riverbed and susceptible to being suspended in winter runoff. This debris could cause temporary increases in suspended solids and turbidity in downstream areas. This impact is not considered significant because the effect would be temporary, similar to natural suspended material in winter flows, and the sediments produced would be very small compared to the sediments from the entire watershed.

Mitigation:
No mitigation required for a Class III (adverse but not significant) impacts.

## WETLAND, RIPARIAN HABITAT AND RARE PLANTS
## CLASS II IMPACTS

SY-WRR-A. Habitat Disturbance. Periodic disturbance to immature willow scrub due to mowing operations. Early to mid-successional woody vegetation dominated by willows in the channel bottom is periodically mowed, then allowed to re-sprout and develop for 3 to 5 years, depending upon runoff conditions. The amount of such habitat disturbed during each maintenance event will not exceed 16 acres.
Mitigation:

SY-B -1 – Compensatory Habitat Mitigation. The District has already initiated long-term compensatory habitat mitigation for the periodic disturbance of riparian habitats in the river channel, establishing 18 acres of various riparian habitats along the river upstream of the project site at three permanent mitigation sites, per the requirements of the California Department of Fish and Game. The creation, maintenance, and protection of these restoration sites represents full and complete mitigation for removal of up to 16 acres of riparian habitat at any time in the future as part of the project. However, subject to available resources, to further mitigate impacts of future periodic maintenance activities on riparian habitat, the District shall remove giant reed plants by the use of herbicides from the lower Santa Ynez River (Robinson Bridge to 13th Street Bridge) and prevent the colonization of this reach of the river for the life of the maintenance project. Stands of giant reed shall be removed, as needed in each reach maintained, in an on-going and proactive program to protect the lower river from this aggressive species. The District shall consider additional habitat restoration if and when future mitigation opportunities arise along the lower river through efforts by other public agencies and private entities.

SY-B-2 – Limits of Disturbance**.** Prior to clearing, District personnel shall place flagging, stakes, or other readily visible markers along the margins of the swaths to be cleared. No more than 16 acres of riparian woodland shall be mowed within the river channel. No clearing shall occur within 25 feet of the primary low-flow channel except when it is necessary to connect cleared swaths from one side of the low flow channel to the other side, or when it is necessary to clear a path across the low-flow channel for temporary equipment and crew access.

SY-B-3 – Minimize Surface Disturbance***.*** Disturbance of the riverbed shall be avoided to the extent feasible. The riverbed shall not be scraped, pushed, excavated, filled, or otherwise directly manipulated by equipment. Vegetative material cut from the riverbed shall be less than six feet in length. Cut vegetative material shall be allowed to fall in place, and shall not be collected, stockpiled, and/or disposed in a directed and purposeful manner.

SY-B-4 – Training and Monitoring. Prior to clearing, the District biologist shall conduct a training session with construction personnel to instruct them on areas to avoid and other environmental protection measures. The District biologist shall be present at all times during clearing activities to ensure that limits of work are observed. Monitoring activities shall be recorded daily.

SY-WRR-B. Disturbance to Wetlands. Mowing operations and accessing the river channel could in advertently disturb ponds and wetlands. The latter are defined as areas dominated by perennial wetland herbs such as watercress, spikerush, cattails, and bulrushes, and do not have a substantial number or density of willow trees or large mulefat plants.

Mitigation:
SY-B-5 – Avoid Ponds and Wetlands. No clearing shall occur within 25 feet of ponds and wetlands. Prior to clearing, District personnel shall place flagging, stakes, or other readily visible markers around ponds and wetlands to be avoided.

See Mitigation Measure SY-B-1- Compensatory Habitat Mitigation

SY-WRR-C. Access Ramp Habitat Impacts. Construction or maintenance of access ramps could temporarily reduce the amount of riparian habitat, which in turn could adversely affect nesting, cover, and foraging habitat for riparian-dependent bird species, as well as cover for riparian amphibians, reptiles, and mammals.

Mitigation:
SY-B-6 – Access Ramp Restoration. After each mowing event, the access ramps shall be seeded with low-growing native grasses, herbs, and shrubs common to the river banks of the project reach to restore habitat after the mowing event, but without dense woody plants that would preclude it use for the next maintenance event.

SY-WRR-D. Impacts to Rare Plants. Accessing the river channel with the crew and mower could potentially affect the regionally rare Lompoc figwort which occurs in woodland habitat along the river banks. Although this species is not known to be present at any of the existing access points, there is a remote possibility that it may be present in the future.

Mitigation:
SY-B-7 - Pre-Construction Biological Surveys. The District biologist shall conduct a biological survey no later than five (5) days prior to the clearing to confirm the limits of the work area, the flagging of environmentally sensitive areas, and to search for: (1) Lompoc figwort at access points; and (2) the western pond turtles and California red-legged frog, both of which could occur in ponds or portions of the low flow channel. The latter species would be physically captured and removed if they occur in areas where clearing or equipment access must occur. They would not be removed from ponds that are protected from clearing or from the low flow channel that is protected by a 25-foot wide buffer zone. The District biologist has the requisite permits and authorizations to handle and relocate these species from CDFG and USFWS. If the Lompoc figwort is present, the District shall modify access routes, if feasible, to avoid removal or disturbance. If the plant cannot be avoided, the District shall relocate the plant by cultivation or seeding methods to a suitable nearby site.

## FISH, AQUATIC SPECIES, AND WILDLIFE
## CLASS II IMPACTS

SY-FAW-A. General Impacts to Wildlife. Mowing will temporarily displace wildlife that utilize immature willow scrub, and reduce the quality of the habitat. Between mowing events, the habitat would recover and be recolonized by wildlife.

Mitigation:
SY-B-8 – Seasonal Avoidance. Clearing shall occur during the months of October 1st to December 1st, to prevent conflicts with the riparian breeding birds, and the endangered southwestern willow flycatcher and the least Bell's vireo.

See Mitigation Measures:
SY-B-2- Limits of Disturbance
SY-B-5- Avoid Ponds and Wetlands

SY-FAW-B. Displace or Disturb Sensitive Wildlife. Mowing operations and accessing the river channel could displace or disturb the California red-legged frog and the southwestern pond turtle. These species are residents in ponds and wetland areas of the river channel. Impacts to these species would be avoided. The willow flycatcher, least Bell's vireo, and various regionally rare riparian breeding birds are absent from the river during the work period. Periodic mowing of immature willow scrub would not adversely affect the quality of the habitat for these species.

Mitigation:
SY-B-9 - Monitor for Sensitive Species. The District biologist shall monitor clearing events located at or near sensitive species locations, as determined during the pre-construction survey. The objective of the monitoring is to ensure that key habitat features or species locations are avoided, and to relocate species if they are unexpectedly encountered in a work area. The District biologist shall examine ponds and channels near the work areas for the presence of pond turtles and/or red-legged frogs; and move these species if it appears that they may be indirectly affected by the clearing activities. Results of the monitoring shall be documented in a post-maintenance report.

See Mitigation Measures:
SY-B-2-Limits of Disturbance
SY-B-5- Avoid Ponds and Wetlands
SY-B-7- Pre-Construction Biological Surveys
SY-B-8-Seasonal Avoidance

SY-FAW-C. Disturbance to Migrating Steelhead. Mowing operations and accessing the river channel could displace or disturb steelhead if they are migrating through the project reach. The southern steelhead migrates upstream from December 1st through March 1st. Smolts migrate downstream to the lagoon or ocean during the period February through May. The mowing will be restricted to the period October through November, and as such, will avoid impacts to migrating steelhead.

Mitigation:
See Mitigation Measure:
SY-B-8 Seasonal Avoidance

SY-FAW-D. Equipment Leaks and Spills, as it affects aquatic organisms and sensitive species (see Water Quality)

Mitigation:
See Mitigation Measure SY-H-1-Prevent Leaks and Spills

## HYDROLOGY
## CLASS III IMPACTS

SY-H-A. Reduced Channel Resistance. Mowing in-channel vegetation may have a slight effect on velocities of low to moderate flows that would otherwise pass through this vegetation. The reduction in channel resistance could result in increase in velocities of certain flows, which in turn, could cause increased channel bed scour and downstream sedimentation. This hydraulic impact is expected to be negligible due to the small area removed, the low resistance of the vegetation being mowed, and the wide channel available for flows to spread.

Mitigation:
No mitigation required for a Class III (adverse but not significant) impacts.

## AIR QUALITY
## Class III Impacts

SY-AQ-A. Equipment Emissions. Temporary emissions of reactive organic compounds (ROC), particulate matter, and NOx associated with the mower and chain saws.

Mitigation:
*SY-A-1 – Reduce Emissions*. Implement the following Santa Barbara County APCD-approved measures for each piece of heavy-duty diesel construction equipment to minimize $NO_x$ emissions: (1) The engine size of construction equipment shall be the minimum practical size; (2) Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated clean diesel engines) should be utilized wherever feasible; (3) The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest number is operating at any one time; (4) Construction equipment operating onsite shall be equipped with two to four degree engine timing retard or pre-combustion chamber engines; (5) Catalytic converters shall be installed on gasoline-powered equipment, if feasible; (6) Diesel catalytic converters shall be installed, if available; and (7) Diesel powered equipment should be replaced by electrical equipment, whenever feasible.

SY-AQ-B. Fugitive Dust Emissions. Temporary emissions of fugitive dust (particulate matter) due to mower operations.

Mitigation:
No feasible measures can be employed to reduce unavoidable dust created during mowing operations and none are required for Class III (adverse but not significant) impacts.

## NOISE
## CLASS III IMPACTS

SY-N-A. Mower Noise. Mowing and chain saw operations would temporarily increase the ambient noise levels in adjacent land uses. However, there are no noise-sensitive receptors in proximity to the project site. This impact would be limited to weekdays between 7 AM and 5 PM, with a limited duration of several days at any one location.

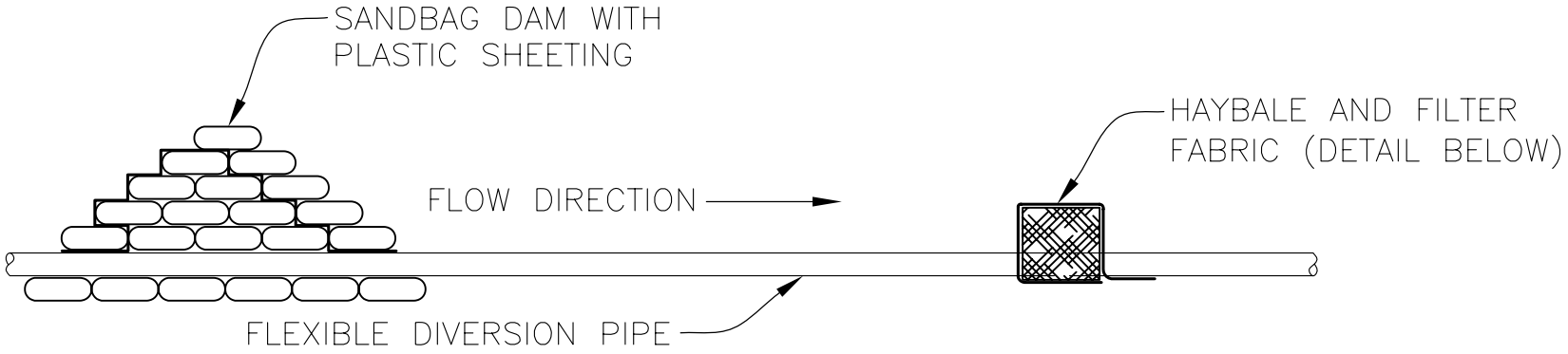
Mitigation:
No mitigation required for Class III (adverse, but not significant) impacts.

## VISUAL
## CLASS III IMPACTS

SY-V-A. Visual Impacts of Mowing. Mowing would increase the open areas in the river channel, exposing open sandy floodplain. This impact would be minor because only a

small proportion of the channel would be affected, dense woodland and mature trees on the banks would be avoided, and public viewing locations of the river channel are not present.

Mitigation:
No mitigation required for Class III (adverse, but not significant) impacts.

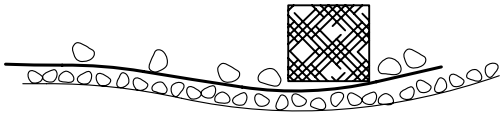




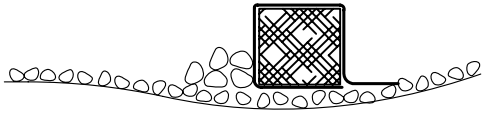

1. PREPARATION—SMOOTH A FLAT AREA OF CHANNEL BY MOVING COBBLES AND SAND (PERFORMED WITH HANDTOOLS ONLY)



2. LAY FILTER FABRIC OVER CHANNEL, ANCHOR LIGHTLY WITH COBBLE



3. PLACE HAYBALE AT ONE END OF FILTER FABRIC



4. WRAP FILTER FABRIC OVER HAYBALE, ANCHOR LEADING EDGE WITH COBBLE

## HAYBALE AND FILTER FABRIC INSTALLATION

N.T.S.

SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

# *TEMPORARY WATER DIVERSION*

APPENDIX - Vascular Plant Lists

Annual Routine Maintenance Plan

# ADOBE CANYON CREEK
# VASCULAR PLANT LIST

| SCIENTIFIC NAME | COMMON NAME | ORIGIN |
|---|---|---|
| AMARANTHACEAE | | |
| Amaranthus sp. | Amaranth | I |
| ANACARDIACEAE | | |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Apium graveloens | Celery | I |
| APOCYNACEAE | | |
| Vinca major | Periwinkle | I |
| ARALIACEAE | | |
| Hedera helix | English Ivy | I |
| ASTERACEAE | | |
| Artemisia douglasiana | Mugwort | N |
| Baccharis salicifolia | Mulefat | N |
| Baccharis pilularis | Coyote Bush | N |
| Centaurea melitensis | Tocalote | |
| Cirsium vulgare | Bull Thistle | I |
| Gnaphalium sp. | Everlasting | I |
| Picris echioides | Ox Tongue | I |
| Senecio mikanioides | German Ivy | I |
| Silybum marianum | Milk Thistle | I |
| Xanthium strumarium | Cocklebur | I |
| BETULACEAE | | |
| Alnus rhombifolia | White Alder | N |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturtium -aquaticum | Watercress | I |

| | | |
|---|---|---|
| CAPRIFOLIACEAE | | |
| Lonicera sp. | Garden Honeysuckle | I |
| Sambucus mexicana | Elderberry | N |
| CHENOPODIACEAE | | |
| Chenopodium murale | Nettle-Leaved Goosefoot | I |
| RUBIACEAE | | |
| Galium trifidum | Bedstraw | I |
| SALICACEAE | | |
| Populus fremontii | Fremont Cottonwood | N |
| Salix exigua | Narrowleaf Willow | N |
| Salix laevigata | Red Willow | N |
| Salix lasiolepis | Arroyo Willow | N |
| SAURURACEAE | | |
| Anemopsis californica | Yerba Mansa | N |
| TYPHACEAE | | |
| Typha sp. | Cattail | N |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | N |
| VERBENACEAE | | |
| Verbena lasiostachys | Verbena | N |

# VASCULAR PLANT LIST
# ALAMO PINTADO CREEK

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| AMARANTHACEAE | | |
| Amaranthus albus | Tumbleweed | I |
| Amaranthus deflexus | Low Amaranth | I |
| ANACARDIACEAE | | |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Apium graveolens | Celery | I |
| Conium maculatum | Poison Hemlock | I |
| APOCYNACEAE | | |
| Vinca major | Periwinkle | I |
| ARALIACEAE | | |
| Hedera helix | English Ivy | I |
| ASTERACEAE | | |
| Artemisia californica | California Sagebrush | N |
| Artemisia douglasiana | Mugwort | N |
| Baccharis pilularis ssp. consanguinea | Coyote Bush | N |
| Calendula officinalis | Pot-Marigold | I |
| Centaurea solstitalis | Barnaby's Thistle | I |
| Conyza canadensis | Horseweed | I |
| Gnaphalium luteo-album | Weedy Everlasting | I |
| Gnaphalium palustre | Wooly Everlasting | N |
| Hapbpapus squarrosus | Sawtooth Golden bush | N |
| Helianthus sp. | Garden Sunflower | I |
| Lactuca serriola | Prickly Lettuce | I |
| Senecio mikanioides | German Ivy | I |
| Silybum marianum | Milk Thistle | I |
| Solidago occidentalis | Western Goldenrod | N |
| Sonchus oleraceus | Sow Thistle | I |
| Xanthium strumarium | Cocklebur | I |
| BETULACEAE | | |
| Alnus rhombifolia | White Alder | N |

| | | |
|---|---|---|
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturtium -aquaticum | Watercress | I |
| CACTACEAE | | |
| Opuntia sp. | Beavertail Cactus | I |
| CAPRIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| JUGLANDACEAE | | |
| Juglans californica | California Walnut | N |
| PLATANACEAE | | |
| Platanus racemosa | Western Sycamore | N |
| POACEAE | | |
| Arundo donax | Giant Reed | I |
| Avena barbata | Slender Wild Oats | I |
| Bromus diandrus | Rupgut | I |
| Cynodon dactylon | Bermuda Grass | I |
| Elymus condensatus | Giant Rye | N |
| Lolium perenne | Italian Ryegrass | I |
| Oryzopsis miliacea | Rice Grass | I |
| Polypogon interruptus | Beard Grass | I |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| POLYGONACEAE | | |
| Polygonum capitatum | Common Knotweed | I |
| Polygonum lapathifolium | Willow Smartweed | N |
| Rumex crispus | Curly Dock | I |
| RANUNCULACEAE | | |
| Clematis ligusticifolia | Creek Clematis | N |
| ROSACEAE | | |
| Rosa californica | Wild Rose | N |
| Rubus ursinus | California Blackberry | N |
| SALICACEAE | | |
| Populus fremontii | Fremont Cottonwood | N |
| Populus balsamifera | Black Cottonwood | N |

| | | |
|---|---|---|
| Salix laevigata | Red Willow | N |
| Salix lasiolepis | Arroyo Willow | N |
| SCROPHULARIACEAE | | |
| Mimulus guttatus | Marsh Monkey Flower | N |
| Veronica americana | Speedwell | N |
| SOLANACEAE | | |
| Datura meteloides | Jimson Weed | I |
| Nicotiana glauca | Tobacco Tree | I |
| TYPHACEAE | | |
| Typha sp. | Cattail | N |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | N |
| VERBENACEAE | | |
| Verbena lasiostachys | Verbena | N |
| VISCACEAE | | |
| Phorandendron villosum | Oak Mistletoe | N |

