City of Fort Bragg Stormwater Full Trash Capture Feasibility Report

August 2025

This submittal has been prepared under the direct supervision of the undersigned, who hereby certifies that she is a Registered Professional Engineer in the State of California

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

Table of Contents

Attachments

Attachment 1: Overview Map of Project Sites
Attachment 2: Site Summary Sheets
Attachment 3: RWQCB Approved Device List

1. Introduction

In April 2015, the State Water Resources Control Board adopted the Trash Amendments, prioritizing stormwater trash control compliance for Municipal Separate Storm Sewer Systems (MS4s) throughout California, including the City of Fort Bragg (City). The Trash Amendments mandate that MS4s implement controls such as full capture systems, treatment devices, or institutional measures to prevent trash from impacting local receiving waters, including creeks, rivers, lakes, and the Pacific Ocean. In the North Coast Region, compliance is managed by the North Coast Regional Water Quality Control Board (NCRWQCB) through National Pollutant Discharge Elimination System (NPDES) permits. By December 2, 2030 the City is to achieve 100% trash capture.

This Trash Capture Feasibility Study summarizes tasks completed, identifies preferred and alternative trash capture sites, evaluates device options, and provides installation and maintenance cost estimates. This report serves as a tool to assist the City in implementing and funding projects to meet trash reduction requirements. The primary deliverables are one-page site summaries (Attachment 2) that present key information for prioritizing sites and design alternatives. The 10 project sites were evaluated, with several sites offering design alternatives. The analysis includes trash reduction effectiveness and associated costs, based on the best available information at the time of the report. Cost estimates for installation and maintenance were developed through site-specific field assessments and information provided by the City. Figure 1 shows the locations and drainage areas for the project site locations.

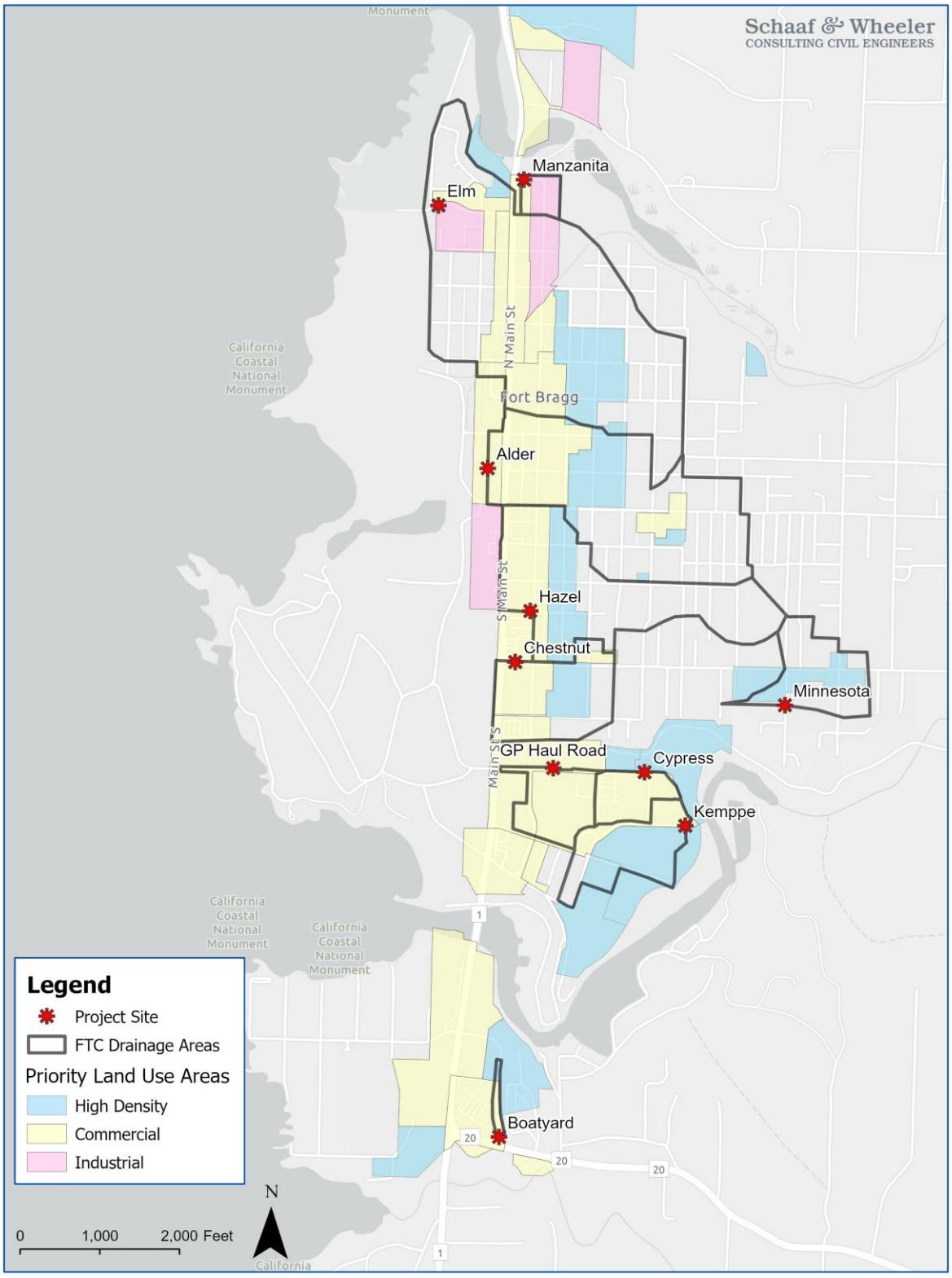


Figure 1. Project Location Sites

2. Full Trash Capture Devices

2.1 Capital Improvement Project Alternatives

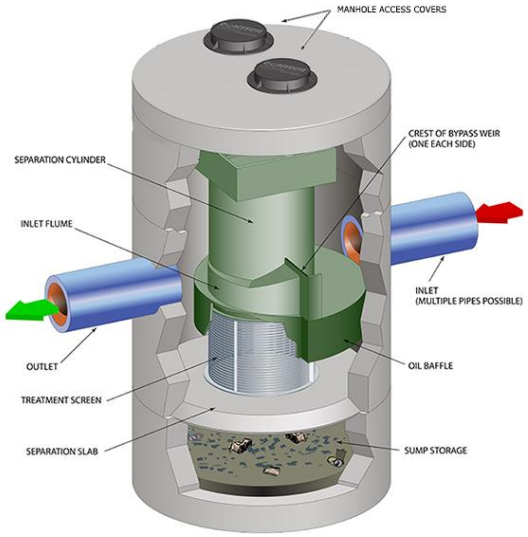
There are a variety of devices available to meet the full capture trash reduction goal, including:

- Catch basin inlet filters/screens;
- Netting, screens, or hydrodynamic structures on a storm drain trunk line; and
- End-of-pipe netting, screens, or hydrodynamic structures.

When selecting a device, it is important to consider the 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. The current list of approved full trash capture devices is contained in Attachment 3.

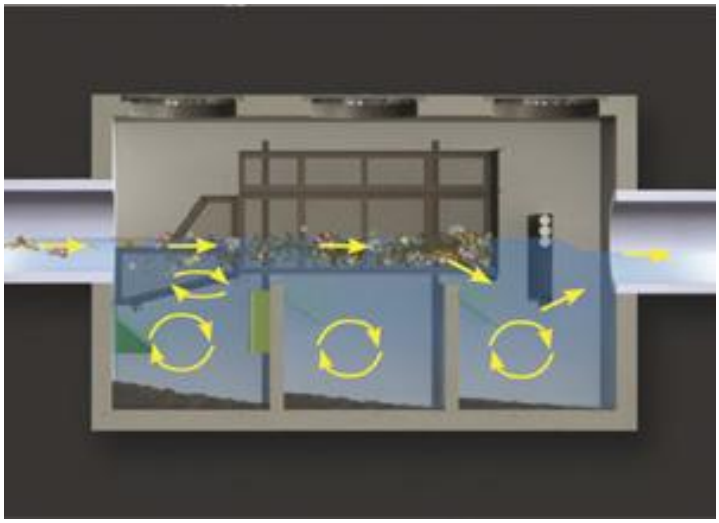
2.1.1 High-Flow Devices (Large-Scale)

Large-scale devices provide a centralized location for construction and maintenance. The downside of large devices is that they capture flow from low trash generating areas resulting in the need to have a larger device to treat the additional runoff from areas with little trash reduction benefit.



Hydrodynamic separators (HDS) are widely used in stormwater treatment. They are flow-through structures with a settling or separation unit to remove sediments, floatables, and other pollutants. They come in a wide range, and some are as small as a standard manhole structure. These inline systems can be cleaned using a vacuum truck to pump out the trash, sediment, and water that has collected in the bottom. Engineering and installation costs can be quite high, but the devices are long-lasting and can capture trash from a considerable area.

Baffle boxes are concrete or fiberglass structures containing a series of sediment settling chambers separated by baffles. The primary function of baffle boxes is to remove sediment, suspended particles, and associated pollutants from stormwater. Trash is removed through the metal cage with 5mm mesh located at the flow line of the storm drain system. Baffle boxes can be located either in-line or at the end of storm pipes.



Cleaning of baffle boxes can be accessed through a manhole or hatch above ground with a vacuum truck, with no confined spaced entry required for servicing. Screened systems are hinged for easy access to collected sediments in the baffle chambers below.

2.1.2 Inlet-Based Devices (Small-Scale)

Small scale devices include structures such as connector pipe screens and hanging baskets installed at storm drain inlets.

The connector pipe screen is a metal screen assembly installed inside a catch basin, in front of the outlet pipe, preventing debris from entering the storm drain system. They are designed to be permanently mounted to the catch basin or have a quick disconnect feature to facilitate pipe jetting or to prevent flooding should the basin drainage system become clogged. These units are designed to retain all trash and solids larger than 5 mm inside the catch basin, and once in place, it also retains large volumes of sediment. Therefore, the trash capture and storage capacity of this product are dependent upon the size of the catch basin where it is installed.

The hanging basket is similar to the connector pipe screen in that it is a separate unit that is installed into the storm drain system. Typically, installed in a catch basin, the hanging basket is an insert that keeps trash and large debris from entering the stormwater system. A frame is inserted into the top of the catch basin and is paired with a basket made with 5mm opening perforations. The large screen openings allow ample flow through and will not clog from sand and sediment loading off streets and parking lots.
Inlet screens are desirable because they can be installed relatively quickly and at a relatively low cost.

3. Cost Estimates and Maintenance Considerations

3.1 Unit Costs

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

- High-flow devices are assumed to have a lifetime of 50-years;
- Inlet-based devices are assumed to have a lifetime of 25-years;
- Hydrodynamic separators and baffle boxes capital cost is estimated at $6,285 per drainage area acre based on recent bids;
- Inlet-based devices (i.e. inlet screens and hanging baskets) were estimated at $3,000 per device, based on recent quotes;
- 20% design added to total costs for high flow devices;
- 50% design added to total costs for inlet-based devices;
- 30% construction contingency added to total costs;
- Percentages based on the assumption that all projects are completed together into one bid package. A reduction of the number of high flow devices per bid document may increase percentages for design due to the increased cost of site investigations. It is recommended to use 35% design costs when doing multiple bid documents for high flow devices;
- Total Base Cost is presented in the 2025 construction year dollars and includes installation and construction needed to update drainage infrastructure to support trash capture device, and the device. It does not include maintenance or device replacement.

Table 3-1 lists the unit costs used to develop each of the site's installation cost. Attachment 2 contains details of each site quantities and total cost.

Table 3-1: Unit Cost Assumptions

Item	Total Base Cost per Unit	Unit
High-Flow Devices	$9,427	per acre of drainage area
Inlet-Based Devices	$5,400	each

3.2 Maintenance Considerations

Cleaning and maintenance costs are not included in the installation costs. They are provided in this section for reference only for City consideration. Maintenance of both high-flow and inlet-based devices can be done by municipal staff or hired out to a cleaning contractor. Wages and vacuum truck unit cost were developed based on information provided by the City in 2024.

