CITY OF SAN LEANDRO
CAPITAL IMPROVEMENT PROGRAM

Wastewater Treatment and Collections

10 Year Plan

DRAFT

September 2024

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I. Introduction

Quality of life in San Leandro depends in part upon how well the public infrastructure meets its needs. For many decades and continuing today, San Leandro delivers reliable, high quality, and competitively priced wastewater services. These services combined with streets, parks, libraries, and other public spaces, create recreation opportunities for residents, protects public health and the SF Bay, and serves as a foundation for a strong local economy.

The *10 Year Capital Plan – Treatment Plant and Collections* focuses on the infrastructure needs for the sewer collection system (pipes and pumps stations) and treatment plant over the next ten years. The plan contains a list of projects to be funded through the Water Pollution Control Enterprise. The City's Water Pollution Control enterprise collects fees for sewage conveyance and treatment, including ongoing renewal and replacement of the City's existing facilities. The Capital Improvement Program (CIP) provides a guide for the preparation of Biennial Operating budgets for the sewer enterprise as well as five-year rate studies, and longer term infrastructure strategy.

The Plan is intended to be updated and presented to the City Council each budget cycle. This document also intends to inform the public, City Staff, and City Councilmembers of the likely projects to be funded over the next ten years.

It should be noted that this document is intended to be a working document and should be updated as capital needs evolve and more information is available.

II. Methodology

Each of the treatment processes involved with the collection and treatment of wastewater were systematically analyzed and staff directly involved with the operation and maintenance of the facilities were interviewed. This included visual inspection of each process unit at the treatment plant and discussion with staff about the known issues and needs for the system.

Outside consultants were engaged to refine the scope of the work. These included a roof assessment, concrete assessment for key structures and preliminary engagement with nutrient reduction experts. Where appropriate, these findings have been incorporated into the plan.

The analysis included a review of collection system renewal practices. Historically, spot repairs or segments of pipes were repaired each year as they failed or could not provide reliable service. The new CIP plan sets a target of renewing 1% of the system per year. Currently, there

are several years' worth of identified pipe for renewal. When the next CIP update is prepared (in 2029), City staff can evaluate if the 1% renewal target remains appropriate. If the 1% annual renewal rate was extended, the entire collection system would be replaced by 2124. Given that some of the system is nearing 100 years of service, it is prudent to begin replacing pipes in poor condition to prevent a loss in the otherwise high performance of the existing system.

III. Discussion of Plant Needs

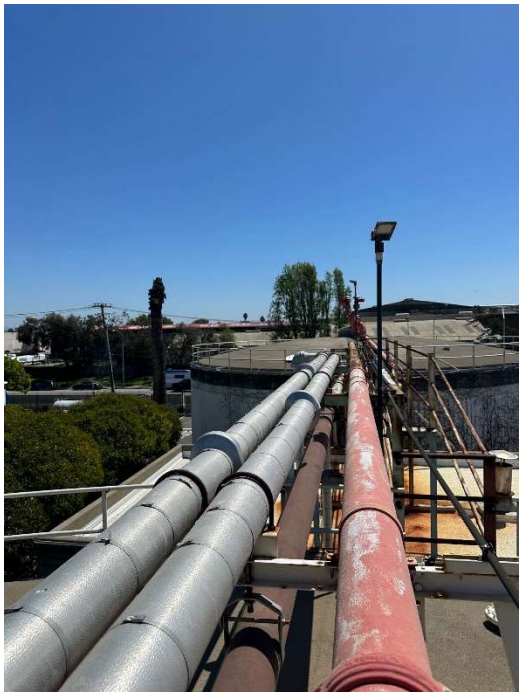
A majority of the total Capital Program expenses can be grouped into categories as detailed in the following sub-headings.

Liquid Stream

Although included in this discussion, the funding needs in the liquid stream (clean water portion from each process stage) are modest in comparison to the value of the facilities. The City continues to benefit from a major upgrade of its liquid stream completed in 2015. This includes the headworks, primary clarifiers, tricking filter, influent pumping and equalization facilities. The upgrade is partly responsible for the City's strong regulatory compliance record and quality effluent. Because of the upgrade, the capital needs for the 'liquid stream' are modest throughout the ten-year planning period and excluded from the discussion that follows.

Solids Handling

Much of the solids stream (material removed from the water at each stage) largely remains in need of rehabilitation and upgrade. These elements include the anaerobic digesters, belt press, digester heat loop boiler, digester heat piping, and digester support piping. Digester No. 4 is in excellent condition. Digester Nos. 1 and 2 are in fair condition (significant cover rehabilitation will be required) and No. 3 is known to be in poor condition (cover replacement likely). The solids stream processes include thickening, digestion, and associated support systems.



Nutrients

In addition to solids handling needs, there are growing calls from the San Francisco Bay Regional Water Quality Control Board ("Water Board" to regulate nutrient treatment. For the San Francisco Bay, nutrient concerns are largely focused on nitrogen, with phosphorus (a commonly regulated nutrient in freshwater discharges) largely absent from the regulatory discussion.

In July 2024, the Water Board passed regulation requiring all treatment plants discharging to the Bay to reduce nitrogen by 40% from their 2022 levels by 2034. In other areas of the United States, plants are required to reduce total nitrogen levels by 80% or more. The higher standard nationally will be kept in mind when considering near term responses to the 40% reduction requirement. Specifically, near term actions will be planned so they are aligned with a future that includes higher treatment standards.

In 2017, the City participated in a region-wide study (Bay Area Clean Water Agencies Nutrient Reduction Study, June 2018, pages 983-1016) to estimate the costs to achieve several technology-based treatment levels. The study analyzed 37 treatment plants, including San Leandro. For the City, the highest level of treatment would result in $131M in capital and increased operating expenses, assuming conservative methods were used for design and technology selection.

Although a mandate for the highest level of treatment has not been issued, the recommendation is to take early steps to reduce nutrient loads. The recommended strategy is to leverage the City's strengths with "no regret" actions to begin reducing nutrients. No regret actions refer to those that are aligned with a longer-term goal of 40% or 80% nutrient reductions. The plant is in an enviable position. It possesses excess aeration capacity and has several potential tanks for use for sidestream treatment. Adding aeration capacity and available tankage is often a significant expense. In addition, the construction of a treatment wetland is expected to begin in 2025, which is designed to achieve a 20% nutrient reduction.

A foundational part of the strategy is to identify facilities to achieve the highest level of nutrient removal without using filtration. After identifying those likely facilities, various interim actions will be identified to achieve 40% (the target reduction level identified by the Regional Water Quality Control Board) and higher removal levels. The approach will allow the maximum use of existing infrastructure, make use of available time before a more stringent regulatory standard is implemented, increase the chances for grant awards, and focus staff on making the most of the existing plant.

A detailed analysis of the available options and expenses for nutrient reduction is outside the scope of this plan. City staff are currently engaging experts to model the treatment process and create a plan for meeting the nutrient requirements. Because these costs are still unknown, it is recommended to create a side fund of $2M per year to pay for costs that will likely occur in the 2nd half of the 10-year planning horizon. If costs are higher than currently anticipated, this fund would serve to reduce the need to borrow to support the expenses.

Collection System Rehabilitation

The sanitary sewer collection system is also an area of significant investment in the Ten-Year Capital Plan. The oldest part of the City's collection system was installed in the 1930s, with the majority intalled between 1940-1980. The plan increases the funding to replace 1% of the City's 125 miles of sewer pipe for $2.2M/year. This represents a shift from the current practice

of identifying and correcting small portions of pipe to identifying entire sections of sewer pipe that should be replaced. The CIP plan includes funding for prioritizing pipe segments most in need of replacement.

The December 31, 2022 storm provided a good stress test for the capacity of the system. Most of the system was able to transport the additional flow, with overflow coming from two locations. It is recommended to investigate the causes of inflow and infiltration (I&I) in this area and invest resources to reduce it to prevent future overflows.

The fund also includes ongoing renewal of the sanitary sewer lift stations. This includes upgrading the larger lift stations with new equipment and includes funding to study lower cost alternatives for the smallest City lift stations. A preliminary investigation of remote lift stations indicated that the assets are in good repair and it is recommended to install cathodic protection to extend the life of the in-ground metal components.

IV.Project Scoring

Scoring for projects in the Wastewater Enterprise using the same criteria and weighting as applied to the rest of the City's capital program. In some cases, 'Equity' for example, all scores are the same as the treatment plant serves all customers equally. It was also assumed that improvements within the plant fenceline do not contribute to the aesthetics of the community. The sole exception to this was the fixed film reactor – which is tall and in poor condition.

The prioritization allows comparison of benefits or value for each alternative use of the money. The City of San Leandro uses 9 categories to score projects and develop a priority ranking.

1. Fiscal Impact

An evaluation of the annual cost or savings created by the project.

2. Economic Development Impact

An evaluation of the potential for the project to create jobs or economic activity.

3. Liability, Risk, Public Health, and Safety

An evaluation of the potential for the project to improve health and safety in the community or to reduce risk of harm to individuals or the community.

