

Member Agencies:

Alameda
Albany
Berkeley
Dublin
Emeryville
Fremont
Hayward
Livermore

Newark
Oakland
Piedmont
Pleasanton
San Leandro
Union City
Alameda County

Alameda County
Flood Control and
Water Conservation
District (District)

Zone 7 of the
District



City of Livermore
Fiscal Year 2015-2016
Annual Report of Stormwater
Program Implementation



Submitted to:
California Regional Water Quality
Control Board
San Francisco Bay Region



September 26, 2016

Bruce H. Wolfe, Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Attention: Selina Louie

Subject: Annual Report of Stormwater Program Implementation for FY 2015/2016

Dear Mr. Wolfe:

Enclosed is the City of Livermore's Annual Report of Stormwater Program Implementation for the FY 2015/2016.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing of violations.

If you have questions regarding this report, please contact Steven Aguiar, Environmental Compliance Supervisor, at 925-960-8126.

Sincerely,

A handwritten signature in blue ink, appearing to read "Helen Ling".

Helen Ling
(Certification for Sections: C1, C2, C4-C15)
Water Resources Division Manager
Public Works Department
Phone number: 925-960-8168

A handwritten signature in blue ink, appearing to read "Cheri Sheets".

Cheri Sheets
(Certification for Sections: C.3)
City Engineer
Community Development
Phone number: 925-960-4510

cc: Darren Greenwood, Director of Public Works

ATTACHMENT B

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Section 1 – Permittee Information

| Background Information | | | |
|---|--|-------------|-------------------------------------|
| Permittee Name: | City of Livermore | | |
| Population: | 83,604 | | |
| NPDES Permit No.: | CAS612008 | | |
| Order Number: | R2-2015-0049 | | |
| Reporting Time Period (month/year): | July 2015 through June 2016 | | |
| Name of the Responsible Authority: | Helen Ling | Title: | Water Resources Manager |
| Mailing Address: | 101 W. Jack London Blvd. | | |
| City: | Livermore | Zip Code: | 94551 |
| | | County: | Alameda County |
| Telephone Number: | 925-960-8100 | Fax Number: | 925-960-8105 |
| E-mail Address: | hfling@cityoflivermore.net | | |
| Name of the Designated Stormwater Management Program Contact (if different from above): | Steven Aguiar | Title: | Environmental Compliance Supervisor |
| Department: | Public Works- Water Resources Division | | |
| Mailing Address: | 101 W. Jack London Blvd. | | |
| City: | Livermore | Zip Code: | 94551 |
| | | County: | Alameda County |
| Telephone Number: | 925-960-8126 | Fax Number: | 925-960-8105 |
| E-mail Address: | smaguiar@cityoflivermore.net | | |

Section 2 - Provision C.2 Reporting Municipal Operations

Program Highlights and Evaluation

Highlight/summarize activities for reporting year:

Summary:

The City of Livermore participates in the Alameda Cleanwater Program's Municipal Maintenance Subcommittee. Mike Wells, Collection System Supervisor, represent the City in this area and participates on this subcommittee. Refer to the C.2 Municipal Operations section of the countywide Program's FY 15-16 Annual Report for a description of activities implemented at the countywide and/or regional level.

C.2.a. ► Street and Road Repair and Maintenance

Place a **Y** in the boxes next to activities where applicable BMPs were implemented. If not applicable, type **NA** in the box and provide an explanation in the comments section below. Place an **N** in the boxes next to activities where applicable BMPs were not implemented for one or more of these activities during the reporting fiscal year, then in the comments section below provide an explanation of when BMPs were not implemented and the corrective actions taken.

| | |
|---|--|
| Y | Control of debris and waste materials during road and parking lot installation, repaving or repair maintenance activities from polluting stormwater |
| Y | Control of concrete slurry and wastewater, asphalt, pavement cutting, and other street and road maintenance materials and wastewater from discharging to storm drains from work sites. |
| Y | Sweeping and/or vacuuming and other dry methods to remove debris, concrete, or sediment residues from work sites upon completion of work. |

Comments:

No additional comments.

C.2.b. ► Sidewalk/Plaza Maintenance and Pavement Washing

Place a **Y** in the boxes next to activities where applicable BMPs were implemented. If not applicable, type **NA** in the box and provide an explanation in the comments section below. Place an **N** in the boxes next to activities where applicable BMPs were not implemented for one or more of these activities during the reporting fiscal year, then in the comments section below provide an explanation of when BMPs were not implemented and the corrective actions taken.

| | |
|---|---|
| Y | Control of wash water from pavement washing, mobile cleaning, pressure wash operations at parking lots, garages, trash areas, gas station fueling areas, and sidewalk and plaza cleaning activities from polluting stormwater |
|---|---|

| | |
|---|--|
| Y | Implementation of the BASMAA Mobile Surface Cleaner Program BMPs |
|---|--|

Comments:
 No additional comments.

C.2.c. ► Bridge and Structure Maintenance and Graffiti Removal

Place a **Y** in the boxes next to activities where applicable BMPs were implemented. If not applicable, type **NA** in the box and provide an explanation in the comments section below. Place an **N** in the boxes next to activities where applicable BMPs were not implemented for one or more of these activities during the reporting fiscal year, then in the comments section below provide an explanation of when BMPs were not implemented and the corrective actions taken.

| | |
|---|--|
| Y | Control of discharges from bridge and structural maintenance activities directly over water or into storm drains |
|---|--|

| | |
|---|--|
| Y | Control of discharges from graffiti removal activities |
|---|--|

| | |
|---|--|
| Y | Proper disposal for wastes generated from bridge and structure maintenance and graffiti removal activities |
|---|--|

| | |
|---|---|
| Y | Implementation of the BASMAA Mobile Surface Cleaner Program BMPs for graffiti removal |
|---|---|

| | |
|---|---|
| Y | Employee training on proper capture and disposal methods for wastes generated from bridge and structural maintenance and graffiti removal activities. |
|---|---|

| | |
|---|--|
| Y | Contract specifications requiring proper capture and disposal methods for wastes generated from bridge and structural maintenance and graffiti removal activities. |
|---|--|

Comments:
 No additional comments.

| C.2.e. ► Rural Public Works Construction and Maintenance | |
|--|--|
| Does your municipality own/maintain rural ¹ roads: | |
| <input checked="" type="checkbox"/> | Yes |
| <input type="checkbox"/> | No |
| If your answer is No then skip to C.2.f. | |
| Place a Y in the boxes next to activities where applicable BMPs were implemented. If not applicable, type NA in the box and provide an explanation in the comments section below. Place an N in the boxes next to activities where applicable BMPs were not implemented for one or more of these activities during the reporting fiscal year, then in the comments section below provide an explanation of when BMPs were not implemented and the corrective actions taken. | |
| NA | Control of road-related erosion and sediment transport from road design, construction, maintenance, and repairs in rural areas |
| NA | Identification and prioritization of rural road maintenance based on soil erosion potential, slope steepness, and stream habitat resources |
| NA | No impact to creek functions including migratory fish passage during construction of roads and culverts |
| NA | Inspection of rural roads for structural integrity and prevention of impact on water quality |
| NA | Maintenance of rural roads adjacent to streams and riparian habitat to reduce erosion, replace damaging shotgun culverts and excessive erosion |
| NA | Re-grading of unpaved rural roads to slope outward where consistent with road engineering safety standards, and installation of water bars as appropriate |
| NA | Inclusion of measures to reduce erosion, provide fish passage, and maintain natural stream geomorphology when replacing culverts or design of new culverts or bridge crossings |
| Comments including listing increased maintenance in priority areas: | |

¹Rural means any watershed or portion thereof that is developed with large lot home-sites, such as one acre or larger, or with primarily agricultural, grazing or open space uses.

| C.2.f. ► Corporation Yard BMP Implementation | | | |
|---|---|---|-------------------|
| Place an X in the boxes below that apply to your corporations yard(s): | | | |
| <input type="checkbox"/> | We do not have a corporation yard | | |
| <input type="checkbox"/> | Our corporation yard is a filed NOI facility and regulated by the California State Industrial Stormwater NPDES General Permit | | |
| <input checked="" type="checkbox"/> | We have a Stormwater Pollution Prevention Plan (SWPPP) for the Corporation Yard(s) | | |
| Place an X in the boxes below next to implemented SWPPP BMPs to indicate that these BMPs were implemented in applicable instances. If not applicable, type NA in the box. If one or more of the BMPs were not adequately implemented during the reporting fiscal year then indicate so and explain in the comments section below: | | | |
| <input checked="" type="checkbox"/> | Control of pollutant discharges to storm drains such as wash waters from cleaning vehicles and equipment | | |
| <input checked="" type="checkbox"/> | Routine inspection prior to the rainy seasons of corporation yard(s) to ensure non-stormwater discharges have not entered the storm drain system | | |
| <input checked="" type="checkbox"/> | Containment of all vehicle and equipment wash areas through plumbing to sanitary or another collection method | | |
| <input checked="" type="checkbox"/> | Use of dry cleanup methods when cleaning debris and spills from corporation yard(s) or collection of all wash water and disposing of wash water to sanitary or other location where it does not impact surface or groundwater when wet cleanup methods are used | | |
| <input checked="" type="checkbox"/> | Cover and/or berm outdoor storage areas containing waste pollutants | | |
| Comments: No additional comments. | | | |
| If you have a corporation yard(s) that is not an NOI facility, complete the following table for inspection results for your corporation yard(s) or attach a summary including the following information: | | | |
| Corporation Yard Name | Inspection Date (1x/year required) | Inspection Findings/Results | Follow-up Actions |
| Livermore Maintenance Service Center | 07/07/2015 | BMPs are effectively implemented. Facility in Compliance with Stormwater Requirements | None. |
| Livermore Maintenance Service Center | 09/08/2015 | BMPs are effectively implemented. Facility in Compliance with Stormwater Requirements | None. |
| | | | |
| | | | |

Section 3 - Provision C.3 Reporting New Development and Redevelopment

**C.3.a. ► New Development and Redevelopment Performance
Standard Implementation Summary Report**

(For FY 15-16 Annual Report only) Provide a brief summary of the methods of implementation of Provisions C.3.a.i.(1)-(8).

Summary:

(1)The City Municipal Code Municipal Code Chapter 13.45 Stormwater management and Control Program give the City of Livermore the authority to regulate Stormwater quality in the City of Livermore.

(2)The City of Livermore requires permittees during the entitlement process to provide stormwater control plans and demonstrate that they can meet the stormwater regulations. The City approves conditions of approval for each project which includes the source control, site design and project specific stormwater treatment requirements to meet the Municipal Regional Permit. During Final Map and Building Plan review the City requires the applicant to provide plans that include stormwater treatment and control devices and calculations demonstrating the designs work.

(3)Water quality effects and mitigation measures are included in all development and design projects. These elements of the projects are evaluated in the initial study report and environmental documents. All mitigation and other requirements identified in the environmental documents are incorporated into the Conditions of Approval for each project and these requirements are incorporated into the design and constructed.

(4)City staff attends the Alameda County Clean Water Program bi-monthly New Development Subcommittee meetings and training sessions. Staff who attend the regional training held a City-wide stormwater training session June 15, 2016 to train Engineering, Planning, Building plan reviewers and inspection staff.

(5)Brochures are available in the permit center for staff, developers, contractors, construction site operators and owner/builders.

(6) & (7) City staff provides information and encourage all applicants and owners of unregulated projects to incorporate site design and source control measures into the design of their projects to the maximum extent practicable.

(8)The General Plan was revised in 2003 to integrate water quality/watershed protection with water supply, flood protection, habitat protection, groundwater recharge and other sustainable development principles and policies.

C.3.b.iv.(2) ► Regulated Projects Reporting

Fill in attached table C.3.b.iv.(2) or attach your own table including the same information. **Sec.3.b.iv. (2) tables attached**

C.3.c.ii ► Design Specifications for Pervious Pavement Systems

(For FY 2015-16 Annual Report only). Submit design specifications for pervious pavement systems that have been developed and adopted on a regional or countywide basis. If design specifications have been adopted and are contained in a Countywide stormwater handbook, include a reference to the handbook.

Summary:

- The City is following the design specifications included in the ACCWP C.3 Technical Guidance Manual.
- The City is updating the Development Review Procedure Manual and Design Codes and Standards to incorporate additional requirements.
- Civic Green Buildings Ordinance LEED requirement – The City adopted the Civic Green Building ordinance in 2004 to promote sustainable construction and use of new civic buildings.
- City has adopted Construction and Demolition Ordinance.
- In 2010, the State of California adopted a statewide green building code that was adopted by the City of Livermore and went into effect on January 1, 2011.
- Recycled Product Procurement Policy – Through its Recycled Product Procurement Policy, City staff purchase and use recycled materials for City operations such as green office supplies, furniture, park benches, picnic tables, and school and park playground structures.

C.3.e.iv. ► Alternative or In-Lieu Compliance with Provision C.3.c.

Is your agency choosing to require 100% LID treatment onsite for all Regulated Projects and not allow alternative compliance under Provision C.3.e.?

| | | | |
|--------------------------|-----|-------------------------------------|----|
| <input type="checkbox"/> | Yes | <input checked="" type="checkbox"/> | No |
|--------------------------|-----|-------------------------------------|----|

Comments (optional):

C.3.e.v ► Special Projects Reporting

| | | | | |
|---|--------------------------|-----|-------------------------------------|----|
| 1. In FY 2015-16, has your agency received, but not yet granted final discretionary approval of, a development permit application for a project that has been identified as a potential Special Project based on criteria listed in MRP Provision C.3.e.ii(2) for any of the three categories of Special Projects (Categories A, B or C)? | <input type="checkbox"/> | Yes | <input checked="" type="checkbox"/> | No |
| 2. In FY 2015-16, has your agency granted final discretionary approval to a Special Project? If yes, include the project in both the C.3.b.iv.(2) Table, and the C.3.e.v. Table. | <input type="checkbox"/> | Yes | <input checked="" type="checkbox"/> | No |
| | <input type="checkbox"/> | | <input type="checkbox"/> | |
| If you answered "Yes" to either question, 1) Complete Table C.3.e.v. 2) Attach narrative discussion of 100% LID Feasibility or Infeasibility for each project. | | | | |

C.3.h.v.(2) ► Reporting Newly Installed Stormwater Treatment Systems and HM Controls (Optional)

| |
|--|
| On an annual basis, before the wet season, provide a list of newly installed (installed within the reporting year) stormwater treatment systems and HM controls to the local mosquito and vector control agency and the Water Board. The list shall include the facility locations and a description of the stormwater treatment measures and HM controls installed. |
| See attached Table C.3.h.v.(2) for list of newly installed Stormwater Treatment Systems/HM Controls. |

C.3.h.v.(3)(a) –(c) and (f) ► Installed Stormwater Treatment Systems Operation and Maintenance Verification Inspection Program Reporting

| Option 1 – Reporting Site Inspections | Number/Percentage |
|---|-------------------|
| Total number of Regulated Projects (including offsite projects, and Regional Projects) in your agency's database or tabular format at the end of the previous fiscal year (FY14-15) | |
| Total number of Regulated Projects (including offsite projects, and Regional Projects) in your agency's database or tabular format at the end of the reporting period (FY 15-16) | |
| Total number of Regulated Projects (including offsite projects, and Regional Projects) for which O&M verification inspections were conducted during the reporting period (FY 15-16) | |
| Percentage of the total number of Regulated Projects (including offsite projects, and Regional Projects) inspected during the reporting period (FY 15-16) | % ² |
| Option 2 – Reporting Stormwater Treatment System Inspections (Note: This option is available during FY 15-16 only) | |
| Total number of stormwater treatment and HM systems in your agency's database or tabular format at the end of the previous fiscal year (FY 14-15) | 148 |
| Total number of stormwater treatment systems in your agency's database or tabular format at the end of the reporting period (FY 15-16) | 159 |
| Total number of stormwater treatment and HM systems inspected in the reporting period (FY 15-16) | 57 |
| Percentage of stormwater treatment and HM systems inspected in the reporting period (FY 15-16) | 36% |

² Based on the number of Regulated Projects in the database or tabular format at the end of the previous fiscal year (FY 14-15), per MRP Provision C.3.h.ii.(6)(b).

**C.3.h.v.(3)(d)-(e) ► Installed Stormwater Treatment Systems
Operation and Maintenance Verification Inspection Program
Reporting**

Provide a discussion of the inspection findings for the year and any common problems encountered with various types of treatment systems and/or HM controls. This discussion should include a general comparison to the inspection findings from the previous year.

Summary:

The City of Livermore conducted 46 operation and maintenance verification inspections of facilities with stormwater treatment measures during this reporting period. Additionally, the City performed 11 initial inspections of newly installed stormwater treatment measures during this reporting period. The most common encountered problems discovered during this routine operation and maintenance inspections were the following: Invasive Vegetation/Weeds in bioretention area, accumulation of trash/litter in bioretention area and/or mechanical devices, and "pumping/cleaning" required of in-ground mechanical devices (CDS, Vortex, etc.)

Provide a discussion of the effectiveness of the O&M Program and any proposed changes to improve the O&M Program (e.g., changes in prioritization plan or frequency of O&M inspections, other changes to improve effectiveness program).

Summary:

The City of Livermore has been requiring new development projects to install stormwater treatment measures since approximately the year 2000. During the early implementation of the City's O & M inspection program, staff was primarily concerned with keeping track and maintaining an inventory of all these measures and their locations. A basic Microsoft Excel Spreadsheet has been utilized to date as part of our efforts to track the device type and location. In order to improve the efficiency of our O & M inspection program in the future, the City is looking to incorporate management of the stormwater treatment measure device inventory list, as well as the tracking of the inspections of both existing and newly installed devices, in the City's Permit Center Database system. This is an Accela based program and provides a comprehensive database of all development projects on all parcels within our jurisdiction. With these improvements, the City will be able to ensure proper tracking of all devices and have a historical and searchable record system of all inspections performed in the future.

C.3.i. ► Required Site Design Measures for Small Projects and Detached Single Family Home Projects

On an annual basis, discuss the implementation of the requirements of Provision C.3.i, including ordinance revisions, permit conditions, development of standard specifications and/or guidance materials, and staff training.

Summary:

BASMAA prepared standard specifications in four fact sheets regarding the site design measures listed in Provision C.3.i, as a resource for Permittees. We have modified local ordinances/policies/procedures and forms/checklists to require all applicable projects approved after December 1, 2012 to implement at least one of the site design measures listed in Provision C.3.i. We are using the following Program and BASMAA products for C.3.i implementation:

- BASMAA's site design fact sheets
- The ACCWP C.3 Technical Guidance Manual Appendix L

C.3.j.i.v.(d) ► Green Infrastructure Outreach

On an annual basis, provide a summary of your agency's outreach and education efforts pertaining to Green Infrastructure planning and implementation.

Summary:

Design with Green Building in Mind educational material and resources, Single Family Green Point checklist, construction debris recycling guides, bay friendly landscape booklets, etc., are made available for the public and staff.

Green Infrastructure Education/Resources include:

- Sustainability website – The “Live More, Save More – Sustainable Livermore” website is a user-friendly resource for the community to learn about sustainability efforts in the City and how they can get involved to help build a sustainable community.
- Green Resource Center – Since 2005, the Green Resource Center within the City Hall Permit Center has offered comprehensive public resources and staff assistance regarding green planning/building, recycling, reuse, and conservation

Please refer to the Countywide Program's FY 15-16 Annual Report for a summary of outreach efforts implemented at the Countywide level.

C.3.j.ii.(2) ► Early Implementation of Green Infrastructure Projects

On an annual basis, submit a list of green infrastructure projects, public and private, that are already planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for green infrastructure measures. Include the following information:

- A summary of planning or implementation status for each public and private green infrastructure project that is not also a Regulated Project as defined in Provision C.3.b.ii. (See C.3.j.ii.(2) Table B - Planned Green Infrastructure Projects).
- A summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practicable during the permit term. For any public infrastructure project where implementation of green infrastructure measures is not practicable, submit a brief description of the project and the reasons green infrastructure measures were impracticable to implement (see C.3.j.ii.(2) Table A - Public Projects Reviewed for Green Infrastructure).

Background Information:

Describe how this provision is being implemented by your agency, including the process used by your agency to identify projects with potential for green infrastructure, if applicable.

Various Green Infrastructure Design guidelines and support are provided at application phase. City will set up a pre-application meeting process to discuss green infrastructure with applicants. The entitlement and plan check review process identifies opportunities to incorporate and include green infrastructure that has pervious pavements, bio-swales/retention, self-treating landscaping.

City Staff has identified future green infrastructure projects utilizing the BASMAA guidance.

Summary of Planning or Implementation Status of Identified Projects:

See attached Tables C.3.j.ii.(2)-A and C.3.j.ii.(2)-B for the required information.

C.3.j.iii.(2) ► Participate in Processes to Promote Green Infrastructure

On an annual basis, report on the goals and outcomes during the reporting year of work undertaken to participate in processes to promote green infrastructure.

Please refer to the Countywide Program's FY 15-16 Annual Report for a summary of efforts conducted to help regional, State, and federal agencies plan, design and fund incorporation of green infrastructure measures into local infrastructure projects, including transportation projects.

C.3.j.iv.(2) ► Tracking and Reporting Progress

On an annual basis, report progress on development and implementation of methods to track and report implementation of green infrastructure measures and provide reasonable assurance that wasteload allocations for TMDLs are being met.

Please refer to the Countywide Program's FY 15-16 Annual Report for a summary of methods being developed to track and report implementation of green infrastructure measures.

C.3.b.iv.(2) ► Regulated Projects Reporting Table (part 1) – Projects Approved During the Fiscal Year Reporting Period

| Project Name Project No. | Project Location ⁹ , Street Address | Name of Developer | Project Phase No. ¹⁰ | Project Type & Description ¹¹ | Project Watershed ¹² | Total Site Area (Acres) | Total Area of Land Disturbed (Acres) | Total New Impervious Surface Area (ft ²) ¹³ | Total Replaced Impervious Surface Area (ft ²) ¹⁴ | Total Pre- Project Impervious Surface Area ¹⁵ (ft ²) | Total Post- Project Impervious Surface Area ¹⁶ (ft ²) |
|--|---|------------------------------------|---------------------------------------|---|---------------------------------|-------------------------------|--|---|---|---|--|
| Private Projects Entitlement | | | | | | | | | | | |
| Chestnut Square SUB 15-010 - | 1625-1779 Chestnut St | Atrium Development | None | Multiuse – 44 townhomes and 116 affordable housing units | G-Arroyo Mocho | 4.2 | 4.2 | 95,462 | 47,953 | 164,690 | 143,415 |
| Wallanus Apartment SPDR 15-001 | 732 N K Street | Wallanus Development | None | 6 - 3 bedroom Apartments | G-Arroyo Mocho | 0.4 | 0.4 | 15,750 | 875 | 17,500 | 16,625 |
| Auburn Grove SUB 16-006 | 3261, 3737, & 3739 First St | Valley Oak Partners | None | 108 townhomes | G-Arroyo Mocho | 6.59 | 6.59 | 0 | 210,226 | 271,814 | 210,226 |
| Crosswinds Commercial SUB 16-005- | 2000 Freisman Road | Crosswinds | None | 244k Retail | Arroyo Los Positas | 23.23 | 23.23 | 841,780 | 0 | 0 | 841,780 |
| Chevron Station @ Southfront SPAM 14-001- | S Front Street & I-580 | Southfront Enterprises, Inc | None | Gas Station | H-Arroyo Los Positas | 1.29 | 0.73 | 25,111 | 65 | 65 | 25,176 |
| Lomitas VTTM 8290 SUB 15-007 | 1591 Lomitas Ave | Ponderosa Homes | None | 10 Single Family Homes | G-Arroyo Mocho | 5 | 5 | 61,890 sf | 30,260 sf | 30,260 sf | 92,150 sf |
| Livermore Valley Charter School – SPDRM 15-023 | 3252 Constitution Dr. | Tri Valley Learning Corporation | None | 50 parking stalls | H-Arroyo Los Positas | 14.4 | 6.5 | 75,376 | 0 | 0 | 75,376 |

⁹Include cross streets

¹⁰If a project is being constructed in phases, indicate the phase number and use a separate row entry for each phase. If not, enter "NA".

¹¹Project Type is the type of development (i.e., new and/or redevelopment). Example descriptions of development are: 5-story office building, residential with 160 single-family homes with five 4-story buildings to contain 200 condominiums, 100 unit 2-story shopping mall, mixed use retail and residential development (apartments), industrial warehouse.

¹²State the watershed(s) in which the Regulated Project is located. Downstream watershed(s) may be included, but this is optional.

¹³All impervious surfaces added to any area of the site that was previously existing pervious surface.

¹⁴All impervious surfaces added to any area of the site that was previously existing impervious surface.

¹⁵For redevelopment projects, state the pre-project impervious surface area.

¹⁶For redevelopment projects, state the post-project impervious surface area.

C.3.b.iv.(2) ► Regulated Projects Reporting Table (part 1) – Projects Approved During the Fiscal Year Reporting Period

| Project Name Project No. | Project Location ⁹ , Street Address | Name of Developer | Project Phase No. ¹⁰ | Project Type & Description ¹¹ | Project Watershed ¹² | Total Site Area (Acres) | Total Area of Land Disturbed (Acres) | Total New Impervious Surface Area (ff ²) ¹³ | Total Replaced Impervious Surface Area (ff ²) ¹⁴ | Total Pre- Project Impervious Surface Area ¹⁵ (ff ²) | Total Post- Project Impervious Surface Area ¹⁶ (ff ²) |
|---------------------------------------|---|---------------------------------|---------------------------------------|---|---------------------------------|-------------------------------|--|---|---|---|--|
| Hyatt House CUPM16-002 | 1000 Airway Blvd | Hyatt | None | Hotel & Parking garage | H-Arroyo Los Positas | 3 | 3 | 120,195 | 120,195 | 120,195 | 120,195 |
| Bettis Terrace PM 10500 SUB 16-001 | 2458 Portola Ave | Bettis | None | 3 SFD | H-Arroyo Los Positas | 1 | 1 | 12,874 | 5,364 | 14,452 | 18,238 |
| Avila Estates – SUB 16-004 | Foley Rd/Velicitos | Crohare | None | Commercial & Residential – 5sfd & small hotel | Arroyo Del Valle | 120 | 1.24 | 54,014 | 0 | 0 | 54,014 |
| Sonoma School | 599 Sonoma Avenue | William Lyon Homes, Inc | None | Single Family Residential | G-Arroyo Mocho | 8.98 | 8.98 | 0 | 210,641 | 221,230 | 210,641 |
| Roadrunner – SPDR 15-016 | 7800 Patterson Pass Road | BCM Construction | None | Warehouse | H-Arroyo Los Positas | 9.9 | 9.9 | 332,008 | 0 | 0 | 332,008 |
| FBO Phase 2 SPDRM 15-028 | 700-736 Terminal Circle | 5 River Aviation | None | 2 buildings | H-Arroyo Los Positas | 2.8 | 2.8 | 109,771 | 0 | 0 | 109,771 |
| Chevron Gas Station SPAM14- 001 | 4707 First street | AK Service, Inc | None | Gas Station – 2 Buildings | H-Arroyo Las Positas | 0.85 | 37,012 | 12,619 | 2,845 | 28,198 | 15,464 |
| 6877 Brisa Street – SPDR 16-001 | 6877Brisa Street | Majestic Brisa Partners, LLC | None | Single Story Industrial Warehouse | H-Arroyo Las Positas | 6.682 | 6.682 | 238,117 | 0 | 0 | 238,117 |
| College Avenue TM 8030 | College Avenue | Porter Development | None | 7 Single Family Homes | G-Arroyo Mocho | 38,000 | 17,293 | 11,105 | 12,709 | 12,709 | 23,814 |
| Garavanta Hills TM 8094 | West of Bear Creek Drive | Lafferty | None | 47 Residential Homes | H-Arroyo Las Positas | 31.7 | 14.4 | 627264 | 0 | 0 | 627264 |
| Primrose School SW 15016 | 3101 Las Positas Road | Primrose School | None | Daycare | H-Arroyo Las Positas | 3.26 | 2.16 | 58,762 | 0 | 0 | 58,762 |
| Vines TM 8195 | 5915 & 5945 East Ave. | Ponderosa Homes | None | 49 residential Homes | H-Arroyo Las Positas | 0.7 | 0.7 | 27,000 | 0 | 0 | 27,000 |
| The Shoppes | Jack London Blvd. | Himsl | None | 5 Commercial | H-Arroyo Las Positas | 13 | 13 | 539,937 | 0 | 0 | 539,937 |

C.3.b.iv.(2) ► Regulated Projects Reporting Table (part 1) – Projects Approved During the Fiscal Year Reporting Period

| Project Name Project No. | Project Location ⁹ , Street Address | Name of Developer | Project Phase No. ¹⁰ | Project Type & Description ¹¹ | Project Watershed ¹² | Total Site Area (Acres) | Total Area of Land Disturbed (Acres) | Total New Impervious Surface Area (ft ²) ¹³ | Total Replaced Impervious Surface Area (ft ²) ¹⁴ | Total Pre- Project Impervious Surface Area ¹⁵ (ft ²) | Total Post- Project Impervious Surface Area ¹⁶ (ft ²) |
|--|---|-------------------|---------------------------------------|---|---------------------------------|-------------------------------|--|---|---|---|--|
| | | | | Buildings | | | | | | | |
| Old Town Village TM 8173/Brighton Ph 3 | First & Inman | Brighton | Phase 3 | 27 High Density Residential Homes | G – Arroyo Mocho | 1.74 | 1.74 | 4,956 | 67,048 | 67,048 | 72,004 |
| Private Projects Final Map | | | | | | | | | | | |
| Oaks Business Park – Trammel Crow PM 10266 | Voyager Street/Discovery Drive | Trammel Crow | Phase 1- 2 | 3 Commercial Buildings, 635,533 SF, 294,940 SF, 367,734 SF | H-Arroyo Las Positas | 70.79 A | 70.79 A | 2,399,736 | 113,219 | 113,219 | 2,399,736 |
| Catalina Crossing TM 8145 | Barcelona Avenue | Sunset Dev. | None | Homes | G-Arroyo Mocho | 94,034 | 94,032 | 0 | 61,855 | 61,855 | 61,855 |
| Shea Sage TM 8121 | Portola Avenue | Shea Homes | Phase 1- 2 | 476 Residential | H-Arroyo Las Positas | 56.33 | 40.0 | 436,115 | 0 | 0 | 436,115 |
| Private Projects Building Permit | | | | | | | | | | | |
| Home 2 Suites SPDRM 15-003 | 2625 Constitution Dr. | Amrat Patel | None | 100 room Hotel | H-Arroyo Las Positas | 2.77 | 2.7 | 59,928 | 38,250 | 74,956 | 96,634 |
| Tiffany Gardens CUP14-004 | 740 Holmes | DeBolt | None | Residential Care Facility | G – Arroyo Mocho | 0.4 | 0.4 | 13,605 | 13,435 | 13,435 | 18,930 |
| Oaks Business Park – Phantom Site Gillig | Voyager Street/Discovery Drive | Gillig | None | 1 Commercial Building | H-Arroyo Las Positas | 37.2 | 37.2 | 1,374,147 | 0 | 0 | 1,374,147 |
| Public Projects | | | | | | | | | | | |
| Fire Station #9 | 1919 Cordoba St | City | None | Fire Station | H-Arroyo Las Positas | 0.23 | 0.23 | 6,920 | 3,350 | 3,350 | 6920 |
| Freisman Park 2B | Livermore Outlets Drive | City | None | Park and Stormwater Treatment Pond | H-Arroyo Las Positas | 10 | 9 | 39,000 | 0 | 0 | 39,000 |
| Railroad Depot Relocation & | 2400 Railroad Court | City | None | Depot Relocation | G – Arroyo Mocho | 0.27 | 0.27 | 11,399 | 11,399 | 11,399 | 11,399 |

C.3.b.iv.(2) ► Regulated Projects Reporting Table (part 1) – Projects Approved During the Fiscal Year Reporting Period

| Project Name Project No. | Project Location ⁹ , Street Address | Name of Developer | Project Phase No. ¹⁰ | Project Type & Description ¹¹ | Project Watershed ¹² | Total Site Area (Acres) | Total Area of Land Disturbed (Acres) | Total New Impervious Surface Area (ft ²) ¹³ | Total Replaced Impervious Surface Area (ft ²) ¹⁴ | Total Pre- Project Impervious Surface Area ¹⁵ (ft ²) | Total Post- Project Impervious Surface Area ¹⁶ (ft ²) |
|-----------------------------|---|-------------------|---------------------------------------|---|---------------------------------|-------------------------------|--|---|---|---|--|
| Rehabilitation | | | | | | | | | | | |
| Jack London Widening – | Jack London | City | None | Road Widening & Trail | H-Arroyo Las Positas | 0.78 | 34,000 | 24,066 | 0 | 0 | 24,066 |
| Comments: | | | | | | | | | | | |

C.3.b.iv.(2) ► Regulated Projects Reporting Table (part 2) – Projects Approved During the Fiscal Year Reporting Period (private projects)

| Project Name Project No. | Application Deemed Complete Date ¹⁷ | Application Final Approval Date ¹⁸ | Source Control Measures ¹⁹ | Site Design Measures ²⁰ | Treatment Systems Approved ²¹ | Type of Operation & Maintenance Responsibility Mechanism ²² | Hydraulic Sizing Criteria ²³ | Alternative Compliance Measures ^{24/25} | Alternative Certification ²⁶ | HM Controls ^{27/28} |
|-------------------------------------|---|---|--|---------------------------------------|---|---|---|--|--|------------------------------|
| Private Projects Entitlement | | | | | | | | | | |
| Chestnut Square SUB 15- | Not Yet | Not Yet | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention |

¹⁷For private projects, state project application deemed complete date. If the project did not go through discretionary review, report the building permit issuance date.

¹⁸For private projects, state project application final discretionary approval date. If the project did not go through discretionary review, report the building permit issuance date.

¹⁹List source control measures approved for the project. Examples include: properly designed trash storage areas; storm drain stenciling or signage; efficient landscape irrigation systems; etc.

²⁰List site design measures approved for the project. Examples include: minimize impervious surfaces; conserve natural areas, including existing trees or other vegetation, and soils; construct sidewalks, walkways, and/or patios with permeable surfaces, etc.

²¹List all approved stormwater treatment system(s) to be installed onsite or at a joint stormwater treatment facility (e.g., flow through planter, bioretention facility, infiltration basin, etc.).

²²List the legal mechanism(s) (e.g., O&M agreement with private landowner; O&M agreement with homeowners' association; O&M by public entity, etc...) that have been or will be used to assign responsibility for the maintenance of the post-construction stormwater treatment systems.

²³See Provision C.3.d.i. "Numeric Sizing Criteria for Stormwater Treatment Systems" for list of hydraulic sizing design criteria. Enter the corresponding provision number of the appropriate criterion (i.e., 1.a., 1.b., 2.a., 2.b., 2.c., or 3).

²⁴For Alternative Compliance at an offsite location in accordance with Provision C.3.e.i.(1), on a separate page, give a discussion of the alternative compliance site including the information specified in Provision C.3.b.v.(1)(m)(i) for the offsite project.

²⁵For Alternative Compliance by paying in-lieu fees in accordance with Provision C.3.e.i.(2), on a separate page, provide the information specified in Provision C.3.b.v.(1)(m)(ii) for the Regional Project.

²⁶Note whether a third party was used to certify the project design complies with Provision C.3.d.

²⁷If HM control is not required, state why not.

²⁸If HM control is required, state control method used (e.g., method to design and size device(s) or method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), bioretention unit(s), regional detention basin, or in-stream control).

**C.3.b.iv.(2) ► Regulated Projects Reporting Table (part 2) –
 Projects Approved During the Fiscal Year Reporting Period
 (private projects)**

| Project Name Project No. | Application Deemed Complete Date ¹⁷ | Application Final Approval Date ¹⁸ | Source Control Measures ¹⁹ | Site Design Measures ²⁰ | Treatment Systems Approved ²¹ | Type of Operation & Maintenance Responsibility Mechanism ²² | Hydraulic Sizing Criteria ²³ | Alternative Compliance Measures ^{24/25} | Alternative Certification ²⁶ | HM Controls ^{27/28} |
|---|---|---|--|---------------------------------------|---|---|---|--|--|---|
| 010 - | | | | | | | | | | |
| Wallanus Apartment SPDR 15-001 | 3/14/16 | 4/19/16 | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention |
| Auburn Grove SUB 16-006 | Not Yet | Not Yet | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention |
| Crosswinds Commercial SUB 16-005 | Not Yet | Not Yet | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention/ Hydromodificati on basin |
| Chevron Station @ South Front SPAM 14-001 | Not Yet | Not Yet | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention |
| Lomitas VTTM 8290 SUB 15- 007 | 12/30/15 | 4/19/16 | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention |
| Livermore Valley Charter School – SPDRM 15-023 | 9/14/15 | 11/20/15 | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention |
| Hyatt House CUPM16-002- | Not Yet | Not Yet | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention |
| Bettis Terrace PM 10500 SUB 16-001 | Not Yet | Not Yet | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention |
| Avila Estates – SUB 16-004 | Not Yet | Not Yet | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention |
| Sonoma School | Not Yet | Not Yet | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention |
| Roadrunner – SPDR 15-016 | Not Yet | Not Yet | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention |
| FBO Phase 2 – SDRM 15-028 | Not Yet | Not Yet | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention |
| Chevron Gas Station SPAM14-001 | Not Yet | Not Yet | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention |
| 6877 Brisa Street – SPDR 16- 001 | 3-11-16 | 7-15-16 | A,D, & G | a | Bio- Retention | O & M Agreement | Volume | NA | NA | Bio-Retention |
| College Avenue TM 8030 | 7-25-08 | 3-10-10 | A,D, & G | a | Bio- Retention | O & M Agreement | Volume | NA | NA | Bio-Retention |
| Garavanta Hills TM 8094 | 6-4-13 | Not Yet | A,D, & G | a | Bio- Retention | O & M Agreement | Volume | NA | NA | Bio-Retention |
| Primrose | 12-1-14 | 7-27-15 | A,D, & G | a | Bio- Retention | O & M Agreement | Volume | NA | NA | Bio- Retention |

**C.3.b.iv.(2) ► Regulated Projects Reporting Table (part 2) –
 Projects Approved During the Fiscal Year Reporting Period
 (private projects)**

| Project Name Project No. | Application Deemed Complete Date ¹⁷ | Application Final Approval Date ¹⁸ | Source Control Measures ¹⁹ | Site Design Measures ²⁰ | Treatment Systems Approved ²¹ | Type of Operation & Maintenance Responsibility Mechanism ²² | Hydraulic Sizing Criteria ²³ | Alternative Compliance Measures ^{24/25} | Alternative Certification ²⁶ | HM Controls ^{27/28} |
|---|---|---|--|---------------------------------------|---|---|---|--|--|------------------------------|
| Vines TM 8195 | 4-18-14 | Not Yet | A,D, & G | α | None Yet | O & M Agreement | Volume | NA | NA | Bio- Retention |
| The Shoppes | 2-27-14 | 4-20-15 | A,D, & G | α | None Yet | None Yet | None Yet | NA | NA | None Yet |
| Old Town Village TM 8173 | 2-7-14 | 12-30-14 | A,D & G | α | Bio- Retention | None Yet | None Yet | NA | NA | None Yet |
| Private Projects - Final Map | | | | | | | | | | |
| Oaks Business Park – Trammel Crow PM 10266 | 7-16-14 | 12-31-14 | A,D, & G | α | Bio- Retention | O & M Agreement | Volume | NA | NA | Bio-Retention |
| Catalina Crossing TM 8145 | 5-3-14 | 7-14-14 | A,D, & G | α | Bio- Retention | O & M Agreement | Volume | NA | NA | Bio-Retention |
| Shea Sage T 8121 | 4-20-14 | 11-6-14 | A, D, & G | α | Bio- Retention | None Yet | None Yet | NA | NA | None Yet |
| Old Town Village Tr 8173 | 2-7-14 | 12-30-14 | A,D & G | α | Bio- Retention | None Yet | None Yet | NA | NA | None Yet |
| Old Town Village Tr 8184 | 3-25-14 | 1-6-15 | A, D, G | α | Bio- Retention | None Yet | None Yet | NA | NA | None Yet |
| Brisa Neighborhood Plan – Phase 1-3 T7870 | 11-5-13 | 1-13-14 | A, D & G | α | Bio-Retention | O&M Agreement | Volume | NA | NA | Bio-Retention |
| Old Town Village First & Inman T8114 | 7-10-14 | 7-14-14 | A, D & G | α | Bio-Retention | O&M Agreement | Volume | NA | NA | Bio-Retention |
| Old Town Village First & Inman T8146 | 12-1-13 | 6-8-15 | A, D & G | α | Bio-Retention | O&M Agreement | Volume | NA | NA | Bio-Retention |
| First and Portola T7633 | 12-1-13 | 11-10-14 | A, D & G | α | Bio-Retention | O&M Agreement | Volume | NA | NA | Bio-Retention |
| Morning Glory T8125 | 12-24-13 | 7-14-14 | A, D & G | α | Bio-Retention | O&M Agreement | Volume | NA | NA | Bio-Retention |
| Premium II Outlet Expansion PM 10090 | 2-1-14 | 7-14-14 | A, D & G | α | Bio-Retention | O&M Agreement | Volume | NA | NA | Bio-Retention |
| Artero BlueBell T 7724 | 6-30-14 | 7-14-14 | A, D & G | α | Bio-Retention | O&M Agreement | Volume | NA | NA | Bio-Retention |
| Gardella Gardens T 7900 | 12-16-08 | 2-9-9 | A, D & G | α | Bio-Retention | O&M Agreement | Volume | NA | NA | Bio-Retention |
| Orchid Ranch T 7671 | 11-17-9 | 1-11-10 | A, D & G | α | Bio-Retention | O&M Agreement | Volume | NA | NA | Bio-Retention |

**C.3.b.iv.(2) ► Regulated Projects Reporting Table (part 2) –
 Projects Approved During the Fiscal Year Reporting Period
 (private projects)**

| Project Name Project No. | Application Deemed Complete Date ¹⁷ | Application Final Approval Date ¹⁸ | Source Control Measures ¹⁹ | Site Design Measures ²⁰ | Treatment Systems Approved ²¹ | Type of Operation & Maintenance Responsibility Mechanism ²² | Hydraulic Sizing Criteria ²³ | Alternative Compliance Measures ^{24/25} | Alternative Certification ²⁶ | HM Controls ^{27/28} |
|--|---|---|--|---------------------------------------|---|---|---|--|--|------------------------------|
| Private Projects – Building Permits | | | | | | | | | | |
| Wallanus Apartment SPDR 15-001 | 3/14/16 | 4/19/16 | A,D, & G | a | Bio- Retention | None Yet | None Yet | NA | NA | Bio-Retention |
| Livermore Valley Charter School – SPDRM 15-023 | 9/14/15 | 11/20/15 | A,D, & G | a | Bio-Retention | None Yet | None Yet | NA | NA | Bio-Retention |
| Home 2 Suites SPDRM 15-003 | 10/23/15 | 11/23/15 | A, D, G | a | Bio-Retention | O & M Agreement | Volume | NA | NA | Bio- Retention |
| Tiffany Gardens CUP14-004 | 9/10/14 | 2/17/15 | A,D & G | a | Bio- Retention | O & M Agreement | Volume | NA | NA | Bio- Retention |
| Oaks Business Park – Phantom Site Gillig | 6-8-14 | 6-20-14 | A,D & G | a | | O & M Agreement | Volume | NA | NA | Bio- Retention |
| Airport FBO | 1-8-14 | 4-15-14 | A, D & G | a | Bio-retention | O&M Agreement | Volume | NA | NA | Bio-retention |
| Crosswinds Church PM 9747 | 5-20-14 | 5-21-14 | A, D & G | a | Bio-retention | O&M Agreement | Volume | NA | NA | Bio-retention |
| Dante Robere Winery | 5-1-14 | 11-26-14 | A, D & G | a | Bio-Retention | O&M Agreement | Volume | NA | NA | Bio-Retention |
| Kiddy Academy | 7-24-15 | Not Yet | A, D & G | a | Bio-Retention | O&M Agreement | Volume | NA | NA | Bio-Retention |
| Scenic Plaza Lot 4 | 5-2-15 | Not Yet | A, D & G | a | Bio-Retention | O&M Agreement | Volume | NA | NA | Bio-Retention |
| Fire Station #9 | Jul-14 | Dec-14 | A,D, G, Q, R, T | a,b,c,d | Bio-Retention | Maintained by City Staff | Volume | NA | NA | Bio-Retention |
| ECSP Phase 2A | Oct - 13 | March-14 | A,D,Q,R,T | c,d | Bio-Retention | Maintained by City Staff | Volume | NA | NA | Bio-Retention |
| Freisman Park 2B | Mar-14 | Sept – 14 | A,D,Q,R,T, W | c,d | Bio-Retention | Maintained by City Staff | Volume | NA | NA | Bio-Retention |

**C.3.b.iv.(2) ► Regulated Projects Reporting Table (part 2) –
 Projects Approved During the Fiscal Year Reporting Period
 (public projects)**

| Project Name Project No. | Approval Date ²⁹ | Date Construction Scheduled to Begin | Source Control Measures ³⁰ | Site Design Measures ³¹ | Treatment Systems Approved ³² | Operation & Maintenance Responsibility Mechanism ³³ | Hydraulic Sizing Criteria ³⁴ | Alternative Compliance Measures ^{35/36} | Alternative Certification ³⁷ | HM Controls ^{38/39} |
|--|--------------------------------|---|--|---------------------------------------|---|---|--|--|--|----------------------------------|
| Public Projects – Construction completed in FY 15/16 or in progress | | | | | | | | | | |
| Fire Station #9 | 7/1/14 | 1/19/2015 | A,D, G, Q, R, T | a,b,c,d | Bio-Retention | Maintained by City Staff | Volume | NA | NA | Bio-Retention |
| ECSP Phase 2A | 12/11/13 | 3/21/14 | A,D,Q,R,T | c,d | Bio-Retention | Maintained by City Staff | Volume | NA | NA | Bio-Retention |
| Freisman Park 2B | 7/21/14 | 11/18/14 | A,D,Q,R,T, W | c,d | Bio-Retention | Maintained by City Staff | Volume | NA | NA | Bio-Retention |
| Railroad Depot Relocation & Rehabilitation | 5/31/16 | Has not started | A,D, G, Q, R, T | a,b,c,d | Bio-Retention/Self Treatment | Maintained by City Staff | Volume | NA | NA | Bio-Retention/ Self Treatment |
| Jack London Widening – | 12/16/14 | Has not started | A,D,Q,R,T | c,d | Bio-Retention | Maintained by City Staff | Volume | NA | NA | Bio-Retention |
| Comments: | | | | | | | | | | |

²⁹For public projects, enter the plans and specifications approval date.

³⁰List source control measures approved for the project. Examples include: properly designed trash storage areas; storm drain stenciling or signage; efficient landscape irrigation systems; etc.

³¹List site design measures approved for the project. Examples include: minimize impervious surfaces; conserve natural areas, including existing trees or other vegetation, and soils; construct sidewalks, walkways, and/or patios with permeable surfaces, etc.

³²List all approved stormwater treatment system(s) to be installed onsite or at a joint stormwater treatment facility (e.g., flow through planter, bioretention facility, infiltration basin, etc.).

³³List the legal mechanism(s) (e.g., maintenance plan for O&M by public entity, etc...) that have been or will be used to assign responsibility for the maintenance of the post-construction stormwater treatment systems.

³⁴See Provision C.3.d.i. "Numeric Sizing Criteria for Stormwater Treatment Systems" for list of hydraulic sizing design criteria. Enter the corresponding provision number of the appropriate criterion (i.e., 1.a., 1.b., 2.a., 2.b., 2.c., or 3).

³⁵For Alternative Compliance at an offsite location in accordance with Provision C.3.e.i.(1), on a separate page, give a discussion of the alternative compliance site including the information specified in Provision C.3.b.v.(1)(m)(i) for the offsite project.

³⁶For Alternative Compliance by paying in-lieu fees in accordance with Provision C.3.e.i.(2), on a separate page, provide the information specified in Provision C.3.b.v.(1)(m)(ii) for the Regional Project.

³⁷Note whether a third party was used to certify the project design complies with Provision C.3.d.

³⁸If HM control is not required, state why not.

³⁹If HM control is required, state control method used (e.g., method to design and size device(s) or method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), bioretention unit(s), regional detention basin, or in-stream control).

C.3.h.v.(2). ►Table of Newly Installed⁴⁰ Stormwater Treatment Systems and Hydromodification Management (HM) Controls (Optional)

Fill in table below or attach your own table including the same information.

| Name of Facility | Address of Facility | Party Responsible ⁴¹ For Maintenance | Type of Treatment/HM Control(s) |
|--------------------------------|----------------------------------|---|---------------------------------|
| Cayetano Park Tr 7610 | Portola Avenue | LARPD | Swales |
| Fire Station #9 | 1919 Cordoba St Proj. 1994-55 | City | Bio-Retention |
| Freisman Park | Livermore Outlets Dr | City | Bio-Retention |
| Trammel Crow PM 10266 – BLDG 1 | 201 Discovery Dr | Livermore Oaks Joint Venture | Bio-Retention |
| Trammel Crow PM 10266 – BLDG 2 | 801 Challenger St | Livermore Oaks Joint Venture | Bio-Retention |
| Trammel Crow PM 10266 – BLDG 3 | 800 Atlantis St | Livermore Oaks Joint Venture | Bio-Retention |
| Gillig | 450 Discovery Dr | Gillig | Bio-Retention |
| Airport FBO | 700 Terminal Circle | Airport FBO | Bio-Retention |
| Positano Tr 7840 | 292 North L St | Real Freedom | Bio-Retention |
| Tiffany Gardens | 740 Holmes | DeBolt | Bio-Retention |
| Scenic Plaza – Lot 4 | Vasco Road | Blau | Bio-Retention |

⁴⁰ "Newly Installed" includes those facilities for which the final installation inspection was performed during this reporting year.

⁴¹State the responsible operator for installed stormwater treatment systems and HM controls.

C.3.e.v. Special Projects Reporting Table
 Reporting Period – July 1 2015 - June 30, 2016
 Guidance: Provide all information indicated in the table. Do not leave blank cells in the table. If any of the indicated information is not available, please explain (for example, "Information is not yet available due to the preliminary phase of design.")

| Project Name & No. | Permittee | Address | Application Submittal Date ⁴² | Status ⁴³ | Description ⁴⁴ | Site Total Acreage | Gross Density DU/Acre | Density FAR | Special Project Category ⁴⁵ | LID Treatment Reduction Credit Available ⁴⁶ | List of LID Stormwater Treatment Systems ⁴⁷ | List of Non-LID Stormwater Treatment Systems ⁴⁸ |
|---|---|---|--|----------------------|---------------------------|--------------------------|------------------------------------|------------------|--|--|---|--|
| Name of the Special Project and Project No. (if applicable) | Name of the Permittee in whose jurisdiction the Special Project will be built | Address of the Special Project; if no street address, state the cross streets | See footnote | See footnote | See footnote | Total site area in acres | Number of dwelling units per acre. | Floor Area Ratio | Category A: Category B: Category C: Location: Density: Parking: See footnote | Category A: Category B: Category C: Location: Density: Parking: See footnote | Indicate each type of LID treatment system and % of total runoff treated. See footnote | Indicate each type of non-LID treatment system and % of total runoff treated. Indicate whether minimum design criteria met or certification received See footnote |

Comments: There were no special projects during this reporting period.

⁴²Date that a planning application for the Special Project was submitted.

⁴³Indicate whether final discretionary approval is still pending or has been granted, and provide the date or version of the project plans upon which reporting is based.

⁴⁴Type of project (commercial, mixed-use, residential), number of floors, number of units, type of parking, and other relevant information.

⁴⁵For each applicable Special Project Category, list the specific criteria applied to determine applicability. For each non-applicable Special Project Category, indicate n/a.

⁴⁶For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit available. For Category C Special Projects also list the individual Location, Density, and Minimized Surface Parking Credits available.

⁴⁷List all LID stormwater treatment systems proposed. For each type, indicate the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area.

⁴⁸List all non-LID stormwater treatment systems proposed. For each type of non-LID treatment system, indicate: (1) the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, and (2) whether the treatment system either meets minimum design criteria published by a government agency or received certification issued by a government agency, and reference the applicable criteria or certification.