For cleaning, replacement, and maintenance, the following considerations should be taken:

- High-flow devices are cleaned approximately two (2) times a year, requiring 4 hours of a team of two staff members at $67/hour, a vacuum truck at $119/hour, or approximately $2,000/device annually, which is increased to $3,000 to account for any clogging or fees to dump materials;
- Inlet-based devices are cleaned approximately two (2) times a year, requiring 2 hours of a team of two staff members at $67/hour, a vacuum truck at $119/hour, or $770/device annually.

3.3 Project Summary

Table 3-2 lists the project costs for each project site. Overall, it is estimated to cost $4M in capital for the City to achieve the 100% trash reduction goals by 2030. With an additional 12% construction management the City should anticipate approximately $4.6M to achieve the statewide trash amendment goals.

Attachment 2 contains details of each site design.

Table 3-2: Project Site Summary Table

Project ID	Project Name	Project Location	Total Drainage Area (Acres)	Priority Land Use (PLU) Areas (Acres)	Design Cost Estimate	Construction Cost Estimate	Construction Contingency	Total Capital	Annual O&M Cost	Cost per Ace of PLU ($/AC)
J306D	Kemppe –	531 Kemppe Way	26.9	23.7	$35,600	$168,800	$50,600	$250,800	$4,540	$10,600
	Kemppe – Alternate 1	531 Kemppe Way	26.9	23.7	$35,600	$168,800	$50,600	$250,800	$4,540	$10,600
	Kemppe - Alternate 2	531 Kemppe Way	26.9	23.7	$38,800	$194,100	$58,200	$291,200	$3,000	$12,000
J303D	Cypress	510 Cypress Street	12.6	12.6	$1,500	$3,000	$900	$5,400	$770	$430
J313M	GP Haul Road	Georgia Pacific Haul Road	19	19	$23,800	$119,200	$35,800	$180,000	$3,000	$9,500
	GP Haul Road - Alternate 1	Georgia Pacific Haul Road	19	19	$23,800	$119,200	$35,800	$180,000	$3,000	$9,500
DI313	Minnesota	165 Minnesota Street	26.4	9.2	$1,500	$3,000	$900	$5,400	$770	$600
	Minnesota - Alternate 1	165 Minnesota Street	26.4	9.2	$5,000	$15,000	$10,000	$30,000	$770	$3,300
NM45	Hazel	331 Hazel Street	80.1	37.1	$123,400	$617,000	$185,000	$926,000	$3,000	$25,000

Project ID	Project Name	Project Location	Total Drainage Area (Acres)	Priority Land Use (PLU) Areas (Acres)	Design Cost Estimate	Construction Cost Estimate	Construction Contingency	Total Capital	Annual O&M Cost	Cost per Ace of PLU ($/AC)
	Hazel - Alternate 1	331 Hazel Street	80.1	37.1	$123,400	$617,000	$185,000	$926,000	$3,000	$25,000
MM17	Chestnut	151 E Chestnut Street	35.6	25.9	$44,700	$223,500	$67,100	$340,000	$3,000	$13,100
	Chestnut - Alternate 1	151 E Chestnut Street	35.6	25.9	$44,700	$223,500	$67,100	$340,000	$3,000	$13,100
G216D	Alder	151 E Alder Street	103.5	49.4	$161,600	$803,500	$241,000	$1,206,100	$3,770	$28,500
	Alder - Alternate 1	152 E Alder Street	103.5	49.4	$161,600	$803,500	$241,000	$1,206,100	$3,770	$28,500
E208M	Elm	W Elm Street	174.3	86.3	$212,900	$1,060,100	$318,000	$1,595,400	$3,770	$261,600
	Elm - Alternate 1	W Elm Street	174.3	86.3	$212,900	$1,060,100	$318,000	$1,595,400	$3,770	$261,600
MM50	Manzanita	110 E Manzanita Street	5.7	5.7	$1,500	$3,000	$900	$5,400	$770	$1,000
M202M	Boatyard	101 Boatyard Drive	1.9	1.8	$1,500	$3,000	$900	$5,400	$770	$3,000
							Capital Subtotal			$4,100,000
							Construction Management (12%)			$490,000
							Project Total			**$4,600,000**

4. Hydraulic Considerations

4.1 Summary

This study did not evaluate the hydraulics of each site in detail. Instead, peak flows from the City's Storm Drain Master Plan (SDMP) from 2004 were compared. In addition, the peak 1-hour, 1-year flows were summarized based on rational calculations to ensure proper sizing of the high flow devices. Table 4-1 summarizes the 10-year peak flows and treatment flow (1-year, 1-hour) at each site and compares to the existing pipe capacity. While some systems are noted as being undersized in the SDMP, there are notes that City staff have not experienced significant flooding.

At the Hazel and Alder sites, further research and study should be done to identify a capital improvement project to upsize the system prior to construction of a trash capture device because the existing capacity is lower than the treatment flow. Each site location has a recommended upsizing of pipe in the SDMP.

Alder, Kemppe, and Elm project sites include multiple proposed devices to capture total drainage area. Table 4-1 summarizes flows for the high-flow devices, since the small inlet-based devices are not flow-based for sizing considerations. During detailed design - each site location should have further hydraulic study during detailed design phase.

Table 4-1: Site Hydraulic Information

Project ID	Project Name	System Capacity (cfs)	Treatment Flow (cfs)	10-yr Flow (cfs)	Notes
G216D	Alder 1	28	38	85	Needs further investigation into upsizing of capacity.
G216D	Alder 2	4	1	5	Inlet device in parking lot
M202M	Boatyard	10	1	10	
MM17	Chestnut	91	13	24	
J303D	Cypress	20	5	16	
E208M	Elm 1	18	2	13	24 inch pipe
E211M	Elm 2	155	67	92	42 inch pipe
J313M	GP Haul Road	55	7	17	
NM45	Hazel	20	27	41	Needs further investigation into upsizing of capacity.
J306D	Kemppe	32	9	21	
MM50	Manzanita	4	2	11	Not within SDMP
DI313	Minnesota	8	8	25	SDMP states that this site has not experience flooding

5. Permit Considerations

5.1 Overview

The trash capture project sites evaluated in this Report may be subject to review under the California Environmental Quality Act (CEQA), depending on the type, scale, and location of the proposed devices. CEQA review evaluates potential environmental impacts associated with project implementation, including construction, installation, operation, and maintenance activities.

The City processed a Coastal Development Permit Exemption and a CEQA Notice of Exemption in August 2024 for these trash capture locations. Because the proposed trash capture devices are located on the City's existing storm drain infrastructure, additional permit requirements are not anticipated at this time.

6. Recommendations

6.1 Timeline and Coordination

The Trash Amendments, adopted by the State Water Resources Control Board (SWRCB) on April 7, 2015, and effective as of December 2, 2015, establish a statewide framework to eliminate trash discharges into California's surface waters. These provisions apply to all Phase I and II Municipal Separate Storm Sewer System (MS4) permittees, including the City of Fort Bragg, and mandate the implementation of trash control measures in areas designated as Priority Land Uses (PLUs).

Key milestones in the implementation timeline include:

- June 1, 2017: Issuance of Water Code Section 13383 Orders to MS4 permittees, requiring them to select a compliance track—either Track 1 (installation of full capture systems) or Track 2 (a combination of full capture systems, treatment controls, and institutional measures)
- December 2, 2018: Deadline for MS4 permittees to submit their chosen compliance approach and, if applicable, an implementation plan detailing how they will achieve full compliance
- 2020–2021: Reissuance of MS4 permits incorporating trash control implementation requirements and compliance milestones
- December 2, 2030: Final compliance deadline for all MS4 permittees to achieve full implementation of trash control measures as specified in their permits

The City of Fort Bragg has selected Track 1 and as an MS4 permittee, is required to comply with these provisions by the December 2, 2030 deadline. Therefore, it is recommended that the City begin developing a funding plan and utilize the information included in this Report to identify which devices should be installed in the upcoming few years.

Additionally, it is recommended that City staff begin verbal communications with Regional Water Board to update staff on the steps that the City has taken to identify and install full trash capture systems. By communicating early with the Regional Water Board staff, the City will be best positioned to adjust its implementation program as needed based on the perspectives of the regulatory agency overseeing the implementation of the NPDES permit. Communications could include sharing the final version of this report and/or providing a presentation of the tasks completed to-date and the planned installation of full trash capture systems.

6.2 Prioritized Installation

Table 6-1 summarizes the project sites and associated cost implications, presenting the cost per Priority Land Use (PLU) acre treated for each design concept. Although there are 10 project sites, the table includes cost per acre values for both primary and alternative design options to aid City decision-making. Inlet-based devices generally provide the most cost-effective solution in terms of cost per acre of PLU treated, however, these devices are limited to smaller drainage areas.

Table 6-1: Priority Ranking by Project Cost per Priority Land Use Acreage

Priority Rank	Project ID	Project Name	Cost per Acre of PLU ($/AC)
1	DI313	Minnesota	$600
2	J303D	Cypress	$800
3	MM50	Manzanita	$1,000
4	M202M	Boatyard	$3,000
5	DI313	Minnesota - Alternate 1	$3,300
6	J313M	GP Haul Road	$9,500
7	J313M	GP Haul Road - Alternate 1	$9,500
8	J306D	Kemppe	$10,600
9	J306D	Kemppe - Alternative 1	$10,600
10	J306D	Kemppe - Alternative 2	$12,000
11	MM17	Chestnut	$13,100
12	MM17	Chestnut - Alternate 1	$13,100
13	NM45	Hazel	$25,000
14	NM45	Hazel - Alternate 1	$25,000
15	G216D	Alder	$28,500
16	G216D	Alder - Alternate 1	$28,500
17	E208M	Elm	$261,600
18	E208M	Elm - Alternate 1	$261,600

6.3 Funding Opportunities

The City of Fort Bragg may coordinate with Caltrans to support funding and implementation of trash capture projects where state highway runoff contributes to local stormwater systems or affects Priority Land Uses. Caltrans, as an MS4 permittee under its own statewide stormwater permit, is also subject to the Trash Amendments and may enter into Cooperative Implementation Agreements (CIAs) to share compliance responsibilities and co-fund trash capture projects.

Alder, Elm, Chestnut all contain Caltrans right of way within their drainage area and may be eligible for this additional funding source.

Medium Sized Devices

The City has applied for grant funding for the GP Haul Road, Chestnut, and Kemppe projects. The projects are all mid sized devices and are shown to be cost effective in their dollar per PLU capture area treated.

Inlet Based Devices

The small, inlet based devices are all ranked top priority due to the smaller capital investment. It is recommended that these 4 devices are all lumped into one bid document to reduce the overall fee.

Alternatively, the City could consider working with a vendor who can install custom fit connector pipe screens on site. The County of Mendocino is also considering installing small, inlet based devices in several locations near Ukiah. The City could consider coordinating with the County to reduce the overall fee.

Large Devices

There are three devices that require significant capital investments – Alder, Elm, and Hazel. These device locations will require more time for design development and considerations on the system capacity and hydraulic impacts from full trash capture devices. The City should consider additional grant opportunities in the future.