4. Protection of Existing Facilities and Lifespan

An evaluation of the impact the project will have on the lifespan of existing facilities.

5. Quality of Life

An evaluation of the impact the project will have on neighborhood appearances, noise,

or pollution. Also considered is the amount or public art and how the project supports community values.

6. Equity / Population Served

An evaluation of the number of people the project will serve or whether the project will address an underserved population.

7. Environmental Benefit

An evaluation of the environmental impact of the project including energy use, trash generation, and creation of impervious surfaces.

8. External of Internal Mandate

An evaluation of the degree the project is required by law or supports a plan adopted by the City Council.

9. One Time Funding Leverage

An evaluation of the degree the project will be funded by one time outside funding that requires matching funds.

Each project is scored from low (zero) to high (three) in each category. A matrix of descriptions for each possible score in each category is at the end of this section. Additionally, to provide context for the scoring, each project is ranked on a percentile basis – where the higher the percentile, the higher the scoring compared to other projects in the capital plan.

The nine categories have been selected and defined with consideration for City Council goals and the values of the San Leandro community. Project information including a summary, description, justification, and impact of not doing the project is included. The impact of each project upon the operation budget is considered in the project scores but is not quantified. Any changes to the operating budget due to implementation of a project should be calculated and included separately in the Water Pollution Control operating budget.

A summary of all project scoring categories and weightings is shown in Table 1. A summary of scores for all projects in the CIP are shown in Appendix 2.

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Table 1: Summary of Project Scoring Categories and Category Weights

	Sustainable Projects score well in Economic, Environment, and Social Benefit								
	Economic Benefit	Economic and Social	Economic and Social	Economic and Social	Social Benefit	Social Benefit	Environmental Benefit		
Category Weights	10	5	15	15	10	5	15	5	10
Category/Score	**Fiscal Impact: Net Cost considering maintenance, utilities, and revenue**	**Economic Development Benefit**	**Liability, Risk, Public Health, and Safety**	**Protection of Existing Facilities and Lifespan**	**Quality of Life**	**Equity / Population Served**	**Environmental Benefit**	**External or Internal Mandate**	**One Time Funding Leverage**
3 points	Net operating cost will be lower if the project is implemented.	Project **significantly** promotes economic activity through job creation, business development, or other	Project alleviates substantial (>$1M) liability, health or safety hazard, or significantly increases health and safety	Project will repair deterioration that currently prevents use of facility and has a lifespan > 15 years, or deferral will increase cost significantly	Project significantly improves the appearance of a neighborhood, incorporates art, reduces noise or pollution, or supports community values.	Project addresses an underserved area/population OR serves / benefits entire City	Project has significant reduction in energy or water use, trash generation, paved area, or other impacts on the environment.	Project is required to comply with Federal, State, or local law, regulation, or ordinance	One time outside funding that requires a match is secured for 75% or more of cost
2 points	Project has little or no impact on net operating cost	Project promotes economic activity through job creation, business development, or other	Project alleviates moderate (>$100k) liability, health or safety hazard, or creates a moderate increase in health and safety	Project will repair deterioration that doesn't prevent use of facility and has a lifespan of >10 years	Project moderately improves the appearance of a neighborhood, incorporates art, reduces noise or pollution, or supports community values.	Project serves / benefits a large size area/ population	Project has minor reduction in energy or water use, trash generation, paved area, or other impacts on the environment.	Project implements Council adopted plan	One time outside funding that requires a match is secured for between 25% and 75% or more of cost
1 point	Project will result in minor additional net operating costs	Project may promote economic activity through job creation, business development, or other	Project alleviates minor (<$100k) liability, health or safety hazard, or creates a minor increase in health and safety	Project will prevent/delay deterioration from occurring	Project slightly improves the appearance of a neighborhood, incorporates art, reduces noise or pollution, or supports community values.	Project serves / benefits a medium size area/population	Project has no impact on the environment.	Project implements plan adopted by outside agency	One time outside funding that requires a match is secured for less than 25% of cost
0 points	Project will result in significant additional net operating costs	Project doesn't promote economic activity	Project won't impact liability, health, or safety.	Project doesn't impact condition of an existing facility	Project has no impact on noise, pollution, or the appearance of a neighborhood, and doesn't incorporate art or actively support community values.	Project serves / benefits a smaller size area/population	Project increases energy or water use, trash generation, paved area, or other impacts on the environment.	Project isn't required by law and doesn't implement an adopted plan	No outside funding has been secured

Scores in each category are weighted to reflect the current City Council priorities. Category weights are distributed per the following schedule.

CIP Category Weight

Description	Weight	Notes
Critically Important	15	3 Categories
Very Important	10	3 Categories
Important	5	3 Categories

The City Council sets weights for each scoring category. Each budget cycle the Council has the option to revise the category weights. No changes were made during preparation of the FY 23/24 budget. Category weights are as follows:

Category Weights

Category	Weight
Fiscal Impact: Net Cost	10
Economic Development Impact	5
Liability, Risk, Public Health, and Safety	15
Protection of Existing Facilities and Lifespan	15
Quality of Life	10
Equity/Population Served	5
Environmental Benefit	15
External or Internal Mandate	5
One Time Funding Leverage	10

Staff within the Water Pollution Control Division reviewed the initial scores established by management for each project in each category.

Installation of Trickling Filter Roof

V. Discussion of Cash Flows/Rate Study

10 – Year Cash Flow Analysis

Water Pollution Control Plant (WPCP) Enterprise funds are collected from users of the City's sanitary sewer system. Each residence connected to the City's system pays a monthly fee for service. The fund is restricted to expenses related to the operation and maintenance of the sanitary sewer collection system and the water treatment plant – including expenses for the Capital Improvement Program. Fees charged for WPCP Enterprise Fund are typically adjusted each year to reflect inflationary cost increases as well as to fund projects required by new regulations or large capital needs.

The City has engaged a financial consultant to study the sewer rates necessary to support the CIP and operating expenses of the Water Pollution Control enterprise. The consultant will present their analysis and draft recommendations in November 2024 for council review and input. The rate study will include development of a detailed cash flow model. The cash flow model will consider the impacts of various rate increases, ability to complete the planned work, and impact on available reserves.

Based upon current conditions, the City has a healthy starting fund balance of approximately $33M. The $33M starting balance is available, in part, due to accumulating a

backlog of CIP work. The backlog is reflected in the first three years of the CIP which includes $42.5M of projected expense. Year 2 of the projections includes receipt of $6.7M grants to fund a Wetland Treatment Project – offsetting a portion of the expense.

Preliminary discussions with the rate consultant show that the Capital Plan is affordable without borrowing funds. It is likely that an annual rate increase of 7-10% will be required to balance revenues with planned expenses in the fifth year of the plan. A discussion of the various rate scenarios and policy trade-offs will be reviewed with the Council in the Fall of 2024 – when the rate study is drafted by the consultant. The Council review and discussion will occur prior to planned rate noticing scheduled for Spring 2025.

Projects for the Biennial Budget

The table on the following page shows the planned projects, line-item expense, and total funding needs for the next two years. Based upon City practice, projects from the 10-Year CIP are funded via the two-year budget process. The practice allows policy makers to review projects an additional time before allocating funds for implementation. Fiscal year 24/25 and 25/26 Projects are expected to total $7.4M and $15.6M respectively.

VI. Projects

The CIP is the mechanism for identifying, defining, tracking, and ranking infrastructure needs. Needs are described as projects and are both for maintenance of existing facilities and construction of new facilities. Funding for projects is established by the City budget and approved by the City Council with the bi-annual budget.

The following pages include details of each recommended project – including a project description, justification, funding needs, priority ranking, and other details.

Nutrient Alternatives Analysis

Impact to Operation Cost Neutral

Detailed Cost **$100,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 97%

Project Description

Recently adopted Regional Water Quality Control Board regulations will require the plant to remove approximately 40% of the nitrogen entering the plant. Short of a complete process overall, optimization refers to methods of using existing treatment assets to do more. The proposed study includes identifying six promising nutrient treatment alternatives, performing an initial screening to 3 top candidates, and developing conceptual design and cost estimates. The analysis will compare unit costs for optimization nitrogen removal ($/lb) with more traditional treatment including membrane aerated bioreactors and and dry weather only treatment.

Project Benefits

The project will identify an optimimal path to reduce nutrient loads from the treatment plant into the San Francisco Bay.

Impacts of Not Completing Project

Without the study, the probability of implementing a sidestream treatment solution is lowered. Without sidestream, the City may neglect a modest cost alternative to treat a significant fraction of nutrients.

Sidestream Alternatives Analysis

Impact to Operation Cost	Increase. Nutrient treatment requires three times the oxygen - leading to higher energy costs.	**Detailed Cost**	**$60,000**
Impact to Maintenance Cost	Slight increase due to more equipment and instrumentation.		
Percentile Ranking	97%		

Project Description

Project Benefits	Sidestream treatment is considered the most economical method to reduce nitrogen. The study will evaluate feasibility and ways to utilize existing infrastructure and to develop costs with the goal of reducing the expense of nutrient treatment.
Impacts of Not Completing Project	Neglecting efforts to maximize existing assets for nutrient control will lead to high cost solutions involving - build new.