* I = Introduced
N = Native

# ARROYO PAREDON CREEK
# VASCULAR PLANT LIST

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| EQUISETACEAE | | |
| Equistum telmateia | Giant Horsetail | N |
| ANACARDIACEAE | | |
| Rhus integrefolia | Lemonadeberry | N |
| Malosma laurina | Laurel Sumac | N |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| Foeniculum vulgare | Sweet Fennel | I |
| ARALIACEAE | | |
| Hedera helix | English Ivy | I |
| ASTERACEAE | | |
| Ageratina adenophora | Ironweed | I |
| Artemisia douglasiana | Mugwort | N |
| Baccharis salicifolia | Mulefat | N |
| Baccharis pilularis | Coyotebush | N |
| Gnaphalium palustre | Wooly Everlasting | N |
| Picris ecioides | Ox Tongue | I |
| Senecio mikanioides | German Ivy | I |
| Sonchus asper | Sow Thistle | I |
| Venegasia carpesioides | Canyon Sunflower | N |
| BETULACEAE | | |
| Alnus rhombifolia | White Alder | N |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| CAPRIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| CHENOPODIACEAE | | |
| Chenopodium ambrosioides | Mexican Tea | I |
| Chenopodium murate | Nettle-Leaved -Goosefoot | I |

| | | |
|---|---|---|
| CONVOLVULACEAE | | |
| Calystegia macrostegia ssp. cyclostegia | Morning-Glory | I |
| CYPERACEAE | | |
| Cyperus alternifolius | Umbrella Plant | I |
| Cyperus esculentus | Yellow Nutgrass | N |
| Scirpus robustus | Prairie Bulrush | N |
| EUPHORBIACEAE | | |
| Ricinus communis | Castor Bean | I |
| FABACEAE | | |
| Melilotus albus | White Sweet Clover | I |
| Vicia benghalensis | Vetch | I |
| FAGACEAE | | |
| Quercus agrifloia | Coast Live Oak | N |
| GROSSULARIACEAE | | |
| Ribes amarum | Bitter Gooseberry | N |
| Ribes malvaceum | Chapperal-Flowering -Gooseberry | N |
| Ribes speciosum | Fuchsia-Flowered -Ribes | N |
| HYDROPHYLLACEAE | | |
| Phacelia ramossissima | Branching Phacelia | N |
| JUNCACEAE | | |
| Juncus xiphioides | Iris-Leaved Juncus | N |
| LAMIACEAE | | |
| Salvia mellifera | Black Sage | N |
| Salvia spatheca | Pithcher Sage | N |
| LAURACEAE | | |
| Umbellularia californica | California Laurel | N |
| MALCACEAE | | |
| Lavatera sp. | Lavatera | N |
| MYOPORUM | | |
| Myoporum laetum | Myoporum | I |

| | | |
|---|---|---|
| MYRTACEAE | | |
| Eucalyptus globulus | Blue Gum | I |
| ONAGRACEAE | | |
| Epilobium paniculatum | Willow-Herb | N |
| OXALIDACEAE | | |
| Oxalis pes-caprae | Sour Grass | I |
| PLANTAGINACEAE | | |
| Plantago lanceolata | English Plantain | I |
| Plantago major | Common Plantain | I |
| PLATANACEAE | | |
| Platanus racemosa | Western Sycamore | N |
| POACEAE | | |
| Avena fatua | Wild Oats | I |
| Bromus diandrus | Ripgut Grass | I |
| Bromus mollis | Soft Chess | I |
| Bromus rubens | Foxtail | I |
| Cortaderia atacamensis | Pampas Grass | I |
| Lolium perenne | Italian Ryegrass | I |
| POLYGONACEAE | | |
| Polygonum lapathifolium | Willow Smartweed | N |
| Rumex conglomeratus | Green Dock | I |
| Rumex crispus | Curly Dock | I |
| PRIMULACEAE | | |
| Anagallis arvensis | Scarlet Pimpernel | I |
| RANUNCULACEAE | | |
| Clematis ligusticifolia | Creek Clematis | N |
| RHAMNACEAE | | |
| Ceanothus spinosus | Greenbark | N |
| ROSACEAE | | |
| Cerocarpus betuloides | Mountain Mahogany | N |
| Rubus ursinus | California Blackberry | N |
| SALICACEAE | | |
| Populus fremontii | Fremont Cottonwood | N |

| | | |
|---|---|---|
| Populus balsamifera | Black cottonwood | N |
| Salix laevigata | Red Willow | N |
| Salix lasiolepis | Arroyo Willow | N |
| Salix exigua | Sandbar Willow | N |
| SCHROPHULARIACEAE | | |
| Mimulus aurantiacus | Bush Monkeyflower | N |
| Keckiella cordifolia | Climbing Pensteman | N |
| SOLANACEAE | | |
| Nicotiana glauca | Tobacco Tree | N |
| Solanum douglasii | Douglas Nightshade | N |
| Solanum xanti | Chaparral Nightshade | N |
| TAMARICACEAE | | |
| Tamarix sp. | Tamarisk | I |
| TROPAEOLACEAE | | |
| Tropaeolum majus | Garden Nasturtium | I |
| TYPHACEAE | | |
| Typha sp. | Cattail | N |
| VERBENACEAE | | |
| Verbena lasiostchys | Verbena | N |

* I = Introduced
N = Native

VASCULAR PLANT LIST
ARROYO BURRO CREEK

| SCIENTIFIC NAME | COMMON NAME | ORIGIN |
|---|---|---|
| EQUISETACEAE | | |
| Equisetum telmateia | Giant Horsetail | N |
| ANACARDIACEAE | | |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Apium graveolens | Celery | I |
| Conium maculatum | Poison Hemlock | I |
| APOCYNACEAE | | |
| Vinca major | Periwinkle | I |
| ARALICEAE | | |
| Hedera helix | English Ivy | I |
| ASTERACEAE | | |
| Artemisia douglasiana | Mugwort | N |
| Baccharis pilularis ssp. consanguinea | Coyote Bush | N |
| Conyza canadensis | Horseweed | I |
| Picris echioides | Ox Tongue | I |
| Senecio mikanioides | German Ivy | I |
| Sonchus arvensis | Prickly Sow Thistle | I |
| Venegasia carpesioides | Canyon Sunflower | N |
| Xanthium strumarium | Cocklebur | I |
| BETULACEAE | | |
| Alnus rhombifolia | White Alder | N |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturtium -aquaticum | Watercress | I |
| CAPRIFOLIACEAE | | |
| Lonicera sp. | Honeysuckle | I |
| Sambucus mexicana | Elderberry | N |
| CHENOPODIACEAE | | |

| | | |
|---|---|---|
| Chenopodium ambrosioides | Mexican Tea | I |
| Chenopodium macrospermum var. farinosum | Coast Goosefoot | I |
| Chenopodium murale | Nettle-Leaved -Goosefoot | I |
| **CYPERACEAE** | | |
| Cyperus alternifolius | Umbrella Plant | I |
| Cyperus eragrostis | Umbrella Sedge | I |
| Scirpus micrcarpus | Small-Fruited Bulrush | N |
| **EUPHORBIACEAE** | | |
| Ricinus communis | Castor Bean | I |
| **FAGACEAE** | | |
| Quercus agrifolia | Coast Live Oak | N |
| **JUGLANDACEAE** | | |
| Juglans sp. | Walnut | I |
| **LAMIACEAE** | | |
| Marrubim vulgare | Horehound | I |
| Mentha citrata | Bargamont Mint | I |
| **MYRTACEAE** | | |
| Euclayptus globulus | Blue Gum | I |
| **ONAGRACEAE** | | |
| Epilobium adenocaulon | Willow-Herb | N |
| **OXALIDACEAE** | | |
| Oxails pes-caprae | Sour Grass | I |
| **PLANTAGINACEAE** | | |
| Plantago lanceolata | English Plantain | I |
| Plantago major | Common Plantain | I |
| **PLATANACEAE** | | |
| Platanus racemosa | Western Sycamore | N |
| **POACEAE** | | |
| Arundo donax | Giant Reed | I |
| Bromus diandrus | Ripgut Grass | I |
| Cortaderia atacamensis | Pampas Grass | I |
| Oryzopsis miliacea | Rice Grass | I |
| Polypogon interruptus | Beard Grass | I |

| | | |
|---|---|---|
| POLYGONACEAE | | |
| Polygonum lapathifolium | Willow Smartweed | I |
| Rumex conglomeratus | Green Dock | I |
| Rumex crispus | Curly Dock | I |
| PRIMULACEAE | | |
| Anagallis arvenisis | Scarlet Pimpernel | I |
| RANUNCULACEAE | | |
| Clematis ligusticifolia | Creek Clematis | N |
| ROSACEAE | | |
| Rubus urnsinus | California Blackberry | N |
| SALICACEAE | | |
| Populus fremonti | Fremont Cottonwood | N |
| Salix laevigata | Red Willow | N |
| Salix lasiolepis | Arroyo Willow | N |
| SCOPHULARIACEAE | | |
| Mimulus cardinalis | Scarlet Monkey | N |
| Scrophularia californica | California Figwort | N |
| SOLANCEAE | | |
| Nicotiana glauca | Tobacco Tree | I |
| Solanum douglasii | Douglas Nightshade | N |
| TROPAELACEAE | | |
| Tropaeolum majus | Garden Nastutium | I |
| TYPHACEAE | | |
| Typha sp. | Cattail | N |
| VALERIANACEAE | | |
| Centranthus rubber | Red Valerian | I |
| VERBENACEAE | | |
| Verbena lasiostachys | Verbena | N |

* I - Introduced
N – Native

# VASCULAR PLANT LIST
# BRADLEY CANYON CHANNEL

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| ANACARDIACEAE | | |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| Foeniculum vulgare | Sweet Fennel | I |
| ASTERACEAE | | |
| Baccharis pilularis ssp. consanguinea | Coyote Bush | N |
| Carduus phonozephalus | Italian Thistle | I |
| Gnaphalium luteo-album | Weedy Everlasting | I |
| Lactuea serriola | Prickly lettuce | I |
| Picris echioides | Ox Tongue | I |
| Silybum marianum | Milk Thistle | I |
| Taraxcum officinale | Common Dandelion | I |
| Xanibum strumarium | Cocklebur | I |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturtium | Watercress | I |
| CAPRIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| CHENOPODIACEAE | | |
| Chenopodium ambrosioides | Mexican Tea | I |
| Chenopodium berlandieri | Lamb's Quarters | I |
| Chenopodium murale | Nettle-Leaved -Goosefoot | I |
| CYPERACEAE | | |
| Cyperus esculentus | Yellow Nutgrass | I |
| Scirpus californicus | California Bulrush | N |
| EUPHORBIACEAE | | |
| Ricinus communis | Castor Bean | I |

| | | |
|---|---|---|
| FABACEAE | | |
| Melilotus albus | White Sweet Clover | I |
| Trifolium sp. | Clover | I |
| LAMIACEAE | | |
| Marrubium vulgare | Horebound | I |
| PLANTAGINACEAE | | |
| Plantago major | Common Plantain | I |
| POACEAE | | |
| Avena fatua | Wild Oats | I |
| Bromus diandrus | Ripgut Grass | I |
| Bromus rubens | Foxtail | I |
| Lolium perenne | Italian Rye | I |
| Oryzopsis miliacea | Rice Grass | I |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| POLYGONACEAE | | |
| Polygonum arenastrum | Italian Ryegrass | I |
| Polygonum lapathifolium | Willow Smartweed | N |
| Rumex crispus | Curly Dock | I |
| SALICACEAE | | |
| Populus balsamifera | Black Cottonwood | N |
| Salix laevigata | Red Willow | N |
| Salix lasiolepis | Arroyo Willow | N |
| SOLANACEAE | | |
| Nicotiana glauca | Tree Tobacco | I |
| TYPHACEAE | | |
| Typha sp. | Cattail | N |

* I - Introduced
N - Native

# CANADA DE LA PILA CREEK
## VASCULAR PLANT LIST

| ***SCIENTIFIC NAME*** | ***COMMON NAME*** | ***ORIGIN**** |
|---|---|---|
| **ANACARDIACEAE** | | |
| Malosma laurina | Laurel Sumac | N |
| Toxicodendron diversilobumPoison | Oak | N |
| **ASTERACEAE** | | |
| Artemisia californica | California Sagebrush | N |
| Artemisia douglasiana | Mugwort | N |
| Baccharis salicifolia | Mulefat | N |
| Baccharis pilularis | Coyote Bush | N |
| Carduus pycnocephalus | Italian Thistle | I |
| Gnaphalium luteo-album | Weedy Everlasting | |
| Picris echioides | Ox Tongue | I |
| Silybum marianum | Milk Thistle | I |
| Sonchus arvensis | Prickly sow Thistle | I |
| Taraxcum officinale | Common Dandelion | I |
| **BRASSICACEAE** | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| **CHENOPODIACEAE** | | |
| Chenopodium ambrosioides | Mexican Tea | I |
| Chenopodium belandieri | Lamb's Quarters | |
| **CYPERACEAE** | | |
| Cyperus alternifolium | Umbrella Plant | I |
| Scirpus californicus | California Bulrush | N |
| **EUPHORBIACEAE** | | |
| Eremocarpus setigerus | Turkey Mullein | N |
| Ricinus communis | Castor Bean | I |
| **FABACEAE** | | |
| Melilotus albus | White sweet Clover | I |
| Vicia benghalensis | Vetch | I |
| **FAGACEAE** | | |
| Quercus agrifolia | Coast Live Oak | N |

| ***SCIENTIFIC NAME*** (cont'd) | ***COMMON NAME*** (cont'd) | ***ORIGIN*** (cont'd) |
|---|---|---|
| **LAMIACEAE** | | |
| Marrubium vulgare | Horehound | I |
| Mentha spicata | Spearment | I |
| **ONAGRACEAE** | | |
| Epilobium ciliatum | Willow-Herb | N |
| **PLANTAGINACEAE** | | |
| Plantago lanceolata | English Plantain | I |
| **POACEAE** | | |
| Avena fatua | Wild Oats | I |
| Bromus diandrus | Ripgut Grass | I |
| Elymus condensatus | Giant Rye | I |
| Piptatherum miliacea | Rice Grass | I |
| Pennisetum clandestinum | Kikuyu Grass | I |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| **POLYGONACEAE** | | |
| Rumex crispus | Curly Dock | I |
| **PRIMULACEAE** | | |
| Anagallis arvensis | Scarlet Pimpernel | I |
| **ROSACEAE** | | |
| Rubus ursinus | California Blackberry | N |
| **SALICACEAE** | | |
| Salix laevigata | Red Willow | N |
| Salix lasiolepis | Arroyo Willow | N |
| **SOLANACEAE** | | |
| Solanum douglasii | Douglas Nightshade | N |
| **TYPHACEAE** | | |
| Typha sp. | Cattail | N |
| **VERBENACEAE** | | |
| Verbena lasiostachys | Verbena | N |