C.3.j.ii.(2) ► Table A - Public Projects Reviewed for Green Infrastructure

| Project Name and Location ⁴³ | Project Description | Status ⁴⁴ | GI Included? ⁴⁵ | Description of GI Measures Considered and/or Proposed or Why GI is Impracticable to Implement ⁴⁶ |
|---|---|----------------------|----------------------------|---|
| Livermore Railroad Depot- 2500 Railroad Court CIP580001 | Relocation & Rehabilitation of the Southern Pacific Railroad Depot, site work, bio-retention & treatment facilities and landscaping | Final Design | Yes | Installation of Bio-Retention area, Self-Treating area and Pervious Pavers |
| Airport Water Quality and HMP Basins CIP2016-15 | Installation of water quality and HMP basins to treat new impervious surfaces | Final Design | Yes | Bio-treatment and HMP Basins |
| New Civil Center Meeting Hall CIP2004-39 | Design and construction of new City Council Chambers | 65% Design | Yes | Planning to install Bio-Retention area and possibly permeable pavement |
| West Jack London Blvd Widening CIP2015-28 | Addition of a new eastbound traffic lane and bike lane | 85% Design | Yes | Planning to install Bio-Retention area |

C.3.j.ii.(2) ► Table B - Planned Green Infrastructure Projects

| Project Name and Location ⁴⁷ | Project Description | Planning or Implementation Status | Green Infrastructure Measures Included |
|--|---|---|--|
| Railroad Avenue Parking Surface Lot CIP200847 | Temporary downtown parking lot adjacent to existing garage. | Planning Stage – project identified. Next steps are to investigate funding for green infrastructure and to develop concept plans. | May include LID features or permeable pavement to treat pavement runoff. |

⁴³ List each public project that is going through your agency's process for identifying projects with green infrastructure potential.
⁴⁴ Indicate status of project, such as: beginning design, under design (or X% design), projected completion date, completed final design date, etc.
⁴⁵ Enter "Yes" if project will include GI measures, "No" if GI measures are impracticable to implement, or "TBD" if this has not yet been determined.
⁴⁶ Provide a summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practicable during the permit term. If review of the project indicates that implementation of green infrastructure measures is not practicable, provide the reasons why green infrastructure measures are impracticable to implement.
⁴⁷ List each planned (and expected to be funded) public and private green infrastructure project that is not also a Regulated Project as defined in Provision C.3.b.ii. Note that funding for green infrastructure components may be anticipated but is not guaranteed to be available or sufficient.

C.3 Additional Comments:

While the City continues to implement the requirements of Provision C.3, the City believes the Green Infrastructure requirements exceed federal law requirements, and are therefore, an unfunded mandate. Many municipalities raised this very issue during the public comment period when the MRP2.0 was brought forward for adoption. On August 29, the California Supreme Court ruled in favor of local agencies that are seeking to enforce their constitutional right to reimbursement for unfunded mandates imposed by the State. In *Department of Finance v. Commission on State Mandates*, the Court ruled in favor of public agencies subject to storm water discharge permits, holding that State-mandated storm water permit provisions exceeding federal law requirements may be reimbursable State mandates under Article XIII B, Section 6, of the California Constitution. The City will continue to monitor these court actions and seek reimbursement should court decisions warrant such actions.

Section 4 – Provision C.4 Industrial and Commercial Site Controls

Program Highlights and Evaluation
 Highlight/summarize activities for reporting year:

Summary:
 The City of Livermore conducted a total of 161 industrial and commercial site controls inspections during the reporting year. The City also updated its "Stormwater Industrial and Commercial Inspection Plan FY2015/2016 through FY 2019/2020. See plan under Section 4.0 Attachments. Refer to the C.4. Industrial and Commercial Site Controls section of the countywide Program's FY 15-16 Annual Report for a description of activities of the countywide program.

C.4.b.iii ► Potential Facilities List

List below or attach your list of industrial and commercial facilities in your Inspection Plan to inspect that could reasonably be considered to cause or contribute to pollution of stormwater runoff.
 Refer to the City's "Stormwater Industrial and Commercial Inspection Plan FY2015/2016 through FY 2019/2020 under Section 4.0 Attachments of this report for a detailed list of facilities scheduled for inspection due to their reasonable potential to cause or contribute to pollution of stormwater runoff.

C.4.d.iii.(1)(a) ► Facility Inspections

Fill out the following table or attach a summary of the following information. Indicate your violation reporting methodology below.

| | | |
|---|--|----------------|
| <input checked="" type="checkbox"/> | Permittee reports multiple discrete violations on a site as one violation. | |
| <input type="checkbox"/> | Permittee reports the total number of discrete violations on each site. | |
| | | |
| | Number | Percent |
| Number of businesses inspected | 141 | |
| Total number of inspections conducted | 161 | |
| Number of violations (excluding verbal warnings) | 4 | |
| Sites inspected in violation | 4 | 2.8% |
| Violations resolved within 10 working days or otherwise deemed resolved in a longer but still timely manner | 4 | 100% |
| Comments: See "Inspection List Grouped by Facility" summary report contain under Section 4.0 Attachments of this report for a detailed list of facilities inspected during the reporting period. | | |

C.4.d.iii.(1)(b) ► Frequency and Types/Categories of Violations Observed

Fill out the following table or attach a summary of the following information.

| Type/Category of Violations Observed | Number of Violations |
|---|----------------------|
| Actual discharge (e.g. active non-stormwater discharge or clear evidence of a recent discharge) | 3 |
| Potential discharge and other | 1 |
| Comments: Two discharges were the result of vehicle/equipment washing resulting in a discharge to the storm sewer system. One discharge was the result of leaking garbage container in addition to bad housekeeping resulting in a discharge of milk/garbage related-liquid wastes to storm sewer system. The one potential/other discharge was the release/exposure of pollutants to the ground; however, no actual discharge to the storm sewer occurred. | |

C.4.d.iii.(1)(b) ► Frequency and Type of Enforcement Conducted

Fill out the following table or attach a summary of the following information.

| | Enforcement Action (as listed in ERP) ⁴⁸ | Number of Enforcement Actions Taken | % of Enforcement Actions Taken ⁴⁹ |
|--------------|--|--|---|
| Level 1 | Verbal Warning | 6 | 60% |
| Level 2 | Warning Letter | | |
| Level 3 | Notice of Violation | 3 | 30% |
| Level 4 | Notice of Violation with an Administrative Citation (Fine) | 1 | 10% |
| Total | | | |

⁴⁸Agencies to list specific enforcement actions as defined in their ERPs.
⁴⁹Percentage calculated as number of each type of enforcement action divided by the total number of enforcement actions.

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C.4.d.iii.(1)(c) ▶ Types of Violations Noted by Business Category

Fill out the following table or attach a summary of the following information.

| Business Category ⁵⁰ | Number of Actual Discharge Violations | Number of Potential/Other Discharge Violations |
|-----------------------------------|---------------------------------------|--|
| Commercial/Retail | 1 | |
| Construction/Maintenance Yards | | 1 |
| Automotive Repair/Auto Dealership | 2 | 1 |
| Food Service Facility | | |
| Grocery/Convenient Store | | 2 |
| Retail Gas Outlet | | 2 |
| Industrial/Manufacturing | | 1 |

C.4.d.iii.(1)(d) ▶ Non-Filers

List below or attach a list of the facilities required to have coverage under the Industrial General Permit but have not filed for coverage:

No industries identified as non-filers during scheduled inspections during this fiscal year.

C.4.e.iii ▶ Staff Training Summary

| Training Name | Training Dates | Topics Covered | No. of Industrial/Commercial Site Inspectors in Attendance | Percent of Industrial/Commercial Site Inspectors in Attendance | No. of IDDE Inspectors in Attendance | Percent of IDDE Inspectors in Attendance |
|-----------------------------------|----------------|--|--|--|--------------------------------------|--|
| ACCWP Inspector Training Workshop | 06/09/2016 | Industrial/Commercial Site Stormwater Inspection, Potable Water Discharges, Vault Dewatering | 4 | 80% | 4 | 80% |
| CWEA P3S Conference 2016 | 03/2016 | Stormwater Inspector Training, QSP/Industrial Permits, National Regulatory Perspectives | 2 | 40% | 2 | 40% |

⁵⁰List your Program's standard business categories.

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| Training Name | Training Dates | Topics Covered | No. of Industrial/ Commercial Site Inspectors in Attendance | Percent of Industrial/ Commercial Site Inspectors in Attendance | No. of IDDE Inspectors in Attendance | Percent of IDDE Inspectors in Attendance |
|--------------------------------------|----------------|---|---|---|--------------------------------------|--|
| CASQA Conference | 10/2015 | Various Topics including : Construction SW Management, Industrial SW Management, Municipal Permits, Stormwater Treatment, TMDLs | 2 | 40% | 2 | 40% |
| Comments: No additional comments. | | | | | | |

Section 5 – Provision C.5 Illicit Discharge Detection and Elimination

| | |
|--|---|
| Program Highlights and Evaluation | |
| Highlight/summarize activities for reporting year: | |
| Provide background information, highlights, trends, etc. | |
| Summary: | |
| Refer to the C.5 Illicit Discharge Detection and Elimination section of countywide program's FY 15-16 Annual Report for description of activities at the countywide level. | |
| C.5.c.iii ► Complaint and Spill Response Phone Number | |
| List below or attach your complaint and spill response phone number | |
| 925-960-8100 (Monday-Friday 8:00am to 4:00 pm) / 925-960-8160 (Outside Business Hours) OR 911 | |
| Provide your complaint and spill response web address, if used | |
| http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/pollution/default.htm | |
| Is a screen shot of your website showing the central contact point attached? See Section 5.0 Attachments | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| If No, explain: | |
| Provide a discussion of how the central contact point (complaint and spill response phone number and, if used, web address) is being publicized to your staff and the public. | |
| The spill response phone number is publicized through various best management practice literature and public educational material that are routinely distributed to the public. The "non-business hours" number as well as instructions on reporting a spill is announced on the outgoing message on the general public line for the Water Resources Division. | |

C.5.d.iii.(1), (2), (3) ▶ Spill and Discharge Complaint Tracking

| Spill and Discharge Complaint Tracking (fill out the following table or include an attachment of the following information) | | |
|---|--------|------------|
| | Number | Percentage |
| Discharges reported (C.5.d.iii.(1)) | 19 | |
| Discharges reaching storm drains and/or receiving waters (C.5.d.iii.(2)) | 11 | 58% |
| Discharges resolved in a timely manner (C.5.d.iii.(3)) | 19 | 100% |
| Comments: During this reporting period, the City took the following enforcement action as a result of illicit discharge incidents: Verbal Warning: 5 Warning Notices: 4 Notice of Violation: 4 Notice of Violation w/Fine and/or Cost Recovery: 2* The City of Livermore uses an "Illicit Discharge Investigation Report" form to document spills and illicit discharges. The City also uses a database to record and track all illicit discharge and spill activity. See Section 5.0 Attachments for report form details and tracking reports for the current reporting period from the City's database. *The City issued fines in the amount of \$253.22 and \$2,660.96 | | |

C.5.f.iii ▶ MS4 Map Availability

Discuss how you make your MS4 map available to the public and how you publicize the availability of the MS4 map.

The City's MS4 Maps are available via a public records request from the City Clerk's office in accordance with the requirement of the Freedom of Information Act. At the present time, the City does not have plans to have general public access of these records via the internet and the City's GIS system.

Section 6 – Provision C.6 Construction Site Controls

| C.6.e.iii.(1) ► Hillside Development Criteria | | | |
|--|--------------------------|---|---|
| What criteria is your agency using to determine hillside development areas? | <input type="checkbox"/> | Local criteria such as maps of hillside development areas or other written criteria | <input checked="" type="checkbox"/> The permit definition of projects on sites with ≥ 15% slope |
| Attach a copy of hillside development area maps or provide your written criteria below, if applicable. | | | |
| Description: | | | |

| C.6.e.iii.2.a, b, c ► Site/Inspection Totals | | |
|---|--|---|
| Number of High Priority Sites (sites disturbing < 1 acre of soil requiring storm water runoff quality inspection) (C.6.e.iii.1.a) | Number of sites disturbing ≥ 1 acre of soil (C.6.e.iii.1.b) | Total number of storm water runoff quality inspections conducted (include only High Priority Site and sites disturbing 1 acre or more) (C.6.e.iii.1.c) |
| # 0 | # 11 | # 70 |
| Comments: The City of Livermore had 11 active construction sites disturbing greater than 1 acre requiring stormwater runoff quality inspections to be performed during the reporting period. These included the following projects: Brighton, Brisa Station Phase I, Brisa Station Phase II, Shea Homes Sage, Portola, Oaks Business Park, Artero, The Vines, Gillig, Orchid Ranch, and Coventry by Ponderosa. | | |

C.6.e.iii.2.d ▶ Construction Activities Storm Water Violations

Guidance: Do not leave any cells blank.

| BMP Category | Number of Violations ⁵¹ excluding Verbal Warnings | % of Total Violations ⁵² |
|----------------------------|---|-------------------------------------|
| Erosion Control | 0 | |
| Run-on and Run-off Control | 0 | |
| Sediment Control | 13 | 45% |
| Active Treatment Systems | 0 | |
| Good Site Management | 8 | 27.5% |
| Non Stormwater Management | 8 | 27.5% |
| Total⁵³ | 29 | 100% |

⁵¹Count one violation in a category for each site and inspection regardless of how many violations/problems occurred in the BMP category. For example, if during one inspection at a site, there are 2 erosion control violations, only 1 violation would be counted for this table.

⁵²Percentage calculated as number of violations in each category divided by total number of violations in all six categories.

⁵³The total number of violations may count more than one violation per inspection, since some inspections may result in violations in more than one category. For example, during one inspection of a site, there may have been both an erosion control violation and a sediment control violation. For this reason, the total number of violations in this table may not match the total number of enforcement actions reported in Table C6.e.iii.1.e.

C.6.e.iii.2.e ▶ Construction Related Storm Water Enforcement Actions

Guidance: Do not leave any cells blank.

| | Enforcement Action (as listed in ERP) ⁵⁴ | Number Enforcement Actions Issued | % Enforcement Actions Issued ⁵⁵ |
|-----------------------|--|--------------------------------------|---|
| Level 1 ⁵⁶ | Verbal Warning | 9 | 100% |
| Level 2 | Written Warning | | |
| Level 3 | Administrative Action/Notice to Comply | | |
| Level 4 | Stop Work Order | | |
| Total | | 9 | 100% |

C.6.e.iii.2.f, g ▶ Illicit Discharges

Guidance: Do not leave any cells blank.

| | Number |
|--|--------|
| Number of illicit discharges, actual and those inferred through evidence at high priority sites and sites that disturb 1 acre or more of land (C.6.e.iii.1.f) | 0 |
| Number of sites with discharges, actual and those inferred through evidence at high priority sites and sites that disturb 1 acre or more of land (C.6.e.iii.1.g) | 0 |

⁵⁴Agencies should list the specific enforcement actions as defined in their ERPs.

⁵⁵Percentage calculated as number of each type of enforcement action divided by the total number of enforcement actions.

⁵⁶For example, Enforcement Level 1 may be Verbal Warning.

| C.6.e.iii.2.h, i ► Violation Correction Times | | |
|--|---------------|---------------------|
| | Number | Percent |
| Violations (excluding verbal warnings) fully corrected within 10 business days after violations are discovered or otherwise considered corrected in a timely period (C.6.e.iii.1.h) | 8 | 88.9% ⁵⁷ |
| Violations (excluding verbal warnings) not fully corrected within 30 days after violations are discovered (C.6.e.iii.1.i) | 1 | 11.1% ⁵⁸ |
| Total number of violations (excluding verbal warnings) for the reporting year⁵⁹ | 9 | 100% |
| Comments: All violations that were documented during this reporting period were resolved at the "Verbal Warning" level of enforcement; therefore, this table includes verbal warning data. | | |

| C.6.e.iii.(4) ► Evaluation of Inspection Data |
|--|
| Describe your evaluation of the tracking data and data summaries and provide information on the evaluation results (e.g., data trends, typical BMP performance issues, comparisons to previous years, etc.). |
| Description: The City of Livermore utilizes the "Inspection Checklist for Construction Stormwater Controls" to document the stormwater inspections conducted by Building and Engineering staff. Completed inspection forms are entered into the Excel Construction Inspection Database/Spreadsheet developed by the SCVURPPP. In the future, these inspections will be tracked in the City's Building/Permit Center database system. Until that system is fully implemented, the City will continue to use the program developed by SCVURPPP to track and analyze this inspection data. See Section 6.0 Attachments for tracking and enforcement data for the Construction Stormwater Site Control Inspection conducted during this reporting period. |

| C.6.e.iii.(4) ► Evaluation of Inspection Program Effectiveness |
|---|
| Describe what appear to be your program's strengths and weaknesses, and identify needed improvements, including education and outreach. |
| Description: The City participates in the ACCWP New Development Subcommittee and workgroups to stay current with all stormwater regulations and MRP requirements. Refer to the C.6 Construction Site Control section of countywide program's FY 15-16 Annual Report for a description of activities at the countywide or regional level. |

⁵⁷ Calculated as number of violations fully corrected in a timely period after the violations are discovered divided by the total number of violations for the reporting year.

⁵⁸ Calculated as number of violations not fully corrected within 30 days after the violations are discovered divided by the total number of violations for the reporting year.

⁵⁹ The total number of violations reported in the table of Violation Correction Times equals the number of initial enforcement actions, i.e., this assumes one violation is issued for several problems during an inspection at a site. The total number of violations in the table of Violation Correction Times may not equal the total number of enforcement actions because one violation issued at a site may have a second enforcement action for the same violation at the next inspection if it is not corrected.

| C.6.f ► Staff Training Summary | | | | |
|---|----------------|---|---|--|
| Training Name | Training Dates | Topics Covered | No. of Inspectors in Attendance | |
| MRP 2.0 Requirements/Stormwater Program Update | 06/15/2016 | MRP 2.0, Construction Inspections, Green Infrastructure, Stormwater Treatment Measure Inspections | 19* <i>(*figure includes inspection staff and engineering staff)</i> | |
| Stormwater Compliance Workshop by BT Consulting | | BMPs, Corrective Actions, Reporting, Etch | 6 | |
| Winter Weather Briefing by NOAA | | Preparation for the El Nino Weather & What to expect | 1 | |

Section 7 – Provision C.7. Public Information and Outreach

C.7.b.i.1 ► Outreach Campaign

Summarize outreach campaign. Include details such as messages, creative developed, and outreach media used. The detailed outreach campaign report may be included as an attachment. If outreach campaign is being done by participation in a countywide or regional program, refer to the separate countywide or regional Annual Report.

Summary:

- Refer to the Countywide Program's Annual Report.

C.7.c. Stormwater Pollution Prevention Education

| | |
|--------------------------------------|---|
| Local stormwater phone number(s) | City of Livermore Water Resources Division: (925) 960-8100 |
| Local/Regional stormwater website(s) | http://www.cityoflivermore.net/howdoi/default.htm http://www.cityoflivermore.net/contact/forms.htm http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/pollution/default.htm http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/pollution/stormwater/protection.htm http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/resources/residents.htm http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/resources/industry.htm http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/resources/teachers.htm http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/pollution/keeping_litter_out_of_waterways/default.htm http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/pollution/stormwater/accwp.htm |

Outreach:

- The local stormwater point of contact is publicized in the following media outlets: City of Livermore Water Resources Division's web pages, the Division's monthly residential and commercial water and sewer bill messages, the City's quarterly residential newsletter articles, and the Division's stormwater pollution prevention materials. These publications are maintained by the Division's Source Control Coordinator and Water Resources Manager, and the City's Public Information Officer. The City of Livermore Water Resources Division is dedicated to providing and maintaining a website to provide information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives.
- Refer to Countywide Program's C.7 Public Information and Outreach section of Program's FY 15-16 Annual Report for efforts conducted by the countywide program to publicize stormwater points of contact (e.g. program website, hotline, outreach materials, etc.).

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| C.7.d ► Public Outreach and Citizen Involvement Events | | |
|--|---|--|
| Describe general approach to event selection. Provide a list of outreach materials and giveaways distributed. Use the following table for reporting and evaluating public outreach events | | |
| Event Details | Description (messages, audience) | Evaluation of Effectiveness |
| Stormwater Exhibit at the Alameda County Fair: The Fair is running from June 15 to July 4, 2016. Setting up the exhibit and producing the outreach materials are Countywide Program efforts. Staffing the exhibit is an effort conducted by individual Permittees. | The County Fair is attended by a wide range of residents from throughout the County. The primary message of the exhibit and outreach materials is to encourage residents to reduce their use of pesticides or when necessary use less-toxic pesticides. The exhibit also illustrates the basic watershed awareness/stormwater pollution message. | Several hundred thousand residents attend the fair each year. A more detailed description of the exhibit is included in Section C.7 Public Information and Outreach of the ACCWP FY 15/16 Annual Report. |
| 2015 Alameda County Fair Exhibit Staffing, 7/3/2015 | | Positive interaction and feedback with approximately one-hundred (100+) residents visiting the Countywide Program Exhibit. |
| Livermore Valley Joint Unified School District (LVJUSD) Science Odyssey, 2/17/2016 | <u>Judging Science Odyssey Projects</u> Water Resources Division staff judged elementary, middle and high school Clean Water (and Wastewater) Projects. Judges conducted an interview with the contestants as part of the judging process. The interview included a few questions regarding creek and pond pollutant sources and their effects on water quality, the environment and public safety. One Clean Water project was awarded 1 st place at the elementary school level. Winners received a Certificate of Achievement. | <u>Judging Science Odyssey Projects</u> Positive interaction and feedback with approximately ten (10+) elementary and middle school students. This trend is consistent with last year's event. |
| Livermore Valley Joint Unified School District (LVJUSD) Science Odyssey, 2/18/2016 | <u>Tabling at Science Odyssey</u> The Water Resources Division booth at the LVJUSD Science Odyssey was used to educate faculty members, students and their families about non-point source | <u>Tabling at Science Odyssey</u> Positive interaction and feedback with approximately one-hundred (100+) residents and faculty members visiting the Water Resources Division's booth. More than one- |

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| | | |
|---|--|--|
| | <p>pollution, reducing non-point source pollution to Livermore storm drains and arroyos, and improving and protecting water quality and aquatic habitat in the Tri-Valley Creek Watershed.</p> <p>Informational materials distributed include: Alameda Creek Watershed Map, Stormwater Pollution and Pollution Prevention Brochures, Litter Prevention Brochure, and Clean Water Activity Booklet.</p> | <p>thousand (1000+) residents and faculty members participated in the event.</p> <p>This trend is consistent with last year's event.</p> |
| <p>Livermore Wine Festival, 4/30 – 5/1/2016</p> | <p>The Water Resources Division booth at the Livermore Wine Festival was used to educate residents about proper FOG, flushable wipe and medicine disposal, Integrated Pest Management, litter prevention and creek clean-up, stormwater pollution prevention, etc.</p> <p>Informational materials distributed include: Think Before You Flush Brochure, Control It! Guide, Grow It! Guide, Healthy Home and Garden Booklet, Pest Bugging You? Pocket Guide, The 10 Most Wanted Bugs in Your Garden Brochure, Don't Plant a Pest Brochure, A Kid's Guide to Backyard Bug Guide, Pest or Pal? Activity Guide, Stormwater Pollution Prevention Brochure, Detain the Rain Brochure, and Clean Water Activity Booklets.</p> | <p>Positive interaction and feedback with approximately two-hundred (200+) residents visiting the Water Resources Division booth. More than four-thousand (4000+) residents participated in the event.</p> <p>This trend is consistent with last year's event.</p> |

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| | | |
|---|--|---|
| <p>City of Livermore Health and Safety Fair, 6/8/2016</p> | <p>The Water Resources Division booth at the City of Livermore Health and Safety Fair was used to educate employees (and their families) about proper FOG, flushable wipe and medicine disposal, Integrated Pest Management, litter prevention and creek clean-up, stormwater pollution prevention, etc.</p> <p>Informational materials distributed include: Think Before You Flush Brochure, Control It! Guide, Grow It! Guide, Healthy Home and Garden Booklet, Pest Bugging You? Pocket Guide, The 10 Most Wanted Bugs in Your Garden Brochure, Don't Plant a Pest Brochure, A Kid's Guide to Backyard Bug Guide, Pest or Pal? Activity Guide, Stormwater Pollution Prevention Brochure, Detain the Rain Brochure, and Clean Water Activity Booklets.</p> | <p>Positive interaction and feedback with approximately one-hundred (100+) employees visiting the Water Resources Division booth. More than two-hundred (200+) employees participated in the event.</p> <p>This trend is consistent with last year's event.</p> |
| <p>2016 Alameda County Fair Exhibit Staffing, 6/18/2016</p> | | <p>Positive interaction and feedback with approximately one-hundred (100+) residents visiting the Countywide Program Exhibit.</p> |

C.7.e. ► Watershed Stewardship Collaborative Efforts

Summarize watershed stewardship collaborative efforts and/or refer to a regional report that provides details. Describe the level of effort and support given (e.g., funding only, active participation etc.). State efforts undertaken and the results of these efforts. If this activity is done regionally refer to a regional report.

Evaluate effectiveness by describing the following:

- Efforts undertaken
- Major accomplishments

Tri-Valley Creeks Adopt a Creek Spot Program (between Clean-ups):

Over one-hundred and fifty-six (156+) Adopt a Creek Spot Program volunteers helped collect and properly dispose of 2,393 gallons of trash from ten Livermore Creek Spots (approximately 6.4 miles) in approximately 643 volunteer hours.

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The Adopt a Creek Spot Program is a partnership between the Water Resources Division, Zone 7 Water Agency, Livermore Area Recreation and Park District, Living Arroyos, Alameda County Resource Conservation District, Alameda Creek Watershed Council, Livermore Valley Joint Unified School District and Friends of the Arroyos. The Program's mission is to promote healthy Tri-Valley creeks through active community participation and education.

Adoptees are asked to sign up for a one year commitment with at least one work day to the adopted spot. In addition, Adoptees are provided the opportunity to perform Ongoing and/or Additional activities as detailed below. (Additional activities require training and authorization from the Adopt a Creek Spot Coordinator.)

Ongoing Activities include:

- Regularly picking up trash and other debris, and reporting total volume collected by June 1st
- Photography and/or sketch mapping the adopted spot

Additional Activities include:

- Painting over graffiti
- Marking storm drains
- Removing weeds and other unwanted vegetation
- Planting site-appropriate plants
- Site monitoring
- Special events

The Program Coordinator provides Adoptees with clean-up supplies and/or services as appropriate, and recognizes Adoptee's commitment and hard work with a recognition sign at the adopted creek spot.

Tri-Valley Creeks to Bay Clean-up (on 9/12, 9/19 & 9/23):

Over two-hundred and fifty-six (256+) volunteers helped collect and properly dispose of 1,926 gallons of trash from nine Livermore Creek Spots (approximately 6.16 miles) in approximately 1,264 hours.

Sponsors providing supplies and refreshments included Livermore Sanitation, Wal-Mart, Coastal Commission, City of Livermore Water Resources Division and Zone 7 Water Agency.

Arroyo Mocho and Arroyo Las Positas evaluations were not conducted again this year since Zone 7 Water Agency did not perform any artificial stream recharge releases. (In 2014, approximately forty (40+) students from Altamont Creek Elementary, Livermore High School and Granada High School evaluated the health of two Livermore Creek Spots).

A completed Tri-Valley Creeks to Bay Day Survey was received from seventy-one residents/groups. Below is summary of their survey results as they pertain to stormwater pollution:

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- 93% of 71 participants were aware that trash from the streets ends up in the storm drains, creeks and ocean.
 - 91% of 70 participants feel that creek pollution is a significant problem in the Tri-Valley.
 - 89% of 70 participants would participate in the Clean-up again next year.
 - 11% of 44 participants are interested in adopting a Spot. (All Spots are adopted.)
- Refer to the Countywide Program Annual Report.

C.7.h. ► School-Age Children Outreach

Summarize school-age children outreach programs implemented. A detailed report may be included as an attachment. Use the following table for reporting school-age children outreach efforts.

| Program Details | Focus & Short Description | Number of Students/Teachers reached | Evaluation of Effectiveness |
|---|--|--|---|
| Refer to the C.7 Section of the countywide program's FY 15-16 Annual Report for a description of School-age Children Outreach efforts conducted at the countywide level. | | | |
| <u>Free To Be Me Childcare Alameda Watershed Presentation:</u> <ol style="list-style-type: none"> 1. 10/21/2015: twenty Kindergartners 2. 10/21/2015: twenty Kindergartners | The Presentation includes information on the watershed and water cycle, the differences between storm and sewer drains, and information on non-point source pollution and pollution prevention. This information is presented with a Sewer versus Storm Display Board, Mr. Ball Video and a Watershed Diorama Activity. | 40 students (Provided Presentation to 29 students during last reporting period.) | Teacher Surveys are used to evaluate the effectiveness of outreach. Survey results have been submitted in previous FY reports for the same teachers. This year's "Great Program!" results are consistent with previous years. |
| <u>Livermore High School Sewer Science Laboratory:</u> <ol style="list-style-type: none"> 1. 3/14-3/18/2016: twenty-six 10th grade Biology GEA students 2. 3/21-3/25/2016: twenty-two 10th grade Biology GEA students | Although the Lab focuses on the wastewater process and what not to put down the sewer drain, it does provide information on the watershed and water cycle, the differences between storm drains and sewers, and information on non-point source pollution and pollution prevention. The information is presented with a Where Does Our Water Go Poster and an Alameda County Watershed Map. | 48 students (Provided Lab to 71 students during last reporting period.) | Student Pre-assessments and Post-tests are used to evaluate the effectiveness of outreach. Teacher Surveys and Student Assessments and Test results have been submitted in previous FY reports for the same teacher. This year's pre-assessment and post-test scores remain consistent with previous years. |

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| | | | |
|--|--|---|---|
| <p><u>Livermore Water Reclamation Plant Tours:</u></p> <ol style="list-style-type: none"> 1. 7/27/2015: one adult resident 2. 10/28/2015: five 4th through 11th graders from Our Savior Lutheran School 3. 10/28/2015: two adult residents | <p>Although the Tour focuses on the wastewater treatment process and what not to put down the sewer drain, it does provide information on the differences between storm drains and sewers, and information on non-point source pollution and pollution prevention.</p> | <p>8 students, scouts chaperones, residents and professionals (Provided Tour to 273 participants during last reporting period.) Plant Manager suspended Tours with construction activity beginning 11/1/2015.</p> | <p>Plant Tour Contact and Plant Tour Guide Surveys are used to evaluate the effectiveness of outreach. This year's "Great Program!" Tour Contact results and Tour Guide results are consistent with previous years.</p> |
|--|--|---|---|

Section 9 – Provision C.9 Pesticides Toxicity Controls

| | | | | | | |
|---|---|-----------------|-----------------|-----------------|---|-----------------------------|
| C.9.a. ► Implement IPM Policy or Ordinance | | | | | | |
| Is your municipality implementing its IPM Policy/Ordinance and Standard Operating Procedures? | | | | | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| If no, explain: | | | | | | |
| Report implementation of IPM BMPs by showing trends in quantities and types of pesticides used, and suggest reasons for increases in use of pesticides that threaten water quality, specifically organophosphates, pyrethroids, carbaryl, and fipronil. A separate report can be attached as evidence of your implementation. | | | | | | |
| Trends in Quantities and Types of Pesticides Used⁶⁰ | | | | | | |
| | FY 15-16 | FY 16-17 | FY 17-18 | FY 18-19 | FY 19-20 | FY 20-21 |
| Organophosphates | | | | | | |
| Product or Pesticide Type A | The City of Livermore does not currently track this data. The City of Livermore and its pest control contractors are in compliance with the reporting requirements of the Department of Pesticide Regulations. The City of Livermore is in the process of entering into a new contract for services with Orkin. As part of this contract renewal process, the contract was written to include requirements for Orkin to provide the City with specific reports that will allow the City to efficiently report and track the use of these specific pesticides in the future. Please see Section 9 Attachments. | | | | | |
| Product or Pesticide Type B | | | | | | |
| Pyrethroids | | | | | | |
| Product or Pesticide Type X | | | | | | |
| Product or Pesticide Type Y | | | | | | |
| Carbamates | | | | | | |
| Product or Pesticide Type X | | | | | | |
| Product or Pesticide Type Y | | | | | | |
| Fipronil | | | | | | |
| Product or Pesticide Type X | | | | | | |

⁶⁰Includes all municipal structural and landscape pesticide usage by employees and contractors.

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| Product or Pesticide Type Y | | | | | | |
|---|------------------------------------|--|--|--|--|--|
| Indoxacarb | Reporting not required in FY 15-16 | | | | | |
| Diuron | Reporting not required in FY 15-16 | | | | | |
| Diamides | Reporting not required in FY 15-16 | | | | | |
| IPM Tactics and Strategies used: Please refer to Section 9.0 Attachments. | | | | | | |

| C.9.b ▶ Train Municipal Employees | |
|---|------|
| Enter the number of employees that applied or used pesticides (including herbicides) within the scope of their duties this reporting year. | 10 |
| Enter the number of these employees who received training on your IPM policy and IPM standard operating procedures within this reporting year. | 14 |
| Enter the percentage of municipal employees who apply pesticides who have received training in the IPM policy and IPM standard operating procedures within this reporting year. | 100% |
| Type of Training: Review of City's IPM Policy and Pesticide/Herbicide application. | |

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| | | | |
|---|-------------------------------------|-----|-----------------------------|
| C.9.c ▶ Require Contractors to Implement IPM | | | |
| Did your municipality contract with any pesticide service provider in the reporting year? | <input checked="" type="checkbox"/> | Yes | <input type="checkbox"/> No |
| <p>If yes, briefly describe how contractor compliance with IPM Policy/Ordinance and SOPs was monitored</p> <p>On April 22, 2016, City of Livermore Source Control Inspection staff performed an audit of the service provided by Orkin Pest Control. During this audit, staff observed the procedures and performance of Steve Cadena, Orkin Commercial Route Manager, as he provided the routine monthly service at the Livermore Water Reclamation Plant. Conformance to the City's IPM policy was confirmed during this audit.</p> | | | |

| | | | |
|--|--------------------------|-----|--|
| C.9.d ▶ Interface with County Agricultural Commissioners | | | |
| Did your municipality communicate with the County Agricultural Commissioner to: (a) get input and assistance on urban pest management practices and use of pesticides or (b) inform them of water quality issues related to pesticides, | <input type="checkbox"/> | Yes | <input checked="" type="checkbox"/> No |
| <p>See section C.9 of the Countywide Program's FY15-16 Annual Report for a summary of the communication between the ACCWP and the County Agricultural Commissioner.</p> | | | |
| Did your municipality report any observed or citizen-reported violations of pesticide regulations (e.g., illegal handling and applications of pesticides) associated with stormwater management, particularly the California Department of Pesticide Regulation (DPR) surface water protection regulations for outdoor, nonagricultural use of pyrethroid pesticides by any person performing pest control for hire. | <input type="checkbox"/> | Yes | <input checked="" type="checkbox"/> No |
| <p>If yes, provide a summary of improper pesticide usage reported to the County Agricultural Commissioner and follow-up actions taken to correct any violations. A separate report can be attached as your summary.</p> | | | |

| | |
|--|--|
| C.9.e.ii (1) ▶ Public Outreach: Point of Purchase | |
| <p>Provide a summary of public outreach at point of purchase, and any measurable awareness and behavior changes resulting from outreach (here or in a separate report); OR reference a report of a regional effort for public outreach in which your agency participates.</p> | |
| <p>Summary: See the C.9 Pesticides Toxicity Control section of Countywide Program's FY 15-16 Annual Report for information on point of purchase public outreach conducted countywide and regionally.</p> | |

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C.9.e.ii.(2) ► Public Outreach: Pest Control Contracting Outreach

Provide a summary of outreach to residents who use or contract for structural pest control and landscape professionals); **AND/OR** reference a report of a regional effort for outreach to residents who hire pest control and landscape professionals in which your agency participates.

Summary:

See the C.9 Pesticides Toxicity Control section of Countywide Program's FY 15-16 Annual Report for information on point of purchase public outreach conducted countywide and regionally.

C.9.e.ii.(3) ► Public Outreach: Pest Control Operators

Provide a summary of public outreach to pest control operators and landscapers and reduced pesticide use (here or in a separate report); **AND/OR** reference a report of a regional effort for outreach to pest control operators and landscapers in which your agency participates.

Summary:

See the C.9 Pesticides Toxicity Control section of Program's FY 15-16 Annual Report for a summary of our participation in and contributions towards countywide and regional public outreach to pest control operators and landscapers to reduce pesticide use.

C.9.f ► Track and Participate in Relevant Regulatory Processes

Summarize participation efforts, information submitted, and how regulatory actions were affected; **AND/OR** reference a regional report that summarizes regional participation efforts, information submitted, and how regulatory actions were affected.

Summary:

During FY 15-16, we participated in regulatory processes related to pesticides through contributions to the countywide Program, BASMAA and CASQA. For additional information, see the Program's Annual Report and the Regional Report submitted by BASMAA on behalf of all MRP Permittees.

Section 10 - Provision C.10 Trash Load Reduction

| C.10.a.i ► Trash Load Reduction Summary | |
|---|------------|
| For Population-based Permittees, provide an estimate of the overall trash reduction percentage achieved to-date within the jurisdictional area of your municipality that generates problematic trash levels (i.e., Very High, High or Moderate trash generation). Base the estimate on the information presented in C.10.b i-iv and C.10.e.i-ii. Provide a discussion of the trash estimate below, including whether the applicable trash reduction performance guideline or deadline was attained. If not attained, include a discussion of next steps (e.g., development of a detailed plan or report of non-compliance). | |
| Trash Load Reductions | |
| Percent Trash Reduction in All Trash Management Areas (TMAs) due to Trash Full Capture Systems (as reported C.10.b.i) | 10% |
| Percent Trash Reduction in all TMAs due to Control Measures Other than Trash Full Capture Systems (as reported in C.10.b.ii) | 0% |
| Percent Trash Reduction due to Jurisdictional-wide Source Control Actions (as reported in C.10.b.iv) | 10% |
| SubTotal for Above Actions | 20% |
| Trash Offsets (Optional) | |
| Offset Associated with Additional Creek and Shoreline Cleanups (as reported in C.10.e.i) | 2% |
| Offset Associated with Direct Trash Discharges (as reported in C.10.e.ii) | 0% |
| Total Estimated % Trash Load Reduction in FY 15-16 | 22% |
| <p>Discussion of Trash Load Reduction Estimate: Section C.10 Attachments contain a detailed plan and schedule of implementation of additional trash load reduction control actions that address attainment of the MRP 2.0 Trash Reduction Requirements.</p> | |

C.10.a.iii ► Mandatory Trash Full Capture Systems

Provide the following:

- 1) Total number and types of full capture systems (publicly and privately-owned) installed prior to FY 15-16, during FY 15-16, and to-date, including inlet-based and large flow-through or end-of-pipe systems, and qualifying low impact development (LID) required by permit provision C.3.
- 2) Total land area (acres) treated by full capture systems for population-based Permittees and total number of systems for non-population based Permittees compared to the total required by the permit.

| Type of System | # of Systems | Areas Treated (Acres) |
|--|--------------|-----------------------|
| Installed Prior to FY 15-16 | | |
| Connector Pipe Screen | 169 | 451 |
| Private Hydrodynamic Separator | 18 | 55 |
| Private Low Impact Development (LID) | 13 | 72 |
| Installed in FY 15-16 | | |
| Private Low Impact Development (LID) | 3 | 10 |
| Total for all Systems Installed To-date | 211 | 588 |
| Treatment Acreage Required by Permit (Population-based Permittees) | | 127 |
| Total # of Systems Required by Permit (Non-population-based Permittees) | | NA |

C.10.b.i ► Trash Reduction - Full Capture Systems

Provide the following:

- 1) Jurisdiction-wide trash reduction in FY 15-16 attributable to trash full capture systems implemented in each TMA;
- 2) The total number of full capture systems installed to-date in your jurisdiction;
- 3) Since the effective date of MRP 2.0 (January 1, 2016), the percentage of systems that exhibited significant plugged/blinded screens or were >50% full when inspected or maintained;
- 4) A narrative summary of any maintenance issues and the corrective actions taken to avoid future full capture system performance issues; and
- 5) A certification that each full capture system is operated and maintained to meet the full capture system requirements in the permit.

| TMA | Jurisdiction-wide Reduction (%) | Total # of Full Capture Systems | % of Systems Exhibiting Plugged/Blinded Screens or >50% full | Summary of Maintenance Issues and Corrective Actions |
|-----|---------------------------------|---------------------------------|--|---|
| 1 | 2.9% | 203 | 0% | <p><u>Public Connector Pipe Screens:</u> During this FY 2015-16, the City of Livermore Collections Section inspected and cleaned 169 Connector Pipe Screens in June – July 2015, November 2015, and June - July 2016.</p> <p>On July 7, 2015, Device ID 4C1TC312 was 70% full with <u>sediment</u> from the Doolan Road construction project taking place nearby.</p> <p>The updated Full Capture Device List and completed Trash Capture Device Maintenance Reports are filed in the Full Trash Capture Device Maintenance Binder twice a fiscal year. The Full Trash Capture Device Maintenance Binder is available for review upon request.</p> |
| 2 | 1.5% | | | |
| 3 | 2.8% | | | |
| 4 | 2.4% | | | |
| 5 | 0% | | | |
| 6 | 0% | | | |
| 7 | 0% | | | |
| 8A | 0% | | | |
| 8B | 0.2% | | | |
| 9 | 0% | | | |
| 10 | 0% | | | |
| 11 | 0% | | | |
| 12 | 0.1% | | | |
| 13 | 0% | | | |
| 14 | 0.3% | | | |

| | | | | |
|--------------|------------|--|--|--|
| 15 | 0% | | | |
| 16 | 0% | | | |
| Total | 10% | | | |

Certification Statement:
 The City of Livermore certifies that a full capture system maintenance and operation program is currently being implemented to maintain all applicable systems in manner that meets the full capture system requirements included in the Permit.

C.10.b.ii ► Trash Reduction – Other Trash Management Actions (PART A)

Provide a summary of trash control actions other than full capture systems or jurisdictional source controls that were implemented within each TMA, including the types of actions, levels and areal extent of implementation, and whether actions are new, including initiation date.

| TMA | Summary of Trash Control Actions Other than Full Capture Systems |
|-----|---|
| 1 | <p><u>Anti-littering and Illegal Dumping Enforcement Activities –</u></p> <ul style="list-style-type: none"> • Perform enforcement of high trash generating retail areas (TMA 1R) without existing full trash capture devices. Enforcement includes inspection of retail areas' waste storage area, parking lot and any partial trash capture device (i.e., CDs unit, vortex unit, large interceptor) located on private property. • Participate on Highway Patrol Litter Enforcement Committee to ensure clover leaves off of Interstate Highway 580 in Livermore are cleaned and litter bugs are cited during quarterly Enforcement Days. <p><u>Activities to Reduce Uncovered Loads –</u></p> <p>Participate on Highway Patrol Litter Enforcement Committee to ensure uncovered loads on Interstate Highway 580 are cited during quarterly Enforcement Days.</p> |
| 2 | <p><u>Anti-littering and Illegal Dumping Enforcement Activities –</u></p> <ul style="list-style-type: none"> • Perform enforcement of high trash generating retail areas (TMA 2R) without existing full trash capture devices. Enforcement includes inspection of retail areas' waste storage area, parking lot and any partial trash capture device (i.e., CDs unit, vortex unit, large interceptor) located on private property. • Participate on Highway Patrol Litter Enforcement Committee to ensure clover leaves off of Interstate Highway 580 in Livermore are cleaned and litter bugs are cited during quarterly Enforcement Days. <p><u>Activities to Reduce Uncovered Loads –</u></p> <p>Participate on Highway Patrol Litter Enforcement Committee to ensure uncovered loads on Interstate Highway 580 are cited during quarterly Enforcement Days.</p> |
| 3 | <p><u>Anti-littering and Illegal Dumping Enforcement Activities –</u></p> <ul style="list-style-type: none"> • Perform enforcement of high trash generating retail areas (TMA 3R) without existing full trash capture devices. Enforcement includes inspection of retail areas' waste storage area, parking lot and any partial trash capture device (i.e., CDs unit, vortex unit, large interceptor) located on private property. • Participate on Highway Patrol Litter Enforcement Committee to ensure clover leaves off of Interstate Highway 580 in Livermore are cleaned and litter bugs are cited during quarterly Enforcement Days. <p><u>Activities to Reduce Uncovered Loads –</u></p> <p>Participate on Highway Patrol Litter Enforcement Committee to ensure uncovered loads on Interstate Highway 580 are cited during quarterly Enforcement Days.</p> |

| | |
|----|---|
| 4 | <p><u>Anti-littering and Illegal Dumping Enforcement Activities –</u></p> <ul style="list-style-type: none"> Perform enforcement of high trash generating retail areas (TMA 4R) without existing full trash capture devices. Enforcement includes inspection of retail areas' waste storage area, parking lot and any partial trash capture device (i.e., CDs unit, vortex unit, large interceptor) located on private property. Participate on Highway Patrol Litter Enforcement Committee to ensure clover leafs off of Interstate Highway 580 in Livermore are cleaned and litter bugs are cited during quarterly Enforcement Days. <p><u>Activities to Reduce Uncovered Loads –</u></p> <p>Participate on Highway Patrol Litter Enforcement Committee to ensure uncovered loads on Interstate Highway 580 are cited during quarterly Enforcement Days.</p> |
| 5 | <p><u>On-land Trash Clean-up –</u></p> <p>In June 2016, contractor removed abated weeds and removed "very little" trash from the Diversion Channel for \$6,000 the HMP Basin for \$2,500 and Freisman Park Basin for \$1000. The contractor is required to clean-up as needed or at least once a year. The contractor is not required to track the amount of trash removed during the clean-up.</p> <p><u>Anti-littering, Illegal Dumping and Uncovered Load Enforcement Activities –</u></p> <p>Perform enforcement of high trash generating retail areas (TMA 5R) without existing full trash capture devices. Enforcement includes inspection of areas' waste storage area, parking lot and any partial trash capture device (i.e., CDs unit, vortex unit, large interceptor) located on private property. Participate on Highway Patrol Litter Enforcement Committee to ensure clover leafs off of Interstate Highway 580 in Livermore are cleaned and litter bugs are cited during quarterly Enforcement Days. Participate on Highway Patrol Litter Enforcement Committee to ensure uncovered loads on Interstate Highway 580 are cited during quarterly Enforcement Days.</p> |
| 6 | <p><u>Multi-family Dwelling Litter Reduction Pilot -</u></p> <p>City worked with ACCWP to develop a litter reduction pilot targeting multi-family (condominium and apartment) complexes known to be sites with significant litter issues. City chose Livermore Garden Apartments (located at 5720 East Avenue) as the "Control Site" for this Pilot. This successful Pilot is in the process of being replicated at neighboring multi-family complexes located throughout the TMA.</p> |
| 7 | <p><u>Anti-littering and Illegal Dumping Enforcement Activities –</u></p> <p>Perform enforcement of high trash generating retail areas (TMA 7R) without existing full trash capture devices. Enforcement includes inspection of areas' waste storage area, parking lot and any partial trash capture device (i.e., CDs unit, vortex unit, large interceptor) located on private property.</p> |
| 8A | <p><u>Anti-littering and Illegal Dumping Enforcement Activities –</u></p> <p>Perform enforcement of high trash generating retail areas (TMA 8AR) without existing full trash capture devices. Enforcement includes inspection of areas' waste storage area, parking lot and any partial trash capture device (i.e., CDs unit, vortex unit, large interceptor) located on private property.</p> |

| | |
|----|--|
| | <p><u>On-land Clean-up Activities-</u> One Landscape Section staff member performed on-land clean-up activities seven days a week for four hours a day. During this reporting period, staff member removed 155 gallons of trash (five 32-gallon trash bags) for a total of \$1,600 per week.</p> |
| 8B | <p><u>Anti-littering and Illegal Dumping Enforcement Activities –</u> Perform enforcement of high trash generating retail areas (TMA 8BR) without existing full trash capture devices. Enforcement includes inspection of areas' waste storage area, parking lot and any partial trash capture device (i.e., CDs unit, vortex unit, large interceptor) located on private property.</p> <p><u>Multi-family Dwelling Litter Reduction Pilot-</u> City worked with ACCWP to develop a litter reduction pilot targeting multi-family (condominium and apartment) complexes known to be sites with significant litter issues. City chose Castilleja del Arroyo Condos (located at 1001 & 1009 Murrieta Boulevard) as the "Outreach Site", and La Castilleja Condominiums (located at 975 Murrieta Boulevard) as the "Norming Site" for this Pilot. This successful Pilot is in the process of being replicated at neighboring multi-family complexes located throughout the TMA.</p> |
| 9 | <p><u>Anti-littering and Illegal Dumping Enforcement Activities –</u> Perform enforcement of high trash generating retail areas (TMA 9R) without existing full trash capture devices. Enforcement includes inspection of areas' waste storage area, parking lot and any partial trash capture device (i.e., CDs unit, vortex unit, large interceptor) located on private property.</p> |
| 10 | <p><u>Anti-littering and Illegal Dumping Enforcement Activities –</u> Perform enforcement of high trash generating retail areas (TMA 10R) without existing full trash capture devices. Enforcement includes inspection of areas' waste storage area, parking lot and any partial trash capture device (i.e., CDs unit, vortex unit, large interceptor) located on private property.</p> |
| 11 | <p><u>Anti-littering and Illegal Dumping Enforcement Activities –</u> Perform enforcement of high trash generating retail areas (TMA 11R) without existing full trash capture devices. Enforcement includes inspection of areas' waste storage area, parking lot and any partial trash capture device (i.e., CDs unit, vortex unit, large interceptor) located on private property.</p> |
| 12 | <p><u>Anti-littering and Illegal Dumping Enforcement Activities –</u> Perform enforcement of high trash generating retail areas (TMA 12R) without existing full trash capture devices. Enforcement includes inspection of areas' waste storage area, parking lot and any partial trash capture device (i.e., CDs unit, vortex unit, large interceptor) located on private property.</p> |
| 13 | No control measures implemented in this TMA since MRP adoption. |
| 14 | No control measures implemented in this TMA since MRP adoption. |
| 15 | No control measures implemented in this TMA since MRP adoption. |
| 16 | No control measures implemented in this TMA since MRP adoption. |

C.10.b.ii ► Trash Reduction – Other Trash Management Actions (PART B)

Provide the following:

- 1) A summary of the on-land visual assessments in each TMA (or control measure area), including the street miles or acres available for assessment (i.e., those associated with VH, H, or M trash generation areas not treated by full capture systems), the street miles or acres assessed, the % of available street miles or acres assessed, and the average number of assessments conducted per site within the TMA; and
- 2) Percent jurisdictional-wide trash reduction in FY 15-16 attributable to trash management actions other than full capture systems implemented in each TMA.

| TMA ID or (as applicable) Control Measure Area | Total Street Miles or Acres Available for Assessment | Summary of On-land Visual Assessments | | | Jurisdictional-wide Reduction (%) |
|--|--|---------------------------------------|--|--|--------------------------------------|
| | | Street Miles or Acres Assessed | % of Applicable Street Miles or Acres Assessed | Avg # of Assessments Conducted at Each Site | |
| 1 | 177 | 0.2 acres | 0% | 1 | 0% |
| 2 | 75 | 0.2 acres | 0% | 1 | 0% |
| 3 | 42 | 0.2 acres | 0% | 1 | 0% |
| 4 | 1180 | 0.2 acres | 0% | 1 | 0% |
| 5 | 51 | 0.2 acres | 0% | 1 | 0% |
| 6 | 41 | 0.2 acres | 0% | 1 | 0% |
| 7 | 238 | 0.2 acres | 0% | 1 | 0% |
| 8A | 79 | 2.8 acres | 3% | 14 | 0% |
| 8B | 198 | 0.2 acres | 0% | 1 | 0% |
| 9 | 248 | 0.2 acres | 0% | 1 | 0% |
| 10 | 119 | 0.2 acres | 0% | 1 | 0% |
| 11 | 184 | 0.2 acres | 0% | 1 | 0% |
| 12 | 111 | 0.2 acres | 0% | 1 | 0% |
| 13 | 50 | 0.2 acres | 0% | 1 | 0% |
| 14 | 98 | 0.2 acres | 0% | 1 | 0% |

C.10 – Trash Load Reduction

| | | | | | |
|--------------|-----|----------------|-----------|----------|-----------|
| 15 | 341 | 0.2 acres | 0% | 1 | 0% |
| 16 | 0 | 0.2 acres | 377% | 1 | 0% |
| Total | | 6 acres | 0% | 2 | 0% |

C.10.b.iv ▶ Trash Reduction – Source Controls

Provide a description of each jurisdictional-wide trash source control action implemented to-date. For each control action, identify the trash reduction evaluation method(s) used to demonstrate on-going reductions, summarize the results of the evaluation(s), and provide the associated reduction of trash within your jurisdictional area. Also include the total % reduction credit for all source controls up to the maximum 10% allowed by MRP 2.0.