6.4 Next Steps

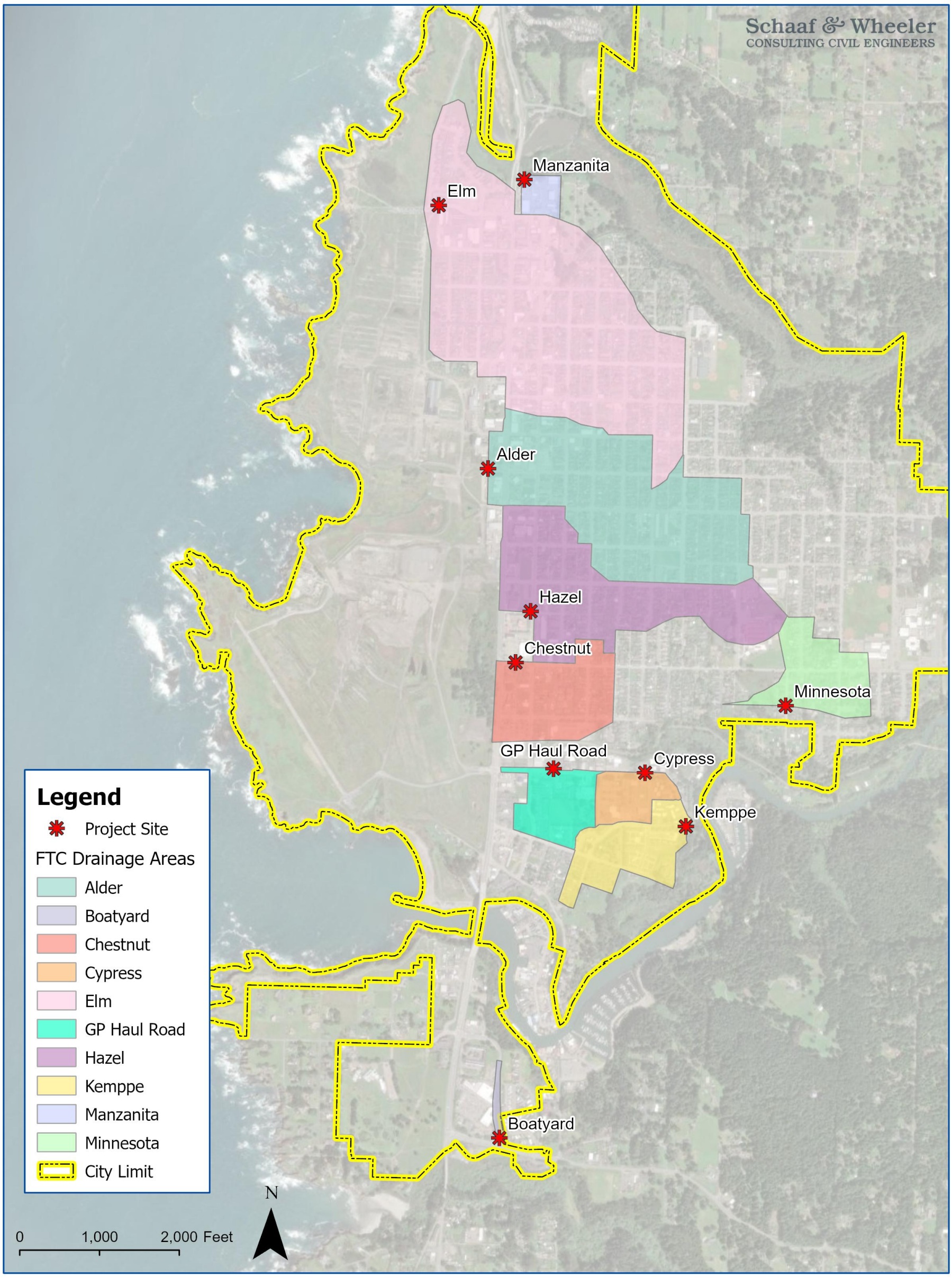
Based on the information provide in this report, we recommend that the City:

- Identify funding for the detailed design and installations of the early installations and then identify how many installs can be achieved within the dedicated/available funding;
- Consider working in house on the four small, inlet based devices
- Identify other funding opportunities for the larger devices
- Consider coordinating with Caltrans for funding support on large-scale devices that address Caltrans right-of-way (ROW);

The City should also begin setting aside funding for maintenance and operation needs and begin conducting staff training for device maintenance and operation. Jurisdictions without a vactor truck might need to obtain one, since this type of equipment will be needed to maintain large-scale (and possibly small-scale) devices. There are also private contractors who can be hired to do the maintenance in lieu of using City staff and equipment.

ATTACHMENT 1

Overview Map of Project Sites


Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS
Manzanita
Elm
Alder
Hazel
Chestnut
Minnesota
GP Haul Road
Cypress
Kemppe
Boatyard
Legend
Project Site
FTC Drainage Areas
Alder
Boatyard
Chestnut
Cypress
Elm
GP Haul Road
Hazel
Kemppe
Manzanita
Minnesota
City Limit
N
0
1,000
2,000 Feet

ATTACHMENT 2

Site Summary Sheets

Conceptual Design - Potential Full Trash System Project

Project ID: G216D

Project Name: Alder

Project Location: 151 E Alder Street (https://maps.app.goo.gl/ynJor3BkN7sDLw246)

Site/Device Information

Proposed Devices Type: Baffle Box and Connector Pipe Screen (CPS) **(See page 2 for Alternatives)**

Baffle Box Pipe Size: 30 inches **Depth:** 72 inches **Grate:** NA
CPS Pipe Size: 12 inches **Depth:** Unknown **Grate:** 24 inches by 48 inches

Project Description: Construction of a baffle box inline or offline hydrodynamic separator inline on E Alder Street. This project also includes a connector pipe screen (CPS) on the inlet on Chief Celeri Dr. All devices should be from the list of approved vendors by the Regional Water Quality Control Board (RWQCB).

Site Specific Considerations:

- Site locations are within private property and easements should be investigated and might need to be acquired
- The parking lot is in poor shape and should be repaved as part of the project
- Need to confirm the presence of 36-in pipe, which would bypass proposed location and require upstream installation within ROW
- Internal bypass flows should be confirmed with vendors

O&M Summary: Devices will require vactor truck for maintenance 2 times per year.

Comments/Notes: Access was not available to the 30-inch pipe during site visit. If there is a 36-inch and a 30-inch pipe leaving then an additional device will need to move upstream. The 30-inch pipe should be upsized to at least a 36-inch pipe or larger to ensure the trash capture device does not increase flooding upstream.

High Flow Device Location

CPS Device Location

Drainage Area and Trash Reduction Information

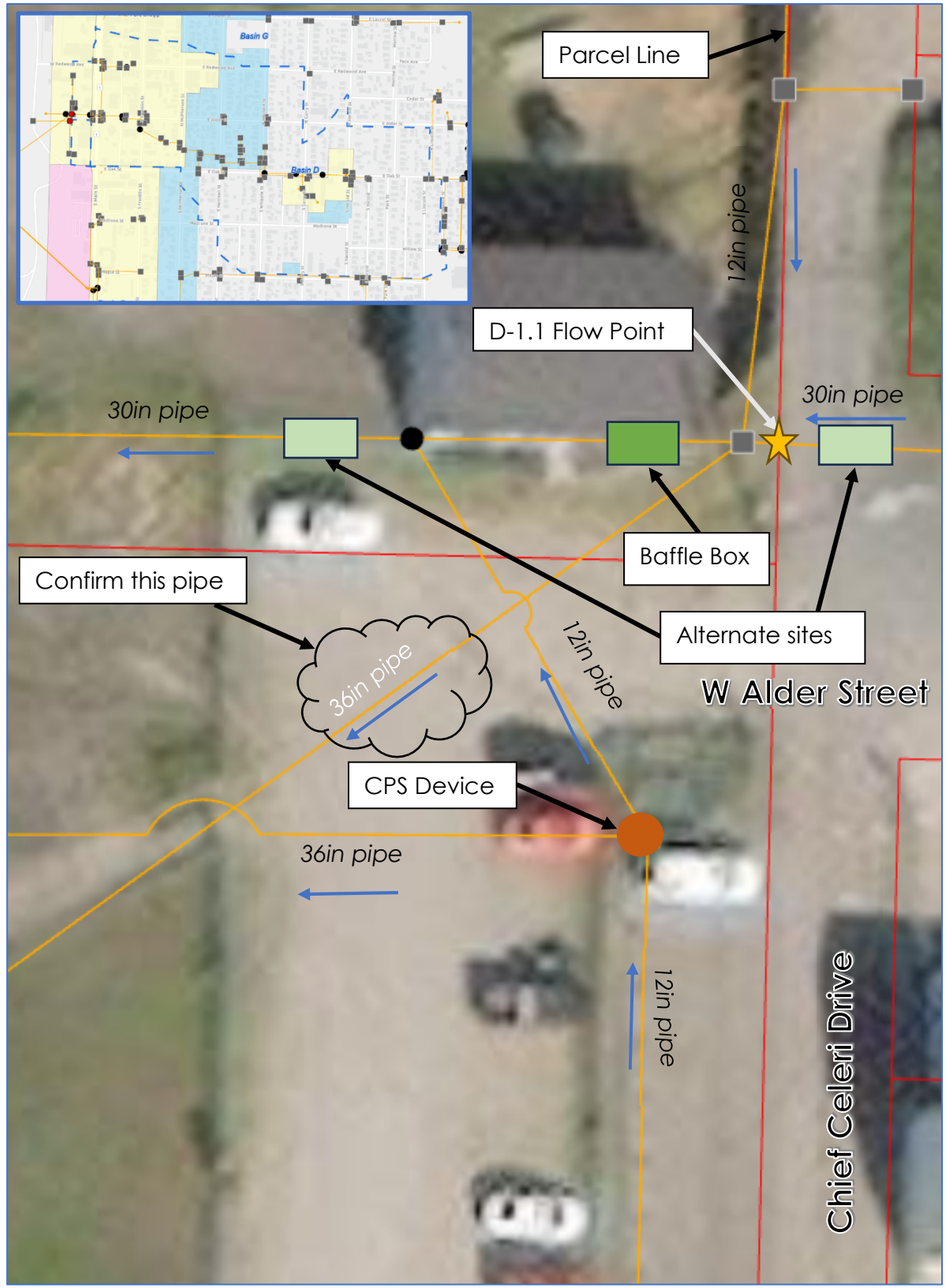
Total Drainage Area: 103.5 acres
- Caltrans Right-of-Way – 2 acres

Priority Land Use (PLU) Areas (acres): **49.4 acres**

Flow Rate (cfs)	Capacity	1yr, 1hr	10-yr	Notes
D-1.1 ★	28	38	85	Flows based on rational method and SDMP data. The SDMP recommends upsizing the existing 30 inch pipe with a 36 inch pipe to meet the 10 year event demand.

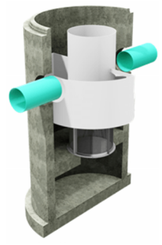
Preliminary Cost Estimate

Design	$161,600
Construction	$803,500
Construction Contingency	$241,000
Total Capital	**$1,206,100**
Annual Operation & Maintenance	***$3,770***
Cost per Acre of PLU	***$28,500/ac***



CONCEPTUAL DESIGN - POTENTIAL FULL TRASH SYSTEM PROJECT

Alternative Design Options

Alternative Site ID	Proposed Device Type	Project Description	Site Specific Considerations	O&M Summary	Comments/Notes	Preliminary Cost Estimate		Photos
Same	Hydrodynamic Separator offline	Same location and alternative locations, but installation of a hydrodynamic separator	N/A	Same		Design	$161,600	
						Construction	$803,500	
						Total Capital	**$1,206,100**	
						Annual Operation & Maintenance	***$3,770***	
						Cost per Acre of PLU	***$28,500/ac***	

Conceptual Design - Potential Full Trash System Project

Project ID: M202M

Project Name: Boatyard

Project Location: 101 Boatyard Dr (https://maps.app.goo.gl/ea7iqNcfVCZGGzSLA)

Site/Device Information

Proposed Device Type: Connector Pipe Screen (CPS)

Pipe Size: 18 inches **Depth:** 36 inches **Grate:** 24 x 24 inches (est)

Project Description: Construction of a connector pipe screen (CPS) installed on outlet pipe of existing catch basin. The CPS unit will be from the list of approved vendors by the Regional Water Quality Control Board (RWQCB). Once the full capture, 1-yr, 1hr design flow is exceeded, flows will weir over the top of the screen into the outlet pipe.

Site Specific Considerations:

- Catch basin is located on existing curb and gutter
- Downstream on the street is Caltrans jurisdiction

O&M Summary: Device will require vactor truck for maintenance 2 to 3 times per year.