* I = Introduced
N = Native

# CAT CANYON CREEK
# VASCULAR PLANT LIST

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| AMACARDOACEAE | | |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Conium Maculatum | Poison Hemlock | I |
| ASTERACEAE | | |
| Ambrosia Psilostachya | Western Ragweed | I |
| Artemisia douglasiana | Mugwort | N |
| Baccharis salicifolia | Mulefat | N |
| Baccharis pilularis | Coyote Bush | N |
| Carpobrotus edulis | Iceplant | I |
| Ciriusum vulgare | Bull Thistle | I |
| Heterotheca grandiflora | Telegraph Weed | N |
| Isocoma venetus ssp. verniodes | Coast Goldenbrush | N |
| Lactuca serriola | Prickly Lettuce | I |
| Picris echioides | Ox Tongue | I |
| Silybum marianum | Milk thistle | I |
| Sisymbrium irio | London Rocket | I |
| Xanthium strumarium | Cocklebur | I |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| CAPRIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| CHENOPDIACEAE | | |
| Chenopodium murale | Nettle-Leaved Goosefoot | I |
| CYPERACEAE | | |
| Cyperus alternifolius | Umbrella Plant | I |
| EUPHORBIACEAE | | |
| Euphoria peplus | Petty Surge | I |
| FABACEAE | | |
| Melilotus indicus | Yellow Sweet Clover | I |

| | | |
|---|---|---|
| MALVACEAE | | |
| Malva parviflora | Cheeseweed | I |
| PLANTAGINACEAE | | |
| Plantago major | Common Plantain | I |
| POACEAE | | |
| Avena fatua | Wild Oats | I |
| Bromus diandrus | Ripgut Grass | I |
| Cynodon dactylon | Bermuda Grass | I |
| Lolium perenne | Italian Ryegrass | I |
| Piptatherum miliaceum | Rice grass | I |
| Polypogon monspeliensis | Rabbitfoot Grass | I |
| POLYGONACEAE | | |
| Polygonum arenastrum | Common Knotweed | I |
| Rumex crispus | Curly Dock | I |
| PRUMULACEAE | | |
| Angallis arvensis | Scarlet Pimpernel | I |
| ROSACEAE | | |
| Rubus ursinus | Calif. Blackberry | N |
| SALICACEAE | | |
| Salix exigua | Narrowleaf Willow | N |
| Salix lasiolepis | Arroyo Willow | N |
| TROPAEOLACEAE | | |
| Tropaelum majus | Garden Nasturtium | I |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | N |

* I = Introduced
N = Native

# CEBADA CANYON CHANNEL
# VASCULAR PLANT LIST

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| ANACARDIACEAE | | |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| ASTERACEAE | | |
| Artemisia california | Calif. Sagebrush | N |
| Artemisia douglasiana | Mugwort | N |
| Baccharis pilularis ssp. consanguinea | Coyote Bush | N |
| Gnaphalium californicum | Pearly Everlasting | N |
| Lactuca serriola | Prickly Lettuce | I |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| CAPRIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| FAGACEAE | | |
| Quercus agrifolia | Coast Live Oak | N |
| MALVACEAE | | |
| Malva parviflora | Cheeseweed | I |
| POACEAE | | |
| Avena fatua | Wild Oaks | I |
| Bromus diandrus | Ripgut Grass | I |
| Oryzopsis sp. | Rice grass | I |
| Polypogon monspeliensis | Rabbitfoot Grass | I |
| PRUMULACEAE | | |
| Angallis arvensis | Scarlet Pimpernel | I |
| ROSACEAE | | |
| Rubus ursinus | Calif. Blackberry | N |

| | | |
|---|---|---|
| SALICACEAE | | |
| Salix lasiolepis | Arroyo Willow | N |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | N |

* I = Introduced
N = Native

# VASCULAR PLANT LIST
# CIENEGUITAS CREEK

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| EQUISETACEAE | | |
| Equisetum telmateia | Giant Horsetail | N |
| AMARANTHACEAE | | |
| Amaranthus deflexus | Low Amaranth | I |
| ANACARDIACEAE | | |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Apium graveolens | Celery | I |
| Conium maculatum | Poison Hemlock | I |
| Foeniculum vulgare | Sweet Fennel | I |
| APOCYNACEAE | | |
| Vinca major | Periwinkle | I |
| ARACEAE | | |
| Zantedeschia aethiopica | Calla-Lily | I |
| ARALIACEAE | | |
| Hedera helix | English Ivy | I |
| ASTERACEAE | | |
| Ambrosia psilostachya | Western Ragweed | N |
| Artemisia californica | California Sagebrush | N |
| Artemisia douglasiana | Mugwort | N |
| Baccharis pilularis ssp. consanguinea | Coyote Bush | N |
| Carduus pycnocephalus | Italian Thistle | I |
| Conyza bonariensis | Flax-Leaved Fleabane | I |
| Conyza canadensis | Horseweed | I |
| Cotula coronopifolia | Brass Buttons | I |
| Gnaphalium luteo-album | Weed Everlasting | I |
| Lactuca serriola | Prickly Lettuce | I |
| Malacothrix saxtitilis var. tenuifolia | Cliff Aster | N |
| Picris echioides | Ox Tongue | I |
| Senecio mikanioides | German Ivy | I |
| Silybum marianum | Milk Thistle | I |
| ASTERACEAE | | |

| | | |
|---|---|---|
| Sonchus arvensis | Prickly Sow Thistle | I |
| Sobchus oleraceaus | Sow Thistle | I |
| Xanthium strumarium | Cocklebur | I |
| BRASSICACEA | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturtium -aquaticum | Watercress | I |
| CACTACEAE | | |
| Opuntia sp. | Beavertail Cactus | N |
| CAPRIFOLIACEAE | | |
| Lonicera japonica | Garden Honeysuckle | I |
| Sambucus mexicana | Elderberry | N |
| CHENOPODIACEAE | | |
| Artiplex hastata | Hastate-Leaved Saltbush | I |
| Artiplex semibaccata | Australian Saltbush | I |
| Chenopodium ambrosioides | Mexican Tea | I |
| Chenopodium murale | Nettle-Leaved Goosefoot | I |
| Salsola iberica | Russian Thistle | I |
| CONVOLVULACEAE | | |
| Convolvulus althaeoides | Garden Morning Glory | I |
| Convolvulus arvensis | Bindweed | I |
| CYPERACEAE | | |
| Cyperus alternifolius | Umbrella Plant | I |
| Scirpus californicus | California Bulrush | N |
| EUPHORBIACEAE | | |
| Eremocarpus setigerus | Turkey Mullein | N |
| Ricinus communis | Castor Bean | I |
| FABACEAE | | |
| Acacia decurrens | Green Wattle | I |
| Lathyrus latifolius | Common Sweetpea | I |
| Melilotus alba | White Sweet Clover | I |
| Melilotus indicus | Yellow Sweet Clover | I |
| Vicia sativa | Spring Vetch | I |
| FAGACEAE | | |
| Quercus agrifolia | Coast Live Oak | N |

| | | |
|---|---|---|
| OLEACEAE | | |
| Fraxinus dipetala | Flowering ash | N |
| GERANEACEAE | | |
| Erodium botrys | Broad-Leaf Filaree | I |
| JUGLANDACEAE | | |
| Juglans regia | English Walnut | I |
| JUNCACEAE | | |
| Juncus effusus var. brunneus | Common Rush | N |
| LAMIACEAE | | |
| Marrubium vulgare | Horehound | |
| Mentha spicata | Spearmint | I |
| Stachys bullata | Wood Mint | N |
| MALVACEAE | | |
| Malva parviflora | Cheeseweed | I |
| MORACEAE | | |
| Ficus carica | Cultivated Fig | I |
| MYRTACEAE | | |
| Eucalyptus globulus | Blue Gum | I |
| OXALIDACEAE | | |
| Oxalis pes-caprae | Sour Grass | I |
| PLANTAGINACEAE | | |
| Plantago lanceolata | English Plantain | I |
| Plantago major | Common Plaintain | I |
| PLATANACEAE | | |
| Platanus racemosa | Western Sycamore | N |
| POACEAE | | |
| Agrostis stolonifera | Redtop | I |
| Avena fatua | Wild Oats | I |
| Avena barbata | Slender Wild Oats | I |
| Bromus diandrus | Ripgut Grass | I |
| Bromus mollis | Soft Chess | I |
| Cortaderia atacamensis | Pampas Grass | I |
| Cynodon dactylon | Bermuda Grass | I |
| Hordeum glaucum | Glaucus Barley | I |

POACEAE

| | | |
|---|---|---|
| Koeleria macrantha | June Grass | I |
| Lolium perenne | Italian Ryegrass | I |
| Oryzopsis miliacea | Rice Grass | I |
| Paspalum dilitatum | Dallas Grass | I |
| Paspalum distichum | Knotgrass | I |
| Pennisetum clandetinum | Kikuyu Grass | I |
| Pennisetum setaceum | Fountain Grass | I |
| Phalaris stenoptera | Harding Grass | I |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| POLYGONACEAE | | |
| Polygonum arenastrum | Common Knotweed | I |
| Polygonum lapathifolium | Willow Smartweed | N |
| Polygonum punctatum | Dotted Smartweed | N |
| Rumex crispus | Curly Dock | I |
| PORTULACACEAE | | |
| Portulaca oleracea | Purslane | N |
| PRIMULACEAE | | |
| Anagallis arvensis | Scarlet Pimpernel | I |
| ROSACEAE | | |
| Heteromeles arbutifloia | Toyon | N |
| Rubus ursinus | California Blackberry | N |
| SALICACEAE | | |
| Populus balsamifera | Black Cottonwood | N |
| Salix lasiolepis | Arroyo Willow | N |
| SOLANACEAE | | |
| Nicotiana glauca | Tobacco tree | I |
| Solanum douglasii | Douglas Nightshade | N |
| TROPAEOLACEAE | | |
| Tropaeolum majus | Garden Nasturtium | I |
| TYPHACEAE | | |
| Typha domingensis | Cattail | N |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | N |

* I = Introduced
N = Native

**DAVIS CREEK**

**VASCULAR PLANT LIST**

| Scientific Name | Origin | Common Name |
|---|---|---|
| *Populus trichocarpa* | Native | Black cottonwood |
| *Salix laevigata* | Native | Red willow |
| *Salix lasiolepis* | Native | Arroyo willow |
| *Baccharis salicifolia* | Native | Mule fat |
| *Frangula californica* ssp. *californica* | Native | Coffeeberry |
| *Lonicera involucrata* | Native | Twin berry |
| *Rubus ursinus* | Native | California blackberry |
| *Toxicodendron diversilobum* | Native | Poison oak |
| *Anagallis arvensis* | Introduced | Scarlet pimpernel |
| *Apium graveolens* | Native | Celery |
| *Artemisia douglasiana* | Native | Mugwort |
| *Bowlesia incana* | Native | Bowlesia |
| *Cardamine oligosperma* | Native | Bitter-cress |
| *Cerastium glomeratum* | Introduced | Mouse-eared chickweed |
| *Claytonia perfoliata* | Native | Miner’s lettuce |
| *Conium maculatum* | Introduced | Poison hemlock |
| *Crassula connata* | Native | Pygmyweed |
| *Melilotus officinalis* | Introduced | Yellow sweet clover |
| *Nasturtium officinale* | Native | Common watercress |
| *Phacelia ramosissima* | Native | Branching phacelia |
| *Stellaria media* | Introduced | Chickweed |
| *Urtica dioica* | Native | Stinging nettle |
| *Veronica anagallis-aquatica* | Native | Water speedwell |
| *Elymus glaucus* | Native | Blue wildrye |
| *Juncus effusus* | Native | Bog rush |
| *Juncus phaeocephalus* | Native | Brown headed rush |
| *Polypogon monspeliensis* | Introduced | Annual beard grass |
| *Schoenoplectus californicus* | Native | California tule |
| *Sparganium eurycarpum* | Native | Bur-reed |
| *Typha domingensis* | Native | Narrowleaf cattail |

# FOXENWOOD 3 BASIN
# VASCULAR PLANT LIST

| SCIENTIFIC NAME | COMMON NAME | ORIGIN |
|---|---|---|
| AMARANTHACEAE | | |
| Amaranthus albus | Tumbleweed | I |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| ASTERACEAE | | |
| Ambrosia psilostachya | Western Ragweed | I |
| Baccharis salicifolia | Mulefat | N |
| Cotula coronopifolia | Brass Buttons | I |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Sisymbrium irio | London Rocket | I |
| CYPERACEAE | | |
| Heleocharis sp | Spike Rush | N |
| Scirpus californicus | California Bulrush | N |
| EUPHORBIACEAE | | |
| Eremocarpus setigerus | Turkey Mullein | N |
| FABACEAE | | |
| Metilotus albus | White Sweet Clover | I |
| LAMIACEAE | | |
| Marrubium vulgare | Horehound | I |
| MYRTACEAE | | |
| Eucalyptus sp. | Eucalyptus | I |
| ONAGRACEAE | | |
| Epilobium paniculatum | Willow-Herb | N |
| POACEAE | | |
| Avena fatua | Wild Oats | I |
| Bromus diandrus | Ripgut Grass | I |
| Piptatherum miliaceum | Rice Grass | I |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| POLYGONACEAE | | |

| | | |
|---|---|---|
| Polygonum lapathiflium | Willow Smartweed | N |
| Rumex crispus | Curly Dock | I |
| SALICACEAE | | |
| Salix lasiolepis | Arroyo Willow | N |

*I = Introduced
N = Native

VASCULAR PLANT LIST
GREEN CANYON DRAINAGES

| SCIENTIFIC | COMMON NAME | ORIGIN* |
|---|---|---|
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| ASTERACEAE | | |
| Ambrosia psilostachya | Western Ragweed | I |
| Conyza bonariensis | Horseweed | I |
| Heterotheca grandiflora | Telegraph Weed | N |
| Sencio vulgaris | Common Groundsel | I |
| Sonchus asper | Sow Thistle | I |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturium -aquaticum | Watercress | N |
| FABACEAE | | |
| Melilotus indicus | Yellow Sweet Clover | I |
| MALVACEAE | | |
| Malva parviflora | Cheeseweed | I |
| MYRTACEAE | | |
| Eucalyptus sp. | Eucalyptus | I |
| ONAGRACEAE | | |
| Epilobium adenocaulation | Willow-Herb | N |
| POACEAE | | |
| Avena fatua | Wild Oat | I |
| Bromus mollis | Soft Chess | I |
| Bromus rubens | Foxtail | I |
| Cortaderia acacamensis | Pampas Grass | I |
| Lolium perenne | Italian Rye | I |
| Oryzopsis sp. | Rice grass | I |
| POLYGONACEAE | | |
| Polygonum lapathifolium | Willow Smartweed | N |
| Rumex crispus | Curly Dock | I |
| SALICACEAE | | |

| | | |
|---|---|---|
| Salix lasiolepis | Arroyo Willow | N |
| TYPHACEAE | | |
| Typha sp. | Cattail | N |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | N |

* I = Introduced
N = Native

**VASCULAR PLANT LIST**
**LAS VEGAS CREEK**

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| APIACEAE | | |
| Foeniculum vulgare | Sweet Fennel | I |
| ASTERACEAE | | |
| Baccharis glutinosa | Mulefat | N |
| Baccharis pilularis ssp. Consanguinea | Coyote Bush | N |
| Picris echioides | Ox Tongue | I |
| Xanthium strumarium | Cocklebur | I |
| BETULACEAE | | |
| Alnus rhombifolia | White Alder | N |
| BRASSICACEAE | | |
| Raphanus sativus | Wild Radish | I |
| EUPHORIACEAE | | |
| Ricinus communis | Castor Bean | I |
| FABACEAE | | |
| Vicia benghalensis | Vetch | I |
| JUGLANDACEAE | | |
| Juglans regia | English Walnut | I |
| PLANTAGINACEAE | | |
| Plantago major | Common plantain | I |
| PLANTANACEAE | | |
| Plantanus racemosa | Western Sycamore | N |
| POLYGONACEAE | | |
| Rumex conglomeratus | Green Dock | I |
| Rumex crispus | Curly Dock | I |
| ROSACEAE | | |
| Rubis ursinus | Blackberry | N |
| SALICACEAE | | |
| Populus trichocarpa | Black Cottonwood | N |
| Salix laevigata | Red Willow | N |

| | | |
|---|---|---|
| Salix lasiolepis | Arroyo Willow | N |
| Salix hindisan | Sandbar Willow | N |
| SOLANACEAE | | |
| Nicotiana glauca | Tobacco Tree | I |
| TROPAEOLACEAE | | |
| Teopaeolum majus | Garden Nasturtium | I |