| Source Control Action | Summary Description & Dominant Trash Sources and Types Targeted | Evaluation/Enforcement Method(s) | Summary of Evaluation/Enforcement Results To-date | % Reduction | Total Reduction Credit (%) |
|--|---|---|--|-------------|----------------------------|
| Single-use Plastic Bag Ordinance or Policy | <p>The Alameda County Waste Management Authority adopted the Single-Use Bag Ban. As of January 1, 2013, all grocery stores, supermarkets, mini-marts, convenience stores, liquor stores, pharmacies, drug stores or other entities that sell milk, bread, soda and snack foods (all four items) and/or alcohol (Type 20 or 21 license) in Alameda County must comply with the Single-Use Bag Ban Ordinance. Affected stores may no longer provide customers with single-use bags at check-out. A copy of the Ordinance is available on the Alameda County Waste Management Authority's website: http://reusablebagsac.org/ordinancetext.html</p> <p>During FY 2015-16, no plastic bags were found while performing On-land Visual Trash Assessments.</p> | See Section C.10 of the ACCWP FY 15-16 Annual Report. | See Section C.10 of the ACCWP FY 15-16 Annual Report. | 4% | 10% |
| Expanded Polystyrene Food Service Ware Ordinance or Policy | <p>On July 1, 2011, the City of Livermore adopted an ordinance banning expanded polystyrene disposable foodservice ware by food vendors. The ordinance requires food vendors to use disposable service ware that is either recyclable or compostable. A copy of the ordinance is available on the City of Livermore's website: http://www.cityoflivermore.net/civicax/filebank/documents/6622/</p> <p>The ordinance is promoted on the City of Livermore Environmental Services Division's web page: http://www.cityoflivermore.net/citygov/pw/swr.htm</p> <p>See page 48, Section 3.2.18, of the City's Trash Long-term Reduction Plan for similar information.</p> <p>During FY 2015-16, no expanded polystyrene food service ware was found while performing On-Land Visual Trash Assessments.</p> | See Section C.10 of the ACCWP FY 15-16 Annual Report. | <p>See Section C.10 of the ACCWP FY 15-16 Annual Report.</p> <p><u>FY 2011-12 Inspections:</u> 45 of 216+ FSEs were noncompliant</p> <p><u>FY 2012-13 Surveys:</u> 45 FSEs were exhausting supplies and purchasing alternatives.</p> <p><u>FY 2013-14 Inspections:</u> 5 of 45 FSEs were noncompliant</p> <p><u>FY 2014-15</u></p> | 5% | |

C.10.b.iv ▶ Trash Reduction – Source Controls

Provide a description of each jurisdictional-wide trash source control action implemented to-date. For each control action, identify the trash reduction evaluation method(s) used to demonstrate on-going reductions, summarize the results of the evaluation(s), and provide the associated reduction of trash within your jurisdictional area. Also include the total % reduction credit for all source controls up to the maximum 10% allowed by MRP 2.0.

| | | | | | |
|---|--|--|--|-----------|--|
| | | | <p><u>Surveys:</u> 5 FSEs were exhausting supplies and purchasing alternatives. <u>January 2015:</u> City staff found 1 out of 21 new FSEs non-compliant <u>This FY 15-16 Survey:</u> 1 FSE was exhausting supplies and purchasing alternatives.</p> | | |
| <p>Public Education and Outreach Programs Targeted at Trash Reduction and Implemented post-MRP Adoption</p> | <p><u>Adopt a Creek Spot Program:</u></p> <p>The Adopt a Creek Spot Program is a partnership between the Water Resources Division, Zone 7 Water Agency, Livermore Area Recreation and Park District, Alameda County Resource Conservation District, Alameda Creek Watershed Council, Livermore Valley Joint Unified School District and Friends of the Arroyos. The Program's mission is to promote healthy Tri-Valley creeks through active community participation and education.</p> <p>The City of Livermore Water Resources Division and Adopt a Creek Spot (AACS) Program developed the City of Livermore's anti-litter message which specifically defined the City's trash problem, explained how long litter lasts, provided 12 easy ways to prevent litter, and described the City's efforts to keep litter out of waterways. The City's anti-litter message is presented in a City and AACS Program display at public events (i.e., Tri-Valley Creeks to Bay Day) and school presentations (i.e., LVJUSD Science Odyssey), and on the City of Livermore Water Resources Division's web page http://www.cityoflivermore.net/citygov/pw/wrd/pollution/keeping_litter_out_of_waterways/default.asp and AACS Programs' website (www.trivalleycreeks.org). The City's general anti-litter outreach message about keeping litter out of storm drains and creeks is still provided in the City of Livermore Water Resources Division's monthly, sewer bill once a year.</p> <p>Also, the City and AACS Program developed the Program's Creek Assessment Activity Form and Creek Assessment Activity Pre and Post-test for middle and high school students. The</p> | | | <p>1%</p> | |

C.10.b.iv ▶ Trash Reduction – Source Controls

Provide a description of each jurisdictional-wide trash source control action implemented to-date. For each control action, identify the trash reduction evaluation method(s) used to demonstrate on-going reductions, summarize the results of the evaluation(s), and provide the associated reduction of trash within your jurisdictional area. Also include the total % reduction credit for all source controls up to the maximum 10% allowed by MRP 2.0.

| | | | | | |
|---|---|--|---|--|--|
| <p>Public Education and Outreach Programs Targeted at Trash Reduction and Implemented post-MRP Adoption (continued)</p> | <p>Creek Assessment Activity helps science students assess creek health by measuring the pollution vulnerability, and the physical, biological and chemical properties of the AACCS Spots. The Creek Assessment Pre and Post-test helps science teachers evaluate middle and high school students' knowledge of the City's anti-litter message, etc. The Creek Assessment and Pre and Post-test meet California Department of Education's Common Core State Standards for grades 6 through 12.</p> <p>Dominant trash sources include transients, trail pedestrians, nearby retail and commercial businesses, nearby apartment complexes and moving vehicles.</p> <p>Also, see Public and School Education and Outreach Program, pages 49 through 51, Section 3.2.18, of the City's Trash Long-term Reduction Plan for similar information.</p> <p><u>Livermore Police Department's Litter Bug Hotline:</u></p> <p>Individuals can report incidents of littering and illegal dumping using the Livermore Police Department's "Litter-Bug Hotline". Violators in question receive a letter providing the time/location of the violation and what was observed, clean-up cost information, and a warning stating that a citation would be issued for a second violation.</p> <p>The Livermore Police Department's Litter Bug Hotline is promoted on the following City of Livermore web pages: http://www.cityoflivermore.net/howdoi/default.htm http://www.cityoflivermore.net/contact/forms.htm http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/default.htm http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/pollution/keeping_litter_out_of_waterways/default.asp</p> | | <p>The Livermore Police Department tracks the total number of Litter-Bug Hotline calls received and litter types thrown out of vehicle windows, etc.</p> <p>Fiscal year 2015-16: 10 Litter-Bug Hotline letters were sent to violators for throwing cigarette butts, food wrappers, etc. out the car</p> | | |
|---|---|--|---|--|--|

C.10.b.iv ▶ Trash Reduction – Source Controls

Provide a description of each jurisdictional-wide trash source control action implemented to-date. For each control action, identify the trash reduction evaluation method(s) used to demonstrate on-going reductions, summarize the results of the evaluation(s), and provide the associated reduction of trash within your jurisdictional area. Also include the total % reduction credit for all source controls up to the maximum 10% allowed by MRP 2.0.

| | | | | | |
|--|--|--|---|--|--|
| | <p>The Litter Bug Hotline is also promoted on the City of Livermore Water Resources Division commercial and residential sewer bill messages.</p> <p>Dominate trash sources are parked and moving vehicles. Dominate trash types include cigarette filters, lighters and packaging/wrappers, tobacco packaging/wrappers, beverage bottles, beverage cans, caps, cups, lids, straws, stirrers, food wrappers and containers, plates, forks, knives, spoons and napkins.</p> <p>See Cigarette Butts, page 49, Section 3.2.18, of the City's Trash Long-term Reduction Plan for more information.</p> <p><u>Cal Trans and CHP's Litter Enforcement Event:</u></p> <p>The City of Livermore Police Department promoted covered load and anti-litter messages on its message board located on Vasco Road near the Vasco Road Landfill.</p> | | <p>window. (Increased media coverage raised awareness. The number of letters sent to violators tripled from the 3 letters usually sent.)</p> | | |
|--|--|--|---|--|--|

C.10.c ► Trash Hot Spot Cleanups

Provide the FY 15-16 cleanup date and volume of trash removed during each MRP-required Trash Hot Spot cleanup during each fiscal year listed. Indicate whether the site was a new site in FY 15-16.

| Trash Hot Spot | New Site In FY 15-16 (Y/N) | FY 15-16 Cleanup Date(s) | Volume of Trash Removed (cubic yards) | | | | |
|---|----------------------------|--------------------------|---------------------------------------|------------------|------------------|------------------|------------------|
| | | | FY 2011-12 | FY 2012-13 | FY 2013-14 | FY 2014-15 | FY 2015-16 |
| Arroyo Mocho- Stanley Bridge-Pedestrian Bridge AM-SB-PB #1 | N | 9/3/2016 | 2.5 Cubic Yards | 0.76 Cubic Yards | 1.6 Cubic Yards | 1.38 Cubic Yards | 1.43 Cubic Yards |
| Arroyo Las Positas @ Livermore Avenue Bridge ALP@Livermore Bridge #2 | N | 9/19/2016 | 0.25 Cubic Yards | 0.28 Cubic Yards | 2.78 Cubic Yards | 0.99 Cubic Yards | 2.07 Cubic Yards |
| Arroyo Mocho-Holmes-Mocho Park AM-H-MP #3 | N | 9/19/2016 | 0.25 Cubic Yards | 1.57 Cubic Yards | 3.76 Cubic Yards | 1 Cubic Yard | 2.06 Cubic Yards |
| Arroyo Las Positas-Northfront Trailhead Park ALP-NTP #4 | N | 9/19/2016 | 1.5 Cubic Yards | 0.31 Cubic Yards | 0.39 Cubic Yards | 0.84 Cubic Yards | 0.40 Cubic Yards |

| C.10.d ► Long-Term Trash Load Reduction Plan | |
|---|----------------|
| Provide descriptions of significant revisions made to your Long-term Trash Load Reduction Plan submitted to the Water Board in February 2014. Describe significant changes made to primary or secondary trash management areas (TMA), trash generation maps, control measures, or time schedules identified in your plan. Indicate whether your trash generation map was revised and is attached to your Annual Report. | |
| Description of Significant Revision | Associated TMA |
| Trash Management Area (TMA) Revisions: TMA 15S (schools) was reclassified as non-jurisdictional commercial. TMA 16P (parks) was reclassified as TMA 15P, and TMA 17 (single-family residential) was reclassified as TMA 16. Revised TMA Map is attached to Section 10.0 Attachments. | 15, 16 and 17 |
| Trash Generation Map was not revised. | |
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C.10.e. ► Trash Reduction Offsets (Optional)

Provide a summary description of each offset program implemented, the volume of trash removed, and the offset claimed in FY 15-16. Also, for additional creek and shoreline cleanups, describe the number and frequency of cleanups conducted, and the locations and cleanup dates. For direct discharge control programs approved by the Water Board Executive Officer, also describe the results of the assessments conducted in receiving waters to demonstrate the effectiveness of the control program. Include an Appendix that provides the calculations and data used to determine the trash reduction offset.

| Offset Program | Summary Description of Actions and Assessment Results | Volume of Trash (CY) Removed/Controlled in FY 15-16 | Offset (Jurisdiction- wide Reduction %) |
|----------------|---|---|--|
|----------------|---|---|--|

C.10.e. ► Trash Reduction Offsets (Optional)

Provide a summary description of each offset program implemented, the volume of trash removed, and the offset claimed in FY 15-16. Also, for additional creek and shoreline cleanups, describe the number and frequency of cleanups conducted, and the locations and cleanup dates. For direct discharge control programs approved by the Water Board Executive Officer, also describe the results of the assessments conducted in receiving waters to demonstrate the effectiveness of the control program. Include an Appendix that provides the calculations and data used to determine the trash reduction offset.

| | | | |
|--|---|---|------------------|
| <p>Additional Creek and Shoreline Cleanups (Max 10% Offset)</p> | <p><u>Spot 1</u> – Arroyo Las Positas @ Northfront Road (Trash Hot Spot 4): 4/23/2016, 150 gallons Subtotal: 1 clean-up; 150 gallons</p> <p><u>Spot 4</u> – Arroyo Mocho in Robertson Park: 7/25/2015, 35 gallons; 9/19/2015, 71 gallons; Subtotal: 2 clean-ups; 106 gallons</p> <p><u>Spot 5</u> – Arroyo Mocho @ Holmes Street (Trash Hot Spot 3): 4/17/2016, 100 gallons Subtotal: 1 clean-up; 100 gallons</p> <p><u>Spot 6</u> – Granada Native Gardens: 7/4/2015, 20 gallons; 7/25/2015, 5 gallons; 8/23/2015, 60 gallons; 8/25/2015, 5 gallons; 9/7/2015, 1 gallon; 9/12/2015, 23 gallons; 9/27/2015, 3 gallons; 9/28/2015, 5 gallons; 9/29/2015, 45 gallons; 10/10/2015, 45 gallons; 10/13/2015, 60 gallons; 10/22/2015, 2 gallons; 11/23/2015, 20 gallons; 11/5/2015, 5 gallons; 11/28/2015, 1 gallons; 12/15/2015, 10 gallons; 12/27/2015, 5 gallons; 1/12/2016, 5 gallons; 1/14/2016, 6 gallons; 1/17/2016, 30 gallons; 1/18/2016, 5 gallons; 1/21/2016, 5 gallons; 1/22/2016, 3 gallons; 1/23/2016, 4 gallons; 1/27/2016, 100 gallons; 1/27/2016, 20 gallons; 1/28/2016, 6 gallons; 1/29/2016, 5 gallons; 2/5/2016, 10 gallons; 2/25/2016, 5 gallons; 2/28/2016, 40 gallons; 3/13/2016, 2 gallons; 3/25/2016, 5 gallons; 4/14/2016, 5 gallons; 4/30/2016, 15 gallons; 5/1/2016, 5 gallons; 5/3/2016, 10 gallons; 5/20/2016, 20 gallons; 5/25/2016, 5 gallons; 6/8/2016, 35 gallons; 6/22/2016, 4 gallons; 6/24/2016, 40 gallons; 6/25/2016, 5 gallons Subtotal: 43 clean-ups; 922 gallons</p> <p><u>Spot 7</u> – Arroyo Mocho @ Stanley Boulevard (Trash Hot Spot 1): 7/4/2015, 4 gallons; 7/11/2015, 200 gallons; 7/18/2015, 4 gallons; 7/25/2015, 4 gallons; 8/1/2015, 4 gallons; 8/8/2015, 4 gallons; 8/15/2015, 4 gallons; 8/22/2015, 4 gallons; 8/29/2015, 4 gallons; 9/12/2015, 4 gallons; 9/19/2015, 4 gallons; 9/26/2015, 4 gallons; 10/3/2015, 4 gallons; 10/10/2015, 4 gallons; 10/17/2015, 4 gallons; 10/24/2015, 4 gallons; 10/31/2015, 4 gallons; 11/7/2015, 4 gallons; 11/14/2015, 4 gallons; 11/21/2015, 4 gallons; 11/28/2015, 4 gallons; 12/5/2015, 4 gallons; 12/12/2015, 4 gallons; 12/19/2015, 4 gallons; 12/26/2015, 4 gallons; 1/2/2016, 4 gallons; 1/9/2016, 4 gallons; 1/16/2016, 4 gallons; 1/23/2016, 4 gallons; 1/30/2016, 4 gallons; 2/6/2016, 4 gallons; 2/13/2016, 4 gallons; 2/20/2016, 4 gallons; 2/27/2016, 4 gallons; 3/5/2016, 4 gallons; 3/12/2016, 4 gallons; 3/19/2016, 4 gallons; 3/26/2016, 4 gallons; 4/2/2016, 4 gallons; 4/9/2016, 4 gallons; 4/16/2016, 4 gallons; 4/23/2016, 4 gallons; 4/30/2016, 4 gallons; 5/7/2016, 4 gallons; 5/14/2016, 280 gallons; 5/21/2016, 4 gallons; 5/28/2016, 4 gallons; 6/4/2016, 4 gallons; 6/11/2016, 4 gallons; 6/18/2016, 4 gallons; 6/25/2016, 4 gallons Subtotal: 51 clean-ups; 400 gallons</p> <p><u>Spot 8</u> – Altamont Creek & Arroyo Las Positas @ Bluebell Drive: 9/19/2015, 265 gallons; 4/23/2016, 346 gallons Subtotal: 2 clean-ups; 611 gallons</p> <p><u>Spot 9</u> – Arroyo Las Positas @ Heather Lane: 8/16/2015, 42 gallons; 9/19/2015, 12.5 gallons Subtotal: 2 clean-ups; 54.5 gallons</p> <p><u>Spot 10</u> – Arroyo Mocho @ Arroyo Street: 3/5/2016, 320 gallons; 9/19/2015, 416 gallons Subtotal: 2 clean-ups; 736 gallons</p> <p>Total: 104 clean-ups; 3,079.5 gallons Total: 104 clean-ups; 3,079.5 gallons</p> | <p>% Reduction Offset (Volume) = $(12A_{VH(2009)} + 4A_{H(2009)} + A_{M(2009)}) \text{ OF}$</p> <ol style="list-style-type: none"> OF = $(7.5 \times 0.033) = 0.2475$ % Reduction Offset = $((12)(0 \text{ weighted acres}) + ((4)(535 \text{ weighted acres}) + 3,065 \text{ weighted acres}))(0.2475)$ % Reduction Offset = $(0 \text{ weighted acres} + 2,140 \text{ weighted acres} + 3,065 \text{ weighted acres})(0.2475)$ % Reduction Offset = $(5,205 \text{ weighted acres})(0.2475)$ % Reduction Offset = 1,288.2 gallons 3,079.5 creek clean-up total gallons / 1,288.2 Reduction Offset gallons = 2.39% | <p>2%</p> |
|--|---|---|------------------|

C.10.e. ► Trash Reduction Offsets (Optional)

Provide a summary description of each offset program implemented, the volume of trash removed, and the offset claimed in FY 15-16. Also, for additional creek and shoreline cleanups, describe the number and frequency of cleanups conducted, and the locations and cleanup dates. For direct discharge control programs approved by the Water Board Executive Officer, also describe the results of the assessments conducted in receiving waters to demonstrate the effectiveness of the control program. Include an Appendix that provides the calculations and data used to determine the trash reduction offset.

| | | | |
|---|----|----|----|
| Direct Trash Discharge Controls (Max 15% Offset) | NA | NA | NA |
|---|----|----|----|

Appendix XX. Baseline trash generation and areas addressed by full capture systems and other control measures in Fiscal Year 15-16.

| TMA | 2009 Baseline Trash Generation (Acres) | | | | | Trash Generation (Acres) in FY 15-16 After Accounting for Full Capture Systems | | | | | Jurisdiction-wide Reduction via Full Capture Systems (%) | Trash Generation (Acres) in FY 15-16 After Accounting for Full Capture Systems <u>and</u> Other Control Measures | | | | | Jurisdiction-wide Reduction via Other Control Measures (%) | Jurisdiction-wide Reduction via Full Capture <u>AND</u> Other Control Measures (%) |
|--------|--|-------|-----|----|--------|--|-------|-----|----|--------|--|--|-------|-----|----|--------|--|--|
| | L | M | H | VH | Total | L | M | H | VH | Total | | L | M | H | VH | Total | | |
| 1 | 1 | 324 | 3 | 0 | 328 | 151 | 175 | 3 | 0 | 328 | 3% | 151 | 175 | 3 | 0 | 328 | 0% | 3% |
| 2 | 0 | 50 | 55 | 0 | 105 | 30 | 35 | 39 | 0 | 105 | 2% | 30 | 35 | 39 | 0 | 105 | 0% | 2% |
| 3 | 0 | 1 | 78 | 0 | 79 | 37 | 1 | 41 | 0 | 79 | 3% | 37 | 1 | 41 | 0 | 79 | 0% | 3% |
| 4 | 238 | 1,300 | 3 | 0 | 1,541 | 360 | 1,177 | 3 | 0 | 1,541 | 2% | 360 | 1,177 | 3 | 0 | 1,541 | 0% | 2% |
| 5 | 0 | 0 | 51 | 0 | 51 | 0 | 0 | 51 | 0 | 51 | 0% | 0 | 0 | 51 | 0 | 51 | 0% | 0% |
| 6 | 0 | 0 | 41 | 0 | 41 | 0 | 0 | 41 | 0 | 41 | 0% | 0 | 0 | 41 | 0 | 41 | 0% | 0% |
| 7 | 1 | 130 | 108 | 0 | 239 | 1 | 130 | 108 | 0 | 239 | 0% | 1 | 130 | 108 | 0 | 239 | 0% | 0% |
| 8A | 2 | 31 | 48 | 0 | 81 | 2 | 30 | 48 | 0 | 81 | 0% | 4 | 30 | 46 | 0 | 80 | 0% | 0% |
| 8B | 13 | 131 | 78 | 0 | 222 | 23 | 121 | 77 | 0 | 222 | 0% | 23 | 121 | 77 | 0 | 222 | 0% | 0% |
| 9 | 3 | 235 | 13 | 0 | 251 | 3 | 235 | 13 | 0 | 251 | 0% | 4 | 235 | 13 | 0 | 251 | 0% | 0% |
| 10 | 0 | 105 | 13 | 0 | 119 | 0 | 105 | 13 | 0 | 119 | 0% | 0 | 105 | 13 | 0 | 119 | 0% | 0% |
| 11 | 0 | 172 | 12 | 0 | 184 | 0 | 172 | 12 | 0 | 184 | 0% | 0 | 172 | 12 | 0 | 184 | 0% | 0% |
| 12 | 0 | 81 | 31 | 0 | 113 | 1 | 81 | 30 | 0 | 113 | 0% | 1 | 81 | 30 | 0 | 113 | 0% | 0% |
| 13 | 0 | 50 | 0 | 0 | 50 | 0 | 50 | 0 | 0 | 50 | 0% | 0 | 50 | 0 | 0 | 50 | 0% | 0% |
| 14 | 0 | 111 | 0 | 0 | 111 | 14 | 98 | 0 | 0 | 111 | 0% | 14 | 97 | 0 | 0 | 111 | 0% | 0% |
| 15 | 0 | 343 | 0 | 0 | 343 | 1 | 341 | 0 | 0 | 343 | 0% | 2 | 341 | 0 | 0 | 343 | 0% | 0% |
| 16 | 11,087 | 0 | 0 | 0 | 11,087 | 11,087 | 0 | 0 | 0 | 11,087 | 0% | 11,087 | 0 | 0 | 0 | 11,087 | 0% | 0% |
| Totals | 11,346 | 3,065 | 535 | 0 | 14,945 | 11,713 | 2,751 | 481 | 0 | 14,945 | 10% | 11,717 | 2,750 | 477 | 0 | 14,945 | 0% | 10% |

Guidance:

- **2009 Baseline Trash Generation (Acres)** – Provide the jurisdictional area (acres) in each trash generation category depicted on your most recent baseline trash generation map. Do not include non-jurisdictional areas.
- **Trash Generation (Acres) in FY 15-16 After Accounting for Full Capture Systems** – Provide the jurisdictional area in each trash generation category after moving all areas treated by full capture systems and reported in section C.10.b.i to "low/L" trash generation.

- **Jurisdiction-wide Reduction via Full Capture Systems (%)**
 - Using the load reduction calculation formula included in the MRP, provide the % reduction in your jurisdiction that has occurred in each TMA as a result of full capture systems.
 - For TMAs with no full capture system treatment, use "0.0%".
 - For TMAs with no moderate, high or very high trash generating areas (i.e., all low trash generation and/or non-jurisdictional) AND with no full capture system treatment, use "NA."
 - The "Total" in the last row should equal the sum of the rows above.
 - The % reductions reported for each TMA and the Total should be consistent with those reported in section C.10.b.i.
 - If a full capture system treats non-jurisdictional areas (e.g., public schools) and you chose to claim a trash reduction, indicate such in a footnote with the acreage of non-jurisdictional treated and the associated baseline trash generation category.
- **Trash Generation (Acres) in FY 15-16 After Accounting for Full Capture Systems and Other Control Measures** - Provide the jurisdictional area in each trash generation category after moving all areas treated by full capture systems and reported in section C.10.b.i to "low/L" trash generation AND accounting for trash load reductions via on-land assessments reported in C.10.b.ii.
- **Jurisdiction-wide Reduction via Other Control Measures (%)**
 - For TMAs with no reductions calculated, use "0.0%".
 - For TMAs with no moderate, high or very high trash generating areas (i.e., all low trash generation and/or non-jurisdictional), use "NA."
 - For each column, the "Total" in the last row should equal the sums of the rows above.
 - The % reductions reported for each TMA and the Total should be consistent with those reported in section C.10.b.ii.
 - If a load reduction associated with other actions implemented in non-jurisdictional areas is claimed in section C.10.b.ii, indicate such in a footnote with the acreage of non-jurisdictional area addressed via other actions and the associated baseline trash generation category.
- **Jurisdiction-wide Reduction via Full Capture AND Other Control Measures (%)**
 - Provide the sum of "Jurisdiction-wide Reduction via Full Capture Systems (%)" and "Jurisdiction-wide Reduction via Other Control Measures (%)" for each TMA and Total.
 - For each column, the "Total" in the last row should equal the sums of the rows above.
 - If a full capture system treats non-jurisdictional areas (e.g., public schools) OR a load reduction associated with other actions in non-jurisdictional areas is claimed in section C.10.b.ii, indicate such in a footnote with the acreage of non-jurisdictional area treated and addressed via other actions and the associated baseline trash generation category.

Section C.10 Additional Comments:

| C.10: FY 2014/2015 and FY 2015/2016 Comparison Table | | | |
|---|--------------|--------------|----------------|
| Trash Load Reductions | FY 2014/2015 | FY 2015/2016 | Net Difference |
| Percent Trash Reduction in All Trash Management Areas (TMAs) due to Trash Full Capture Systems (as reported C.10.b.i) | 10% | 10% | |
| Percent Trash Reduction in all TMAs due to Control Measures Other than Trash Full Capture Systems (as reported in C.10.b.ii) | 11% | 0% | 11% |
| Percent Trash Reduction due to Jurisdictional-wide Source Control Actions (as reported in C.10.b.iv) | 14% | 10% | 4% |
| SubTotal for Above Actions | 35% | 20% | 15% |
| Trash Offsets (Optional) | | | |
| Offset Associated with Additional Creek and Shoreline Cleanups (as reported in C.10.e.i) | 7% | 2% | 5% |
| Offset Associated with Direct Trash Discharges (as reported in C.10.e.ii) | 0% | 0% | |
| Total Estimated % Trash Load Reduction in FY 15-16 | 42% | 22% | 20% |

During the FY 2015/2016, the City of Livermore maintained consistent efforts in attempting to meet the compliance requirements of Provision C.10. In fact, the City committed an even greater amount of staff time and resources towards meeting those goals in FY 2015/2016 in comparison to FY2014/2015. However, as can be seen in the FY 2014/2015 and FY 2015/2016 Comparison Table, the "measured" results are quite different. Despite the same or an even greater level of effort, there is quite a significant decline in "measured" results, or basically in the "credit" the City received for implementing these efforts. This difference is directly the result of, yet again, more changes to the "EOA/BASMMMA Trash Load Reduction Reporting Tool" and changes to the C.10 Requirements as contained in MRP 2.0 versus MRP 1.0. Under MRP 1.0, Permittees were required to develop a "Short Term Trash Reduction Plan" in 2012, and then, Permittees were required to develop a "Long Term Trash Reduction Plan" in 2014. The City of Livermore complied with both of these requirements; however, it is difficult to move forward with any new meaningful implementation when "compliance" with these requirements over the course of the last six years has proven to be a moving target from year to year.

As can be seen in the FY2014/2015 and FY 2015/2016 Comparison Table, the City of Livermore received an 11% reduction under "Other Control Measures than Trash Full Capture Systems" as a result of confirmed reductions verified by Visual Trash Assessments in FY2014/2015. In this current reporting period, despite the fact that actual trash conditions in Livermore have remained relatively the same over the last two reporting periods and City staff performed visual assessments confirming such conditions, the City is not able to take this 11% reduction in FY 2015/2016. The reason for this is a result of the changes made to the Visual Trash Assessment Protocols and the MRP 2.0 requirement of "selecting locations covering at least 10% of a trash management area's street miles...." for visual

assessment. The City staff charged with implementation of the City's C.10 compliance, taking a very conservative approach and maintaining a strict adherence to the "new and enhanced" Visual Assessment Protocol that now require 3 or more assessments per year/per Trash Management Area and corresponding increases to the area size per TMA that must be assessed, staff did not feel comfortable in taking this 11% reduction again this year, as the City was not able to increase the number or increase the acreage of visually assessed areas. While the visual assessments conducted did not show any significant changes in the amount of litter present in FY 2015/2016, the City is losing an 11% reduction as result of this conservative approach. Also, the nature of the visual assessment protocol is flawed for a low-trash City like Livermore because it assumes that additional trash management activities are necessary before taking credit for observed low-levels of trash. When Livermore staff repeatedly observes low levels of trash in a TMA rated with a "medium" category on the base-map, they are precluded from taking credit for the observed "low" level of trash unless "additional" trash management efforts have been conducted in the area. Unfortunately, City staff does not have time to conduct unnecessary, "additional" trash efforts in an area with repeatedly low levels of litter JUST to receive credit under the assessment protocol for the actual, observed results. It seems unlikely that other agencies have time to waste on this type of effort either. Therefore, the protocol should be changed to allow agencies to take credit for actual low-levels of trash regardless if they were obtained through extensive "additional" efforts or by sheer good fortune, since the goal should really be to minimize litter and not to compel wasteful activities to document agency "effort".

In the future, if the City must rely on Visual Assessments to confirm and prove compliance, the City may train its maintenance staff in the performance of Visual Trash Assessments or consider the hiring and training temporary staff to perform this work in order to ensure the City meets the frequency and area requirements as specified in the revised protocols; thus, enabling the City to take the necessary reduction credits in this area.

As can be seen in the FY2014/2015 and FY 2015/2016 Comparison Table, the City of Livermore received a 14% reduction under "Jurisdictional-wide Source Control Actions in FY 2014/2015. This 14% reduction was comprised of the sum of a 7% reduction attributed to the "Single-use Plastic Bag Ordinance", a 5% reduction attributed to the "Polystyrene Food Service Ware Ordinance", and a 2% reduction attributed to "Public Education and Outreach Programs Targeted at Trash Reduction and Implemented post-MRP Adoption" (i.e. The City of Livermore's Adopt A Creek Spot Program). During the current reporting period and despite the fact that the City's level of implementation in all three areas (Plastic Bag, Polystyrene, and Public Education) remained the same or greater, the City is now only allowed to take a 10% reduction for "Jurisdictional-wide Source Control Actions in accordance with the revised protocols and based on BASMAA/ACCWP recommendations. This 10% reduction is comprised of the sum of a 4% reduction attributed to the "Single-use Plastic Bag Ordinance, a 5% reduction attributed to the "Polystyrene Food Service Ware Ordinance", and a 1% reduction attributed to "Public Education and Outreach Programs Targeted at Trash Reduction and Implementation post -MRP Adoption (i.e. The City of Livermore's Adopt A Creek Spot Program). Therefore, the largest "reduction" in the effectiveness of the City's trash management efforts was caused by an arbitrary change in interpretation by BASMAA and Regional Board staff rather than any change in activities or reduction in level of effort by the City of Livermore.

Additionally, the FY 2014/2015 and FY 2015/2016 Comparison Table highlights a change for a 7% reduction in FY 2014/2015 to a 2% reduction in FY 2015/2016 for the "Offset Associated with Additional Creek and Shoreline Cleanups. Not only did MRP 2.0 cap the maximum allowable reduction under this area to 10%, it significantly modified the "percent reduction offset calculation" which, in turn yields, a lower "measured" reduction for the same level of implementation (trash removed) as was performed in prior reporting years. Thus, the demonstration of compliance under this area has proven to be a moving target as well.

In order to adjust for the changes in the C.10 requirements of MRP 2.0 and, more significantly, the changes to the "accepted" methodology of "measuring" compliance, the City of Livermore, once again, has been forced to revise its Long Term Trash Plan. A draft of this revised plan is contained in [Section C.10 Attachments](#).

City of Livermore staff continues to have serious concerns over the trash management approach being required by Regional Board staff in the C.10 provision of the MRP 2.0. As stated in prior reports, City staff believes that the C.10 provisions fail to incorporate some of the key concepts and lessons learned by the Bay Area Stormwater programs over the last 20 years. Moreover, not only do the requirements fail to incorporate key lessons learned by years of experience implementing stormwater regulations; they actually directly contradict those hard-fought lessons. In the early 1990's, the Alameda County Clean Water Program conducted a great deal of pollutant monitoring in local creeks and streams to characterize stormwater pollutants. One of the outcomes of this early creek

monitoring work was a data evaluation to determine the efficacy of routine stream monitoring. One of the outcomes of this monitoring and data evaluation was an analysis by Woodward Clyde Consultants that showed that pollutant monitoring in local receiving waters was ineffective in determining the "progress" or "success" of pollutant control or removal efforts due to the variability in pollutant levels. The data analysis found that even if the stormwater programs were capable of reducing the level of a particular pollutant by 50%, we might only be able to identify that reduction 20% of the time based on pollutant sampling due to the variability of stormwater sampling, flow and antecedent dry period. The same concepts will hold true with a physical pollutant such as trash. Therefore, the goals of reducing trash by 40, 70, or 100 percent by a given date is not reasonable given the nature of stormwater pollutant sampling, or in this case, a periodic visual assessment of trash management areas. It is simply not possible to use this type of periodic measurement or assessment to quantify trash management efforts, since one or several pieces of trash deposited on the day an assessment is performed might skew weeks or months with "no" visible trash. Basically, the approach is overly-simplistic and unlikely to yield useful and repeatable results. Also, the C.10 provisions in MRP 1.0 and 2.0 ignores the concept of "Starting at the Source", which has been a key to addressing numerous stormwater pollution sources. The focus on "full-trash capture" in the MRP requirements ignores the "Start at the Source" concept, or the idea of preventing litter in the first place, and instead, focuses on "end of pipe capture" which is likely to be much less effective and contradicts years of stormwater regulatory experience. A better approach would be to focus on source reduction, education or outreach rather than on end-of-pipe treatment. The lack of emphasis on source control in the C.10 requirements is likely to doom the programs to failure, or worse, might actually *increase* the amount of litter once the public realize that cities have installed a "trash-can" in every catch basin or at the end of every storm drain pipe. There is little incentive for residents to NOT litter if the City is installing devices to remove and dispose of it later.

Since the adoption of the C.10 Trash Provisions of MRP 1.0 in 2010, the City of Livermore, as well as many other municipalities, has put forth great efforts towards compliance despite the lack of the funding and the staff resources necessary to fully comply with all of these requirements. These funding issues were repeatedly raised, and largely ignored by the San Francisco Regional Water Quality Control Board, over the course of a number of public hearings held from 2009 through 2015. As a result of this lack of funding, the City's interim compliance strategy has been one that is forced to focus on control measures "other than full trash capture". Unfortunately, due to the continual changes made to the "accepted" methodologies utilized for "calculating" and/or "demonstrating" compliance under this "other strategies" approach, the City has not been able to consistently demonstrate compliance with Provision C.10 from year to year. Ironically, the City of Livermore is, for the most part, a relatively clean community in terms of trash and litter. It is a beautiful community, and its public spaces are quite attractive and free of the significant litter problems that appear to plague many other communities in the greater San Francisco Bay Area. If one were to ascertain the top ten community issues, staff doubts "litter" would even rank in this list. More importantly, it is likely to not even rank highly in the top "water-quality" related concerns for our area. However, despite our concerns with the C.10 requirements or the methodologies employed to demonstrate compliance, the City's Long Term Trash Plan remains one that is primarily focused on compliance through the installation of Full Trash Capture Devices, as this remains the only viable option for a municipality to adequately and consistently demonstrate compliance. Unfortunately, this requires a significant initial capital investment in addition to substantial on-going maintenance costs. Finding this funding remains a work in progress.

During the next reporting period, the City of Livermore will adopt one of the compliance strategies outlined in the updated Schaaf & Wheeler Report (See Section C.10 Attachments) and outline an implementation plan in subsequent reports to the San Francisco Bay Regional Water Quality Control Board. However, for City staff to recommend moving forward with implementation of the Long Term Trash Plan and the very significant investment of over \$5 million in full trash capture devices, the City of Livermore (and likely all other municipalities covered by MRP 2.0 and subsequent versions) will need some assurance from Board staff and/or the Board itself that compliance will stop being a "moving target". Agencies and the community residents who pay the cost of stormwater compliance deserve to know that their investment will not be squandered by a future Board staff "interpretation" of what constitutes "compliance". Without this assurance, it would be foolish for communities to invest the resources to comply with the full trash capture provisions of the MRP. Additionally, the City believes the Trash Reduction Requirements exceed federal law requirements, and are therefore, an unfunded mandate. Many municipalities raised this very issue during the public comment period when the MRP2.0 was brought forward for adoption. On August 29, 2016, the California Supreme Court ruled in favor of local agencies that are seeking to enforce their constitutional right to reimbursement for unfunded mandates imposed by the State. In Department of Finance v. Commission on State Mandates, the Court ruled in favor of public agencies subject to storm water discharge permits, holding that State-mandated storm water permit provisions exceeding federal law requirements may be reimbursable State mandates under Article XIII B, Section 6, of the California Constitution. The City will continue to monitor these court actions and seek reimbursement should court decisions warrant such actions.

Section 11 - Provision C.11 Mercury Controls

- C.11.a ▶ Implement Control Measures to Achieve Mercury Load Reductions**
- C.11.b ▶ Assess Mercury Load Reductions from Stormwater**
- C.11.c ▶ Plan and Implement Green Infrastructure to Reduce Mercury Loads**
- C.11.d ▶ Prepare Implementation Plan and Schedule to Achieve TMDL Allocations**
- C.11.e ▶ Implement a Risk Reduction Program**

Summary:

A summary of countywide Program and regional accomplishments for these sub-provisions are included within the C.11 Mercury Controls section of Program's FY 15-16 Annual Report and/or BASMAA regional reports.

Section 12 - Provision C.12 PCBs Controls

- C.12.a ▶ Implement Control Measures to Achieve PCBs Load Reductions**
- C.12.b ▶ Assess PCBs Load Reductions from Stormwater**
- C.12.c ▶ Plan and Implement Green Infrastructure to Reduce PCBs Loads**
- C.12.d ▶ Prepare Implementation Plan and Schedule to Achieve TMDL Allocations**
- C.12.e ▶ Evaluate PCBs Presence in Caulks/Sealants Used in Storm Drain or Roadway Infrastructure in Public Rights-of-Way**
- C.12.f ▶ Manage PCB-Containing Materials and Wastes During Building Demolition Activities So That PCBs Do Not Enter Municipal Storm Drains**
- C.12.g. ▶ Fate and Transport Study of PCBs: Urban Runoff Impact on San Francisco Bay Margins**
- C.12.h ▶ Implement a Risk Reduction Program**

Summary:

A summary of Permittee, Countywide Program and regional accomplishments for these sub-provisions are included within the C.12 PCB Controls section of Program's FY 15-16 Annual Report and/or BASMAA regional reports.

Section 13 - Provision C.13 Copper Controls

C.13.a.iii ► Manage Waste Generated from Cleaning and Treating of Copper Architectural Features

| | | | | |
|---|-------------------------------------|------------------------------|--------------------------|-----------------------------|
| <p><i>(For FY 15-16 Annual Report only)</i> Do you have adequate legal authority to prohibit the discharge of wastewater to storm drains generated from the installation, cleaning, treating, and washing of copper architectural features, including copper roofs?</p> | <input checked="" type="checkbox"/> | <input type="checkbox"/> Yes | <input type="checkbox"/> | <input type="checkbox"/> No |
| <p><i>(For FY 15-16 Annual Report only)</i> Provide a summary of how copper architectural features are addressed through the issuance of building permits.</p> | | | | |
| <p>Summary: The City provides information on Best Management Practices for installation of copper architectural features to building permit applicants as needed.</p> | | | | |
| <p><i>(FY 15-16 Annual Report and each Annual Report thereafter)</i> Provide summaries of permitting and enforcement activities to manage waste generated from cleaning and treating of copper architectural features, including copper roofs, during construction and post-construction.</p> | | | | |
| <p>Summary: No specific enforcement actions in this area were required during this reporting period.</p> | | | | |

C.13.b.iii ► Manage Discharges from Pools, Spas, and Fountains that Contain Copper-Based Chemicals

(For FY 15-16 Annual Report only) Do you have adequate legal authority to prohibit the discharge to storm drains of water containing copper-based chemicals from pools, spas, and fountains? Yes No

(For FY 15-16 Annual Report only) Provide a summary of how copper-containing discharges from pools, spas, and fountains are addressed to accomplish the prohibition of the discharge.

Summary:
 The City's Source Control Inspection staff provided Best Management Practices to residents and business regarding swimming pool and fountain discharges.

(FY 15-16 Annual Report and each Annual Report thereafter) Provide summaries of any enforcement activities related to copper-containing discharges from pools, spas, and fountains.

Summary:
 The City's Source Control Inspection staff provides authorization of swimming pool and fountain discharges to the City's Water Reclamation Plant and/or to landscaping (or the Stormdrain if other alternatives are not feasible). During this process, staff review BMPs with the pool owner and assess whether any copper-containing products have been used. No specific enforcement actions regarding pool, spa, and fountain discharges were taken during this reporting period.

C.13.c.iii ► Industrial Sources Copper Reduction Results

Based upon inspection activities conducted under Provision C.4, highlight copper reduction results achieved among the facilities identified as potential users or sources of copper, facilities inspected, and BMPs addressed.

Summary:
 The City of Livermore annually conducts pretreatment (sanitary sewer) and stormwater inspection of facilities that are identified as a potential copper source. Additionally, the City requires all facilities that wash vehicles or have drains in the vehicle service bays to plumb all fixtures to a sand/oil interceptor and connect to the sanitary sewer system. All such facilities are required to obtain a wastewater discharge permit and wastewater discharges to the sanitary sewer system are routinely monitored for compliance with all local discharge limits for heavy metals (including copper).

Section 15 -Provision C.15 Exempted and Conditionally Exempted Discharges

C.15.b.vi.(2) ► Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering

Provide implementation summaries of the required BMPs to promote measures that minimize runoff and pollutant loading from excess irrigation. Generally the categories are:

- Promote conservation programs
- Promote outreach for less toxic pest control and landscape management
- Promote use of drought tolerant and native vegetation
- Promote outreach messages to encourage appropriate watering/irrigation practices
- Implement Illicit Discharge Enforcement Response Plan for ongoing, large volume landscape irrigation runoff.

Summary:

Refer to the C.3 New Development and Redevelopment, C.7. Public Information and Outreach and C.9. Pesticide Toxicity Control sections of Program's FY15-16 Annual Report as needed.

Additionally, the City's requirements for new development projects include the following requirements:

All new development projects are required to address the following, and implement when feasible, the following:

Landscaping shall be designed to both minimize irrigation and the runoff of irrigation waters. It shall also be designed to promote surface infiltration where appropriate. Landscaping plans should also consider measures and/or planting selections, which serve to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.

If a landscaping plan is required as part of a development project application, the plan shall meet the following conditions related to reduction of pesticide use on the project site:

Where feasible, landscaping shall be designed and operated to treat stormwater runoff by incorporating elements that collect, detain, and infiltrate runoff. In areas that provide detention of water, plants that are tolerant of saturated soil conditions and prolonged exposure to water shall be specified.

Plant materials selected shall be appropriate to site specific characteristics such as soil type, topography, climate, amount and timing of sunlight, prevailing winds, rainfall, air movement, patterns of land use, ecological consistency and plant interactions to ensure successful establishment.

Existing native trees, shrubs, and ground cover shall be retained and incorporated into the landscape plan to the maximum extent practicable.

Unless otherwise specified, proper maintenance of landscaping shall be the responsibility of the property owner.

Integrated pest management (IPM) principles and techniques shall be encouraged as part of the landscaping design. Some examples of IPM principles and techniques include the following:

Select plants that are well adapted to soil conditions at the site.

Select plants that are well adapted to sun and shade conditions at the site. Consider future conditions when plants reach maturity. Consider seasonal changes and time of day.

Provide irrigation appropriate to the water requirements of the selected plants.

Select pest and disease resistant plants.

Plant a diversity of species to prevent a potential pest infestation from affecting the entire landscaping plan.

Use "insectary" plants in the landscaping to attract and keep beneficial insects.

Landscaping shall also comply with City of Livermore's "Water Efficient Landscape Ordinance". However, areas of a site used for bioswales or other landscaped areas that function as a stormwater treatment measure shall be exempt from the Water Efficient Landscaping requirements.

The City as part of its Public Outreach events provides and promotes the following information to the public:

Promotional items and informational materials described IPM and its controls mechanisms, the benefits of using IPM products, and the OWOW Program. The product included labels that identified the control mechanism, active ingredient(s), and the OWOW local store of purchase Stormwater Pollution Brochure, Bay Begins Brochure, Home Maintenance Tips for a Cleaner Bay Brochure, Grow It! Guides, Control It! Guides, Healthy Home and Garden Booklet, Pest Bugging You? Pocket Guides, The 10 Most Wanted Bugs in Your Garden Brochure, A Kid's Guide to Backyard Bug Guides, and Pest or Pal? Activity Guides.

SECTION 4.0: ATTACHMENTS

**Stormwater Industrial and Commercial Inspection Plan
FY 2015/2016 through FY2019/2020**

I. On an annual basis, the City shall perform stormwater inspections of all NOI facilities and the following industrial facilities permitted under the City's Pretreatment Program: Categorical Industrial Users(CIU), General Industrial/Commercial Users (G), Photo Processor Users (P), and Vehicle and Equipment Wash Rack Users (WR) The following table provides a specific list of these facilities:

Table 1.0

| INDUSTRY | TYPE | FREQUENCY |
|--|-------|-----------|
| Eight Bridges Brewery | G | Annually |
| Heritage Paper | G | Annually |
| Protein Research | G | Annually |
| Sabor de mi Tierra | G | Annually |
| Working Man's Brewing Company | G | Annually |
| Bridgelux | NOI | Annually |
| Livermore Anodizing | NOI | Annually |
| Toshiba | NOI | Annually |
| Nestle Water North America (Arrowhead) | NOI/G | Annually |
| Autopia Car Wash | WR | Annually |
| Budget Car and Truck Rental | WR | Annually |
| Clark Pest Control | WR | Annually |
| Cresco Equipment Rental | WR | Annually |
| Enterprise Rent-A-Car | WR | Annually |
| B & S Hacienda | WR | Annually |
| Cactus Car Wash | WR | Annually |
| Condon Johnson | WR | Annually |
| Las Positas Shell | WR | Annually |

| INDUSTRY | TYPE | FREQUENCY |
|---|---------|-----------|
| Livermore Audi | WR | Annually |
| Livermore Harley-Davidson | WR | Annually |
| Livermore Honda | WR | Annually |
| Livermore Jaguar | WR | Annually |
| Livermore Porsche | WR | Annually |
| Livermore Subaru | WR | Annually |
| LPPFD Fire Station 10 | WR | Annually |
| LPPFD Fire Station 6 | WR | Annually |
| LPPFD Fire Station 7 | WR | Annually |
| LPPFD Fire Station 8 | WR | Annually |
| Altamont Beer Works | G | Annually |
| Bake Fresh | G | Annually |
| Sutherland Distillery | G | Annually |
| Turman Commercial Painters | G | Annually |
| Costco | P | Annually |
| ADMEDES | CIU | Annually |
| Form Factor-501 Lawrence | NOI/CIU | Annually |
| Form Factor-7545 Longard | NOI/CIU | Annually |
| InPhenix, Inc. | NOI/CIU | Annually |
| Bernard's Mini Mart | WR | Annually |
| California Department of Transportation | WR | Annually |
| Happy Daze RV's | WR | Annually |
| Henderlong Lewis Building | WR | Annually |
| Hertz Equipment Rental | WR | Annually |

| INDUSTRY | TYPE | FREQUENCY |
|--------------------------------------|---------|-----------|
| Boat Masters | WR | Annually |
| Dun-Rite Excavating | WR | Annually |
| Interstate Storage | WR | Annually |
| JAM Services | WR | Annually |
| Left Coast Diesel | WR | Annually |
| Livermore Auto Group-2266 Kitty Hawk | WR | Annually |
| Livermore Auto Group-2304 Kitty Hawk | WR | Annually |
| Livermore Car Wash | WR | Annually |
| Livermore Toyota | WR | Annually |
| Power Washing Services | WR | Annually |
| Quentin Bammer/Moeller Bros. | WR | Annually |
| Royal Restrooms | WR | Annually |
| SAB Stanley Shell | WR | Annually |
| SpeedDee Wash | WR | Annually |
| U.S. Foods | G | Annually |
| Vasco Road Chevron | WR | Annually |
| WBT | WR | Annually |
| Bonner Processing, LLC | NOI/CIU | Annually |
| Maas Brothers-275 S. Vasco Rd. | NOI/CIU | Annually |
| Maas Brothers-285 S. Vasco Rd. | NOI/CIU | Annually |
| Culligan Water | G | Annually |
| National Food Laboratory | G | Annually |
| Packaging Innovators | NOI/G | Annually |
| Wheel Works #8255 | WR | Annually |

| INDUSTRY | TYPE | FREQUENCY |
|--|-------|-----------|
| Goodfellow / Top Grade | WR | Annually |
| Harris Salinas Rebar | NOI/G | Annually |
| Las Positas Golf Course | WR | Annually |
| Les Schwab Tire Center #647 | WR | Annually |
| Livermore Amador Valley Transit Authority (LAVTA) | NOI/G | Annually |
| Livermore Amador Valley Transit Authority (LAVTA) 875 Atlantis Court | NOI/G | Annually |
| Livermore Chevron | WR | Annually |
| Livermore Gas and Shop | WR | Annually |
| Livermore Maintenance Services Center (MSC) | WR | Annually |
| Livermore Municipal Airport | NOI/G | Annually |
| Livermore Police Department | WR | Annually |
| Livermore Sanitation | NOI/G | Annually |
| Marshall Brothers Ent., Inc. | WR | Annually |
| MidCoast Transportation | WR | Annually |
| Mountain Cascade | WR | Annually |
| Paramedics Plus | WR | Annually |
| Penske Truck Leasing Co. | WR | Annually |
| Pleasanton Truck & Equipment Repair | WR | Annually |
| RGW Construction | WR | Annually |
| Sunbelt Rentals | WR | Annually |
| Wal-Mart Tire & Lube Express | WR | Annually |
| Yamaha Golf Cars of CA | WR | Annually |
| Zone 7 Water Agency | WR | Annually |
| Enray | WR | Annually |

| INDUSTRY | TYPE | FREQUENCY |
|---------------------------------------|------|-----------|
| Fenestra Winery | NOI | Annually |
| Triangle Coatings Inc. | NOI | Annually |
| Triple S Metal | NOI | Annually |
| Fabco Automotive Corporation | NOI | Annually |
| Jifco | NOI | Annually |
| Refund Recycle Center | NOI | Annually |
| Integrated Manufacturing Group | NOI | Annually |
| USP Structural Connectors | NOI | Annually |
| Total Number of Facilities: 98 | | |

II. The 5-Year inspection plan detailed below outlines how the City of Livermore will prioritize it's inspection to adequately address the requirements of Provision C.4.b.:

Fiscal Year 2015/2016: All Pretreatment and NOI Facilities identified in Table 1.0 (98 Facilities)

All Facilities Listed under SIC 7532, Automotive Body Shops, and all facilities Listed under SIC 7538, Automotive Repair Shops (47 Facilities)
All Facilities Listed under SIC 5541, Gasoline Service Stations (27 Facilities)

FY 2015/2016- 172 Facility Inspections

Fiscal Year 2016/2017: All Pretreatment and NOI Facilities identified in Table 1.0 (98 Facilities)

All Facilities Listed under SIC 5812, (150 Facilities)

FY 2016/2017 - 248 Facility Inspections

Fiscal Year 2017/2018: All Pretreatment and NOI Facilities identified in Table 1.0 (98 Facilities)

All Facilities Listed under SIC 8711, Engineering Services
(15 Facilities)

All Facilities Listed under SIC 8731, R&D Labs-Commercial
(5 Facilities)

All Facilities Listed under SIC 8734, Testing Labs (2 Facilities)

All Facilities Listed under SIC 5093, Scrap & Waste Materials
(2 Facilities)

All Facilities Listed under SIC 4212, Local Trucking (5 Facilities)

All Facilities Listed under SIC 5261, Retail Nurseries (5 Facilities)

All Facilities Listed under SIC 5211, Lumber and Other Building
Material Dealers (10 Facilities)

FY 2017/2018- 142 Facility Inspections

Fiscal Year 2018/2019: All Pretreatment and NOI Facilities identified in Table 1.0 (98 Facilities)

All Facilities Listed under SIC, Restaurant with a Grease Trap or No
Grease Removal Device (125 Facilities)

FY 2018/2019- 223 Facility Inspections

Fiscal Year 2019/2020: All Pretreatment and NOI Facilities identified in Table 1.0 (98 Facilities)

All Facilities Listed under SIC 3599, Industrial and Commercial
Machinery and Equipment (19 Facilities)

All Facilities Listed under SIC 3679, Electronic Components
Manufacturing (5 Facilities)

All Facilities Listed under SIC 3089, Plastic Products (3 Facilities)

FY 2019/2020- 125 Facility Inspections

Note: The "number" of facilities listed under each SIC in this 5-Year Inspection plan is based upon a query of the City's Business License Database performed in January 2010. Prior to each fiscal year, a new query of the database shall be performed to get the most updated figure for that year's facility type scheduled to be inspected.