Nutrient Optimization

Impact to Operation Cost Increase. Nutrient treatment requires three times the oxygen - leading to higher energy costs.

Detailed Cost **$2,000,000** Annually

Impact to Maintenance Cost Slight increase due to more equipment and instrumentation.

Percentile Ranking 37%

Project Description

Nutrient Treatment Regulations are tightening in the SF Bay Area. The next Bay wide nutrient permit in 2024 will require utilities to reduce nitrogen discharges by 40% on an annual average basis. Among the EBDA agencies - USD, Hayward, and OLSD have either taken action to upgrade to nutrient treatment or are in process. San Leandro is taking proactive action to implement nature based - wetland treatment and sidestream (Belt Press Filtrate) treatment. The project goal is to provide funding to address the new regulatory limits within the next ten years. The funding level and planning also assumes that more stringent (75%) removal will be required in 2034 or beyond. All intermediate steps will consider a possible higher treatment standard and require that any early optimization steps would be aligned with future plans. The sidefund is established to begin establishing reserves for the large future treatment upgrade expense.

Project Benefits The project provides a proactive and cost effective plan to maintain compliance with NPDES permit requirements. The goal is to use available time to experiment with the use of existing infrastructure to treat nutrients.

Impacts of Not Completing Project Neglecting efforts to maximize existing assets for nutrient control will lead to high cost solutions involving - build new.

Nature Based Nutrient Treatment Wetland

Impact to Operation Cost Increase associated with operating and maintaining MABR's near wetland.

Detailed Cost **$4,520,000**

Impact to Maintenance Cost Increase in year 10 when MABR's require replacement.

Percentile Ranking 79%

Project Description

The project includes the use of membrane aerated biofilm reactor (MABR) for nitrification with a wetland based treatment system for denitrification. The result is the removal of nitrogen compounds from the effluent.

Project Benefits The grant funded project will reduce nutrient loads to the San Francisco Bay.

Impacts of Not Completing Project Stopping the work will result in the loss of the grant funds and reduction of nitrogen from the plant effluent.

Sidestream Implementation

Impact to Operation Cost Slight Increase, higher aeration/energy demand

Detailed Cost **$2,500,000**

Impact to Maintenance Cost Slight increase - more equipment

Percentile Ranking 22%

Project Description

Sidestream treatment focuses on a relatively small flow (1-2% of influent) from the dewatering process with a high concentration of ammonia. The concentrated nature makes it an ideal target for treatment. The costs include repurposing an existing concrete tank with the technology recommended in the Sidestream Alternatives Analysis. The City's strategy is to implement a treatment wetland, sidestream treatment, and mainstream optimization to defer full nutrient treatment until at least 2034.

Project Benefits The project will seek to reduce nutrient loads to the San Francisco Bay in a cost efficient manner.

Impacts of Not Completing Project If the project is not completed, the City will need to equivalent treatment in the main treatment process. The sidestream alternatives analysis will identify the cost differences between a mainstream and sidestream treatment process.

Concrete Renewal

Impact to Operation Cost Neutral

Detailed Cost **$350,000**
Annually

Impact to Maintenance Cost Neutral

Percentile Ranking 81%

Project Description

The treatment plant structures were recently examined by V&A Consulting Engineers. V&A noted several areas requiring immediate attention including the sodium hypochlorite floor and basement ceiling, Digester No. 2, Primary No. 2, and spot repairs on Digester No. 4. The funding anticipates designing and awarding a contract in 2024/25 with the work carrying over into 25/26.

Project Benefits The project will prevent rapid deterioration to treatment plant structures and extend the useful life of the concrete.

Impacts of Not Completing Project If unmaintained, the rebar reinforcement in existing structures can rapidly deteriorate - leading to more costly repairs.

Influent Pipeline Inspections

Impact to Operation Cost Neutral

Detailed Cost **$40,000**
Annually

Impact to Maintenance Cost Neutral

Percentile Ranking 95%

Project Description

Due to its critical nature and large size, the 30" and 33" influent lines are assessed every five years and rehabilitated as needed to avoid failure. The City does not possess the large equipment required to perform this assessment.

Project Benefits

The project will provide an assessment of existing conditions and estimate of remaining life. Under all conditions, the work will allow a proactive response to maintaining this critical piece of infrastructure.

Impacts of Not Completing Project

Without inspection and/or repairs, the risk of a major failure and costly bypass pumping operation increases.

Demo Old Fixed Film Reactor

Impact to Operation Cost Neutral

Detailed Cost **$2,250,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 30%

Project Description

The project provides for the demolition and proper disposal of the FFR decomissioned in 2015. Environmental screening in FY 23/24 confirmed the plastic media contains high levels of lead stabilizers - requiring specialized and costly disposal.

Project Benefits The fixed film reactor was originally scheduled for demolition in 2015. Since then, it has continued to deteriorate and should be removed before becoming a safety concern.

Impacts of Not Completing Project If not completed, the structure will continue to be an eyesore in the center of an otherwise well maintained facility.

Blower Swing Unit

Impact to Operation Cost Neutral

Detailed Cost **$600,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 30%

Project Description

The aeration blower is critical for compliance. The Blower Swing Unit Project will provide a spare blower to allow timely replacement if two of the three existing units goes down. It will also allow the service unit to be returned to the factory for overhaul.

Project Benefits

It is anticipated that both blowers will be required within the next 5-10 years. Keeping a standby unit on the plant site will limit downtime if a unit requires service and may prevent a regulatory violation.

Impacts of Not Completing Project

Without a spare, the plant could be subject to major outages and permit violations during the time for repairs.

Aeration Basin Piping and Concrete Rehabilitation

Impact to Operation Cost Neutral

Detailed Cost **$350,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 59%

Project Description

Remove corroded step feed, foam sprayers, and overflow piping. Repair concrete where support anchors are removed and three foot band at waterline. Treat areas of cracking and apply sealant to structure as recommended in concrete condition assessment report.

Project Benefits

The aeration basins were designed with spray headers, overflow piping and step feed piping. This piping is both unused and heavily corroded. Removal will improve the appearance and limit hazards associated with the old piping systems.

Impacts of Not Completing Project

Without removal, the corroded piping and supports will become a safety hazard. Without maintenance, the structure will degrade at an accelerating rate.

Effluent Pump Station Rehabilitation Pre-design

Impact to Operation Cost Neutral

Detailed Cost **$75,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 90%

Project Description

The effluent pump station was originally constructed in 1982. The station pumps treated water to the Marina Dechlor Station before release into the Bay. During the December 2022 storms, internal plant flooding came within 6 inches of overwhelming the electrical feeds (which are much lower than the pump motors) to the pump station which would have led to plantwide flooding. To avoid future similar risk, the electrical systems will be elevated to a similar elevation to the pumps and motors. The predesign effort will include an assessment of existing facilities, summarize the systems to be upgraded, and will provide guidance for the planned design effort. The predesign effort will specifically include a condition assessment of the lift station wetwell, pumps, and motors.

Project Benefits

The noted project will prevent electrical system flooding and a potential complete treatment plant failure during heavy rains.

Impacts of Not Completing Project

The predesign report is intended to provide a resource for design consultants in preparing their scope and fee estimate. Without the study, higher costs are expected given the unknowns about the project and scope.

Effluent Pump Station Rehabilitation Design

Impact to Operation Cost Neutral

Detailed Cost **$250,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 90%

Project Description

The effluent pump station was originally constructed in 1982. The station pumps treated water to the Marina Dechlor Station before release into the Bay. During the December 2022 storms, internal plant flooding came within 6 inches of overwhelming the electrical feeds (which are much lower than the pump motors) to the pump station which would have led to plantwide flooding. To avoid future similar risk, the electrical systems will be elevated to a similar elevation to the pumps and motors. The design effort will provide plans and specifications to extend the life of the station and eliminate vulnerability from flood risks.

Project Benefits The noted project will prevent electrical system flooding and a potential complete treatment plant failure during heavy rains.

Impacts of Not Completing Project If the design is not completed, the project will not move forward and the station will remain at risk of flooding during peak storm events.

Effluent Pump Station Rehabilitation Construction

Impact to Operation Cost Decrease

Detailed Cost **$2,600,000**

Impact to Maintenance Cost Decrease

Percentile Ranking 100%

Project Description

The effluent pump station was originally constructed in 1982. The station pumps treated water to the Marina Dechlor Station before release into the Bay. During the December 2022 storms, internal plant flooding came within 6 inches of overwhelming the electrical feeds (which are much lower than the pump motors) to the pump station which would have led to plantwide flooding. To avoid future similar risk, the electrical systems will be elevated to a similar elevation to the pumps and motors. Construction is expected to included elevating the MCC and either refurbishing or replacing the existing pumps and motors.

Project Benefits

The noted project will prevent electrical system flooding and a potential complete treatment plant failure during heavy rains.

Impacts of Not Completing Project

If the project is not completed, the station remains at risk of flooding during peak storm events.

