



CASTROVILLE COMMUNITY SERVICES DISTRICT

**SYSTEM-WIDE FISCAL
SUSTAINABILITY PLAN
(FSP)**

DRAFT

June 2024

AKEL
ENGINEERING GROUP, INC.

June 21, 2024

DRAFT

Castroville Community Services District
11499 Geil Street
Castroville, CA 95012

Attention: Eric Tynan,
General Manager.

Subject: System-Wide Fiscal Sustainability Plan – Draft Report

Dear Eric,

We are pleased to submit this Fiscal Sustainability Plan (FSP) to assist the Castroville Community Services District (CCSD) with long-term planning and effective management of its wastewater collection system. The FSP consists of the following four elements stipulated in Section 603 (d) (1) (E) of the Federal Water Pollution Control Act:

- An inventory of critical assets that are part of the treatment works project;
- An evaluation of the condition and performance of inventoried assets or asset groupings;
- A certification that the recipient has evaluated and will be implementing water and energy conservation efforts as part of the plan; and
- A plan for maintaining, repairing and, as necessary, replacing the treatment works and a plan for funding such activities.

We are extending our thanks to you, Roberto Galvez and other District staff for your valuable input during the completion of this study.

Sincerely,

AKEL ENGINEERING GROUP, INC.

Tony Akel, P.E., D.WRE
President
Enclosure: Draft Fiscal Sustainability Plan

Castroville Community Services District
System-Wide Fiscal Sustainability Plan (FSP)

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Castroville Community Services District
System-Wide Fiscal Sustainability Plan (FSP)

Fiscal Sustainability Plan Checklist

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Fiscal Sustainability Plan Checklist

System-Wide Fiscal Sustainability Plan
Castroville Community Services District

PRELIMINARY

No.	Plan Components	Report Section	Supporting Documentation
1	An inventory of critical assets that are a part of the treatment works	Section 2	Figures 2 and 3 Tables 1 to 3
2	An evaluation of the condition and performance of inventoried assets or asset groupings	Section 3	Figures 4 to 6 Tables 4 and 5
3	A certification that the recipient has evaluated and will be implementing water and energy conservation efforts as part of the plan	Section 4	Appendix B Form (T2d)
4	A plan for maintaining, repairing, and as necessary, replacing the treatment works and a plan for funding such activities	Section 5	Table 6

Castroville Community Services District

System-Wide Fiscal Sustainability Plan

1.0 PURPOSE AND SCOPE

Castroville Community Services District (CCSD) currently provides wastewater collection services to approximately 9,000 residents within the communities of Castroville and Moss Landing. The raw wastewater is collected via 23.6 miles of pipelines and conveyed to two Regional Pump Stations operated by Monterey One Water. The wastewater flows are ultimately discharged into Monterey One Water's Regional Treatment Plant located 2 miles north of the City of Marina.

The purpose of this report is to document a system-wide Fiscal Sustainability Plan (FSP) that can be used to effectively manage CCSD's aging wastewater infrastructure. CCSD retained the professional services of Akel Engineering Group, Inc. (Akel) to prepare a FSP with the following scope of work stipulated in the Federal Water Pollution Control Act:

- Provide an inventory of existing wastewater infrastructure.
- Evaluate the condition and performance of the wastewater collection system.
- Document CCSD's ongoing water and energy conservation efforts.
- Develop an improvement plan for maintaining, repairing and replacing wastewater, and list available funding sources.

A copy of the required certification forms is also provided in **Appendix A** (Form T2c) and **Appendix B** (Form T2d) for reference purposes.

2.0 WASTEWATER INFRASTRUCTURE INVENTORY

According to CCSD's AutoCAD database, the existing wastewater collection system consists of 23.6 miles of pipes and 14 lift stations. The overall collection system is divided into two service areas shown on Figure 1 and described as follows

Infrastructure Inventory	
23.6	Miles of Pipelines
9	Lift Stations
585	Manholes

- **Castroville Collection System.** This system encompasses a service area of 1.5 square miles and includes the community of Castroville, Monte Del Lago, Moro Cojo and North Monterey County High School. This system consists of 18.1 miles of pipelines and 5 lift stations, as illustrated on Figure 2 and documented on Table 1. The wastewater flows from this service area are conveyed west into Monterey One Water's Castroville Pump Station located at the end of Watsonville Road.

- **Moss Landing Collection System.** This system encompasses a service area of 0.7 square miles and includes 5.5 miles of pipelines as well as 4 lift stations, as shown on Figure 2. A complete inventory of the system is also listed on Table 2 for reference purposes. This system was mostly constructed in 1985 and merged with the CCSD in 2011. The wastewater flows from this service area are conveyed southeast into Monterey One Water’s Moss Landing Pump Station located at 8147 Moss Landing Road. Subsequently, the wastewater flows are pumped south into the Castroville Pump Station via a 6-inch diameter regional force main (Moss Landing Interceptor).

Additionally, an inventory of CCSD lift stations is also listed on Table 3 with location, number of pumps and total pumping capacity. This table also lists the pumping capacity of the Regional Monterey One Water Pump Stations.

3.0 CONDITION AND PERFORMANCE EVALUATION

This section provides a condition and performance evaluation of CCSD’s wastewater collection system. The following sections identify relevant data sources and detail a risk-based criticality analysis that identifies high risk infrastructure.

3.1 DATA SOURCES

A list of data sources used for the risk assessment are as follows:

- **CCTV Inspections.** The District staff provided CCTV inspection videos for approximately 30% of the system, as illustrated on Figure 4. These inspections were conducted from 2007 to 2022 and document the condition of major pipelines along Geil Street, Washington Street, Merritt Street, Oak Street, Preston Street and Highway 1 (Moss Landing). The 2007 to 2009 inspections were performed using camera mounted robotic units whereas more recent inspections from 2011 to 2022 were completed using a push camera.
- **Lift Station Condition Assessment.** The District staff and Akel performed a visual field inspection of the Moss Landing lift stations in July 2017. Subsequently, Castroville lift stations were inspected visually in April 2024 by the District operator. The data collected from these inspections was used to evaluate the condition of various components including electrical panels, internal piping and site accessibility/security.
- **Manhole Condition Assessment.** The District staff have recently rehabilitated several manholes within the Moss Landing collection system. Visual inspections from 2017 to 2024 were integrated in this FSP to document manhole defects related to corrosion and spalling near the Elkhorn Slough.
- **As-Built Drawings.** Akel performed a cursory review of available as-built drawings to extract key information such as pipeline age and material. The drawings contained information for Castroville subdivisions, which represent approximately 5% of the system.

The drawings indicate that most of the subdivision pipelines were constructed between 1970s to late 1990s and made of Vitrified Clay (VCP) and Polyvinyl Chloride (PVC).

- **Wastewater Collection System Hydraulic Model.** CCSD's existing wastewater collection system hydraulic model was developed in 2013 and calibrated by Akel in 2023. The latest hydraulic model accounts for the Official Community Plan amendments and recommends capacity improvements that were integrated in this FSP.
- **2017 Moss Landing Sewer System Risk Assessment.** Akel prepared a risk assessment report in 2017 to document the condition of the Moss Landing system. The recommendations from this study were also integrated in this FSP.

3.2 RISK ASSESSMENT CRITERIA

Risk assessment is an essential component of asset management and serves as a primary tool to identify and prioritize capital improvements. The results of this assessment can be used to make optimized decisions on critical infrastructure needs and allocate public funds accordingly.

The risk-based approach consists of assessing the probability (likelihood) of an asset failing and more importantly linking it to a consequence if such failure was to occur. The overall risk, also known as the Business Risk Exposure (BRE), is calculated by multiplying the Likelihood of Failure (LoF) by the Consequence of Failure (CoF). The following sections list the assessment criteria developed for evaluation purposes.

3.2.1 Likelihood of Failure Criteria

The LoF criteria for pipelines are listed on Table 4 and intended to quantify the probability of failure. Each criterion and its respective weight is described as follows:

- **CCTV Condition (Weight of 100% if available and 0% if not available):** This criterion assess the likelihood of failure based on a risk score extracted from CCTV inspections. It should be noted that the condition for the Moss Landing system was obtained from the 2017 Moss Landing Sewer System Risk Assessment. The overall structural and maintenance risk scores conform to the standards established by the National Association of Sewer Service (NASSCO) Pipeline Assessment and Certification Program (PACP). Evaluation scores range from a value of 1 for minor defects to a value of 5 for major defects.
- **Age (Weight of 50% if CCTV Condition is not available):** This criterion is used in the absence of CCTV data to determine LoF based on pipeline age or construction year. Evaluation scores range from a value of 1 for pipelines constructed within the previous 30 years to a value of 5 for pipelines constructed more than 60 years ago. Pipelines with an unknown age were assigned a neutral value of 3.

- **Material (Weight of 50% if CCTV Condition is not available):** This criterion is also used in the absence of CCTV to determine LoF based on pipeline material. Evaluation scores range from a value of 1 for pipelines constructed of PVC to a value of 5 for pipelines constructed of asbestos cement. Pipelines with an unknown material were assigned a neutral value of 3. The useful life of each material is different due to manufacturing techniques, quality assurance protocols and construction inspection standards.

3.2.2 Consequence of Failure Criteria

The CoF criteria for pipelines is centered around three categories: public safety, environmental impact and hydraulics. Each category has a significant impact on the local community and thus, the level of customer service. The CoF criteria are listed on Table 5 and described as follows with their respective weight:

Public Safety (Combined Weight of 40%)

- **Proximity to Critical Facilities (Weight of 20%):** This criterion is based on proximity to critical facilities such as schools or hospitals. Education and health care are vital for every community and both institutions receive a large number of visitors on a daily basis. As such, a pipeline failure near these facilities can pose a public safety risk. A score of 1 is assigned to pipelines located more than 200 feet from critical facilities while a score of 5 (high consequence) is assigned to pipelines within 200 feet from critical facilities.
- **Proximity to Highways (Weight of 20%):** This criterion is based on proximity to highways because such failure requires coordination with the California Department of Transportation and impacts local traffic patterns. A score of 1 is assigned to pipelines located more than 200 feet of a highway while a score of 5 (high consequence) is assigned to pipelines located within 200 feet of a highway.