Inspection List Grouped by Facility

| Facility Name | Date | Inspector | Reason | Enforcement Action* | Facility Closed | Comments |
|-------------------------------------|------------|---------------|----------------------|---------------------|-----------------|---|
| 5 Star Pool Plastering, Inc. | | | | | | |
| | 10/20/2015 | Lynna Allen | First Inspection | a. | No | B- Muriatic acid to be properly stored in covered stora |
| | 12/01/2015 | Lynna Allen | Follow-up Inspection | | No | B.- Muriatic acid was properly stored in covered stora |
| 7-Eleven | | | | | | |
| | 01/21/2016 | Blaine Drewes | Routine Inspection | | No | Vortecnicos stormwater treatment device 100%full. Re |
| | 06/16/2016 | John Roberts | Routine Inspection | v. | No | Dumpster area cleanTrash in landscaping area |
| AABCO | | | | | | |
| | 04/20/2016 | John Roberts | Routine Inspection | | No | B- Covered Parts storage outside; C- Dumpster Lids |
| ACCURATE AUTO CARE | | | | | | |
| | 04/12/2016 | Zachary Wu | Routine Inspection | | No | Dumpster lids closed, area tidy.Parking lot tidy, swe |
| Acutrack | | | | | | |
| | 09/29/2015 | John Roberts | Routine Inspection | | No | C- Dumpster lids closed; E- Lot clean |
| Admedes Inc. | | | | | | |
| | 11/04/2015 | John Roberts | Routine Inspection | | No | C- Covered trash enclosure, clean; E-Lots clean and |
| Advanced Auto | | | | | | |
| | 04/25/2016 | John Roberts | Routine Inspection | | No | C- Trash area clean; E- Parking lot clean |
| Advantage Metal Products | | | | | | |
| | 09/23/2015 | John Roberts | Routine Inspection | | No | C- Dumpster lids closed; E- Lot clean. |
| All Tune and Lube | | | | | | |
| | 04/06/2016 | Zachary Wu | Routine Inspection | | No | Tires stored in trash area, off-hauled quarterly.Dumps |
| Altamont Automotive | | | | | | |
| | 05/03/2016 | Zachary Wu | First Inspection | | No | Dumpster lids shut, area tidyParking lot clean, swept |
| Altamont Beer Works | | | | | | |
| | 08/12/2015 | John Roberts | Routine Inspection | | No | B- Filter bags in stormdrain; D-shared lot clean |
| | 03/21/2016 | John Roberts | Routine Inspection | | No | B-Filter bags in stormdrain; D- shared lot, clean |
| AMS.net | | | | | | |
| | 09/23/2015 | John Roberts | Routine Inspection | | No | C- Covered trash enclosure clean; E- shared lot, clea |
| Arco | | | | | | |

| <i>Facility Name</i> | <i>Date</i> | <i>Inspector</i> | <i>Reason</i> | <i>Enforcement Action*</i> | <i>Facility Closed</i> | <i>Comments</i> |
|---|-------------|------------------|--------------------|----------------------------|------------------------|---|
| Arco AM PM | 01/21/2016 | Blaine Drewes | Routine Inspection | | No | Trash area picked up daily and swept weekly. Area w |
| Arco AM/PM | 01/21/2016 | Blaine Drewes | Routine Inspection | | No | Swales were designed to drain the impervious areas. |
| Arrowhead Water | 05/10/2016 | John Roberts | Routine Inspection | | No | C- Trash swept daily, area clean; E- Parking lot swept |
| | 05/10/2016 | John Roberts | Routine Inspection | | No | C- Covered trash area cleaned weekly. Area clean; E- |
| Autopia Car Wash | 03/01/2016 | Blaine Drewes | Routine Inspection | | No | Trash area cleaned weekly. Area was clean. Parking l |
| Awesome Smiles | 03/23/2016 | Blaine Drewes | Routine Inspection | | No | Detail and vaccum areas are covered. Facility closed |
| B & C Gas | 12/10/2015 | John Roberts | Routine Inspection | | No | Shared trash, cleanShare lot, clean |
| B & S Hacienda Auto Body | 04/15/2016 | Zachary Wu | Routine Inspection | | No | Dumpster lids shut, area tidy.Parking lot tidy, swept d |
| | 09/11/2015 | Blaine Drewes | Routine Inspection | | No | Trash area cleaned daily. Trash area was clean.Spill |
| | 03/30/2016 | Blaine Drewes | Routine Inspection | | No | Trash area picked up daily. Container kept closed wh |
| B & S Hacienda Autobody Repair | 05/25/2016 | Zachary Wu | First Inspection | | No | Dumpster lids shut, area tidyParking lot tidy, swept w |
| Benztek Motorsports | 04/14/2016 | Zachary Wu | First Inspection | | No | Dumpster lids shut, area tidy.Parking lot sept weekly, |
| Bernard's Mini Mart | 08/12/2015 | Z. Wu | Routine Inspection | | No | Waste Area covered and swept dailyParking lot swept |
| Boatmasters | 11/10/2015 | John Roberts | Routine Inspection | | No | B- Boats stored outside on paved lot; C-Dumpsters & |
| | 06/19/2016 | John Roberts | Routine Inspection | | No | B- Boats stored outside on paved lot; C- Dumpsters a |
| Bonner Metal Processing, LLC | 03/22/2016 | Zachary Wu | Routine Inspection | | No | Dumpster lids closed, area tidyLot was tidy, swept by |
| Bridgelux/ Toshiba | 06/08/2016 | Blaine Drewes | Routine Inspection | | No | Trash area swept weekly, lids kept closed, Area was |

| <i>Facility Name</i> | <i>Date</i> | <i>Inspector</i> | <i>Reason</i> | <i>Enforcement Action*</i> | <i>Facility Closed</i> | <i>Comments</i> |
|--|-------------|------------------|----------------------|----------------------------|------------------------|--|
| Cactus Car Wash/Smog & Automotive | 08/20/2015 | Blaine Drewes | Routine Inspection | | No | Covered trash container area cleaned weekly. Area w |
| Cal State Automotive | 01/27/2016 | Zachary Wu | Routine Inspection | | No | I- Stormdrains in parking lot shared with other busine |
| California Department of Transportation | 07/30/2015 | Z. Wu | Routine Inspection | | No | Material storage sheds bermed to keep storwater out |
| California Reflections Auto Body | 08/19/2015 | Zachary Wu | Routine Inspection | | No | Area around stormdrain clean.Dumpster lids closed. |
| CARTECH SERVICE CENTER | 09/05/2015 | Zachary Wu | Respond to Complaint | | No | Dumpster area clean, lids were closed |
| Chevron | 10/07/2015 | Zachary Wu | Routine Inspection | | No | Dumpster lids closed. 55-gallon hazardous waste on |
| | 02/05/2016 | Zachary Wu | Routine Inspection | | No | Dumpster lids closed area tidy.Lot cleaned weekly, w |
| Clark Pest Control | 06/20/2016 | Blaine Drewes | Routine Inspection | | No | Vegetated and grassy swals present. Filters placed in |
| Comfort Dental | 12/17/2015 | John Roberts | Routine Inspection | | No | Shared trash enclosure, cleanShared lot, clean |
| Condon Johnson & Associates | 09/08/2015 | Blaine Drewes | Routine Inspection | | No | Filter fabric in all storm drains.Dirt storage area. Meta |
| | 06/21/2016 | Blaine Drewes | Routine Inspection | | No | Filter fabric installed ina all drains.Dirt storage ara. M |
| Costco Wholesale | 06/28/2016 | John Roberts | Routine Inspection | a. | No | C- Liquid/Grease in stormdrain from pressure washin |
| Creevan Dental | 01/20/2016 | John Roberts | Routine Inspection | | No | C- Shared garbage area, clean; Shared lot, clean |
| Culligan Water | 03/28/2016 | Zachary Wu | Routine Inspection | | No | Storage containers enclosed. Area covered.Dumpster |
| Dick & Ryan's Complete Auto Repair | 09/23/2015 | Zachary Wu | Routine Inspection | | No | C- Secondary containment had door ripped off during |
| Don's Mobile Fleet Service | 09/02/2015 | Zachary Wu | Routine Inspection | a. | No | Caught Don's Mobile Fleet washing in parking lot to st |

| <i>Facility Name</i> | <i>Date</i> | <i>Inspector</i> | <i>Reason</i> | <i>Enforcement Action*</i> | <i>Facility Closed</i> | <i>Comments</i> |
|---|-------------|------------------|----------------------|--------------------------------|----------------------------|---|
| Double AA Gas | 06/15/2016 | John Roberts | First Inspection | | No | Dumpster lids closed lot clean |
| Early Years & Exotics | 04/21/2016 | Zachary Wu | Routine Inspection | | No | Dumpster lids shut, area tidy Parking lot tidy, swept w |
| EI Mechanico | 02/10/2016 | Zachary Wu | Routine Inspection | | No | Waste Tires stored outside, picked up every 3 weeks. |
| Eurotech | 04/14/2016 | Steven Aguiar | First Inspection | | No | I. Two stormdrains located on site. They are well mai |
| EVAN'S BROTHERS INC. | 11/16/2015 | Zachary Wu | Routine Inspection | | No | B- Large piles of gravel and brick stored on site. Ther |
| Finestra Winery | 10/08/2015 | Blaine Drewes | Routine Inspection | | No | Agricultural site: Non-stormwater discharges are sewer |
| First Street Auto Repair | 01/27/2016 | Zachary Wu | Routine Inspection | | No | I. Site does not have storm drain on property but a pip |
| First Street Smog | 04/05/2016 | Zachary Wu | Routine Inspection | | No | First Street Smog shares the same office as "Alan & |
| Form Factor | 05/04/2016 | John Roberts | Routine Inspection | | No | C- Waste storage areas cleaned weekly. Trash contai |
| Form Factor 501 | 05/04/2016 | John Roberts | Routine Inspection | | No | C- Waste area clean. Trash containers closed and loc |
| Goodfellow / Top Grade LLC | 03/23/2016 | Zachary Wu | Routine Inspection | | No | B-Fuel Island has double walled tanks. Absorbent loc |
| Grafco | 04/24/2016 | John Roberts | Routine Inspection | | No | C- Trash area clean; E- Parking lot clean |
| Guerrero's Tires | 10/02/2015 | B. Drewes | Respond to Complaint | p. | No | Contact was washing in area immediately west of buil |
| Happy Daze RV's | 09/03/2015 | Zachary Wu | Routine Inspection | | No | 3 Stormdrains on site. All 3 maintained and clean. 2 I |
| Harris Salinas Rebar (fmr: Salinas Rein | 05/10/2016 | Zachary Wu | Routine Inspection | | No | B- Uncovered metal (rebar) stored on large gravel lot. |

Tuesday, August 09, 2016

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* v - verbal notice; w - warning notice; a - administration action; p - administration penalty; f - formal violation; l - legal action

| <i>Facility Name</i> | <i>Date</i> | <i>Inspector</i> | <i>Reason</i> | <i>Enforcement Action*</i> | <i>Facility Closed</i> | <i>Comments</i> |
|------------------------------------|-------------|------------------|--------------------|----------------------------|------------------------|---|
| Henderlong Lewis Building | 07/28/2015 | Z. Wu | Routine Inspection | | No | Two shared trsh containers on site. JR stated that the |
| Heritage Paper | 07/21/2015 | Z. Wu | Routine Inspection | | No | Storm drains all have filter inlets installed and are mai |
| IMPORT AUTO TECH | 08/17/2015 | Zachary Wu | Routine Inspection | | No | Stormdrain was very clean. The area around the stor |
| InPhenix, Inc. | 08/26/2015 | John Roberts | Routine Inspection | | No | B- Outdoor Storage area is in process of being cleane |
| | 05/11/2016 | John Roberts | Routine Inspection | | No | B- Outdoor storage area is in process of being cleane |
| International Auto Service | 01/20/2016 | Blaine Drewes | Routine Inspection | | No | No storm system near facility. Trash are picked up da |
| Interstate Storage | 11/19/2015 | John Roberts | Routine Inspection | | No | C- covered trash enclosure; D-Covered RV, Boat, & a |
| John M Chan, DDS | 08/21/2015 | Zachary Wu | Routine Inspection | | No | Dumpster area clean. Lids shutParking lot swept as n |
| Joshua Soloman DDS, Inc | 12/16/2015 | John Roberts | Routine Inspection | | No | C- shared trash enclosure, clean; E- shared lot, clean |
| K.A.R. SERVICE | 04/20/2016 | Zachary Wu | Routine Inspection | | No | C- Covered trash area is cleaned daily; E- lot clean, s |
| Las Positas Shell | 08/27/2015 | Blaine Drewes | Routine Inspection | | No | Uncovered trash bin kept closed when not in use. Are |
| | 03/23/2016 | Blaine Drewes | Routine Inspection | v. | No | North eastern catch basin filled with leave and debris. |
| LAVTA | 04/04/2016 | Zachary Wu | Routine Inspection | | No | I. 2 storm drain inlets. 1st SDI located near fueling sta |
| Left Coast Diesel | 04/19/2016 | John Roberts | Routine Inspection | | No | C- Dumpster lids open; D- Trucks to be work on, park |
| Les Schwab Tire Center #647 | 06/02/2016 | Zachary Wu | Routine Inspection | | No | Dumpster area tidy, lids shutParking lot swept weekly |
| LIVERMORE AUTO & TIRE | 01/21/2016 | Blaine Drewes | Routine Inspection | | No | No work involving lizuids conducted. Area swept daily. |

Tuesday, August 09, 2016

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* v - verbal notice; w - warning notice; a - administration action; p - administration penalty; f - formal violation; l - legal action

| <i>Facility Name</i> | <i>Date</i> | <i>Inspector</i> | <i>Reason</i> | <i>Enforcement Action*</i> | <i>Facility Closed</i> | <i>Comments</i> |
|--|-------------|------------------|--------------------|----------------------------|------------------------|---|
| Livermore Auto Center | 04/28/2016 | John Roberts | Routine Inspection | | No | C- Trash lids closed; E- Lot swept reguarly |
| Livermore Auto Group | 01/12/2016 | John Roberts | Routine Inspection | v. | No | B- Covered parts storage areas; C- large uncovered |
| | 01/16/2016 | John Roberts | Routine Inspection | | No | C- shared trash enclosure; D- cars parked on lot; E- l |
| Livermore Car Wash | 12/09/2015 | J. Roberts | Routine Inspection | | No | C- Trash containers locked when not in use. Area cle |
| | 03/29/2016 | John Roberts | Routine Inspection | | No | B- Covered Storage Area; C- Trash containers locked |
| Livermore Chevron | 05/17/2016 | Zachary Wu | Routine Inspection | | No | Dumpster lids open, IU told to close, area tidyArea tid |
| Livermore Collision Center | 04/25/2016 | John Roberts | Routine Inspection | | No | B- Covered waste storage areas; E- Lot clean. |
| Livermore Gas & Shop | 06/07/2016 | Zachary Wu | Routine Inspection | v. | No | C- Covered trash enclosure. Recycle bins were not ke |
| Livermore Harley-Davidson/Buell | 09/28/2015 | Blaine Drewes | Routine Inspection | | No | Covered trash area cleaned weekly. Trash area was c |
| | 03/30/2016 | Blaine Drewes | Routine Inspection | | No | Covered trash area cleaned weekly. Trash area was c |
| Livermore Honda | 05/19/2016 | Blaine Drewes | Routine Inspection | | No | Covered trash areas picked up daily and swept weekl |
| Livermore Jaguar | 03/24/2016 | Blaine Drewes | Routine Inspection | | No | Swale looked healthy and efficient.Covered trash area |
| Livermore Mini Mart & Gas | 04/20/2016 | John Roberts | Routine Inspection | | No | C- Dumpster lids open; Business asked to keep lids c |
| LIVERMORE MUFFLER, Brake, & Hitch | 11/17/2015 | Zachary Wu | Routine Inspection | | No | Dumpster area tidy. Lids shut.Parking lot swept every |
| Livermore Pleasanton Fire Dept, 10 | 07/07/2015 | B. Drewes | Routine Inspection | | No | Vegitative swale present on east side of facility. Swal |
| Livermore Pleasanton Fire Dept, 6 | 07/07/2015 | B. Drewes | Routine Inspection | | No | Trash area picked up daily. Container kept closed. Tr |
| Livermore Pleasanton Fire Dept, 7 | | | | | | |

Tuesday, August 09, 2016

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* v - verbal notice; w - warning notice; a - administration action; p - administration penalty; f - formal violation; l - legal action

| <i>Facility Name</i> | <i>Date</i> | <i>Inspector</i> | <i>Reason</i> | <i>Enforcement Action*</i> | <i>Facility Closed</i> | <i>Comments</i> |
|-----------------------------------|-------------|------------------|--------------------|----------------------------|------------------------|--|
| Livermore Pleasanton Fire Dept, 8 | 07/07/2015 | B. Drewes | Routine Inspection | | No | Trash area picked up daily. Trash area was clean.Par |
| Livermore Police Department | 07/07/2015 | B. Drewes | Routine Inspection | | No | Covered trash area cleaned daily.Parking area picked |
| Livermore Sanitation | 07/30/2015 | Z. Wu | Routine Inspection | | No | Trash can area is covered and cleaned daily. Trash c |
| Livermore Subaru | 06/01/2016 | Zachary Wu | Routine Inspection | | No | Trash area tidy, dumpster lids shutGarbage trucks on |
| Longevity Wines | 05/19/2016 | Blaine Drewes | Routine Inspection | | No | Vegative swale present.Trash area picked up daily an |
| Machados Auto Care | 09/29/2015 | John Roberts | Routine Inspection | | No | C- Dumpster lids open; E- Lot clean. |
| Maintenance Service Center | 05/02/2016 | Zachary Wu | Routine Inspection | | No | Dumpster lids shut, area tidyParking lot tidy, swept w |
| Mid-Coast Transportation | 07/07/2015 | Z. Wu | Routine Inspection | | No | B. Material storage bays hold sand, gravel, rocks, and |
| | 09/18/2015 | Zachary Wu | Routine Inspection | | No | B- Material storage bays hold sand, gravel, rock, and |
| Mountain Cascade Inc. | 03/29/2016 | Zachary Wu | Routine Inspection | | No | B- Chemical storage area is covered and bermed; C- |
| MT Auto | 07/08/2015 | Z. Wu | Routine Inspection | | No | C. Large uncovered dumpster. D Lots of heavy equi |
| National Food Labs | 01/20/2016 | Blaine Drewes | Routine Inspection | | No | Dumpster lids closed when not in use. Area swept we |
| | 12/07/2015 | Zachary Wu | Routine Inspection | | No | Swales (3) surrounding the building collect surfacwe |
| Olsen's Automotive | 03/28/2016 | Zachary Wu | Routine Inspection | | No | 3 swales surround the building collect surface water. |
| | 01/25/2016 | Blaine Drewes | Routine Inspection | | No | Covered trash area cleaned twice weekly. Area was cl |
| Packaging Innovators Corp. | 11/19/2015 | Zachary Wu | Routine Inspection | | No | Catch basins have filter bags installed. Catch basins |
| Paramedics Plus | | | | | | |

| <i>Facility Name</i> | <i>Date</i> | <i>Inspector</i> | <i>Reason</i> | <i>Enforcement Action*</i> | <i>Facility Closed</i> | <i>Comments</i> |
|---|-------------|------------------|----------------------|----------------------------|------------------------|---|
| Peterson Automotive & Tire | 10/21/2015 | Zachary Wu | Routine Inspection | | No | Dumpster area tidy; Lids closed Parking lot swept wee |
| Pete's Speed Shop | 04/29/2016 | Zachary Wu | First Inspection | | No | Dumpster lids shut, area tidy Parking lot clean, swept |
| Piazza Rubino Market | 03/11/2016 | Blaine Drewes | First Inspection | | No | Trash area picked up daily. Area was clean. Parking a |
| Pleasanton Truck and Equipment Repair | 08/11/2015 | Braden Chistians | Routine Inspection | | No | B- Covered trash area is swept daily. Trash containe |
| | 07/13/2015 | B. Drewes | Routine Inspection | | No | Uncovered waste area is swept monththly and picked u |
| Portola Food & Gas | 05/31/2016 | Zachary Wu | Routine Inspection | | No | Trash area tidy, swept as needed Lot clean, swept as |
| Power Washing Services | 06/15/2016 | John Roberts | Routine Inspection | | No | Lids closed Lot clean |
| Pro Touch Paint Shop | 12/10/2015 | J. Roberts | Routine Inspection | | No | C- Dumpster lids open. Filters and oil waste stored on |
| Protein Research | 04/11/2016 | Zachary Wu | First Inspection | | No | Storm drains in parking lot shared with other business |
| Quentin Bammer/Moeller Bros/Norm's Towin | 09/15/2015 | Blaine Drewes | Routine Inspection | | No | Swales present at loading dock. Swale is healthy and |
| Quik Stop | 11/12/2015 | John Roberts | Routine Inspection | | No | C- Dumpster Lids Closed; D- Tow trucks parked on lo |
| | 12/18/2015 | Blaine Drewes | Routine Inspection | v. | No | Note 1- Diesel fuel spills noted. These are to be clea |
| Redline Autosports | 01/20/2016 | Blaine Drewes | Follow-up Inspection | | No | Covered trash area picked up daily and swept weekly. |
| RED'S LIVERMORE AUTO BODY | 05/04/2016 | Zachary Wu | First Inspection | | No | Dumpster lids tidy, area tidy Parking lot clean, swept |
| Refund Recycle Center | 01/25/2016 | Blaine Drewes | Routine Inspection | | No | Trash container kept closed when not in used. Area cl |
| Rite Aid Store #6456 | 09/30/2015 | John Roberts | First Inspection | v. | No | A- Covered bailers & compactors for cans & metal; B- |

| <i>Facility Name</i> | <i>Date</i> | <i>Inspector</i> | <i>Reason</i> | <i>Enforcement Action*</i> | <i>Facility Closed</i> | <i>Comments</i> |
|----------------------------------|-------------|------------------|--------------------|--------------------------------|----------------------------|---|
| Rotten Robbie | 09/23/2015 | John Roberts | Routine Inspection | | No | C- Covered trash enclosure clean; E- shared lot clean |
| Royal Restrooms | 01/20/2016 | Blaine Drewes | Routine Inspection | | No | Wale (rock/grassy) is present. Swal appeared healthy |
| RV Storage | 07/02/2015 | J. Roberts | Routine Inspection | | No | C. Dumpster lids closed. D. Trailers stored on lot. |
| | 06/07/2016 | John Roberts | Routine Inspection | | No | C- Dumpster lids closed, clean; D- Trailers stored on l |
| Ryan's Automotive Service | 09/29/2015 | John Roberts | Routine Inspection | | No | Boats and RVs stored on dirt lot. |
| Ryerson | 08/27/2015 | Zachary Wu | Routine Inspection | | No | Dumpster area ws clean, lids were closed |
| SAB Stanley Shell | 08/06/2015 | J. Roberts | First Inspection | | No | B- Pallets & Aluminum stored outside and metal chip |
| | 10/28/2015 | John Roberts | Routine Inspection | | No | C- Lids closed; E- Lot swept and clean |
| Safeway Fuel Station | 06/15/2016 | John Roberts | Routine Inspection | | No | C- Lids closed; E- Lot swept clean |
| Skips Automotive Service | 08/24/2015 | Zachary Wu | Routine Inspection | | No | Dumpset lid closed. Area around dumpster was clean |
| Sosa Marble & Granite | 08/25/2015 | Zachary Wu | Routine Inspection | | No | Dumpster area was clean, lid was closed. Waste oil, |
| Speedee Wash | 09/29/2015 | John Roberts | Routine Inspection | | No | B- Granite stored outside; C- Area clean; E- Area clea |
| Springtown Chevron | 09/30/2015 | John Roberts | Routine Inspection | | No | C- Dumpster lids closed and locked; E- Lot swept as |
| SPRINGTOWN UNION 76 | 04/07/2016 | Zachary Wu | Routine Inspection | | No | Covered wast area cleaned daily and locked when not |
| Sunbelt Rentals | 04/18/2016 | Zachary Wu | Routine Inspection | | No | Dumpster lids shut, area tidyParking lot swept weekly |
| Sutherland Distilling | 05/04/2016 | Zachary Wu | Routine Inspection | | No | D- Outdoor Vehicles & Heavy Equipment stored on p |

| <i>Facility Name</i> | <i>Date</i> | <i>Inspector</i> | <i>Reason</i> | <i>Enforcement Action*</i> | <i>Facility Closed</i> | <i>Comments</i> |
|---|-------------|------------------|--------------------|----------------------------|------------------------|--|
| Top Jimmy's Motorsports | 05/31/2016 | John Roberts | Routine Inspection | | No | C- Shared trash enclosure. Clean; E- Shared parking |
| Top of the Hill Performance Center | 04/11/2016 | Zachary Wu | First Inspection | | No | I- Stormdrains in parking lot shared with other busine |
| Triangle Coatings | 03/22/2016 | Blaine Drewes | Routine Inspection | | No | Trash area picked up daily and swept weekly.Parking |
| Triple S Metal | 10/07/2015 | Blaine Drewes | Routine Inspection | | No | Triangle Coating belongs to the Chemical Batch and |
| TRI-VALLEY AUTO BODY | 10/05/2015 | Blaine Drewes | Routine Inspection | | No | A- Process area drains to 2- 5,000 gallon tanks to set |
| Tri-Valley Car Care | 02/08/2016 | Zachary Wu | Routine Inspection | | No | Dumpster lids closed. Area tidy. Back of shop has scr |
| Turman Commerical Painters | 04/28/2016 | John Roberts | First Inspection | | No | C- Covered waste storage area; E- Lot clean |
| US Food Service (frmly Alliant FS) | 05/16/2016 | John Roberts | Routine Inspection | | No | B- Paint is dried outside under covered roof in 2nd co |
| USA MiniMart & Shell | 10/27/2015 | John Roberts | Routine Inspection | | No | B- Pallet storage behind building.Area Clean; C- Com |
| Valero Circle K | 02/08/2016 | Zachary Wu | Routine Inspection | | No | B- Dumpser lids were open. IU was instructed to clos |
| Vasco Road Chevron | 01/29/2016 | Blaine Drewes | Routine Inspection | | No | |
| Vasco Valero | 05/26/2016 | John Roberts | Routine Inspection | | No | C- Lids closed; E- Lot Swept daily; F- Covered wash r |
| Vintage Cars | 02/26/2016 | Blaine Drewes | Routine Inspection | | No | Trash containers kept closed and locked when not in |
| WBT | 03/17/2016 | Blaine Drewes | First Inspection | | No | Shared trash container. Area cleaned daily. Trash are |
| | 10/07/2015 | John Roberts | Routine Inspection | | No | C- Dumpster lids closed; D- Partial tow lot. Wrecked c |
| | 02/17/2016 | John Roberts | Routine Inspection | | No | C- Dumpster lids closed; D-Partial tow lot. Wrecked c |

| <i>Facility Name</i> | <i>Date</i> | <i>Inspector</i> | <i>Reason</i> | <i>Enforcement Action*</i> | <i>Facility Closed</i> | <i>Comments</i> |
|-----------------------------|-------------|------------------|--------------------|----------------------------|------------------------|--|
| Working Man Brewing Company | 09/15/2015 | Blaine Drewes | Routine Inspection | | No | Shared uncovered trash container kept closed when n |
| Yamaha Golf Cars of CA | 02/23/2016 | Zachary Wu | Routine Inspection | | No | B- Golf cars, parts, and batteries stored outside. Saw |

SECTION 5.0: ATTACHMENTS

Pollution Prevention



NAVIGATION

- Pollution Prevention Home
- Why Pollution Prevention?
- Resident's Guide to Pollution Prevention ▶
- Business Guide to Pollution Prevention
- Industrial Pretreatment Program
- Stormwater Management Program ▶
- Disposing of Unwanted Medications
- Keeping Litter Out of Waterways ▶
- Keeping Sewers Fat-Free

Pollution Prevention

Efforts to minimize or eliminate the discharge of certain pollutants at their source are warranted because wastewater treatment plants are not capable of removing those substances completely.

Exchange Your Mercury Thermometers

Mercury is toxic and can cause damage to the nervous system, brain, kidneys, liver and immune systems in humans and animals. Be mercury-free! Bring your mercury thermometers to the City of Livermore Water Reclamation Plant, Monday through Friday, 8 am to 4 pm, and exchange them for new mercury-free ones, at no cost to you! For more info call 960-8100.

Contact Us

Report Spills Or Illicit Discharges to The Water Resources Division
Monday - Friday 8 AM - 4 PM
960-8100
Outside Business Hours 960-8160



Municipality: City of Livermore, Water Resources Division/Source Control

Date: _____ Inspector(s): _____

I. Source of Discharge

1. Indicate the primary reason for conducting the investigation:
 Inspection Staff Routine Field Survey Public
 Public Services Maintenance Staff External Agency Referral
 LPPFD City of Livermore, *other: _____

2. Describe general location of incident and/or source of discharge : _____
 Industrial Business* Commercial Business* Residential Area Other: _____
*Provide Stormwater Facility Identification Number for Industrial & Commercial Facilities: _____
 *Enter Standard Industrial Classification Code for Industrial & Commercial Facilities: _____

3. Source Identified: Yes No If yes, Provide Contact Information of Person(s) causing/or responsible for discharge:
 Name: _____ Title: _____ Phone: _____

Mailing Address: _____

II. Discharge Summary

1. General type discharge : Illegal Dumping Illicit Connection Poor Management Practices

2. Check one of the following which best describes the specific pollutants/substances discharged:
 Paint Concrete cutting slurry/washwaters
 Concrete Industrial wastes (solvents, metals, corrosives, cooling tower blowdown, etc.)
 Food wastes Vehicle cleaning washwaters
 Construction debris Building/sidewalk washwaters
 Sediment, mud Other washwaters
 Yard wastes Automotive fluids (antifreeze, motor oil, fuels, etc.)
 Other (describe): _____

3. Describe frequency of discharge: Continuous Discharge Intermittent Discharge One time incident

III. Follow-up Activities

- 1a. Describe action to be taken by discharger: Discharge has been stopped Discharge cannot be stopped immediately
 1b. If discharge cannot be immediately stopped, describe the corrective actions that will be taken by the discharger: _____

2. Describe informational, educational, or BMP information distributed: _____

3. Describe enforcement action.
 None Administrative Action/Notice of Violation
 Verbal Notice Administrative Action with penalty and/or Cost Recovery
 Warning Notice Legal Action
 4. Comments: _____
 5. If necessary, attach additional notes, diagrams, or photographs. _____

| Date | Reason for Investigation | Location of Incident | Discharge Type | | | | | | | | | | | | | Discharge Stopped | Discharge Cannot be Stopped | Corrective Action Info Distributed | None | Verbal Notice | Warning Notice | Admin Action Notice | Admin Action Penalty | Legal Action | Additional Comments | Attachments | | | | | | | | | | | |
|--|--------------------------|----------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|-------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|---|---|--|
| | | | Source ID # | Frequency of Discharge | Illegal Dumping | Illicit Connection | Poor Mgmt Practices | Paint | Concrete | Construction Debris | Sediment Mud | Food Wastes | Yard Wastes | Industrial Waste | Concrete Cutting Slurry | | | | | | | | | | | | Veh Clean Washwaters | Bldg Sidewalk Washwaters | Other Washwaters | Sewage | Automotive Fluids | Other | Other Description | | | | |
| 08/12/2015 | | 398 West Jack L | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | One Time Incident | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ssmall amount of concreted spilled on road during accident involving Elite Ready Mix truck. Livermore Street sweeping cleaned | |
| 08/19/2015 | | 662 Heligan Lane | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | One Time Incident | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Spilled oil onto street. Put down absorbent, failed to clean. Citation with cost recovery totaling 253.22 | | |
| | | Public | | | | | | | One Time Incident | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Record Count for August 2015 = 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| September 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 09/04/2015 | | Public | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Illegal Dumping | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Stormwater BMPs | |
| Record Count for September 2015 = 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Date | Reason for Investigation | Location of Incident | Source ID # | Frequency of Discharge | Discharge Type | Illegal Dumping | Poor Mgmt Practices | Illicit Connection | Concrete | Construction Debris | Sediment Mud | Food Wastes | Yard Wastes | Industrial Waste | Concrete Cutting Slurry | Veh Clean Washwaters | Bldg Sidewalk Washwaters | Other Washwaters | Sewage | Automotive Fluids | Other | Other Description | Discharge Stopped | Discharge Cannot be Stopped | Corrective Action Info Distributed | Verbal Notice | Warning Notice | Admin Action Notice | Admin Action Penalty | Legal Action | Additional Comments | Attachments |
|------|--------------------------|----------------------|-------------|------------------------|----------------|-----------------|---------------------|--------------------|----------|---------------------|--------------|-------------|-------------|------------------|-------------------------|----------------------|--------------------------|------------------|--------|-------------------|-------|-------------------|-------------------|-----------------------------|------------------------------------|---------------|----------------|---------------------|----------------------|--------------|---------------------|-------------|
|------|--------------------------|----------------------|-------------|------------------------|----------------|-----------------|---------------------|--------------------|----------|---------------------|--------------|-------------|-------------|------------------|-------------------------|----------------------|--------------------------|------------------|--------|-------------------|-------|-------------------|-------------------|-----------------------------|------------------------------------|---------------|----------------|---------------------|----------------------|--------------|---------------------|-------------|

October 2015

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------|--------------------------------|-------------------|-------------------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|-------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|---|--------------------------|--|--|
| 10/26/2015 | | 1025 Alison Circl | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Poor Management P | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Small amount of slurry in street. Resident will sweep | | | |
| | Public | | | | | | | | One Time Incident | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/25/2015 | | 6643 Brookdale | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Poor Management P | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Must clean street by 11/2/2015 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Keeping It All In T | | |
| | Public Works Maintenance Staff | | | | | | | | One Time Incident | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/06/2015 | | 225 Mountain Vis | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Poor Management P | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Discharge due to fire fighting efforts by LPFD | |
| | | | | | | | | | One Time Incident | | | | | | | | | | | | | | | | | | | | | | | Fire Fighting FI | | | |

Record Count for October 2015 = 3

February 2016

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------|--------|------------------|--------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|-------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--|--|
| 02/08/2016 | | Sun Valley Mobil | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Poor Management P | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Sewer discharge to storm drain- NOV with cost recovery in the amount of \$2,660.96 | |
| | Public | | | | | | | | One Time Incident | | | | | | | | | | | | | | | | | | | | | | | Sewage | |

Record Count for February 2016 = 1

| Date | Reason for Investigation | Location of Incident | Discharge Type | | | | | | | | | | | | | Discharge Stopped | Discharge Cannot be Stopped | Corrective Action Info Distributed | None | Verbal Notice | Warning Notice | Admin Action Notice | Admin Action Penalty | Legal Action | Additional Comments | Attachments | | | | | | | | | | | | | | | | | | | | | |
|------------|--------------------------------|----------------------|--------------------------|-------------------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|-------------------|--|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|--|--|
| | | | Source ID # | Source ID YES | Other Source | Residential Area | Commercial Business | Industrial Business | Frequency of Discharge | Illegal Dumping | Illicit Connection | Poor Mgmt Practices | Paint | Concrete | Construction Debris | | | | | | | | | | | | Sediment Mud | Food Wastes | Yard Wastes | Industrial Waste | Concrete Cutting Slurry | Veh Clean Washwaters | Blde Sidewalk Washwaters | Other Washwaters | Sewage | Automotive Fluids | Other | Other Description | | | | | | | | | |
| 06/28/2016 | | Livermore Toyota | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | One Time Incident | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Livermore Toyota was unaware of detailers action and stopped washing immediately. | | | | | | | | | | |
| 06/28/2016 | City of Livermore, Other | The Venue Bary | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Poor Management P | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | One Time Incident | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sanitary lateral and cleanout piping must be repaired. | |
| | Public Works Maintenance Staff | | | | | | | | One Time Incident | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Record Count for June 2016 = 3

Total Reports: 19

SECTION 6.0: ATTACHMENTS

Summary
 [Sheet 2 of SCVURPPP Construction Site Inspection Tracking Excel Workbook]

| | A | B | C | D | E | F | G |
|----|---|----------------------------|-------------------------|------------------------------|---|----------------------------------|--------------|
| 1 | Number of Sites Disturbing less than 1 acre of soil requiring inspection (i.e. High Priority) (C.6.e.iii.1.a): | | | | | | |
| 2 | 11 | | | | | | |
| 3 | | | | | | | |
| 4 | Number of Sites Disturbing 1 acre of soil or more (C.6.e.iii.1.b): | | | | | | |
| 5 | 11 | | | | | | |
| 6 | | | | | | | |
| 7 | Total Number of Inspections Conducted (C.6.e.iii.1.c): | | | | | | |
| 8 | 70 | | | | | | |
| 9 | | | | | | | |
| 10 | Violations (C.6.e.iii.1.d) | | | | | | |
| 11 | Erosion Control | Run-on & Runoff | Sediment Control | Active Treatment | Good Site Management | Non-Stormwater Management | Total |
| 12 | 0 | 0 | 13 | 0 | 8 | 8 | 29 |
| 13 | 0% | 0% | 45% | 0% | 28% | 28% | |
| 14 | | | | | | | |
| 15 | Enforcement Actions (C.6.e.iii.1.e): | | | | | | |
| 16 | No Action | Verbal Warning | Written Warning | Administrative Action | Educational materials handed out | Stop Work Order | Total |
| 17 | 61 | 9 | 0 | 0 | 0 | 0 | 70 |
| 18 | 87% | 13% | 0% | 0% | 0% | 0% | |
| 19 | | | | | | | |
| 20 | Number of Illicit Discharges (C.6.e.iii.1.f): | | | | | | |
| 21 | 0 | | | | | | |
| 22 | | | | | | | |
| 23 | Number of Violations Corrected Within 10 Days (C.6.e.iii.1.h) | | | | | | |
| 24 | 7 | 88% | | | | | |
| 25 | | | | | | | |
| 26 | Number of Violations Corrected Within 30 Days (C.6.e.iii.1.i) | | | | | | |
| 27 | 1 | 13% | | | | | |

SECTION 9.0: ATTACHMENTS



COMMERCIAL SERVICES

Orkin Integrated Pest Management Program

Orkin Commercial Services understands your strict need for highly effective *and* environmentally responsible pest control. While other pest control companies may only respond to problems, we take a proactive approach to help keep pests out. Here's a summary of our proposed program, which can help you achieve pest management excellence:

Service: Interior and exterior¹ pest management in accordance with the principles of Integrated Pest Management (IPM). IPM is an environmentally responsible approach to pest management that relies on a combination of practices. By taking advantage of all pest management options, starting with non-chemical techniques, IPM programs proactively manage pests and help minimize any hazard to people, property or the environment.

Service Frequency: An Orkin Commercial Pest Specialist will service your location (checked):
x 1 time 2 times 3 times 4 times per day week **monthly service for 12 months**

Pest Coverage: Rats, mice, cockroaches, ants and occasional invaders (e.g., beetles, centipedes, slugs). Coverage excludes: flies, fire ants, pharaoh ants, carpenter ants, birds, bed bugs, termites and fumigation treatments. (Excluded pests can be serviced under separate contracts with unique guarantees and service protocols.)

Documentation: Written reports and recommendations will be provided and reviewed with the designated facility representative following each regular service visit. Additional copies will be filed at your local Orkin branch office.

Quality Assurance: Orkin's IPM program is backed by our Quality Assurance program, which guarantees the service you receive meets Orkin's high quality standards – and your own. A follow-up visit by your Orkin Account Manager will be scheduled within 60 days of your initial service. In addition, Orkin's Independent Pest and Termite Control Quality Assurance Department regularly audits the services provided by our branch locations to ensure they meet the Orkin standard.

Emergency Service: Included at no extra charge and guaranteed within 24 hours of your call to Orkin, 365 days per year.

Materials: All forms of monitor boards and product formulations, as required, are included.

Insurance: Orkin Commercial Services is fully insured with personal liability and property damage to a limit of \$10,000,000.

Triple Guarantee:

- **24-Hour Response Guarantee** – Your request will be responded to within 24 hours, 365 days per year.
- **Satisfaction Guarantee** – Total satisfaction or you don't pay. We'll pay the reasonable cost of initial service by another provider if you're still not satisfied after 60 days of service.
- **Reimbursement Guarantee**² – Should your company be fined by a regulatory agency due solely to a pest infestation, Orkin will reimburse you for any fines paid, up to \$50,000.

¹ Exterior coverage extends to property boundaries unless otherwise indicated.

² Your account must be current, under contract over 60 days, and your business must be compliant with sanitation and structural requests as noted on Orkin Service Reports.

Orkin Commercial Services understands your strict need for highly effective and environmentally responsible pest control. We take a proactive approach to help keep pests out. Here is a summary of our proposed program, which can help you achieve pest management excellence:

Services: Interior and exterior pest management in accordance with the principles of Integrated Pest Management (IPM). Including attention to the Stipulated Injunction ordered by the U.S. District Court for the Northern District of California, restricting the use of 75 pesticides in eight San Francisco Bay area counties to protect 11 federally listed threatened or endangered species. IPM is an environmentally responsible approach to pest management that relies on a combination of practices, starting with non-chemical techniques (minimizing any hazards to people, property, or the environment). Orkin will inspect the property and work with the designated property manager to investigate the source of the problem – and eliminate it – before applying pesticides by providing recommendations to address education, sanitation/maintenance, exclusion, and trapping where needed. This approach is in accordance with EcoWise, Greenshield, and GreenPro strategies for managing specific pests.

Pesticides: In the rare event that all other methods of pest control have been exhausted and a pesticide must be utilized to eliminate an infestation, pesticides that may be used are in accordance to the San Francisco Reduced Risk Pesticide List, Tier III (least toxic). A list of these pesticides is included below for your reference. All pesticides are applied according to the product label and any pertinent state and federal regulations. Pesticide products are the responsibility of Orkin and are not stored at any client location. At no time shall a pesticide be applied in a waterway or within 100 ft. of a waterway that may subject the waterway to become contaminated by drift or runoff.

Quality Assurance: Orkin's IPM program is backed by our Quality Assurance program, which guarantees the service you receive meets Orkin's high quality standards, GreenPro program standards – and your own. Our service specialists and operations management are licensed by the State of California Structural Pest Control Board. Orkin is certified under the Greenpro standard and is a gold member of the US EPA Pesticide Environmental Stewardship Program. Service specialists at our location are in the process of completing their individual Greenpro certifications at this time.

Documentation: Orkin will provide a copy of a Service Report at each service. This report will include all of the details of the service performed (actions taken, pesticides applied (if any), structural/maintenance/sanitation recommendations to address pest conducive conditions, etc.). We will also provide a quarterly summary of the pesticides used at the following service locations:

Livermore Public Library
1188 S. Livermore Ave.
Livermore, CA 94550

Livermore Police Department
1110 S. Livermore Ave.
Livermore, CA 94550

Livermore City Hall
1052 S. Livermore Ave
Livermore, CA 94550

Livermore Water Treatment Plant
101 W. Jack London Blvd.
Livermore, CA 94551

Fire Station #6
4550 East Ave.

Livermore, CA 94550

Livermore Airport
636 Terminal Circle
Livermore, CA 94551

Livermore Chamber of Commerce
2157 1st St.

Livermore, CA 94550

Fire Station #9

1919 Cordoba St.

Livermore, CA 94550

Springtown Library
998 Bluebell Dr.

Livermore, CA 94551

Old Public Library

1000 S. Livermore Ave.

Livermore, CA 94550

Maintenance Service Center

3500 Robertson Park Rd.

Livermore, CA 94550

City of Livermore

2388 2nd St.

Livermore, CA 94550

City of Livermore

725 Rincon Ave.

Livermore, CA 94550



Fire Station #7
951 Rincon Ave.
Livermore, CA 94550

Fire Station #8
5750 Scenic Ave.
Livermore, CA 94551

Fire Station #10
330 Airway Blvd.
Livermore, CA 94551

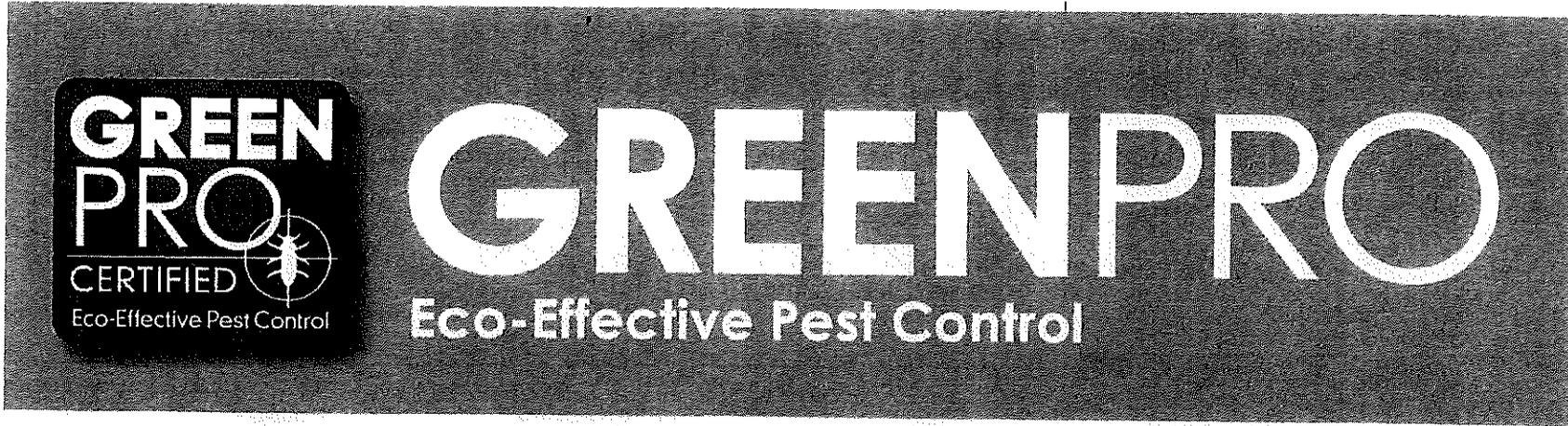
Council Chambers
3575 Pacific Ave.
Livermore, CA 94550

Multi Service Center
3311 Pacific Ave.
Livermore, CA 94550

Livermore Gateway Business
101 Pullman St.
Livermore, CA 94551

San Francisco Reduced Risk Pesticide List, Tier III

- **Dupont Advion Ant Bait Arena**, Indoxacarb 0.1%, EPA: 352-664
- **Dupont Advion Ant Gel**, Indoxacarb 0.05%, EPA: 352-746
- **Dupont Advion Cockroach Bait Arena**, Indoxacarb 0.5%, EPA: 352-668
- **Dupont Advion Cockroach Gel Bait**, Indoxacarb 0.6%, EPA: 352-652
- **Prentiss EcoExempt G**, Eugenol (clove oil) 2.9%, EPA: exempt
- **Wellmark Gentrol Point Source Roach Control Device**, Hydroprene 96%, EPA: 2724-469
- **Bayer Maxforce FC Professional Insect Control Roach Killer Bait Gel**, Fipronil 0.01%, EPA: 432-1259
- **Nisus Niban Granular Bait**, Boric Acid 5%, EPA: 64405-2
- **Victor Poison Free Flying Insect Killer**, Mint Oil 4.0%, Sodium Lauryl Sulfate 0.1%, EPA: exempt
- **Victor Poison Free Wasp and Hornet Killer**, Mint Oil 8.0%, Sodium Lauryl sulfate 1.0%, EPA: exempt
- **Zoecon Gentrol IGR Concentrate**, Hydroprene 9%, EPA: 2724-351



Presenting this certificate of excellence to

Orkin Pest Control

in acknowledgment of your continuing efforts toward professional excellence and environmental awareness in the pest management industry. You have met the GreenPro testing requirements for eco-effective pest control.


official signature



EXHIBIT A
SCOPE OF SERVICES

PEST CONTROL SERVICES

CONTRACTOR shall perform pest control with related products and services at various City facilities. Contractor shall perform pest control services for interior and exterior pest management in accordance with the principles of Integrated Pest Management (IPM) and attention to the Stipulated Injunction ordered by the U.S. District Court for the Northern District of California, restricting the use of 75 pesticides in eight San Francisco Bay area counties to protect 11 federally listed threatened or endangered species. Service means the inspection and treatment of various interior and exterior City facilities to help control and prevent targeted pests and ancillary pests as described in the rates.

Common Pest Control includes but is not limited to placement of exterior bait stations, interior bait stations, glue traps, multi catch traps, spray building perimeters for insects and spiders, and use of a spray truck on the whole water resources plant quarterly.

Contractor Personnel Onsite:

All Contractor personnel shall wear a uniform with proper identification whenever working in or around any City facility. Contractor personnel shall establish and submit to the Project Manager a schedule of services to be performed at each facility monthly, unless noted otherwise, and schedule all visits prior to providing services. Contractor personnel shall check in with City staff before performing services to receive an update on any issues that may have come up since the last routine service. All work must be scheduled during Business Hours: Monday to Friday 8:00 AM to 5:00 PM.

Inspections:

The Contractor must perform a thorough inspection during routine service. Contractor personnel shall provide the City with a copy of the inspection report within one week of service in order to report any issues that may be addressed by the City prior to the next scheduled service (i.e. trim vegetation away from building, install door sweeps, etc.).

All pest control services shall be performed in accordance with Federal, State and Local rules and regulations. Any and all chemicals used during the service must be approved for its intended use, and applied in a manner consistent with the regulations established by the State of California Department of Pesticide Regulation and consistent with Federal and Cal OSHA standards.

Invoices:

Consultant shall invoice City no more than once monthly for work hours completed during the previous month. Invoices shall include the following level of detail: contract number; invoice period; detailed description of work completed including location and

EXHIBIT A
SCOPE OF SERVICES

date of work; hours worked by employee; name of consultant's staff and their respective rate; invoice total for period as well as subtotal and contract remaining balance.

Annual and Quarterly Reports:

Consultant shall provide City with quarterly and annual reports of total quantities and types of pesticide active ingredients used at City facilities for each period, explain any increases in use of reported pesticides, and provide a brief description of two IPM tactics or strategies implemented at City sites. Reports will be for the following periods due 30 days after the last day of the period.

- Quarterly Reports:
 - July 1st to September 30th
 - October 1st to December 31st
 - January 1st to March 31st
 - April 1st to June 30th
- Annual Report
 - July 1st to June 30th

Quarterly and Annual reports shall summarize total quantity of pesticide active ingredient used at City sites by reporting period for each active ingredient as follows:

- Organophosphates (summarize by product or pesticide Type A or Type B),
- Pyrethroids (summarize by product or pesticide Type X or Type Y),
- Carbamates (summarize by product or pesticide Type S or Type Y),
- Fipronil (summarize by product or pesticide Type X or Type Y),
- Indoxacarb,
- Diuron,
- Diamides.

CITY FACILITY DETAILS

Water Buildings at 101 Jack London Blvd:

Pest control services at this location include occupied and unoccupied buildings. Regular weekly service for occupied buildings shall receive normal pest control service. Regular weekly service for unoccupied buildings shall include services for insects and spiders only. Additional services may be requested for ancillary onsite unoccupied buildings at additional cost as described in the rates.

Regular Weekly Services at Water:

- Admin/Main Building (occupied)
- Laboratory Building (occupied)
- Water Building (occupied)

EXHIBIT A
SCOPE OF SERVICES

- Maintenance Building (occupied)
- RO Building (occupied)
- Tertiary Building (occupied)
- Digester building (not occupied)

Ancillary Onsite Unoccupied Services at Wafer.