* I = Introduced
N = Native

# LAS POSITAS CREEK
# VASCULAR PLANT LIST

| *SCIENTIFIC NAME* | *COMMON NAME* | *ORIGIN** |
|---|---|---|
| **EQUISETACEAE** | | |
| Equisetum telmateia | Giant Horsetail | N |
| **APIACEAE** | | |
| Conium maculatum | Poison Hemlock | I |
| Foeniculum vulgare | Sweet Fennel | I |
| **APOCYNACEAE** | | |
| Vinca major | Periwinkle | I |
| **ASTERACEAE** | | |
| Artemisia doulgasiana | Mugwort | N |
| Baccharis glutinosa | Mulefat | N |
| Baccharis pilularis ssp. consanguinea | Coyote Bush | N |
| Senecio mikanioides | German Ivy | I |
| **BRASSICACEAE** | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| **CAPRIFOLIACEAE** | | |
| Sambucus mexicana | Elderberry | N |
| **CYPERACEAE** | | |
| Cyperus alternifolius | Umbrella Plant | I |
| **FABACEAE** | | |
| Vicia benghalensis | Vetch | N |
| **FAGACEAE** | | |
| Qurcus agriolia | Coast Live Oak | N |
| **JUGLANDACEAE** | | |
| Juglans regia | English Walnut | I |
| **MYRTACEAE** | | |
| Eucalyptus globulus | Blue Gum | I |

| ***SCIENTIFIC NAME*** | ***COMMON NAME*** | ***ORIGIN*** |
|---|---|---|
| **PLANTAGINACEAE** | | |
| Plantago lanceolata | English Plantain | I |
| Plantago major | Common Plantain | I |
| **POACEAE** | | |
| Arundo donax | Giant Reed | I |
| Cortaderia atacamensis | Pampas Grass | I |
| **POLYGONACEAE** | | |
| Rumex conglomeratus | Green Dock | I |
| Rumex crispus | Curly Dock | I |
| **RANUNCULACEAE** | | |
| Clematis ligusticifolia | Creek Clematis | N |
| **ROSACEAE** | | |
| Rosa californica | Wild Rose | N |
| Rubus ursinus | California Blackberry | N |
| **SALICACEAE** | | |
| Salix laevigata | Red Willow | N |
| Salix lasiolepis | Arroyo Willow | N |
| **SOLANABEAE** | | |
| Nicotiana glauca | Tobacco Tree | I |
| Solanum douglasii | Douglas Nightshade | N |
| **TYPHACEAE** | | |
| Typha sp. | Cattail | N |

*N = NATIVE
I= INTRODUCED

VASCULAR PLANT LIST
MARIA YGNACIO CREEK

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| EQUISETACEAE | | |
| Equisetum telmateia | Giant Horsetail | N |
| APIACEAE | | |
| Apium graveolens | Celery | I |
| Foeniculum vulgare | Sweet Fennel | I |
| ASTERACEAE | | |
| Artemisia douglasiana | Mugwort | N |
| Xanthium strumarium | Cocklebur | I |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturtium-aquaticum | Watercress | I |
| CONVOVULACEAE | | |
| Calystegia macrostegia ssp. cyclostegia | Morning Glory | I |
| CYPERACEAE | | |
| Cyperus alternifolius | Umbrella Plant | I |
| Scirpus californicus | California Bulrush | N |
| EUPHORBIACEAE | | |
| Ricinus communis | Castor Bean | I |
| FABACEAE | | |
| Melilotus albus | White Sweet Clover | I |
| Vicia benghalensis | Vetch | I |
| FAGACEAE | | |
| Quercus agrifolia | Coast Live Oak | N |
| HYDROPHYLLACEAE | | |
| Phacelia ramossissima | Branching Phacelia | N |
| ONAGRACEAE | | |
| Clarkia deflexa | Clarkia | N |

| | | |
|---|---|---|
| Oenothera hookeri | Primrose | N |
| PLANTAGINACEAE | | |
| Plantago lanceolata | English Plantain | I |
| PLATANACEAE | | |
| Plantanus racemosa | Western Sycamore | N |
| POACEAE | | |
| Arundo donax | Giant Reed | I |
| Cortaderia atacamensis | Pampas Grass | I |
| POLYGONACEAE | | |
| Rumex conglomeratus | Green Dock | I |
| Rumex crispus | Curly Dock | I |
| SALICACEAE | | |
| Salix laevigata | Red Willow | N |
| Salix lasiolepis | Arroyo Willow | N |
| SOLANACEAE | | |
| Nicotiana glauca | Tobacco Tree | I |
| Solanum douglasii | Douglas Nightshade | N |
| VERBENACEAE | | |
| Verbena lasiotachys | Verbena | N |

* N = Native
I = Introduced

MIGUELITO CHANNEL OUTLET
VASCULAR PLANT LIST

| SCIENTIFIC NAME | COMMON NAME | ORIGIN |
|---|---|---|
| ANACARDIACEAE | | |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Apium graveolens | Celery | I |
| Conium maculatum | Poison Hemlock | I |
| Foenicumum vulgare | Sweet Fennel | I |
| ASTERACEAE | | |
| Artemisia californica | California Sagebrush | N |
| Artemisia douglasiana | Mugwort | N |
| Baccharis salicifolia | Mulefat | N |
| Baccharis pillaris | Coyote Bush | N |
| Cirisium vulgare | Bull Thistle | I |
| Lactuca serriola | Prickly Lettuce | I |
| Picris ecioides | Ox Tongue | I |
| Silybum marianum | Milk Thistle | I |
| Sonchus arvensis | Prickly Sow Thistle | I |
| Xanthium strmarium | Cocklebur | I |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| CARIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| CYPERACEAE | | |
| Scirpus californicus | California Bulrush | N |
| FABACEAE | | |
| Metilotus albus | White Sweet Clover | I |
| Metilotus indicus | Yellow Sweet Clover | I |
| FAGACEAAE | | |
| Quercus agrifolia | Coast Live Oak | N |
| PLANTANACEAE | | |
| Platanus racemosa | Western Sycamore | N |
| POACEAE | | |

| | | |
|---|---|---|
| Avena fatua | Wild Oats | I |
| Bromus diandrus | Ripgut Grass | I |
| Lolium perenne | Italian Ryegrass | I |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| RANUNCULACEAE | | |
| Clematis ligusticifolia | Creek Clematis | N |
| ROSACEAE | | |
| Rubus ursinus | California Blackberry | N |
| SALICACEAE | | |
| Populus balsamifera | Black Cottonwood | N |
| Salix laevigata | Red Willow | N |
| Salix lasiolepis | Arroyo Willow | N |
| SCROPHULARIACEAE | | |
| Scrophularia californica | California Figwort | N |
| SOLANCEAE | | |
| Nicotiana glauca | Tobacco Tree | I |
| Solananum douglasii | Douglas Nightshade | N |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | N |

*I = Introduced
N = Native

VASCULAR PLANT LIST
MONTECITO CREEK

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| EQUISETACEAE | | |
| Equisetum telmateia | Giant Horsetail | N |
| ANACARDIACEAE | | |
| Rhus integrefolia | Lemonadesberry | N |
| Rhus laurina | Laurel Sumac | N |
| Schinus molle | PepperTree | I |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| Foeniculum vulgare | Sweet Fennel | I |
| APOCYNACEAE | | |
| Vinca major | Periwinkle | I |
| ARALIACEAE | | |
| Hedera helix | English Ivy | I |
| ASTERACEAE | | |
| Ageratina adenophora | Ironweed | I |
| Artemisia californica | California Sagebrush | N |
| Artemisia douglasiana | Mugwort | N |
| Baccharis glutinosa | Mulefat | N |
| Baccharis pilularis ssp. Consanguinea | Coyote Bush | N |
| Cardus pyncnocephalus | Italian Thistle | I |
| Cirsium vulgare | Bull Thistle | I |
| Picris echioides | Ox Tongue | I |
| Senecio mikanioides | German Ivy | I |
| Silybum marianum | Milk Thistle | I |
| Sonchus arvensis | Prickly Sow Thistle | I |
| Taraxcum officinale | Common Dandelion | I |
| Venegasia carpesioides | Canyon Sunflower | N |
| BRASSICACEAE | | |
| Raphanus sativus | Wild Radish | I |
| CAPRIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| CHENOPODIACEAE | | |

| | | |
|---|---|---|
| Chenopodium ambrosioides | Mexican Tea | I |
| CONVULVULACEAE | | |
| Calystegia macrostegia | Morning Glory | I |
| EUPHORBIACEAE | | |
| Ricinus Communis | Castor Bean | I |
| FABACEAE | | |
| Vicia sativa | Spring Vetch | I |
| FAGACEAE | | |
| Quercus agrifolia | Coast Live Oak | N |
| HYDROPHYLLACEAE | | |
| Phacelia ramossissima | Branching Phacelia | N |
| JUGLANDACEAE | | |
| Juglans regia | English Walnut | I |
| LAMIACEAE | | |
| Mentha citrata | Bergamont Mint | N |
| Mentha Spicata | Spearmint | N |
| Stachys bullata | Wood Mint | N |
| MYOPORACEAE | | |
| Myoporum laetum | Myoporum | I |
| MYRTACEAE | | |
| Eucalyptus gloubulus | Blue Gum | I |
| ONAGRACEAE | | |
| Epilobium adenocaulon | Willow-Herb | N |
| PITTOSPORACEAE | | |
| Pittosporum undulatum | Pittosporum | I |
| PLANTAGINACEAE | | |
| Plantago Major | Common Plantain | I |
| PLATANACEAE | | |
| Plantanus racemosa | Western Sycamore | N |
| POLYGONACEAE | | |
| Polygonum lapathifolium | Willow Smartweed | N |

| | | |
|---|---|---|
| Rumex conglomeratus | Green Dock | I |
| Rumex crispus | Curly Dock | I |
| RANUNCULACEAE | | |
| Clematis ligusticifolia | Creek Clematis | N |
| ROSACEAE | | |
| Heteromeles arbitufolia | Toyon | N |
| Pyracantha sp. | Pyracantha | I |
| Rubus discolor | Himalayan Blackberry | N |
| Rubus ursinus | California Blackberry | N |
| SALICACEAE | | |
| Salix lasiolepis | Arroyo Willow | N |
| SCROPHULARIACEAE | | |
| Mimulus guttatus | Marsh Monkey - Flower | N |
| Scrophularia californica | Figwort | N |
| SOLANACEAE | | |
| Nicotiana glauca | Tobacco Tree | I |
| TROPAEOLACEAE | | |
| Tropaeolum majus | Garden Nasturtium | I |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | I |

* N - Native
I - Introduced

VASCULAR PLANT LIST
ORCUTT- SOLOMON CREEK

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| EQUISETACEAE | | |
| Equisetum telmateia | Giant Horsetail | N |
| AMACARDOACEAE | | |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Conium Maculatum | Poison Hemlock | I |
| ASTERACEAE | | |
| Achillea millefolium | Yarrow | N |
| Ambrosia Psilostachya | Western Ragweed | I |
| Artemisia biennis | Biennial Sagewort | I |
| Artemisia douglasiana | Mugwort | N |
| Baccharis douglasii | Marsh Baccharis | N |
| Baccharis salicifolia | Mulefat | N |
| Baccharis pilularis | Coyote Bush | N |
| Carpobrotus edulis | Iceplant | I |
| Ciriusum vulgare | Bull Thistle | I |
| Conyza bonariensis | Horseweed | I |
| Cotula coronopifolia | Brass Buttons | I |
| Gnaphalium purpureum | Purple Cudweed | I |
| Helenium puberulum | Sneezeweed | N |
| Heterotheca grandiflora | Telegraph Weed | N |
| Isocoma venetus ssp. verniodes | Coast Goldenbrush | N |
| Lactuca serriola | Prickly Lettuce | I |
| Picris echioides | Ox Tongue | I |
| Sencio blochmaniae | Blochman's -Groundsel | I |
| Silybum marianum | Milk thistle | I |
| Sisymbrium irio | London Rocket | I |
| Sonchus asper | Sow Thistle | I |
| Xanthium spinosum | Spiny Cocklebur | I |
| Xanthium strumarium | Cocklebur | I |
| BORAGINACEAE | | |
| Heliotropium curassavicum var. occulatrum | Heliotrope | N |
| BRASSICACEAE | | |

| | | |
|---|---|---|
| Brassica nigra | Black Mustard | I |
| Brassica campestris | Field Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturium -aquaticum | Watercress | I |
| **CACTACEAE** | | |
| Opuntia sp. | Beavertail Cactus | I |
| **CAPRIFOLIACEAE** | | |
| Sambucus mexicana | Elderberry | N |
| **CARYOPHYLLACEAE** | | |
| Spergularia st. | Sand Spurrey | I |
| **CHENOPDIACEAE** | | |
| Artiplex hastata | Hastate-Leaved -Saltbush | N |
| Chenopodium berlandiere | Lamb's Quarters | I |
| Chenopodium murale | Nettle-Leaved -Goosefoot | I |
| **CYPERACEAE** | | |
| Cyperus alternifolius | Umbrella Plant | I |
| Cyperus esculentus | Yellow Nutgrass | N |
| Eleocharis macrostachya | Common Spikerush | N |
| Scirpus californicus | California Bulrush | N |
| Scirpus robustus | Prairie Bulrush | N |
| **EUPHORBIACEAE** | | |
| Euphoria peplus | Petty Surge | I |
| **FABACEAE** | | |
| Lotus purshianus var. purshianus | Spanish Clover | N |
| Lotus salsuginosus | Lotus | N |
| Melilotus indicus | Yellow Sweet Clover | I |
| Vicia benghalensis | Vetch | I |
| **JUNACEAE** | | |
| Juncus bufonius | Toad Rush | N |
| Juncus phaeocephalus | Brown-Headed Rush | N |
| **LEMNACEAE** | | |
| Lemna sp. | Dutchweed | N |

| | | |
|---|---|---|
| MALVACEAE | | |
| Malva parviflora | Cheeseweed | I |
| ONAGRACEAE | | |
| Epilobium adenocaulation | Willow-Herb | N |
| PLANTAGINACEAE | | |
| Plantago major | Common Plantain | I |
| POACEAE | | |
| Agrostis stolonifera | Redtop | I |
| Cynodon dactylon | Bermuda Grass | I |
| Digitaria sanguinalis | Crab grass | I |
| Echonochloa crusgalli | Barnyard Millet | I |
| Lolium perenne | Italian Ryegrass | I |
| Piptatherum miliaceum | Rice grass | I |
| Polypogon monspeliensis | Rabbitfoot Grass | I |
| POLEMONIACEAE | | |
| Microsteris gracilis spp. gracilis | Microsteris | N |
| POLYGONACEAE | | |
| Polygonum arenastrum | Common Knotweed | I |
| Polygonum lapathifolium | Willow Smartweed | N |
| Polygonum punctatum | Dotted Smartweed | N |
| Rumex crispus | Curly Dock | I |
| Rumex fueginus | Golden Dock | I |
| Rumes hymenosephalus | Wild Rhubarb | I |
| PORTULACEAE | | |
| Portulaca oleraceae | Purslane | I |
| PRUMULACEAE | | |
| Angallis arvensis | Scarlet Pimpernel | I |
| ROSACEAE | | |
| Poentilla egedii | Silverweed | |
| Rubus ursinus | Calif. Blackberry | N |
| SALICACEAE | | |
| Salix exigua | Narrowleaf Willow | N |
| Salix lasiolepis | Arroyo Willow | N |

| | | |
|---|---|---|
| SCROPHULARICEAE | | |
| Mimulus guttatus | Marsh Monkey -Flower | N |
| Scrophularia californica | Figwort | N |
| SOLANACEAE | | |
| Solanum nodiflorum | Small-Flowered -Weed | I |
| SPARGANIACEAE | | |
| Sparganium ecrycarpum | Bur Reed | N |
| TROPAEOLACEAE | | |
| Tropaelum majus | Garden Nasturtium | I |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | N |
| Urtica urens | Dwarf Nettle | N |
| VERBENACEAE | | |
| Verbena lasiotachys | Verbena | N |

* I = Introduced
N = Native

**VASCULAR PLANT LIST**
**PICAY CREEK**

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| EQUISETACEAE | | |
| Equisetum telmateia | Giant Horsetail | N |
| ANACARDIACEAE | | |
| Schinus molle | Pepper Tree | I |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| Foeniculum vulgare | Sweet Fennel | I |
| APOCYNACEAE | | |
| Vinca major | Periwinkle | I |
| ARALIACEAE | | |
| Hedera helix | English Ivy | I |
| ASTERACEAE | | |
| Ageratina adenophora | Ironweed | I |
| Artemisia douglasiana | Mugwort | I |
| Baccharis glutinosa | Mulefat | I |
| Baccharis pilularis ssp. consanguinea | Coyote Bush | N |
| Picris echioides | Ox Tongue | I |
| Senecio mikanioides | German Ivy | I |
| Silybum marianum | Milk Thistle | I |
| Xanthium strumarium | Cocklebur | N |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| CAPRIFOLIACEAE | | |
| Saambucus mexicana | Elderberry | N |
| CONVOLVULACEAE | | |
| Calystegia macrostegia | Morning-Glory | N |
| CYPERACEAE | | |
| Cyperus alternifolius | Umbrella Plant | I |
| Scirpus californicus | California Bulrush | N |

| | | |
|---|---|---|
| EUPHORBIACEAE | | |
| Ricinus communis | Castor Bean | I |
| FABACEAE | | |
| Melilotus albus | White Sweet Clover | I |
| Vicia benghalensis | Vetch | I |
| FAGACEAE | | |
| Quercus agrifolia | Coast Live Oak | N |
| LAMIACEAE | | |
| Mentha citrata | Bergamont Mint | N |
| ONAGRACEAE | | |
| Epilobium adenocaulon | Willow-Herb | N |
| PLATANACEAE | | |
| Platanus racemosa | Western Sycamore | N |
| POACEAE | | |
| Avena fatua | Wild Oats | I |
| Pennisetum clandestinum | Kikuyu Grass | I |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| POLYGONACEAE | | |
| Rumex crispus | Curly Dock | I |
| PRIMULACEAE | | |
| Anagallis arvensis | Scarlet Pimpernel | I |
| RANUNCULACEAE | | |
| Clematis ligusticifolia | Creek Clematis | N |
| ROSACEAE | | |
| Rubus ursinus | California Blackberry | N |
| SALICACEAE | | |
| Salix lasiolepis | Arroyo Willow | N |
| SOLANACEAE | | |
| Nicotiana glauca | Tobacco Tree | I |
| TROPAEOLACEAE | | |

| | | |
|---|---|---|
| Tropaeolum majus | Garden Nasturtium | I |
| TYPHACEAE | | |
| Typha sp. | Cattail | N |