Comments/Notes: Might need to consider standard catch basin size and grate for pre-fabricated device

Proposed Project Location

Proposed Device Type

Drainage Area and Trash Reduction Information

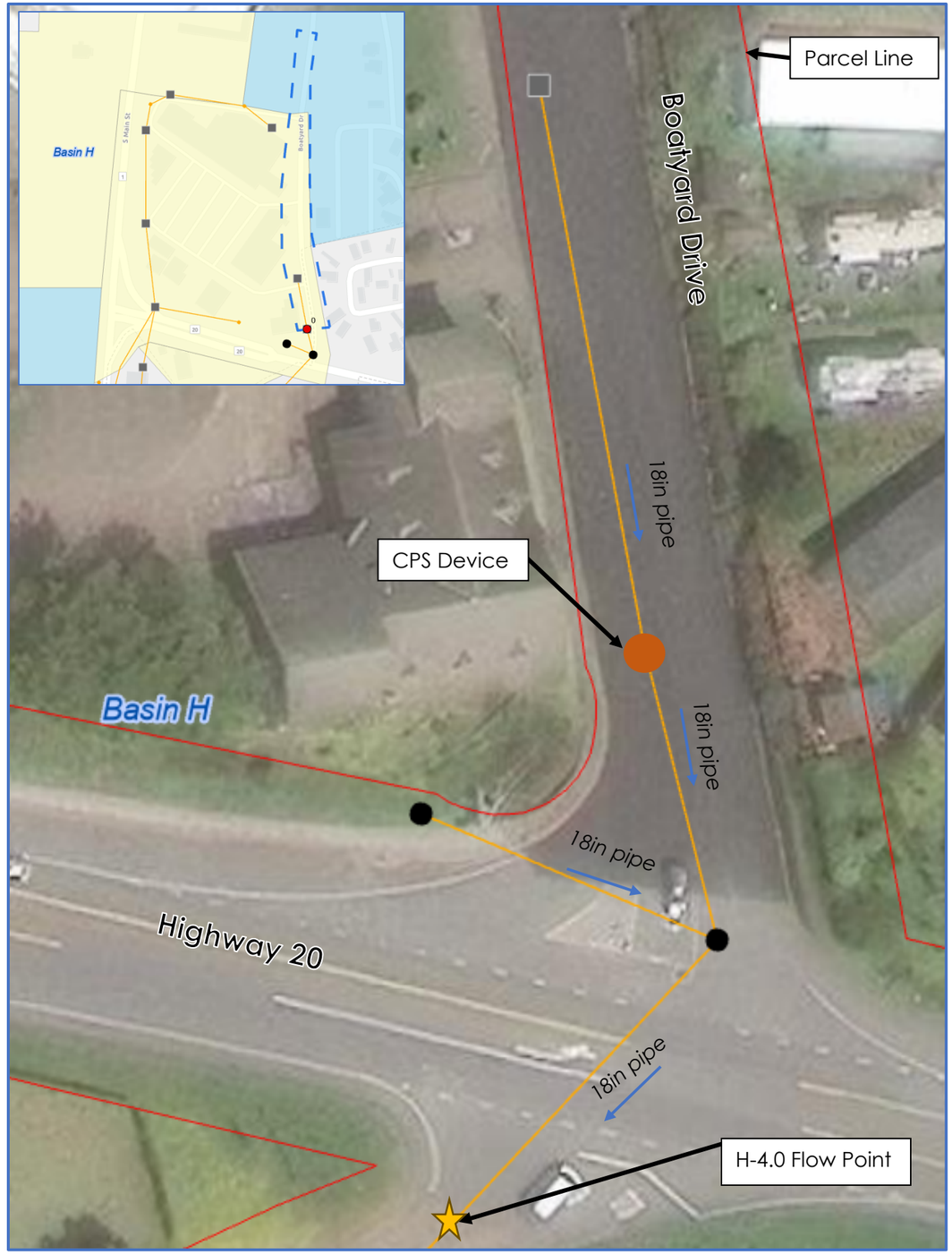
Total Drainage Area: 1.9 acres
- Caltrans Right-of-Way – 0 acres

Priority Land Use (PLU) Areas (acres): **1.8 acres**

Flow Rates	Capacity (cfs)	1yr, 1hr (cfs)	10-yr (cfs)	Notes
H-4.0 ★	10	1	10	Flows based on rational method and SDMP data. According to SDMP, no improvements are recommended on this pipe because the capacity meets the 10 year flow event.

Preliminary Cost Estimate

Design	$1,500
Construction	$3,000
Construction Contingency	$900
Total Capital	**$5,400**
Annual Operation & Maintenance	***$770/yr***
Construction Cost per Acre of PLU	***$3,000/ac***



CONCEPTUAL DESIGN - POTENTIAL FULL TRASH SYSTEM PROJECT

Project ID: MM17

Project Name: Chestnut

Project Location: 151 E Chestnut Street (https://maps.app.goo.gl/Lfh8SQM25GgxByKU6)

Site/Device Information

Proposed Device Type: Baffle Box **(See page 2 for Alternatives)**

Pipe Size: 36 inches **Depth:** 69 inches **Grate:** NA

Project Description: Construction of a baffle box or hydrodynamic separator inline on Chestnut Street downstream of manhole indicated in maps. Device should be from the list of approved vendors by the Regional Water Quality Control Board (RWQCB). Once the full capture, 1-yr, 1hr design flow is exceeded, flows are conveyed through an internal bypass.

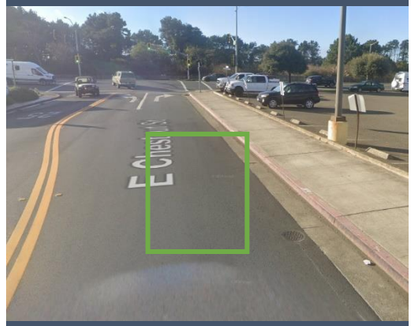
Site Specific Considerations:

- Device should be located far enough from intersection so that cars can turn right onto Main Street during routine maintenance
- Internal bypass flows should be confirmed with vendors to ensure that the 10yr flow can be bypassed
- Street has heavy traffic

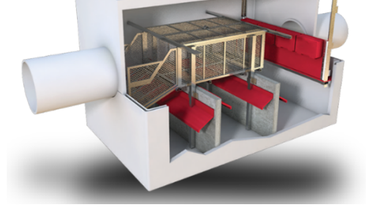
O&M Summary: Device will require vactor truck for maintenance 2 times per year.

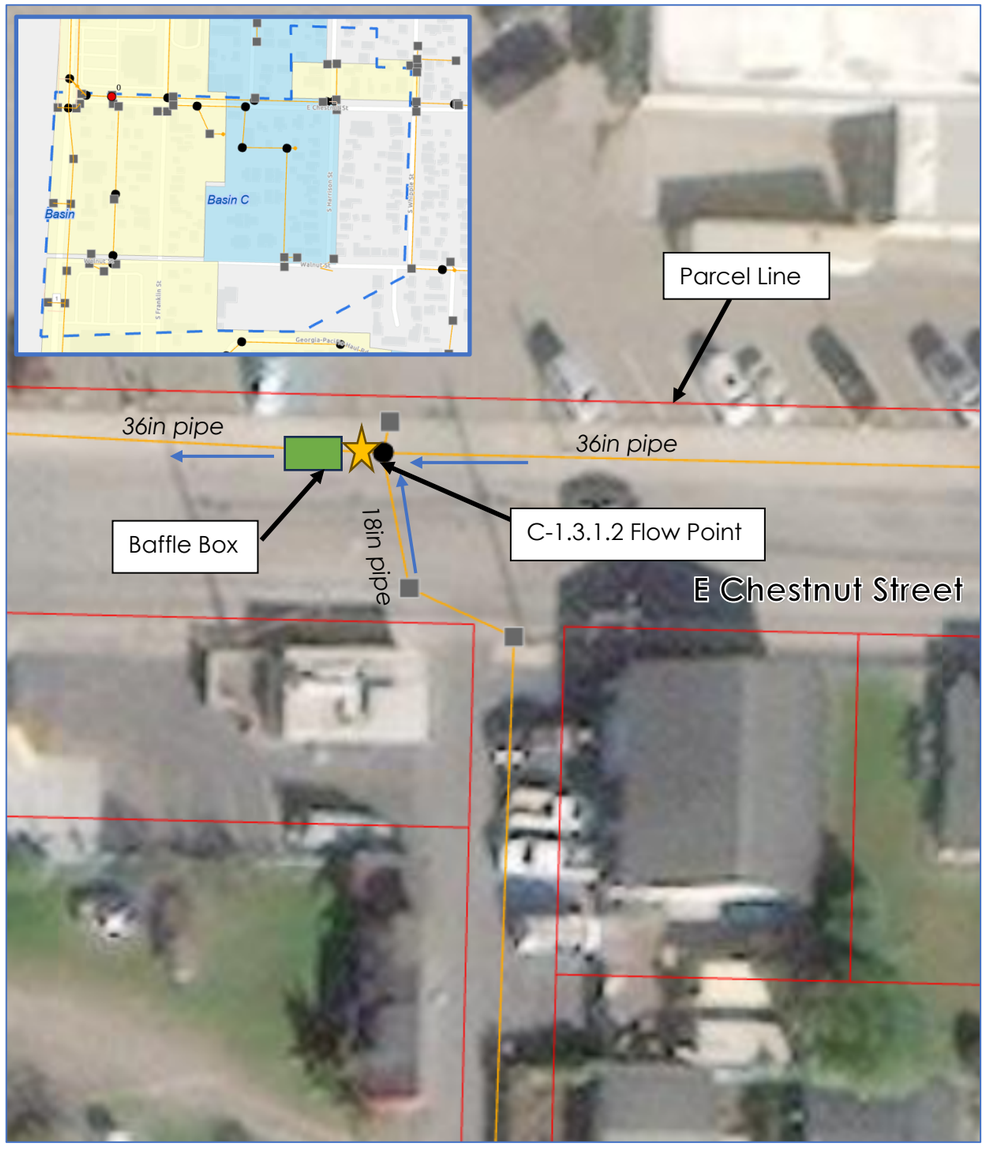
Comments/Notes: Maintenance requested that device is located sufficient distance from the intersection so that traffic control is not an issue during maintenance. System is overzied and might consider taking more flows that are currently routed towards Hazel Street. Updated flows would be needed and possibly increase the size of the device.

Proposed Project Location



Proposed Device Type





Drainage Area and Trash Reduction Information

Total Drainage Area: 35.6 acres

- Caltrans Right-of-Way – 2.3 acres

Priority Land Use (PLU) Areas (acres): 25.9 acres

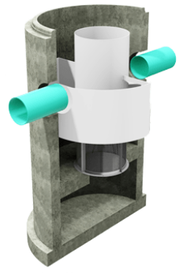
Flow Rate (cfs)	Capacity	1yr, 1hr	10-yr	Notes
C-1.3.1.2 ★	91	13	24	Flows based on rational method and SDMP data. This pipe has sufficient capacity and an in-line device is possible.

Preliminary Cost Estimate

Design	$44,700
Construction	$223,500
Construction Contingency	$67,100
Total Capital	**$340,000**
Annual Operation & Maintenance	***$3,000***
Cost per Acre of PLU	***$13,100/ac***

CONCEPTUAL DESIGN - POTENTIAL FULL TRASH SYSTEM PROJECT

Alternative Design Options

Alternative Site ID	Proposed Device Type	Project Description	Site Specific Considerations	O&M Summary	Comments/Notes	Preliminary Cost Estimate		Photos
Same	Hydrodynamic separator	Same location, but installation of a hydrodynamic separator instead of baffle box	N/A	Same		Design/ Permitting	$44,700	
						Construction	$223,500	
						Total Capital	**$340,000**	
						Annual Operation & Maintenance	***$3,000***	
						Cost per Acre of PLU	***$13,100/ac***	

Conceptual Design - Potential Full Trash System Project

Project ID: J303D

Project Name: Cypress

Project Location: **510 Cypress Street** (https://maps.app.goo.gl/m5H3pa3rdd3AHcWT7)

Site/Device Information

Proposed Device Type: Connector Pipe Screen

Pipe Size: 24 inches **Depth:** 62 inches **Grate:** 28 inches x 28 inches

Project Description: Construction of a connector pipe screen on Cypress Street downstream of catchbasin indicated in maps. Device should be from the list of approved vendors by the Regional Water Quality Control Board (RWQCB).

