

# Goleta Water District

## Infrastructure Improvement Plan 2015-2020



Amended May 2019

## **Goleta Water District**

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## Executive Summary - Safeguarding Today While Preparing for the Future

Ensuring that enough water will always be available for drinking, health and human safety needs has been a driving force throughout the District's 70 plus year history. The Infrastructure Improvement Plan 2015-2020 (IIP) builds upon the investments that District ratepayers have made by providing a portfolio of capital projects designed to implement the goals set forth by the Board of Directors in the District's Water Supply Management Plan, Urban Water Management Plan and Sustainability Plan.

The uncertainty facing the District's traditional water supply portfolio has accelerated the adoption of this new IIP by a year. Accordingly, this plan shows how the District will adeptly build, maintain and manage the assets needed to produce, treat and distribute water all while keeping costs as low as feasible. As portions of the District's infrastructure are well over 50 years old, the IIP provides for rehabilitation or complete replacement of facilities and equipment that have significantly aged or no longer meet current standards and regulations. The IIP also details how the District will protect, monitor and replenish our water supply sources to ensure that customer demand can be met now and into the future.

The IIP begins with an Overview to provide background information, including a description of the methodology used to identify and prioritize projects. Section 1 of the IIP lists 40 projects planned for 2015-2020 that facilitate significant enhancement of the District's groundwater extraction and aquifer storage systems as well as upgrades to the broader water distribution and treatment systems. The first 33 of these projects are Regulatory Requirement or Critical Need Projects. The seven remaining projects in Section 1 are categorized as Vital to Sustain Infrastructure and have been included as they ranked highest in an objective evaluation process for their ability to ensure service reliability, increase operational flexibility, or reduce ongoing costs. The IIP was originally adopted on March 10, 2015, and is amended by the Board annually. The latest amendment was in May 2019, bringing the estimated total cost to deliver 40 projects to \$26,987,955.

Section 2 of the IIP details a range of non-critical Appendix projects, that while not funded, are intended to support the integrity of the District infrastructure in the coming decades as the current portfolio of assets continue to age. Several of the Appendix projects are "shovel-ready" candidates to receive grant funding or would generate revenue for the District.

The combined projects, priorities and related funding needs described in the 2015-2020 IIP provide the capital investment necessary to manage the District's asset portfolio to meet the demands of the District's customers. Especially in the face of a dynamically changing water supply and water quality, and to ensure that funds invested in capital projects are spent wisely, the IIP also provides the District flexibility to reevaluate and reprioritize projects on an annual basis.

## INFRASTRUCTURE IMPROVEMENT PLAN (IIP) OVERVIEW

### 1.1 Introduction

The Infrastructure Improvement Plan (IIP) serves as a tool for describing, analyzing, prioritizing and scheduling the District's infrastructure and preventative maintenance needs. The IIP takes into account the need to meet changing regulatory standards and sustain vital infrastructure, while addressing evolving water supply and production reliability projects. IIP Projects are ranked and evaluated systematically, with the final list of projects representing the minimal level of investment necessary to meet the District's mission to deliver an adequate supply of water to customers. Since the IIP is designed to be a dynamic planning tool, the prioritization of projects may shift over time in response to changing external conditions.

The District's previous IIP covered the timeframe from 2011-2016. Due to the water supply challenges presented by the current drought, and the changing infrastructure needs necessitated by the shift to groundwater as a significant source of the District's water supply, the new IIP has been moved up by a year to cover 2015-2020.

This IIP is divided into four sections:

1. Overview – Infrastructure Improvement Plan Overview
2. Section I – 5-Year Proposed Infrastructure Improvement Projects
3. Section II – Appendix of Projects for Future Consideration
4. Section III – Appendix of Revenue Generating Projects

### 1.2 Background

The projects included in the IIP represent the minimal level of investment necessary to continue to meet regulatory requirements and critical needs, and sustain vital infrastructure. The IIP evaluates whether or not a project is critical, its need relative to other projects, and its cost and schedule in an effort to manage resources and balance capital investment.