* N - Native
  I - Introduced

VASCULAR PLANT LIST
REFUGIO CREEK

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| EQUISETACEAE | | |
| Equisetum telmateia | Giant Horsetail | N |
| ANACARDIACEAE | | |
| Schinus molle | Pepper Tree | I |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| Foeniculum vulgare | Sweet Fennel | I |
| APOCYNACEAE | | |
| Vinca major | Periwinkle | I |
| ASTERACEAE | | |
| Ambrosia psilostachya | Western Ragweed | I |
| Artemisia californica | California Sagebrush | N |
| Artemisia douglasiana | Mugwort | N |
| Baccharis pilularis ssp. consanguinea | Coyote Bush | N |
| Carduus pycnocephalus | Italian Thistle | I |
| Cotula coronopifolia | Brass Buttons | I |
| Helenium puberulum | Sneezeweed | I |
| Lactuca serriola | Prickly Lettuce | I |
| Picris echioides | Ox Tongue | I |
| Silybum marianum | Milk Thistle | I |
| Sonchus arvensis | Prickly Sow Thistle | I |
| Taraxcum officinale | Common Dandelion | I |
| Xanthium strumarium | Cocklebur | I |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| CAPRIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| CHENOPODIACEAE | | |
| Chenopodium ambrosioides | Mexican Tea | I |

| | | |
|---|---|---|
| EUPHORBIACEAE | | |
| Ricinus communis | Castor Bean | I |
| FABACEAE | | |
| Melilotus indicus | Yellow Sweet Clover | I |
| Vicia benghalensis | Vetch | N |
| FAGACEAE | | |
| Quercus agrifolia | Coast Live Oak | N |
| PLATANACEAE | | |
| Platanus racemosa | Western Sycamore | N |
| POACEAE | | |
| Arudo donax | Giant Reed | I |
| Avena fatua | Wild Oats | I |
| Bromus rubens | Foxtail | I |
| Echinochloa crusgalli | Barnyard Millet | I |
| Oryzopsis miliacea | Rice Grass | I |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| PRIMULACEAE | | |
| Anagallis arvensis | Scarlet Pimpernel | I |
| ROSACEAE | | |
| Rubus ursinus | California Blackberry | N |
| SALICACEAE | | |
| Populus balsamifera | Black Cottonwood | N |
| Salix lasiolepis | Arroyo Willow | N |
| SOLANACEAE | | |
| Nicotiana glauca | Tobacco Tree | I |
| Solanum douglasii | Douglas Nightshade | N |
| TROPAEOLACEAE | | |
| Tropaeolum majus | Garden Nasturtium | I |
| TYPHACEAE | | |
| Typha sp. | Cattail | N |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | I |

* N - Native
I - Introduced

VASCULAR PLANT LIST
RODEO-SAN PASQUAL CREEK AND BASIN

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| EQUISETACEAE | | |
| Equisetum telematia | Giant Horsetail | N |
| ANACARDIACEAE | | |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| Foeniculum vulgare | Fennel | I |
| ASTERACEAE | | |
| Achillea millefolium | Yarrow | N |
| Artemisia california | Calif. Sagebrush | N |
| Artemisia douglasiana | Mugwort | N |
| Baccharis gutinosa | Mulefat | N |
| Baccharis pilularis ssp. consanguinea | Coyote Bush | N |
| Ciriusum vulgare | Bull Thistle | I |
| Carduus pycnocephalus | Italian Thistle | I |
| Gnaphalium californicum | Pearly Everlasting | N |
| Lactuca serriola | Prickly Lettuce | I |
| Picris echioides | Ox Tongue | I |
| Venegasia carpesoides | Canyon Sunflower | N |
| Xanthium spinosum | Spiny Cocklebur | I |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturium -aquaticum | Watercress | I |
| CAPRIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| Lonicera involucrata | Twinberry | N |
| EQUISETACEAE | | |
| Equisetum telmateia | Horsetail | N |

| | | |
|---|---|---|
| FABACEAE | | |
| Lupinus sp. | Lupine | N |
| Melilotus indicus | Yellow Sweet Clover | I |
| Vicia benghalensis | Vetch | I |
| FAGACEAE | | |
| Quercus agrifolia | Coast Live Oak | N |
| MALVACEAE | | |
| Malva parviflora | Cheeseweed | I |
| MYRTACEAE | | |
| Eucalyptus sp. | Eucalyptus | I |
| ONAGRACEAE | | |
| Epilobium adenocaulation | Willow-Herb | N |
| POACEAE | | |
| Avena fatua | Wild Oaks | I |
| Bromus diandrus | Ripgut Grass | I |
| Oryzopsis sp. | Rice grass | I |
| Polypogon monspeliensis | Rabbitfoot Grass | I |
| PRUMULACEAE | | |
| Angallis arvensis | Scarlet Pimpernel | I |
| RANUNCULACEAE | | |
| Clematis ligusticifolia | Creek Clematis | N |
| RHAMNACEAE | | |
| Rhamnus california | Coffeeberry | N |
| ROSACEAE | | |
| Heteromeles arbutifolia | Toyon | N |
| Rubus ursinus | Calif. Blackberry | N |
| SALICACEAE | | |
| Populus trichocarpa | Black Cottonwood | N |
| Salix lasiolepis | Arroyo Willow | N |
| SCROPHULARICEAE | | |
| Mimulus cardinalis | Scarlet Monkey -Flower | N |
| Scrophularia california | California Figwort | N |

| | | |
|---|---|---|
| SOLANACEAE | | |
| Solanum douglasii | Douglas Nightshade | N |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | N |
| VERBENACEAE | | |
| Verbena lasiotachys | Verbena | N |

* I = Introduced
N = Native

VASCULAR PLANT LIST
ROMERO CREEK

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| EQUISETACEAE | | |
| Equisetum telmateia | Giant Horsetail | N |
| ACERACEAE | | |
| Acer sp. | Ormamental Maple | I |
| AGAVACEAE | | |
| Agave sp. | Ornamental Agave | I |
| ANACARDIACEAE | | |
| Rhus integrefolia | Lemonadesberry | N |
| Rhus laurina | Laurel Sumac | N |
| Schinus molle | PepperTree | I |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| Foeniculum vulgare | Sweet Fennel | I |
| APOCYNACEAE | | |
| Vinca major | Periwinkle | I |
| ARACEAE | | |
| Zantedeschia aethiopica | Calla-Lily | I |
| ARALIACEAE | | |
| Hedera helix | English Ivy | I |
| ASTERACEAE | | |
| Ageratina adenophora | Ironweed | I |
| Artemisia californica | California Sagebrush | N |
| Artemisia douglasiana | Mugwort | N |
| Baccharis pilularis ssp. consanguinea | Coyote Bush | N |
| Carduus pycnocephalus | Italian Thistle | I |
| Cirsium vulgare | Bull Thistle | I |
| Picris echioides | Ox Tonuge | I |
| Senecio mikanioides | German Ivy | I |
| Silybum marianum | Milk Thistle | I |
| Sonchus arvensis | Prickly Sow Thistle | I |
| Taraxcum carpesioides | Canyon Sunflower | N |
| Xanthium strumarium | Cocklebur | I |

| | | |
|---|---|---|
| BRASSICACEAE | | |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturtium -aquaticum | Watercress | I |
| CAPRIFOLIACEAE | | |
| Sambucus meicana | Elderberry | N |
| CHENOPODIACEAE | | |
| Chenopodium ambrosioides | Mexican Tea | N |
| CONVULVULACEAE | | |
| Calystegia macrostegia | Morning-Glory | I |
| EUPHORBIACEAE | | |
| Ricinus communis | Castor Bean | I |
| FABACEAE | | |
| Vicia sativa | Spring Vetch | I |
| FAGACEAE | | |
| Quercus agrifolia | Coast Live Oak | N |
| GROSSULARIACEAE | | |
| Ribes amarum var. hoffmannii | Bitter Gooseberry | N |
| Ribes malvaceum | Chapparral Currant | N |
| Ribes speciosum | Fuschia-Flowered Ribes | N |
| HYDROPHYLLACEAE | | |
| Phacelia ramossissima | Branching Phacelia | N |
| JUGLANDACEAE | | |
| Juglans regia | English Walnut | I |
| LAMIACEAE | | |
| Mentha citrata | Bergamont Mint | N |
| Mentha spicata | Spearmint | N |
| Stachys bullata | Wood Mint | N |
| MYOPORACEAE | | |
| Myoporum laetum | Myoporum | I |
| MYRTACEAE | | |
| Eucalyptus globulus | Blue Gum | I |

| | | |
|---|---|---|
| ONAGRACEAE | | |
| Epilobium adenocaulon | Willow- Herb | N |
| PITTOSPORACEAE | | |
| Pittosporum undulatum | Pittosporum | I |
| PLANTAGINACEAE | | |
| Plantago major | Common Plantain | I |
| PLANTANACEAE | | |
| Plantanus racemosa | Western Sycamore | N |
| POLYGONACEAE | | |
| Polygonum lapathifolium | Willow Smartweed | N |
| Rumex conglomeratus | Green Dock | I |
| Rumex crispus | Curly Dock | I |
| RANUNCULACEAE | | |
| Clematis ligusticifolia | Creek Clematis | N |
| ROSACEAE | | |
| Heteromeles arbutifolia | Toyon | N |
| Pyrancantha | Pyrancantha | I |
| Rosa californica | Wild Rose | N |
| Rubus ursinus | California Blackberry | N |
| SALICACEAE | | |
| Populus trichocarpa | Black Cottonwood | N |
| Salix lasiolepis | Arroyo Willow | N |
| SCROPHULARIACEAE | | |
| Mimulus guttatus | Marsh Monkey Flower | N |
| SOLANACEAE | | |
| Nicotiana glauca | Tobacco tree | I |
| TROPAEOLACEAE | | |
| Tropaeolum majus | Garden Nasturtium | N |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | I |

* N - Native
I - Introduced

# SAN ANTONIO CREEK - GOLETA
# VASCULAR PLANT LIST

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| EQUISETACEAE | | |
| Equisetum temateia | Giant Horsetail | N |
| ANACARDIACEAE | | |
| Schinus molle | Pepper Tree | I |
| toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Foeniculum vulgare | Sweet Fennel | I |
| APOCYNACEAE | | |
| Vinca Major | Periwinkle | I |
| ARALIACEAE | | |
| Hedera helix | English Ivy | I |
| ASTERACEAE | | |
| Ageratina adenophora | Ironweed | I |
| Artemisia californica | California Sagebrush | N |
| Artemisia douglasiana | Mugwort | N |
| Baccharis glutinosia | Mulefat | N |
| Baccharis pilularis ssp. Consanguinea | Coyote Bush | N |
| Gnaphalium califoricum | Pearly Everlasting | N |
| Gnaphalium luteo-album | Weedy Everlasting | I |
| Picris echioides | Ox Tongue | I |
| Senecio mikanioides | German Ivy | I |
| Venegasia carpesioides | Canyon Sunflower | N |
| BETULACEAE | | |
| Alnus rhombifolia | White Alder | N |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa-nasturtium-aquaticum | Watercress | I |
| CAPRIFOLIACEAE | | |
| Lonicera japonica | Garden Honeysuckle | I |
| Sambucus mexicana | Elderberry | N |

| | | |
|---|---|---|
| CARYOPHYLLACEAE | | |
| Silene gallica | Windmill Pink | I |
| CHENOPODIACEAE | | |
| Chenopodium ambrosioides | Mexican Tea I | I |
| Chenopodium murale | Nettle Leaved -Goosefoot | I |
| CONVULVULACEAE | | |
| Calystegia macrostegia ssp. cyclostegia | Morning-Glory | I |
| CYPERACEAE | | |
| Cyperus erageotis | Cyperus | I |
| Scirpus robustus | Prairie Bulrush | N |
| EUPHORBIACEAE | | |
| Ricinus communis | Castor Bean | I |
| FABACEAE | | |
| Lathyrus latifloius | Common Sweetpea | I |
| Lupinus bicolor | Bicolor Lupine | N |
| Lupinus succulentus | Succulent Lupine | N |
| Melilotus albus | White Sweet Clover | I |
| Melilotus indicus | Yellow Sweet Clover | I |
| Vicia americana | American vetch | I |
| FAGACEAE | | |
| Quercus agrifolia | Coast Live Oak | N |
| GERANEACEAE | | |
| Erodium botrys | Broad-Leaf Filatree | I |
| GROSSULARIACEAE | | |
| Ribes amarum var. hoffmannii | Bitter Gooseberry | N |
| Ribes speciosum | Fuchsia-Flowered -Ribes | N |
| HYDROPHYLLACEAE | | |
| Phacelia grandiflora | Phacelia | N |
| Phacelia ramossissima | Branching Phacelia | N |
| JUNCACEAE | | |
| Juncus xiphioides | Iris-Leaved Juncus | N |

| | | |
|---|---|---|
| LAMIACEAE | | |
| Marrubium vulgare | Horehound | |
| Salvia mallifera | Black Sage | N |
| Stachys bullata | Wood Mint | N |
| MALVACEAE | | |
| Malcothamnus sp. | Mallow | N |
| MYOPORUM | | |
| Myoporum sp. | Myoporum | I |
| MYRTACEAE | | |
| Eucalyptus globulus | Blue Gum | I |
| ONAGRACEAE | | |
| Epilobium adenocaulon | Willow- Herb | N |
| Clarkia purpurea | Clarkia | N |
| OXALIDACEAE | | |
| Oxallis pes-caprae | Sour Grass | I |
| PLANTAGINACEAE | | |
| Plantago lanceolata | English Plantain | I |
| Plantago major | Common Plantain | I |
| PLANTANACEAE | | |
| Platanus racemosa | Western Sycamore | N |
| POACEAE | | |
| Avena fatua | Wild Oats | I |
| Bromus diandrus | Ripgut Grass | I |
| Bromus mollis | Soft Chess | I |
| Cortaderia atacamensis | Pampas Grass | I |
| Elymus condensatus | Giant Rye | N |
| Lolium perenne | Italian Ryegrass | I |
| Oryzopsis miliacea | Rice Grass | I |
| Polypogon interruptus | Beard Grass | I |
| POLEMONIACEAE | | |
| Gilia achilleaefolia | Gilia | N |
| POLYGONACEAE | | |
| Rumex crispus | Curly Dock | I |
| Rumex hymenosepalus | Wild Rhubard | I |

| | | |
|---|---|---|
| PRIMULACEAE | | |
| Anagallis arvensis | Scarlet Pimpernel | I |
| RANUNCULACEAE | | |
| Clematis ligusticifolia | Creek Clematis | N |
| RHAMNACEAE | | |
| Rhamnus californica | Coffeeberry | N |
| Ceanothus spinosus | Greenbark | N |
| ROSACEAE | | |
| Heteromeles arbutifolia | Toyon | N |
| Pyracantha sp. | Pyracantha | I |
| Rosa californica | Wild Rose | N |
| Rubus ursinus | California Blackberry | N |
| SALICACEAE | | |
| Populus trichocarpa | Black cottonwood | N |
| Salix exigua | Narrowleaf Willow | N |
| Salix laevigata | Red Willow | N |
| Salix lasiolepis | Arroyo Wiilow | N |
| SCROPHULARIACEAE | | |
| Mimulus aurantiacus | Monkey Flower | N |
| Mimulus guttatus | Mash Monkey Flower | N |
| Scropularia californica | California Figwort | N |
| Veronica anagallis-aquatica | Speedwell | I |
| SOLANACEAE | | |
| Nicotiana glauca | Tobacco Tree | I |
| Solanum douglasii | Douglas Nightshade | N |
| Solanum xantii | Chaparral Nightshade | N |
| TROPAEOLACEAE | | |
| Tropaeolum majus | Garden Nasturtium | I |
| TYPHACEAE | | |
| Typha sp. | Cattail | N |
| VERBENACAEAE | | |
| Verbena lasiostachys | Verbena | N |