Hypo Tanks and Piping

Impact to Operation Cost Neutral

Detailed Cost **$250,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 10%

Project Description

Project provides for the replacement and reinstallation of new sodium hypochlorite tanks and piping. As of 2024, tanks and piping in great shape - program for year 11

Project Benefits

The disinfection processs relies on storage and transport of the chemical to the dosage point. Providing ongoing renewal wil ensure reliable performance.

Impacts of Not Completing Project

Over time, leaks will become more frequent. The actual replacement date can be adjusted backward if no leaks occur.

Storage Building Rehabilitation

Impact to Operation Cost Neutral

Detailed Cost **$500,000**

Impact to Maintenance Cost Increase

Percentile Ranking 18%

Project Description

In 2024, the City completed a property transfer of the building adjacent to the treatment plant. The plan is to use the building for storage of spare parts, equipment, and materials. Prior to the transfer, vandals have taken wiring and copper piping. The project will include costs to secure, replace missing wiring, paint, and repair any safety deficiencies.

Project Benefits The rehabilitation effort will provide needed storage for spare parts and work areas for larger maintenance projects.

Impacts of Not Completing Project At a minimum, the building should be secured from vandals and made watertight to prevent accelerated wear and theft.

Huber Rotating Drum Thickener

Impact to Operation Cost Neutral

Detailed Cost **$850,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 3%

Project Description

The thickener process takes waste activated sludge and thickens it before digestion to limit heating demands and conserve space in the digester. The existing unit is 15 years old and will reach the end of its useful life in 2033. The new unit will have a 125 gpm capacity.

Project Benefits

The rotating drum thickener is used to thicken waste sludge prior to digestion. Reliable operation is essential for compliance with minimum detention times for digestion and efficient heating.

Impacts of Not Completing Project

Without thickening, the Digester cannot meet the detention requirements of Federal 503 regulations. If the rotating drum thickener does down for extended repair, the risk of violation increases.

Roediger Rotating Drum Thickener Replacement

Impact to Operation Cost Neutral

Detailed Cost **$650,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 3%

Project Description

The thickener process takes waste activated sludge and thickens it before digestion to limit heating demands and conserve space in the digester. The existing Roediger unit is 30 years old and at the end of its useful life. The replacement unit will provide similar function (125 gpm) and the scope will include integrating the replacement unit with the controls for the existing unit.

Project Benefits

The rotating drum thickener is used to thicken waste sludge prior to digestion. Reliable operation is essential for compliance with minimum detention times for digestion and efficient heating.

Impacts of Not Completing Project

Without thickening, the Digester cannot meet the detention requirements of Federal 503 regulations. If the rotating drum thickener does down for extended repair, the risk of violation increases.

Polymer System Replacements

Impact to Operation Cost Neutral

Detailed Cost **$100,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 3%

Project Description

The polymer system is used to supply polymer to the thickening process. The polymer flocculates the sludge particles so they can be thickened. The existing units are nearing the end of their useful life.

Project Benefits

The polymer system is essential for the operation of the thickener and contributes to the reliable operation of the plant.

Impacts of Not Completing Project

Without polymer, the thickener system will not operate. If the thickener does not operate, the risk of violation increases.

Belt Press Replacement

Impact to Operation Cost Neutral

Detailed Cost **$1,400,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 40%

Project Description

The existing belt press is a critical part of the treatment plant, is nearing the end of its life, and has no redundancy. The subject project will provide for a new unit, with an expected life of 15 years.

Project Benefits

The belt press dries digested sludge approximately 10:1 - saving hauling costs and truck trips. A reliable unit saves labor and prevents wetting sludge in the drying beds.

Impacts of Not Completing Project

If the belt press is not replaced, the frequency of outages is expected to increase over time. Without the press, wet sludge needs to be stored leading to higher hauling and disposal costs.

Belt Press Standby Unit

Impact to Operation Cost Neutral

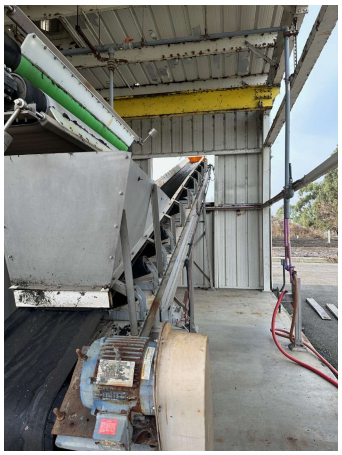
Detailed Cost **$140,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 40%

Project Description

The Belt Press Standby project scope includes repurposing the belt press replaced in FY 25/26 to a trailer mounted back up unit. The trailer mounted unit will serve as a back up to the new unit.



Project Benefits The plan is to re-purpose the existing belt press as an emergency back up for the new unit.

Impacts of Not Completing Project If the old unit is not repurposed as a spare, the system will lose any standby capacity for repairs or outages.

Solar Biosolids Dryer

Impact to Operation Cost Reduction

Detailed Cost **$2,000,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 0%

Project Description

The Solar Biosolids Dryer provids funding to accelerate biosolids drying on the existing site. Over time, the treatment plant has lost area used to dry its biosolids. The solar dryer will provide a green and cost effective way to reliably reduce water content before hauling offsite.

Project Benefits

The project will reduce hauling costs by lowering the water content of the dewatered sludge. Additionally, the project will reduce neighborhood emissions by lowering the number of truck trips required for hauling.

Impacts of Not Completing Project

The City is managing now, but annual hauling costs are high. The project will be recommended for funding, only if a compelling economic case can be made.

Digester No. 1 and 2 Cleaning

Impact to Operation Cost Neutral

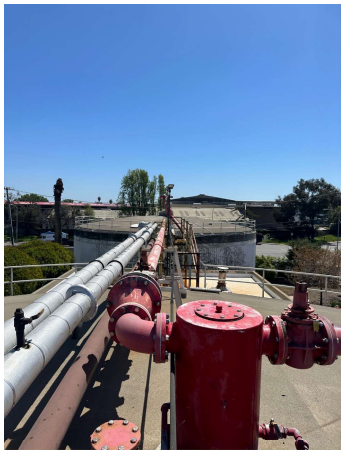
Detailed Cost **$150,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 40%

Project Description

Over time, heavy solids accumulate in the digesters and cannot be resuspended by the mixing system. Standard industry practice to empty these materials every 5-10 years and perform a digester condition assessment. As planned, the digesters will be removed from service one at a time, cleaned, and inspected.



Project Benefits Cleaning will allow a condition assessment and a proactive overhaul of the digesters.

Impacts of Not Completing Project Without cleaning and inspection every 5-10 years the risk of a sudden failure increases. Additionally, without cleaning, less and less of the available volume is available for treatment.

Digester No. 1 Assessment

Impact to Operation Cost Neutral

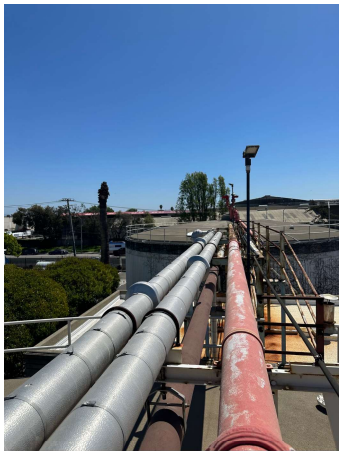
Detailed Cost **$30,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 40%

Project Description

Digesters operate in a corrosive environment and are inaccessible while in operation. When removed from service, they should undergo an inspection to determine their condition and maintain the protective coatings on all surfaces within four feet of the gas/sludge interface. The assesment cost includes rental of a small scaffold structure to allow access for inspection.



Project Benefits The Digester Assessment will identify any areas of corrosion and the best method of repair.

Impacts of Not Completing Project Without an assessment, the digester is at risk for a sudden and costly failure.

Digester No. 1 Cover Rehabilitation

Impact to Operation Cost Neutral

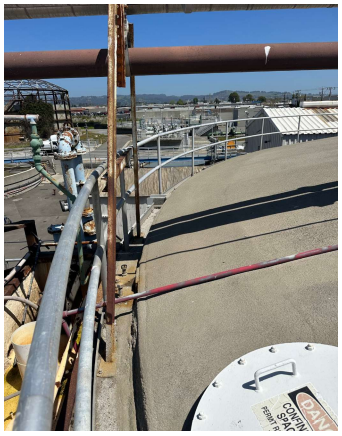
Detailed Cost **$340,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 40%

Project Description

The digester cover is essential for safety and to prevent the release of methane from the process. The rehabilitation scope will be informed by the assessment report and is recommended every ten years.



Project Benefits

The Digester Cover Rehabilitation will include repair of corroded sections, surface preparation, and coating of steel surfaces to extend the life of the digesters.

Impacts of Not Completing Project

Digester covers collect methane for productive use. If allowed to degrade, the methane will be released to the atomoshhere - creating a potentially hazardous condition.

Digester No. 1 and 2 Piping Replacement

Impact to Operation Cost Neutral

Detailed Cost **$800,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 40%

Project Description

The biogas and sludge piping on digesters 1, 2, and 3 is 70 years old and near the end of its life. The subject project will provide new biogas, mixing, and heat piping on digesters 1 and 2.