### 1.3 Purpose

This IIP has been prepared to identify the District's infrastructure improvement needs, and to budget for and schedule the required improvements for the next five years. Unusual and unforeseen events such as main breaks and sudden failures of equipment are not included in the Infrastructure Improvement Plan. For public agencies such as the District, costs associated with these types of unusual and unforeseen events are typically funded by the agency's reserves.

The IIP is intended to serve many purposes:

1. Long Range Capital Planning Document

As a long-range capital planning document, the IIP describes the key infrastructure improvement needs for the next 5 years and also lists additional projects that should be re-evaluated on a regular basis. Despite abundant infrastructure needs, the goal of the IIP is to identify only the most critical projects.

2. Cost of Service Study and Rate Analysis

The capital needs of the District identified in the IIP provide an overview of infrastructure projects, their needs, expenses and scheduling. These numbers will be used to inform the rate setting process.

### 3. Budget Development

The annual District budget authorizes funds for maintenance and infrastructure improvement, with priority based on the ranking and prioritization of projects in the IIP. The new IIP will inform the capital spending portion of the FY 2015-2020 budgets.

### 4. Communication to the Public

The IIP serves as a way to effectively communicate the range of infrastructure and maintenance needs of the District to the public, thereby providing a transparent way to summarize the state of the District's assets and anticipated challenges that affect the budgetary needs and resulting levels of service that can be provided to the community.

## 1.4 Project Evaluation Methodology to Prioritize Infrastructure Improvement Projects

In order to evaluate projects systematically, the District designed an evaluation matrix to identify top priority projects based on an initial screening and project scoring. Various criteria were used to compare and evaluate projects against one another. Staff compiled a comprehensive list of proposed projects and listed these projects within the evaluation matrix spreadsheet. The proposed projects were then evaluated in four steps as described below.

### Step 1

An initial screening of projects was accomplished in Step 1 by answering "Yes" or "No" to four key questions.

1. Is there a regulatory requirement or agency-driven need for the project? (Yes or No).
2. Is there a critical need for the project? (Yes or No).
3. Is the project vital to sustaining infrastructure? (Yes or No).
4. Does the project generate revenue? (Yes or No).

If there is a particular regulatory requirement or critical need for the project, it is given top priority. These top-priority projects are identified as "Regulatory and Critical." These projects must move forward for implementation and funding in the 5-year time frame. Therefore, scoring of these projects was not necessary.

"Regulatory" projects fall under two categories. The first category consists of projects subject to the requirements of federal, state or local regulatory agencies, with noncompliance resulting in fines or other adverse actions. The second category involves the action of another government agency impacting a District facility where the jurisdictional authority of the other agency is superior to that of the District. For example, the County of Santa Barbara has jurisdiction over road rights-of-way, street improvements and storm drain improvements within Santa Barbara County. If the County is constructing a new storm drain and District facilities are impacted, the County has superior jurisdictional authority to that of the District, and the impacted District facilities must be relocated at District expense to comply with that authority.

A "Critical Need" project involves a water-related facility or a piece of equipment that has failed, or has a greater than 50% probability of failure within one year. This failure would result in one of the following consequences:

- Diminished service levels.
- Placing the water operations in jeopardy of non-compliance with a regulated standard.
- Personal injury.
- Property damage.

Drought-related projects may be Regulatory, or Critical, depending on whether drought conditions are affecting water quality, triggering regulatory issues, or whether shifting water supplies require enhanced capacity and expanded maintenance or rehabilitation of equipment.

**Step 2**

All other projects that do not qualify as an Regulatory or Critical Need projects were evaluated, and the highest scoring projects were considered the most important and prioritized accordingly. These projects are vital to the sustained operations of the District, but do not fall within the categories as defined above.