* I = Introduced
N = Native

VASCULAR PLANT LIST
SAN ANTONIO CREEK - LOS ALAMOS

| SCIENTIFIC NAME | COMMON NAME | ORIGIN |
|---|---|---|
| ACERACEAE | | |
| Acer negundo | Box elder | N |
| AMARANTHACEAE | | |
| Amaranthus albus | Tumbleweed | I |
| Amaranthus deflexus | Low Amaranth | I |
| ANACARDIACEAE | | |
| Malosma laurina | Laurel Sumac | N |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Apium graveolens | Celery | I |
| Conium maculatum | Poison Hemlock | I |
| Foenicumum vulgare | Sweet Fennel | I |
| ARALIACEAE | | |
| Hedera helix | English Ivy | I |
| ASTERACEAE | | |
| Ambrosia psilostachya | Western Ragweed | I |
| Anthemis cotula | Mayweed | I |
| Artemisia biennis | Biennial Sagewort | |
| Artemisia californica | California Sagebrush | N |
| Artemisia douglasiana | Mugwort | N |
| Baccharis douglasii | Marsh Baccharis | N |
| Baccharis salicifolia | Mulefat | N |
| Baccharis pillaris | Coyote Bush | N |
| Carduus pysnocephalus | Italian thistle | I |
| Centaurea sostitalis | Barnaby's Thistle | I |
| Cirisium vulgare | Bull Thistle | I |
| Conyza canadensis | Horseweed | I |
| Cotula coronopifolia | Brass Buttons | I |
| Gnaphalium chilense | Cottonvatting | N |
| Isocoma venetus ssp. Vernoniodes | Coast Goldenbrush | N |
| Lactuca serriola | Prickly Lettuce | I |
| Picris ecioides | Ox Tongue | I |
| Senecio vulgare | Common Groundsel | I |
| Silybum marianum | Milk Thistle | I |
| Sonchus arvensis | Prickly Sow Thistle | I |

| | | |
|---|---|---|
| Xanthium spinosium | Spiny Cocklebur | I |
| Xanthium strmarium | Cocklebur | I |
| BORAGINACEAE | | |
| Heliotropium curassavicum var. occulatum | Heliotrope | N |
| Amsinckia intermedia | Fiddleneck | N |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Capsella bursa-pastoris | Shepherd's Purse | I |
| Cardaria draba | Hoary Cress | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturtium -aquaticum | Watercress | I |
| Sisymbrium altissimum | Tumbling Mustard | I |
| Sisymbrium irio | London Rocket | I |
| CARIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| CARYOPHYLLACEAE | | |
| Spergula arvensis | Spurrey | I |
| Spergularia sp. | Sand Spurrey | I |
| CHENOPODIACEAE | | |
| Artiplex hastate | Hastate-Leaved -Saltbush | N |
| Artiplex serenana | Bractscale | N |
| Chenopodium album | Lamb's Quarters | I |
| Chenopodium macrospermum var. farinosum | Coast Goosefoot | I |
| Chenopodium murale | Nettle-Leaved -Goosefoot | I |
| Salsola iberica | Russian Thistle | I |
| CONVOLVULACEAE | | |
| Convolvulus arvensis | Bindweed | I |
| Cuscuta claifornica | Dodder | N |
| CYPERACEAE | | |
| Cyperus alternifolius | Umbrella Plant | I |
| Cyperus esculentus | Yellow Nutgrass | N |
| Scirpus acutus | Common Tule | N |
| Scirpus californicus | California Bulrush | N |
| Scirpus pungens | Bulrush | N |

| | | |
|---|---|---|
| Scirpus robustus | Prairie Bulrush | N |
| EUPHORBIACEAE | | |
| Eremocarpus setigerus | Turkey Mullein | N |
| FABACEAE | | |
| Lotus purshianus var. purshianus | Spanish Clover | N |
| Lotus salsuginosus | Lotus | N |
| Lupius bicolor | Bicolor Lupin | N |
| Medicago polymorpha | Bur Clover | I |
| Metilotus albus | White Sweet Clover | I |
| Metilotus inducus | Yellow Sweet Clover | I |
| Vicia benghalensis | Vetch | I |
| FAGACEAAE | | |
| Quercus agrifolia | Coast Live Oak | N |
| Quercus lobata | Valley Oak | N |
| FRANKENIACEAE | | |
| Frankenia grandifolia | Alkali Heath | N |
| GROSSULARIACEAE | | |
| Ribes divaricatum | Straggly Gooseberry | N |
| JUGLANDACEAE | | |
| Juglans regia | English Walnut | I |
| JUNCACEAE | | |
| Juncus bufonius | Toad Rush | N |
| Juncus effusus var. brunneus | Common Rush | N |
| Juncus texilis | Indian Rush | N |
| Juncus Xipihiodes | Iris-Leaved Juncus | N |
| LAMIACEAE | | |
| Marrubium vulgare | Horehound | I |
| Stachys bullata | Wood Mint | N |
| LEMNACEAE | | |
| Lemma sp. | Duckweed | N |
| MALVACEAE | | |
| Malva prviflora | Cheeseweed | I |
| Sidalcea leprosa | Alkali Mallow | N |

| | | |
|---|---|---|
| MYRTACEAE | | |
| Eucalyptus globulus | Blue Gum | I |
| ONAGRACEAE | | |
| Camissonia cheiranthifolia ssp. cheiranthifolia | Primose | N |
| Epilobium paniculatum | Willow-Herb | N |
| Epilobiumm ciliatum | Willow-Herb | N |
| PAPAVERACEAE | | |
| Eschscholzia californica | California Poppy | N |
| PLANTANACEAE | | |
| Platanus racemosa | Western Sycamore | N |
| PLUMBAGINACEAE | | |
| Limonium sinatum | Statice | I |
| POACEAE | | |
| Arundo donax | Giant Reed | I |
| Avena fatua | Wild Oats | I |
| Bromus diandrus | Ripgut Grass | I |
| Cynodron dactylon | Bermuda Grass | I |
| Digitaria sanguinalis | Crab-Grass | I |
| Distichlis spicata | Saltgrass | I |
| Echinocgkia crysgakku | Barbyard Nukket | I |
| Elymus condensatus | Giant Rye | N |
| Hordeum glacum | Glausus Barley | I |
| Koeleria macrantha | June Grass | I |
| Leptochloa univeria | Sprangletop | I |
| Lolium perenne | Italian Ryegrass | I |
| Piptatherum miliaceum | Rice Grass | I |
| Phalaris stenoptera | Harding Grass | I |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| POLEMONIACEAE | | |
| Navarretia atractyloides | Navarretia | I |
| POLYGONACEAE | | |
| Chorizanthe saticoides | Turkish Rugging | I |
| Polygonum arenastrum | Common Knotweed | I |
| Polygonum lapathiflium | Willow Smartweed | N |
| Polygonum punctatum | Dotted Smartweed | N |
| Rumex angiocarpus | Sheep Sorrel | I |
| Rumex crispus | Curly Dock | I |
| Rumex fueginus | Golden Dock | I |

| | | |
|---|---|---|
| Rumex hymenosepalus | Wild Rhubarb | N |
| PORTULACEAE | | |
| Portulaca oleracea | Purslane | I |
| PRIMULACEAE | | |
| Anagallis arvensis | Scarlet Pimpernel | I |
| RANUNCULACEAE | | |
| Clematis ligusticifolia | Creek Clematis | N |
| ROSACEAE | | |
| Rosa californica | Wild Rose | N |
| Rubus ursinus | California Blackberry | N |
| SALICACEAE | | |
| Populus fremontii | Fremont Cottonwood | N |
| Populus balsamifera | Black Cottonwood | N |
| Salix exigua | Narrowleaf Willow | N |
| Salix laevigata | Red Willow | N |
| Salix lasiolepis | Arroyo Willow | N |
| SCROPHULARIACEAE | | |
| Datura ferox | Chinese Thornapple | I |
| Datura meteloides | Jimson Weed | I |
| Diplacus longiflorus | Bush Monkeyflower | N |
| Mimulus guttatus | Marsh Monkey -Flower | N |
| Scrophularia californica | California Figwort | N |
| Veronica Americana | Speedwell | N |
| SOLANCEAE | | |
| Nicotiana glauca | Tobacco Tree | I |
| Solananum douglasii | Douglas Nightshade | N |
| SPARGANIACEAE | | |
| Sparganium euycarpum | Bur Reed | I |
| TAMARICACEAE | | |
| Tamarix sp. | Tamarisk | I |
| TYPHACEAE | | |
| Typha domingensis | Cattail | N |
| ULMACEAE | | |
| Ulmus minor | Smoothleaved Elm | I |

| | | |
|---|---|---|
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | N |
| Urtica urens | Dwarf Nettle | N |
| VERBENACEAE | | |
| Verbena lasiostachys | Verbena | N |
| VITACEAE | | |
| Vitis sp. | Grape | I |

*I = Introduced
N = Native

VASCULAR PLANT LIST
SAN JOSE CREEK

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| AIZOACAE | | |
| Carpobrotus edulis | Hottentot Fig | I |
| ANACARDIACEAE | | |
| Toxicoclendron diversilobum | Poison Oak | N |
| Schinus molle | Pepper Tree | I |
| Schinus terebenthifolius | Pepper Tree | I |
| APIACEAE | | |
| Apium graveolens | Wild Celery | I |
| Conium maculatum | Poison Hemlock | I |
| APOCYNACEAE | | |
| Vinca major | Periwinkle | I |
| ARALIACEAE | | |
| Hedera canariensis | Algerian Ivy | I |
| ASTERACEAE | | |
| Ambrosia psilostachya var. california | Western Ragweed | N |
| Amaranthus albus | Tumbleweed | I |
| Artemesia biennis | Marsh Sagebrush | N |
| Artemesia californica | CA. Sagebrush | N |
| Artemesia douglasiana | Muswort | N |
| Baccharis pilularis | Coyotebrush | N |
| Baccharis salicifolia | Mulejat | N |
| Carduus pyenocephalus | Italian Thistle | I |
| Conyza canadensis | Horseweed | I |
| Gnaphalium bicolor | Bicolored Everlasting | N |
| Gnaphalium californicum | Green Everlasting | N |
| Gnaphalium luteo-album | Cudweed Everlasting | I |
| Isocoma veneta | Coast Golden Bush | N |
| Lactuca serriola | Prickly Lettuce | I |
| Picris echioides | Ox tongue | I |
| Senecio micanioides | German Ivy | I |
| Senecio vulgaris | Common Groundsel | I |
| Sylibum marianum | Milk Thistle | I |
| Venegasia carpesioides | Canyon Sunflower | N |
| Xanthium strumarium | Cocklebur | I |

| | | |
|---|---|---|
| BETULACEAE | | |
| Alnus rhombifolia | White Alder | N |
| BRASSICACEAE | | |
| Brassica geniculata | Summer Mustard | I |
| Brassica nigra | Black Mustard | I |
| Lobularia maritime | Sweet Alyssum | I |
| Raphanus sativus | Wild Raddish | I |
| Rorippa Nasturtium-aquaticum | Watercress | I |
| CACTACEAE | | |
| Opuntia ficus-indica | Indian Fig | I |
| CAPRIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| CARYOPHYLLACEAE | | |
| Sagina occiclentalis | Western Pearlwort | N |
| Stellaria media | Common Chickweed | I |
| CHENOPODIACEAE | | |
| Atriplex patula ssp. hastate | Spear-leaved Saltbush | N |
| Chenopodium ambrosioides | Mexican Tea | I |
| Chenopodium berlanclieri | Berlander's Goosefoot | N |
| Chenopodium murale | Nettle-leaved Goosefoot | I |
| Salsola australis | Russian Thistle | I |
| CUCURBITACEAE | | |
| Marah herbaceous | Wild Cucumber | N |
| CYPERACEAE | | |
| Carex sp. | Sedge | |
| Cyperus alternifolius | African Umbrella Sedge | I |
| Cyperus eragrostis | Tall Umbrella Sedge | N |
| Eragrostis sp. | | |
| EQUISETACEAE | | |
| Equisetum telmateia var. braunii | Giant Horsetail | N |
| EUPHORBIACEAE | | |
| Ricinus communis | Castor Bean | I |
| Euphorbia Peplus | Petty Spurge | I |
| FABACEAE | | |
| Acacia sp. | | I |
| Lotus salsuginosus | Coastal Hosackia | N |
| Melilotus alba | White Sweetclover | I |

| | | |
|---|---|---|
| FAGACEAE | | |
| Quercus agrifolia | Coast Live Oak | N |
| GROSSULARIACEAE | | |
| Ribes amarum | Gooseberry | N |
| GERANIACEAE | | |
| Erodium cicutarium | Redstem Filaree | I |
| HYDROPHYLLACEAE | | |
| Phacelia viscida | Sticky phacelia | N |
| Phacelia ramosissima | Branching phacelia | I |
| JUGLANDACEAE | | |
| Juglans californica | So. CA. Black Walnut | N |
| Juglans regia | English Walnut | I |
| JUNCACEAE | | |
| Juncus bufonius | Toad Rush | N |
| LAMIACEAE | | |
| Salvia mellifera | Black Sage | N |
| Mentha sp. | Mint | I |
| LAURACEAE | | |
| Umbellularia californica | CA. Bay | N |
| LYTHRACEAE | | |
| Lythrum hyssopifolia | Hyssop-leaved Loosestrfe | N |
| MALVACEAE | | |
| Lavatera cretica | Annual Lavatera | I |
| Malva nicaeensis | Mallow | I |
| Malva parvifolia | Cheeseweed | I |
| MYOPORACEAE | | |
| Myoporum laetum | Myoporum | I |
| MYRTACEAE | | |
| Eucalyptus globulus | Blue Gum | I |
| Eucalyptus camaldulensis | Murray Red Gum | I |
| Eucalyptus citriodora | Lemon-scented Gum | I |
| Eucalyptus lehmannii | Lehmann’s Gum | I |
| OLEACEAE | | |
| Fraxinus uhdei | Shamel Ash | I |

| | | |
|---|---|---|
| PINACEAE | | |
| Pinus radiata | Monterey Pine | I |
| PLATAGINACEAE | | |
| Plantago major | Common Plantain | I |
| Plantago lanceolata | Plantain | I |
| PLANTANACEAE | | |
| Platanus racemosa | Ca. Sycamore | N |
| POECEAE | | |
| Agrostis semiverticellata | Water Bent | I |
| Arundo donax | Giant Reed | I |
| Avena fatua | Wild Oat | I |
| Bromus diandrus | Ripgut Grass | I |
| Bromus mollis | Soft Chess | I |
| Cortadena jubata | Pampas Grass | I |
| Cynodon dactylon | Bermuda Grass | I |
| Echinochloa crusgalli | Barnyard Millet | I |
| Elymus condensatus | Giant Rye | I |
| Hordeum murinum | Foxtail | I |
| Lolium multiflorum | Italian Ryegrass | I |
| Lolium miliacea | Rice Grass | |
| Pennisetum clandestinum | Kikuyu Grass | I |
| Polypogon interruptus | | |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| POLYGONACEAE | | |
| Polygonum arenastrum | Common Knotweed | I |
| Polygonum lapathifolium | Willow Smartweed | I |
| Polygonum punctatum | Dotted Water Smartweed | N |
| Rumex crispus | Curly Dock | I |
| PTERIDACEAE | | |
| Pteridium aquilinum var. pubescens | Western Bracken | N |
| RANUNCULACEAE | | |
| Clematis ligusticifolia | Creek Clematis | N |
| ROSACEAE | | |
| Contoneaster lacteus | Cotoneaster | I |
| Heteromeles arbutifolia | Toyon | N |
| Malosma laurina | Sumac | N |
| Prunus illicifolia | Holly-leaved Cherry | N |
| Pyracantha sp. | Fire Thorn | I |
| Rosa californica | CA. Rose | N |
| Rubus procerus | Himalya Berry | I |
| Rubus ursinus | CA. Blackberry | N |

| | | |
|---|---|---|
| SALICACEAE | | |
| Populus balsamifera | Black Cottonwood | N |
| Salix exigua | Sandbar Willow | N |
| Salix lasiolepsis | Arroyo Willow | N |
| Salix laevigata | Red Willow | N |
| Salix lucida | Yellow Willow | N |
| SCROPHULARIACEAE | | |
| Scrophularia californica | CA. Figwort | N |
| Veronica anagallis-aquatica | Water Speedwell | I |
| SOLANACEAE | | |
| Datura wrightii | Jimson Weed | N |
| Nicotiana glauca | Tree Tobacco | I |
| Solanum doughasii | Douglas Nightshade | N |
| Solanum nigrum | Black Nightshade | I |
| Solanum xanti | Nightshade | N |
| TROPAEOLACEAE | | |
| Tropaeolum majus | Nasturium | I |
| TYPACEAE | | |
| Typha domingensis | Narrow-leaved Cattail | N |
| Typha latifolia | Broad-leaved Cattail | N |
| ULMACEAE | | |
| Ulmus sp. | Elm | I |
| Ulmus parviflorus | Chinese Elm | I |
| VISCACEAE | | |
| Phoradendron tomentosum | Bigleaf Mistletoe | N |