- LAMMA Pump Station
- Oil Storage Building (next to Maintenance Building)
- Storage Facilities (on-site)
- UV Disinfection Facility (on-site)
- Solids Handling Building (on-site)

Service Rates DRAFT

| Facility | Address | NJPA Pricing per minute | NJPA Pricing August 2016 | Service |
|-------------------------|---|-------------------------|--------------------------|----------------|
| 1. Rincon Library | 725 Rincon Avenue Livermore, CA 94550 | \$1.50 | \$75.00 | Once per Month |
| 2. Springtown Library | 998 Bluebell Avenue Livermore, CA 94550 | \$1.50 | \$45.00 | Once per Month |
| 3. Civic Center Library | 1188 S. Livermore Avenue Livermore, CA 94550 | \$1.50 | \$120.00 | Once per Month |
| 4. Council Chambers | 3575 Pacific Avenue Livermore, CA 94550 | \$1.50 | \$60.00 | Once per Month |
| 5. Public Works | 3500 Robertson Park Rd. Livermore, CA 94550 | \$1.50 | \$150.00 | Once per Month |
| 6. Police | 1110 S. Livermore Avenue Livermore, CA 94550 | \$1.50 | \$112.50 | Once per Month |
| 7. City Hall | 1052 S. Livermore Avenue Livermore, CA 94550 | \$1.50 | \$75.00 | Once per Month |
| 8. Fire Stations | 4450 East Avenue Livermore, CA 94550 | \$1.50 | \$75.00 | Once per Month |
| | 951 Ricon Avenue Livermore, CA 94550 | \$1.50 | \$60.00 | Once per Month |
| | 5750 Scenic Avenue Livermore, CA 94550 | \$1.50 | \$60.00 | Once per Month |
| | 1919 Cordorba Street Livermore, CA 94550 | \$1.50 | \$80.00 | Once per Month |
| | 330 Airway Boulevard Livermore, CA 94550 | \$1.50 | \$72.00 | Once per Month |
| 9. Old Library | 1000 S. Livermore Avenue Livermore, CA 94550 | \$1.50 | \$82.50 | Once per Month |

EXHIBIT A
SCOPE OF SERVICES

| | | | | |
|--------------------|--|---------|----------|-------------------|
| 10. Parking Garage | 2350 Railroad Avenue Livermore, CA 94550 | \$1.50 | \$60.00 | Every other Month |
| 11. MSC | 3311 Pacific Avenue Livermore, CA 94550 | \$1.50 | \$60.00 | Once per Month |
| 12. Water | 101 West Jack London Blvd Livermore, CA 94551 | \$1.50 | \$60.00 | Weekly Service |
| 13. Airport | 680 Terminal Circle Livermore, CA 94551 | \$1.50 | \$127.50 | Once per Month |
| Documentation | Quarterly Reports (Pesticide) | 4 QTRS. | \$300.00 | |
| Documentation | Annual Report (Pesticide) | Final | \$75.00 | |

Pests Included

Ants: Excluding Carpenter; Pharaoh; Raspberry; Crazy & Fire Ants

Bees: Orkin will knock down nests up to 8 feet high should lift equipment be needed, there will be additional costs to cure;

Birds: nests will be knocked down up to 8 feet high provided the nest does not belong to a protected species; should other control methods such as Netting, Spikes Eagle Eyes, Wire, or Gel be necessary, there will be additional costs to cure;

Commensal Rodents: rats & mice;

Occasional Invaders: beetles; pillbugs; centipedes; earwigs; slugs
Spiders: excluding Black Widow & Brown Recluse;

Stored Product Pests: included provided the infestation is local and can be treated with sanitation, vacuuming and pheromone traps; if the infestation is widespread & fumigation and/or fogging is necessary there will be additional costs to cure;

Ancillary Pests - Additional Cost to Cure

Bed Bugs: \$100.00/hour + materials
Flies:TBD

Mosquito Service: \$100.00/hour + materials
Termite Eradication: TBD

Wildlife Control: \$275.00/service, Minimum 2 services

Excluded pests can be serviced under separate contracts with unique guarantees and service protocols.

SECTION 10.0: ATTACHMENTS





Stormwater Trash Reduction Plan

September 2016



Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS



City of Livermore
Department of Public Works

Updated
Stormwater Trash Reduction Plan
for
City of Livermore, California



September 22, 2016

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

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1. Introduction

This report is to provide a multi-year plan to reduce trash entering channels within the City of Livermore from the municipal separate stormwater system (MS4), with the goal of meeting trash reduction requirements as outlined in the Regional Water Quality Control Board (RWQCB) NPDES Municipal Permit section C.10.

The NPDES permit includes the following deadlines for trash reduction milestones (items in grey have been completed):

- Progress report detailing whether baseline trash load and trash load reduction tracking method are being determined individually or collaboratively due by February 1, 2011. Compliance obtained by BASMAA letter entitled *Progress Report: Trash Baseline Loads and Load Reduction Tracking – MRP Provision C.10.a(ii)*.
- Short-term trash reduction load plan due by February 1, 2012. Compliance obtained by City of Livermore *Baseline Trash Load and Short-Term Trash Load Reduction Plan*.
- Establish baseline trash load and trash load reduction tracking method by February 1, 2012. Compliance obtained by BASMAA reports: *Trash Load Reduction Tracking Method Technical Report* and *Preliminary Baseline Trash Generation Rated for San Francisco Bay Area MS4s Technical Memorandum*.
- Installation of full trash capture devices (meeting NPDES criteria for mesh screen and capacity) treating a minimum of 20 acres runoff area by July 1, 2014. Compliance obtained through inlet filters.
- Long-Term Trash Load Reduction Plan due by February 1, 2014. Compliance obtained by the City of Livermore *Trash Long-Term Reduction Plan and Progress Assessment Strategy*.
- 40% reduction in baseline trash load by July 1, 2014. Short term trash reduction compliance has been obtained as described in the *Baseline Trash Load and Short-Term Trash Load Reduction Plan* by City of Livermore dated 2/1/2012.
- 60% reduction in baseline trash load performance guideline for July 1, 2016.
- 70% reduction in baseline trash load by July 1, 2017.
- 80% reduction in baseline trash load by July 1, 2019.
- 100% reduction in baseline trash load by July 1, 2022 (long term trash reduction).

This Stormwater Trash Reduction Plan (Plan) has been designed to guide compliance with both the 2017 and 2022 trash reduction deadlines. The Plan includes a schedule for implementation, a description of proposed control measures and proposed best management practices (BMPs). This Plan supplements the Trash Long-Term Reduction Plan and Progress Assessment Strategy developed by the City to meet the NPDES deadline of February 2, 2014. This Stormwater Trash Reduction Plan is intended to provide detailed guidance on how the reduction goals will be obtained through the installation of full trash capture devices. The Plan provides the City with a 'road map' to follow between now and 2022 to meet the NPDES trash reduction requirements.

1.1 Changes from Last Draft

The following is a list of changes made since the final draft of this report dated October 2014:

- Update to the 2015 Municipal Regional Permit
- 10% credit for single-use plastic bags and polystyrene bans
- 0% credit for creek clean-ups
- Revisions to generation map, including:
 - Updated methodology regarding generation rates and categories
 - Updated downtown TMA
 - Removal of non-jurisdictional schools
 - Updated Trash Management Areas

2. Trash Generation and Management Areas

2.1 Trash Generation

Trash generation rates are based on land use, income level and visual assessment. The City of Livermore, with Bay Area Stormwater Management Agencies Association (BASMAA), has developed trash generation rates and categories for all land within the City limits.

2.1.1 BASMAA Baseline Trash Generation Rates

Generation rates published by BASMAA in the June 20, 2014 final technical report *San Francisco Bay Area Stormwater Trash Generation Rates* and updates to Trash Generation Rates released in July 2016 were used to develop a range based on land use and are summarized in Table 1. Updates changed rates to weighted acres, with one weighted acre roughly equating to 7.5 gallons per acre, per year. Generation rate represents the amount of trash littered, not necessarily the amount that washes into the storm drain after street sweeping.

Table 1: San Francisco Bay Area Trash Generation Rates by Land Use

| Land Use | Rate (Weighted Acres) | Rate (gallons/acre/year) |
|---------------------------|-----------------------|--------------------------|
| Commercial & Services | 1 | 7.5 |
| Industrial | 1 | 7.5 |
| Residential | 0-4 | 0.0 – 30.0 |
| Retail | 1-4 | 7.5 - 30.0 |
| K-12 Schools | 0 | 0.0 |
| Urban Parks | 1 | 5.0 |
| Transportation (Highways) | 12 | 90.0 |

2.1.2 Livermore Trash Generation Rates

The City of Livermore developed a Preliminary Generation Trash Load based on the generation rates in Table 1, land-use and effective loading area. Activities already undergone by the City to reduce trash in the Municipal Separate Storm Sewer System (MS4) were tabulated and used to create the Preliminary Baseline Trash Load. Activities previously counted towards a reduction in baseline have been updated to zero per the City and regional change in methodology towards jurisdictional credits.

Table 2: Baseline Trash Load for the City of Livermore

| Category | Annual Load (gallons) |
|--|-----------------------|
| Preliminary Generation Trash Load | 39,023 |
| Load Removed via Baseline Street Sweeping | 0 |
| Load Removed via Baseline Storm Drain Inlet Maintenance (5% of generation) | 0 |
| Load Removed via Baseline Stormwater Pump Station Maintenance | 0 |
| Preliminary Trash Baseline Load | 39,023 |

2.3 Trash Management

The City is tasked with removing trash which can make its way to the creeks and ultimately to the San Francisco Bay via the City's MS4. BASMAA has developed a number of means by which to track the reduction in trash load, both quantitatively and qualitatively.

2.3.1 Implemented Enhanced Trash Management

The City has created ordinances and enhanced control measures to reduce the volume of trash making it into the waterways annually. Estimated reduction percentages for the ordinance bans on plastic bags and polystyrene foam are based on new guidance provided by the RWQCB for the MRP2.0. 169 West Coast Storm connector pipe screen inlet filters were installed by the City in 2012 capturing over 430 acres to meet the 2014 40% trash baseline reduction goal. The calculated trash load reduction is based on updated generation rates from Table 1 and watershed delineations for each of the existing inlet filters. See Figures 1-3 for existing treatment device watersheds and trash generation levels. Media filters, inlet filters, tree well filters and hydrodynamic separators installed by private properties to meet the MRP 2.0 Section C.3 for post-construction stormwater quality are also considered full trash capture and included in Table 3 and detailed in Appendix A. The reduction in trash provided by these devices is tabulated below.

The City has also implemented currently non-quantifiable trash reduction measures. These include public education and outreach, activities to reduce trash from uncovered loads, anti-littering and illegal dumping enforcement activities, on-land clean-up and creek cleanups.

Table 3 is a summary of the quantifiable trash management measures implemented at the time of this updated Plan.

Table 3: Implemented Enhanced Trash Control Measures

| Trash Control Measure | Estimated Reduction % | Trash Load Reduced (gal/year) | Cumulative Estimated Reduction % (Compared to Baseline) |
|--|-----------------------|-------------------------------|---|
| Single-Use Carryout Plastic Bag Ordinance | 5 | 1,951 | 5 |
| Polystyrene Foam Food Service Ware ban | 5 | 1,951 | 10 |
| City Owned Full-Capture Treatment Devices (169 inlet filters)* | 7.9 | 3,091 | 17.9 |
| Private Full-Capture Treatment Devices** | 2.6 | 1,021 | 20.5 |
| Creek/Channel/Shoreline Cleanups*** | 0 | 0 | 20.5 |
| Total | | 8,014 | 20.5% |

*Value differs from the Baseline Trash Load and Short-Term Trash Load Reduction Plan due to detailed device catchment analysis completed by Schaaf & Wheeler and revised with new generation rates.

**Devices installed on private property to meet C.3 Water Quality Treatment requirements which also meet full-trash capture.

***Credit is no longer being taken for creek cleanups.

In order to reach the 2017 goal of 70% reduction, the City must capture an additional 19,302 gallons of trash per year (49%) over the baseline in Table 3. To obtain 100% reduction in baseline, Livermore must capture an additional 31,009 gallons per year (79%) over the baseline in Table 3.

2.3.2 Existing Full Trash Capture Devices

Trash management areas (TMA) are defined in the City’s *Trash Long-Term Reduction Plan and Progress Assessment Strategy* based on geographical distribution of trash generating areas, types of trash sources, and current or planned control measure locations. Refer to the City’s Long-Term Reduction Plan for detailed explanation and delineation.

The City has installed 169 West Coast Storm Connector Pipe Screen Inlet Filters. Below is a summary of the existing City owned full trash capture device locations and capture rate within the trash management areas.

Table 4: Existing City Owned Full Trash Capture Devices

| TMA | Trash Load Reduction (gal/year) | Number of Existing Inlet Filters | | | |
|--------------|---------------------------------|----------------------------------|-----------|-----------|-----------|
| | | Very High | High | Medium | Low |
| 1 | 19 | | 1 | | |
| 1C | 473 | 1 | 16 | 3 | 9 |
| 1I | 463 | 1 | 8 | 3 | 14 |
| 1R | 115 | | 5 | 1 | 4 |
| 2C | 33 | | 1 | 1 | 8 |
| 2I | 6 | | | | 2 |
| 2R | 325 | | 3 | 2 | |
| 3R | 878 | | 5 | 4 | 1 |
| 4 | 370 | | 2 | 2 | 3 |
| 17 | 409 | | 7 | 1 | 42 |
| Total | 3,091 | 12 | 56 | 17 | 83 |

The City has required private developments to install water quality treatment measures to meet section C.3 of the MRP. Some of those devices also meet the requirements of section C.10 full trash capture. These devices include media filters, hydrodynamic separators, tree well filters and inlet filters. Some private sites include Low Impact Development measures which have been counted as full trash capture. The private properties cover approximately 123 acres of the City and capture 1,021 gallons of trash per year (2.6%) in addition to the volume captured by the City owned devices. The capture volumes are based on the generation rates developed by the City for each parcel based on land use. Details regarding these private parcels are included in Appendix A.



Figure 1: Existing City Owned Trash Capture Device Watersheds – City Northwest

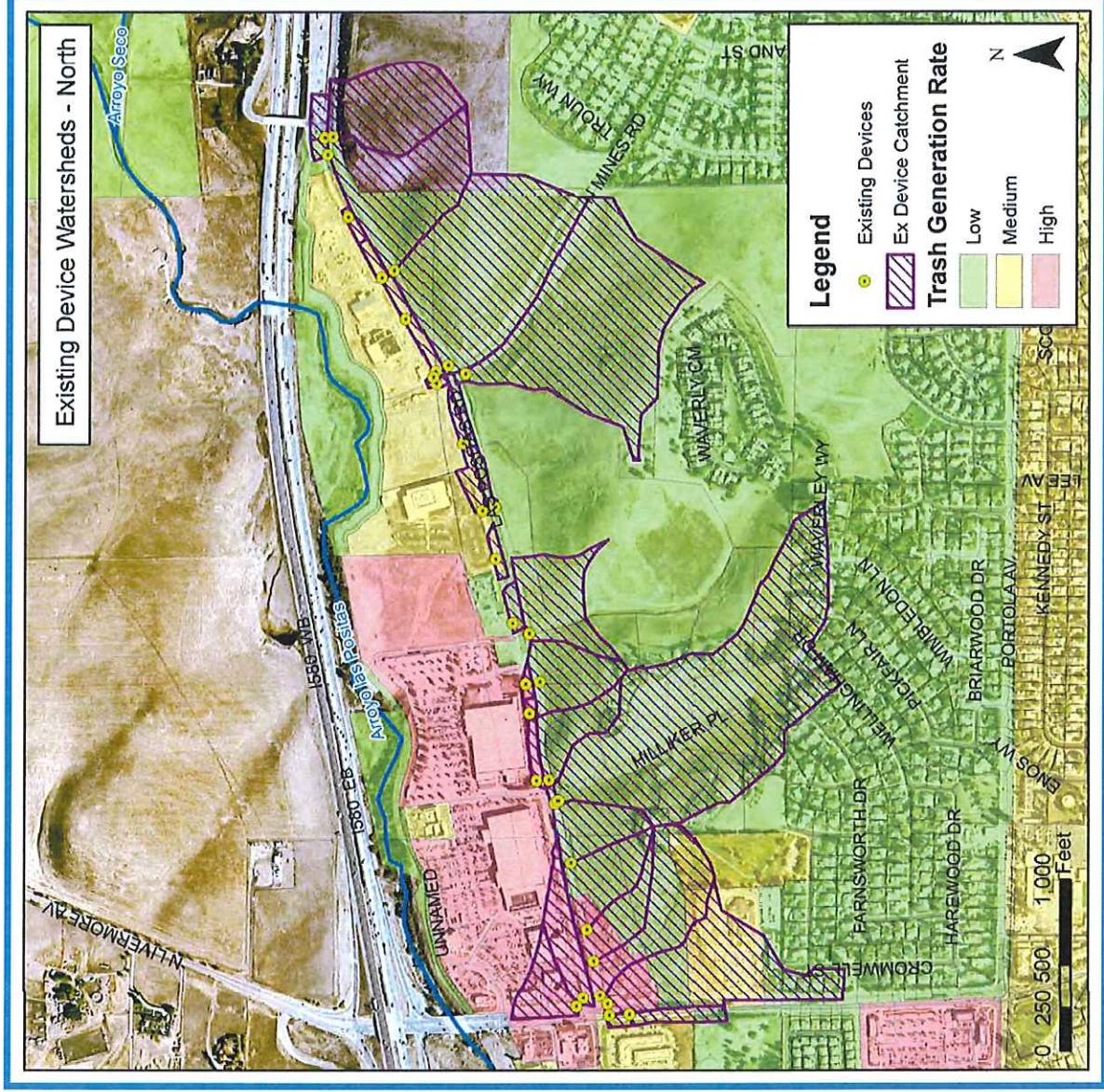


Figure 2: Existing City Owned Trash Capture Device Watersheds – City North

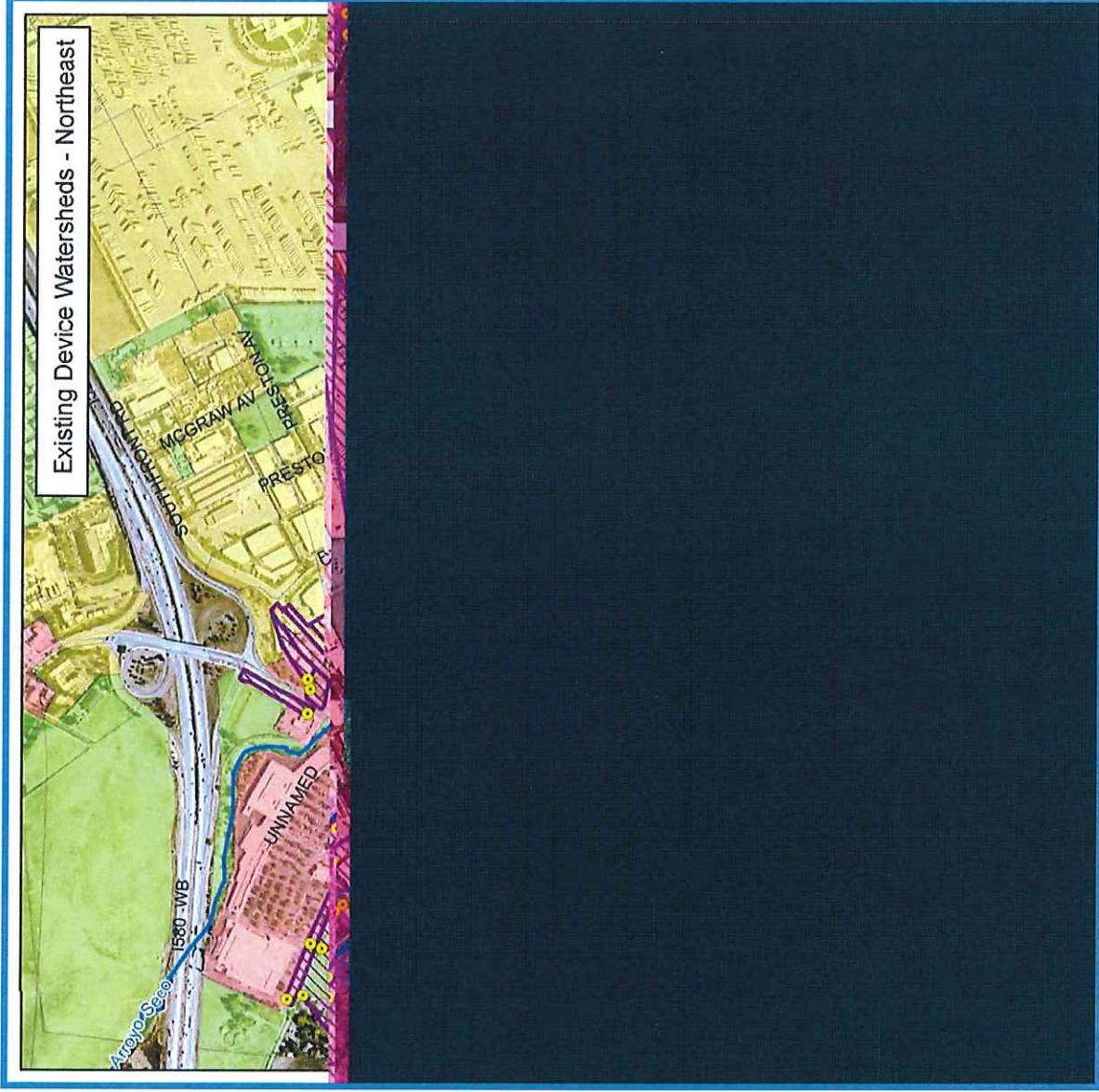


Figure 3: Existing City Owned Trash Capture Device Watersheds – City Northeast

3. Trash Capture Plan – No Additional Ordinances

3.1 Capital Improvement Projects

In order to meet the 2017 and 2022 reduction goals, the City may install additional full trash capture devices. There are a variety of devices available to meet these goals:

1. Catch basin inlet filters
2. End of pipe netting or structures serving an entire drainage network
3. Inline netting or structures on a storm drain trunk line

When selecting a device it is important to consider drainage area, hydraulic losses across the system when full, permitting requirements in open channels, device maintenance and access, property rights and utility clearance. All of these factors should be weighed against the device, installation and maintenance costs to ensure maximum capture volume per dollar spent.

It is important to recognize that much of the City of Livermore drains directly into the creeks (Figure 5), without first entering the MS4. This includes some industrial, commercial and high density residential properties. These areas could be managed through privately owned and maintained full trash capture devices. Continued creek cleanups and educational outreach to the public may also reduce the trash from entering the waterways from these Sites.

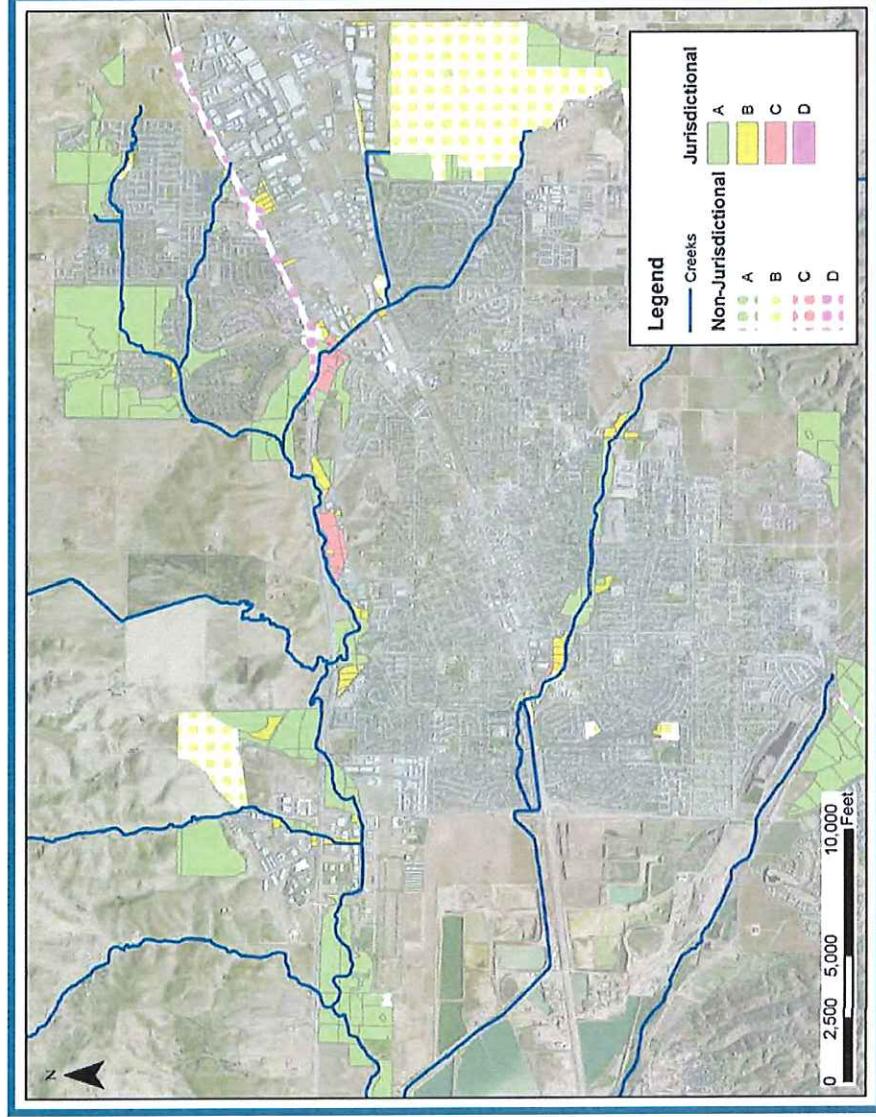


Figure 5: Trash Generation not to Livermore MS4.

3.1.1.1 Device Locations

The following procedure was used to determine optimal treatment device types and locations:

1. Identify high generation areas based on Livermore’s *Baseline Trash Load*.
2. Define the inlets that intercept the high generation areas and delineate catchments. Where there are many inlets which drain to a common outfall consider a large treatment device along the trunk line. Large system scale devices were not considered in drainage basins which have existing City owned inlet filters.
3. Calculate treatment rate of each device. Consider only devices which obtain a capture rate of at least 20 gallons/year.
4. “Ground Truth”: Only consider devices which treat a real development (i.e. do not treat open space, vacant parcels, etc.)
5. To the greatest extent practicable, do not consider devices in areas heavily impacted by flooding based on the SDMP. If necessary, consider off-line treatment.
6. Group devices based on location to streamline maintenance.

In order to meet the 70% reduction goal by the year 2017, the City may install nine (9) new off-line large scale trash capture devices and six (6) new inlet filters. These devices will capture the trash flowing through the existing pipe network from the dense commercial and retail areas, mostly in downtown Livermore, before it is conveyed to Arroyo Mocho or Arroyo Las Positas and will result in 20,275 gallons captured per year. A portion of the total reduction is from Non-Jurisdictional areas, as shown in Table 5.

See Appendix D for detailed conceptual layouts of each large-scale device location and Appendix C for a full size map of proposed devices and their drainage areas.

Table 5: 70% Goal Planned Full Trash Capture Devices

| TMA | Jurisdictional Reduction (gal/year) | Non-Jurisdictional Reduction (gal/year) | Area Treated (acres) | Number of Planned Inlet Filters | Number of Planned Large Trash Capture Devices |
|------------|-------------------------------------|---|----------------------|---------------------------------|---|
| 1 | 4,366 | 404 | 862 | | 1 |
| 4 | 6,138 | 706 | 1,101 | 1 | 4 |
| 6 | 928 | 0 | 63 | 2 | 1 |
| 8 | 3,710 | 26 | 244 | | 1 |
| 11 | 408 | 0 | 54 | | 1 |
| 12 | 464 | 0 | 29 | 3 | |
| 17 | 2,670 | 344 | 517 | | 1 |
| Sum | 18,683 | 1,592 | 2,887 | 6 | 9 |

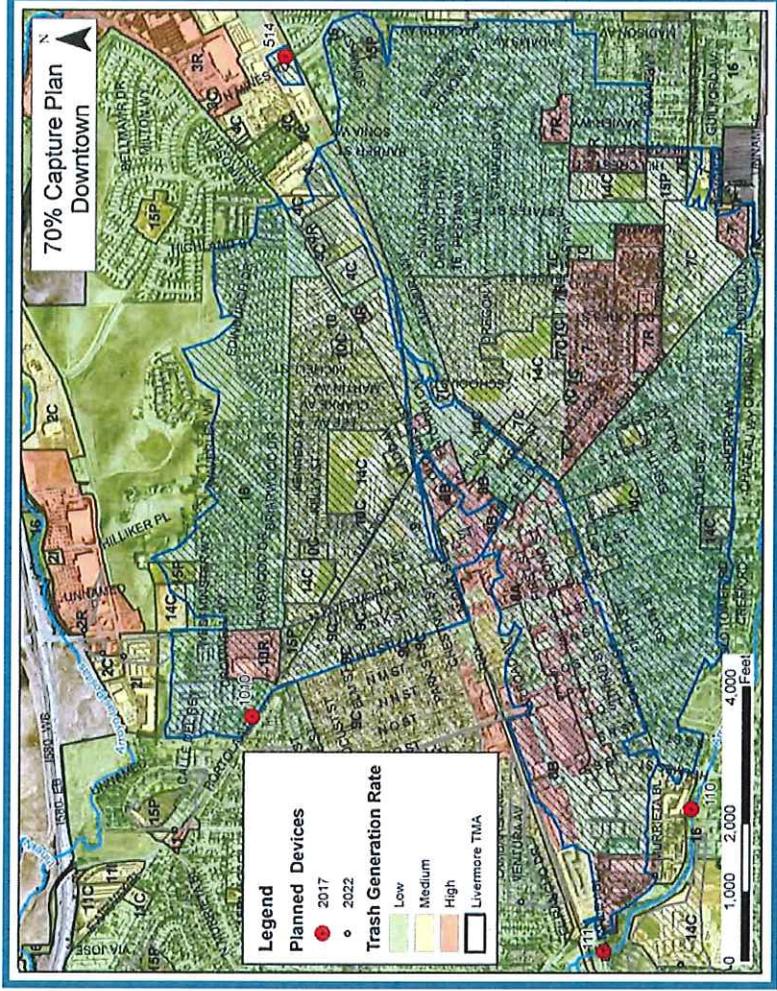


Figure 6: 70% Goal Proposed Full Capture Device Locations - Downtown

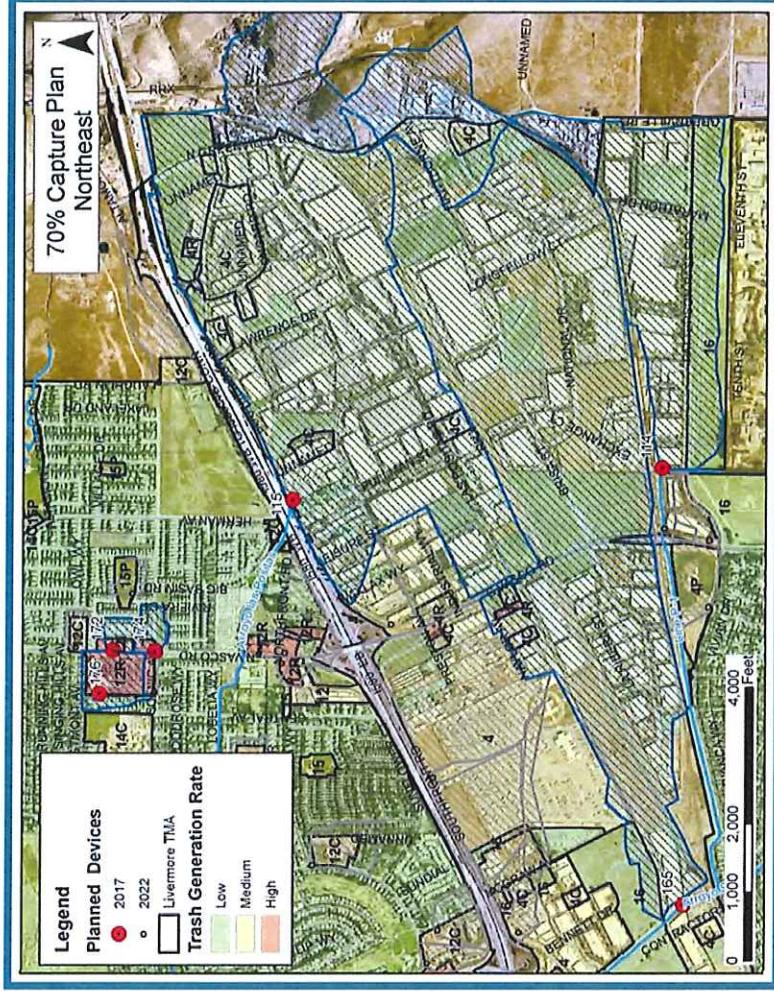


Figure 7: 70% Goal Proposed Full Capture Device Locations -- Northeast

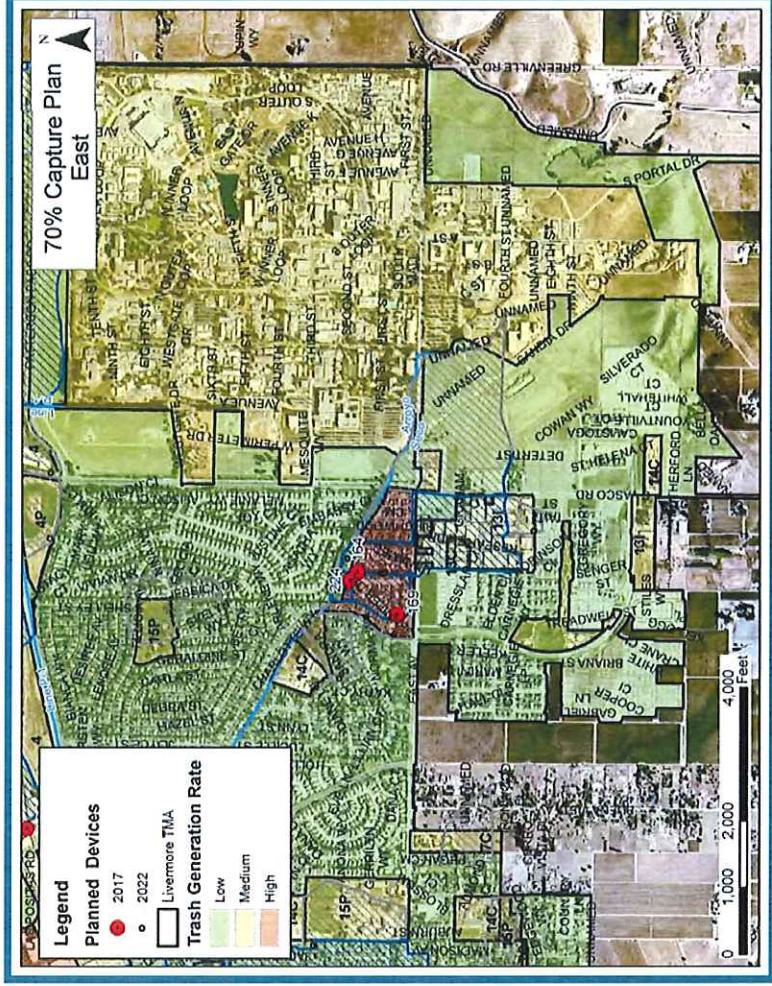


Figure 8: 70% Goal Proposed Full Capture Device Locations – East

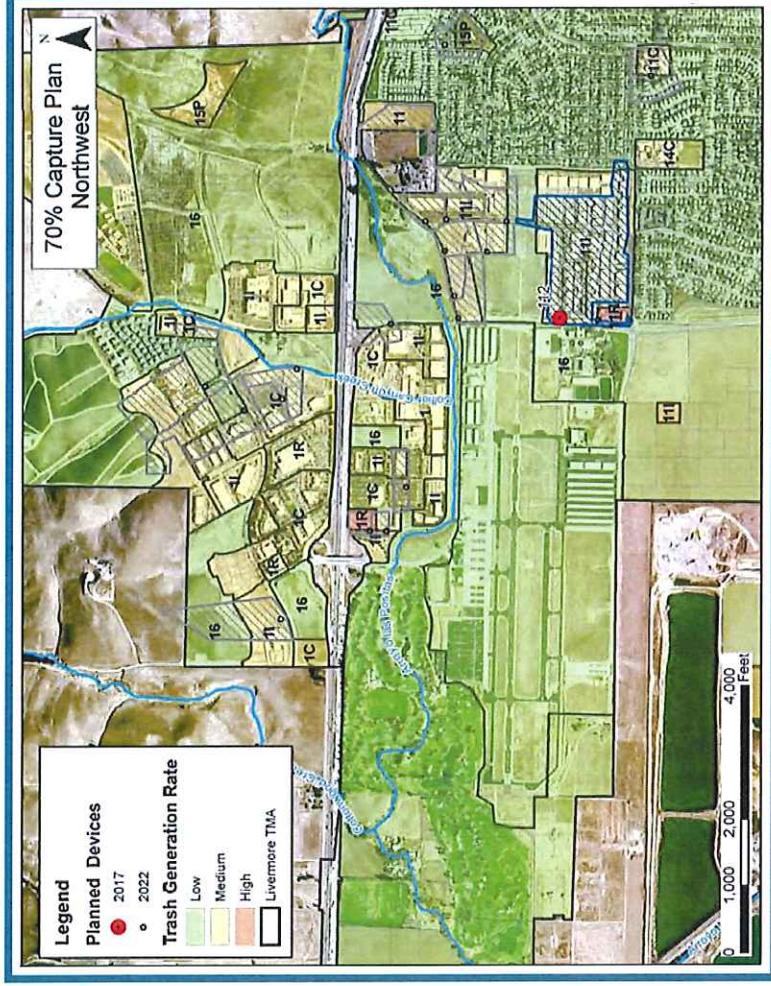


Figure 9: 70% Goal Proposed Full Capture Device Locations – Northwest

To reduce trash in the waterways a minimum additional 10,734 gallons per year over the proposed 70% devices to achieve 100% reduction in the baseline, a combination of new inlet filters and large scale in-line and off-line systems may be installed.

Through implementation of the devices listed in Table 6, the 100% trash capture goal can be achieved.

Table 6: 100% Goal Planned Public Full Trash Capture Devices

| TMA | Jurisdictional Reduction (gal/year) | Non-Jurisdictional Reduction (gal/year) | Area Treated (acres) | Number of Planned Inlet Filters | Number of Planned Large Trash Capture Devices |
|------------|-------------------------------------|---|----------------------|---------------------------------|---|
| 1 | 319 | 287 | 51 | 7 | |
| 2 | 138 | 0 | 10 | 3 | |
| 4 | 1450 | 318 | 229 | 5 | 3 |
| 5 | 293 | 51 | 10 | 1 | |
| 6 | 165 | 0 | 7 | 2 | |
| 8 | 36 | 0 | 2 | 1 | |
| 9 | 701 | 22 | 94 | 7 | |
| 11 | 577 | 4 | 105 | 13 | |
| 12 | 725 | 372 | 118 | 15 | |
| 13 | 40 | 0 | 8 | 1 | |
| 14 | 245 | 0 | 46 | 3 | |
| 15 | 104 | 328 | 97 | 5 | |
| 16 | 1265 | 115 | 336 | 18 | |
| 17 | 2954 | 274 | 330 | 2 | 3 |
| Sum | 9,013 | 1,769 | 1,443 | 83 | 6 |

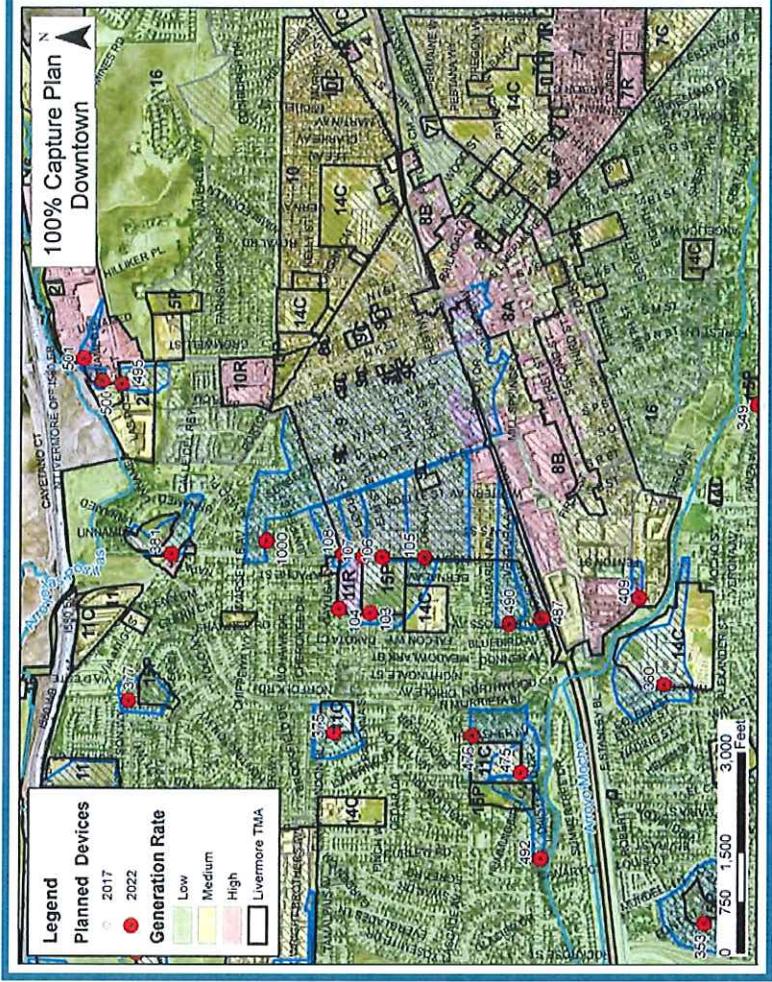


Figure 10: 100% Goal Proposed Full Capture Device Locations – Downtown

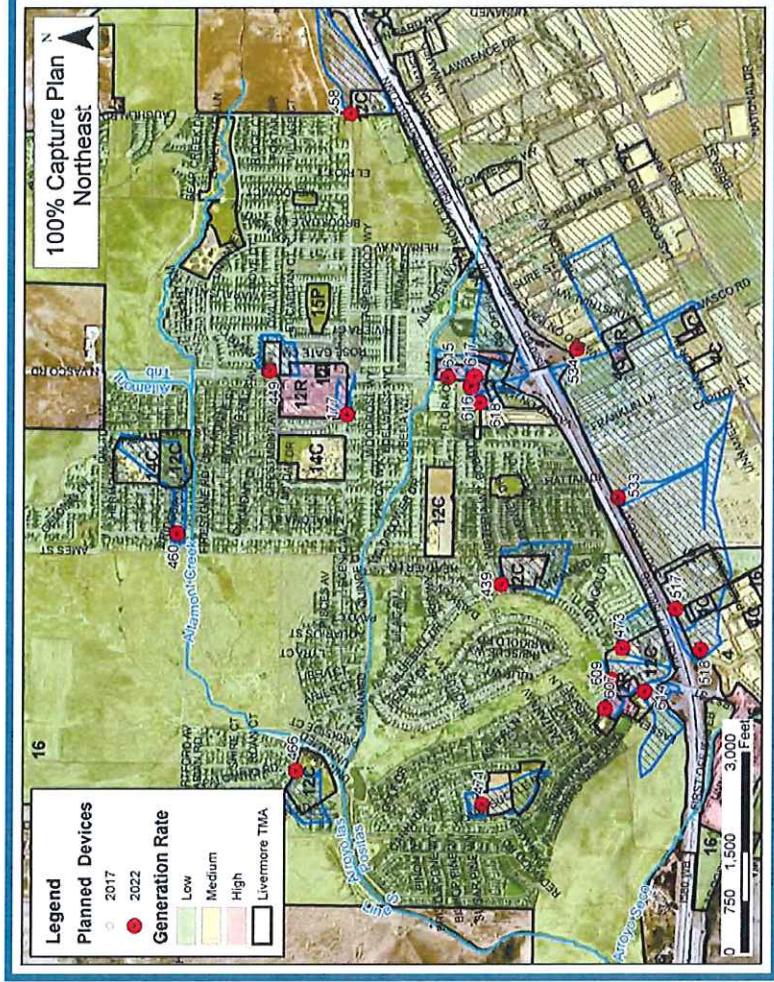


Figure 11: 100% Goal Proposed Full Capture Device Locations – Northeast

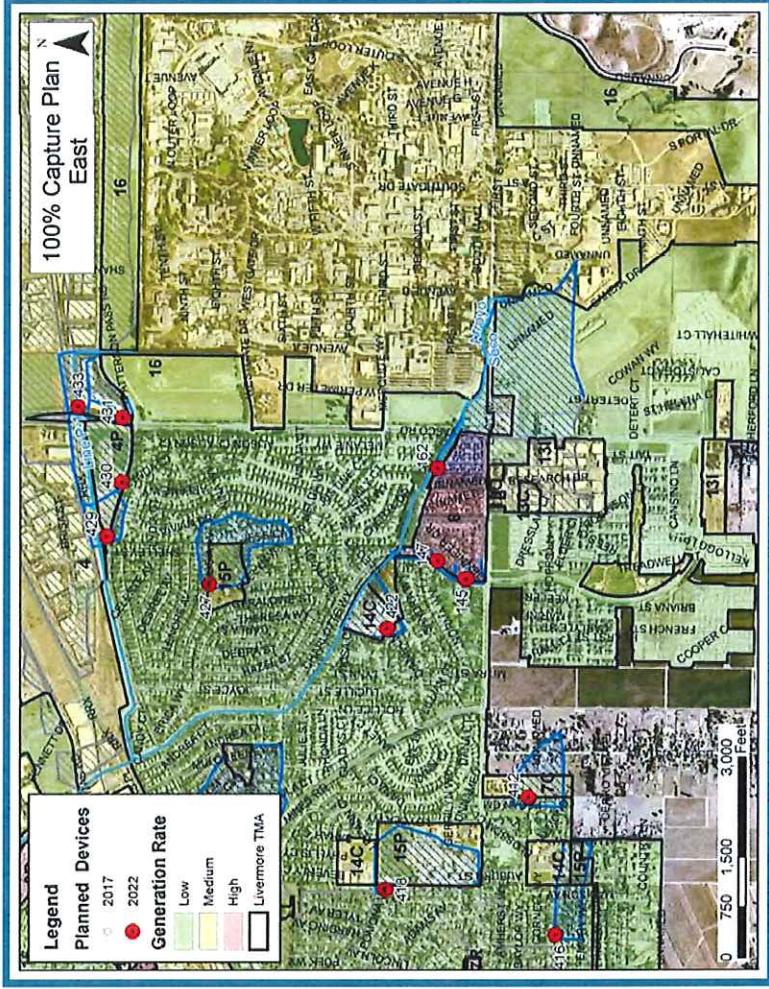


Figure 12: 100% Goal Proposed Full Capture Device Locations – East

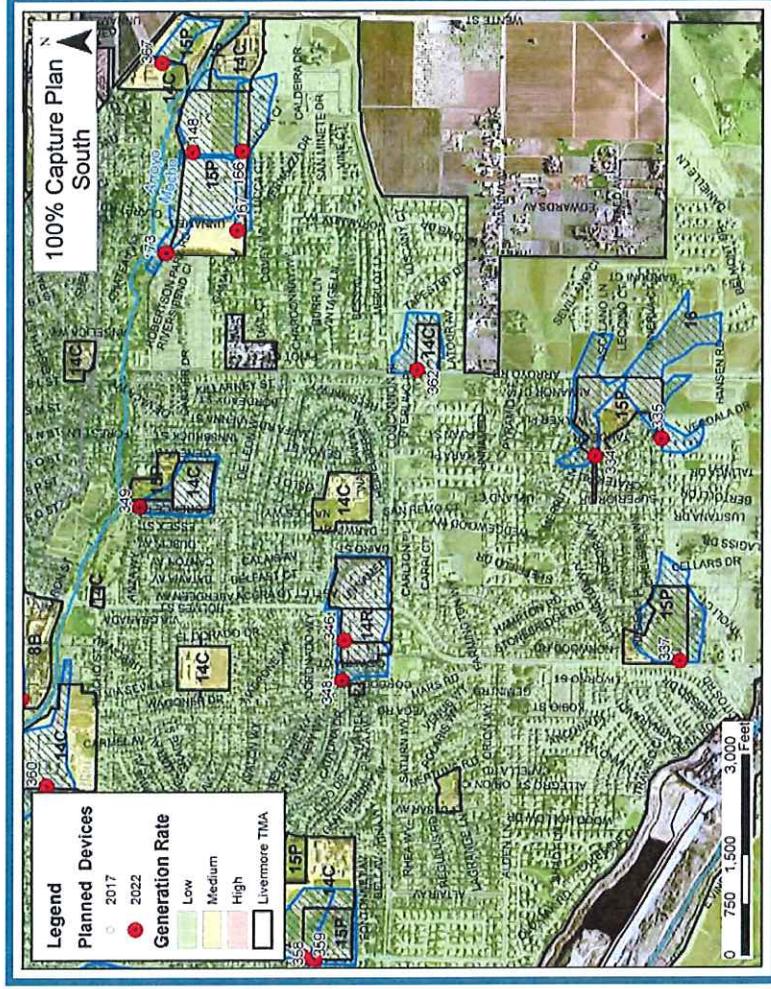


Figure 13: 100% Goal Proposed Full Capture Device Locations – South

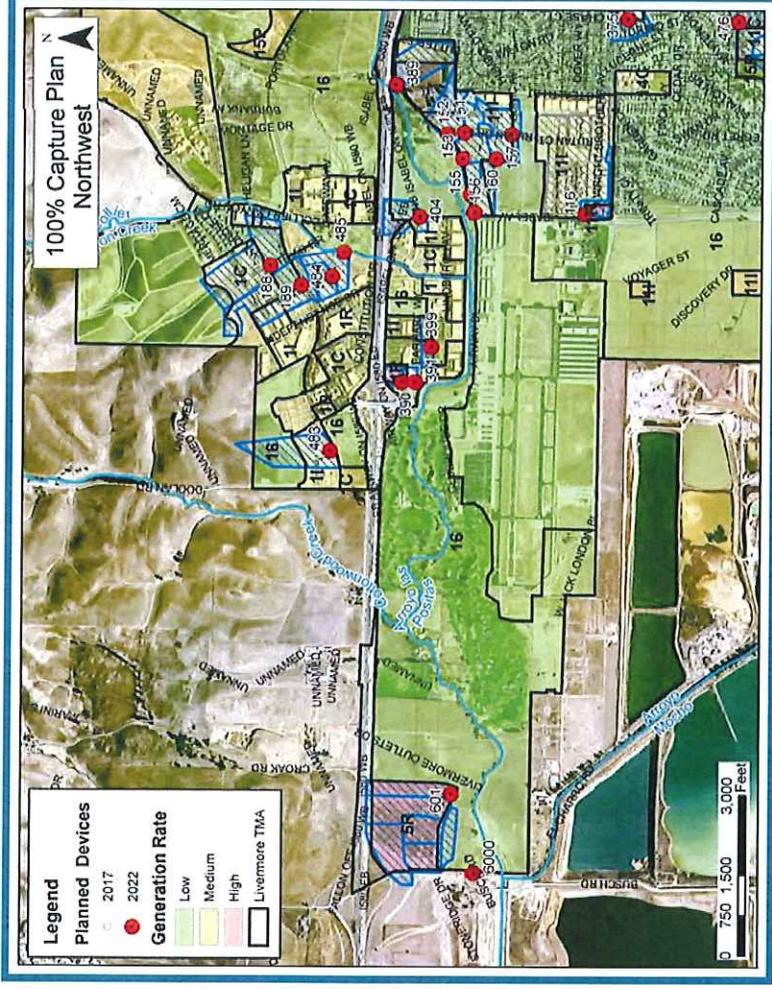


Figure 14: 100% Goal Proposed Full Capture Device Locations – Northwest

3.1.2 System Hydraulics

Due to flooding as indicated in the City’s Storm Drain Master Plan, it is imperative that the installation of the new in-line and outfall trash capture devices consider the potential loss in head across the structure when full or partially full with trash. It may be necessary to install the large scale devices off-line from the main trunk with a diversion structure to re-direct the treatment flow rate. This also has the advantage of optimizing the treatment devices since they will not have to have the overflow capacity equal to the capacity of the existing storm drain line.

Catch basin inlet filters capture trash before it enters the City system thereby not significantly impacting the hydraulics of the system as a whole. However, localized ponding can occur at individual inlets during rain events if the inserts are not routinely maintained. All capture devices must be cleaned and maintained at least two times a year based on manufacturer’s recommendations and frequency of storm events.