Projects that are not considered Regulatory or Critical Need are scored based on “evaluation criteria.” The most relevant evaluation criteria are identified and utilized in the matrix. In this case, the following evaluation criteria are utilized:

- Reliability of Service
- O&M Impact
- Employee Health & Safety Upgrade
- Size of Population Benefited
- Depreciable Service Life of Facility
- Resource Conservation
- Co-Funding Potential

The evaluation criteria are given “weighting factors” to assign more weight to those criteria that are considered more important. The weighting factors for the seven evaluation criteria are not equal. The seven criteria are divided into three groups with a common weighting factor applied to the criteria in each group. The common weighting factor applied to the criteria in each group is assigned based on that criteria group’s overall importance to water facilities operation and to the provision of water service to our customers. The three distinct groups are listed below in order of importance.

- **Reliability of Service; Employee Health & Safety Upgrade; Size of Population Benefited.** This is the highest priority group, with an assigned weighting factor of 9. This group of criteria directly affects the District’s customers, the general community, or District employees’ health and safety.
- **O&M Impact; Resource Conservation; Co-Funding Potential.** This is the middle priority group, with an assigned weighting factor of 6.5. This group of criteria has a financial effect on the cost benefit of the project, additional cost savings, or cost to fund resource conservation efforts. Therefore, these three criteria were assigned the same weighting factor.
- **Depreciable Service Life of Facility.** This is the lowest priority criterion, with an assigned weighting factor of 3.5. This criterion is based on the age of the facility only and evaluated on the number of years that the particular facility has exceeded its depreciable life. Once an asset has been in useful operation beyond its depreciable useful life, it has a potential for sudden failure. Therefore, even though an asset is operating satisfactorily, due to the potential for age-based failure, this criterion is included as an additional justification of a project’s importance.

**Description of Scoring Parameters**

Projects were scored on a scale from 0 to 3 for each of the evaluation criteria. The scoring parameters are described below.

- Reliability of Service:**
- Improves reliability of service to population of over 20,000 = 3
  - Improves reliability to population of 2,000 to 20,000 = 2
  - Improves reliability to population less than 2,000 = 1

- O&M Impact:**
- Reduces non-labor cost associated by more than \$20K/yr = 3
  - Reduces non-labor cost between \$10K and \$20K/yr = 2
  - Reduces non-labor cost between \$5K and \$10K/yr = 1
  - Reduces non-labor cost less than \$5K/yr = 0

**Employee Health & Safety Upgrade:**

- Provides OSHA recommended health & safety upgrades = 3
- Provides upgrades recommended by the District Safety Committee = 2
- Provides desirable upgrades = 1
- Provides no upgrade related to worker health & safety = 0

**Size of Population Benefited:**

- Benefits a population of over 20,000 = 3
- Benefits a population of 2,000 to 20,000 = 2
- Benefits a population less than 2,000 = 1

**Depreciable Service Life of Facility:**

- Replaces facility that has reached this point in its depreciable life:
- greater than 200% = 3
  - by 150% to 200% = 2
  - by 100% to 150% = 1
  - If facility is less than depreciable life = 0

**Resource Conservation:**

- High conservation of water and power = 3
- Moderate conservation of water or power = 2
- Other environmental benefit = 1
- Provides no resource conservation benefit = 0

**Co-Funding Potential:**

- Reasonable potential for co-funding:
- Over \$100K = 3
  - Between \$50K and \$100K = 2
  - Between \$10K and \$50K = 1
  - Less than \$10K = 0

**Discretionary:**

- Up to a maximum of 25 points that can be added to any project’s total score based on the below criteria that has not been completely reflected in the formal scoring criteria developed:
- Critical timing of the project
  - Magnitude of risk or benefits that the project addresses or obtains
  - Important information obtained from the project that assists in the development of future projects
  - Other critical aspects that a particular project’s score does not reflect

For a given project and evaluation criteria, the individual score is multiplied by the weighting factor to arrive at the “weighted score.” The weighting factors yield a higher weighted score for those criteria that are considered more important, and a lower weighted score for those criteria that are considered less important. For each project in the matrix, the weighted scores for each criterion are then added up to arrive at the “Total Score” for the project. The maximum Total Score is 150. A higher score indicates a higher priority for implementation.