* N = Native
I = Introduced

# VASCULAR PLANT LIST
# SANTA MARIA AIRPORT/ABEX CHANNELS

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| ANACARDIACEAE | | |
| Schinus molle | Pepper Tree | I |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| Foeniculum vulgare | Sweet Fennel | I |
| ASTERACEAE | | |
| Baccharis pilularis ssp. consanguinea | Coyote Bush | N |
| Carduus phonozephalus | Italian Thistle | I |
| Gnaphalium luteo-album | Weedy Everlasting | I |
| Picris echioides | Ox Tongue | I |
| Taraxcum officinale | Common Dandelion | I |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturtium | Watercress | I |
| CHENOPODIACEAE | | |
| Chenopodium ambrosioides | Mexican Tea | I |
| Chenopodium murale | Nettle-Leaved -Goosefoot | I |
| CYPERACEAE | | |
| Cyperus alternifolius | Umbrella Plant | I |
| Cyperus esculentus | Yellow Nutgrass | I |
| Scirpus californicus | CA Bulrush | N |
| EUPHORBIACEAE | | |
| Ricinus communis | Castor Bean | I |
| FABACEAE | | |
| Melilotus albus | White Sweet Clover | I |
| JUNCACEAE | | |
| Juncus effusus var. brunneus | Common Rush | N |
| Juncus xiphioides | Iris-Leaved Juncus | N |

| | | |
|---|---|---|
| LAMIACEAE | | |
| Marrubium vulgare | Horebound | I |
| MYRTACEAE | | |
| Eucalyptus | Eucalyptus | I |
| PAPAVERACEAE | | |
| Eschscholia californica | California Poppy | N |
| PLANTAGINACEAE | | |
| Plantago lanceolata | English Plantain | I |
| Plantago major | Common Plantain | I |
| POACEAE | | |
| Agrostis stolonifera | Redtop | I |
| Avena fatua | Wild Oats | I |
| Bromus rubens | Foxtail | I |
| Cortaderia acacamensis | Pampas Grass | I |
| Lolium perenne | Italian Rye | I |
| Oryzopsis miliacea | Rice Grass | I |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| POLYGONACEAE | | |
| Rumex conglomeratus | Green Dock | I |
| Rumex crispus | Curly Dock | I |
| SALICACEAE | | |
| Salix lasiolepis | Arroyo Willow | N |
| SOLANACEAE | | |
| Nicotiana glauca | Tree Tobacco | I |
| TROPAELACEAE | | |
| Tropaeolum majus | Garden Nasturtium | I |
| TYPHACEAE | | |
| Typha sp. | Cattail | N |

* I - Introduced
N - Native

SANTA MARIA RIVER
VASCULAR PLANT LIST

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| ANACARDIACEA | | |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| Foeniculum vulgare | Sweet Fennel | I |
| ASTERACEAE | | |
| Artemiasia douglasiana | Mugwort | N |
| Baccharis salicifolia | Mulefat | N |
| Baccharis douglasii | Marsh Baccharis | N |
| Baccharis pilularis | Coyotebrush | N |
| Cotula coronopifolia | Brass Buttons | I |
| Gnaphalium luteo-album | Weedy Everlasting | I |
| Picris echioides | Ox Tongue | I |
| Silybum marianum | Milk Thistle | I |
| Taraxcum officinale | Common Dandelion | I |
| Senecio blochmaniae | Dune ragwort | N |
| Xanthium strumarium | Cocklebur | N |
| BETULACEAE | | |
| Alnus rhombifolia | White Alder | N |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturtium-aquaticum | Watercress | I |
| CHENOPODIACEAE | | |
| Chenopodium ambrosioides | Mexican Tea | I |
| Chenopodium berlandieri | Lamb’s Quarters | N |
| CONVOLVULACEAE | | |
| Convolvulus althaeoides | Garden Morning Glory | I |
| CYPERACEAE | | |
| Cyperus alternifolius | Umbrella Plant | I |
| Cyperus eragrostis | Sedge | N |

| | | |
|---|---|---|
| CYPERACEAE | | |
| Scirpus americanus | Three square | N |
| Scirpus californicus | California Bulrush | N |
| EQUISATACEAE | | |
| Equisetum telmateia | Giant Horsetail | N |
| EUPHORBIACEAE | | |
| Eremocarpus setigerus | Turkey Mullein | N |
| Ricinus communis | Castor Bean | I |
| FABACEAE | | |
| Lupinus arborus | Lupine | N |
| Melilotus albus | White Sweet Clover | I |
| Melilotus indicus | Yellow Sweet Clover | I |
| Vicia benghalensis | Vetch | N |
| GROSSULARIACEAE | | |
| Ribes amarum | Bitter Gooseberry | N |
| LAMIACEAE | | |
| Marrubium vulgare | Horehound | I |
| Mentha xpiperita | Peppermint | I |
| MALVACEAE | | |
| Malva parviflora | Cheeseweed | I |
| ONAGRACEAE | | |
| Epilobium ciliatum | Willow-Herb | N |
| Camissonia cheiranthifolia | Beach Evening-primrose | N |
| PAPAVERACEAE | | |
| Argemone munita | Prickly Poppy | N |
| PLANTAGINACEAE | | |
| Plantago major | Common Plantain | I |
| POACEAE | | |
| Avena fatua | Wild Oats | I |
| Pennisetum calnestinum | Kikuyu Grass | I |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| POLYGONACEAE | | |
| Rumex crispus | Curly Dock | I |
| PRIMULACEAE | | |
| Anagallis arvensis | Scarlet Pimpernel | I |

| | | |
|---|---|---|
| ROSACEAE | | |
| Rosa californica | Wild Rose | N |
| Rubus ursinus | California Blackberry | N |
| SALICACEAE | | |
| Populus fremontii | Fremont Cottonwood | N |
| Salix lasiolepis | Arroyo Willow | N |
| Salix exigua | Sandbar Willow | N |
| SCROPHULARIACEAE | | |
| Mimulus guttatus | Marsh Monkey Flower | N |
| Minmulus guttatus | Monkey Flower | N |
| Veronica angallis-aquatica | Speedwell | N |
| SOLANCEAE | | |
| Nicotiana glauca | Tobacco Tree | I |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | N |
| VERBENACEAE | | |
| Verbena lasiostachys | Verbena | N |

* I = Introduced
N = Native

Table 3

## Santa Ynez River - West of Lompoc

## Plant Species Inventory

| Species | Habit[1] | Status[2] |
|---|---|---|
| ***Agrostis exarata*** Trin. "Spike bentgrass" | PG | N |
| ***Ambrosia acanthicarpa*** Hook. "Sand-bur" | AH | N |
| ***Ambrosia psilostachya*** DC. "Western ragweed" | PH | N |
| ***Amsinckia intermedia*** F. & M. "Fiddleneck" | AH | N |
| ***Amsinckia spectabilis*** F. & M. var. ***microcarpa*** (Greene) Jeps. & Hoov. "Seaside Amsinckia" | AH | N |
| ***Anemopsis californica*** Hook. "Yerba mansa" | PH | N |
| ***Apium graveolens*** L. "Celery" | PH | I |
| ***Artemisia californica*** Less. "California sagebrush" | S | N |
| ***Artemisia douglasiana*** Bess. in Hook. "Mugwort" | PH | N |
| ***Artemisia dracunculus*** L. "Tarragon" | PH | N |
| ***Astragalus*** sp. "Locoweed" | PH | N |

(continued)

Table 3
(continued)
**Santa Ynez River - West of Lompoc**
**Plant Species Inventory**

| Species | Habit[1] | Status[2] |
|---|---|---|
| ***Avena barbata*** Brot.<br>"Slender wild oat" | AG | I |
| ***Avena fatua*** L.<br>"Wild oat" | AG | I |
| ***Baccharis douglasii*** DC.<br>"Douglas' Baccharis" | PH | N |
| ***Baccharis glutinosa*** Pers.<br>"Mule fat" | S | N |
| ***Baccharis pilularis*** DC. ssp. ***consanguinea*** (DC.) C. B. Wolf.<br>"Coyote brush" | S | N |
| ***Brassica geniculata*** (Desf.) J. Ball.<br>"Mediterranean mustard" | BH | I |
| ***Brassica nigra*** (L.) Koch.<br>"Black mustard" | AH | I |
| ***Bromus diandrus*** Roth.<br>"Ripgut brome" | AG | I |
| ***Bromus mollis*** L.<br>"Soft chess" | AG | I |
| ***Bromus rubens*** L.<br>"Red brome" | AG | I |
| ***Bromus willdenovii*** Kunth.<br>"Rescue grass" | AG | I |
| ***Calandrinia ciliata*** (R. & P.) DC. var. ***menziesii*** (Hook.) Macbr.<br>"Red maids" | AH | N |
| ***Camissonia micrantha*** (Hornem. ex Spreng.) Raven.<br>"Small primrose" | AH | N |

(continued)

Table 3
(continued)
**Santa Ynez River - West of Lompoc**
**Plant Species Inventory**

| Species | Habit[1] | Status[2] |
|---|---|---|
| ***Camissonia strigulosa*** (Fisch. & Meyer) Raven. "Contorted primrose" | AH | N |
| ***Cardaria draba (L.) Desv.*** "Hoary cress" | PH | I |
| ***Carduus pycnocephalus*** L. "Italian thistle" | AH | I |
| ***Centaurea melitensis*** L. "Tocalote" | AH | I |
| ***Claytonia perfoliata*** Donn. "Miner's lettuce" | AH | N |
| ***Clematis ligusticifolia*** Nutt. in T. & G. "Virgin's bower" | V | N |
| ***Conium maculatum*** L. "Poison hemlock" | BH | I |
| ***Cortaderia atacamensis*** (Phil.) Pilger. "Pampas grass" | PG | I |
| ***Cotula coronopifolia*** L. "Brass buttons" | PH | I |
| ***Cryptantha*** sp. "Popcorn flower" | AH | N |
| ***Cyperus eragrostis*** Lam. "Tall Cyperus" | PH | N |
| ***Descurainia pinnata*** (Walt.) Britton ssp. ***menziesii*** (DC.) Detl. "Tansy mustard" | AH | N |
| ***Dipsacus sativus*** (L.) Honckeny. "Teasel" | BH | I |
| ***Ehrharta calycina*** Sm. "Veldt grass" | PG | I |

(continued)

Table 3
(continued)
**Santa Ynez River - West of Lompoc**
**Plant Species Inventory**

| Species | Habit[1] | Status[2] |
|---|---|---|
| ***Eleocharis macrostachya*** Britton in Small. "Common spikerush" | PH | N |
| ***Epilobium adenocaulon Hausskn.*** "Willow-herb" | PH | N |
| ***Equisetum telmateia*** Ehrh. var. ***braunii*** Milde. "Giant horsetail" | PH | N |
| ***Eremocarpus setigerus*** (Hook.) Benth. "Doveweed" | AH | N |
| ***Eriogonum fasciculatum*** Benth. "California buckwheat" | S | N |
| ***Erodium cicutarium*** L. "Filaree" | AH; I | |
| ***Eucrypta chrysanthemifolia*** (Benth.) Greene. "Common Eucrypta" | AH | N |
| ***Euphorbia peplus*** L. "Petty spurge" | AH | I |
| ***Festuca arundinacea*** Schreb. "Alta fescue" | PG | I |
| ***Festuca megalura*** Nutt. "Foxtail fescue" | AG | N |
| ***Foeniculum vulgare*** Mill. "Sweet fennel" | PH | I |
| ***Galium aparine*** L. "Bedstraw" | AH | I |
| ***Geranium dissectum*** L. "Cranesbill" | AH | I |
| ***Gnaphalium luteo-album*** L. "Cudweed" | AH | I |

(continued)

Table 3
(continued)
Santa Ynez River - West of Lompoc
**Plant Species Inventory**

| Species | Habit[1] | Status[2] |
|---|---|---|
| ***Gnaphalium sp.*** "Everlasting" | AH or BH | N |
| ***Haplopappus ericoides*** (Less.) H. & A. "Mock heather" | S | N |
| ***Hedypnois cretica*** (L.) Willd. "Crete Hedypnois" | AH | I |
| ***Helenium puberulum*** DC. "Sneezeweed" | BH | N |
| ***Heliotropium curassavicum*** L. var. ***oculatum*** (Heller) Jtn. "Heliotrope" | PH | N |
| ***Heterotheca grandiflora*** Nutt. "Telegraph weed" | BH | N |
| ***Hordeum leporinum*** Link. "Foxtail" | AG | I |
| ***Hypochoeris glabra*** L. "Cat's ear" | AH | I |
| ***Juncus bufonius*** L. "Toad rush" | AH | N |
| ***Juncus effusus*** L. var. ***brunneus*** Engelm. "Bog rush" | PH | N |
| ***Juncus patens*** E. Mey. "Wire grass" | PH | N |
| ***Juncus xiphioides*** E. Mey. "Iris-leaved rush" | PH | N |
| ***Lemna*** sp. "Duckweed" | AH | N |
| ***Lupinus latifolius*** J. G. Agardh. "Canyon lupine" | PH | N |

(continued)

Table 3
(continued)

**Santa Ynez River - West of Lompoc**
**Plant Species Inventory**

| Species | Habit[1] | Status[2] |
|---|---|---|
| ***Lupinus succulentus*** Dougl. ex Koch. "Succulent lupine" | AH | N |
| ***Marah macrocarpus*** (Greene) Greene. "Wild cucumber" | PH | N |
| ***Marrubium vulgare*** L. "Horehound" | PH | I |
| ***Medicago polymorpha*** L. "Burr clover" | AH | I |
| ***Melilotus albus*** Desr. "Sweet clover" | AH | I |
| ***Melilotus indicus*** L. "Yellow sweet clover" | AH | I |
| ***Mimulus guttatus*** Fisch. ex DC. "Monkey flower" | PH | N |
| ***Nicotiana glauca*** Grah. "Tree tobacco" | S | I |
| ***Picris echioides*** L. "Ox tongue" | AH | I |
| ***Phalaris minor*** Retz. "Mediterranean canary grass" | AG | I |
| ***Plantago lanceolata*** L. "English plantain" | PH | I |
| ***Plantago major*** L. "Common plantain" | PH | I |
| ***Polygonum lapathifolium*** L. "Willow weed" | AH | I |

(continued)

Table 3
(continued)

**Santa Ynez River - West of Lompoc**
**Plant Species Inventory**

| Species | Habit[1] | Status[2] |
|---|---|---|
| ***Polypogon monspeliensis*** (L.) Desf. "Beard grass" | AG | I |
| ***Populus trichocarpa*** T. & G. "Black cottonwood" | T | N |
| ***Psoralea macrostachya*** DC. "Leather root" | S | N |
| ***Raphanus sativus*** L. "Wild radish" | AH | I |
| ***Ribes*** sp. "Gooseberry" | S; N | |
| ***Rorippa nasturtium-aquaticum*** (L.) Schinz & Thell. "Water-cress" | PH | I |
| ***Rorippa palustris*** (L.) Besser ssp. ***occidentalis*** (Wats. in Gray) Abrams "Marsh cress" | AH | N |
| ***Rubus ursinus*** C. & S. "California blackberry" | S | N |
| ***Rumex crispus*** L. "Curly dock" | PH | I |
| ***Salix hindsiana*** Benth. "Sandbar willow" | S | N |
| ***Salix laevigata*** Bebb. "Red willow" | T | N |
| ***Salix lasiolepis*** Benth. "Arroyo willow" | T | N |
| ***Sambucus mexicana*** Presl. "Mexican elderberry" | T | N |

(continued)

Table 3
(continued)

**Santa Ynez River - West of Lompoc**
**Plant Species Inventory**

| Species | Habit[1] | Status[2] |
|---|---|---|
| ***Satureja douglasii*** (Benth.) Briq. "Yerba buena" | PH | N |
| ***Schismus barbatus*** (L.) Thell. | AG | I |
| ***Scirpus californicus*** (C. A. Mey.) Steudel. "California bulrush" | PH | N |
| ***Scirpus microcarpus*** Presl. "Small-fruited bulrush" | PH | N |
| ***Scirpus robustus*** Pursh. "Prairie bulrush" | PH | N |
| ***Scrophularia atrata*** Penn. "Black-flowered figwort" | PH | N* |
| ***Scrophularia californica*** C. & S. var. ***floribunda*** Greene. "California figwort" | PH | N |
| ***Silybum marianum*** (L.) Gaertn. "Milk thistle" | AH | I |
| ***Sonchus oleraceus*** L. "Sow thistle" | AH | I |
| ***Sparganium angustifolium*** Michx. "Bur-reed" | PH | N |
| ***Stachys bullata*** Benth. "Hedge-nettle" | PH | N |
| ***Toxicodendron diversilobum*** (T. & G.) Greene. "Poison oak" | S | N |
| ***Trifolium*** sp. "Clover" | AH | |

(continued)

Table 3
(continued)

**Santa Ynez River - West of Lompoc**
**Plant Species Inventory**

| Species | Habit[1] | Status[2] |
|---|---|---|
| ***Typha domingensis*** Pers. "Cattail" | PH | N |
| ***Urtica holosericea*** Nutt. "Giant creek nettle" | PH | N |
| ***Urtica urens*** L. "Dwarf nettle" | AH | I |
| ***Verbena lasiostachys*** Link. "Verbena" | PH | N |
| ***Veronica anagallis-aquatica*** L. "Great water speedwell" | PH | I |
| ***Vicia sativa*** L. "Spring vetch" | AH | I |
| ***Xanthium strumarium*** L. var. ***canadense*** (Mill.) T. & G. "Cocklebur" | AH | I |