Environmental Impact (Combined Weight of 25%)

- **Proximity to Water Bodies (Weight of 25%):** This criterion is based on proximity to a water body, where a failure can release raw wastewater into local water streams and pose as an environmental hazard. A score of 1 is assigned to pipelines more than 200 feet from a water body while a score of 5 (high consequence) is assigned to pipelines within 200 feet of a water body.

Hydraulics (Combined Weight of 35%)

- **Major Trunks (Weight of 20%):** This criterion evaluates the CoF based on pipeline diameter. Large pipelines typically convey significant flows and therefore a failure may disrupt normal operations, cause public nuisance and require emergency operations. Such failure can also result in overflows or surcharged conditions in the upstream system.

Evaluation scores range from a value of 1 for 4-inch diameter pipelines to a value of 5 for pipes equal to or greater than 18-inch in diameter.

- **Hydraulic Capacity (Weight of 15%):** This criterion is based on hydraulic capacity of pipelines during normal dry weather flow conditions. CCSD staff has noted several pipelines along Washington Street are at capacity or almost full during peak hour conditions from 8 AM to 10 AM. As such, this criterion evaluates the CoF based on hydraulic capacity obtained from CCSD's calibrated hydraulic model. Pipeline capacity is generally evaluated based on flow depth to diameter ratio (d/D). Pipelines with a d/D ratio of 0.92 are considered to be at full capacity and a failure may result in overflows or surcharged conditions in the upstream system. Evaluation scores range from a value of 1 for pipelines with a d/D ratio of 0.3 to a value of 5 for pipelines with a d/D ratio of 0.92 or higher. Pipelines that were excluded from the hydraulic model were assigned a neutral score of 3.

3.2.3 Lift Station and Manhole Condition Assessment Criteria

The following criteria were considered during visual field inspections of lift stations and manholes:

- **General Defects.** This criterion assess the general defects in the structure, roofing, lid/cover, electrical control panels and associated components.
- **Location and Site Access.** This criterion assess potential right-of-way constraints, site accessibility, local traffic and security concerns for each lift station.
- **Operational Concerns.** This criterion assess the periodic maintenance schedule of each lift station and captures valuable input from CCSD's Operations staff.

3.3 RISK ASSESSMENT RESULTS

The overall risk (BRE) for the Castroville and Moss Landing collection systems are illustrated on Figure 5 and Figure 6 respectively. It should be noted that the Moss Landing risk assessment results were extracted from the 2017 Study completed by Akel. The detailed results are described in the subsequent sections.

3.3.1 Pipeline Risk Assessment Results

The overall pipeline risk is a combination of both LoF and CoF scores, and grouped into 4 categories:

- **Low Risk.** This category represents the least critical assets in the system and mostly consist of smaller diameter pipelines. This category accounts for 71% of the collection system. These assets are generally in good condition with notable defects such as separated joints and offset joints. CCSD staff indicated that these defects were initially noted following the Loma Prieta earthquake.

- **Moderate Risk.** This category represents assets with neutral or moderate risk ratings, and accounts for 14% of the collection system. The pipelines should be surveyed via CCTV within the next 1 to 5 years to identify potential rehabilitation action (if necessary).
- **High Risk.** This category represents critical assets in the system with substantial impact on the current level of service. This category accounts for 12% of the collection system and includes 2 critical segments:
 - Washington Street Trunk. This 18-inch diameter trunk is an existing bottleneck of the system as it receives flows from all communities within Castroville and conveys wastewater east into the regional pump station. This trunk is also located within 200 feet of a major Highway and identified to be at capacity during peak hour conditions.
 - Cypress Street Pipelines. These 6-inch diameter pipelines are located in the backyard of single-family homes north of Cypress Street. CCSD staff have indicated these pipelines are in poor condition, with lateral service connections protruding in the main line and causing backup. These pipelines also exhibit significant infiltration and inflows (I&I) due to existing topography in the backyard of homes. For maintenance purposes and to mitigate the risk of failure, these pipelines should be abandoned and replaced with new pipelines along the right-of-way on Cypress Street and Merritt Way. Existing lateral service connections should also be relocated and repaired as necessary.
- **Extreme Risk.** This category represents the most critical assets in the system with the largest impact on the current level of service. This category accounts for 2% of the collection system and includes 1 critical segment:
 - Elkhorn Slough Force Main. This 4-inch diameter force main crossing the Elkhorn Slough has experienced significant corrosion within the carrier pipe in the bridge abutment, and marginal corrosion in the sections exposed under the bridge deck (Figure 7). Additionally, the hangers are corroded and need replacement.

3.3.2 Lift Station Condition Assessment Results

Specific risks and concerns associated with the Castroville and Moss Landing lift stations are described in the following sections.

Castroville Lift Stations

Castroville Boulevard Lift Station (Extreme Risk)

This lift station structure requires major repairs, including new electrical control panels and more site lighting. The station also requires a larger wet well due to frequent overflows and capacity

related concerns in the upstream tributary area. During wet weather conditions, CCSD staff noted that the current wet well only provides a detention time of 45 minutes before overflowing. The internal piping shows visible signs of rust and deterioration. This lift station is classified as extreme risk due to capacity issues and aging components.

Del Monte Lift Station (High Risk)

This lift station was constructed more than 30 years ago and shows visible evidence of deterioration as well as rust. The manhole lid, ring and interior cement walls have degraded severely over time and require upgrades. The internal piping is also broken with rusted and outdated electrical panel controls. The general condition of this lift station is poor and therefore classified as high risk.

Moro Cojo Lift Station (Low Risk)

This lift station was constructed as part of the Moro Cojo subdivision in 1997 and is approximately 27 years old. Based on CCSD staff input, the cement slab around the wet well has separated significantly since construction. However, the wet well itself is in good condition with minor visible defects. The electrical panels are also in good condition and the pumps were most recently replaced in August 2023 to reduce power consumption and optimize efficiency. The generator housing roof shows rust but generally appears to be in good condition. Overall, this lift station is classified as low risk.

Sea Garden Lift Station (Low Risk)

This lift station was constructed in 2012 and is currently 12 years old. The lift station appears to be in good condition with evidence of minor rust in the electrical panels. This lift station is classified as low risk based on its age and existing condition.

Via Linda Lift Station (Moderate Risk)

This lift station was constructed in 1995 and is currently 29 years old. The general condition is poor as various components are at the end of their useful life. Notable deficiencies observed by CCSD staff include rusted piping and electrical panels. The cement slabs around the wet well have significant cracks and separated joints. Additionally, the generator is also at the end of its useful life and parts cannot be replaced as that particular model has been discontinued. The check valves also show signs of deterioration. This lift station is classified as moderate risk and requires significant repairs.

Moss Landing Lift Stations

The Moss Landing lift stations were constructed in 1985 and many components are nearing the end of, or have exceeded, their useful life. There are also no security fences around the stations, which makes the equipment susceptible to vandalism. The four Moss Landing lift stations are in very poor condition and classified as extreme risk.

Lift Station Number 1 Along Struve Road (Extreme Risk)

This lift station is located in the front yard of a single-family home and currently exhibits high I&I due to poor stormwater drainage along Struve Road. Based on discussions with the CCSD staff, this station is subject to overflows during wet weather conditions due to stormwater runoff discharging into the wet well. CCSD is currently coordinating with Monterey County to address stormwater concerns. The station's telemetry antenna is located directly under power lines and potential interference can create unsafe conditions. The electrical control panel is in poor condition showing signs of rust, damage and age. CCSD staff also noted that the power service is unstable, and thus a backup generator is recommended to mitigate potential issues related to loss of power.

Lift Station Number 2 Along Little Baja (Extreme Risk)

This lift station is located on the west side of State Highway 1, next to a driveway. Although the electrical panel is protected with steel bollards, it is noted to be in poor condition due to visible signs of rust, damage and age.

Lift Station Number 3 Along Sandholdt Road (Extreme Risk)

This lift station is located on the east side of Sandholdt Road, which is a dead-end road with only one access point. The lift station is within the street lane of traffic with its associated valve and piping box in the parking strip next to the concrete curb. When the pump station access cover is open for maintenance purposes, vehicles using the road are dangerously close to the maintenance workers. Closure of the street for maintenance is also problematic for the businesses located at the north end of the peninsula. In addition to access concerns, the electrical control panel is in poor condition showing signs of rust, damage and age. CCSD staff also noted that the impellers for this lift station are known to deteriorate quickly due to sand and grit found in the upstream pipelines. This condition was confirmed via CCTV inspection of the pipelines to the south of the lift station.

Lift Station Number 4 Along Potrero Road (Extreme Risk)

The lift station is located on the north side of Potrero Road, west of State Highway 1. The station is within the right-of-way just off the side of the roadbed. When the station access cover is open for maintenance purposes, vehicles using the road drive dangerously close to the maintenance workers. Additionally, the cover for the wet well is located at a low point of the roadway. Repeated vehicle travel has resulted in damage to the wet well cover, and CCSD staff have had to replace the cover.

3.3.3 Manhole Condition Assessment Results

CCSD staff has noted several manholes near the Elkhorn Slough have corroded over time due to sulfide gas. Over the last 6 years, CCSD staff has rehabilitated several manholes within this

general area due to significant spalling and rebar exposure (Figure 8). Approximately 13 manhole structures require rehabilitation to mitigate existing defects.