3.1.3 Device Options

The Regional Water Quality Control Board has produced a list of approved full trash capture devices (updated May 2014) which may be used to comply with the NPDES permit. Full trash capture devices must trap all particles retained by a 5 mm mesh screen and have a design treatment capacity of not less than the peak flow rate resulting from a one-year, one-hour storm event per the MRP Section C.10.a.iii. The Regional Water Quality Control Board has been utilizing a storm intensity of 0.5 inches per hour for smaller drainage basins and 0.2 inches per hour for larger basins where there are tailwater and flooding constraints to determine the treatment rate. For drainage areas larger than 50 acres, a storm intensity of

0.2 inches per hour is used to calculate runoff in this study. Smaller areas use the NOAA ATLAS 14 average 1-year, 1-hour intensity of 0.31 inches per hour. Note: flow rates may be more accurate for large drainage areas when using the hydrograph method in place of the rational method and result in smaller treatment rates. Hydrograph methodology should be utilized during detailed design where possible. Runoff coefficients were taken from the City of Livermore Facilities Planning Guidelines dated August 1995 Table 3-3 based on land use.

Table 7: Runoff Coefficients for Device Sizing

| Land Use | Runoff Coefficient (C) |
|---|------------------------|
| Commercial/Retail | 0.95 |
| Light Industrial | 0.80 |
| Residential - Rural | 0.40 |
| Residential – Low Density | 0.50 |
| Residential – Medium Density | 0.60 |
| Residential – High Density | 0.70 |
| Residential/Commercial Mixed Use | 0.75 |
| K-12 Schools | 0.60 |
| Urban Parks | 0.35 |
| Agriculture/Rangeland/Urban Open | 0.30 |
| State Facilities/Utilities/Transportation | 0.90 |

3.2 Cost Estimates

The following assumptions were made in determining construction costs for each proposed device:

- For large scale full capture devices, the device cost varies based on treatment rates based on data provided by Contech and BioClean;
- Catch basin inlet filters were assumed to be for 24" x 36" inlets and cost \$500 each;
- Installation costs for full-scale devices are assumed to be 2 times the cost of the device plus any diversion structures;
- Installation costs for inlet filters are assumed to be 1 times the cost of the device;
- The devices are located in areas which do not require major utility relocation, property or easement acquisition or environmental permitting;
- The 50% contingency includes 20% design costs and administration and 30% construction contingencies;
- Large scale devices were assumed to have a lifetime of 50-years while inlet filters were assumed to be replaced every 25 years;
- Estimates include an inflation rate of 2.54% and a discount rate of 6.25%;
- Total Base Cost is presented in the construction year dollars and includes installation, diversion structure and the device. It does not include maintenance or device replacement.

For cleaning, replacement and maintenance, the following assumptions were made:

- Large scale devices are cleaned twice a year, requiring 1 hour of a team of two maintenance workers at \$111.97/hour and a vacuum truck at \$254.12/hour;
- Inlet filters are cleaned two times a year, requiring 15 minutes of a team of two maintenance workers and vacuum truck;

For more detailed costs estimates, including lifetime costs at present value, refer to Appendix B.

3.3 Schedule for Implementation

In order to meet the 2017 goal, 9 large scale and 6 inlet filter devices should be installed in the spring of 2017. Devices should be constructed before July 1, 2017.

To meet the 2022 goal, 83 trash inlet filters and 6 large scale devices should be installed on the public MS4 system. For estimating purposes, the devices were phased over the course of four years from 2018 to 2020. Device installation can vary based on available funds, provided that all are in place by July 1, 2022.

Table 8: 2017 70% Reduction Goal Cost Estimate

| ID | Device Type | Acres | Load Reduction (gal/yr) | Treatment Q (cfs) | Device Cost | Diversion Structure Cost | Installation Cost | Yearly Maintenance Cost | Construction Year | Total Base Cost |
|------------------------|-------------|-------|-------------------------|-------------------|-------------|--------------------------|-------------------|-------------------------|-------------------|-----------------|
| 110 | Off-Line | 862 | 4,770 | 97.4 | \$282,653 | \$20,000 | \$605,306 | \$956 | 2016 | \$907,960 |
| 111 | Off-Line | 244 | 3,733 | 39.0 | \$113,056 | \$18,000 | \$262,111 | \$956 | 2016 | \$393,170 |
| 112 | In-Line | 54 | 408 | 8.5 | \$40,256 | | \$80,512 | \$956 | 2016 | \$120,770 |
| 114 | Off-Line | 157 | 708 | 18.9 | \$64,984 | \$16,500 | \$162,969 | \$956 | 2016 | \$244,450 |
| 115-1 | Off-Line | 157 | 1,007 | 23.3 | \$65,669 | \$16,500 | \$164,338 | \$956 | 2016 | \$246,510 |
| 115-2 | In-Line | 315 | 1,845 | 46.2 | \$134,030 | | \$268,061 | \$956 | 2016 | \$402,090 |
| 164 | In-Line | 49 | 553 | 10.6 | \$53,580 | | \$107,161 | \$956 | 2016 | \$160,740 |
| 165 | Off-Line | 469 | 2,819 | 66.2 | \$165,600 | \$18,000 | \$367,200 | \$956 | 2016 | \$550,800 |
| 169 | Inlet | 12 | 345 | 1.9 | \$500 | | \$500 | \$239 | 2016 | \$1,000 |
| 172 | Inlet | 5.3 | 44 | 1.3 | \$500 | | \$500 | \$239 | 2016 | \$1,000 |
| 174 | Inlet | 6.4 | 39 | 1.3 | \$500 | | \$500 | \$239 | 2016 | \$1,000 |
| 176 | Inlet | 17 | 381 | 4.4 | \$500 | | \$500 | \$239 | 2016 | \$1,000 |
| 224 | Inlet | 2.7 | 30 | 0.3 | \$500 | | \$500 | \$239 | 2016 | \$1,000 |
| 514 | Inlet | 4.0 | 28 | 1.0 | \$500 | | \$500 | \$239 | 2016 | \$1,000 |
| 1010 | Off-line | 517 | 3,014 | 62.4 | \$157,500 | \$18,000 | \$351,000 | \$956 | 2016 | \$526,500 |
| Subtotal | | | | | | | | | | \$3,559,000 |
| 50% Contingency | | | | | | | | | | \$1,779,500 |
| Total | | | | | | | | | | \$5,338,500 |

Note: All estimates presented in year 2016 dollars.

Table 9: 2022 100% Reduction Goal Cost Estimate

| ID | Device Type | Acres | Load Reduction (gal/yr) | Treatment Q (cfs) | Device Cost | Diversion Structure Cost | Installation Cost | Yearly Maintenance Cost | Construction Year | Total Base Cost |
|-----|-------------|-------|-------------------------|-------------------|-------------|--------------------------|-------------------|-------------------------|-------------------|-----------------|
| 104 | Inlet | 6.3 | 185 | 1.8 | \$500 | | \$500 | \$251 | 2018 | \$1,050 |
| 105 | Inlet | 30.5 | 225 | 5.1 | \$500 | | \$500 | \$251 | 2018 | \$1,050 |
| 106 | Inlet | 15.9 | 119 | 2.7 | \$500 | | \$500 | \$251 | 2018 | \$1,050 |
| 107 | Inlet | 7.2 | 55 | 1.2 | \$500 | | \$500 | \$251 | 2018 | \$1,050 |
| 108 | Inlet | 8.4 | 41 | 1.4 | \$500 | | \$500 | \$251 | 2018 | \$1,050 |
| 116 | Inlet | 5.0 | 90 | 1.3 | \$500 | | \$500 | \$251 | 2018 | \$1,050 |
| 145 | Inlet | 2.7 | 70 | 0.5 | \$500 | | \$500 | \$251 | 2018 | \$1,050 |
| 147 | Inlet | 4.5 | 96 | 0.7 | \$500 | | \$500 | \$251 | 2018 | \$1,050 |
| 148 | Inlet | 21.8 | 154 | 2.8 | \$500 | | \$500 | \$251 | 2018 | \$1,050 |
| 151 | Inlet | 5.8 | 44 | 1.4 | \$500 | | \$500 | \$251 | 2018 | \$1,050 |
| 152 | Inlet | 6.7 | 46 | 1.6 | \$500 | | \$500 | \$251 | 2018 | \$1,050 |
| 153 | Inlet | 6.8 | 47 | 1.6 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 155 | Inlet | 4.1 | 27 | 0.9 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 156 | Inlet | 7.8 | 33 | 1.4 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 157 | Inlet | 8.8 | 47 | 1.8 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 160 | Inlet | 6.1 | 35 | 1.3 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 162 | In-Line | 85.0 | 389 | 7.2 | \$37,371 | \$14,000 | \$102,743 | \$1,031 | 2019 | \$165,850 |
| 166 | Inlet | 11.3 | 33 | 1.6 | \$500 | | \$500 | \$251 | 2018 | \$1,050 |
| 167 | Inlet | 5.7 | 30 | 0.7 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 173 | Inlet | 24.2 | 141 | 2.5 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 177 | Inlet | 3.1 | 63 | 0.8 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 188 | Inlet | 31.6 | 145 | 6.9 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 189 | Inlet | 26.3 | 148 | 6.1 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 334 | Inlet | 18.9 | 78 | 2.2 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |

| ID | Device Type | Acres | Load Reduction (gal/yr) | Treatment Q (cfs) | Device Cost | Diversion Structure Cost | Installation Cost | Yearly Maintenance Cost | Construction Year | Total Base Cost |
|-----|-------------|-------|-------------------------|-------------------|-------------|--------------------------|-------------------|-------------------------|-------------------|-----------------|
| 335 | Inlet | 30.8 | 54 | 3.4 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 337 | Inlet | 25.9 | 119 | 3 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 346 | Inlet | 24 | 168 | 7 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 348 | Inlet | 9.7 | 34 | 2.47 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 349 | Inlet | 15.8 | 78 | 2.6 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 352 | Inlet | 27.5 | 65 | 4.8 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 353 | Inlet | 31.8 | 55 | 4.5 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 358 | Inlet | 13.7 | 85 | 1.8 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 359 | Inlet | 13.0 | 87 | 2.1 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 360 | Inlet | 32.0 | 155 | 5.7 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 362 | Inlet | 12.5 | 42 | 3.2 | \$500 | | \$500 | \$258 | 2019 | \$1,080 |
| 367 | Inlet | 6.7 | 50 | 0.8 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 375 | Inlet | 11.0 | 32 | 2.3 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 377 | Inlet | 8.5 | 31 | 1.1 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 381 | Inlet | 10.3 | 41 | 2 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 389 | Inlet | 8.7 | 68 | 2.5 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 390 | Inlet | 2.6 | 70 | 0.75 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 391 | Inlet | 2.0 | 25 | 0.57 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 399 | Inlet | 4.9 | 36 | 1.31 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 404 | Inlet | 9.7 | 304 | 1.87 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 409 | Inlet | 2.1 | 36 | 0.4 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 412 | Inlet | 7.6 | 40 | 1.9 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 416 | Inlet | 13.7 | 41 | 2.02 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 418 | Inlet | 25.5 | 188 | 2.79 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 421 | Inlet | 33.3 | 31 | 5.80 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 422 | Inlet | 11.7 | 80 | 2 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 427 | Inlet | 21.6 | 57 | 2.95 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 429 | Inlet | 7.9 | 30 | 1.1 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 430 | Inlet | 21.7 | 138 | 2.9 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 431 | Inlet | 7.7 | 53 | 1.8 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 433 | Inlet | 8.1 | 60 | 2.1 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 439 | Inlet | 15.0 | 47 | 3.4 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 448 | Inlet | 9.9 | 53 | 1.7 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 449 | Inlet | 6.8 | 37 | 1.5 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 458 | Inlet | 4.7 | 34 | 1.3 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 460 | Inlet | 14.6 | 79 | 2.2 | \$500 | | \$500 | \$264 | 2020 | \$1,100 |
| 466 | Inlet | 8.3 | 40 | 1.1 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 471 | Inlet | 9.9 | 58 | 1.9 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 473 | Inlet | 10.7 | 47 | 2.8 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 475 | Inlet | 8.3 | 32 | 1.8 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 476 | Inlet | 15.2 | 40 | 3.4 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 483 | Inlet | 18.6 | 68 | 3.1 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 484 | Inlet | 6.1 | 46 | 1.8 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 485 | Inlet | 7.5 | 57 | 2.2 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 487 | Inlet | 12.1 | 58 | 2.2 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 490 | Inlet | 13.2 | 41 | 2.1 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 492 | Inlet | 8.7 | 33 | 1.3 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 495 | Inlet | 6.0 | 34 | 1.2 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 500 | Inlet | 1.5 | 37 | 0.4 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |

| ID | Device Type | Acres | Load Reduction (gal/yr) | Treatment Q (cfs) | Device Cost | Diversion Structure Cost | Installation Cost | Yearly Maintenance Cost | Construction Year | Total Base Cost |
|------------------------------|-------------|-------|-------------------------|-------------------|-------------|--------------------------|-------------------|-------------------------|-------------------|-----------------|
| 501 | Inlet | 2.2 | 67 | 0.7 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 517 | In-Line | 56.4 | 404 | 8.6 | \$40,492 | \$14,000 | \$108,983 | \$1,057 | 2020 | \$180,080 |
| 518 | Inlet | 7.5 | 186 | 1.9 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 533 | In-Line | 89.7 | 673 | 13.0 | \$44,479 | \$16,500 | \$121,959 | \$1,084 | 2021 | \$206,170 |
| 534 | In-Line | 30.2 | 225 | 7.5 | \$39,084 | \$14,000 | \$106,169 | \$1,084 | 2021 | \$179,470 |
| 601 | Inlet | 10.3 | 344 | 3.0 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 607 | Inlet | 2.1 | 57 | 0.6 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 609 | Inlet | 7.2 | 72 | 2.0 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 614 | Inlet | 10.5 | 92 | 1.6 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 615 | Inlet | 4.3 | 74 | 0.9 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 616 | Inlet | 3.3 | 109 | 0.7 | \$500 | | \$500 | \$271 | 2021 | \$1,130 |
| 617 | Inlet | 15.6 | 253 | 2.4 | \$500 | | \$500 | \$278 | 2022 | \$1,150 |
| 618 | Inlet | 1.9 | 37 | 0.5 | \$500 | | \$500 | \$278 | 2022 | \$1,150 |
| 1000 | Off-Line | 137.6 | 1159 | 16.8 | \$57,669 | \$16,500 | \$148,337 | \$1,084 | 2021 | \$250,770 |
| 6000 | Off-Line | 49.5 | 1390 | 12.9 | \$44,308 | \$16,500 | \$121,615 | \$1,111 | 2022 | \$210,220 |
| Subtotal | | | | | | | | | | \$1,282,000 |
| 50% Contingency Total | | | | | | | | | | \$641,000 |
| | | | | | | | | | | \$1,923,000 |

Note: All estimates provided in dollars based on construction year.

4. Trash Capture Plan – With Ordinance

4.1 Capital Improvement Projects

Based on the trash management areas defined in the Long Term Trash Reduction Plan by the City, the Commercial, Retail and Industrial properties generate a cumulative 22,292 gallons of trash per year over a total of 2,987 acres. If you exclude the areas which are currently being captured by the existing City owned and private treatment devices, there is a remaining 18,950 gallons of trash generated on these private properties. If the City were to require these property owners to install trash capture devices on their sites, the 70% and 100% trash capture goals of 19,302 and 31,009 gallons per year would still not be met. Some additional public devices or activities will still be required to accomplish the reduction goals.

Table 10: Commercial, Retail and Industrial Trash Capture

| Land Use | Trash Load Generation (gal/year) | Existing Load Reduction (gal/year) | Trash Load Remaining (gal/year) |
|--------------|----------------------------------|------------------------------------|---------------------------------|
| Commercial | 6,559 | 1,430 | 5,129 |
| Retail | 3,395 | 18 | 3,377 |
| Industrial | 12,338 | 1,894 | 10,444 |
| Total | 22,292 | 3,342 | 18,950 |

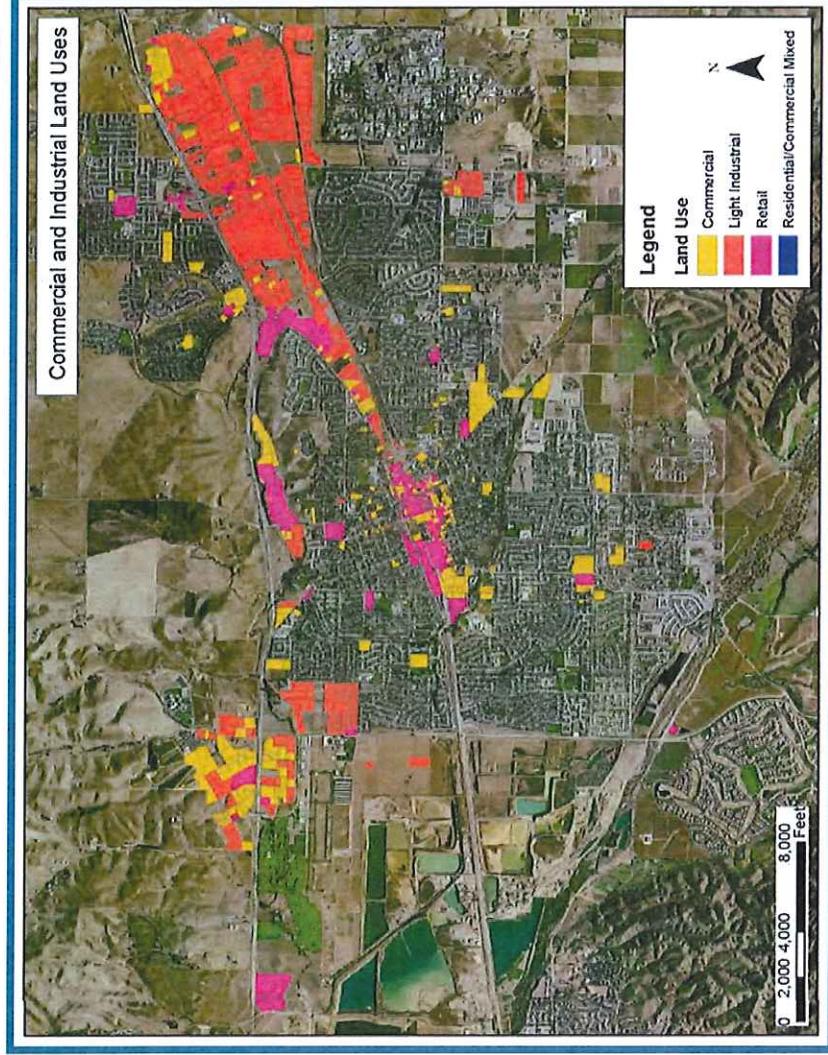


Figure 15: Commercial, Retail and Industrial Properties

Schaaf & Wheeler performed site visits and aerial investigation of the 1,245 commercial, retail and industrial parcels within the City to determine the presence of an onsite storm drainage system. The below table summarizes the results of the investigation.

Table 11: Commercial, Retail and Industrial Parcel Analysis

| Land Use | Number of Parcels | Vacant | Inaccessible | No Storm Drain | Zero Lot Line | With SD System | Average Inlets per Site with a SD system |
|--------------|-------------------|------------|--------------|----------------|---------------|----------------|--|
| Commercial | 388 | 54 | 18 | 159 | 3 | 154 | 2.7 |
| Retail | 347 | 22 | 1 | 170 | 71 | 83 | 2.2 |
| Industrial | 510 | 71 | 115 | 0 | 0 | 324 | 3.8 |
| Total | 1245 | 147 | 134 | 329 | 74 | 561 | 3.2 |

4.1.1.1 Device Locations

If the City were to enact an ordinance to require private commercial, industrial and retail properties to install full-trash capture devices this could result in one of two Options.

Option 1:

- Properties with an onsite storm drainage system would be required to install inlet filters or in-line devices on the private storm system prior to connection to the City drainage pipe. This would result in 1,830 devices obtaining 44.3% treatment (17,269 gallons).
- Properties without an on-site system or inaccessible properties where on-site full trash capture devices may not be feasible would pay a fee to provide additional trash pick-up and trash assessments based on the size and generation rate of the parcel. The additional treatment obtained from these parcels is 11% or 4,327 gallons.

Option 2:

- Properties with an onsite storm drainage system would be required to install inlet filters or in-line devices on the private storm system prior to connection to the City drainage pipe. This would result in 1,830 devices obtaining 44.3% treatment (17,269 gallons).
- Properties without an on-site system or inaccessible properties where on-site full trash capture devices may not be feasible would be assessed a fee for the City to install inlet filter devices on the public system near the parcels without on-site systems. Fees would be based on either the size and generation rate of the parcel, or on how many public inlets the property drains to.

Option 2 would provide some coincidental load reduction benefit from public property as well. The private parcels without a storm drainage system generate 4,327 gallons, or 11%. The approximate 302 City owned devices within the right-of-way would capture an additional 4,050 gallons of trash per year from 503 acres of public right of way surrounding private properties without storm drain systems. This would bring the total treated for the second ordinance option to 25,646 gallons (totaling 33,835 gallons, or 86%, including existing measures). Because this would not meet the 100% goal, Option 2 on its own is not sufficient.

For Option 2, approximately 302 privately funded devices within the City right-of-way would be owned and maintained by the City as an extension of their existing operations and maintenance program. This program may be additionally funded through continued agreements with property owners contributing trash and drainage to the devices. The City should consider development of these operation and maintenance agreements if a City Ordinance solution is selected.

4.1.2 System Hydraulics

For Option 2, since approximately 1,830 of 2,132 (86%) of the required devices would be located on private property the flow from these properties would be treated before connecting to the City storm drainage system. The existing public system will not be adversely impacted by the installation of the full trash capture devices on private property. It will be important for the City to implement detailed operation and maintenance agreements with the property owners to ensure that the devices do not fail and cause overland release of trash and stormwater. If devices do fail, this may increase surface flow until the flow re-enters the City system via a downstream catch basin.

4.2 Cost Estimates

City Costs

For either Option 1 or Option 2, the cost for implementing the trash capture would be borne by the individual property owners. The City would experience an increase in inspections required to ensure the devices are properly installed and maintained. There are 1,098 parcels which will require trash capture devices, either onsite or in the public right of way. An additional 147 are vacant and do not generate trash. The City building inspector would inspect the devices after installation. After initial inspection, it is recommended that the devices be inspected every two years by a qualified staff member.

At ultimate build-out it is assumed that the City will require the following additional resources:

Table 12: City Resources Required for Ultimate Build-Out

| Position | Duties | Fully Burdened Hourly Cost |
|---|---|----------------------------|
| Program Development | | |
| 1 Full-time Source Control Coordinator during Program development | <ul style="list-style-type: none"> Work with contractor to develop Program Follow-up with contractor and Source Control Inspector on enforcement issues | \$ 138.48 |
| 1 Full-time Program Coordinator (contractor) during Program Development | <ul style="list-style-type: none"> Work with Source Control Coordinator to develop Program Develop device and maintenance database | \$ 185.00 |
| 1 Part-time Senior Engineer during Development | <ul style="list-style-type: none"> Review and approve proposed device plan Review proposed O&M Agreement Enter device and maintenance data into database | \$ 137.54 |
| 1 Part-time Building Inspector III during Program development | <ul style="list-style-type: none"> Perform inspections for the installation of private devices | \$ 154.74 |
| Program Implementation | | |
| 1 Part-time Source Control Coordinator during implementation | <ul style="list-style-type: none"> Work with contractor to implement Program Perform parcel on-land clean-up and container management assessments three times per year Follow-up with contractor and Source Control Inspector on device maintenance enforcement issues | \$ 138.48 |
| 1 Full-time Program Coordinator (contractor) during implementation | <ul style="list-style-type: none"> Update device and maintenance database Review property owners annual Stormwater Treatment Measure Operation and Maintenance Inspection Reports Follow-up with vendors regarding maintenance issues | \$ 185.00 |

| | | | | |
|--|---|--|--|-----------|
| | <ul style="list-style-type: none"> Follow-up with Source Control Coordinator on enforcement issues Perform O&M device inspection Approve O&M Agreement Update device and maintenance data in database Perform maintenance device inspections at least every five years Perform parcel on-land clean-up and container management enforcement as required Follow-up with Source Control Coordinator on device maintenance enforcement issues Issue enforcement orders | | | \$ 154.74 |
| 1 Part-time Building Inspector III during implementation | | | | \$ |
| 1 Part-time Source Control Inspector during Implementation | | | | \$ 131.88 |

The yearly cost of these additional staff members is estimated to be **\$976,800** during development and **\$442,100** during implementation.

Private Costs

The cost anticipated to the private owners is summarized in the tables herein. The following assumptions were made:

- Catch basin inlet filters were assumed to be 24" x 36" and cost \$500 each;
- Installation costs for inlet filters are assumed to be 1 times the cost of the device;
- 50% contingency includes 20% design and administration and 30% construction contingencies;
- Inlet filters were assumed to be replaced once every 25 years. Lifetime project costs are based on 50-years (to allow for comparison to the Trash Capture Reduction Plan costs);
- Estimates include an inflation rate of 2.54% and a discount rate of 6.25% based on ENR construction cost index for capital project cost inflation 10-year average figure;
- Total Base Cost is presented in the construction year dollars and includes installation and the device. It does not include maintenance or device replacement;
- Costs do not include maintenance agreements or encroachments required for maintenance and installation in the City right-of-way;
- Inlet filters are cleaned two times a year, requiring 15 minutes cleaning per device for a team of two maintenance workers and vacuum truck. Total rate of \$478.06 per hour.

Detailed cost estimating can be found in Appendix B.

For parcels with storm drainage systems (561 parcels on 1,836 acres), costs would be determined based on number of inlets filters required on each parcel. The total cost of filters has been summed and averaged per parcel and per acre in Table 13 below.

Table 13: Private Cost Summary Table for Parcels with On-Site Systems

| | | |
|--|----|------------|
| Total Initial Cost (Present Value) | \$ | 2,745,000 |
| Total Lifetime Cost (Present Value) | \$ | 19,473,000 |
| Average Initial Cost per Parcel | \$ | 4,900 |
| Average Initial Cost per Acre | \$ | 1,500 |
| Average Lifetime Cost per Parcel | \$ | 32,500 |
| Average Lifetime Cost per Acre | \$ | 10,600 |

Fees for parcels without on-site systems or which were inaccessible (463 parcels on 556 acres) would be determined based on parcel size and generation rate, and would depend on measures chosen to achieve further reduction (Option 1, Option 2, or some combination of the two). The estimated cost of additional trash pick-up, container management, street sweeping per parcel and trash control assessments (Option 1) are shown in Table 14.

Table 14: Option 1 - Annual Private Cost for Parcels with No On-Site System

| | | |
|---|-----------|---------------|
| Daily On-Land Clean-Up Cost | \$ | 13,140 |
| Enhanced Container Management Cost | \$ | 6,050 |
| Street Sweeping Costs per Parcel | \$ | 10 |
| Trash Control Assessment Costs | \$ | 800 |
| Total Average Annual Cost per Parcel | \$ | 20,000 |

For Option 2, the 302 inlet filter devices installed on City property to treat parcels without on-site storm drain systems would incur an initial cost of \$303,000, and a total lifetime cost of \$3,120,000 (2016 dollars).

Table 15: Option 2 - Annual Private Cost for Parcels with No On-Site System

| | | |
|-------------------------------------|----|-----------|
| Total Initial Cost (Present Value) | \$ | 303,000 |
| Total Lifetime Cost (Present Value) | \$ | 3,120,000 |
| Average Initial Cost per Parcel | \$ | 650 |
| Average Lifetime Cost per Acre | \$ | 550 |
| Average Lifetime Cost per Parcel | \$ | 6,700 |
| Average Lifetime Cost per Acre | \$ | 5,600 |

Because additional assessments and devices would only focus on the area around the high generation commercial/industrial/retail parcels, Option 1 and Option 2 measures would only capture enough to achieve 86% overall reduction. Publically funded devices on the City MS4 or additional enhanced measures may be required to achieve the additional 5,363 gallons of reduction required to reach 100% capture.

4.3 Schedule for Implementation

The City would need to enforce a volume reduction of at least 19,302 gallons per year by 2017 and 31,009 gallons per year by 2022. It may be practicable to allow for exemptions for certain properties whose activities can be proven to produce little or no trash. Time is of the essence, the City will need to have the Ordinance in place in time to allow for the private construction of treatment devices and agreements before the July 2017 deadline. Treating Commercial, Retail, and Industrial properties through Option 1 or Option 2 would meet the 2017 goal; however, additional measures would be required to meet the 2022 goal.

5. Conclusion

The significantly larger lifetime costs associated with enacting a private retail-commercial-industrial trash capture ordinance can be explained by maintenance costs and lack of detailed engineering. The ordinance option assumes that only inlet filters will be installed. Although they have relatively low capital costs, inlet filters have very high maintenance costs when compared to the larger scale inline or outlet devices. Additionally, the ordinance requires all inlets within private high-generation land uses to have filters. This means that some devices which accept runoff from very small drainage areas will be installed at the same cost as inlets which receive runoff from large areas with a significant volume of trash. In contrast, the public infrastructure option as described in Chapter 3 uses trash generation calculations and drainage basin delineation to optimize inlet filter and large scale trash capture device locations.

It is recommended that infrastructure as described in Chapter 3 be installed to meet the 2017 and 2022 trash reduction goals. The City generates a total of 39,023 gallons per year. The high-generation land uses generate 22,292 gallons per year (57% of the total). To help fund the installations, the City should enact an ordinance which requires industrial, retail and commercial properties (high generation land uses) to contribute to the total cost based on their trash generation percentage.

Appendix A: Treatment Tables

A-1: Proposed Public Device Treatment Calculations

| Device ID | Device Type | TMA | Catchment Area (ac) | Trash Capture Rate (gal/yr) | Weighted C Value | Treatment Intensity (in/hr) | Treatment Flow Rate (cfs) |
|-----------|-------------|-----|---------------------|-----------------------------|------------------|-----------------------------|---------------------------|
| 103 | Inlet | 16P | 21.0 | 114.5 | 0.43 | 0.31 | 2.77 |
| 104 | Inlet | 9R | 6.3 | 185.4 | 0.94 | 0.31 | 1.82 |
| 105 | Inlet | 9 | 30.5 | 224.5 | 0.55 | 0.31 | 5.10 |
| 106 | Inlet | 9 | 15.9 | 118.8 | 0.55 | 0.31 | 2.65 |
| 107 | Inlet | 9 | 7.2 | 55.3 | 0.53 | 0.31 | 1.18 |
| 108 | Inlet | 9 | 8.4 | 40.8 | 0.56 | 0.31 | 1.44 |
| 110 | Off-Line | 17 | 862.3 | 4770.0 | 0.56 | 0.20 | 97.43 |
| 111 | Off-Line | 8 | 244.4 | 3732.5 | 0.80 | 0.20 | 38.97 |
| 112 | In-line | 11I | 54.0 | 407.7 | 0.79 | 0.20 | 8.54 |
| 114 | Off-Line | 4 | 156.6 | 707.8 | 0.60 | 0.20 | 18.92 |
| 115-1 | Off-Line | 4 | 157.11 | 1007.3 | 0.74 | 0.20 | 23.28 |
| 115-2 | In-Line | 4 | 314.54 | 1844.8 | 0.73 | 0.20 | 46.19 |
| 116 | Inlet | 11R | 5.0 | 90.2 | 0.87 | 0.31 | 1.34 |
| 145 | Inlet | 6 | 2.7 | 69.8 | 0.65 | 0.31 | 0.54 |
| 147 | Inlet | 6 | 4.5 | 95.5 | 0.53 | 0.31 | 0.72 |
| 148 | Inlet | 16P | 21.8 | 153.9 | 0.41 | 0.31 | 2.76 |
| 151 | Inlet | 11I | 5.8 | 43.7 | 0.80 | 0.31 | 1.42 |
| 152 | Inlet | 11I | 6.7 | 46.1 | 0.76 | 0.31 | 1.55 |
| 153 | Inlet | 11I | 6.8 | 47.1 | 0.76 | 0.31 | 1.58 |
| 155 | Inlet | 11I | 4.1 | 27.2 | 0.74 | 0.31 | 0.93 |
| 156 | Inlet | 11I | 7.8 | 32.6 | 0.59 | 0.31 | 1.41 |
| 157 | Inlet | 11I | 8.8 | 46.7 | 0.66 | 0.31 | 1.76 |
| 160 | Inlet | 11I | 6.1 | 34.5 | 0.68 | 0.31 | 1.26 |
| 162 | In-line | 17 | 85.0 | 388.6 | 0.42 | 0.20 | 7.20 |
| 164 | In-line | 6 | 49.0 | 552.6 | 0.71 | 0.31 | 10.59 |
| 165 | Off-Line | 4 | 469.3 | 2818.5 | 0.71 | 0.20 | 66.24 |
| 166 | Inlet | 16P | 11.3 | 32.8 | 0.48 | 0.31 | 1.64 |
| 167 | Inlet | 16P | 5.7 | 30.4 | 0.39 | 0.31 | 0.68 |
| 169 | Inlet | 6 | 11.5 | 345.4 | 0.54 | 0.31 | 1.92 |
| 172 | Inlet | 12R | 5.3 | 43.7 | 0.77 | 0.31 | 1.25 |
| 173 | Inlet | 16P | 24.2 | 141.1 | 0.34 | 0.31 | 2.51 |
| 174 | Inlet | 12R | 6.4 | 39.3 | 0.67 | 0.31 | 1.32 |
| 176 | Inlet | 12R | 17.3 | 381.3 | 0.83 | 0.31 | 4.39 |
| 177 | Inlet | 12R | 3.1 | 63.2 | 0.80 | 0.31 | 0.77 |
| 188 | Inlet | 17 | 31.6 | 144.8 | 0.71 | 0.31 | 6.91 |
| 189 | Inlet | 17 | 26.3 | 147.6 | 0.76 | 0.31 | 6.14 |
| 224 | Inlet | 6 | 2.7 | 29.7 | 0.37 | 0.31 | 0.31 |
| 334 | Inlet | 16P | 18.9 | 77.5 | 0.38 | 0.31 | 2.20 |
| 335 | Inlet | 16P | 30.8 | 53.9 | 0.36 | 0.31 | 3.42 |

| Device ID | Device Type | TMA | Catchment Area (ac) | Trash Capture Rate (gal/yr) | Weighted C Value | Treatment Intensity (in/hr) | Treatment Flow Rate (cfs) |
|-----------|-------------|-----|---------------------|-----------------------------|------------------|-----------------------------|---------------------------|
| 337 | Inlet | 16P | 25.9 | 118.8 | 0.41 | 0.31 | 3.24 |
| 346 | Inlet | 14R | 24.0 | 168.2 | 0.93 | 0.31 | 6.81 |
| 348 | Inlet | 14C | 9.7 | 34.4 | 0.84 | 0.31 | 2.47 |
| 349 | Inlet | 15S | 15.8 | 78.4 | 0.55 | 0.31 | 2.64 |
| 353 | Inlet | 16P | 31.8 | 54.9 | 0.47 | 0.31 | 4.53 |
| 358 | Inlet | 16P | 13.7 | 84.6 | 0.42 | 0.31 | 1.76 |
| 359 | Inlet | 16P | 13.0 | 87.1 | 0.52 | 0.31 | 2.06 |
| 360 | Inlet | 15S | 32.0 | 154.6 | 0.58 | 0.31 | 5.65 |
| 362 | Inlet | 14C | 12.5 | 42.3 | 0.83 | 0.31 | 3.16 |
| 367 | Inlet | 16P | 6.7 | 50.0 | 0.39 | 0.31 | 0.80 |
| 375 | Inlet | 11C | 11.0 | 32.0 | 0.68 | 0.31 | 2.26 |
| 377 | Inlet | 16P | 8.5 | 30.5 | 0.43 | 0.31 | 1.12 |
| 381 | Inlet | 11 | 10.3 | 40.5 | 0.50 | 0.31 | 1.56 |
| 389 | Inlet | 11 | 8.7 | 68.2 | 0.95 | 0.31 | 2.52 |
| 390 | Inlet | 1R | 2.6 | 69.8 | 0.93 | 0.31 | 0.75 |
| 391 | Inlet | 1C | 2.0 | 25.2 | 0.92 | 0.31 | 0.57 |
| 399 | Inlet | 1C | 4.9 | 36.0 | 0.88 | 0.31 | 1.31 |
| 404 | Inlet | 1I | 13.9 | 319.3 | 0.60 | 0.31 | 2.56 |
| 409 | Inlet | 8 | 2.1 | 36.0 | 0.69 | 0.31 | 0.44 |
| 412 | Inlet | 13C | 7.6 | 40.4 | 0.82 | 0.31 | 1.91 |
| 416 | Inlet | 16P | 13.7 | 40.7 | 0.48 | 0.31 | 2.02 |
| 418 | Inlet | 16P | 25.5 | 187.8 | 0.36 | 0.31 | 2.79 |
| 421 | Inlet | 16P | 33.3 | 31.0 | 0.57 | 0.31 | 5.80 |
| 422 | Inlet | 15S | 11.7 | 79.9 | 0.55 | 0.31 | 1.98 |
| 427 | Inlet | 16P | 21.6 | 57.1 | 0.45 | 0.31 | 2.95 |
| 429 | Inlet | 4P | 7.9 | 29.5 | 0.44 | 0.31 | 1.06 |
| 430 | Inlet | 4P | 21.7 | 137.5 | 0.43 | 0.31 | 2.88 |
| 431 | Inlet | 4 | 7.7 | 53.3 | 0.76 | 0.31 | 1.79 |
| 433 | Inlet | 4 | 8.1 | 60.1 | 0.83 | 0.31 | 2.05 |
| 439 | Inlet | 12C | 15.0 | 46.6 | 0.74 | 0.31 | 3.38 |
| 449 | Inlet | 12C | 6.8 | 36.6 | 0.74 | 0.31 | 1.54 |
| 458 | Inlet | 12C | 4.6 | 34.2 | 0.94 | 0.31 | 1.33 |
| 460 | Inlet | 12C | 14.6 | 78.6 | 0.48 | 0.31 | 2.16 |
| 466 | Inlet | 12C | 8.3 | 39.6 | 0.45 | 0.31 | 1.14 |
| 471 | Inlet | 12C | 9.9 | 58.0 | 0.62 | 0.31 | 1.89 |
| 473 | Inlet | 12C | 10.7 | 47.0 | 0.84 | 0.31 | 2.75 |
| 475 | Inlet | 11C | 8.3 | 31.8 | 0.73 | 0.31 | 1.84 |
| 476 | Inlet | 11C | 15.2 | 40.1 | 0.73 | 0.31 | 3.40 |
| 483 | Inlet | 1I | 18.6 | 67.6 | 0.54 | 0.31 | 3.08 |
| 484 | Inlet | 1C | 6.1 | 45.9 | 0.95 | 0.31 | 1.78 |
| 485 | Inlet | 1C | 7.5 | 56.5 | 0.95 | 0.31 | 2.19 |
| 487 | Inlet | 9 | 12.1 | 57.6 | 0.59 | 0.31 | 2.17 |
| 490 | Inlet | 9 | 13.1 | 41.1 | 0.52 | 0.31 | 2.11 |

| Device ID | Device Type | TMA | Catchment Area (ac) | Trash Capture Rate (gal/yr) | Weighted C Value | Treatment Intensity (in/hr) | Treatment Flow Rate (cfs) |
|-----------|-------------|-----|---------------------|-----------------------------|------------------|-----------------------------|---------------------------|
| 492 | Inlet | 16P | 8.7 | 33.4 | 0.48 | 0.31 | 1.28 |
| 495 | Inlet | 2I | 6.0 | 34.2 | 0.68 | 0.31 | 1.24 |
| 500 | Inlet | 2R | 1.5 | 36.9 | 0.94 | 0.31 | 0.44 |
| 501 | Inlet | 2R | 2.2 | 67.1 | 0.95 | 0.31 | 0.65 |
| 514 | Inlet | 4 | 4.0 | 28.3 | 0.79 | 0.31 | 0.97 |
| 517 | In-Line | 4 | 56.4 | 403.5 | 0.76 | 0.20 | 8.59 |
| 518 | Inlet | 4 | 7.5 | 185.8 | 0.83 | 0.31 | 1.91 |
| 533 | In-Line | 4 | 89.7 | 673.1 | 0.72 | 0.20 | 12.95 |
| 534 | In-Line | 4 | 30.2 | 224.8 | 0.81 | 0.31 | 7.53 |
| 601 | Inlet | 5R | 10.3 | 344.2 | 0.95 | 0.31 | 3.00 |
| 605 | Inlet | 5R | 15.9 | 536.0 | 0.93 | 0.31 | 4.50 |
| 607 | Inlet | 12R | 2.1 | 56.7 | 0.88 | 0.31 | 0.57 |
| 609 | Inlet | 12C | 7.2 | 72.3 | 0.92 | 0.31 | 2.04 |
| 614 | Inlet | 12C | 10.5 | 91.6 | 0.49 | 0.31 | 1.58 |
| 615 | Inlet | 12R | 4.3 | 73.8 | 0.68 | 0.31 | 0.89 |
| 616 | Inlet | 12R | 3.3 | 109.0 | 0.73 | 0.31 | 0.74 |
| 617 | Inlet | 12R | 15.6 | 252.5 | 0.50 | 0.31 | 2.38 |
| 618 | Inlet | 12R | 1.9 | 36.9 | 0.81 | 0.31 | 0.48 |
| 1000 | Off-Line | 17 | 137.6 | 1159.3 | 0.61 | 0.20 | 16.79 |
| 1010 | Off-Line | 17 | 522.0 | 3014.2 | 0.60 | 0.20 | 63.03 |
| 6000 | Off-Line | 16 | 49.5 | 1390 | 0.85 | 0.31 | 12.90 |

A-2: Existing City Owned Device Treatment Calculations

| Existing Device Name | Area (ac) | Location | TMA | Trash Gen Rate | Trash Load (gal/yr) |
|----------------------|-----------|---------------------------------------|-----|----------------|---------------------|
| 4C1TC202 | 1.1 | Constitution Dr & N Canyons Pkwy | 1C | Moderate | 7.7 |
| 4C1TC203 | 5.3 | 455 North Canyons Pkwy | 17 | High | 11.7 |
| 4C1TC204 | 0.6 | 3142 N Canyons Pkwy | 1C | Low | 4.2 |
| 4C1TC205 | 6.8 | Constitution Dr & N Canyons Pkwy | 1C | High | 25.2 |
| 4C1TC207 | 1.7 | Constitution Dr & N Canyons Pkwy | 1C | Moderate | 5.3 |
| 4C1TC300 | 0.3 | 2882 Constitution Dr | 1C | Low | 2.3 |
| 4C1TC307 | 0.6 | N Canyons Pkwy & Airway Blvd | 17 | Low | 0.2 |
| 4C1TC308 | 0.3 | Airway Blvd & N Canyons Pkwy | 1C | Low | 1.8 |
| 4C1TC311 | 0.5 | Airway Blvd & N Canyons Pkwy | 1R | Low | 3.8 |
| 4C1TC312 | 3.7 | 1815 Doolan Rd | 11 | High | 17.8 |
| 4C1TC313 | 6.9 | Airway Blvd & N Canyons Pkwy | 1C | High | 23.0 |
| 4C1TC400 | 1.8 | 2801 Constitution Dr | 1C | High | 12.7 |
| 4C1TC404 | 0.5 | Doolan Rd & N Canyons Pkwy | 1C | Low | 3.7 |
| 4C1TC405 | 0.6 | 952 N Canyons Pkwy | 17 | Low | 1.0 |
| 4C1TC407 | 2.3 | N Canyon Pkwy & Doolan Rd | 11 | High | 15.8 |
| 4C1TC409 | 9.2 | N Canyons Pkwy & Republic Dr | 17 | High | 30.5 |
| 4C1TC410 | 0.6 | Kitty Hawk Rd & Airway Blvd | 1C | Low | 1.9 |
| 4C1TC413 | 0.2 | 2929 Constitution Dr | 1C | Low | 1.5 |
| 4C1TC416 | 2.3 | 82 Constitution Drive | 1C | High | 16.1 |
| 4C1TC523 | 3.7 | Doolan Rd & Collier Cyn | 1C | High | 26.2 |
| 4C1TC529 | 1.5 | Doolan Rd & Collier Cyn | 1C | High | 10.6 |
| 4C1TC536 | 1.8 | 477 Independence Dr | 11 | High | 12.8 |
| 4C2TC103 | 6.3 | 2649 Collier Cyn Rd | 11 | High | 44.0 |
| 4C2TC210 | 0.2 | 2648 Collier Cyn Rd | 11 | Low | 1.4 |
| 4C2TC211 | 0.2 | 2694 Gateway Ave | 11 | Low | 0.9 |
| 4C2TC300 | 0.7 | 2694 Gateway Ave | 11 | Low | 4.6 |
| 4C2TC301 | 13.2 | 455 North Canyons Pkwy | 11 | Very High | 78.6 |
| 4C2TC304 | 2.8 | North Canyons Pkwy & Independence Dr | 11 | High | 19.7 |
| 4C2TC312 | 1.0 | 2854 Independence Dr | 1R | Moderate | 6.8 |
| 4C2TC401 | 3.1 | Constitution Dr & Shea Center Dr | 1C | High | 21.9 |
| 4C2TC501 | 5.5 | Constitution Dr & Shea Center Dr | 17 | High | 38.1 |
| 4C2TC502 | 1.7 | Cotton Wood Creek And Constitution Dr | 1C | Low | 114.3 |
| 4C2TC505 | 0.6 | Cotton Wood Creek And Constitution Dr | 1C | Low | 26.7 |
| 4C2TC506 | 0.5 | Collier Canyon & Independence Dr | 1R | Low | 2.4 |
| 4C2TC508 | 0.3 | Collier Canyon & Independence Dr | 1R | Low | 2.0 |
| 4C2TC509 | 1.5 | Collier Canyon Rd & Constitution Dr | 17 | High | 10.4 |
| 4C2TC510 | 0.3 | Collier Canyon Rd & Constitution Dr | 17 | Low | 11.1 |
| 4C2TC511 | 3.4 | Collier Canyon Rd & Constitution Dr | 17 | Low | 0.1 |
| 4C2TC513 | 0.8 | Collier Cyn Rd & Constitution Dr | 11 | Low | 1.6 |
| 4C2TC514 | 1.2 | Independence Dr & Collier Canyon | 1R | Moderate | 8.3 |
| 4C2TC515 | 1.3 | Collier Canyon & Independence Dr | 1R | Moderate | 9.4 |
| 4C2TC517 | 0.2 | Collier Canyon & Independence Dr | 1R | Low | 3.2 |
| 4C2TC518 | 2.1 | 444 Collier Canyon | 1R | High | 14.6 |

| Existing Device Name | Area (ac) | Location | TMA | Trash Gen Rate | Trash Load (gal/yr) |
|----------------------|-----------|----------------------------------|-----|----------------|---------------------|
| 4C2TC519 | 0.2 | Independence Dr & Collier Canyon | 1C | Low | 6.8 |
| 4C2TC522 | 1.8 | 445 Collier Canyon | 1R | High | 12.4 |
| 4C2TC523 | 3.3 | 467 Collier Canyon | 1R | High | 22.8 |
| 4C2TC524 | 2.9 | 466 Collier Canyon | 1I | High | 20.4 |
| 4C2TC525 | 1.0 | Airway Blvd & Kitty Hawk Rd | 1I | Low | 55.1 |
| 4C3TC109 | 0.3 | Kitty Hawk Rd & Airway Blvd | 1I | Low | 27.4 |
| 4C3TC110 | 0.3 | Airway Blvd & Kitty Hawk Rd | 1I | Low | 20.5 |
| 4C3TC114 | 0.1 | Kitty Hawk Rd & Airway Blvd | 1I | Low | 10.4 |
| 4C3TC115 | 0.2 | 2383 Nissen Dr | 1C | Low | 16.8 |
| 4C3TC200 | 4.1 | Kitty Hawk Rd & Airway Blvd | 1I | High | 39.8 |
| 4C3TC202 | 0.4 | Airway Blvd & Kitty Hawk Rd | 17 | Low | 23.5 |
| 4C3TC204 | 0.3 | Airway Blvd & Kitty Hawk Rd | 1I | Low | 2.1 |
| 4C3TC206 | 0.2 | Earhart Way & Nissen Dr | 1C | Low | 1.3 |
| 4C3TC216 | 2.8 | Airway Blvd & Kitty Hawk Rd | 1I | High | 21.2 |
| 4C3TC224 | 1.2 | 2333 Nissen Dr | 1C | Moderate | 8.7 |
| 4C3TC401 | 6.7 | Airway Blvd & Clubhouse Dr | 17 | Low | 0.0 |
| 4C3TC408 | 3.3 | Lindbergh Ave & Nissen Dr | 1C | High | 22.9 |
| 4C3TC439 | 0.6 | 472 Lindbergh Ave | 1I | Low | 3.6 |
| 4C3TC505 | 2.1 | 448 Airway Blvd | 17 | Low | 0.0 |
| 4C3TC506 | 1.5 | 464 Airway Blvd | 17 | Low | 0.0 |
| 4C3TC507 | 1.7 | 550 Airway Blvd | 17 | Low | 0.0 |
| 4C3TC508 | 0.2 | 465 Airway Blvd | 17 | Low | 0.0 |
| 4C3TC510 | 0.2 | 550 Airway Blvd | 17 | Low | 0.0 |
| 4C4TC200 | 2.7 | 419 Earhart Way | 1C | Medium | 18.8 |
| 4C4TC203 | 1.5 | 349 Earhart Way | 1I | High | 10.6 |
| 4C4TC300 | 0.6 | Armstrong St & Earhart Way | 17 | Low | 1.3 |
| 4C4TC400 | 2.7 | 201 Lindbergh Ave | 1 | High | 19.0 |
| 4C4TC403 | 3.9 | 274 Lindbergh Ave | 1C | High | 27.4 |
| 4C4TC406 | 4.3 | Lindbergh Ave & Armstrong St | 1C | High | 17.4 |
| 4C4TC408 | 1.5 | 335 Lindbergh Ave | 1C | High | 10.4 |
| 4C4TC410 | 0.5 | 170 Lindbergh Ave | 1C | Low | 3.8 |
| 4C4TC414 | 4.6 | 122 Lindbergh Ave | 1I | High | 32.5 |
| 4C4TC415 | 2.9 | 135 Lindbergh Ave | 1C | High | 20.2 |
| 4C4TC418 | 2.1 | 405 Lindbergh Ave | 1C | High | 14.9 |
| 4C4TC419 | 1.1 | Lindbergh Ave & Armstrong St | 1I | Moderate | 6.7 |
| 4D1TC303 | 5.1 | Gateway Ave & Shea Center Dr | 1I | High | 15.0 |
| 4D1TC402 | 0.6 | 2580 Shea Center Dr | 1I | Low | 3.4 |
| 4D1TC501 | 10.9 | Constitution Dr & Shea Center Dr | 1C | Very High | 74.5 |
| 4D1TC503 | 1.4 | Constitution Dr & Shea Center Dr | 17 | Low | 73.4 |
| 4D1TC505 | 0.7 | Constitution Dr & Shea Center Dr | 17 | Low | 45.2 |
| 4E3TC401 | 0.2 | N Livermore Ave & Las Positas Rd | 2I | Low | 1.6 |
| 4E3TC402 | 10.5 | N Livermore Ave & Las Positas Rd | 2R | Very High | 81.6 |
| 4E3TC411 | 6.3 | Las Positas Rd & N Livermore Ave | 2R | High | 45.0 |
| 4E3TC415 | 2.6 | Las Positas Rd & N Livermore Ave | 2R | Very High | 73.6 |

| Existing Device Name | Area (ac) | Location | TMA | Trash Gen Rate | Trash Load (gal/yr) |
|----------------------|-----------|----------------------------------|-----|----------------|---------------------|
| 4E3TC417 | 2.4 | N Livermore Ave & Las Positas Rd | 2R | Very High | 66.0 |
| 4E3TC504 | 1.0 | N Livermore Ave & Las Positas Rd | 2I | Low | 4.7 |
| 4E4TC202 | 0.8 | 3000 Las Positas Rd | 2C | Moderate | 5.3 |
| 4E4TC300 | 30.4 | Las Positas Rd & Hilliker Pl | 17 | Low | 0.0 |
| 4E4TC301 | 2.9 | Las Positas Rd & Hilliker Pl | 17 | Low | 0.0 |
| 4E4TC302 | 3.8 | 2825 Las Positas Rd | 17 | Low | 0.3 |
| 4E4TC303 | 0.5 | 2792 Las Positas Rd | 2R | High | 13.9 |
| 4E4TC304 | 0.2 | 2826 Las Positas Rd | 2R | Moderate | 5.4 |
| 4E4TC305 | 0.2 | 3031 Las Positas Rd | 17 | Moderate | 6.4 |
| 4E4TC308 | 0.9 | 3000 Las Positas Rd | 2C | Low | 1.2 |
| 4E4TC309 | 0.4 | 2881 Las Positas Rd | 17 | Low | 2.3 |
| 4E4TC313 | 4.9 | 2904 Las Positas Rd | 17 | Low | 0.0 |
| 4E4TC314 | 0.5 | 2301 Las Positas Rd | 2R | Low | 0.0 |
| 4E4TC401 | 3.8 | 2301 Las Positas Rd | 2R | High | 19.1 |
| 4E4TC402 | 2.6 | 2500 Las Positas Rd | 17 | High | 27.9 |
| 4E4TC403 | 3.1 | Las Positas Rd & Hilliker Pl | 17 | Low | 0.4 |
| 4E4TC404 | 0.1 | 3600 Las Positas Rd | 17 | Low | 0.0 |
| 4F1TC501 | 0.1 | Missing | 17 | Low | 0.2 |
| 4F1TC502 | 0.0 | 3600 Las Positas Rd | 17 | Low | 0.0 |
| 4F1TC506 | 0.2 | Missing | 17 | Low | 0.0 |
| 4F1TC508 | 0.3 | 3400 Las Positas Rd | 2C | Low | 2.0 |
| 4F3TC102 | 0.4 | 3400 Las Positas Rd | 2C | Low | 2.5 |
| 4F3TC103 | 4.6 | 3400 Las Positas Rd | 2C | Low | 1.4 |
| 4F3TC104 | 0.4 | 31 Las Positas Rd | 17 | Low | 2.2 |
| 4F3TC201 | 21.0 | 3200 Las Positas Rd | 2C | Low | 0.0 |
| 4F3TC204 | 0.5 | N Mines Rd & Las Positas Rd | 17 | Low | 3.4 |
| 4F3TC205 | 16.9 | North Mines Rd & Las Positas Rd | 2C | Low | 0.3 |
| 4F3TC206 | 0.3 | Las Positas Rd & N Mines Rd | 17 | Low | 2.2 |
| 4F3TC207 | 0.1 | 3100 Las Positas Rd | 2C | Low | 0.8 |
| 4F3TC208 | 0.1 | North Mines Rd & Las Positas Rd | 2C | Low | 0.5 |
| 4F4TC101 | 0.5 | North Mines Rd & Las Positas Rd | 2C | High | 11.6 |
| 4F4TC200 | 2.5 | 4440 Las Positas Rd | 17 | Low | 0.0 |
| 4F4TC202 | 0.5 | 4514 Las Positas Rd | 3R | Moderate | 9.9 |
| 4F4TC203 | 0.7 | 4300 Las Positas Rd | 3R | High | 15.1 |
| 4F4TC205 | 2.7 | 4300 Las Positas Rd | 17 | Low | 0.0 |
| 4F4TC206 | 6.0 | 4290 Las Positas Rd | 17 | Low | 0.0 |
| 4F4TC303 | 0.5 | First St & Las Positas Rd | 3R | High | 13.7 |
| 4F4TC305 | 0.3 | Las Positas Rd & First St | 3R | Moderate | 6.5 |
| 4F4TC306 | 0.4 | Las Positas Rd & First St | 17 | Low | 0.2 |
| 4F4TC307 | 1.0 | 4526 Las Positas Rd | 17 | Low | 0.0 |
| 4F4TC308 | 0.2 | Las Positas Rd & First St | 3R | Low | 2.8 |
| 4F4TC310 | 0.5 | First St & Southfront | 3R | High | 15.0 |
| 4F4TC420 | 2.2 | Las Positas Blvd & First St | 3R | Very High | 61.3 |
| 4F4TC423 | 1.4 | Las Positas Blvd & First St | 3R | High | 40.5 |

| Existing Device Name | Area (ac) | Location | TMA | Trash Gen Rate | Trash Load (gal/yr) |
|----------------------|------------|-------------------------------|-----|----------------|---------------------|
| 4F4TC503 | 0.8 | First St & Bellmawr Dr | 17 | Low | 0.0 |
| 4F4TC509 | 0.4 | Bellmawr Dr & First St | 17 | Low | 0.0 |
| 4F4TC511 | 0.9 | Bellmawr Dr & First St | 17 | Low | 0.0 |
| 4F4TC525 | 2.9 | First St & Bellmawr Dr | 3R | Very High | 80.2 |
| 4G3TC219 | 1.2 | 4849 South Front Rd | 3R | High | 23.0 |
| 4G3TC221 | 0.6 | 4849 South Front Rd | 4 | Low | 4.3 |
| 4G3TC226 | 0.6 | South Front Ln & First St | 3R | High | 12.8 |
| 4G3TC230 | 0.6 | 4700 First St | 3R | Moderate | 5.8 |
| 4G3TC233 | 0.5 | 4707 First St | 3R | High | 14.5 |
| 4G3TC300 | 1.8 | 4749 Bennett Dr | 4 | High | 12.3 |
| 4G3TC303 | 19.1 | 4741 Bennett Dr | 4 | Very High | 85.6 |
| 4G3TC305 | 6.0 | 4749 Bennett Dr | 17 | High | 41.8 |
| 4G3TC307 | 1.4 | 4771 Arroyo Vista | 4 | Moderate | 9.4 |
| 4G3TC315 | 4.8 | 4740 Bennett Dr | 4 | Very High | 126.3 |
| 4G3TC412 | 1.4 | South Front Ln & First St | 3R | Moderate | 9.8 |
| 4G3TC413 | 4.3 | 4749 Bennett Dr | 17 | Low | 0.0 |
| 4G3TC418 | 5.1 | 4747 Arroyo Vista | 17 | Moderate | 10.0 |
| 4G3TC420 | 0.8 | 4749 Bennett Dr | 17 | Low | 0.0 |
| 4G3TC502 | 1.5 | 4659 C Las Positas Rd | 17 | Low | 0.1 |
| 4G3TC505 | 1.3 | Las Positas Rd & Bennett Dr | 4 | Moderate | 9.3 |
| 4G3TC507 | 0.5 | 4671 Las Positas Rd | 17 | Low | 0.3 |
| 4G3TC509 | 4.1 | Las Positas And Arroyo Vista | 17 | High | 26.0 |
| 4G3TC512 | 7.4 | Arroyo Vista & Las Positas Rd | 17 | High | 13.2 |
| 4G3TC520 | 8.7 | 4647 C Las Positas Rd | 4 | High | 36.1 |
| 5F2TC102 | 0.7 | Technology Dr & N Mines Rd | 4 | High | 17.6 |
| 5F2TC111 | 0.7 | Technology Dr & N Mines Rd | 4 | Low | 0.0 |
| 5F2TC116 | 8.4 | N Mines Rd & Technology Dr | 4 | Very High | 95.3 |
| 5F2TC124 | 12.9 | N Mines Rd & Technology Dr | 4 | Very High | 347.2 |
| 5F2TC316 | 1.6 | 4555 Las Positas Rd | 4 | High | 44.2 |
| 5F2TC317 | 2.6 | 4676 Las Positas Rd | 17 | Very High | 62.5 |
| 5F2TC401 | 0.8 | 4569 Las Positas Rd | 4 | High | 15.5 |
| 5F2TC402 | 2.5 | 4570 Las Positas Rd | 5 | High | 17.5 |
| 5F2TC408 | 0.4 | 4571 Las Positas Rd | 6 | Low | 3.0 |
| 5F2TC411 | 0.5 | 4572 Las Positas Rd | 7 | Low | 3.3 |
| 5G1TC106 | 4.6 | 4573 Las Positas Rd | 8 | High | 27.2 |
| 5G1TC111 | 1.5 | 4574 Las Positas Rd | 9 | Low | 3.9 |
| 5G1TC201 | 3.4 | 4575 Las Positas Rd | 10 | High | 19.8 |
| Total | 442 | | | | 3,091 |