Site Specific Considerations:

- Might require a standard manhole in the sidewalk for access to the device for maintenance

O&M Summary: Device will require vactor truck for maintenance 2 to 3 times per year.

Comments/Notes: Additional $5k has been included into construction for a new manhole lid.

Proposed Project Location

Proposed Device Type

Drainage Area and Trash Reduction Information

Total Drainage Area: 12.6 acres
- Caltrans Right-of-Way – 0 acres

Priority Land Use (PLU) Areas (acres): **12.6 acres**

Flow Rates (cfs)	Capacity	1yr, 1hr	10-yr	Notes
A-1.1 ★	20	5	16	Flows based on rational method and SDMP data. This pipe has sufficient capacity and an in-line device is possible.

Preliminary Cost Estimate

Design	$1,500
Construction	$8,000
Construction Contingency	$900
Total Capital	**$10,400**
Annual Operation & Maintenance	***$770***
Cost per Acre of PLU	***$800/ac***

CONCEPTUAL DESIGN - POTENTIAL FULL TRASH SYSTEM PROJECT

Project ID: **E208M**

Project Name: **Elm**

Project Location: **W Elm Street** (https://maps.app.goo.gl/myhRTejCDgkWJkrE8)

Site/Device Information

Proposed Devices Type: Baffle Box and Connector Pipe Screen (CPS) **(See page 2 for Alternatives)**

Baffle Box Pipe Size: 42 inches **Depth:** 74 inches **Grate:** NA
CPS Pipe Size: 24 inches **Depth:** 91 inches **Grate:** NA

Project Description: Construction of a baffle box inline on W Elm Street. This project also includes a connector pipe screen (CPS) on the manhole on the intersection of W Elm Street and Glass Beach Drive on the Southeast corner. All devices should be from the list of approved vendors by the Regional Water Quality Control Board (RWQCB).

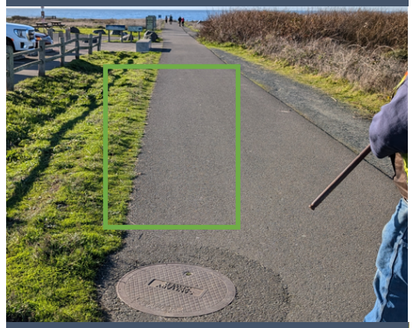
Site Specific Considerations:

- There is a connection between the 42in outfall pipe and the 24in outfall that needs to be confirmed and ensure that the 1-yr, 1-hr flow in the 42in pipe does not overflow into the 24in pipe
-

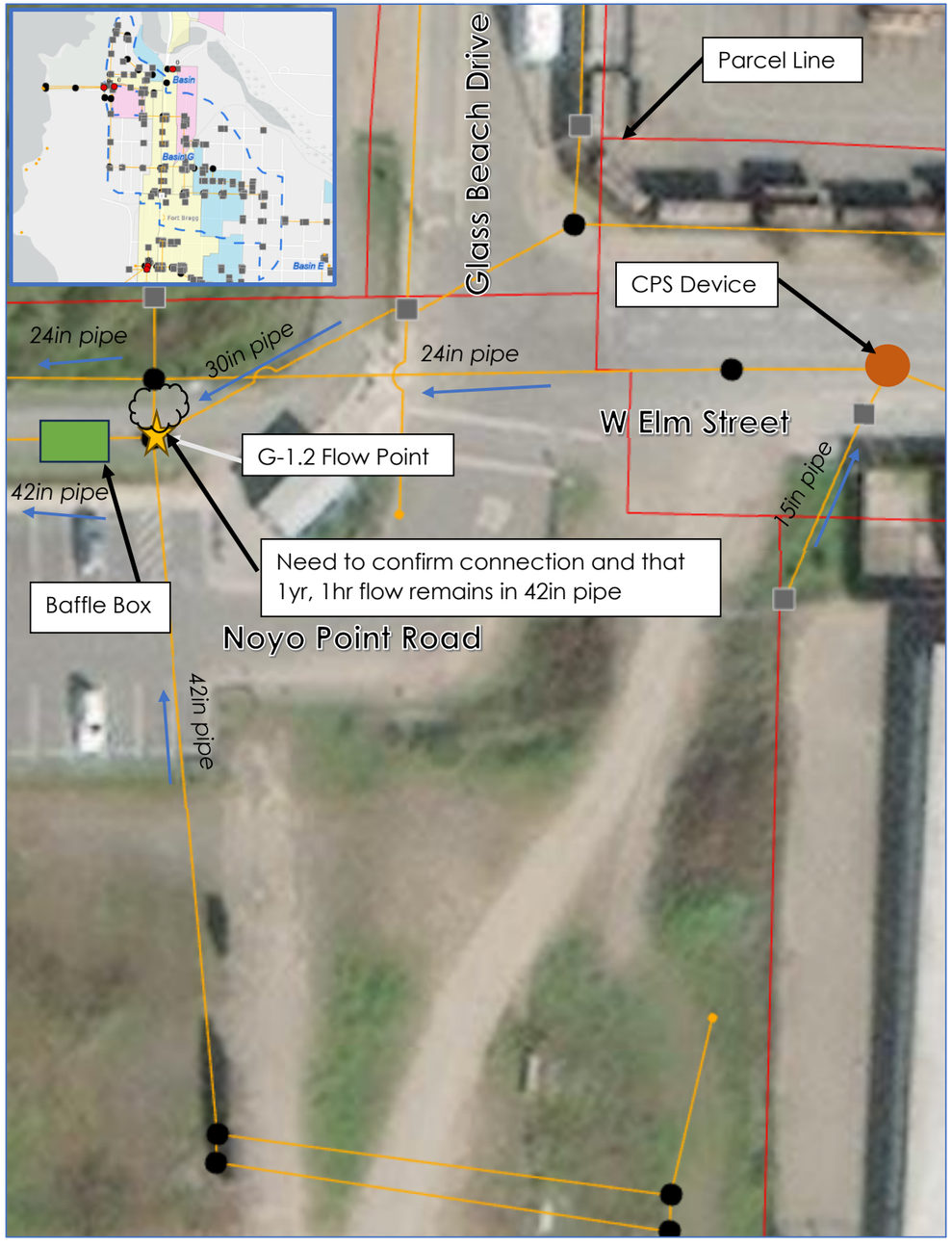
O&M Summary: Devices will require vactor truck for maintenance 2 times per year.

Comments/Notes:

High Flow Device Location



CPS Device Location



Drainage Area and Trash Reduction Information

Total Drainage Area: 174.3 acres
- Caltrans Right-of-Way – 4 acres

Priority Land Use (PLU) Areas (acres): **86.3 acres**

Flow Rate (cfs)	Capacity	1yr, 1hr	10-yr	Notes
G-1.2 ★	155	67	92	Flows based on rational method and SDMP data. This pipe has sufficient capacity and an in-line device is possible.

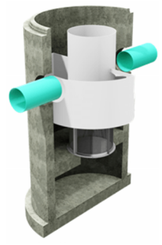
Preliminary Cost Estimate

Design	$212,900
Construction	$1,060,100
Construction Contingency	$318,000
Total Capital	**$1,595,400**
Annual Operation & Maintenance	***$3,770***
Cost per Acre of PLU	***$261,600/ac***

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

CONCEPTUAL DESIGN - POTENTIAL FULL TRASH SYSTEM PROJECT

Alternative Design Options

Alternative Site ID	Proposed Device Type	Project Description	Site Specific Considerations	O&M Summary	Comments/Notes	Preliminary Cost Estimate		Photos
Same	Hydrodynamic Separator	Same location, but installation of a baffle box device instead of the hydrodynamic separator	N/A	Same		Design	$212,900	
						Construction	$1,060,100	
						Total Capital	**$1,595,400**	
						Annual Operation & Maintenance	***$3,770***	
						Cost per Acre of PLU	***$261,600/ac***	

Conceptual Design - Potential Full Trash System Project

Project ID: J313M

Project Name: GP Haul Road

Project Location: Georgia Pacific Haul Road (https://maps.app.goo.gl/C5trsFKT8XVBMyJV9)

Site/Device Information

Proposed Device Type: Baffle Box **(See page 2 for Alternatives)**

Pipe Size: 36 inches **Depth:** 36 inches **Grate:** N/A – Curb Inlet

Project Description: Construction of a baffle box or hydrodynamic separator inline on the intersection of Cypress Street and Georgia Pacific Haul Road. Device should be from the list of approved vendors by the Regional Water Quality Control Board (RWQCB) for high flow devices. Once the full capture, 1-yr, 1hr design flow is exceeded, flows are conveyed through an internal bypass.

Site Specific Considerations:

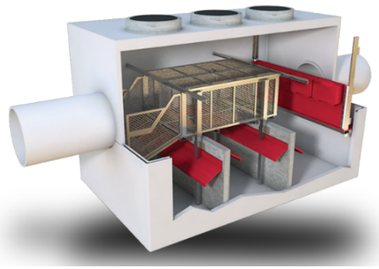
- Property lines and right of way will need to be established
- Device should be located such that the flow into the curb inlet is treated

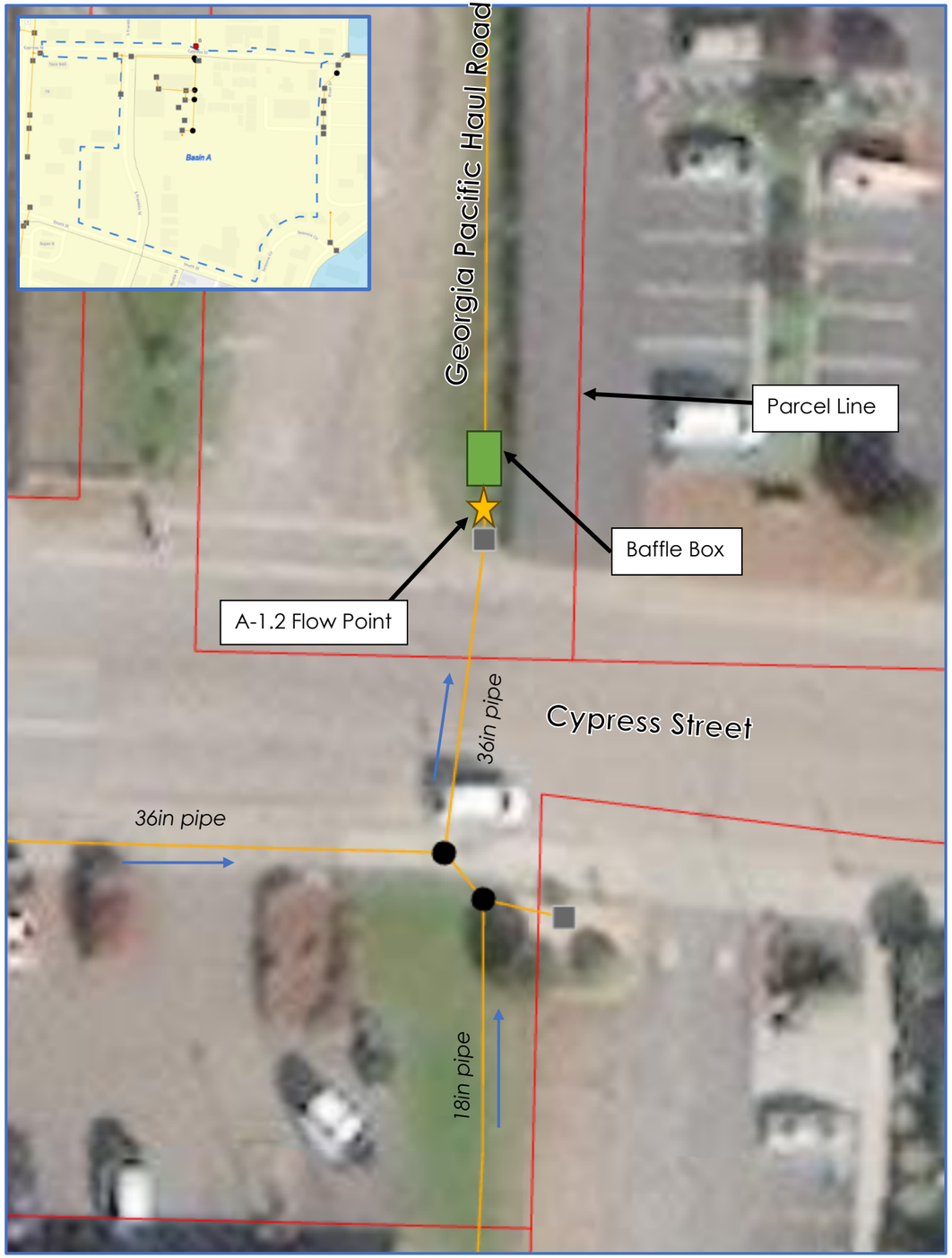
O&M Summary: Device will require vactor truck for maintenance 2 to 3 times per year.