Projects receiving a score of 80 or greater were considered for implementation and funding in the IIP. The remaining projects scoring less than 80 were not recommended for implementation within the next five years due to budget constraints. Therefore, the Project Descriptions and Cost Estimates for these projects have been moved to the Appendix of the IIP document, and will be considered in the future.

**Step 3**

In this final step, project cost is considered. Individual project costs are estimated and listed. Estimated project costs include engineering, final design, construction, construction management, and a contingency, as applicable. Project costs for these top priority and top scoring projects were totaled, and an IIP was developed. The IIP creates a schedule for implementing the top priority projects, and establishes approximate expenditures for the next five years.

Table 1 provides the scoring for each of the projects that received a score of 80 or higher.

**1.5 Funding**

**Capitalization Policy**

The District capitalizes assets that have an expected useful life of more than one year and a value of \$5,000 or more. Exceptions to this may include certain office equipment, which may be valued at less than \$5,000, but that has a useful life of considerably more than one year.

Expenditures on existing assets (amounts added to the carrying amount of the asset) must be capitalized when they improve the condition of the asset beyond its originally assessed standard of performance or capacity. This can occur through an increase in the annual service capacity provided by the asset, or increasing the useful life of the asset.

Expenditures that do not meet the above criteria or merely restore the asset to its original function must be expensed as repairs and maintenance when incurred.

Capital assets are acquired and/or constructed and capitalized at historical cost. Donated assets are recorded at estimated fair market value at the date of donation. Upon retirement or other disposition of capital assets, the cost and related accumulated depreciation are removed from the respective balances and any gains or losses are recognized. Depreciation is recorded on a straight-line basis over the estimated useful lives of the assets as follows:

- Transmission and distribution system      20-50 years
- Recycled water system                              33 1/3 years
- Water treatment plant/equipment              10-30 years
- Wells    25 years
- Pumping equipment                                 25 years
- Structures and improvements                    15-50 years
- Other plant and equipment                      5-25 years
- Capitalized interest                                50 years

**1.6 Cost Estimates**

Cost estimates have been prepared for all projects within the IIP. The central aspect of each cost estimate is an estimate of the construction cost for the project. As a project moves forward from the conceptual phase to the study/preliminary engineering phase, through final design and then into construction, more becomes known about the project and its costs.

For some of the projects identified in the IIP, planning and design work may already be underway (i.e., some preliminary engineering or final design work has been completed). For these projects, more is known about the scope of the project and cost estimates are more detailed and include less contingency. However, many projects identified in the IIP are in the conceptual phase. For these projects, the cost estimates are less detailed and contain greater contingency.

District project management includes oversight of staff when the engineering work is performed in-house, as well as consultant oversight when consultants are used to provide engineering and other professional services. Project management tasks typically involve staff within the Operations and Engineering Departments unless specialized expertise is needed.

District construction management, testing and inspection includes oversight of construction contractors performing the construction of District infrastructure improvements. These costs generally range from 10% to 20% of the construction cost.

### 1.7 Overview of Capital Requirements

The tables and charts in this section provide an overview of the proposed capital requirements.