4.0 WATER AND ENERGY CONSERVATION

CCSD is located in a semi-arid region and is largely dependent on local groundwater aquifers for water supply. As such and to continue to implement sustainable practices within its service area, CCSD has implemented the following measures to conserve water and reduce energy consumption:

- **Ordinance No. 65 - Permanent Voluntary Water Saving Measures and Temporary Water Conservation Standards.** CCSD adopted an ordinance on September 16, 2014 to establish water conservation measures and a water supply shortage program. This ordinance encourages residents to use water efficient devices and discourages the watering of lawn between the hours of 9:00 am to 5:00 pm. The ordinance was originally established in response to the drought conditions in 2014 and 2015 and provides a framework for future conservation efforts. CCSD is also investigating potential programs to promote efficient indoor water fixtures such as low-flush toilets, low-pressure shower heads and efficient water meters.
- **Monthly Water Production, Consumption and Loss Trends.** CCSD prepares a monthly water supply and demand analysis documenting the percentage of water losses. These reports and trends are reviewed and discussed at the CCSD Board Meetings. Where needed, CCSD implements potential corrective actions such as leak repairs and leak detection surveys in specific service areas. CCSD also continues to monitor local groundwater well levels to ensure adequate supply remains available.
- **Water Distribution System Capital Improvement Projects.** CCSD has developed plans and designs to replace/upsized aging water distribution pipelines and optimize efficiency of the current distribution network. These projects will help CCSD effectively manage its water infrastructure and mitigate current leaks.
- **Optimized Energy Consumption at Lift Stations.** CCSD performs regular tests at both Castroville and Moss Landing lift stations to optimize the performance of existing pumps and reduce power consumption. The pump set points are adjusted on a seasonal basis to minimize pump run times, and thus electricity consumption. The Moro Cojo lift station pumps were most recently replaced in August 2023 with more energy efficient pumps that have a significantly lower run time.

5.0 IMPROVEMENT RECOMMENDATIONS

This section presents the capital improvement projects necessary for maintaining, repairing and replacing high risk wastewater infrastructure. This section also provides a list of potential funding sources to implement each project.

5.1 Capital Improvement Projects

The capital improvement recommendations are grouped into 7 projects that target high risk infrastructure, as summarized on Table 6 each with a unique project ID, priority, cost, and funding source. These projects are also described as follows:

Castroville

- **Project P-01 – Washington Street Sewer By-Pass Project.** This project proposes to construct 1,250 ft of new 24-inch diameter gravity pipes, as illustrated on Figure 9. The purpose of this project is to alleviate existing capacity issues along Washington Street and provide system redundancy in case of a failure in the Washington Street Trunk. This project is prioritized as imminent and also includes constructing 5 new manholes. The capital costs for this project are estimated at approximately \$3.5 Million dollars (M) and based on the design estimates provided in Appendix C. It should be noted that the costs from Appendix C were escalated from the August 2021 20-City construction cost index (CCI) of 12,463 to the June 2024 CCI of 13,546.8.
- **Project P-02 – Cypress Street Improvement Project.** This project proposes to abandon 6-inch diameter pipelines north of Cypress Street and construct new 6-inch diameter pipelines along the right-of-way on Cypress Street and Merritt Way. This project will also require 6 new manholes, as illustrated on Figure 10. The existing pipelines are located in the backyard of single family homes and subject to I&I during wet weather events. This project is also prioritized as imminent with a capital cost of approximately \$0.35 M. This cost was estimated from unit costs in CCSD’s 2013 Wastewater Collection System Master Plan Update and adjusted to the June 2024 CCI of 13,546.8.
- **Project P-03 – Pipeline CCTV Inspections.** This medium-priority project proposes a CCTV inspection of all Castroville pipelines in the next 1 to 5 years. This project is strongly recommended to capture the condition of aging infrastructure and determine appropriate rehabilitation action where needed. The inspections should be prioritized based on the risk shown on Figure 5. The cost of this project is estimated at approximately \$0.40 M, as documented in Appendix D.
- **Project P-04 – Castroville Boulevard, Del Monte and Via Linda Lift Station Rehabilitation.** This project proposes to rehabilitate three Castroville lift stations that have reached the end of their useful life and require critical repairs. This project is prioritized as imminent with an estimated capital cost of \$0.68 M. The rehabilitation costs was estimated

based on the Moss Landing lift station rehabilitation costs provided in **Appendix E** and escalated to the June 2024 CCI of 13,546.8

Moss Landing

- **Project P-05 – Moss Landing Wastewater System Rehabilitation Project:** This project proposes to rehabilitate all four lift stations, 13 manholes, 1,000 feet of 4-inch diameter force main crossing Elkhorn Slough and 2,500 feet of 6-inch diameter gravity pipes. These improvements target critical high risk infrastructure and are prioritized as imminent with a capital cost of approximately \$8 M based on discussions with the Design Engineer. Preliminary costs from 2015 are provided in **Appendix E** for reference only.
- **Project P-06 – Pipeline CCTV Inspections.** This low priority project proposes a system-wide CCTV inspection of all Moss Landing pipelines in the next 3 to 10 years. The inspection will capture structural condition and determine appropriate rehabilitation action, if necessary. The cost of this project is estimated at approximately \$0.18 M, as shown in **Appendix D**.

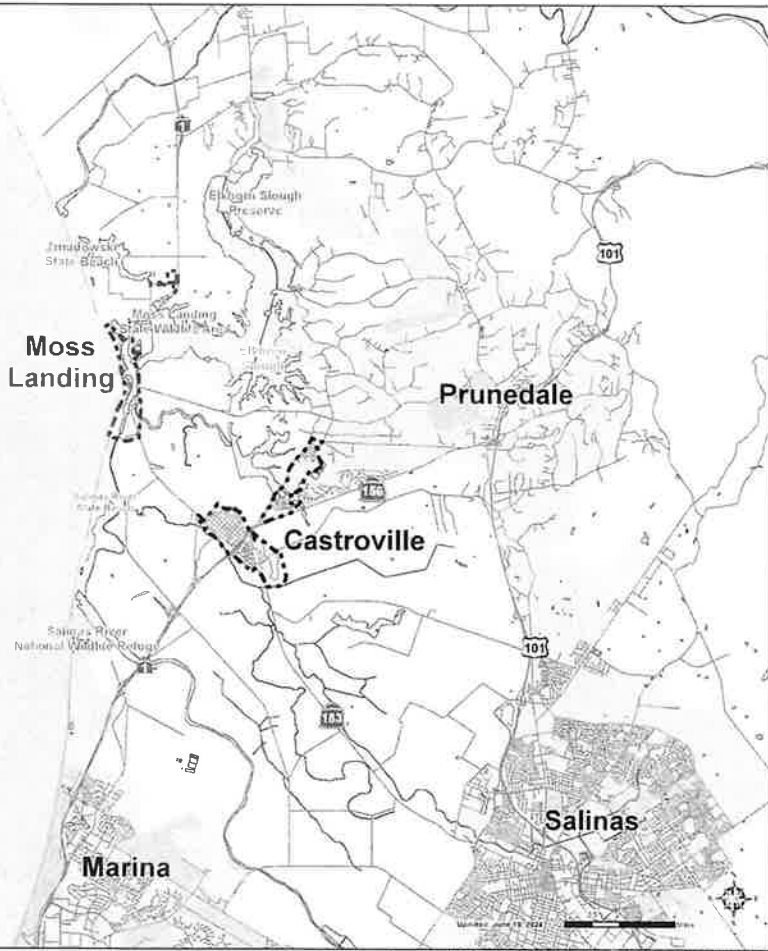
5.2 Funding Sources

The Clean Water State Revolving Fund (CWSRF) will be used as a primary source to fund projects P-01 and P-05. It should be noted that CCSD has been actively engaged with the State Water Resources Control Board and developed this FSP to meet the funding requirements stipulated by Federal Water Pollution Control Act.

Additionally, CCSD will also continue to investigate alternate funding opportunities such as a potential increase in wastewater connection/service fees or other relevant grant programs that assist rural communities.

Castroville Community Services District
System-Wide Fiscal Sustainability Plan


FIGURES



Legend

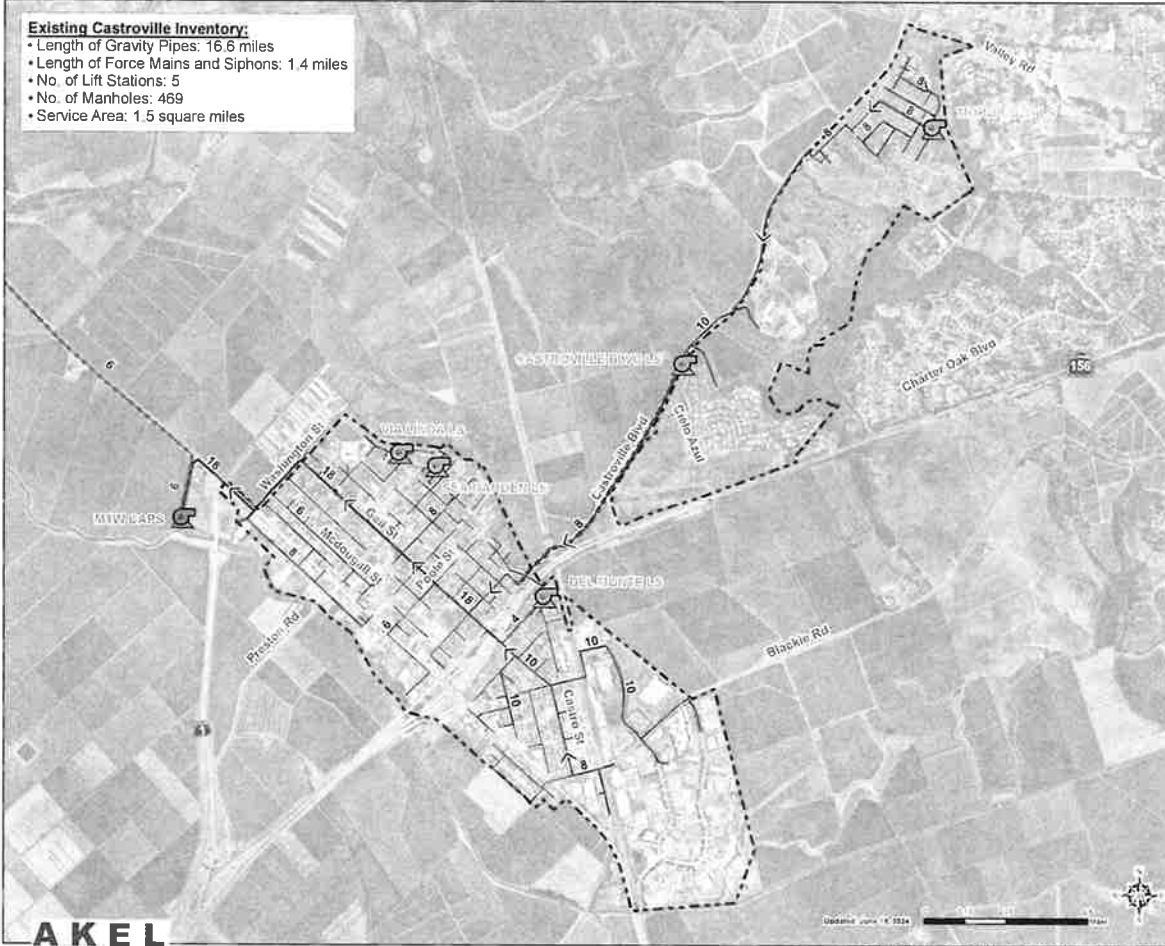
-  Castroville Service Area
-  Moss Landing Service Area
-  Urbanized Area
-  Protected Open Space
-  Rivers/Streams
-  Waterbodies