A-3: Existing Parcels with Private Devices Treatment Calculations

| Street Number | Street Name | Hydrodynamic Separator | Water Quality Inlets | Media Filters | Private Tree Well Filter | Public Tree Well Filter * | Area (ac) | Trash Captured (minus ex City device catchments) (gal/year) |
|---------------|------------------------|------------------------|----------------------|---------------|--------------------------|---------------------------|------------|---|
| 50 | Contractor's Street | X | | | | | 2.34 | 17.55 |
| 3102-3278 | Constitution Drive | X | | | | | 9.35 | 67.18 |
| 3142 | Constitution Drive | | | | | X | | |
| 4542 | Contractor's Place | X | | | | | 2.04 | 15.00 |
| 3103-3197 | Independence Drive | | | X | | | 4.62 | 34.62 |
| 2304 | Kitty Hawk Road | | X | | | | 8.30 | 61.34 |
| 6850 | Brisa Street | | X | | | | 6.35 | 47.65 |
| 6650 | National Drive | | X | | | | 6.22 | 46.61 |
| 7600-7648 | National Drive | X | | | | | 2.43 | 17.05 |
| 7770 | Hawthorne Avenue | | X | | | | 4.96 | 37.14 |
| 200 | Greenville Road | X | | | | | 2.44 | 10.82 |
| 922 | Larkspur Drive | X | | | | | | |
| 3100 | Las Positas Road | X | | | | | 5.08 | 38.05 |
| 3200 | Las Positas Road | X | | | | | 3.26 | 24.01 |
| 3400 | Las Positas Road | X | | | | | 1.92 | 14.31 |
| 2500 | Las Positas Road | X | | | | | 5.58 | 167.39 |
| 5489 | Las Positas Road | | | | | X | | |
| 5699 | Las Positas Road | | | | | X | | |
| 6211 | Las Positas Road | X | | | | | 6.07 | 45.49 |
| 6475 | Las Positas Road | X | | | | | 3.14 | 23.58 |
| 6553-6589 | Las Positas Road | X | | | | | 2.99 | 22.45 |
| 6061 | Northfront Road | | X | | | | 0.69 | 14.24 |
| 6049 | Northfront Road | | X | | | | 0.68 | 16.18 |
| 6200 | Northfront Road | | | | | X | | |
| 100 | North Canyons Parkway | X | | | | | 3.31 | 24.80 |
| 3560 | Robertson Park Road | | X | | | | 8.22 | 61.67 |
| 1860 | Second Street | | | | X | | 0.70 | 5.40 |
| 5750 | Scenic Avenue | | X | | | | 0.70 | 0.00 |
| 6153-6175 | Southfront Road | | X | | | | 6.46 | 48.44 |
| 355 | South Vasco Road | | | X | | | 11.70 | 87.78 |
| 101 | Vineyard Avenue | X | | | | | 4.20 | 0.00 |
| 800 | East Stanley Boulevard | X | | | | | 9.53 | 72.37 |
| Totals | | | | | | | 123 | 1,021 |

*Drainage areas and capture volumes for public tree well filters unknown at this time

Appendix B: Detailed Cost Estimates

| A | B | C | D | E | F | G | H | I | J | K | L | M | P | Q | R | S |
|------------------------|---------------------|-----|----------|-------|---------------------------|---------------------|--------------------|---------------------------------|--------------------------|---|----------------------------|---|---|----------------------------------|-------------------------------------|---|
| Device ID | Device Type | TMA | Location | Acres | Load Reduction (gal/year) | Treatment t Q (cfs) | Device Cost (2014) | Diversion Structure Cost (2014) | Installation Cost (2016) | Total Base Cost on Year (H+I+J) (In 2016 dollars) | Construct Lifetime (years) | Yearly Maintenance Cost (Cost Per Year (time before replacement is required) at Installation) | Yearly Maintenance Cost (Present Value) | Replacement Cost (Present Value) | Total Lifetime Cost (Present Value) | |
| 110 | Off-Line HDS | | | 862 | | 97.4 | \$282,653 | \$20,000 | \$605,306 | | 50 | \$956 | \$23,000 | \$930,960 | \$0 | |
| 111 | Off-Line HDS | | | | | 39.0 | \$113,056 | \$18,000 | \$262,111 | | 50 | \$956 | \$23,000 | \$116,170 | \$0 | |
| 112 | In-Line HDS | | | | | 8.5 | \$40,256 | | \$80,512 | | 50 | \$956 | \$23,000 | \$143,770 | \$0 | |
| 114 | Off-Line HDS | | | | | 708 | \$64,984 | \$16,500 | \$162,969 | | 50 | \$956 | \$23,000 | \$267,450 | \$0 | |
| 115-1 | Off-Line HDS | | | | | 23.3 | \$65,669 | \$16,500 | \$164,338 | | 50 | \$956 | \$23,000 | \$269,510 | \$0 | |
| 115-2 | In-Line Roscoe Moss | | | | | 46.2 | \$134,030 | | \$268,061 | | 50 | \$956 | \$23,000 | \$425,090 | \$0 | |
| 164 | In-Line HDS | | | | | 553 | \$53,580 | | \$107,161 | | 50 | \$956 | \$23,000 | \$183,740 | \$0 | |
| 165 | Off-Line HDS | | | | | 66.2 | \$165,600 | \$18,000 | \$367,200 | | 50 | \$956 | \$23,000 | \$573,800 | \$0 | |
| 169 | Inlet | | | | | 345 | \$500 | | \$500 | | 25 | \$239 | \$5,690 | \$73,101 | \$0 | |
| 172 | Inlet | | | | | 12 | \$500 | | \$500 | | 25 | \$239 | \$5,690 | \$71,011 | \$0 | |
| 174 | Inlet | | | | | 6.4 | \$500 | | \$500 | | 25 | \$239 | \$5,690 | \$71,011 | \$0 | |
| 176 | Inlet | | | | | 12R | \$500 | | \$500 | | 25 | \$239 | \$5,690 | \$71,011 | \$0 | |
| 224 | Inlet | | | | | 2.7 | \$500 | | \$500 | | 25 | \$239 | \$5,690 | \$71,011 | \$0 | |
| 514 | Inlet | | | | | 4.0 | \$500 | | \$500 | | 25 | \$239 | \$5,690 | \$71,011 | \$0 | |
| 1010 | Off-Line HDS | | | | | 4 | | | | | 50 | \$956 | \$23,000 | \$549,500 | \$0 | |
| Subtotal | | | | | | | | | | | | | | | | |
| 50% Contingency | | | | | | | | | | | | | | | | |
| Total | | | | | | | | | | | | | | | | |
| | | | | | | | \$3,559,000 | | \$3,559,000 | | | | \$2,000 | \$3,803,000 | \$5,704,500 | |
| | | | | | | | \$1,779,500 | | \$1,779,500 | | | | \$120,500 | \$1,901,500 | \$1,901,500 | |
| | | | | | | | \$5,338,500 | | \$5,338,500 | | | | \$361,500 | \$5,704,500 | \$5,704,500 | |

2022 100% Reduction Goal Estimate

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S |
|-----------|-------------|-----|----------|-------|---------------------------|--------------------------|--------------------|--------------------------------|-----------------------------|-------------------------|-------------------|---------------------------|-------------------------------------|--|--|--|-------------------------------------|---------|
| Device ID | Device Type | TMA | Location | Acres | Load Reduction (gal/year) | Device Treatment (g/cfs) | Device Cost (2016) | Division Structure Cost (2016) | Installation Cost (2016) | Total Base Cost on Year | Construction Year | lifetime (years) | Total Base Cost (Construction Year) | Device + Installation Cost (Present Value) | Yearly Maintenance Cost | Yearly Replacement Cost (Present Value) | Total Lifetime Cost (Present Value) | |
| | | | | | | | (In 2016 dollars) | (In 2016 dollars) | (2xH+1 for Off-Line Filter) | (H+I+J) | | (time before replacement) | (K inflated 2.54% to 2016) | (N inflated 6.25% to 2016) | (P inflated 2.54% over 50 years and deflated 6.25% to present value) | (Q inflated 2.54% over 1+25 years and deflated 6.25% to present value) | (O+Q+R) | |
| 104 | Inlet | 16P | | 6.3 | 185 | 225 | \$500 | \$500 | \$1,000 | 2018 | 25 | \$1,050 | \$930 | \$251 | \$5,690 | \$383 | \$7,000 | \$7,000 |
| 105 | Inlet | 9R | | 30.5 | 119 | 2.7 | \$500 | \$500 | \$1,000 | 2018 | 25 | \$1,050 | \$930 | \$251 | \$5,690 | \$383 | \$7,000 | \$7,000 |
| 106 | Inlet | 9 | | 15.9 | 119 | 2.7 | \$500 | \$500 | \$1,000 | 2018 | 25 | \$1,050 | \$930 | \$251 | \$5,690 | \$383 | \$7,000 | \$7,000 |
| 107 | Inlet | 9 | | 7.2 | 55 | 1.2 | \$500 | \$500 | \$1,000 | 2018 | 25 | \$1,050 | \$930 | \$251 | \$5,690 | \$383 | \$7,000 | \$7,000 |
| 108 | Inlet | 9 | | 8.4 | 41 | 1.4 | \$500 | \$500 | \$1,000 | 2018 | 25 | \$1,050 | \$930 | \$251 | \$5,690 | \$383 | \$7,000 | \$7,000 |
| 116 | Inlet | 9 | | 5.0 | 90 | 1.3 | \$500 | \$500 | \$1,000 | 2018 | 25 | \$1,050 | \$930 | \$251 | \$5,690 | \$383 | \$7,000 | \$7,000 |
| 145 | Inlet | 11R | | 2.7 | 70 | 0.5 | \$500 | \$500 | \$1,000 | 2018 | 25 | \$1,050 | \$930 | \$251 | \$5,690 | \$383 | \$7,000 | \$7,000 |
| 147 | Inlet | 6 | | 4.5 | 96 | 0.7 | \$500 | \$500 | \$1,000 | 2018 | 25 | \$1,050 | \$930 | \$251 | \$5,690 | \$383 | \$7,000 | \$7,000 |
| 148 | Inlet | 6 | | 21.8 | 154 | 2.8 | \$500 | \$500 | \$1,000 | 2018 | 25 | \$1,050 | \$930 | \$251 | \$5,690 | \$383 | \$7,000 | \$7,000 |
| 151 | Inlet | 16P | | 5.8 | 44 | 1.4 | \$500 | \$500 | \$1,000 | 2018 | 25 | \$1,050 | \$930 | \$251 | \$5,690 | \$383 | \$7,000 | \$7,000 |
| 152 | Inlet | 11I | | 6.7 | 46 | 1.6 | \$500 | \$500 | \$1,000 | 2018 | 25 | \$1,050 | \$930 | \$251 | \$5,690 | \$383 | \$7,000 | \$7,000 |
| 153 | Inlet | 11I | | 6.8 | 47 | 1.6 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 155 | Inlet | 11I | | 4.1 | 27 | 0.9 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 156 | Inlet | 11I | | 7.8 | 33 | 1.4 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 157 | Inlet | 11I | | 8.8 | 47 | 1.8 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 160 | Inlet | 11I | | 6.1 | 35 | 1.3 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 162 | In-Line HDS | 11I | | 85.0 | 389 | 7.2 | \$37,371 | \$102,793 | \$154,110 | 2019 | 50 | \$165,950 | \$1138,270 | \$1,031 | \$22,800 | \$161,100 | \$7,000 | \$7,000 |
| 166 | Inlet | 17 | | 11.3 | 33 | 1.6 | \$500 | \$500 | \$1,000 | 2018 | 25 | \$1,050 | \$930 | \$251 | \$5,690 | \$383 | \$7,000 | \$7,000 |
| 167 | Inlet | 16P | | 5.7 | 30 | 0.7 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 173 | Inlet | 16P | | 24.2 | 141 | 2.5 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 177 | Inlet | 16P | | 3.1 | 63 | 0.8 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 188 | Inlet | 16P | | 31.6 | 145 | 6.9 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 189 | Inlet | 12R | | 26.3 | 148 | 6.1 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 334 | Inlet | 17 | | 18.9 | 78 | 2.2 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 335 | Inlet | 17 | | 30.8 | 54 | 3.4 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 337 | Inlet | 16P | | 25.9 | 119 | 7 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 346 | Inlet | 16P | | 24 | 168 | 7 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 348 | Inlet | 16P | | 9.7 | 34 | 2.47 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 349 | Inlet | 14R | | 15.8 | 78 | 2.6 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 352 | Inlet | 14C | | 27.5 | 65 | 4.8 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 353 | Inlet | 15S | | 31.8 | 55 | 4.5 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 358 | Inlet | 16P | | 13.7 | 85 | 1.8 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 359 | Inlet | 16P | | 13.0 | 87 | 2.1 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 360 | Inlet | 14C | | 32.0 | 155 | 5.7 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 362 | Inlet | 16P | | 12.5 | 42 | 3.2 | \$500 | \$500 | \$1,000 | 2019 | 25 | \$1,080 | \$900 | \$258 | \$5,690 | \$370 | \$7,000 | \$7,000 |
| 367 | Inlet | 11C | | 6.7 | 50 | 0.8 | \$500 | \$500 | \$1,000 | 2020 | 25 | \$1,100 | \$860 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 375 | Inlet | 16P | | 11.0 | 32 | 2.3 | \$500 | \$500 | \$1,000 | 2020 | 25 | \$1,100 | \$860 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 377 | Inlet | 11 | | 8.5 | 31 | 1.1 | \$500 | \$500 | \$1,000 | 2020 | 25 | \$1,100 | \$860 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 381 | Inlet | 11 | | 10.3 | 41 | 2 | \$500 | \$500 | \$1,000 | 2020 | 25 | \$1,100 | \$860 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 389 | Inlet | 1R | | 8.7 | 68 | 2.5 | \$500 | \$500 | \$1,000 | 2020 | 25 | \$1,100 | \$860 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 390 | Inlet | 1C | | 2.6 | 70 | 0.75 | \$500 | \$500 | \$1,000 | 2020 | 25 | \$1,100 | \$860 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 391 | Inlet | 1C | | 2.0 | 25 | 1.31 | \$500 | \$500 | \$1,000 | 2020 | 25 | \$1,100 | \$860 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 399 | Inlet | 11 | | 4.9 | 36 | 1.31 | \$500 | \$500 | \$1,000 | 2020 | 25 | \$1,100 | \$860 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 404 | Inlet | 11 | | 9.7 | 304 | 1.87 | \$500 | \$500 | \$1,000 | 2020 | 25 | \$1,100 | \$860 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 409 | Inlet | 8 | | 2.1 | 36 | 0.4 | \$500 | \$500 | \$1,000 | 2020 | 25 | \$1,100 | \$860 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 412 | Inlet | 8 | | 7.6 | 40 | 1.9 | \$500 | \$500 | \$1,000 | 2020 | 25 | \$1,100 | \$860 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 416 | Inlet | 13C | | 13.7 | 41 | 2.2 | \$500 | \$500 | \$1,000 | 2020 | 25 | \$1,100 | \$860 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 418 | Inlet | 16P | | 25.5 | 188 | 2.79 | \$500 | \$500 | \$1,000 | 2020 | 25 | \$1,100 | \$860 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 421 | Inlet | 16P | | 33.3 | 31 | 5.80 | \$500 | \$500 | \$1,000 | 2020 | 25 | \$1,100 | \$860 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S |
|------------------------|--------------|-----|----------|--------------------------|-------|---------------------|--------------------|---------------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-------------------------------------|--|--|--|--|--|
| ID | Device Type | TMA | Location | Load Reduction Treatment | Acres | (gal/year) tQ (cfs) | Device Cost (2016) | Diversion Structure Cost (2016) | Installation Cost (2016) | Total Base Cost (2016) | Construct on Year | Construct Lifetime (Years) | Total Base Cost (Construction Year) | Device + Installation Cost (Present Value) | Yearly Maintenance (Present Value) | Replacement Cost (Present Value) | Total Lifetime Cost (Present Value) | |
| | | | | | | | (In 2016 dollars) | (2xH+I for Off-Line Filter) | (H+I+J) | (K Inflated 2.54% to 2016) | (L Inflated 2.54% to 2016) | (M Inflated 2.54% to 2016) | (N deflated 6.25% to 2016) | (O Inflated 2.54% over 50 years and deflated 6.25% to present value) | (P Inflated 2.54% over 50 years and deflated 6.25% to present value) | (Q Inflated 2.54% over 50 years and deflated 6.25% to present value) | (R Inflated 2.54% over 50 years and deflated 6.25% to present value) | (S Inflated 2.54% over 50 years and deflated 6.25% to present value) |
| 422 | Inlet | 16P | | | 80 | 11.7 | \$500 | \$500 | \$1,000 | \$1,000 | 2020 | 25 | \$1,100 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 427 | Inlet | 16P | | | 57 | 2.95 | \$500 | \$500 | \$1,000 | \$1,000 | 2020 | 25 | \$1,100 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 429 | Inlet | 13I | | | 30 | 7.9 | \$500 | \$500 | \$1,000 | \$1,000 | 2020 | 25 | \$1,100 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 430 | Inlet | 16P | | | 138 | 21.7 | \$500 | \$500 | \$1,000 | \$1,000 | 2020 | 25 | \$1,100 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 431 | Inlet | 4P | | | 7.7 | 1.8 | \$500 | \$500 | \$1,000 | \$1,000 | 2020 | 25 | \$1,100 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 433 | Inlet | 4 | | | 60 | 8.1 | \$500 | \$500 | \$1,000 | \$1,000 | 2020 | 25 | \$1,100 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 439 | Inlet | 4 | | | 15.0 | 4.7 | \$500 | \$500 | \$1,000 | \$1,000 | 2020 | 25 | \$1,100 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 448 | Inlet | 12C | | | 5.3 | 1.7 | \$500 | \$500 | \$1,000 | \$1,000 | 2020 | 25 | \$1,100 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 449 | Inlet | 12C | | | 3.7 | 1.5 | \$500 | \$500 | \$1,000 | \$1,000 | 2020 | 25 | \$1,100 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 458 | Inlet | 12C | | | 3.4 | 1.3 | \$500 | \$500 | \$1,000 | \$1,000 | 2020 | 25 | \$1,100 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 460 | Inlet | 12C | | | 7.9 | 2.2 | \$500 | \$500 | \$1,000 | \$1,000 | 2020 | 25 | \$1,100 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 466 | Inlet | 16P | | | 40 | 1.1 | \$500 | \$500 | \$1,000 | \$1,000 | 2020 | 25 | \$1,100 | \$264 | \$5,690 | \$357 | \$6,900 | \$6,900 |
| 471 | Inlet | 12C | | | 5.8 | 1.9 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 473 | Inlet | 12C | | | 4.7 | 2.8 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 475 | Inlet | 12C | | | 8.3 | 3.2 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 484 | Inlet | 11C | | | 6.1 | 1.8 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 485 | Inlet | 11C | | | 5.7 | 2.2 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 487 | Inlet | 11 | | | 5.8 | 2.2 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 490 | Inlet | 1C | | | 4.1 | 2.1 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 492 | Inlet | 1C | | | 8.7 | 1.3 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 495 | Inlet | 9 | | | 6.0 | 1.2 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 500 | Inlet | 9 | | | 1.5 | 0.4 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 501 | Inlet | 16P | | | 2.2 | 0.7 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 517 | In-Line HDS | 2I | | | 40.4 | 8.6 | \$500 | \$500 | \$1,000 | \$1,000 | 2020 | 50 | \$180,080 | \$1,057 | \$22,800 | \$0 | \$164,100 | \$164,100 |
| 518 | Inlet | 2R | | | 186 | 1.9 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 533 | In-Line HDS | 2R | | | 67.3 | 13.0 | \$44,479 | \$16,500 | \$121,959 | \$182,940 | 2021 | 25 | \$30 | \$830 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 534 | In-Line HDS | 4 | | | 30.2 | 7.5 | \$39,084 | \$14,000 | \$106,169 | \$159,250 | 2021 | 50 | \$206,170 | \$1,084 | \$22,800 | \$0 | \$175,100 | \$175,100 |
| 601 | Inlet | 4 | | | 10.3 | 3.0 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 607 | Inlet | 4 | | | 2.1 | 0.6 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 614 | Inlet | 5R | | | 10.5 | 1.6 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 615 | Inlet | 5R | | | 4.3 | 0.9 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 616 | Inlet | 5R | | | 3.3 | 1.0 | \$500 | \$500 | \$1,000 | \$1,000 | 2021 | 25 | \$1,130 | \$271 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 617 | Inlet | 5R | | | 15.6 | 2.4 | \$500 | \$500 | \$1,000 | \$1,000 | 2022 | 25 | \$1,150 | \$278 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 618 | Inlet | 12R | | | 1.9 | 0.5 | \$500 | \$500 | \$1,000 | \$1,000 | 2022 | 25 | \$1,150 | \$278 | \$5,690 | \$344 | \$6,900 | \$6,900 |
| 1000 | Off-Line HDS | 12C | | | 137.6 | 16.8 | \$57,669 | \$16,500 | \$222,510 | \$250,770 | 2021 | 50 | \$185,200 | \$1,084 | \$22,800 | \$0 | \$162,000 | \$162,000 |
| 6000 | Off-Line HDS | 12R | | | 49.5 | 12.9 | \$44,308 | \$16,500 | \$121,615 | \$148,337 | 2022 | 50 | \$210,220 | \$1,111 | \$22,800 | \$0 | \$169,900 | \$169,900 |
| Subtotal | | | | | | | | | | \$1,147,000 | | | \$967,000 | \$603,000 | \$30,000 | \$1,602,000 | \$801,000 | \$2,403,000 |
| 50% Contingency | | | | | | | | | | \$573,500 | | | \$483,500 | \$301,500 | \$15,000 | \$801,000 | \$400,500 | \$1,203,000 |
| Total | | | | | | | | | | \$1,720,500 | | | \$1,450,500 | \$904,500 | \$45,000 | \$1,403,000 | \$1,203,000 | \$3,606,000 |

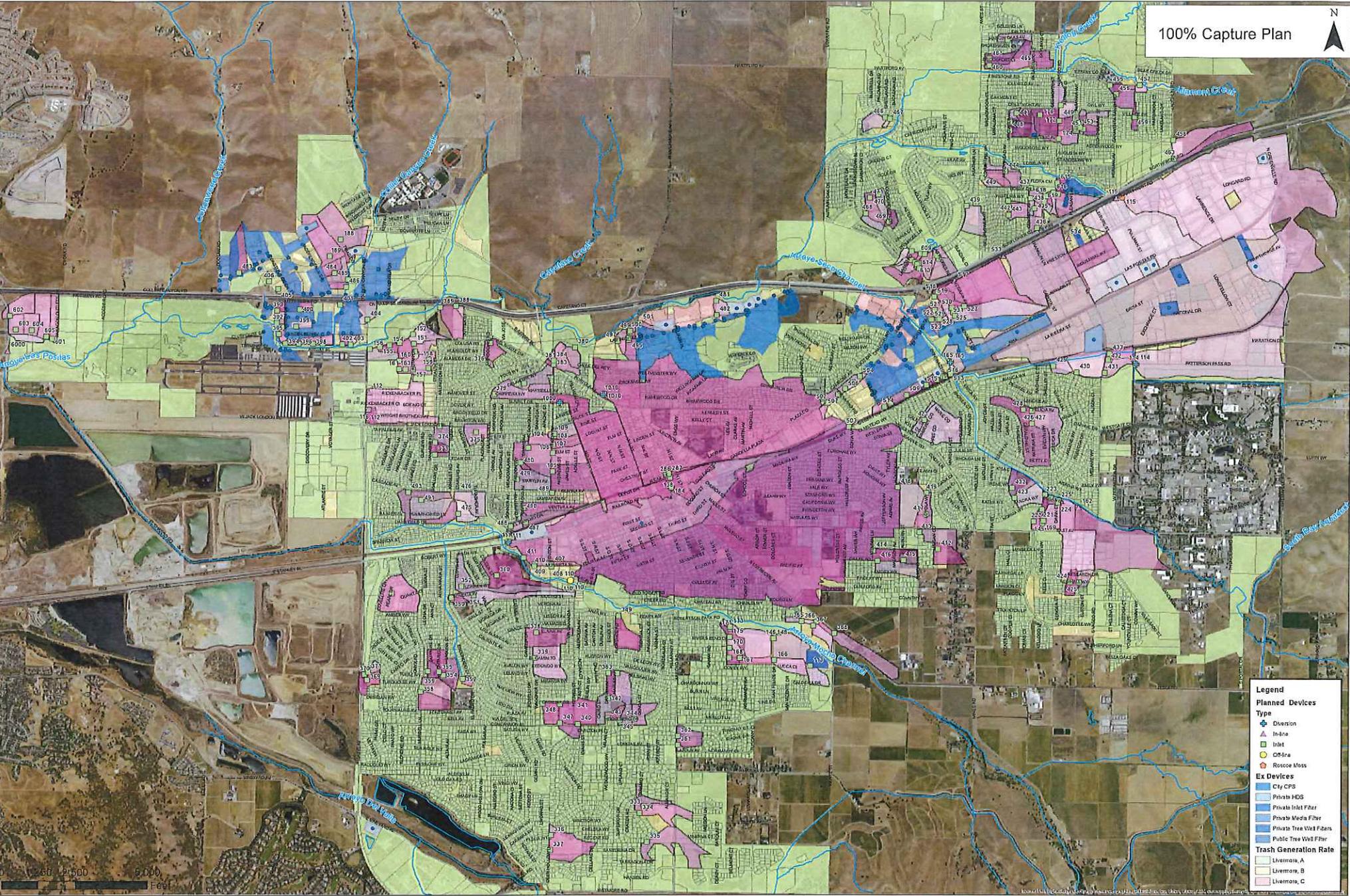
Appendix C: Full Scale 100% Trash Capture Plan

September 2016

A-10

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100% Capture Plan



Legend

Planned Devices

Type

- Diversion
- In-line
- Inlet
- Off-line
- Roscow Moss

Ex Devices

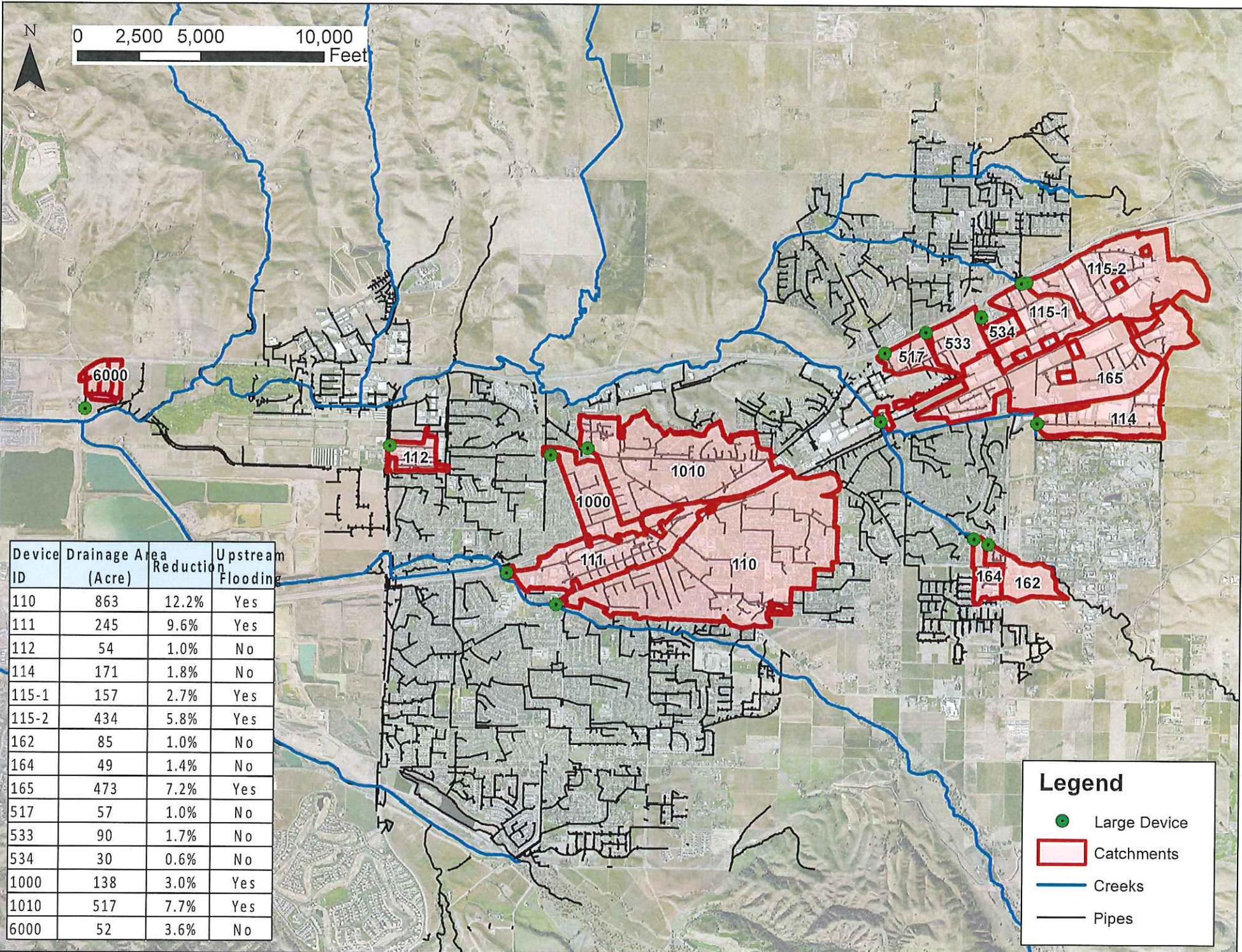
- City CPS
- Private HDS
- Private Inlet Filter
- Private Media Filter
- Private Tree Wet Filter
- Public Tree Wet Filter

Trash Generation Rate

- Livemore, A
- Livemore, B
- Livemore, C

0 1000 2000 5000 Feet

Appendix D: Conceptual Device Drawings



| Device ID | Drainage Area (Acre) | Area Reduction | Upstream Flooding |
|-----------|----------------------|----------------|-------------------|
| 110 | 863 | 12.2% | Yes |
| 111 | 245 | 9.6% | Yes |
| 112 | 54 | 1.0% | No |
| 114 | 171 | 1.8% | No |
| 115-1 | 157 | 2.7% | Yes |
| 115-2 | 434 | 5.8% | Yes |
| 162 | 85 | 1.0% | No |
| 164 | 49 | 1.4% | No |
| 165 | 473 | 7.2% | Yes |
| 517 | 57 | 1.0% | No |
| 533 | 90 | 1.7% | No |
| 534 | 30 | 0.6% | No |
| 1000 | 138 | 3.0% | Yes |
| 1010 | 517 | 7.7% | Yes |
| 6000 | 52 | 3.6% | No |

Legend

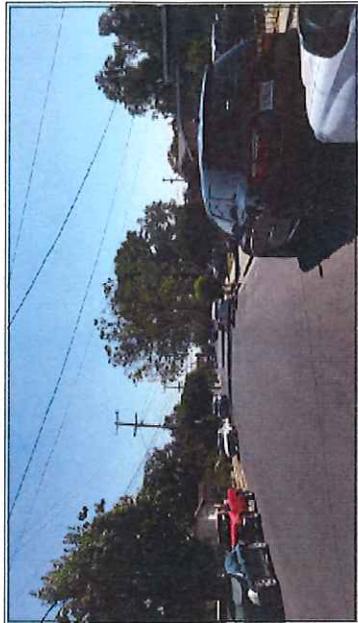
- Large Device
- Catchments
- Creeks
- Pipes

Project Description

Device Type:
Large Scale, Off-Line HDS

Service Area:
138 Acres

Field Notes:
Locate to avoid OH lines
Place on south side to avoid SS
Upstream flooding occurs
Verify existing utilities in street



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Livermore Trash Capture Device Locations: Device 1000



Vicinity Map



Livermore System

- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Other Utilities |
| Catch Basin | Water Meter |
| Manhole | Water Structure |
| Outfall | Sewer Pipe |
| Other Structure | Sewer Manhole |
| Planned Device | Sewer Cleanout |
| Diversion | Other SS Struct |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*



Project Description

Device Type:
Large Scale, Off-Line Single or Double HDS

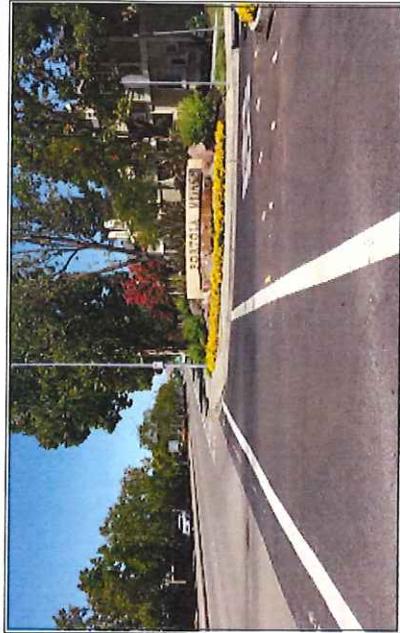
Service Area:
517 Acres

Field Notes:
Place one device at curb return for service

SS on north side of Portola (10' deep)
Pipe from diversion (6' deep) over SS

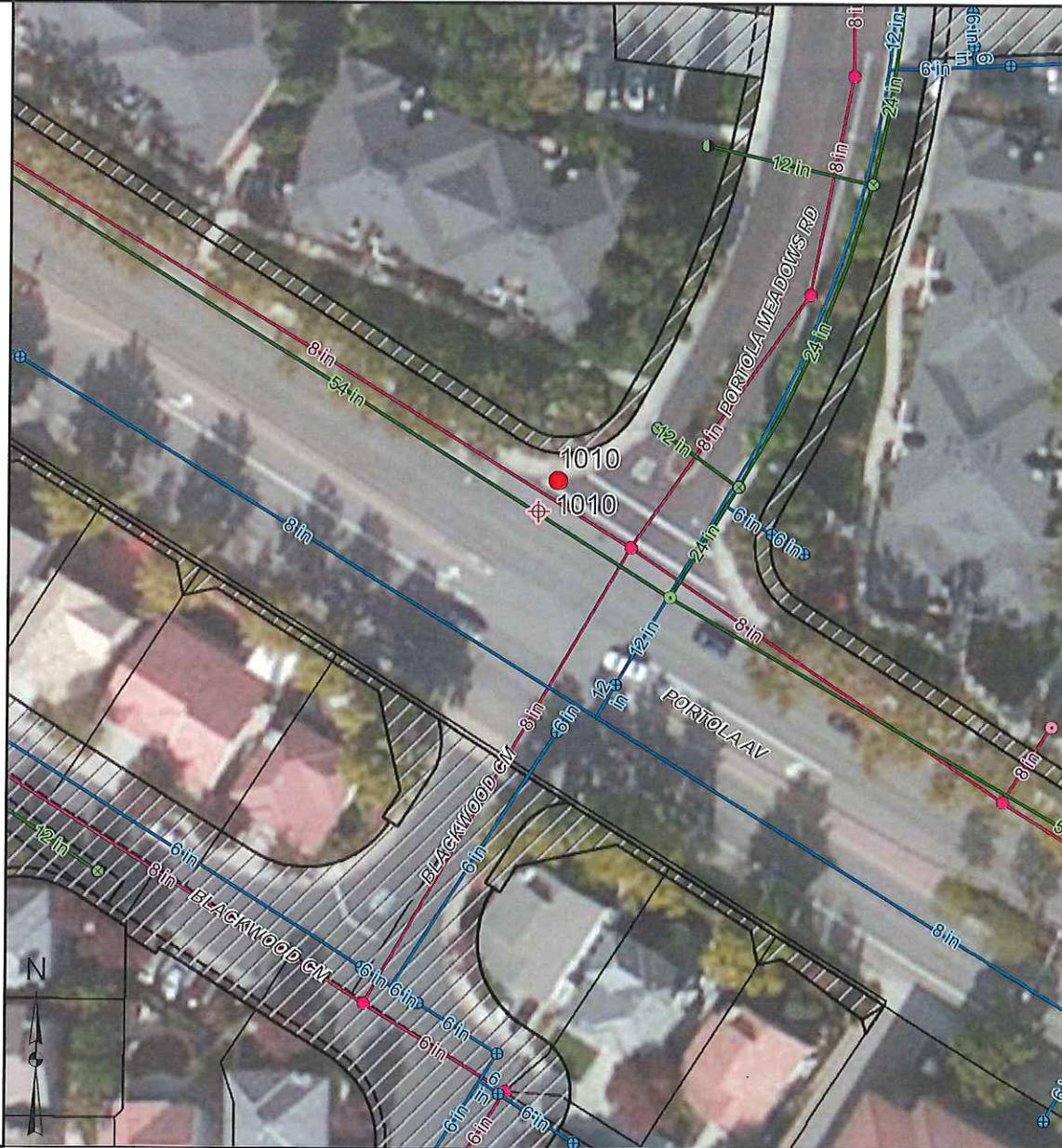
OH lighting and trees on Portola

Can move downstream if necessary



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Livermore Trash Capture Device Locations: Device 1010



Vicinity Map



Livermore System

- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Other Utilities |
| Catch Basin | Water Meter |
| Manhole | Water Structure |
| Outfall | Sewer Pipe |
| Other Structure | Sewer Manhole |
| Planned Device | Sewer Cleanout |
| Diversion | Other SS Struct |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*



Project Description

Device Type:
Large Scale, Double Off-Line HDS

Service Area:
862 Acres

Field Notes:
Bike Path Within City ROW

Double 60" (One is Capped for Future)

Low OH Lines at Access from Holmes



Livermore Trash Capture Device Locations: Device 110



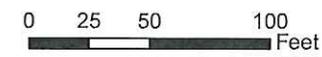
Vicinity Map



Livermore System

- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Other Utilities |
| Catch Basin | Water Meter |
| Manhole | Water Structure |
| Outfall | Sewer Pipe |
| Other Structure | Sewer Manhole |
| Planned Device | Sewer Cleanout |
| Diversion | Other SS Struct |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*



Project Description

Device Type:
Large Scale, Off-Line HDS

Service Area:
244 Acres

Field Notes:
CIP already planned on 54" pipe
Pipe runs along curb (Off street)



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Livermore Trash Capture Device Locations: Device 111



Vicinity Map



Livermore System

- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Water Meter |
| Catch Basin | Water Structure |
| Manhole | Sewer Pipe |
| Outfall | Sewer Manhole |
| Other Structure | Sewer Cleanout |
| Planned Device | Other SS Struct |
| Diversion | |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*

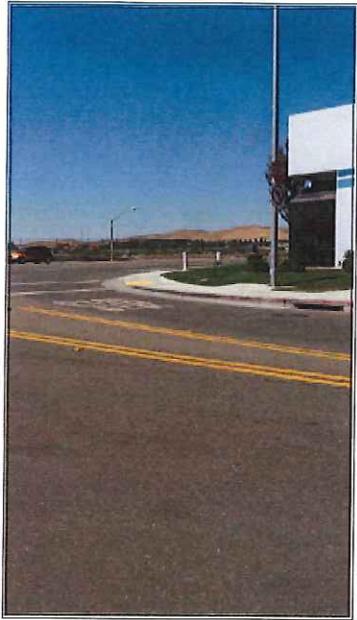


Project Description

Device Type:
Large Scale, In-Line HDS

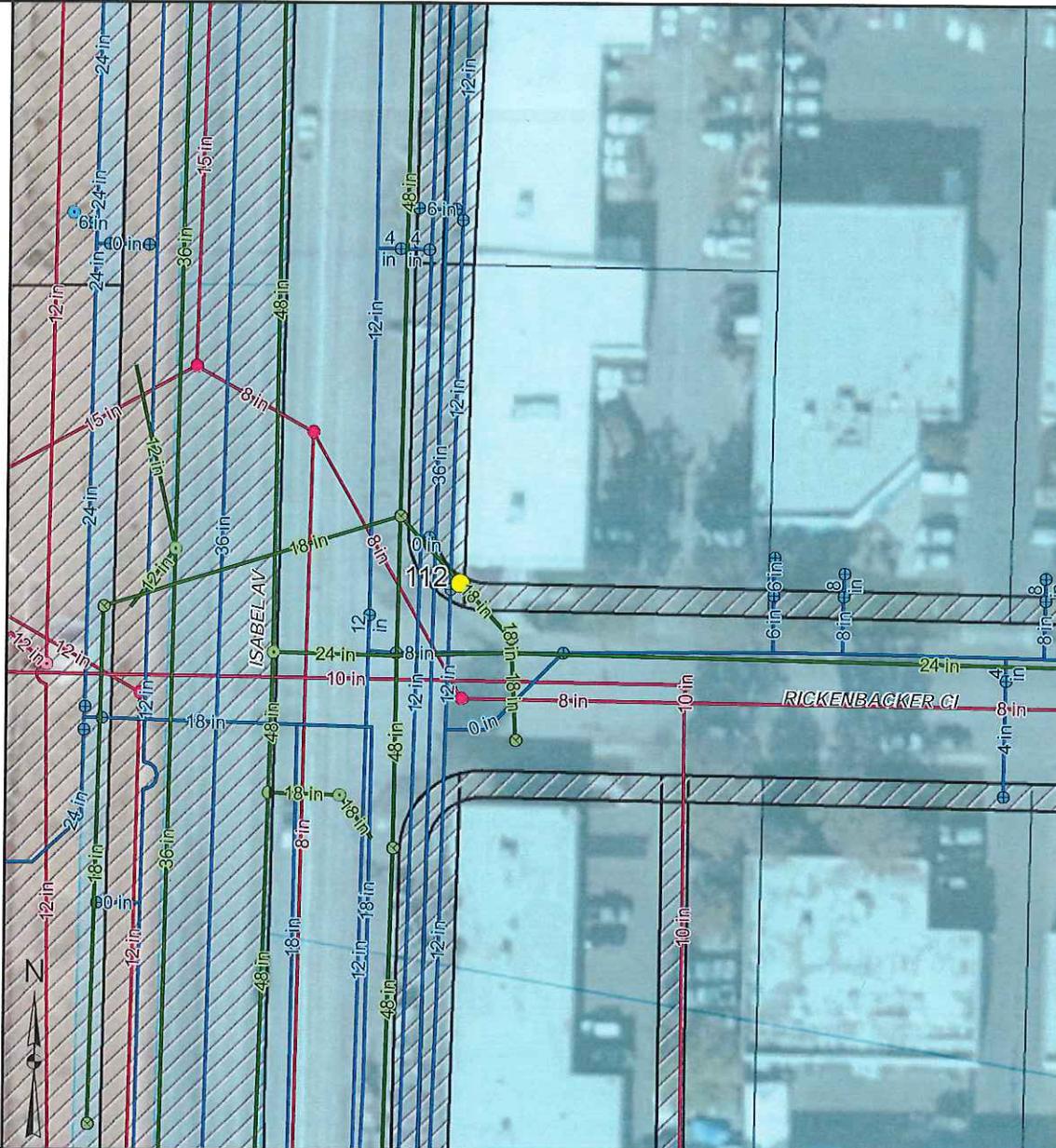
Service Area:
54 Acres

Field Notes:
Pipe invert 10-15' down
Pipe crosses lawn on corner



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Livermore Trash Capture Device Locations: Device 112-1



Vicinity Map



Livermore System

- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Other Utilities |
| Catch Basin | Water Meter |
| Manhole | Water Structure |
| Outfall | Sewer Pipe |
| Other Structure | Sewer Manhole |
| Planned Device | Sewer Cleanout |
| Diversion | Other SS Struct |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*