Comments/Notes: It was determined that the GP Haul Road is not maintained routinely by public works. In addition, there is a gate that blocks entrance to the street. This device location is the most downstream that can still be maintained and within public right of way. A dedicated easement may be required for installation.

Proposed Project Location

Proposed Device Type





Drainage Area and Trash Reduction Information

Total Drainage Area: 19 acres
- Caltrans Right-of-Way – 0 acres

Priority Land Use (PLU) Areas (acres): **19 acres**

Flow Rates	Capacity (cfs)	1yr, 1hr (cfs)	10-yr (cfs)	Notes
A-1.2 ★	55	7	17	Flows based on rational method and SDMP data. According to SDMP, no improvements are recommended on this pipe because capacity exceeds the 10 year flow.

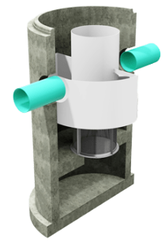
Preliminary Cost Estimate

Design	$23,800
Construction	$119,200
Construction Contingency	$35,800
Total Capital	**$180,000**
Annual Operation & Maintenance	***$3,000/yr***
Cost per Acre of PLU	***$9,500/acre***

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

CONCEPTUAL DESIGN - POTENTIAL FULL TRASH SYSTEM PROJECT

Alternative Design Options

Alternative Site ID	Proposed Device Type	Project Description	Site Specific Considerations	O&M Summary	Comments/Notes	Preliminary Cost Estimate		Photos
Same	Hydrodynamic Separator	Same location, but installation of a baffle box device instead of the hydrodynamic separator	N/A	Same		Design/ Permitting	$23,800	
						Construction	$119,200	
						Total Capital	**$180,000**	
						Annual Operation & Maintenance	***$3,000/yr***	
						Cost per Acre of PLU	***$9,500/acre***	

Conceptual Design - Potential Full Trash System Project

Project ID: NM45

Project Name: Hazel

Project Location: 331 Hazel Street (https://maps.app.goo.gl/aA1q2yBRMjFdDW388)

Site/Device Information

Proposed Device Type: Baffle Box **(See page 2 for Alternatives)**

Pipe Size: 24 inches **Depth:** 38 inches **Grate:** N/A

Project Description: Construction of a baffle box or hydrodynamic separator inline on Hazel Street between Main Street and South Franklin Street. Device should be from the list of approved vendors by the Regional Water Quality Control Board (RWQCB). Once the full capture, 1-yr, 1hr design flow is exceeded, flows are conveyed through an internal bypass.

Site Specific Considerations:

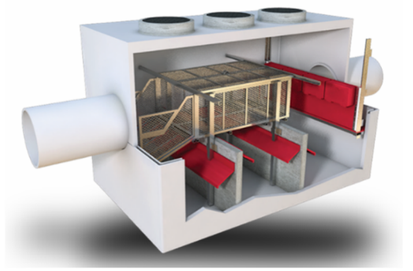
- Device should be located far enough from intersection so that maintenance does not impact traffic flow
- Internal bypass flows should be confirmed with vendors to ensure that the 10yr flow can be bypassed
- System is undersized. Hydraulic capacity should be increased

O&M Summary: Device will require vactor truck for maintenance 2 to 3 times per year.

Comments/Notes: Maintenance requested that device is located sufficient distance from the intersection so that traffic control is not an issue during maintenance. SDMP recommends upsizing the 24 inch pipe to a 30 inch pipe in this area, this project could be combined with the trash capture device installation. Or consider removing the connection on Franklin Street so those flows remain along Chestnut.

Proposed Project Location

Proposed Device Type



Drainage Area and Trash Reduction Information

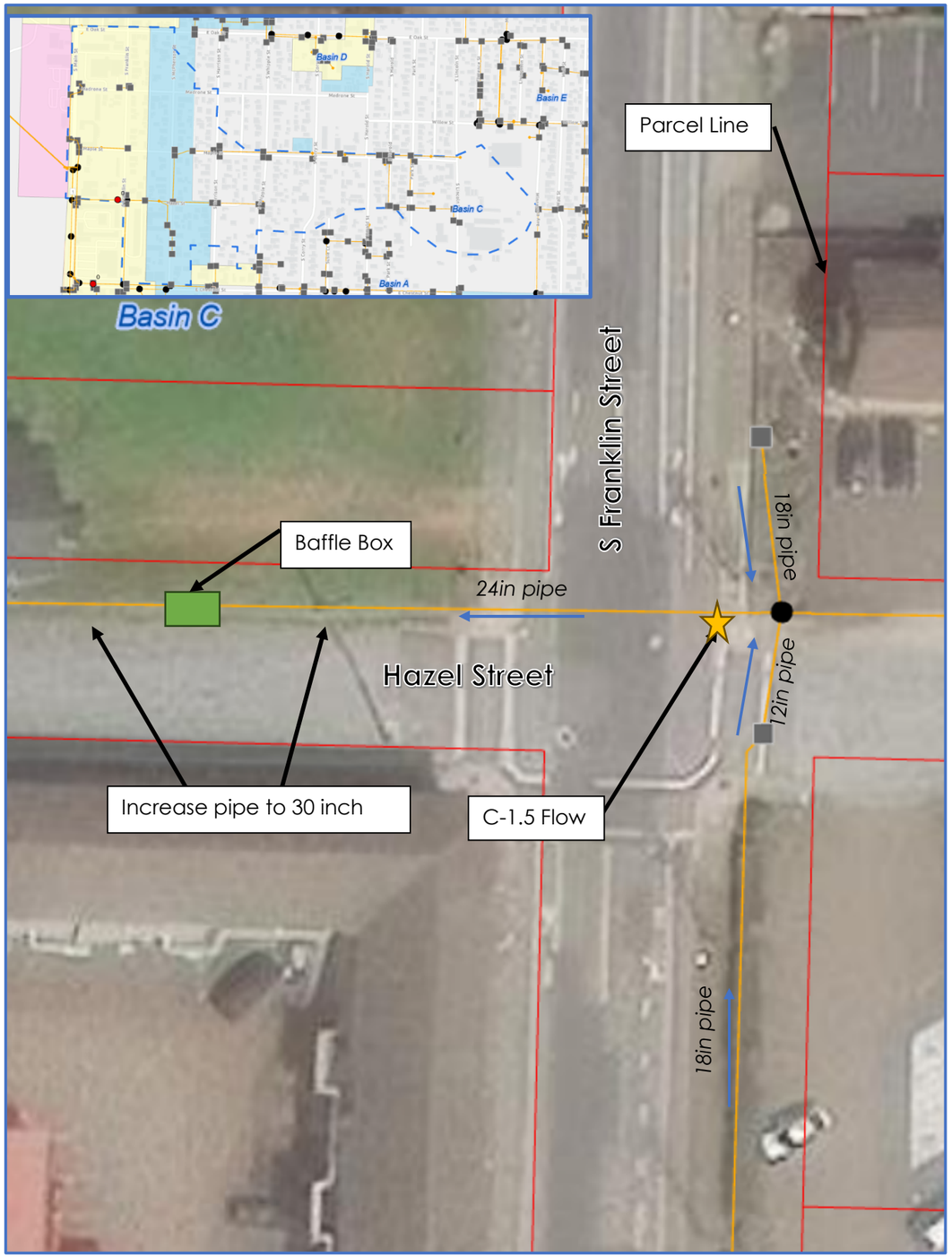
Total Drainage Area: 80.1 acres
- Caltrans Right-of-Way – 0 acres

Priority Land Use (PLU) Areas (acres): **37.1 acres**

Flow Rates	Capacity (cfs)	1yr, 1hr (cfs)	10-yr (cfs)	Notes
C-1.5 ★	20	27	41	Flows based on rational method and SDMP data. According to SDMP, upsizing the 24 inch to a 30 inch pipe is recommended because 10 year event exceeds the capacity.

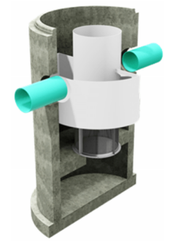
Preliminary Cost Estimate

Design	$123,400
Construction	$617,000
Construction Contingency	$185,000
Total Capital	**$926,000**
Annual Operation & Maintenance	***$3,000/yr***
Cost per Acre of PLU	***$25,000/acre***



CONCEPTUAL DESIGN - POTENTIAL FULL TRASH SYSTEM PROJECT

Alternative Design Options

Alternative Site ID	Proposed Device Type	Project Description	Site Specific Considerations	O&M Summary	Comments/Notes	Preliminary Cost Estimate		Photos
Same	Hydrodynamic Separator	Same location, but installation of a hydrodynamic separator device instead of baffle box	N/A	Same		Design/ Permitting	$123,400	
						Construction	$617,000	
						Total Capital	**$926,000**	
						Annual Operation & Maintenance	***$3,000/yr***	
						Cost per Acre of PLU	***$25,000/acre***	

Conceptual Design - Potential Full Trash System Project

Project ID: MM17

Project Name: Kemppe

Project Location: 531 Kemppe Way (https://maps.app.goo.gl/um2QC3TSuP4jpaFz8)

Site/Device Information

Proposed Devices Type: Baffle Box, Hanging Basket and Connector Pipe Screen (CPS) **(See page 2 for Alternatives)**

Baffle Box Pipe Size: 24 inches	**Depth:** ~60 inches	**Grate:** NA
CPS Pipe Size: 18 inches	**Depth:** 62 inches	**Grate:** 40 inches x 24 inches
Hanging Basket: NA	**Depth:** 105 inches	**Grate:** 34 inches x 30 inches

Project Description: Construction of a baffle box or hydrodynamic separator inline on Kemppe Way upstream of intersection with East Cypress. This project also includes two inlet based devices – one is a connector pipe screen (CPS) on the inlet on the Northwest corner, the other is a hanging basket at the grate on the south edge. All devices should be from the list of approved vendors by the Regional Water Quality Control Board (RWQCB).

Site Specific Considerations:

- There is no structure on the 24 inch pipe along Kemppe Way
- Device location should be discussed with maintenance for best location
- Internal bypass flows should be confirmed with vendors to ensure that the 10yr flow can be bypassed

O&M Summary: Devices will require vactor truck for maintenance 2 times per year.

Comments/Notes: This site was originally scoped for one high flow device at the south grate but field investigations noted that an electrical pole would need be stabilized or relocated, this is discussed as an alternative, with higher associated cost.