Figure 1
CCSD Service Areas
 System-Wide FSP
 Castroville Community Services District



Existing Castroville Inventory:

- Length of Gravity Pipes: 16.6 miles
- Length of Force Mains and Siphons: 1.4 miles
- No. of Lift Stations: 5
- No. of Manholes: 469
- Service Area: 1.5 square miles



Legend

Castroville Wastewater System

Castroville Lift Station

Gravity Pipes by Diameter

— 6" or Less

— 8" - 10"

— 18"

Force Mains by Diameter

- - - 6" or Less

- - - 8"-12"

..... Siphon

Castroville Service Area

Monterey One Water System

Monterey One Water Pump Station

..... Moss Landing Interceptor

Figure 2
Castroville Wastewater Infrastructure Inventory

System-Wide FSP
Castroville Community Services District



Existing Moss Landing Inventory:

- Length of Gravity Pipes: 2.9 miles
- Length of Force Mains: 2.5 miles
- No. of Lift Stations: 4
- No. of Manholes: 116
- Service Area: 0.7 square miles



Legend

Moss Landing Wastewater System

Moss Landing Lift Station

8" Gravity Pipe

4" Force Main

Moss Landing Service Area

Castroville Wastewater System

Castroville Service Area

Monterey One Water System

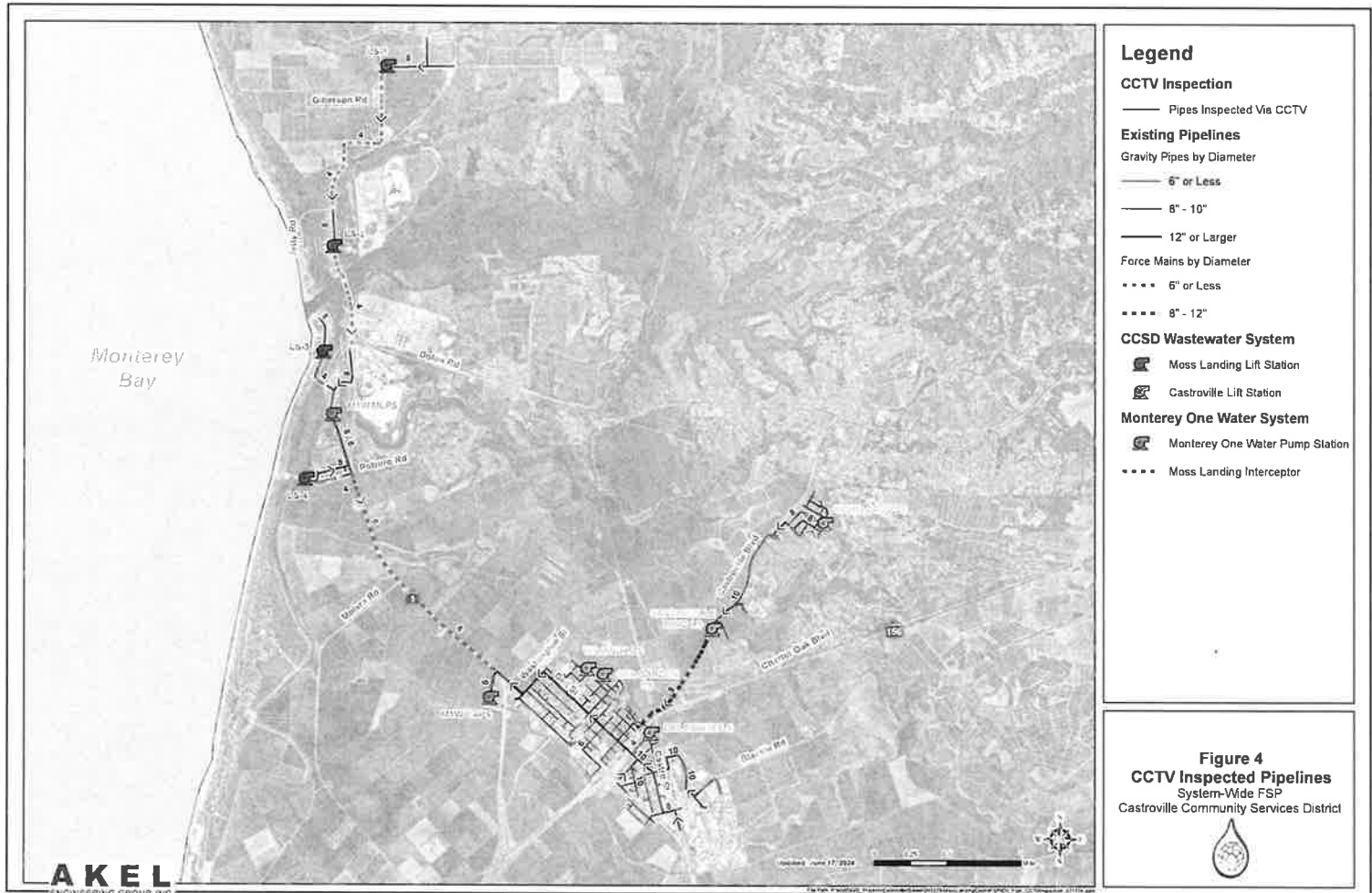
Monterey One Water Pump Station

Moss Landing Interceptor

Figure 3
Moss Landing Wastewater Infrastructure Inventory

System-Wide FSP
Castroville Community Services District



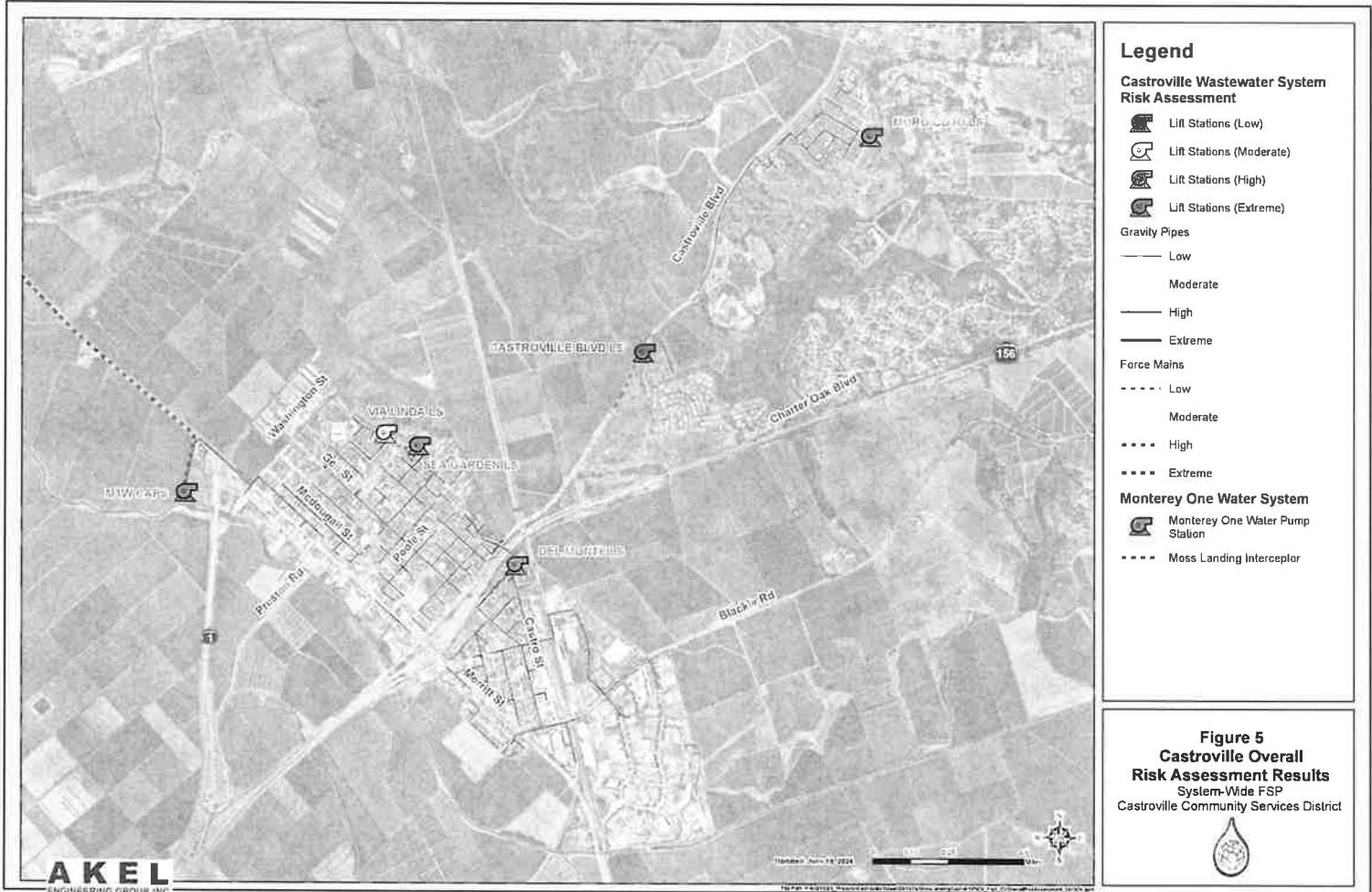


Legend

- CCTV Inspection**
 - Pipes Inspected Via CCTV
- Existing Pipelines**
- Gravity Pipes by Diameter**
 - 6" or Less
 - 8" - 10"
 - 12" or Larger
- Force Mains by Diameter**
 - 6" or Less
 - 8" - 12"
- CCSD Wastewater System**
 - Moss Landing Lift Station
 - Castroville Lift Station
- Monterey One Water System**
 - Monterey One Water Pump Station
 - Moss Landing Interceptor