Project Benefits

The support piping for digesters is essential for its operation. Replacing it will extend the useful life of the digester.

Impacts of Not Completing Project

Neglecting the piping will increase the chance of a sudden failure and the need to take two of four digesters out of service for the several months it would take to perform repairs.

Digester No. 2 Assessment

Impact to Operation Cost Neutral

Detailed Cost **$30,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 40%

Project Description

Digesters operate in a corrosive environment and are inaccessible while in operation. When removed from service, they should undergo an inspection to determine their condition and maintain the protective coatings on all surfaces within four feet of the gas/sludge interface. The assesment cost includes rental of a small scaffold structure to allow access for inspection.

Project Benefits The Digester Assessment will identify any areas of corrosion and the best method of repair.

Impacts of Not Completing Project Without an assessment, the digester is at risk for a sudden and costly failure.

Digester No. 2 Cover Rehabilitation

Impact to Operation Cost Neutral

Detailed Cost **$340,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 40%

Project Description

The digester cover is essential for safety and to prevent the release of methane from the process. The rehabilitation scope will be informed by the assessment report and is recommended every ten years.

Project Benefits

The Digester Cover Rehabilitation will include repair of corroded sections, surface preparation, and coating of steel surfaces to extend the life of the digesters.

Impacts of Not Completing Project

Digester covers collect methane for productive use. If allowed to degrade, the methane will be released to the atomoshhere - creating a potentially hazardous condition.

Digester No. 3 Assessment

Impact to Operation Cost Neutral

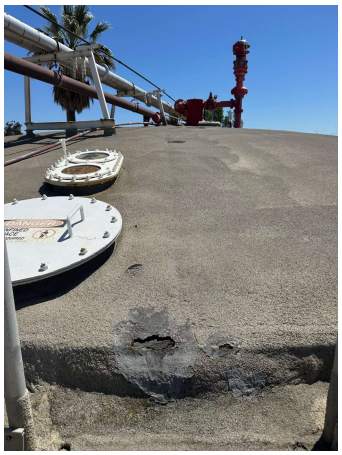
Detailed Cost **$30,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 40%

Project Description

Digester No. 3 is in poor condidtion and will likely require a higher level of rehabilitation. In a case where organics loading is stable in the plant (ie. no outside food waste), Digester No. 3 will remain out of service. The assessment will be performed to identify what will be required to return it to service. It is possible that digester no. 3 will require a new cover given the poor existing condition.



Project Benefits The Digester Assessment will identify any areas of corrosion and the best method of repair.

Impacts of Not Completing Project Without an assessment, the digester is at risk for a sudden and costly failure.

Digester No. 3 Cover Replacement

Impact to Operation Cost Neutral

Detailed Cost **$-**

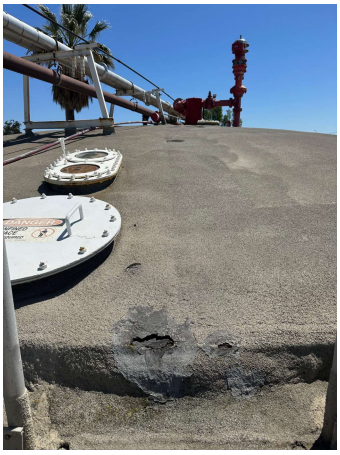
Only if organics revenues pays for it.

Impact to Maintenance Cost Neutral

Percentile Ranking 40%

Project Description

Digester No. 3 has not been operated for the past 10 years. It shows signifiant signs of corrosion and may require a complete replacement. A replacement is recommended if the City initiates a program to receive food waste. Any expenses for the cover replacement should be born by the food waste project.



Project Benefits

The Digester Cover Rehabilitation will include repair of corroded sections, surface preparation, and coating of steel surfaces to extend the life of the digesters.

Impacts of Not Completing Project

The work will only be scheduled if the City can increase its feedstocks and corresponding revenues to pay for the cover replacement.

Digester No. 3 Piping Replacement

Impact to Operation Cost Neutral

Detailed Cost **$-**

Only if organics revenues pays for it

Impact to Maintenance Cost Neutral

Percentile Ranking 40%

Project Description

The biogas and sludge piping on digester 3 is close to 70 years old and near the end of its life. The subject project will provide new biogas, mixing, and heat piping.

Project Benefits

The support piping for digesters is essential for its operation. Replacing it will extend the useful life of the digester.

Impacts of Not Completing Project

The work will only be scheduled if the City can increase its feedstocks and corresponding revenues to recover the costs.

Digester No. 4 Assessment

Impact to Operation Cost Neutral

Detailed Cost **$30,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 40%

Project Description

Digester No. 4 was inspected in early 2024. An assessment is planned again in 2033/34

Project Benefits The Digester Assessment will identify any areas of corrosion and the best method of repair.

Impacts of Not Completing Project Without an assessment, the digester is at risk for a sudden and costly failure.

Energy Efficiency and Resiliency Project

Impact to Operation Cost Reduction

Detailed Cost **$3,372,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 16%

Project Description

Installation of micro-grid battery, high efficiency blower technology and high efficiency digester mixing technology. Includes 3rd party design review and inspection

Project Benefits The project will result in lowering the overall energy and greenhouse gas footprint of the treatment plant.

Impacts of Not Completing Project Not completing the project will result in higher energy use and higher utility expenses.

Digester No. 4 Cover Rehabilitation

Impact to Operation Cost Neutral

Detailed Cost **$80,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 40%

Project Description

In early 2024, Digester No. 4 was inspected and some corrosion of the roof was identified. These repairs are planned for FY 24/25.

Project Benefits

The Digester Cover Rehabilitation will include repair of corroded sections, surface preparation, and coating of steel surfaces to extend the life of the digesters.

Impacts of Not Completing Project

If the digester is placed into service without the repairs, then accelerated deterioration will occur - leading to much higher expenses.

Boiler Predesign and Permit Coordination

Impact to Operation Cost Neutral

Detailed Cost **$30,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 23%

Project Description

The predesign effort will include an assessment of the existing system, verify that the boiler is undersized, size a new boiler, and identify two potential replacement boilers. Initiate BAAQMD permitting and verify that a straightforward permitting path is available.

Project Benefits

The current boiler cannot maintain the desired setpoint. The predesign will include an investigation of options and air permit coordination of the selected heating unit.

Impacts of Not Completing Project

Operating the digesters at reduced temperature lowers pathogen destruction and stabilization - one of the primary purposes of a wastewater plant.

Boiler Replacement

Impact to Operation Cost Neutral

Detailed Cost **$180,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 23%

Project Description

Bid and prepurchase boiler. Bid installation of boiler once received.

Project Benefits

The existing boiler does not possess enough capacity to heat the digester. The new unit will be sized to maintain the desired temperature setpoint.

Impacts of Not Completing Project

Operating the digesters at reduced temperature lowers pathogen destruction and stabilization - one of the primary purposes of a wastewater plant.

Boiler Room Valve Replacements

Impact to Operation Cost Neutral

Detailed Cost **$110,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 23%

Project Description

Many of valves in the boiler room are severely corroded and non-operable. The subject project will include new valving and coating of mechanical piping and equipment.

Project Benefits

The boiler room valves and piping are heavily corroded. The replacement project will replace critical piping at the end of its useful life.

Impacts of Not Completing Project

Without properly functioning valves, performing maintenance or re-routing flows becomes more and more challenging.

Beneficial Biogas Reuse

Impact to Operation Cost Neutral

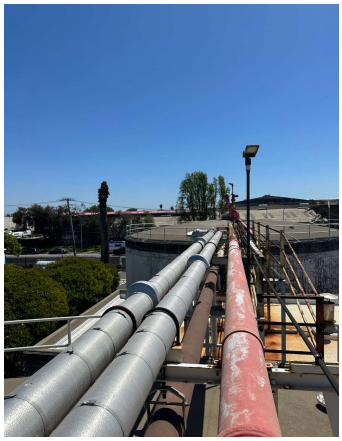
Detailed Cost **$65,000**

Impact to Maintenance Cost Neutral. Potential increase if complex purification is required.

Percentile Ranking 1%

Project Description

The City is currently underutilizing the biogas from the digestion process. The Beneficial Biogas Reuse Project will provide technical and legal support to identify and develop a beneficial reuse project including a pipeline to the Oakland Airport, vehicle fuel, or energy production.



Project Benefits The project will allow the beneficial reuse of a great City resource.

Impacts of Not Completing Project Without the project, the City will continue flaring excess gas.

Valley Service Area Reconnection

Impact to Operation Cost Neutral

Detailed Cost **$50,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 81%

Project Description

San Leandro pays Oro Loma about $300K to process water from the "Valley" portion of the service area. Previous studies said it wasn't worth reconnecting, but the major variables of the analysis have changed since that time. The study will revisit the analysis and will determine if it makes economic sense to redirect the flows to the treatment plant.

Project Benefits

Rerouting the flow to the treatment plant will provide significant additional revenues with minimal additional ongoing expense. Performing the study will help the City understand the trade-offs of the existing agreement.