High Flow Device Location

Catch Basin Insert Location

Drainage Area and Trash Reduction Information

Total Drainage Area: 26.9

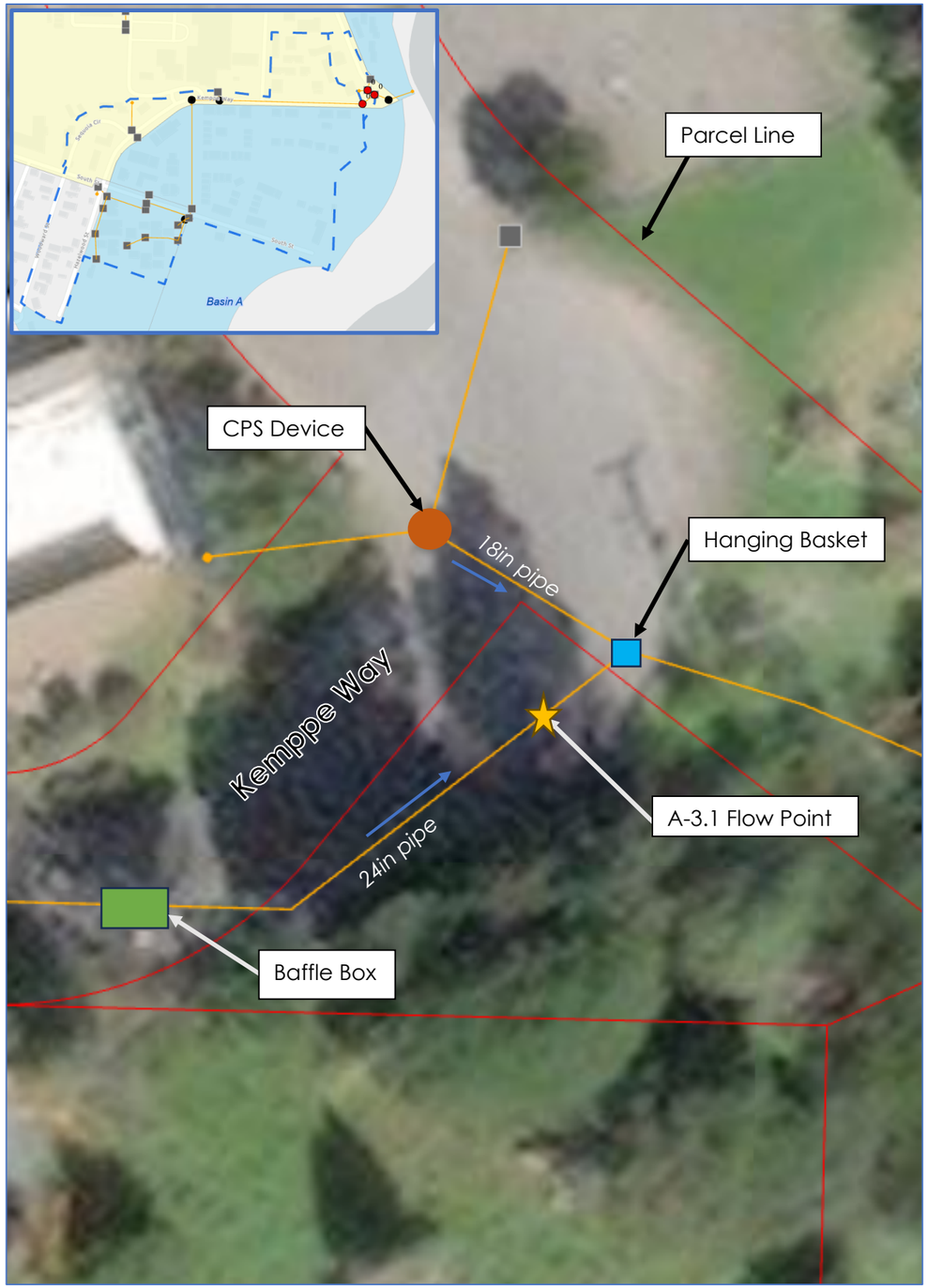
- Caltrans Right-of-Way – 0 acres

Priority Land Use (PLU) Areas (acres): 23.7

Flow Rate (cfs)	Capacity	1yr, 1hr	10-yr	Notes
A-3.1 ★	32	9	21	Flows based on rational method and SDMP data. This pipe has sufficient capacity and an in-line device is possible.

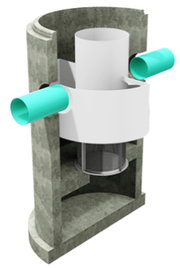
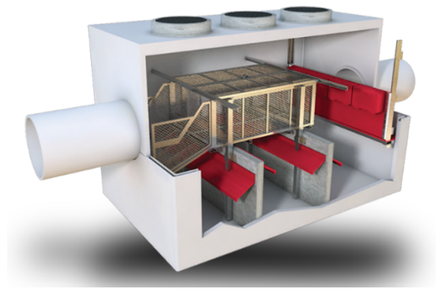
Preliminary Cost Estimate

Design	$35,600
Construction	$168,800
Construction Contingency	$50,600
Total Capital	**$250,800**
Annual Operation & Maintenance	***$4,540***
Cost per Acre of PLU	***$16,000/ac***



CONCEPTUAL DESIGN - POTENTIAL FULL TRASH SYSTEM PROJECT

Alternative Design Options

Alternative Site ID	Proposed Device Type	Project Description	Site Specific Considerations	O&M Summary	Comments/Notes	Preliminary Cost Estimate		Photos
Same	Hydrodynamic Separator (HDS) and 2 inlet based devices	Same location, but installation of a HDS device instead of the baffle box	N/A	Same		Design	$35,600	 HDS  CPS  Hanging Basket
						Construction	$168,800	
						Total Capital	**$250,800**	
						Annual Operation & Maintenance	***$4,540***	
						Construction Cost per Acre of PLU	**$16,000/ac**	
Same	One Baffle Box, no small devices	One high flow device downstream of grate in vegetation and close to electrical pole	Will require excavation in vegetation and coordination with electrical company	Device will be off main road, but within reach of vactor	Additional $15k for stabilizing pole and coordination with electrical company. Extra $10k for deeper excavation (approximately 5-ft deeper than proposed location)	Design	**$38,800**	
						Construction	$194,100	
						Total Capital	**$291,200**	
						Annual Operation & Maintenance	***$3,000***	
						Cost per Acre of PLU	**$12,300/ac**	

Conceptual Design - Potential Full Trash System Project

Project ID: MM50

Project Name: Manzanita

Project Location: 110 E Manzanita St (https://maps.app.goo.gl/HGBk4MDfKM8YWruDA)

Site/Device Information

Proposed Device Type: Connector Pipe Screen (CPS)

Pipe Size: 12 inches **Depth:** 34 inches **Grate:** 42 inches x 17 inches

Project Description: Construction of a connector pipe screen (CPS) installed on outlet pipe of existing catch basin. The CPS unit will be from the list of approved vendors by the Regional Water Quality Control Board (RWQCB). Once the full capture, 1-yr, 1hr design flow is exceeded, flows will weir over the top of the screen into the outlet pipe.

Site Specific Considerations:

- Downstream on the street is Caltrans jurisdiction
- Device is very close to parcel line. May require easement
- Basin is odd size and may require custom design

O&M Summary: Device will require vactor truck for maintenance 2 to 3 times per year.

Comments/Notes: Device will need to capture flows from the curb opening. Device shown in picture would ensure curb flow does not bypass screening.

Proposed Project Location

Proposed Device Type

Drainage Area and Trash Reduction Information

Total Drainage Area: 5.7 acres

- Caltrans Right-of-Way – 0 acres

Priority Land Use (PLU) Areas (acres): 5.7 acres

Flow Rates	Capacity (cfs)	1yr, 1hr (cfs)	10-yr (cfs)	Notes
Not within SDMP scope	4	2	8	Flows based on rational method and Manning's equation. Flows suggest that the 12-inch pipe might be undersized. Maintenance staff should be consulted to determine if pipe should be upsized.

Preliminary Cost Estimate

Design	$1,500
Construction	$3,000
Construction Contingency	$900
Total Capital	**$5,400**
Annual Operation & Maintenance	***$770/yr***
Construction Cost per Acre of PLU	***$1,000/ac***

City of Fort Bragg Full Tash Capture Preliminary Designs
January 2024

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

CONCEPTUAL DESIGN - POTENTIAL FULL TRASH SYSTEM PROJECT

Project ID: DI313

Project Name: Minnesota

Project Location: 165 Minnesota Street (https://maps.app.goo.gl/gsSk8mjtrUq7ddobA)

Site/Device Information

Proposed Device Type: Connector Pipe Screen (CPS) **(See page 2 for Alternatives)**

Pipe Size: 18 inches **Depth:** 87 inches **Grate:** 36 inches x 24 inches

Project Description: Construction of a connector pipe screen (CPS) installed on outlet pipe of existing catch basin, or into new catch basin structure downstream. The CPS unit will be from the list of approved vendors by the Regional Water Quality Control Board (RWQCB). Once the full capture, 1-yr, 1hr design flow is exceeded, flows will weir over the top of the screen into the outlet pipe.

Site Specific Considerations:

- Catch basin is not located on the curb and gutter flow
- Catch basin is located directly in front of private driveway
- Downstream on the street is County jurisdiction

O&M Summary: Device will require vactor truck for maintenance 2 to 3 times per year. Considerations will need to be made with property owner about blocking driveway.

Comments/Notes: The entire street appears to have outdated catch basin grates. There is an upstream driveway (111 Minnesota) that is unpaved and will likely send dirt and sediments that will be collected by the screen.

Proposed Project Location

Proposed Device Type

Drainage Area and Trash Reduction Information

Total Drainage Area: 26.4 acres
- Caltrans Right-of-Way – 0 acres

Priority Land Use (PLU) Areas (acres): 9.2 acres

Flow Rates	Capacity (cfs)	1yr, 1hr (cfs)	10-yr (cfs)	Notes
B-2.2 ★	8	8	25	Flows based on rational method and SDMP data. According to SDMP, no improvements are recommended on this pipe because the maintenance staff have not noticed any flooding and street drains to creek.

Preliminary Cost Estimate

Design	$1,500
Construction	$3,000
Construction Contingency	$900
Total Capital	**$5,400**
Annual Operation & Maintenance	***$770/yr***
Construction Cost per Acre of PLU	***$600/ac***

CONCEPTUAL DESIGN - POTENTIAL FULL TRASH SYSTEM PROJECT

Alternative Design Options

Alternative Site ID	Proposed Device Type	Project Description	Site Specific Considerations	O&M Summary	Comments/Notes	Preliminary Cost Estimate		Photos
Same	New Catch Basin Downstream	Install new catch basin downstream to avoid private driveway and use City Standard detail for Catch Basin	N/A	Same		Design/ Permitting	$5,000	N/A
						Construction	$15,000	
						Total Capital	**$30,000**	
						Annual Operation & Maintenance	**$770/yr**	
						Construction Cost per Acre of PLU	**$3,300/ac**	

ATTACHMENT 3

RWQCB Approved Device List

State Water Resources Control Board

Executive Director Designee Certification of Trash Full Capture Systems (Updated April 2025)

The State Water Resources Control Board Executive Director's designee has received applications and certified the trash full capture systems (Systems) listed in the first table below, per the requirements of the Trash Provisions.[1] Legacy Systems certified pursuant to the Trash Provisions are listed in the second table below, with a certification date of December 2, 2015 (the effective date of the Trash Provisions). Legacy Systems include those full capture systems that were listed in Appendix I of the Bay Area-wide Trash Capture Demonstration Project, Final Project Report (May 8, 2014). All Systems remain certified unless and until they are decertified by the State Water Board's Executive Director or designee. The Trash Implementation Program webpage also includes a list of decertified Systems, including the reasons for decertification.

The tables below include the names of the applicants of the certified Systems. Applicants own the design of the Systems or were designated in writing by the owner of the design to pursue certification. Applicants may also manufacture or distribute the Systems or this may be done by third parties authorized by the applicant and specified in the application.

The tables also include the dates of certification and, if applicable, the date of any update or decertification. Systems are either identified by their application number or, for Legacy Systems, by an alpha numeric designation.

The Systems must be sized, manufactured, and installed according to the certified application to be compliant with the Trash Provisions. This also serves as certification of multi-benefit trash full capture systems listed separately in the document Certified Multi-Benefit Trash Full Capture Systems, first certified by the Executive Director's designee on August 4, 2017. Multi-benefit trash systems shall be designed in accordance with the criteria in that document. The document is available on the Trash Implementation Program webpage.

The applicant shall submit an amended application under the following circumstances:

1. If an applicant is proposing design feature revisions to a certified System

[1] Amendment to the Water Quality Control Plan for Ocean Waters of California to Control Trash (Ocean Plan) and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, And Estuaries of California adopted by the State Water Board located on the Statewide Water Quality Control Plans for Trash webpage at: https://www.waterboards.ca.gov/water_issues/programs/trash_control/documentation.html

(including revisions to or additions of filters, screens, configurations, bypass or other physical characteristics that affect the functionality of a certified System), the applicant must submit an amended application for re-certification before use or sale of the updated System.