Figure 4
CCTV Inspected Pipelines
 System-Wide FSP
 Castroville Community Services District







Legend

Moss Landing Wastewater System Risk Assessment

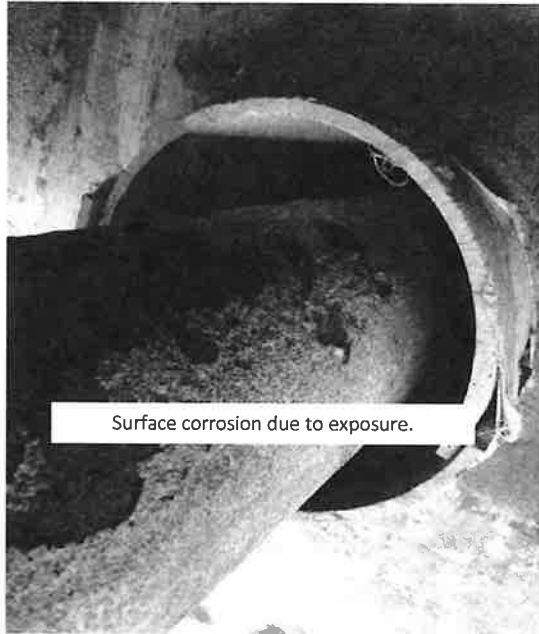
- Lift Stations (Extreme)
- Gravity Pipes**
- Low
- Moderate
- High
- Extreme
- Force Mains**
- - - - Low
- - - - Moderate
- - - - High
- - - - Extreme

Monterey One Water System

- Monterey One Water Pump Station
- - - - Moss Landing Interceptor

Figure 6
Moss Landing Overall Risk Assessment Results
 System-Wide FSP
 Castroville Community Services District





Surface corrosion due to exposure.



Severe Corrosion due to direct and prolonged moisture contact.

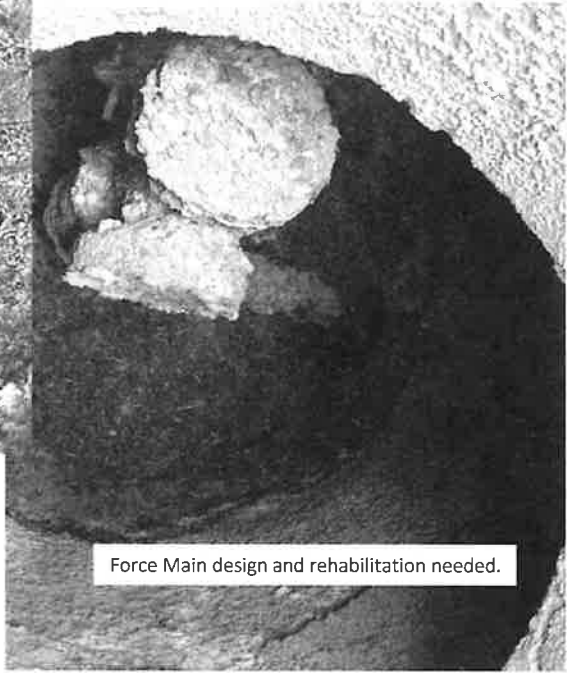
Note:

Figure 7
Elkhorn Slough Force
Main - Corrosion
System-Wide FSP
Castroville Community Services
District





Manhole surface corrosion and spalling



Force Main design and rehabilitation needed.

Note:

Figure 8
Elkhorn Slough
Manhole - Corrosion
System-Wide FSP
Castroville Community Services
District



Washington Sewer Bypass Project:

- Construct 1,250 ft of New 24" PVC Gravity Pipes (IMP-01)
- Upsize 90 ft of Existing 18" PVC Gravity Pipes to 24" (IMP-02)
- Construct 20 ft of New 18" PVC Gravity Pipes (IMP-03)
- Construct 20 ft of New 8" PVC Gravity Pipes (IMP-04)

Legend

Proposed Improvements

- Future Manholes
- Manholes to be Abandoned
- Future Pipes
- Pipes to be Abandoned

Castroville Wastewater System

- Existing Manholes
- Gravity Pipes by Diameter
- 6" or Less
- 8" - 10"
- 18"

Force Mains by Diameter

- 6" or Less
- 8"-12"

Monterey One Water System

- ⊠ Monterey One Water Pump Station
- Moss Landing Interceptor

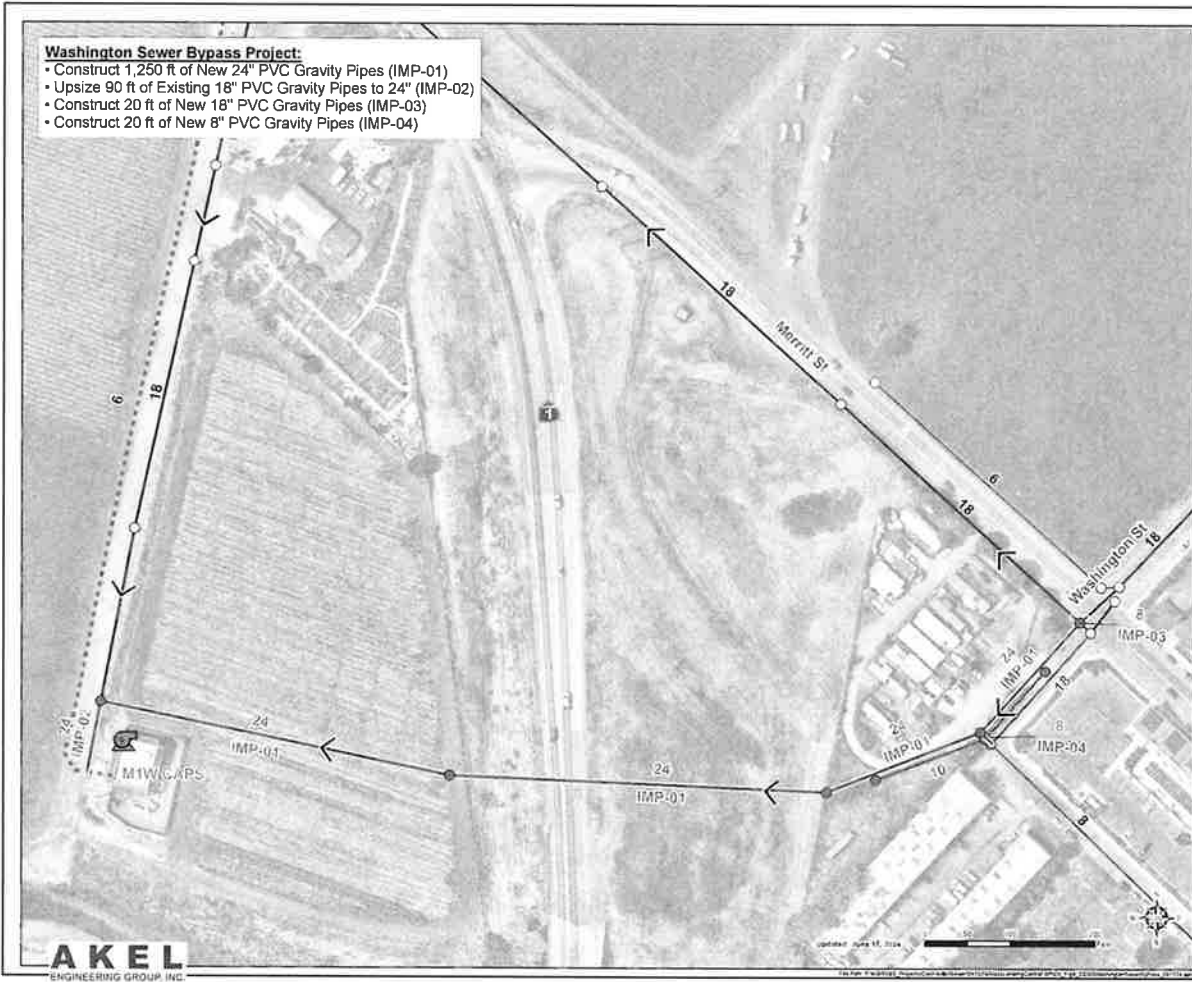


Figure 9
Washington Street
ByPass Project
 System-Wide FSP
 Castroville Community Services District





Legend

Proposed Improvements

- Future Manholes
- ⊙ Manholes to be Abandoned
- Future Pipes
- Pipes to be abandoned