Impacts of Not Completing Project

Business as usual. The City will continue to pay Oro Loma for treating customers in the 'Valley' portion of the service area.

Broadmore Area Sewer Pipe Rehabilitation -

Impact to Operation Cost Neutral

Detailed Cost **$1,300,000**

Impact to Maintenance Cost Slight Decrease

Percentile Ranking 59%

Project Description

The projects involves sewer rehabilitation in the Broadmore Area - 2727 feet of pipe replacement (Downstream MH's 304+10, 304+07, 304+06, 330+49 (2), 300+48, 300+47, 300+46).

Project Benefits 2727 feet of sewer pipe replacement (Downstream MH's 304+10, 304+07, 304+06, 330+49 (2), 300+48, 300+47, 300+46). Vitrified clay pipe to be pipe burst to high density polyethylene pipe.

Impacts of Not Completing Project Neglecting renewal will raise the likelihood of sudden failures, overflows, and/or regulatory action.

Westbay Easement Pipe Rehabilitation

Impact to Operation Cost Neutral

Detailed Cost **$165,200**

Impact to Maintenance Cost Slight Decrease

Percentile Ranking 59%

Project Description

Westbay Easement - - 118 feet of pipe replacement (Downstream MH 305+13). Pipe to be burst manhole to manhole

Project Benefits The project will lead to continued high service levels and excellent overflow record.

Impacts of Not Completing Project Increased likelihood of sudden failures, overflows, and/or regulatory action.

Davis St San Sewer Manhole & Pipe Rehab

Impact to Operation Cost Neutral

Detailed Cost **$2,500,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 59%

Project Description

Manhole for influent pipes in Davis Street has corroded and needs to be taken out of service. Project includes rerouting influent pipes to avoid this location.

Project Benefits The project will lead to continued high service levels and excellent overflow record.

Impacts of Not Completing Project Increased likelihood of sudden failures, overflows, and/or regulatory action.

Sanitary Sewer Replacement

Impact to Operation Cost Neutral

Detailed Cost **$2,190,000**
Annually

Impact to Maintenance Cost Neutral

Percentile Ranking 59%

Project Description

The collection system has a replacement value of $220M. The funding level allow for replacement of approximately 1% of the system piping per year.

Project Benefits The project will lead to continued high service levels and excellent overflow record.

Impacts of Not Completing Project Increased likelihood of sudden failures, overflows, and/or regulatory action.

Bermuda and Neptune drainage area flow modeling

Impact to Operation Cost Neutral

Detailed Cost **$60,000**
Annually

Impact to Maintenance Cost Neutral

Percentile Ranking 59%

Project Description

This area experienced sewer overflows during the 12/31/2022 storm. This project is to identify the reasons for this issue.

Project Benefits The project will help verify if additional capacity is needed.

Impacts of Not Completing Project The City can either assume there is a problem and potentially upsize a line that is not required.

Wet Weather Flow Monitoring

Impact to Operation Cost Neutral

Detailed Cost **$60,000** Annually

Impact to Maintenance Cost Neutral

Percentile Ranking 3%

Project Description

Sound collection system management includes identifying and potentially correcting areas of inflow (direct connections with storm drains) and infiltration (flow seeping into piping). The highest priority areas include all siphons and storm channel crossings.

Project Benefits Measuring inflow and infiltration is a sound part of collection system management. The effort may help the City focus outreach or infrastructure renewal to eliminate increased flow.

Impacts of Not Completing Project Without ongoing monitoring, wet weather flows can increase to the point where they are difficult to treat and manage.

Cathodic Protection

Impact to Operation Cost Neutral

Detailed Cost **$50,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 81%

Project Description

Five of the City's lift stations include buried steel structures. The original design included the use of cathodic protection to prevent corrorosion. The original anodes were depleted and a new anodes should be installed to continue providing protection.

Project Benefits Cathodic protection provides significant additional life by limiting corrosion over the decades.

Impacts of Not Completing Project Neglecting cathodic protection on buried steel assets will lead to higher costs over time.

Benedict SS Lift Station Renovation

Impact to Operation Cost Neutral

Detailed Cost **$886,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 81%

Project Description

The Benedict Lift Station, serving Memorial Hospital, was constructed in circa 1961 (c602d0021) and has reached the end of its service life. The station consists of a wet well and separate adjacent dry well housing two pumps, hard piped in place at the base. Maintenance of pump equipment requires confined entry by mechanics into the congested dry well. Compatible replacement parts are becoming scarcer to find and more expensive to acquire. Project includes removal and replacement with a package lift station.

Project Benefits Provides continued reliable service.

Impacts of Not Completing Project Increased risk of overflow and potential regulatory violation.

Merced SS Lift Station

Impact to Operation Cost Neutral

Detailed Cost **$1,117,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 90%

Project Description

The electrical and backup generation equipment are at the end of life and due for replacement. The project includes new switchgear, new VFDs and other electrical upgrades.

Project Benefits Provides continued reliable service.

Impacts of Not Completing Project Increased risk of overflow and potential regulatory violation.

Sylvan SS Lift Station Renovation

Impact to Operation Cost Neutral

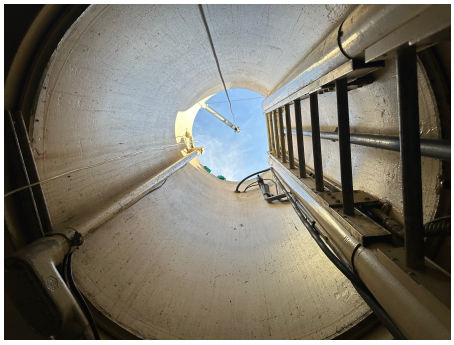
Detailed Cost **$883,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 81%

Project Description

The Sylvan Lift Station, serving a section of Estudillo Estates neighborhood, was constructed circa 1959 (c505d0045) and has reached the end of its service life. The station consists of a wet well and separate adjacent dry well housing two pumps, hard piped in place at the base. Maintenance of pump equipment requires confined entry by mechanics into the congested dry well. Compatible replacement parts are becoming scarcer to find and more expensive to acquire. Project includes removal and replacement with a package lift station.



Project Benefits Provides continued reliable service.

Impacts of Not Completing Project Increased risk of overflow and potential regulatory violation.

Teagarden SS Lift Station Renovation

Impact to Operation Cost Neutral

Detailed Cost **$1,185,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 59%

Project Description

Replace the existing lift station with a wet well package system equipped with submersible pumps, controls, and telemetry. Provide new force main valve vault and appurtenances. Provide quick connect for portable emergency back-up power. Provide bypass cam lock for quick bypass of the lift station. Install VFD's (variable frequency drives). Test existing force main flow.

Project Benefits Provides continued reliable service.

Impacts of Not Completing Project Increased risk of overflow and potential regulatory violation.

Packaged Lift Station Feasibility Review

Impact to Operation Cost Neutral

Detailed Cost **$15,000**

Impact to Maintenance Cost Reduction

Percentile Ranking 58%

Project Description

The Benedict, Sylvan, and Teagarden Lift Stations serve a small customer base and are considered low flow stations. Prior to the planned major rehabilitations, staff will study alternatives including a smaller packaged lift station.

Project Benefits Project may lead to 75% reduction in costs associated with lift station upgrades.

Impacts of Not Completing Project If the project is not completed, the lift station upgrades will be performed as planned - potentially at much higher costs.

General Renewal and Replacement

Impact to Operation Cost Neutral

Detailed Cost **$530,000**
Annually

Impact to Maintenance Cost Neutral

Percentile Ranking 30%

Project Description

Proper maintenance and asset management maintains system reliability and extends the useful life of treatment plant equipment and structures. There are many majore systems requireming regular major maintenance to aintain system reliability and permit compliance. Recommended ongoing maintenance items include:

Plant Electrical Breaker Maintenance and Replacements
SCADA and Plant Network
Roof Maintentance/Reroof
VFD Replacements - Plant
Instrumentation Replacements
Plant Paving Maintenance
Gate and Valve Replacement
Solar Drying Bed Maintenance
Plant Security
Treatment Wetland Maintenance

Project Benefits General renewal and replacement items help improve the longevity, reliability and security of existing assets and help plan for ongoing capital maintenance.

Impacts of Not Completing Project Failure to complete these projects will over time lead to increased capital costs from accelerated wear, corrosion, equipment downtime, and permit violations.

Plant Painting

Impact to Operation Cost Neutral

Detailed Cost **$150,000**
Bi-Annually

Impact to Maintenance Cost Neutral

Percentile Ranking 30%

Project Description

Ongoing coating efforts to protect and extend the remaining useful life of plant assets.

Project Benefits

The project helps project a professional appearance and extends the life of existing treatment plant assets.

Impacts of Not Completing Project

Over time, neglecting plant coatings will accelerate corrosion and shorten the life of existing structures, equipment and piping.