2. If the applicant is proposing minor revisions to the original certified application (i.e. routine revisions to the applicant's contact information or to installation or maintenance instructions), the applicant may do so without delaying the use or sale of the certified System. Such minor revisions do not affect a System's certification status. The Executive Director reserves the right to require re-certification of an amended application with such revisions if it is determined that the revisions are significant enough to warrant re-certification. In such an instance and upon notice from State Water Board staff, the applicant must wait for re-certification of the updated application prior to use or sale of the updated System.

Instructions for submitting an amended application are included in the Application Requirements for Trash Full Capture System Certification, which is available on the Trash Implementation Program webpage at:

https://www.waterboards.ca.gov/water_issues/programs/stormwater/trash_implementation.html

Certified System applications are available on the California Stormwater Quality Association (CASQA) website (https://www.casqa.org/resources/water-quality-priorities/trash/certified-trash-full-capture-systems-available-to-the-public).

Table 1. New Applications Certified by the Executive Director Designee

Application Number	Applicant's Name and System Name	Date of Certification and, if Applicable, Update and/or Decertification Date
1	AquaShield™ – Aqua-Swirl® Stormwater Treatment System	08/04/2017 Updated 01/06/2023
2	Inventive Resources Inc. – Water Decontaminator	03/15/2018 Updated 02/05/2021
3	Advanced Drainage Systems, Inc. – FLEXSTORM Full Trash Capture Inserts	03/15/2018 Updated 04/21/2021 Updated 12/20/2024
4	Bio Clean® Environmental Services, Inc. – Curb Inlet and Grate Inlet Filters	03/15/2018 Updated 10/21/2021 Updated 04/29/2024
5	Jensen® Stormwater Systems – Jensen® Deflective Separator	03/15/2018
6	Bio Clean® Environmental Services, Inc. – Debris Separating Baffle Box	03/15/2018
7	CleanWay® Environmental Partners, Inc. – Curb Inlet Filtration System	03/15/2018 Decertified 07/19/2021
8	CleanWay® Environmental Partners, Inc. – Drop Inlet Device	03/15/2018 Decertified 07/19/2021
9	StormTrap® – SiteSaver®	03/15/2018 Updated 02/23/2021
10	Hydro International® – Hydro DryScreen®	07/10/2018 Updated 05/05/2021
11	Hydro International® – Hydro Up-Flo Filter®	07/10/2018
12	Revel Environmental Manufacturing Inc. – Triton™ Crescent Pipe Screen	07/10/2018 Updated 08/19/2024
13	Revel Environmental Manufacturing Inc. – Triton™ Perf-Full Trash Capture Insert	07/10/2018 Updated 12/21/2021
14	Hydro International® – Downstream Defender® (In-Line and Off-Line Configurations)	07/10/2018

Application Number	Applicant's Name and System Name	Date of Certification and, if Applicable, Update and/or Decertification Date
15	Bio Clean® Environmental Services, Inc. – Modular Wetland System®	07/10/2018
16	Filtrexx® Sustainable Technologies – StormExx® Clean	08/10/2018 Updated 11/25/2019
17	Oldcastle Infrastructure – Nutrient Separating Baffle Box®	10/12/2018 Updated 07/21/2020
18	G2 Construction, Inc. – CPS-Mod™ and Removable CPS Mod™ Screen	06/26/2019
19	G2 Construction, Inc. – G2 Grated Inlet Trash Screen	06/26/2019
20	Bio Clean® Environmental Services, Inc. – Bio Clean® Deflective Screening Device	06/26/2019
21	Advanced Drainage Systems, Inc. – Barracuda Hydrodynamic Separator	06/26/2019 Updated 05/21/2021
22	Frog Creek Partners, LLC – Gutter Bin® Channel Filtration System and Mundus Bag® Water Filter	06/26/2019
23	Frog Creek Partners, LLC – Gutter Bin® Eco Curb Inlet Filter and Mundus Bag® Water Filter	02/18/2020
24	Frog Creek Partners, LLC – Gutter Bin® Eco Drop Inlet Filter and Mundus Bag® Water Filter	02/18/2020
25	AbTech Industries, Inc. – Ultra Urban Filter	06/30/2020
26	Brightwater™ – Curb Inlet Filter	06/30/2020
27	Enviropod® International: A Stormwater 360 Group Company – Enviropod® LittaTrap™ Full Capture	10/14/2020 Updated 12/20/2024
28	Hydro International® – First Defense® High-Capacity Full Trash Capture Device	10/30/2020
29	Brightwater™ – Connector Pipe Screen	03/15/2018 Updated 12/29/2020

Application Number	Applicant's Name and System Name	Date of Certification and, if Applicable, Update and/or Decertification Date
30	Safe Drain Stormwater Holdings, Inc. – Storm Vector Guard	02/11/2021
31	California Department of Transportation – Inclined Screen Gross Solids Removal Device	06/08/2021
32	California Department of Transportation – End-of-Pipe Full Trash Capture Net Device (Trash Net)	06/08/2021
33	California Department of Transportation – Linear Radial Gross Solids Removal Device	06/08/2021
34	StormTrap®, LLC – TrashTrap® Net and Fixed Basket In- Line Stormwater Treatment System	06/21/2022
35	StormTrap®, LLC – TrashTrap® Net and Fixed Basket End-of-Pipe Stormwater Treatment System	07/06/2022
36	Fabco Industries, Inc. – Fabco Connector Pipe Screen	07/06/2022 Updated 02/07/2024 Updated 04/25/2024 Updated 08/19/2024
37	Fabco Industries, Inc. – Fabco ScreenBox	10/13/2022 Updated 12/20/2024
38	Fabco Industries, Inc. – Fabco StormBasin	10/13/2022
39	Fabco Industries, Inc. – Fabco StormSack	10/13/2022 Updated 12/20/2024
40	California Department of Transportation – Capture Housing	06/13/2023
41	Fabco Industries, Inc. – Fabco Ready-Fit StormSack	06/16/2023
42	Fabco Industries, Inc. – Fabco Expanding StormRing and Flowline CPS	09/25/2023 Updated 04/01/2025
43	Fabco Industries, Inc. – Fabco StormTrough	11/30/2023 Updated 08/19/2024 Updated 04/01/2025
44	Hydroworks, LLC, - HydroDome TR	04/30/2024

Application Number	Applicant's Name and System Name	Date of Certification and, if Applicable, Update and/or Decertification Date
45	Kai Pono Solutions – Standard Basic System Device	06/14/2024
46	Hydroworks, LLC, - HydroDome® TS	09/26/2024
47	County of Marin – Storm Flo Screen Flat Panel Array, a project-specific application.	01/25/2025
48	City of Livermore – Stormflo Screens 6000 and 6001, a project-specific application	03/25/2025
49	StormTrap®, LLC – StormSettler Hydrodynamic Separator	04/15/2025

Table 2. Legacy Systems[2]

System Identifier	Legacy System Owner's Name and System Name	Date of Certification and, if Applicable, Update and/or Decertification Date
ADS-1	Advanced Drainage Systems, Inc. – FLEXSTORM Connector Pipe Screen	12/02/2015 Updated 06/08/2021 Updated 05/20/2024 Updated 11/01/2024
AS-1 AS-2	Stormtek – Stormtek ST3 & ST3G Catchbasin Connector Pipe	12/02/2015 Updated 08/12/2021
BC-1	Bio Clean® Environmental Services, Inc. – Square Grate Inlet Skimmer Box	12/02/2015 Decertified 10/01/2018
BC-2	Bio Clean® Environmental Services, Inc. – Round Curb Inlet Basket	12/02/2015 Decertified 10/01/2018
BC-3	Hydra TMDL Systems- Connector Pipe Screen	12/02/2015 Updated 04/30/2020 Updated 05/01/24
BC-4	Bio Clean® Environmental Services, Inc. – Catchbasin Connector Pipe Trash Screen	12/02/2015 Decertified 01/27/2020
BC-5HF	Bio Clean® Environmental Services, Inc. – Nutrient Separating Baffle Box	12/02/2015 Decertified 10/01/2018
COA-1	Coanda Inc. – Coanda Trash Screen and Debris Fence	12/02/2015 Updated 09/10/2021
CCP-1HF	Contech Engineered Solutions – Continuous Deflective Separator Hydrodynamic Separator	12/02/2015 Updated 05/27/2021
ECI-1	Ecology Control Industries – Debris Dam - Catch Basin Insert for Curb Inlet Design	12/02/2015 Updated 06/17/2020
FCT-1HF	StormTrap® Modular Concrete Stormwater Management – Inline Netting Trash Trap – Inline Pipe Net with Trash Screen	12/02/2015 Decertified 08/01/2021
FCT-2HF	StormTrap® Modular Concrete Stormwater Management – End of Pipe Netting Trash Trap – End of Pipe Net with Trash Screen	12/02/2015 Decertified 08/01/2021
GFI-1	Gentile Family Industries – Wavy Grate Trash Catcher	12/02/2015 Decertified 04/01/2016

[2] Legacy Systems are certified pursuant to the Trash Provisions on 12/02/2015.

System Identifier	Legacy System Owner's Name and System Name	Date of Certification and, if Applicable, Update and/or Decertification Date
KS-5HF	KriStar Enterprises, Inc. – CleansAll	12/02/2015 Decertified 04/01/2016
KS-6HF	KriStar Enterprises, Inc. – Downstream Defender	12/02/2015 Decertified 04/01/2016
KS-7HF	Oldcastle Infrastructure – Dual Vortex Separator Hydrodynamic Separator	12/02/2015 Decertified 05/01/2021
KS-8HF	Oldcastle Infrastructure – FloGard® Perk Filter Radial Cartridge Filter	12/02/2015 Decertified 05/01/2021
KS-9HF	KriStar Enterprises, Inc. – Swirl -Flo Screen Separator	12/02/2015 Decertified 04/01/2016
KS-10HF	Oldcastle Infrastructure – Nettech Gross Pollutant Trap, In Line – Trash Screen and Net	12/02/2015 Decertified 05/01/2021
KS-11HF	Oldcastle Infrastructure – Nettech Gross Pollutant Trap, End of Line – Trash Screen and Net	12/02/2015 Decertified 05/01/2021
OI-1	Oldcastle Infrastructure – FloGard® + Plus® Catchbasin Trash Screen Insert, Combination Inlet Style Drop in Basket	12/02/2015 Updated 06/09/2021
OI-2	Oldcastle Infrastructure – FloGard® Catchbasin Trash Screen Insert, Flat Grated Inlet Style Drop in Basket	12/02/2015 Updated 06/09/2021
OI-3	Oldcastle Infrastructure – FloGard® Catchbasin Outlet Trash Screen Insert Connector Pipe Screen	12/02/2015 Updated 01/29/2019 Updated 04/01/2025
OI-11HF	Oldcastle Infrastructure – FloGard® NetTech	12/02/2015 Updated 02/08/2020
REM-1	Revel Environmental Manufacturing, Inc. – Triton™ Bioflex Inlet Trash Guard Catchbasin Polyester Fiber Mesh Trash Filter Insert	12/02/2015 Updated 09/10/2021
RMC-1HF	Roscoe Moss Company - Storm Flo® Trash Screen – Linear Radial Gross Solids Removal Device	12/02/2015 Updated 03/30/2021
USW-1	United Stormwater, Inc. – Connector Pipe Trash Screen	12/02/2015 Updated 01/29/2022

System Identifier	Legacy System Owner's Name and System Name	Date of Certification and, if Applicable, Update and/or Decertification Date
USW-5	United Stormwater, Inc. – Drop-In Grate Inlet Catchbasin Trash Screen	12/02/2015 Decertified 02/15/2018
WCS-1	West Coast Storm, Inc – Connector Pipe Screen	12/02/2015 Decertified 04/01/2016

In accordance with the Trash Provisions, I do hereby certify that the trash treatment control systems listed above are Full Capture Systems for the purposes of the Trash Provisions.

Phillip Crader, Deputy Director
Division of Water Quality