Project Description

Device Type:
Large Scale, In-Line HDS

Service Area:
54 Acres

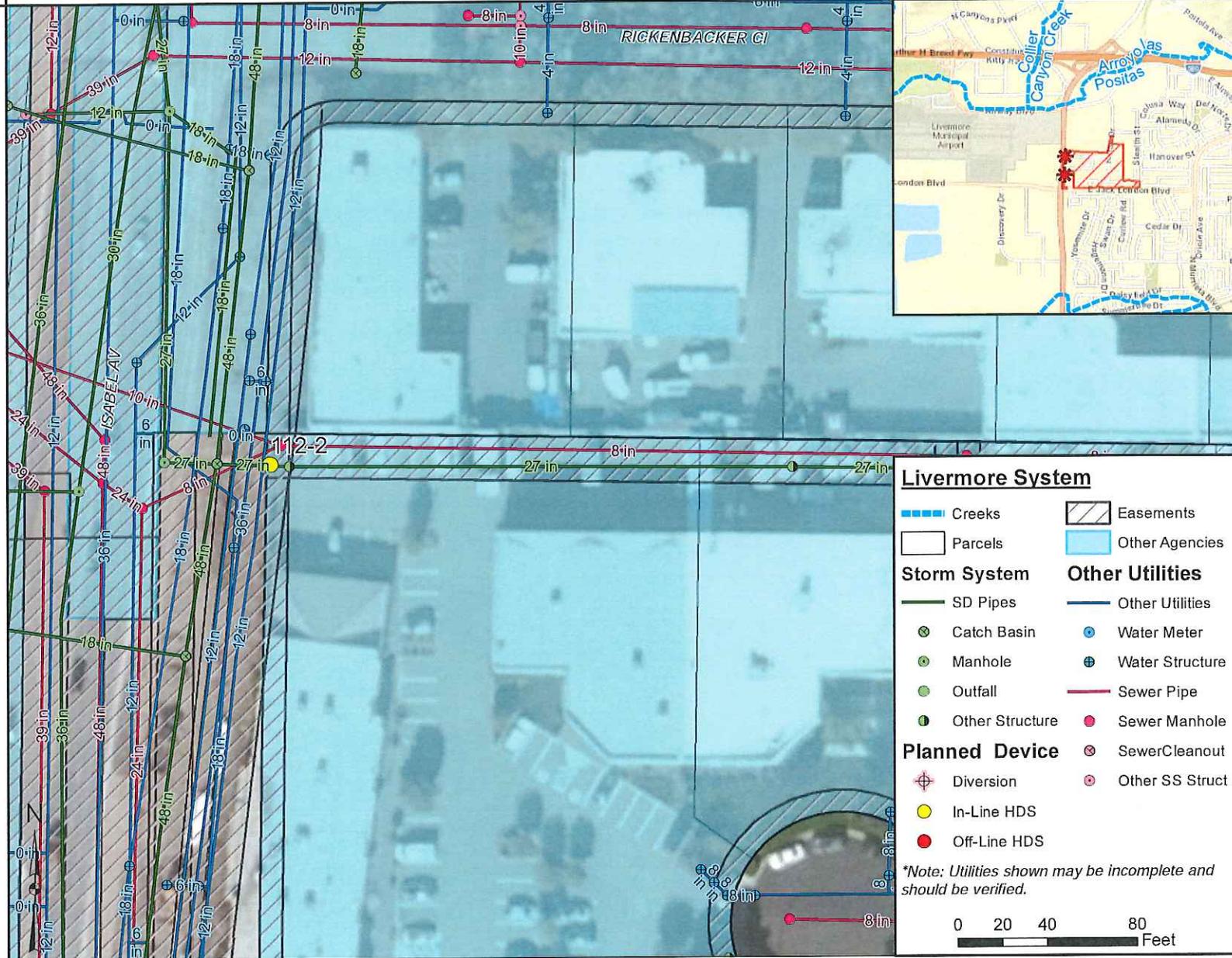
Field Notes:
Easements should be verified

Verify water line locations and depths



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Livermore Trash Capture Device Locations: Device 112-2



Vicinity Map



Livermore System

- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Other Utilities |
| Catch Basin | Water Meter |
| Manhole | Water Structure |
| Outfall | Sewer Pipe |
| Other Structure | Sewer Manhole |
| Planned Device | Sewer Cleanout |
| Diversion | Other SS Struct |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*

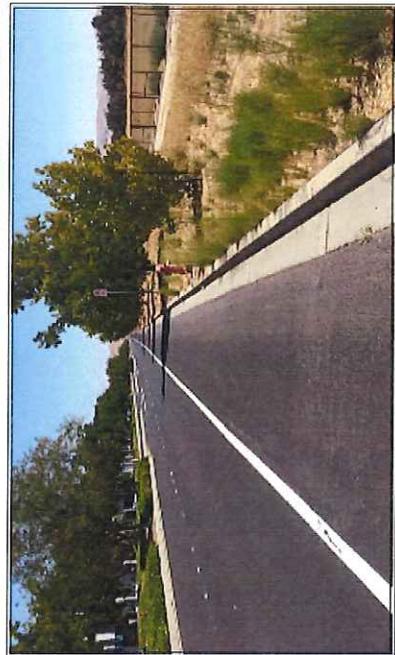


Project Description

Device Type:
Large Scale, Off-Line HDS

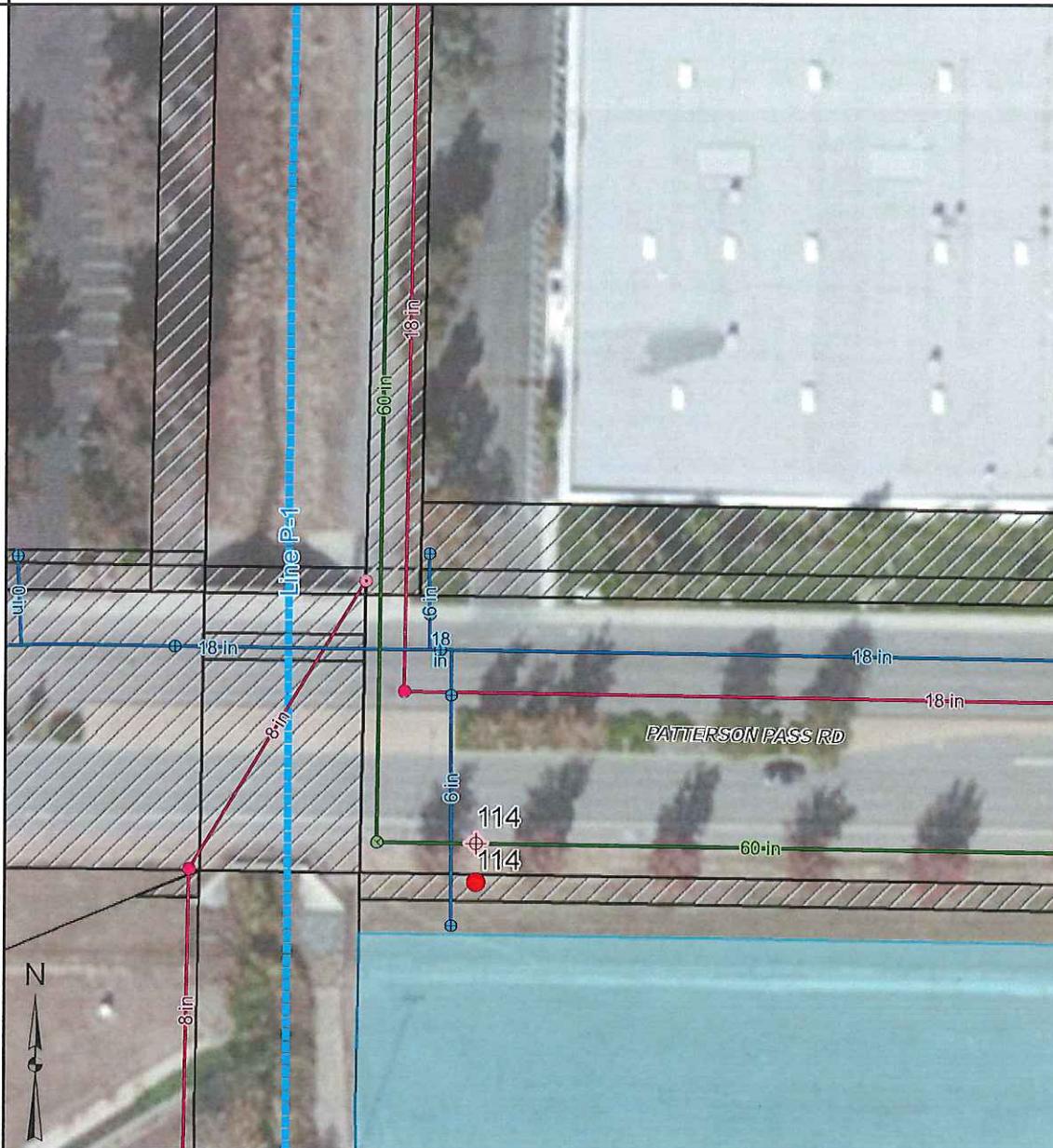
Service Area:
157 Acres

Field Notes:
Device off-line in landscape strip
Water line to hydrant (verify location)
Overhead lines parallel to Line P-1

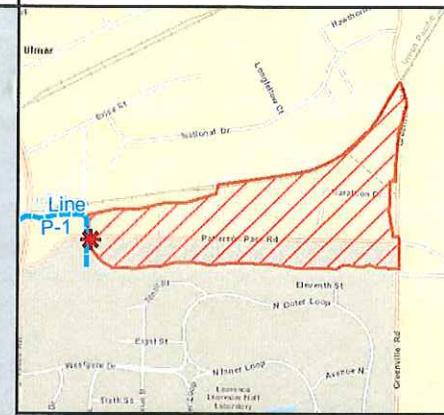


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Livermore Trash Capture Device Locations: Device 114



Vicinity Map



Livermore System

- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Other Utilities |
| Catch Basin | Water Meter |
| Manhole | Water Structure |
| Outfall | Sewer Pipe |
| Other Structure | Sewer Manhole |
| Planned Device | Sewer Cleanout |
| Diversion | Other SS Struct |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*



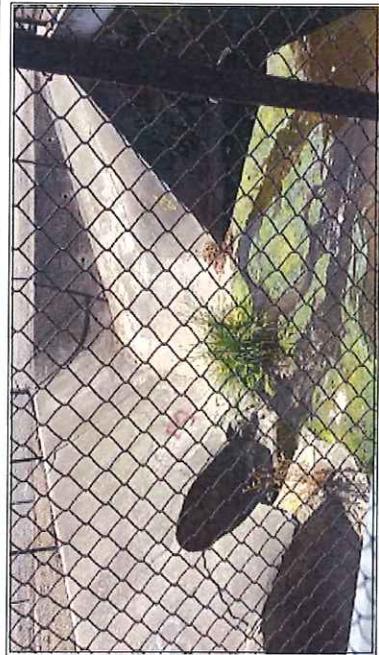
Project Description

Device Type:
Large Scale, In-Line Screen & Weir

Service Area:
434 Acres

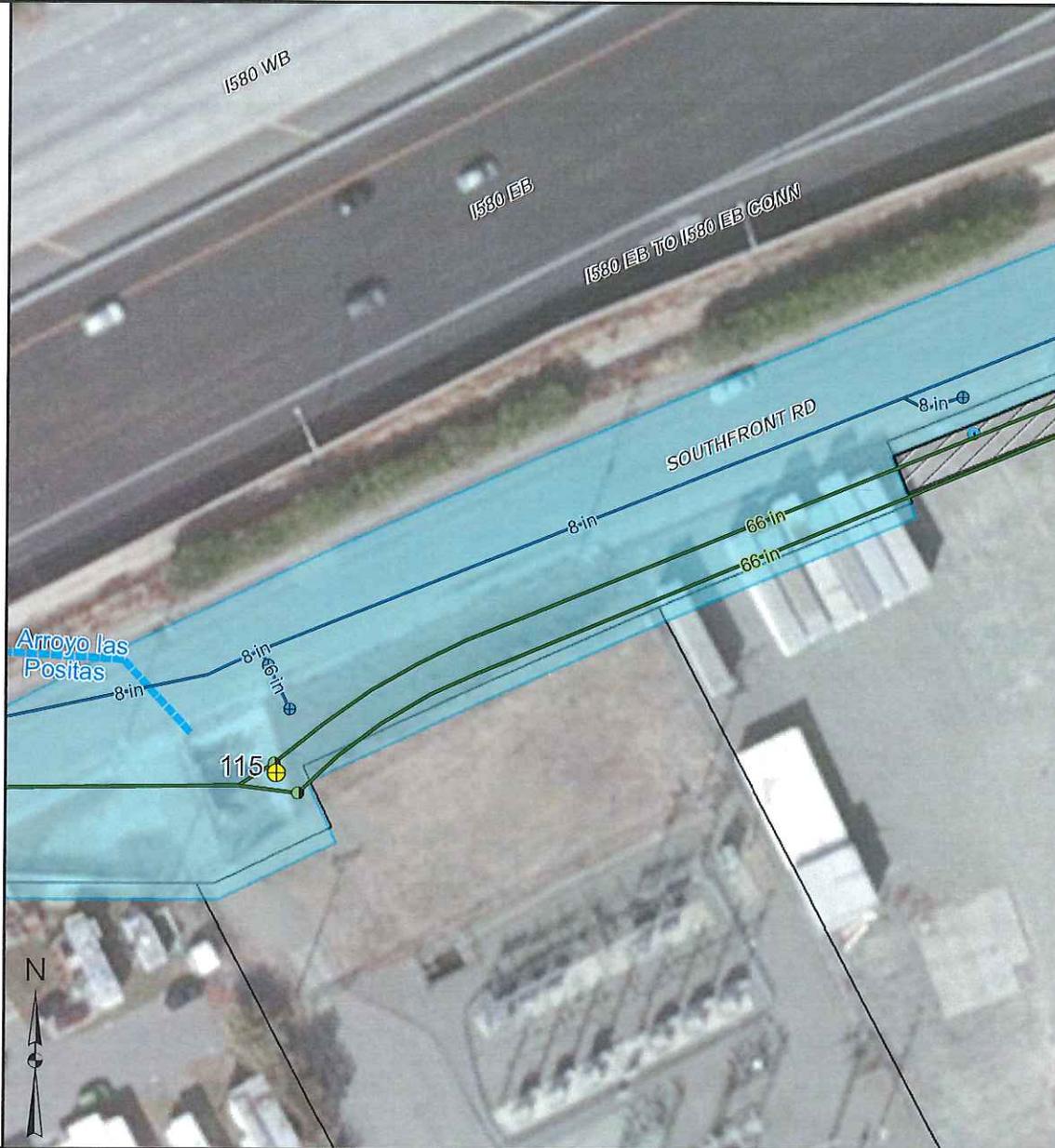
Field Notes:
Flooding issues upstream

Verify ownership of existing structure



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Livermore Trash Capture Device Locations: Device 115-1



Vicinity Map



Livermore System

- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Other Utilities |
| Catch Basin | Water Meter |
| Manhole | Water Structure |
| Outfall | Sewer Pipe |
| Other Structure | Sewer Manhole |
| Planned Device | Sewer Cleanout |
| Diversion | Other SS Struct |
| In-Line HDS | |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*

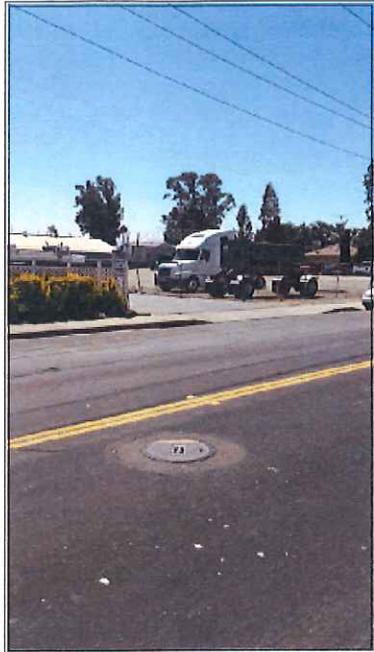


Project Description

Device Type:
Large Scale, In-Line or Off-Line HDS

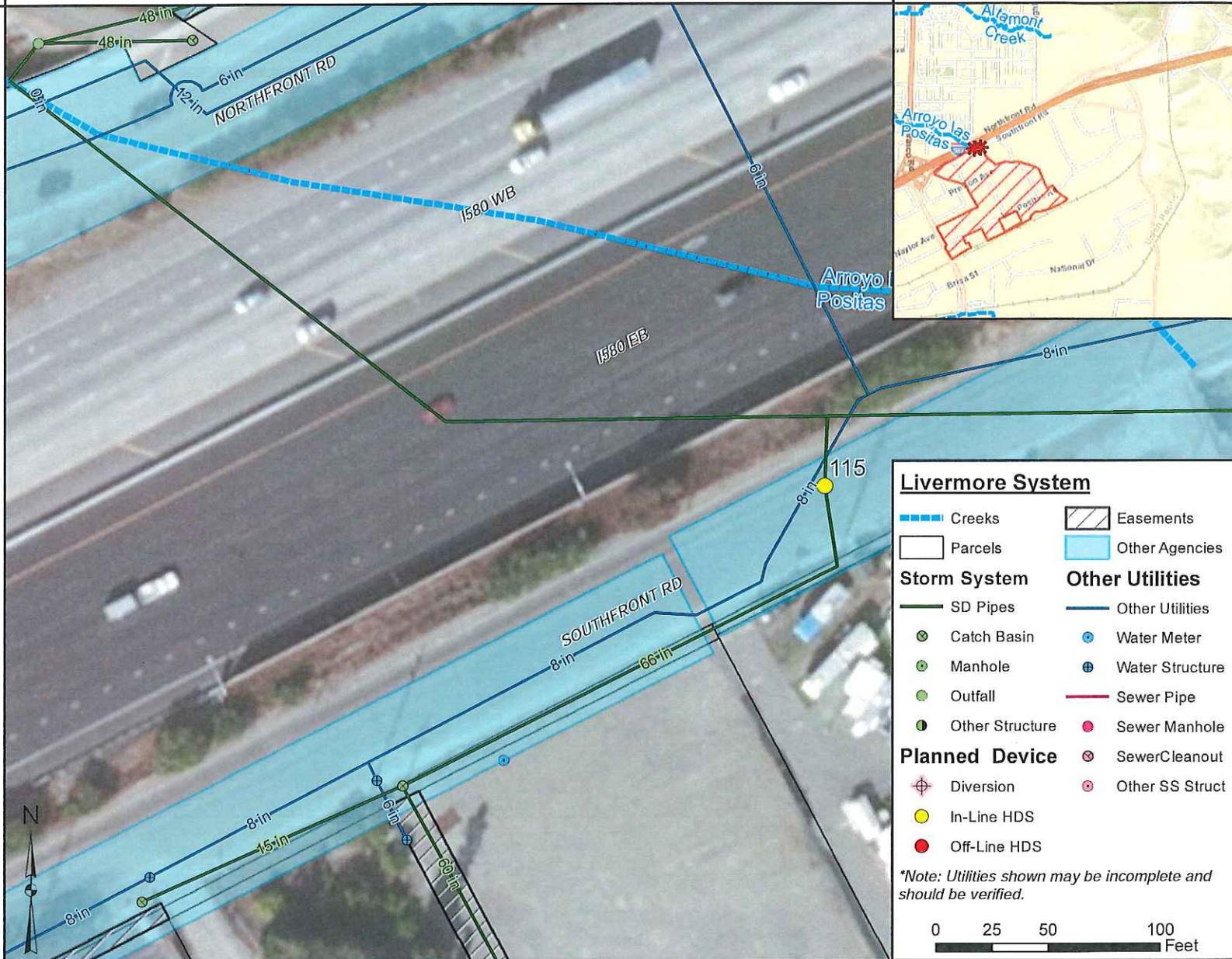
Service Area:
157 Acres

Field Notes:
OH power lines both sides of Southfront
Verify sanitary sewer line location



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Livermore Trash Capture Device Locations: Device 115-2



Vicinity Map



Livermore System

- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Other Utilities |
| Catch Basin | Water Meter |
| Manhole | Water Structure |
| Outfall | Sewer Pipe |
| Other Structure | Sewer Manhole |
| Planned Device | Sewer Cleanout |
| Diversion | Other SS Struct |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*

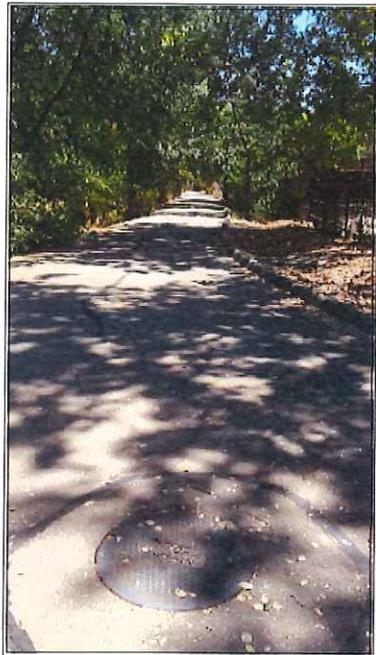


Project Description

Device Type:
Large Scale, In-Line HDS

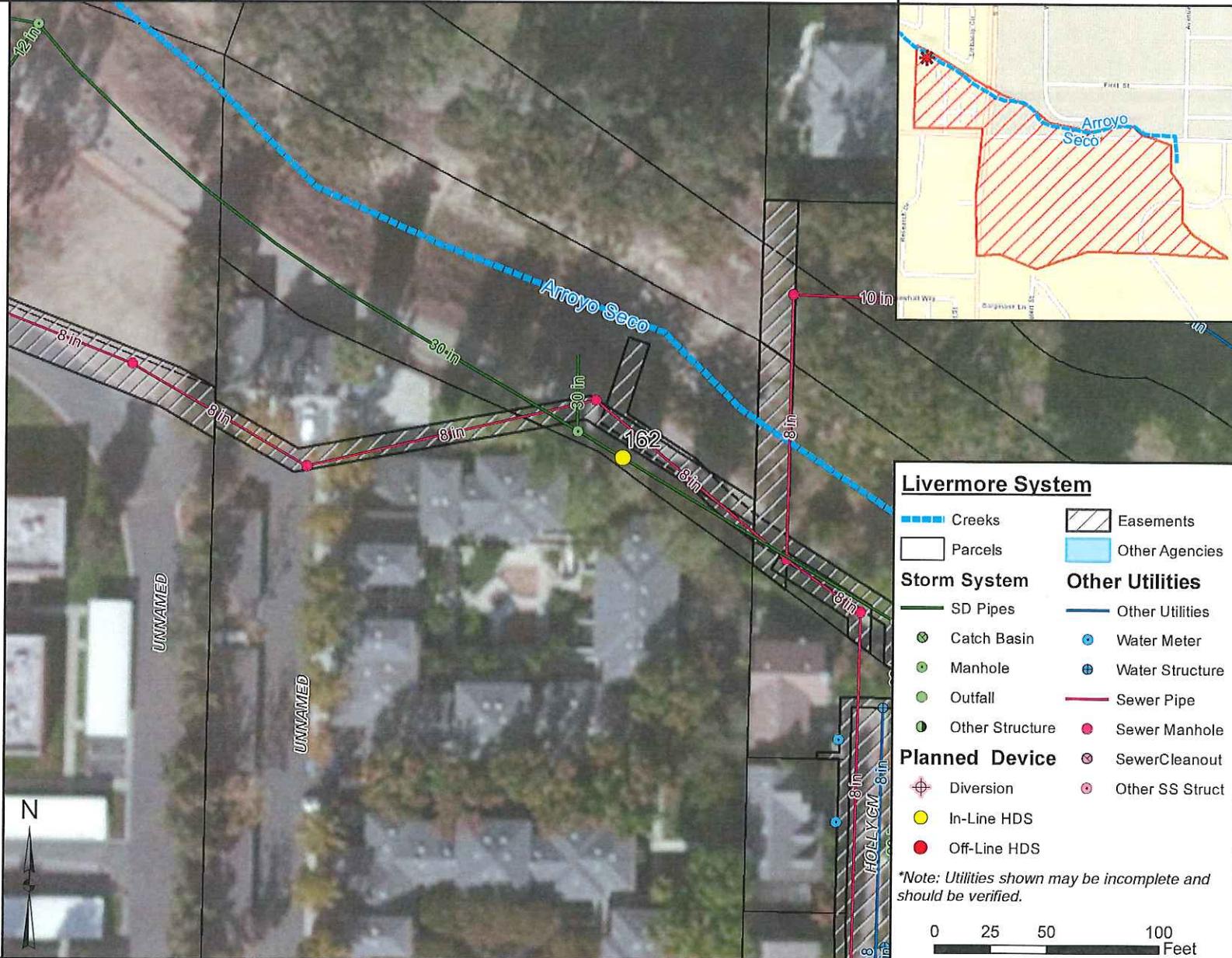
Service Area:
85 Acres

Field Notes:
Place upstream of existing manhole on bike path



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Livermore Trash Capture Device Locations: Device 162



Vicinity Map



Livermore System

- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Other Utilities |
| Catch Basin | Water Meter |
| Manhole | Water Structure |
| Outfall | Sewer Pipe |
| Other Structure | Sewer Manhole |
| Planned Device | SewerCleanout |
| Diversion | Other SS Struct |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*



Project Description

Device Type:
Large Scale, In-Line HDS

Service Area:
49 Acres

Field Notes:
Park strip north of Susan Ln City ROW
Large Zone 7 Water line in park strip.
Verify location

Water, Gas, SS, and Streetlights on Susan

Flooding issue upstream (trees on pipe)



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Livermore Trash Capture Device Locations: Device 164



Vicinity Map



Livermore System

- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Other Utilities |
| Catch Basin | Water Meter |
| Manhole | Water Structure |
| Outfall | Sewer Pipe |
| Other Structure | Sewer Manhole |
| Planned Device | Sewer Cleanout |
| Diversion | Other SS Struct |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*



Project Description

Device Type:
Large Scale, Off-Line Single or Double HDS

Service Area:
469 Acres

Field Notes:
Place on access road between outfall and private property

Location within Zone 7 ROW

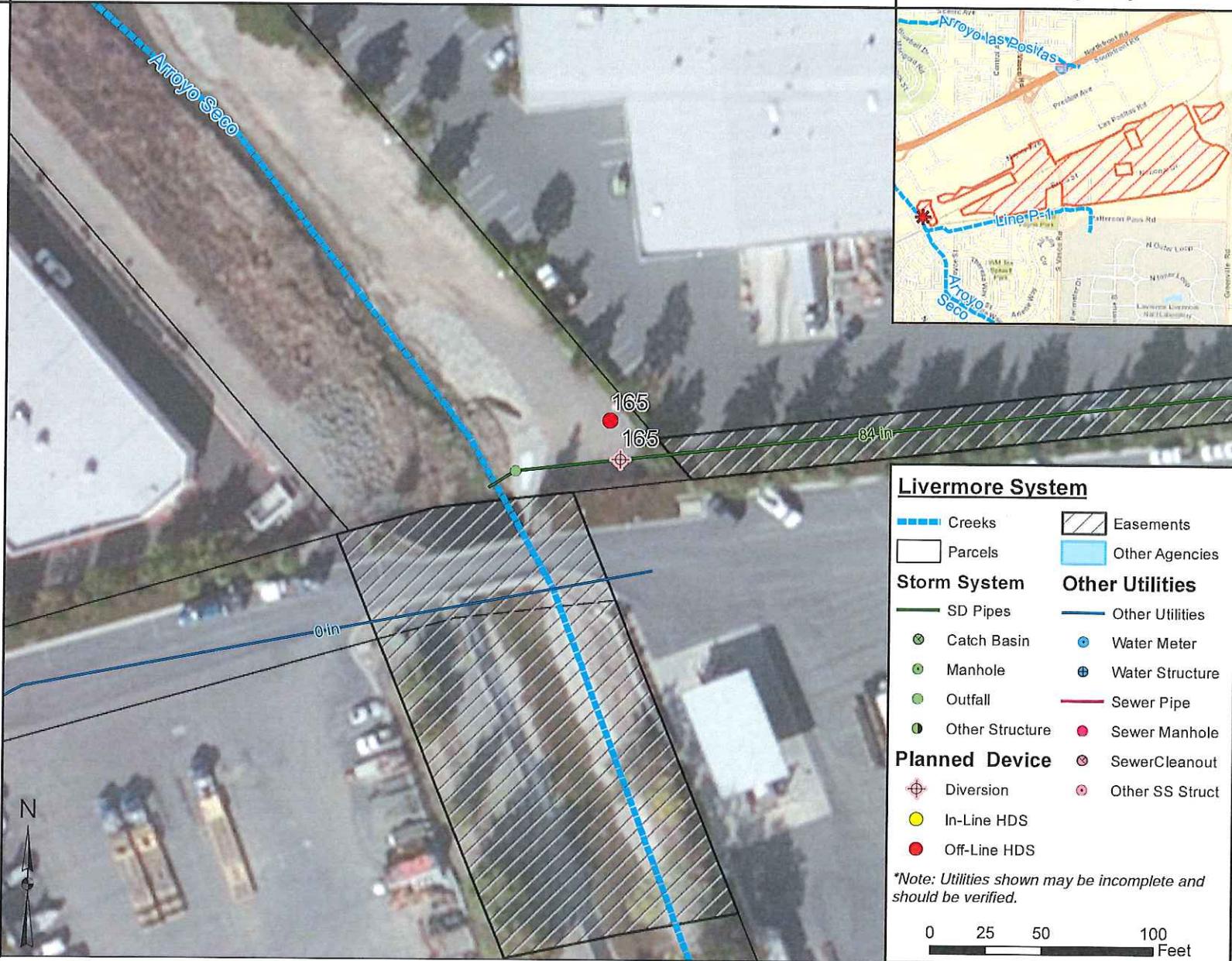
Flooding issues upstream

May be environmental concerns with installing so close to Creek.



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Livermore Trash Capture Device Locations: Device 165



Vicinity Map



Project Description

Device Type:
Large Scale, In-Line HDS

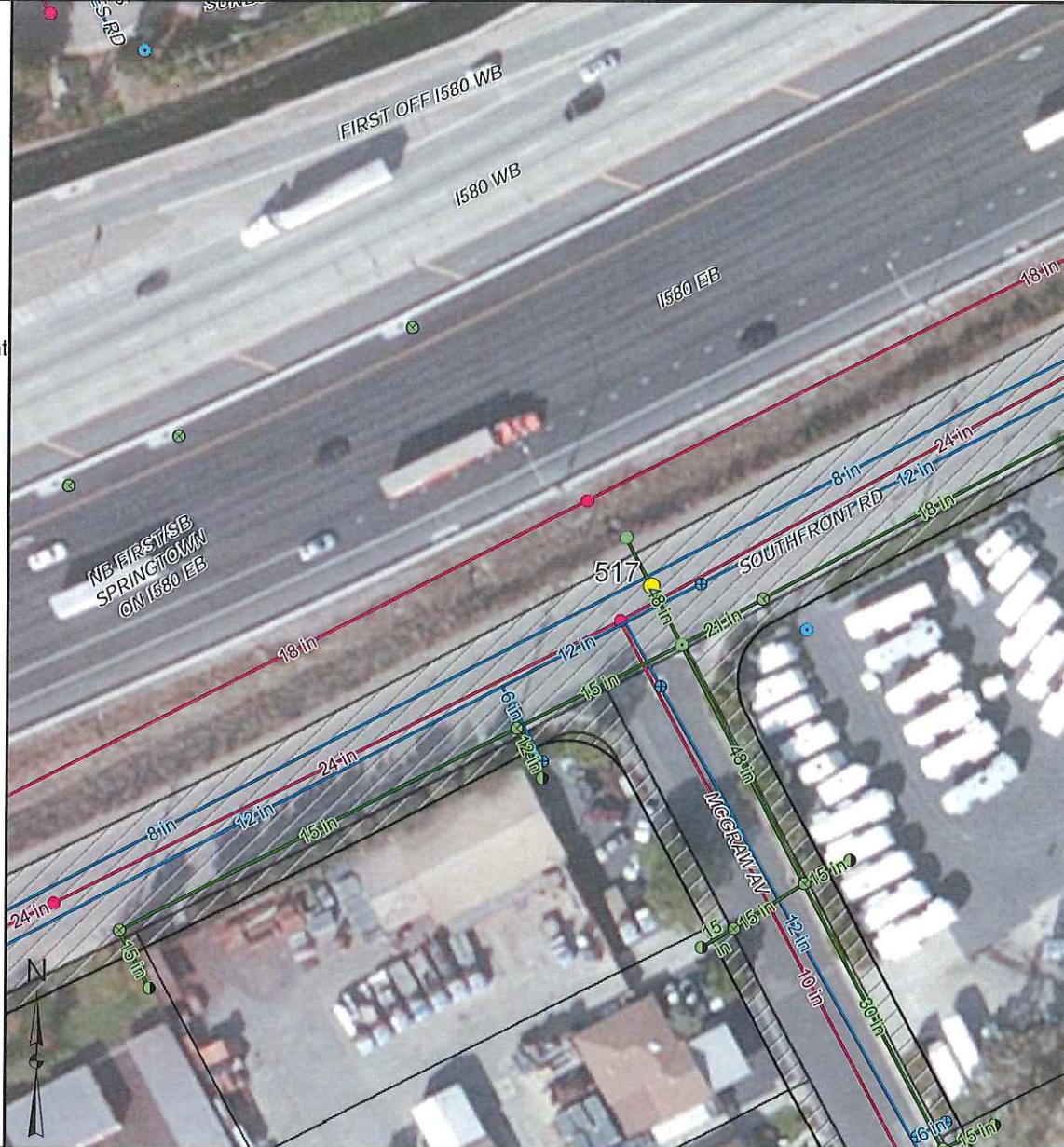
Service Area:
56 Acres

Field Notes:
Water line and sewer trunk line on Southfront
OH electric on both sides
Streetlighting on north side of Southfront



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Livermore Trash Capture Device Locations: Device 517



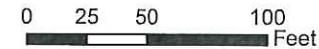
Vicinity Map



Livermore System

- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Other Utilities |
| Catch Basin | Water Meter |
| Manhole | Water Structure |
| Outfall | Sewer Pipe |
| Other Structure | Sewer Manhole |
| Planned Device | Sewer Cleanout |
| Diversion | Other SS Struct |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*



Project Description

Device Type:
Large Scale, Off-Line HDS

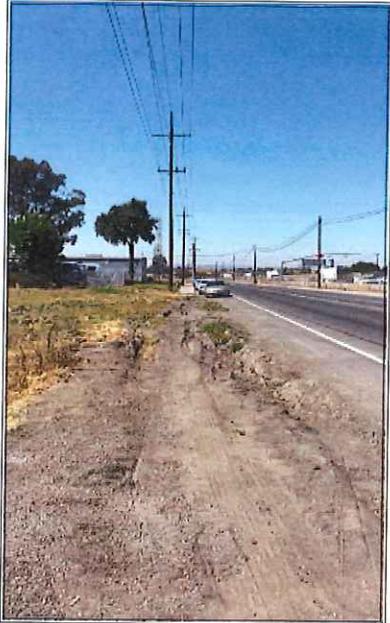
Service Area:
90 Acres

Field Notes:
Very shallow pipes (~2.5' deep)

Adjacent parcel may be developed in the near future

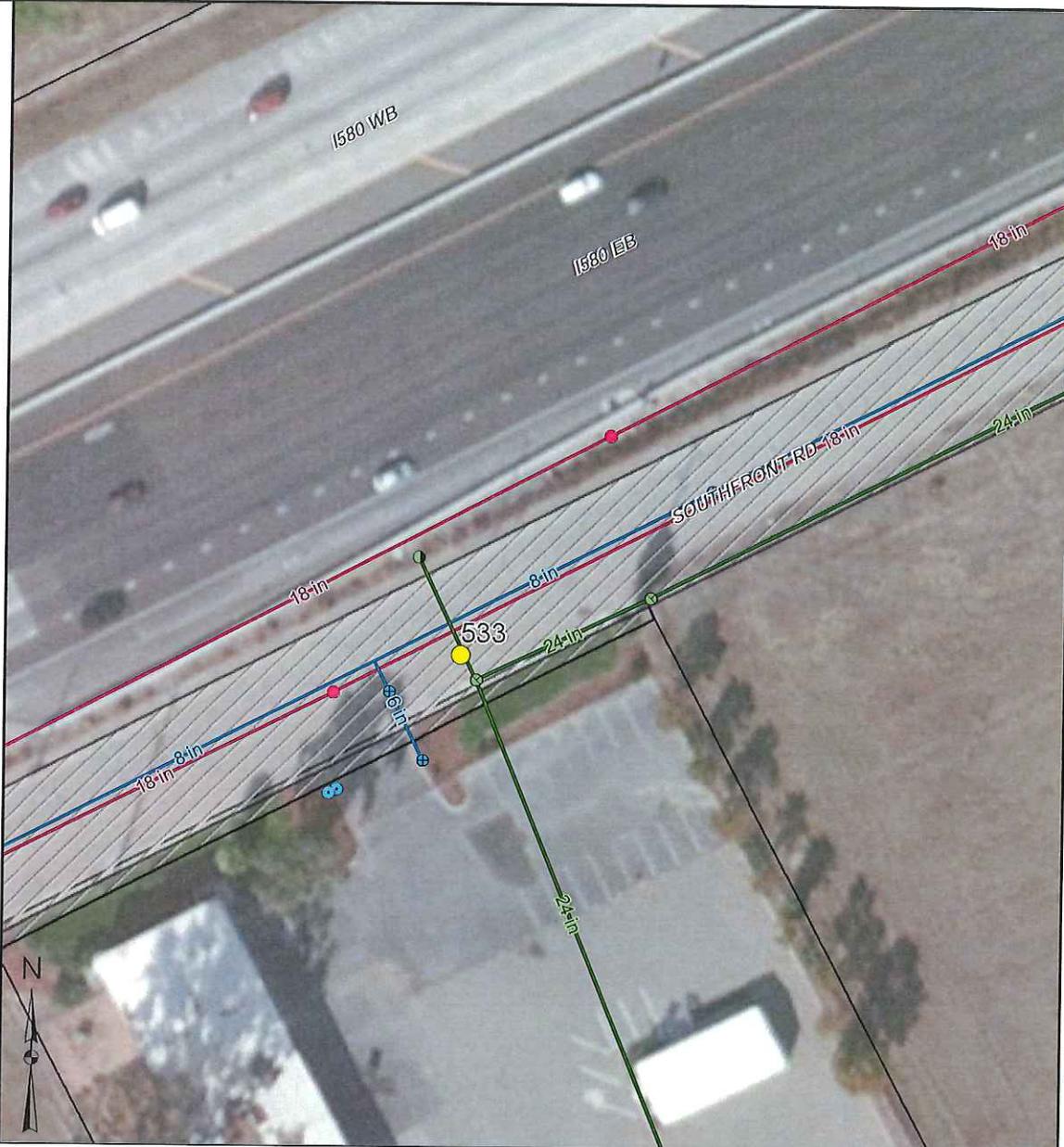
Caltrans 24" culvert from upstream
Potentially treat Caltrans runoff also

Could place off-line to avoid OH lines



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Livermore Trash Capture Device Locations: Device 533



Vicinity Map



Livermore System

- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Other Utilities |
| Catch Basin | Water Meter |
| Manhole | Water Structure |
| Outfall | Sewer Pipe |
| Other Structure | Sewer Manhole |
| Planned Device | Sewer Cleanout |
| Diversion | Other SS Struct |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*

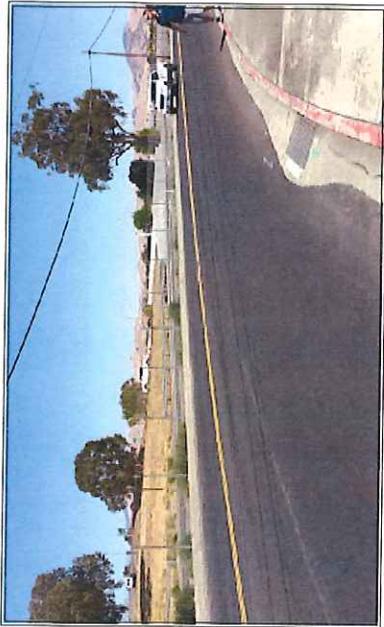


Project Description

Device Type:
Large Scale, In-Line HDS

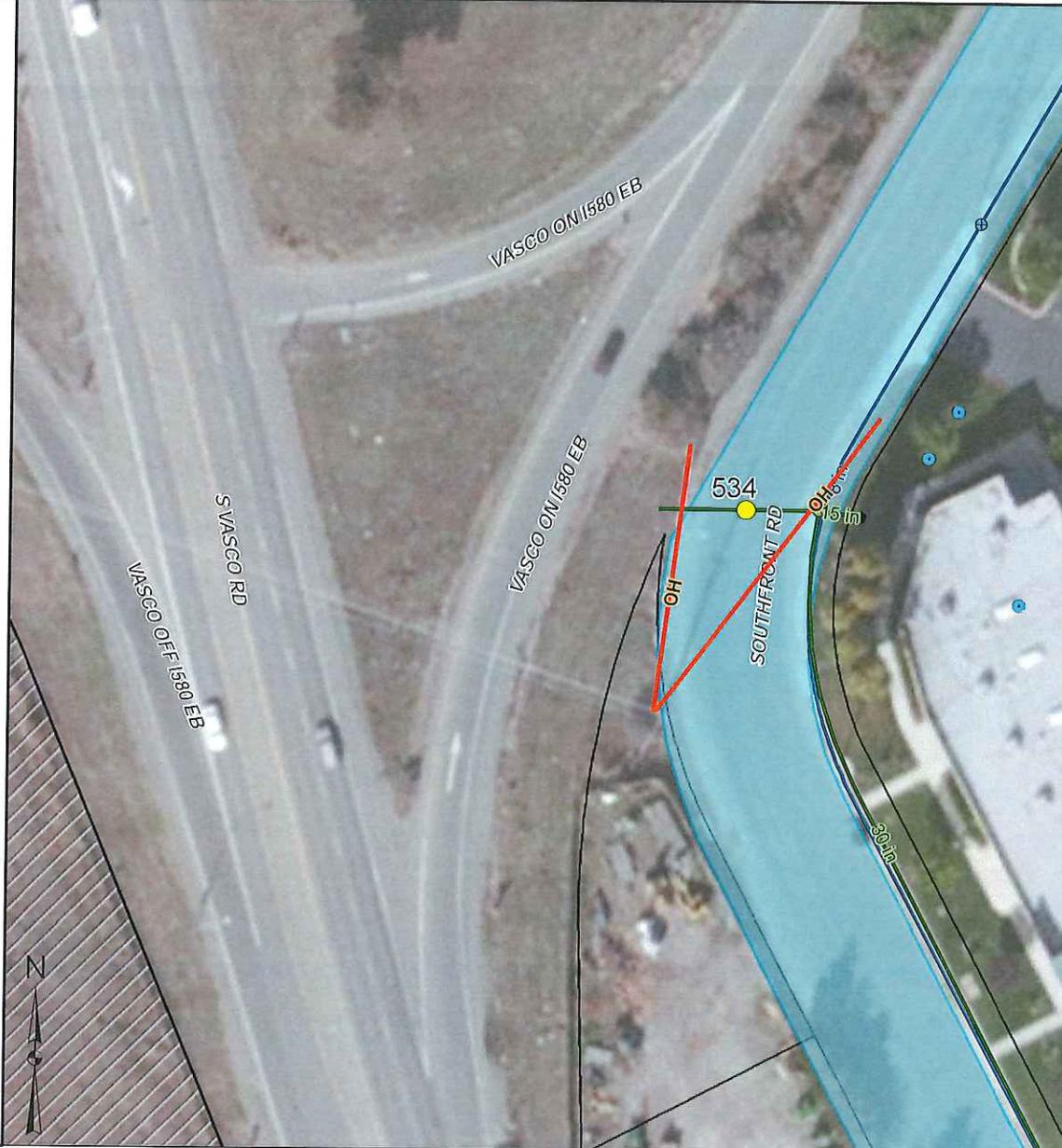
Service Area:
30 Acres

Field Notes:
Locate to avoid OH lines



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Livermore Trash Capture Device Locations: Device 534



Vicinity Map



Livermore System

- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Other Utilities |
| Catch Basin | Water Meter |
| Manhole | Water Structure |
| Outfall | Sewer Pipe |
| Other Structure | Sewer Manhole |
| Planned Device | Sewer Cleanout |
| Diversion | Other SS Struct |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*



Project Description

Device Type:
Large Scale, In-Line HDS

Service Area:
52 Acres

Field Notes:
Upstream of bioretention, adjacent to El Charro

Was not visited

Livermore Trash Capture Device Locations: Device 6000



Vicinity Map



Livermore System

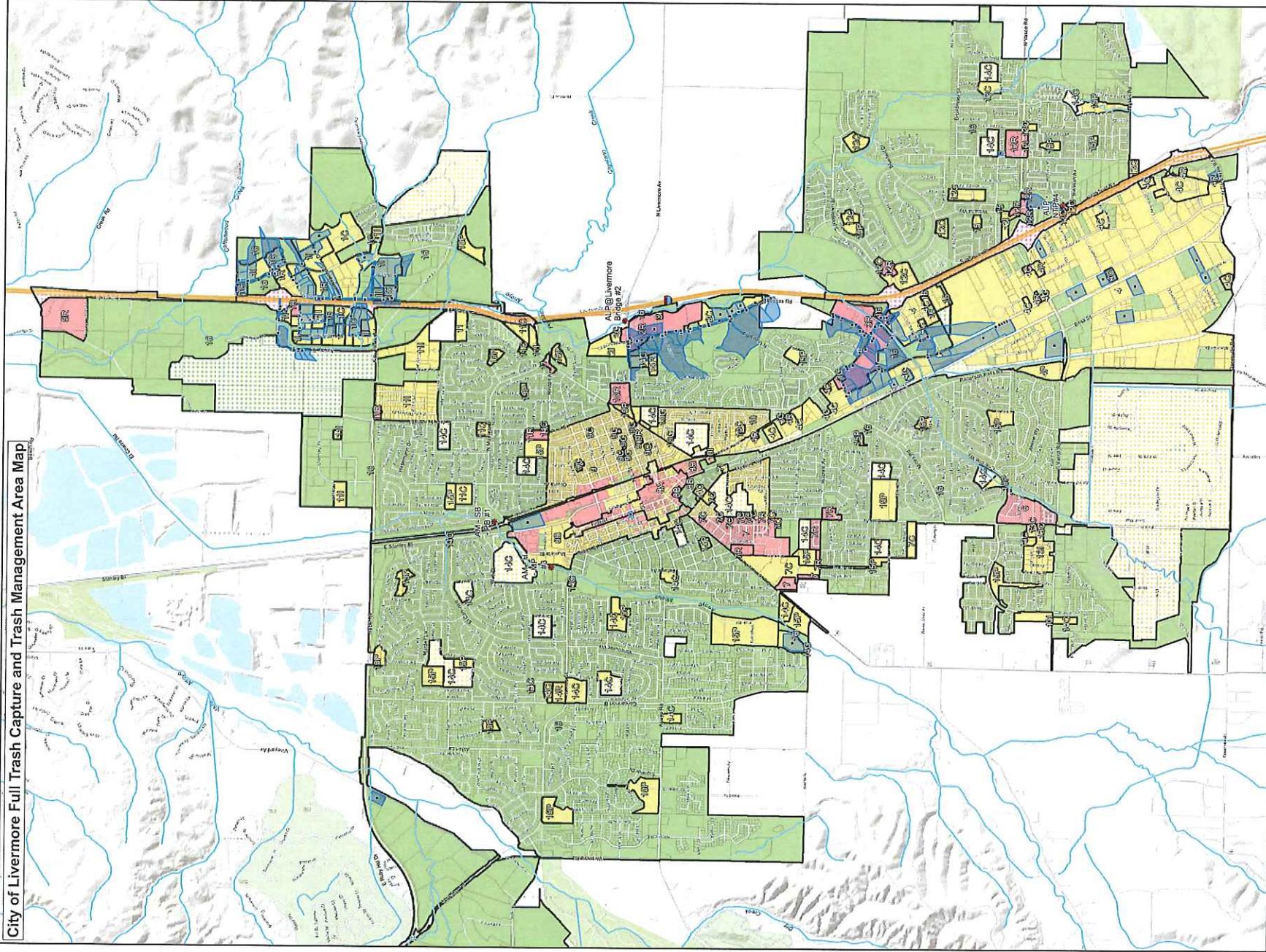
- | | |
|-----------------------|------------------------|
| Creeks | Easements |
| Parcels | Other Agencies |
| Storm System | Other Utilities |
| SD Pipes | Other Utilities |
| Catch Basin | Water Meter |
| Manhole | Water Structure |
| Outfall | Sewer Pipe |
| Other Structure | Sewer Manhole |
| Planned Device | Sewer Cleanout |
| Diversion | Other SS Struct |
| In-Line HDS | |
| Off-Line HDS | |

**Note: Utilities shown may be incomplete and should be verified.*



Appendix E: Trash Management Area Map

City of Livermore Full Trash Capture and Trash Management Area Map



Legend

Trash Generation Category

- Low
- Moderate
- High
- Very High

Other Symbols

- Creek/Shoreline Hotspot
- Full-Capture Location
- Full Trash Capture
- Trash Management Area
- Non-Jurisdictional (Dot color = Generation Category)
- Streets
- Freeway
- Creeks
- Parcel Boundary

Data Sources:

- Roads: Alameda County
- City Boundaries: Alameda County
- City Streets: Alameda County
- Parcels: Alameda County
- Background: ESRI World Topographic Map

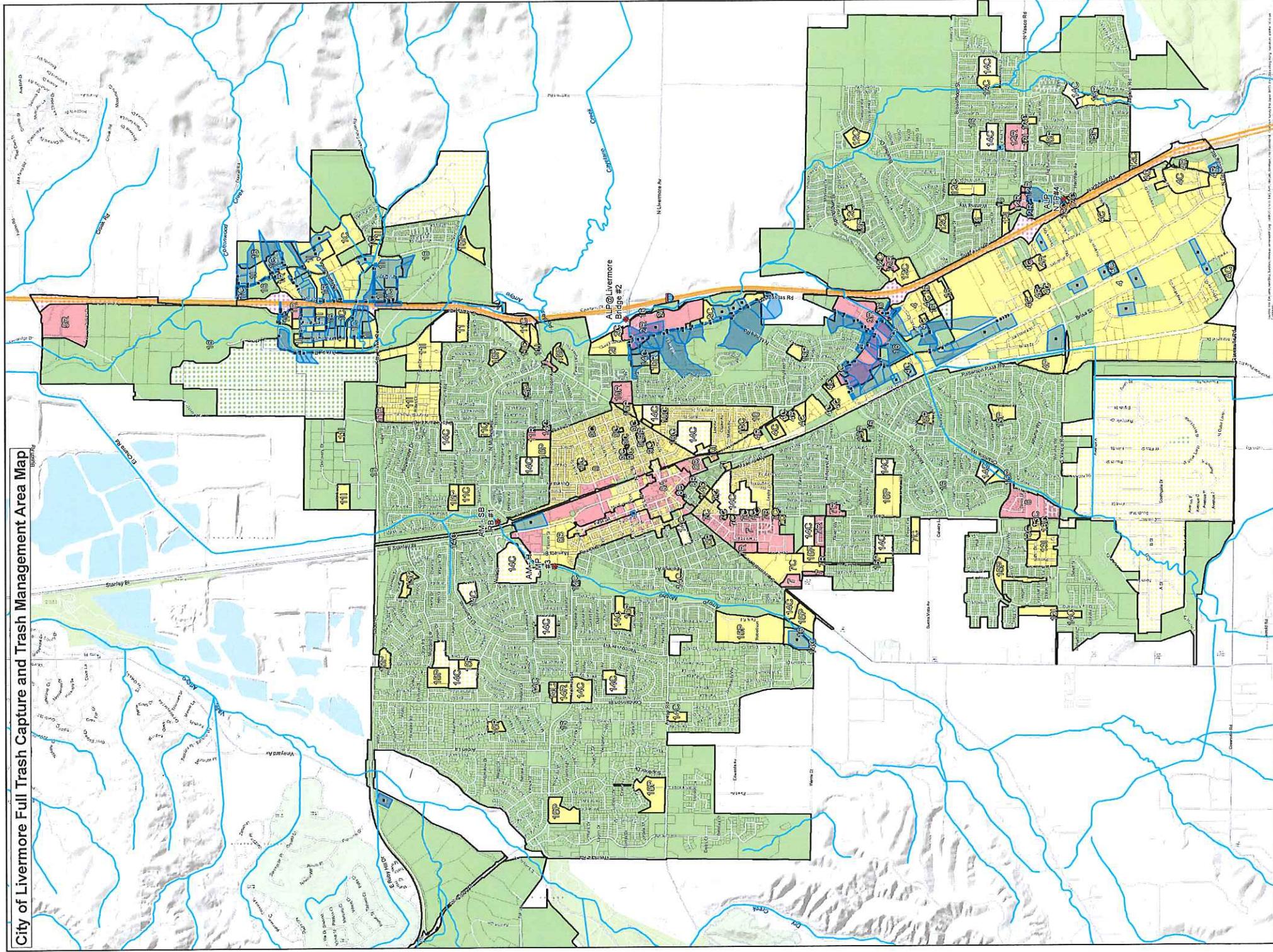
Map Created By: EDA, Inc.

Date: July 13th, 2016

0 0.25 0.5 1 Miles

N

City of Livermore Full Trash Capture and Trash Management Area Map



Legend

Trash Generation Category

- Low
- Moderate
- High
- Very High

Creek/Shoreline Hotspot

- Full-Capture Location
- Full Trash Capture
- Trash Management Area
- Non-Jurisdictional (Dot color = Generation Category)

Streets

- Streets
- Freeway
- Creeks
- Parcel Boundary

Data Sources:

- Roads: Alameda County
- City Boundaries: Alameda County
- Creeks: Alameda County
- Parcels: Alameda County
- Background: ESRI World Topographic Map

Map Created By: ECA, Inc.
Date: July 13th, 2016

0 0.25 0.5 1 Miles