Habit abbreviations:
AH = Annual herb; BH = Biennial herb; PH = Perennial herb; AG = Annual grass; PG = Perennial grass; V = Vine; S = Shrub; T = Tree

Native/introduced species:
N = Native; I = Introduced

*California Native Plant Society List 4 species

Sources: Munz, P. A. 1974. A Flora of Southern California. Univ. of Calif. Press,

VASCULAR PLANT LIST
TANGLEWOOD CHANNEL

| SCIENTIFIC NAME | COMMON NAME | ORIGIN |
|---|---|---|
| AMARANTHACEAE | | |
| Amaranthus albus | Tumbleweed | I |
| APIACEAE | | |
| Apium graveolens | Celery | I |
| Conium maculatum | Poison Hemlock | I |
| Foenicumum vulgare | Sweet Fennel | I |
| ASTERACEAE | | |
| Ambrosia psilostachya | Western Ragweed | I |
| Anthemis cotula | Mayweed | I |
| Artemisia douglasiana | Mugwort | N |
| Baccharis pillaris | Coyote Bush | N |
| Carduus pycnocephalus | Italian thistle | I |
| Cirisium vulgare | Bull Thistle | I |
| Conyza canadensis | Horseweed | I |
| Cotula coronopifolia | Brass Buttons | I |
| Gnaphalium chilense | Cottonvatting | N |
| Senecio vulgare | Common Groundsel | I |
| Silybum marianum | Milk Thistle | I |
| Xanthium spinosium | Spiny Cocklebur | I |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturtium -aquaticum | Watercress | I |
| Sisymbrium irio | London Rocket | I |
| CHENOPODIACEAE | | |
| Chenopodium album | Lamb's Quarters | I |
| Chenopodium macrospermum var. farinosum | Coast Goosefoot | I |
| Chenopodium murale | Nettle-Leaved -Goosefoot | I |
| CYPERACEAE | | |
| Eleocharis macrostachya | common spikerush | N |
| Cyperus alternifolius | Umbrella Plant | I |
| Scirpus californicus | California Bulrush | N |

| | | |
|---|---|---|
| EUPHORBIACEAE | | |
| Eremocarpus setigerus | Turkey Mullein | N |
| FABACEAE | | |
| Lotus purshianus var. purshianus | Spanish Clover | N |
| Lotus salsuginosus | Lotus | N |
| Metilotus albus | White Sweet Clover | I |
| LAMIACEAE | | |
| Marrubium vulgare | Horehound | I |
| LEMNACEAE | | |
| Lemna sp. | Duckweed | N |
| MALVACEAE | | |
| Malva prviflora | Cheeseweed | I |
| PAPAVERACEAE | | |
| Eschscholzia californica | California Poppy | N |
| POACEAE | | |
| Avena fatua | Wild Oats | I |
| Bromus diandrus | Ripgut Grass | I |
| Cynodron dactylon | Bermuda Grass | I |
| Lolium perenne | Italian Ryegrass | I |
| Phalaris stenoptera | Harding Grass | I |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| POLYGONACEAE | | |
| Rumex crispus | Curly Dock | I |
| Rumex fueginus | Golden Dock | I |
| PRIMULACEAE | | |
| Anagallis arvensis | Scarlet Pimpernel | I |
| SOLANCEAE | | |
| Nicotiana glauca | Tobacco Tree | I |

* I = Introduced
N = Native

VASCULAR PLANT LIST
TECOLOTE CREEK

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| EQUISETACEAE | | |
| Equisetum telmateia | Giant Horsetail | N |
| ANACARDIACEAE | | |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| Foeniculum vulgare | Sweet Fennel | I |
| APOCYNACEAE | | |
| Vinca major | Periwinkle | I |
| ARARLIACEAE | | |
| Hedera helix | English Ivy | I |
| ASTERACEAE | | |
| Artemisia douglasiana | Mugwort | N |
| Baccharis douglasiana | Mulefat | N |
| Baccharis pilularis ssp. consanguinea | Coyote Bush | N |
| Cirsium vulgare | Bull Thistle | I |
| Gnaphalium californicum | Everlasting | |
| Picris echioides | Ox Tongue | I |
| Senecio mikanioides | German Ivy | I |
| Silybum marianum | Milk Thistle | I |
| Venegasia carpesioides | Canyon Sunflower | N |
| Xanthium strumarium | Cocklebur | I |
| BETULACEAE | | |
| Alnus rhombifolia | White Alder | N |
| BORAGINACEAE | | |
| Heliotropium curassavicum | | N |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus sativus | Wild Radish | I |
| Rorippa nasturtium-aguaticum | Watercress | I |

| | | |
|---|---|---|
| CAPRIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| POACEAE | | |
| Avena fatua | Wild Oats | I |
| Bromus diandrus | Ripgut Grass | I |
| Elymus condensatus | Giant Rye | N |
| Hordeum glaucum | Glaucus Barley | I |
| Lolium perenne | Italian Ryegrass | I |
| Oryzopsis miliacea | Rice Grass | I |
| Phalaris stenoptera | Harding Grass | I |
| POLYGONACEAE | | |
| Rumex conglomeratus | Green Dock | I |
| Rumex crispus | Curly Dock | I |
| PRIMULACEAE | | |
| Anagallis arvenis | Scarlet Pimpernel | I |
| RANUNCULACEAE | | |
| Clematis ligusticifolia | Creek Clematis | N |
| ROSACEAE | | |
| Heteromeles arbutifolia | Toyon | N |
| Pyracantha sp. | Pyracantha | I |
| Rubus ursinus | California Blackberry | N |
| SALICACEAE | | |
| Populus fremontii | Fremont Cottonwood | N |
| Salix hindsiana | Sandbar Willow | N |
| Salix laevigata | Red Willow | N |
| Salix lasiolepis | Arroyo Willow | N |
| SCHROPHULARIACEAE | | |
| Mimulus aurantiacus | Sticky Monkey -Flower | N |
| Scrophularia californica | California Figwort | N |
| Veronica angallis-aquatica | Speedwell | I |
| SOLANACEAE | | |
| Nicotiana glauca | Tobacco Tree | I |
| Solanum douglasii | Douglas Nightshade | N |
| TAMARICACEAE | | |
| Tamarix sp. | Tamarisk | I |

| | | |
|---|---|---|
| TROPAELACEAE | | |
| Tropaeolum majus | Garden nasturtium | I |
| TYPHACEAE | | |
| Typha sp. | Cattail | N |

* I = Introduced
N = Native

**VASCULAR PLANT LIST**
**TECOLOTITO CREEK**

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| EQUISETACEAE | | |
| Equisetum telemateia | Giant Horsetail | N |
| ANACARDIACEAE | | |
| Rhus integrefolia | Lemonadeberry | N |
| Rhus laurina | Laurel Sumac | N |
| APIACEAE | | |
| Foeniculum vulgare | Sweet Fennel | I |
| ASTERACEAE | | |
| Artemisia californica | California Sagebrush | N |
| Baccharis pilularis ssp. consanguinea | Coyote Bush | N |
| Xanthium strmarium | Cocklebur | I |
| BRASSICACEAE | | |
| Raphanus sativus | Wild Radish | I |
| CAPRIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| CHENOPODIACEAE | | |
| Artiplex Hastata | Hastate-Leaved -Saltbush | |
| CYPERACEAE | | |
| Cyperus alternifolius | Umbrella plant | I |
| Scirpus californicus | California Bulrush | N |
| Scirpus cernuus var. californicus | Low Club-Rush | N |
| Scirpus microcarpus | Small-Fruited Bulrush | N |
| Scirpus robustus | Prairie Bulrush | N |
| EUPHORBIACEAE | | |
| Ricinis communis | Castor Bean | I |
| FABACEAE | | |
| Lotus scoparius | Deerweed | N |

| | | |
|---|---|---|
| JUGLANDACEAE | | |
| Juglans regia | English Walnut | I |
| MYRTACEAE | | |
| Eucalyptus globulus | Blue Gum | I |
| PLATANACEAE | | |
| Plantus racemosa | Western Sycamore | N |
| POACEAE | | |
| Cortaderia atacamensis | Pampas Grass | I |
| POLYGONACEAE | | |
| Rumex crispus | Curly Dock | I |
| RANUNCULACEAE | | |
| Clematis ligusticifolia | Creek Clematis | N |
| ROSACEAE | | |
| Hetermeles arbutifolia | Toyon | N |
| Rubus ursinus | California Blackberry | N |
| SALICACEAE | | |
| Salix lasiolepis | Arroyo Willow | N |
| SROPHULARIACEAE | | |
| Scrophularia californica | California Figwort | N |
| SOLANCEAE | | |
| Nicotiana glauca | Tobacco Tree | I |
| TROPAEOLACEAE | | |
| Tropaeolum majus | Garden Nasturtium | I |
| TYPHACEAE | | |
| Typha sp. | Cattail | N |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | N |

* I = Introduced
  N = Native

VASCULAR PLANT LIST
TORO CREEK

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| EQUISETACEAE | | |
| Equisetum telemateia | Giant Horsetail | N |
| ANACARDIACEAE | | |
| Malosma laurina | Laurel Sumac | N |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | N |
| APOCYNACEAE | | |
| Vinca major | Perwinkle | I |
| ARALIACEAE | | |
| Hedera Helix | English Ivy | I |
| Ageratina adenophora | Ironweed | I |
| Artemisia caloifornica | California Sagebush | N |
| Artemisia douglasiana | Mugwort | N |
| Baccharis salicifolia | Mulefat | N |
| Baccharis pilularis | Coyote Bush | N |
| Gnaphalium luteo-album | Weedy Everlasting | I |
| Picris echioides | Ox Tongue | I |
| Senecio mikanioides | German Ivy | I |
| Silybum marianum | Mild Thistle | I |
| Venegasia carpesioides | Canyon Sunflower | N |
| BETULACEAE | | |
| Alnus rhombifolia | White Alder | N |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Raphanus Satuvus | Wild Radish | I |
| CAPRIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| CONVOLVULACEAE | | |
| Calystegia Macrostegia ssp. cyclostegia | Morning-Glory | I |

| | | |
|---|---|---|
| CYPERACEAE | | |
| Cyperus alternifolius | Umbrella Plant | I |
| EUPHORBIACEAE | | |
| Ricinus communis | Castor Bean | I |
| FABACEAE | | |
| Vicia benghalensis | Vetch | I |
| FAGACEAE | | |
| Quercus agrifolia | Coast Live Oak | N |
| HYDROPHYLACEAE | | |
| Phacelia ramossissima | Branching Phacelia | N |
| LAMIACEAE | | |
| Mentha citrata | Bergamont Mint | I |
| Salvia mellifera | Black Sage | N |
| MALVACEAE | | |
| Lavatera cretica | Cretan Lavatera | I |
| MYRTACEAE | | |
| Eucalyptus camaldulensis | Red Gum | I |
| PLANTAGINACEAE | | |
| Plantago lanceolata | English Plantain | I |
| PLATANACEAE | | |
| Plantanus racemosa | Western Sycamore | N |
| POACEAE | | |
| Elymus condensatus | Giant Rye | N |
| Pennisetum clandestinum | Kikuyu Grass | I |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| POLYGONACEAE | | |
| Polygonum lapathifolium | Willow Smartweed | N |
| Rumex crispus | Curly Dock | I |
| RANUNCULACEAE | | |
| Clematis ligusticifolia | Creek Clematis | N |
| RHAMNACEAE | | |
| Ceanothus spinosus | Greenbark | N |

| | | |
|---|---|---|
| ROSACEAE | | |
| Heteromeles arbutfolia | Toyon | N |
| Rosa californica | Wild Rose | N |
| Rubus ursinus | California Blackberry | N |
| SCHROPHULARIACEAE | | |
| Scrophularia californica | California Figwort | N |
| SOLANCEAE | | |
| Nicotiana glauca | Tobacco Tree | I |
| Solanum douglasii | Douglas Nightshade | N |
| TROPAEOLACEAE | | |
| Tropaeolum majus | Garden Nasturtium | I |

* I = Introduced
N = Native

# VASCULAR PLANT LIST
## Unit II/West Main, East and Unit II Tailwater Channels

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| AIZOACEAE | | |
| Carpobrotus edulis | Iceplant | I |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| ASTERACEAE | | |
| Ambrosia psilostachya | Western Ragweed | I |
| Baccharis pilularis ssp. consanguinea | Coyote Bush | N |
| Cotula coronopifolia | Brass Buttons | I |
| Heterotheca grandiflora | Telegraph Weed | I |
| Lactuca serriola | Prickly Lettuce | I |
| Silybum marianum | Milk thistle | I |
| Xanthium spinosum | Spiny Cocklebur | I |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | I |
| Rrippa nasturium -aquaticum | Watercress | I |
| CHENOPDIACEAE | | |
| Chenopodium ambrosioides | Mexican Tea | I |
| CYPERACEAE | | |
| Scirpus californicus | Ca. Bullrush | N |
| MALVACEAE | | |
| Malva parviflora | Cheeseweed | I |
| ONAGRACEAE | | |
| Epilobium adenocaulation | Willow-Herb | N |
| POACEAE | | |
| Echinochloa crusgalli | Barnyard Millet | I |
| Oryzopsis sp. | Rice grass | I |
| Polypogon monspeliensis | Rabbitsfoot Grass | I |
| POLYGONACEAE | | |
| Polygonum arenastrum | Common Knotweed | I |

| | | |
|---|---|---|
| SALICACEAE | | |
| Salix lasiolepis | Arroyo Willow | N |
| TYPHACEAE | | |
| Typha sp. | Cattail | N |
| URTICACEAE | | |
| Urtica holosericea | Giant Nettle | N |

* I = Introduced
N = Native

VASCULAR PLANT LIST
ZACA CREEK

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| Sanicula crassicaulis | Senicle | |
| Foeniculum Vulgare | Fennel | I |
| ASTERACEAE | | |
| Artemisia californica | California Sagebrush | N |
| Artemisia douglasiana | Mugwort | N |
| Baccharis salicifolia | Mulefat | N |
| Baccharis pilularis | Coyotebush | N |
| Cirsium vulgare | Bull Thistle | I |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | N |
| CAPRIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| FABACEAE | | |
| Lupinus arboreus | Bush Lupine | N |
| Melilotus indicus | Yellow Sweet Clover | I |
| FAGACEAE | | |
| Quercus agrifolia | Coast Live Oak | N |
| MYRTACEAE | | |
| Eucaplyptus globulus | Blue Gum | I |
| POACEAE | | |
| Avena fatua | Wild Oats | I |
| Bromus diandrus | Ripgut Grass | I |
| Hordeum sp. | Hordeum | I |
| SALICACEAE | | |
| Salix laevigata | Red Willow | N |
| Salix exigua | Sandbar Willow | N |
| Populus balsamifera | Black Cottonwood | N |
| SOLANACEAE | | |
| Nicotiana glauca | Tobacco Tree | I |

* I = Introduced
N = Native

# ZANJA DE COTA CREEK
# VASCULAR PLANT LIST

| SCIENTIFIC NAME | COMMON NAME | ORIGIN* |
|---|---|---|
| AMARANTHACEAE | | |
| Amaranthus sp. | Amaranth | I |
| ANACARDIACEAE | | |
| Toxicodendron diversilobum | Poison Oak | N |
| APIACEAE | | |
| Conium maculatum | Poison Hemlock | I |
| Sanicula crassicaulis | Senicle | |
| Foeniculum Vulgare | Fennel | I |
| ASTERACEAE | | |
| Artemisia californica | California Sagebrush | N |
| Artemisia douglasiana | Mugwort | N |
| Baccharis salicifolia | Mulefat | N |
| Baccharis pilularis | Coyotebush | N |
| Cirsium vulgare | Bull Thistle | I |
| Silybum marianum | Milk Thistle | I |
| Xanthium strumarium | Cocklebur | I |
| BRASSICACEAE | | |
| Brassica nigra | Black Mustard | N |
| Raphanus sativus | Wild Radish | I |
| CAPRIFOLIACEAE | | |
| Sambucus mexicana | Elderberry | N |
| FABACEAE | | |
| Lupinus arboreus | Bush Lupine | N |
| Melilotus indicus | Yellow Sweet Clover | I |
| FAGACEAE | | |
| Quercus agrifolia | Coast Live Oak | N |
| MYRTACEAE | | |
| Eucaplyptus globulus | Blue Gum | I |
| POACEAE | | |
| Avena fatua | Wild Oats | I |

| | | |
|---|---|---|
| Bromus diandrus | Ripgut Grass | I |
| Hordeum sp. | Hordeum | I |
| ROSACEA | | |
| Rubus ursinus | California Blackberry | N |
| Rubus armeniacus | Himalayan Blackberry | I |
| SALICACEAE | | |
| Salix laevigata | Red Willow | N |
| Salix exigua | Sandbar Willow | N |
| Populus balsamifera | Black Cottonwood | N |
| SOLANACEAE | | |
| Nicotiana glauca | Tobacco Tree | I |

* I = Introduced
N = Native