Electrical Maintenance Building Rehabilitation

Impact to Operation Cost Neutral

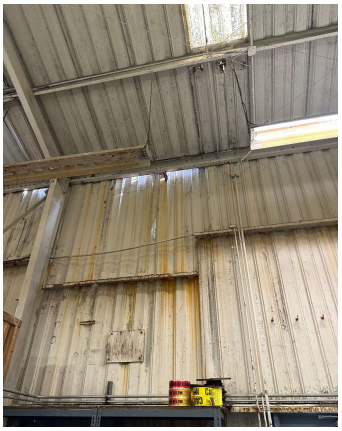
Detailed Cost **$90,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 30%

Project Description

The electrical maintenance building is in poor condition and requires new roof and wall panels as well as a new lighting and space heater.



Project Benefits The electrical building rehabilitation will extend the life of an existing building for another 20 years+.

Impacts of Not Completing Project If the project is not completed, building wear is expected to accelerate to the point the the building will require complete replacement.

Sea Rise Adaptation Study

Impact to Operation Cost Neutral

Detailed Cost **$75,000**

Impact to Maintenance Cost Neutral

Percentile Ranking 95%

Project Description

By design, the treatment plant is located in a low lying elevation within the City. The treatment plant is also a high value asset and is expected to be protected from sea rise in its existing location. The Sea Rise Adaptation Study will identify current vulnerabilites and recommendations to adapt to rising ocean levels over time.

Project Benefits

The project will help identify areas vulnerable to sea rise and provide a plan to mitigate the identified risks.

Impacts of Not Completing Project

A lack of an adaption plan limits opportunities to transition over time. An early plan may allow adaptation on the same time scale as existing plant life (ie 50 years).

CIP Program Management

Impact to Operation Cost Neutral

Detailed Cost **$200,000** Annually

Impact to Maintenance Cost Neutral

Percentile Ranking 77%

Project Description

The treatment plant has no dedicated project engineer to complete planned projects. As a result, the backlog of project work has grown. The planned budget will allow resources to plan, organize, monitor the implementation of the CIP. The planned budget is also expected to allow time for project6 management of larger efforts and to design, bid, and manage smaller projects in the CIP program. Staff or consulting time to manage CIP Program.

Project Benefits

For the past several years, staffing resources have not been available to complete the planned CIP work. The proposed amount allocates funding for part time/consulting support to manage the CIP implementation. The City will benefit by not hiring a full time employee and can adjust the level of support as needed.

Impacts of Not Completing Project

Without additional resources, the backlog of projects will continue to grow and the risk of accelerated deterioration and/or critical outage will increase.

Budgeted Contingency (10%)

Impact to Operation Cost NA

Detailed Cost **$1,502,700**

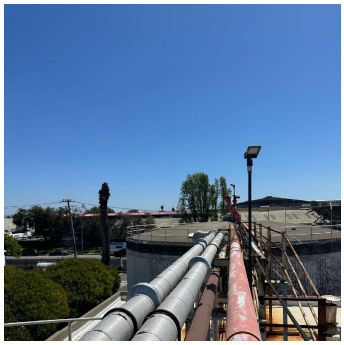
Varies Annually

Impact to Maintenance Cost NA

Percentile Ranking

Project Description

Each year, a portion of spending is for unplanned projects. They may include projects designed to address safety concerns, compliance issues, or new efficiency opportunities.



Project Benefits Project allows for uncertainty.

Impacts of Not Completing Project Without the funds, critical repairs or great opportunities may be neglected due to lack of funds.

Appendix 1

10-Year Project List

Appendix 1: 10-Year Project List

Row Labels	Sum of 2024/2!	Sum of 2025/2(	Sum of 2026/2'	Sum of 2027/2(	Sum of 2028/2!	Sum of 2029/3(	Sum of 2030/3:	Sum of 2031/3:	Sum of 2032/3:	Sum of 2033/34
Belt Press Replacement					1,400,000.00					
Belt Press Standby Unit						140,000.00				
Benedict SS Lift Station Renovation							886,000.00			
Beneficial Biogas Reuse		65,000.00								
Blower Swing Unit						600,000.00				
Boiler Predesign and Permit Coordination		30,000.00								
Boiler Replacement			180,000.00							
Boiler Room Valve Replacements			110,000.00							
Broadmore Area Sewer Pipe Rehabilitation -		1,300,000.00								
Budgeted Contingency (10%)	998,200.00	1,987,700.00	881,500.00	765,000.00	717,000.00	521,000.00	826,400.00	494,000.00	517,000.00	611,000.00
Concrete Assessment/Inspection Report							80,000.00			
Concrete Renewal	350,000.00	300,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00
Davis St San Sewer Manhole & Pipe Rehab	2,500,000.00									
Demo Old FFR	50,000.00	2,250,000.00								
Diffuser Replacement										
Digester No. 1 and 2 Cleaning	150,000.00									
Digester No. 1 and 2 Piping Replacement		800,000.00								
Digester No. 1 Assessment	30,000.00									
Digester No. 1 Cover Rehabilitation			340,000.00							
Digester No. 2 Assessment		30,000.00								
Digester No. 2 Cover Rehabilitation			340,000.00							
Digester No. 3 Assessment		30,000.00								
Digester No. 3 Cover Replacement										
Digester No. 3 Piping Replacement										
Digester No. 4 Assessment										30,000.00
Digester No. 4 Cover Rehabilitation	80,000.00									
Effluent Pump Station Rehabilitation Design		250,000.00								
Effluent Pump Station Rehabilitation Construction			2,600,000.00							
Effluent Pump Station Rehabilitation Pre-design	75,000.00									
Electrical Maintenance Building Rehabilitation		90,000.00								
Huber Rotating Drum Thickener										850,000.00
Hypo Tanks and Piping										250,000.00
Influent Pipeline Inspections	40,000.00					30,000.00				
Merced SS Lift Station		1,117,000.00								
Nature Based Nutrient Treatment Wetland		9,520,000.00								
Nutrient Alternatives Analysis	100,000.00									
Packaged Lift Station Feasibility Review	15,000.00									
Plant Painting			150,000.00		150,000.00		150,000.00		150,000.00	
Polymer System Replacements		100,000.00			100,000.00					
Primary Clarifier No. 1 Rehabilitation										
Primary Clarifier No. 2 Rehabilitation										
Primary Clarifier No. 3 Rehabilitation										
Roediger Rotating Drum Thickener Replacement				650,000.00						
Sea Rise Adaptation Study			75,000.00							
Secondary Clarifier No. 1										
Secondary Clarifier No. 2										
Sidestream Alternatives Analysis		60,000.00								
Sidestream Implementation					2,500,000.00					
SS Replacement	-	890,000.00	2,024,800.00	2,190,000.00	2,190,000.00	2,190,000.00	2,190,000.00	2,190,000.00	2,190,000.00	2,190,000.00
Storage Building Rehabilitation	500,000.00									
Sylvan SS Lift Station Renovation							883,000.00			
Teagarden SS Lift Station Renovation							1,185,000.00			
Westbay Easement Pipe Rehabilitation			165,200.00							
Wet Weather Flow Monitoring			60,000.00		60,000.00		60,000.00		60,000.00	
Nutrient Optimiziation	2,000,000.00	2,000,000.00	2,000,000.00	2,000,000.00		1,500,000.00	2,000,000.00	2,000,000.00	2,000,000.00	2,000,000.00
Solar Biosolids Dryer				2,000,000.00						
Valley Service Area reconnection	50,000.00									
Bermuda and Neptune drainage area flow modeling		60,000.00								
Aeration Basin Piping and Concrete Rehabilitation		350,000.00								
Energy Efficiency and Resiliency Project (Climatec)	3,222,000.00									
Energy Efficiency and Resiliency Projects	150,000.00									
Cathodic protection	50,000.00									
General Renewal and Replacement	420,000.00	435,000.00	470,000.00	510,000.00	470,000.00	450,000.00	530,000.00	450,000.00	470,000.00	490,000.00
CIP Program Management	200,000.00	200,000.00	200,000.00	200,000.00	200,000.00	200,000.00	200,000.00	200,000.00	200,000.00	200,000.00
Grand Total	**10,980,200.00**	**21,864,700.00**	**9,696,500.00**	**8,415,000.00**	**7,887,000.00**	**5,731,000.00**	**9,090,400.00**	**5,434,000.00**	**5,687,000.00**	**6,721,000.00**