Castroville Wastewater System

- Existing Manholes
- Gravity Pipes by Diameter
 - 6" or Less
 - 8" - 10"
 - 18"
- Force Mains by Diameter
 - - - - 6" or Less
 - - - - 8"-12"

Figure 10
Cypress Street
Improvements
 System-Wide FSP
 Castroville Community Services District



Castroville Community Services District
System-Wide Fiscal Sustainability Plan

TABLES

Table 1 Castroville Wastewater Infrastructure Inventory

System-Wide Fiscal Sustainability Plan

Castroville Community Services District

PRELIMINARY

Pipe Diameter (in)	Total Length ¹		Percent of Total (%)
	(feet)	(miles)	
Gravity Pipes			
3"	530	0.1	0.6%
4"	1,534	0.3	1.6%
6"	47,575	9.0	49.9%
8"	18,884	3.6	19.8%
10"	11,523	2.2	12.1%
18"	7,808	1.5	8.2%
Subtotal	87,854	16.6	92.1%
Force Mains			
3"	767	0.1	0.8%
4"	1,053	0.2	1.1%
6"	1,017	0.2	1.1%
8"	4,601	0.9	4.8%
Subtotal	7,439	1.4	7.8%
Siphons			
12"	114	0.02	0.1%
Subtotal	114	0.02	0.1%
Summary			
Total Pipe Length		18.1	100%
Number of Manholes		469	
Number of Lift Stations ²		5	

Notes:

1. Length was calculated from the City's CAD database received on May 20, 2013.
2. Inventory does not include Monterey One Water's Castroville Pump Station (CAPS).

Table 2 Moss Landing Wastewater Infrastructure Inventory
 System-Wide Fiscal Sustainability Plan
 Castroville Community Services District

PRELIMINARY

Pipe Diameter (in)	Total Length ¹		Percent of Total (%)
	(feet)	(miles)	
Gravity Pipes			
8"	15,421	2.9	53.4%
Force Mains			
4"	13,444	2.5	46.6%
Monterey One Water Moss Landing Interceptor (Force Main) ²			
6"	12,191	2.3	-
Summary (Excluding Monterey One Water Interceptor)			
Total Pipe Length		5.5	100%
Number of Manholes		116	
Number of Lift Stations ³		4	

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Notes:

1. Length was calculated from the City's CAD database received on May 20, 2013.
2. This 6" force main is known as the Moss Landing Interceptor and operated by Monterey One Water. This force main discharges into CAPS Pump Station.
3. Inventory does not include Monterey One Water's Moss Landing Pump Station (MLPS).

Table 3 CCSD Lift Station Inventory
 System-Wide Fiscal Sustainability Plan
 Castroville Community Services District

PRELIMINARY

Name	Location	No. of Pumps	Total Capacity (mgd)	Firm Capacity ⁴ (mgd)
Castroville Lift Stations¹				
Moro Cojo	Los Arboles Cir and Campo De Casa Dr	2	0.50	0.25
Castroville Boulevard ²	North of Castroville Boulevard and Cielo Azul	2	1.44	0.72
Sea Garden	Approx. 100 ft w/o Davis St and Preston St	2	0.14	0.07
Via Linda	Via Linda approx. 100 ft w/o Blevins Wy	2	0.05	0.03
Del Monte	Near Del Monte Ave and Main St	2	0.12	0.06
Moss Landing Lift Stations²				
Lift Station No. 1 (LS-1)	124 Struve Rd	2	0.35	0.17
Lift Station No. 2 (LS-2)	Cabrillo Hwy / Old Brg Road	2	0.52	0.26
Lift Station No. 3 (LS-3)	7700 Sandholdt Rd	2	0.37	0.19
Lift Station No. 4 (LS-4)	270 ft w/o 10933 Potrero Rd	2	0.014	0.007
Monterey One Water Regional Pump Stations³				
Castroville Pump Station (CAPS)	End of Watsonville Road	2	5.60	2.80
Moss Landing Pump Station (MLPS)	8147 Moss Landing Rd	2	0.65	0.32



6/18/2024

Notes:

1. CCSD lift station information was obtained from CCSD's 2013 Wastewater Collection System Master Plan.
2. Moss Landing lift station information was obtained from the 2017 Moss Landing Sewer System Risk Assessment Report.
3. Monterey One Water lift station information was obtained from Monterey One Water's 2018 Pump Station and Conveyance System Condition Optimization Analysis Report.
4. Firm capacity refers to the pumping capacity available with the largest pump out-of-service. This capacity is used to evaluate lift stations under peak wet weather flow conditions.

Table 4 Likelihood of Failure Criteria

System-Wide Fiscal Sustainability Plan
 Castroville Community Services District

No.	Failure Type	Likelihood Categories	Description	Likelihood of Failure Rating		Very Low	Low	Moderate	High	Extreme
				Category Weighting		1	2	3	4	5
				CCTV Available	CCTV Not Available	Likelihood Scale				
1	Structural	CCTV Condition (PACP Overall Structural and Maintenance Score)	Overall risk score of CCTV inspected pipelines. It should be noted that CCTV inspections were completed from 2007 to 2022.	100%	-	1 Minor Defects	2 Minor to Moderate Defects	3 Moderate Defects	4 Significant Defects	5 Most Significant Defects
2		Age	Pipeline age can contribute to an increase in the likelihood of failure.	*	50%	< 30 years	30-40 years	40-50 years / Unknown	50-60 years	> 60 years
3		Material	Useful life and durability varies across different materials and can lead to elevated risks for certain materials.	*	50%	PVC / HDPE	Reinforced Concrete	VCP / Unknown	Ductile/ Cast Iron	Asbestos Cement



Table 5 Consequence of Failure Criteria

System-Wide Fiscal Sustainability Plan
 Castroville Community Services District

						Consequence of Failure Rating				
						Very Low	Low	Moderate	High	Extreme
						1	2	3	4	5
No.	Consequence Type	Consequence Categories	Description	Category Weighting	Combined Weighting	Consequence Scale				
1	Public Safety	Proximity to Critical Facilities	Pipeline failure in close proximity to schools and hospitals require a more urgent response.	20%	40%	Not located near Critical Facilities				Within 200 Feet of Critical Facilities
2		Proximity to Highways	Pipeline failure in close proximity to Highways requires coordination with the California Department of Transportation and impacts local Highway traffic.	20%		Not located near Critical Facilities				Within 200 Feet of Critical Facilities
3	Environmental Impact	Proximity to Water Bodies	Pipeline failure within 200 feet of a water body poses an environmental threat.	25%	25%	Not located near Water Bodies				Within 200 feet of Water Bodies
4	Hydraulics	Major Trunks	Large pipelines typically convey higher flows, and a failure may result in overflows or surcharged flow conditions in the upstream system.	20%	35%	Size ≤ 4"	Size = 6"	Size = 8"-10"	Size = 12"-15"	Size = 18" and Larger
5		Hydraulic Capacity	Hydraulic capacity is quantified based on pipe flow depth to diameter ratio (d/D). Pipelines with a high d/D are mostly full, and a failure may result in overflows, surcharged flow conditions or create potential bottlenecks.	15%		d/D < 0.3	d/D = 0.3 to 0.59	d/D = 0.6 to 0.79	d/D = 0.8 to 0.91	d/D ≥ 0.92



Table 6 Capital Improvement Projects
 System-Wide Fiscal Sustainability Plan
 Castroville Community Services District

PRELIMINARY

Project ID	Project Name	Project Priority	Estimated Capital Costs ² (\$)	Funding Sources
Castroville Wastewater Collection System				
P-01	Washington Street Sewer ByPass ¹	Imminent	\$3,500,000	The Clean Water State Revolving Fund
P-02	Cypress Street Improvements ²	Imminent	\$344,000	Other Grants
P-03	Pipeline CCTV Survey ³	Medium	\$397,000	Other Grants
P-04	Castroville Boulevard, Del Monte and Via Linda Lift Station Rehabilitation ⁴	Imminent	\$675,000	Other Grants
Subtotal			\$4,916,000	
Moss Landing Wastewater Collection System				
P-05	Moss Landing System-Wide Rehabilitation ⁵	Imminent	\$8,000,000	The Clean Water State Revolving Fund
P-06	Pipeline CCTV Survey ³	Low	\$175,000	Other Grants
Subtotal			\$8,175,000	
Total			Total Capital Costs	\$13,091,000



Notes:

- Detailed cost Estimate for the Washington Street By-Pass Trunk are provided in Appendix C, and were estimated at \$2.6 Million Dollars in August 2021 (20-city CCI of 12,462). This cost was escalated to June, 2023 (20-City ENR CCI of 13,546.8) and rounded up to the nearest \$1,000.
- Cypress Street Improvement costs were estimated using a unit cost of \$215 per linear feet. This value is consistent with CCSD's 2013 Wastewater Collection System Master Plan (\$150/lineal feet of 6-inch diameter pipelines) and was escalated to the current CCI of 13,546.8 from June 2024.
- Pipeline CCTV inspection costs are provided in Appendix D, and were obtained from PSI Inc. in August 2023. The costs have been adjusted to June 2024 CCI.
- Lift station costs were estimated from the Moss Landing costs provided in Appendix E and adjusted to June 2024 CCI. Each lift station rehabilitation is estimated to cost approximately \$225,000.
- Capital cost estimates for Moss Landing Rehabilitation were estimated at approximately \$8 Million Dollars based on discussions with the Design Engineer.

6/21/2024

Castroville Community Services District
System-Wide Fiscal Sustainability Plan

APPENDICES

Appendix A
FSP Certification
(T2c)

**CERTIFICATION FOR FISCAL SUSTAINABILITY PLAN
REQUIRED FOR ALL CWSRF FUNDING APPLICATIONS
FOR TREATMENT WORKS PROJECTS**



Funding Agency: State Water Resources Control Board

Funding Program: Clean Water State Revolving Fund (CWSRF)

Applicant (Agency Name): _____

Section 603(d)(1)(E) of the federal Clean Water Act (CWA) requires a CWSRF financing recipient with a project involving the repair, replacement, or expansion of a treatment works¹ (including treatment, pumping, collection, distribution and storage facilities etc.) to develop and implement a fiscal sustainability plan or certify that it has developed and implemented such a plan.

¹ "Treatment works" is defined in section 212(2)(A) of the CWA. (33 U.S.C. § 1282(2)(A).)

Please check one of the boxes below and sign and date this form:

- As the authorized representative for the applicant agency, I certify that the agency shall develop and implement a fiscal sustainability plan as set forth in section 603(d)(1)(E)(i) of the Clean Water Act no later than _____ that includes:
 - (I) an inventory of critical assets that are a part of the treatment works;
 - (II) an evaluation of the condition and performance of inventoried assets or asset groupings;
 - (III) a certification that the agency has evaluated and will be implementing water and energy conservation efforts as part of the plan; and
 - (IV) a plan for maintaining, repairing, and, as necessary, replacing the treatment works and a plan for funding such activities

- As the authorized representative for the agency, I certify that the agency has developed and implemented a fiscal sustainability plan that meets the requirements of section 603(d)(1)(E)(i) of the federal Clean Water Act (33 U.S.C. § 1383(d)(1)(E)(i)).

I understand that the Funding Agency will rely on this signed certification in order to approve funding and that false and/or inaccurate representations in this Certification may result in loss of all funds awarded to the applicant for its project. Additionally, the Funding Agency may withhold disbursement of project funds, and/or pursue any other applicable legal remedy.

Name of Authorized Representative (Please print)	Title
Signature of Authorized Representative	Date

Castroville Community Services District
System-Wide Fiscal Sustainability Plan

Appendix B
FSP Water and Energy
Conservation Certification
(T2d)

**CERTIFICATION FOR COST AND EFFECTIVENESS AND
WATER AND ENERGY CONSERVATION AND EFFICIENCY**

**REQUIRED FOR ALL CWSRF FUNDING APPLICATIONS
FROM MUNICIPAL, INTERMUNICIPAL, INTERSTATE AND
STATE AGENCY APPLICANTS**



Funding Agency: State Water Resources Control Board

Funding Program: Clean Water State Revolving Fund (CWSRF)

Applicant (Agency Name): _____

As the engineer in responsible charge of the project for the applicant agency, I certify that the agency has complied with Section 602(b)(13) of the Clean Water Act.

Please check the boxes below to indicate that the agency has completed the required analyses for the proposed project:

- The agency has studied and evaluated the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought under this title; and
- The agency has selected, to the maximum extent practicable, a project or activity that maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account
 - i. the cost of constructing the project or activity;
 - ii. the cost of operating and maintaining the project or activity over the life of the project or activity; and
 - iii. the cost of replacing the project or activity.

Engineer in Responsible Charge of the Project
(Please print)

Registration Number & Expiration Date

Engineer's Signature

Date

Appendix C
Cost Estimates for Washington
Street Bypass Project

OPINION OF PROBABLE CONSTRUCTION COST



Project: Washington Sewer Trunk Line Bypass

Submittal: 60% Draft

Estimate Type: Conceptual Construction Change Order
 Preliminary (w/o plans) Change Order
 Design Development @ 60 % complete

Prepared By: MWB Date Prepared: 8/31/2021
 Checked By: NEP MNS Proj No: DICVL 180333

Current at ENR _____
 Escalated to ENR _____
 Months to Midpoint of Construction: 24

Item No.	Description	Qty.	Units	Materials		Installation		Sub-Contractor		Total
				S/Unit	Total	S/Unit	Total	S/Unit	Total	
1	Mobilization	1	LS	\$10,000.00	\$10,000.00	\$20,000.00	\$20,000.00	\$0.00	\$0.00	\$30,000.00
2	Traffic Control	1	LS	\$5,000.00	\$5,000.00	\$10,000.00	\$10,000.00	\$0.00	\$0.00	\$15,000.00
3	Dewatering	1	LS	\$10,000.00	\$10,000.00	\$40,000.00	\$40,000.00	\$0.00	\$0.00	\$50,000.00
4	Sewer Bypass	1	LS	\$3,000.00	\$3,000.00	\$20,000.00	\$20,000.00	\$0.00	\$0.00	\$23,000.00
5	Sewer Abandonment	1	LS	\$250.00	\$250.00	\$2,500.00	\$2,500.00	\$0.00	\$0.00	\$2,750.00
6	Manhole Removal	3	EA	\$1,000.00	\$3,000.00	\$2,500.00	\$7,500.00	\$0.00	\$0.00	\$10,500.00
7	8" PVC SDR35 Sewer Main, 8'-12' Depth	20	LF	\$70.00	\$1,400.00	\$80.00	\$1,600.00	\$0.00	\$0.00	\$3,000.00
8	18" PVC PS46 Sewer Main, 8'-12' Depth	20	LF	\$120.00	\$2,400.00	\$100.00	\$2,000.00	\$0.00	\$0.00	\$4,400.00
9	24" PVC PS46 Sewer Main, 8'-12' Depth	893	LF	\$130.00	\$116,090.00	\$130.00	\$116,090.00	\$0.00	\$0.00	\$232,180.00
10	24" PVC C905 DR25 Sewer Main in Steel Casing	446	LF	\$80.00	\$35,680.00	\$125.00	\$55,750.00	\$0.00	\$0.00	\$91,430.00
11	Casing Spacers	56	EA	\$300.00	\$16,800.00	\$100.00	\$5,600.00	\$0.00	\$0.00	\$22,400.00
12	Casing End Seals	2	EA	\$250.00	\$500.00	\$150.00	\$300.00	\$0.00	\$0.00	\$800.00
13	36" Steel Casing Under Hwy 1	435	LF	\$115.00	\$50,025.00	\$115.00	\$50,025.00	\$0.00	\$0.00	\$100,050.00
14	Trenchless Pipe Installation Under Hwy 1	1	LS		\$0.00		\$0.00	\$765,000.00	\$765,000.00	\$765,000.00
15	Trenchless Emergency Shaft	1	LS		\$0.00		\$0.00	\$130,000.00	\$130,000.00	\$130,000.00
16	60" Polymer Concrete Manhole, 4'-8' Depth	1	EA	\$9,000.00	\$9,000.00	\$5,000.00	\$5,000.00	\$0.00	\$0.00	\$14,000.00
17	60" Polymer Concrete Manhole, 8'-12' Depth	4	EA	\$10,000.00	\$40,000.00	\$7,000.00	\$28,000.00	\$0.00	\$0.00	\$68,000.00
18	Lateral Reconnection	1	EA	\$500.00	\$500.00	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,500.00
19	Reconnection to Existing Sewer Main	4	EA	\$500.00	\$2,000.00	\$750.00	\$3,000.00	\$0.00	\$0.00	\$5,000.00
20	Upsizing Manhole Connection from 18" to 24"	1	EA	\$2,500.00	\$2,500.00	\$5,000.00	\$5,000.00	\$0.00	\$0.00	\$7,500.00
Subtotals					\$308,145.00		\$373,365.00		\$895,000.00	\$1,576,510.00
Division I Costs				@	2.00%	\$6,162.90	\$7,467.30	\$17,900.00	\$31,530.20	
Subtotals						\$314,307.90	\$380,832.30	\$912,900.00	\$1,608,040.20	
Taxes - Materials Costs				@	7.75%	\$24,358.86			\$24,358.86	
Subtotals						\$338,666.76	\$380,832.30	\$912,900.00	\$1,632,399.06	
Contractor Markup for Sub				@	15.00%			\$136,935.00	\$136,935.00	
Subtotals						\$338,666.76	\$380,832.30	\$1,049,835.00	\$1,769,334.06	
Contractor OH&P				@	15.00%	\$50,800.01	\$57,124.85	\$157,475.25	\$265,400.11	
Subtotals						\$389,466.78	\$437,957.15	\$1,207,310.25	\$2,034,734.17	
Estimate Contingency				@	20.00%	\$77,893.36	\$87,591.43	\$241,462.05	\$406,946.83	
Subtotals						\$467,360.13	\$525,548.57	\$0.00	\$2,441,681.01	
Escalate to Midpoint of Construct				@	6.00%	\$28,041.61	\$31,532.91	\$0.00	\$146,500.86	
Estimated Bid Cost						\$495,401.74	\$557,081.49	\$0.00	\$2,588,181.87	
Total Estimate										\$2,600,000.00

Appendix D
Cost Estimates for
CCTV Inspections

Table D1 CCTV Inspection Cost Estimates from Presidio Systems, Inc. (PSI)

System-Wide Fiscal Sustainability Plan
 Castroville Community Services District

PRELIMINARY

Pipeline Diameter (inches)	CCTV Unit Cost ¹ (\$/feet)	Hydro Cleaning Unit Cost ¹ (\$/feet)	Total Unit Cost (CCTV+Cleaning) (\$/feet)	Pipeline Length (feet)	Cost Estimate ¹ (\$)
Castroville Wastewater Collection System					
3" to 10" Gravity	\$1.50	\$2.00	\$3.50	80,160	\$280,561
18" Gravity	\$2.25	\$4.00	\$6.25	7,808	\$48,798
3" to 8" Force Main	\$3.00	\$6.00	\$9.00	7,439	\$66,951
			Subtotal	95,407	\$396,310
Moss Landing Wastewater Collection System					
8" Gravity	\$1.50	\$2.00	\$3.50	15,421	\$53,973
4" Force Main	\$3.00	\$6.00	\$9.00	13,444	\$120,997
			Subtotal	28,865	\$174,970
Total					
			Total	124,272	\$571,280

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Notes:

1. Unit costs were obtained from Presidio Systems Inc., (PSI) and reflects the June 2024 CCI of 13 M/G R

Appendix E

Cost Estimates for Moss

Landing Rehabilitation Project

Moss Landing Sewer System Rough Draft Capital Improvement Program

Sept. 4, 2105

Capital Asset	Placed in Service Date	Estimated Usable Life	Age	Needs Replacement	Construction Cost
Lift Station 1: Struve Road					
Wet Well (Lined)	1985	20	30	Yes	\$ 9,142
Pumps (2-20)	1997	10	18	Yes	\$ 14,063
Removal mechanism	1985	15	30	Yes	\$ 3,515
Controls (outdoors)	1997	20	18	Yes	\$ 3,515
Wet Well Cover Plate	1985	20	30	Yes	\$ 4,922
Scada	1999	3	16	Yes	\$ 4,218
Valve Box Cover Plates	1985	30	30	No	\$ 30,000
Valve Box, Valves	1985	40	30	No	\$ -
Emergency Generator	NA	NA	Proposed	New	\$ 65,000
Water source for wash down and clean up	NA	NA	Proposed	New	\$ 5,000
Yard light	NA	NA	Proposed	New	\$ 2,000
Security Fencing	NA	NA	Proposed	New	\$ 10,000
Warning Beacon for hi-level alarms	NA	NA	Proposed	New	\$ 2,000
Security Camera	NA	NA	Proposed	New	\$ 10,000
Lift Station 1 Subtotal					\$ 163,375
Lift Station 2: Little Baja/North Harbor					
Wet Well (Lined)	1985	20	30	Yes	\$ 12,274
Pumps (2-20)	2001	10	14	Yes	\$ 14,063
Removal mechanism	2002	40	13	No	\$ -
Controls (outdoors)	1997	20	18	Yes	\$ 3,515
Wet Well Cover Plate	1985	10	30	Yes	\$ 4,922
Scada	2000	3	15	Yes	\$ 4,219
Valve Box Cover Plates	1985	30	30	No	\$ 30,000
Valve Box, Valves	1985	40	30	No	\$ -
Pump for LF	2015	40	0	No	\$ -
Bollards	1985	30	30	Yes	\$ 10,000
Emergency Generator	NA	NA	Proposed	New	\$ 65,000
Water source for wash down and clean up	NA	NA	Proposed	New	\$ 5,000
Yard light	NA	NA	Proposed	New	\$ 2,000
Security Fencing	NA	NA	Proposed	New	\$ 10,000
Warning Beacon for hi-level alarms	NA	NA	Proposed	New	\$ 2,000
Security Camera	NA	NA	Proposed	New	\$ 10,000
Lift Station 2 Subtotal					\$ 172,993
Lift Station 3: Moss Landing Island					
Wet Well (Lined)	1985	20	30	Yes	\$ 9,142
Pumps (2-20)	1997	10	18	Yes	\$ 14,063
Removal mechanism	1989	15	26	Yes	\$ 3,515
Controls (outdoors)	1997	20	18	Yes	\$ 3,515
Wet Well Cover Plate	1989	20	26	Yes	\$ 4,921
Scada	2002	3	13	Yes	\$ 4,219
Valve Box Cover Plates	1985	30	30	No	\$ 30,000
Valve Box, Valves	1985	40	30	No	\$ -
Bollards	1985	30	30	Yes	\$ 10,000
Emergency Generator	NA	NA	Proposed	New	\$ 65,000
Water source for wash down and clean up	NA	NA	Proposed	New	\$ 5,000
Yard light	NA	NA	Proposed	New	\$ 2,000
Security Fencing	NA	NA	Proposed	New	\$ 10,000
Warning Beacon for hi-level alarms	NA	NA	Proposed	New	\$ 2,000
Security Camera	NA	NA	Proposed	New	\$ 10,000
Lift Station 3 Subtotal					\$ 163,375

Lift Station 4: Potrero Rd						
Wet Well (Lined)	1985	20	30	Yes	\$	9,142
Pumps (2-20)	1997	10	18	Yes	\$	14,063
Removal mechanism	1985	15	30	Yes	\$	3,515
Controls (outdoors)	1997	20	18	Yes	\$	3,515
Wet Well Cover Plate	1985	35	30	Yes	\$	4,921
Scada	1999	3	16	Yes	\$	4,218
Valve Box Cover Plates	1985	30	30	No	\$	30,000
Valve Box, Valves	1985	40	30	No	\$	-
Impeller Kit	2015	40	0	No	\$	-
Emergency Generator	NA	NA	Proposed	New	\$	65,000
Water source for wash down and clean up	NA	NA	Proposed	New	\$	5,000
Yard light	NA	NA	Proposed	New	\$	2,000
Security Fencing	NA	NA	Proposed	New	\$	10,000
Warning Beacon for hi-level alarms	NA	NA	Proposed	New	\$	2,000
Security Camera	NA	NA	Proposed	New	\$	10,000
Lift Station 4 Subtotal					\$	163,374
General Capital Assets						
Casing and replace 1000 feet Force Main over Elkhorn Slough	1985	20	30	Yes	\$	400,000
Replace Rings 13 Manholes	1985	30	30	Yes	\$	130,000
Replace 2,500 LF Sanitary Sewer Line	1985	30	30	Yes	\$	312,500
General Capital Assets Subtotal					\$	842,500
					\$	1,505,617
					\$	451,685
					\$	1,957,302
					\$	293,595
					\$	137,011
					\$	195,730
					\$	97,865
					\$	2,681,504
					\$	2,700,000



Temporary Impact Restoration Plan for Trenching

The project anticipates temporary impacts to an agricultural drainage ditch within the project area. Approximately 0.008 acre (62 linear feet) of the agricultural drainage ditch will be temporarily impacted from the excavation of a trench to place the new sewer pipeline. The project will re-establish the stream channel back to pre-existing conditions after construction.

Commented [NP1]: Revise per updated impacts

Table 1 Project Mitigation Quantities for Temporary Impacts

Aquatic Resource Type	Units	Method				
		Est.	Re-est.	Reh.	Enh.	Pres.
Stream Channel	Acres		0.008			
	Linear Feet		62			

establishment (Est.), reestablishment (Re-est.), rehabilitation (Reh.), enhancement (Enh.), preservation (Pres.)

Schedule:

The total construction is expected to occur over approximately five months with 125 working days beginning in November 2024 and ending in April 2025. Construction within the agricultural drainage ditch will be conducted when water is present, however water levels within the ditch are expected to be low and dependent on agricultural activities.

Grading Plan:

Grading for site preparation for sewer line installation will require a 4-foot-wide, by 30-foot-long, 6 to 11-foot-deep excavation, temporarily displacing 1000 cubic yards of soil. All temporarily disturbed areas will be restored to pre-existing conditions after sewer line installation immediately after construction is completed.

Plant Palette:

Project activities will not require permanent removal of vegetation; no plant palette is proposed. No seed collection is proposed.

Invasive Species Management:

All vehicles and equipment will be inspected for invasive species prior to working onsite. Onsite excavated materials will be used for backfill of the trench and no outside soils will be allowed on the Project site.

Performance Standards:

None.



Maintenance Requirements:

None.

Avoidance and Minimization Measures:

- **Site re-contouring:** Temporary impacts to the drainage shall be mitigated by fully restoring the drainage to pre-project conditions, or as required in permits obtained from regulatory agencies.
- **Dust Control:** No visible dust plumes are allowed. If dust plumes are observed, then slow speeds on dirt roads, water dirt/work areas, or work when the soil is not extremely dry.
- **Biological Pre-activity Survey:** A biological survey for California red-legged frog, western pond turtle, and nesting birds is required prior to construction.
- **Sensitive Plant Community and Environmentally Sensitive Habitat Area Avoidance and Minimization Measures**
 - 1) To the extent feasible, all project activities, including access routes, staging areas, stockpile areas, and equipment maintenance, should be located outside of the limits of mapped sensitive habitats. Sensitive habitat areas should be mapped by a qualified biologist and clearly shown on construction plans. Bright orange protective fencing (e.g., orange snow fencing) should be installed at the outermost edge of sensitive habitats and should not be disturbed except as required for project activities.
 - 2) Imported soil should be obtained from a source that is known to be free of invasive plant species.
 - 3) Minimize removal or disturbance of existing vegetation outside of the footprint of project construction activities.
 - 4) Limit site access and parking, equipment storage and stationary construction activities to the designated staging areas to the maximum extent feasible.
 - 5) Prior to staging equipment on-site, clean all equipment caked with mud, soils, or debris from off-site sources and/or previous construction sites to avoid introducing or spreading invasive exotic plant species. When feasible, remove invasive exotic plants from the APE. All equipment used on the premises should be cleaned prior to leaving the site for other projects.
 - 6) Position all stationary equipment such as motors, pumps, generators, and/or compressors over drip pans. At the end of each day, move vehicles and equipment as far away as feasible from any water body adjacent to the project site in a level staging area. Position parked equipment also over drip pans or absorbent material.
 - 7) Refuel and perform all vehicle and/or equipment maintenance off-site at a facility approved for such activities.
 - 8) To the greatest extent feasible, stabilize all exposed or disturbed areas in the APE. Install erosion control measures as necessary such as silt fences, jute matting, weed-free straw bales, plywood, straw wattles, and water check bars, and broadcasting weed-free straw wherever silt-laden water has the potential to leave the work site and enter the nearby aquatic features.
- **Spill Release/Prevention:** Position all stationary equipment such as motors, pumps, generators, and/or compressors over drip pans. At the end of each day, move vehicles and equipment as far away as feasible from any water body adjacent to the project site in a level staging area. Position parked equipment also over drip pans or absorbent material. Refuel and



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perform all vehicle and/or equipment maintenance off-site at a facility approved for such activities. To the greatest extent feasible, stabilize all exposed or disturbed areas in the APE. Install erosion control measures as necessary such as silt fences, jute matting, weed-free straw bales, plywood, straw wattles, and water check bars, and broadcasting weed-free straw wherever silt-laden water has the potential to leave the work site and enter the nearby aquatic features.