Appendix 2

Details of Project Scoring

Appendix 2: Summary of Project Scores, Weighted Score, and Percentile Ranking

Project Name	*Fiscal Impact*	*Economic Development Benefit*	*Liability, Risk, Public Health and Safety*	*Protection of Existing Facilities and Lifespan*	*Quality of Life*	*Equity/ Population Served*	*Environmental Benefit*	*External or Internal Mandate*	*One Time Funding Leverage*	*Weighted Score*	*Weighted Score Percentile Rank*
Plant Electrical Breaker Maintenance and Replacements	2	1	3	2	0	3	1	2	0	1.12	91%
Coating Inspections	2	1	2	2	0	3	1	1	0	0.92	39%
Plant Painting	2	1	2	2	0	3	1	1	0	0.92	39%
SCADA and Plant Network	2	1	2	1	0	3	1	2	0	0.82	30%
Roof Maintentance/Reroof	2	1	2	2	0	3	1	1	0	0.92	39%
VFD Replacements - Plant	2	1	2	1	0	3	1	1	0	0.77	27%
Instrumentation Replacements	2	1	2	1	0	3	1	2	0	0.82	30%
Electrical Maintenance Building Rehabilitation	2	1	2	1	0	3	1	2	0	0.82	30%
Plant Paving Maintenance	2	1	1	1	0	3	1	1	0	0.62	3%
Gate and Valve Replacement	2	1	1	1	0	3	1	2	0	0.67	9%
Solar Drying Bed Maintenance	2	1	1	1	0	3	1	2	0	0.67	9%
Sea Rise Adaptation Study	2	1	3	2	0	3	2	2	0	1.15	95%
Plant Security	2	1	3	2	0	3	1	1	0	1.07	81%
Nutrient Alternatives Analysis	3	1	3	1	0	3	3	3	0	1.17	97%
CIP Program Management	2	1	2	2	0	3	2	2	0	1.00	77%
Sidestream Alternatives Analysis	3	1	3	1	0	3	3	3	0	1.17	97%
Nutrient Optimization	0	1	3	1	0	3	3	3	0	0.87	36%
Nature Based Nutrient Treatment Wetland	1	1	2	1	0	3	3	2	3	1.07	80%
Treatment Wetland Maintenance	1	0	2	2	1	3	2	1	0	0.90	38%
Sidestream Implementation	1	1	3	0	0	3	2	2	0	0.75	22%
Concrete Assessment/Inspection Report	2	1	3	2	0	3	1	1	0	1.07	81%
Concrete Renewal	2	1	3	2	0	3	1	1	0	1.07	81%
Influent Pipeline Inspections	2	1	3	2	0	3	2	2	0	1.15	95%
Ongoing Pump Renewal	2	1	2	0	0	3	1	2	0	0.67	9%
Develop Plan and Perform Comprehensive Sampling on FFR	2	1	2	0	0	3	1	3	0	0.72	20%
Demo Old FFR	2	1	2	0	1	3	1	3	0	0.82	30%
Diffuser Replacement	2	1	2	1	0	3	1	2	0	0.82	30%
Blower Swing Unit	2	1	2	1	0	3	1	2	0	0.82	30%
Piping and Concrete Rehabilitation	2	1	2	2	0	3	1	2	0	0.97	58%
Primary Clarifier No. 1 Rehabilitation	2	1	2	2	0	3	1	2	0	0.97	58%
Primary Clarifier No. 2 Rehabilitation	2	1	2	2	0	3	1	2	0	0.97	58%
Primary Clarifier No. 3 Rehabilitation	2	1	2	2	0	3	1	2	0	0.97	58%
Secondary Clarifier No. 1	2	1	2	2	0	3	1	2	0	0.97	58%
Secondary Clarifier No. 2	2	1	2	2	0	3	1	2	0	0.97	58%
Effluent Pump Station Rehabilitation Pre-design	2	1	3	2	0	3	1	2	0	1.12	91%
Effluent Pump Station Rehabilitation Design	2	1	3	2	0	3	1	2	0	1.12	91%
Effluent Pump Station Rehabilitation Construction	3	1	3	2	0	3	1	3	0	1.27	100%
Hypo Tanks and Piping	2	1	1	1	0	3	1	2	0	0.67	9%
Hypo Feed Pump - Ongoing Repair/Replacements	2	1	1	1	0	3	1	2	0	0.67	9%
Chlorine Analyzers	2	1	1	1	0	3		3	0	0.70	19%
Storage Building Rehabilitation	1	1	0	3	1	3	0	0	0	0.70	18%
Storage Building Assessment and Cost Estimate	2	1	0	3	1	3	0	0	0	0.80	28%
Huber Rotating Drum Thickener	2	1	1	1	0	3	1	1	0	0.62	3%
Roediger Rotating Drum Thickener Replacement	2	1	1	1	0	3	1	1	0	0.62	3%
Polymer System Replacements	2	1	1	1	0	3	1	1	0	0.62	3%
Pump Rebuild	2	1	2	2	0	3	1	2	0	0.97	58%
Belt Press Overhaul	3	1	2	2	0	3	1	1	0	1.02	78%
Belt Press Replacement	2	1	2	2	0	3	1	1	0	0.92	39%
Belt Press Standby Unit	2	1	2	2	0	3	1	1	0	0.92	39%
Solar Biosolids Dryer	2	1	1	0	0	3	1	0	0	0.42	0%
Energy Efficiency and Resiliency Project	2	1	1	1	0	3	2	0	1	0.70	16%
Digester No. 1 and 2 Cleaning	2	1	2	2	0	3	1	1	0	0.92	39%
Digester No. 1 Assessment	2	1	2	2	0	3	1	1	0	0.92	39%
Teagarden SS Lift Station Renovation	2	1	2	2	0	3	1	2	0	0.97	58%
Packaged Lift Station Feasibility Review	2	1	2	2	0	3	1	2	0	0.97	58%

Appendix 3

5 Year Project List

Appendix 3: 5-Year Project List

Row Labels	Sum of 2024/25	Sum of 2025/26	Sum of 2026/27	Sum of 2027/28	Sum of 2028/29
Belt Press Replacement					1,400,000.00
Belt Press Standby Unit					
Benedict SS Lift Station Renovation					
Beneficial Biogas Reuse		65,000.00			
Blower Swing Unit					
Boiler Predesign and Permit Coordination		30,000.00			
Boiler Replacement			180,000.00		
Boiler Room Valve Replacements			110,000.00		
Broadmore Area Sewer Pipe Rehabilitation -		1,300,000.00			
Budgeted Contingency (10%)	998,200.00	1,987,700.00	881,500.00	765,000.00	717,000.00
Concrete Assessment/Inspection Report					
Concrete Renewal	350,000.00	300,000.00	100,000.00	100,000.00	100,000.00
Davis St San Sewer Manhole & Pipe Rehab	2,500,000.00				
Demo Old FFR	50,000.00	2,250,000.00			
Diffuser Replacement					
Digester No. 1 and 2 Cleaning	150,000.00				
Digester No. 1 and 2 Piping Replacement		800,000.00			
Digester No. 1 Assessment	30,000.00				
Digester No. 1 Cover Rehabilitation			340,000.00		
Digester No. 2 Assessment		30,000.00			
Digester No. 2 Cover Rehabilitation			340,000.00		
Digester No. 3 Assessment		30,000.00			
Digester No. 3 Cover Replacement					
Digester No. 3 Piping Replacement					
Digester No. 4 Assessment					
Digester No. 4 Cover Rehabilitation	80,000.00				
Effluent Pump Station Rehabilitation Design		250,000.00			
Effluent Pump Station Rehabilitation Construction			2,600,000.00		
Effluent Pump Station Rehabilitation Pre-design	75,000.00				
Electrical Maintenance Building Rehabilitation		90,000.00			
Huber Rotating Drum Thickener					
Hypo Tanks and Piping					
Influent Pipeline Inspections	40,000.00				
Merced SS Lift Station		1,117,000.00			
Nature Based Nutrient Treatment Wetland		9,520,000.00			
Nutrient Alternatives Analysis	100,000.00				
Packaged Lift Station Feasibility Review	15,000.00				
Plant Painting			150,000.00		150,000.00
Polymer System Replacements		100,000.00			100,000.00
Primary Clarifier No. 1 Rehabilitation					
Primary Clarifier No. 2 Rehabilitation					
Primary Clarifier No. 3 Rehabilitation					
Roediger Rotating Drum Thickener Replacement				650,000.00	
Sea Rise Adaptation Study			75,000.00		
Secondary Clarifier No. 1					
Secondary Clarifier No. 2					
Sidestream Alternatives Analysis		60,000.00			
Sidestream Implementation					2,500,000.00
SS Replacement	-	890,000.00	2,024,800.00	2,190,000.00	2,190,000.00
Storage Building Rehabilitation	500,000.00				
Sylvan SS Lift Station Renovation					
Teagarden SS Lift Station Renovation					
Westbay Easement Pipe Rehabilitation			165,200.00		
Wet Weather Flow Monitoring			60,000.00		60,000.00
(blank)					
Nutrient Optimiziation	2,000,000.00	2,000,000.00	2,000,000.00	2,000,000.00	
Solar Biosolids Dryer				2,000,000.00	
Valley Service Area reconnection	50,000.00				
Bermuda and Neptune drainage area flow modeling		60,000.00			
Aeration Basin Piping and Concrete Rehabilitation		350,000.00			
Develop Plan and Perform Comprehensive Sampling on Old FFR Media					
Energy Efficiency and Resiliciency Project	3,222,000.00				
Energy efficiency and Resiliciency Projects	150,000.00				
Cathodic protection	50,000.00				
General Renewal and Replacement	420,000.00	435,000.00	470,000.00	510,000.00	470,000.00
Asset					
CIP Program Management	200,000.00	200,000.00	200,000.00	200,000.00	200,000.00
Grand Total	**10,980,200.00**	**21,864,700.00**	**9,696,500.00**	**8,415,000.00**	**7,887,000.00**