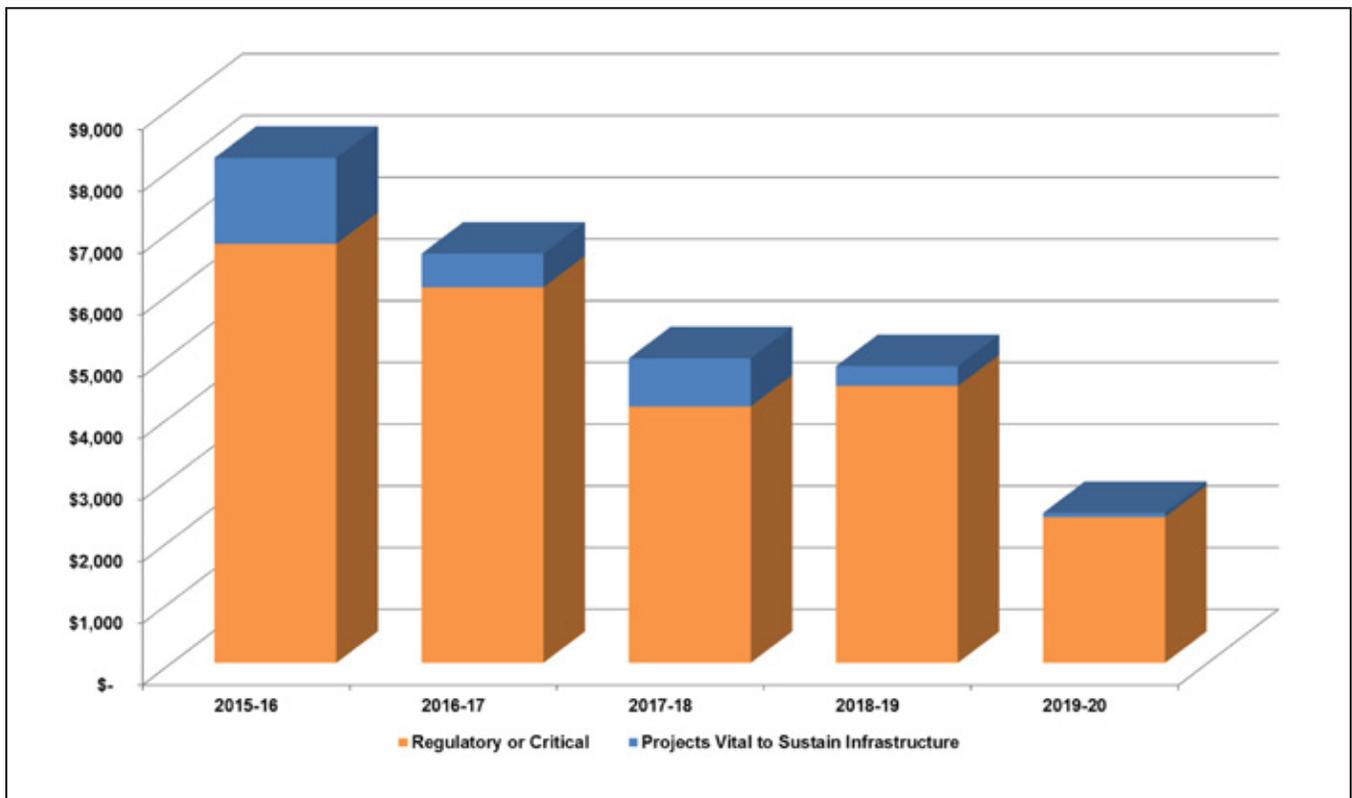
Table 1 and Chart 1 provide a view of the Total 5-Year Capital Requirements by Evaluation Category and Total 5-Year Capital Spending Schedule.

Table 2 and Chart 2 provide the Capital Improvement Plan, 5-Year Spending by Infrastructure Type.

**Table 1: Total 5-Year Capital Requirements by Evaluation Category**

Group Description		2015-16	2016-17	2017-18	2018-19	2019-20	TOTAL
1	Regulatory or Critical	\$6,789,244	\$6,085,981	\$4,154,086	\$4,484,972	\$2,363,968	\$23,878,251
2	Projects Vital to Sustain Infrastructure	\$1,393,581	\$546,733	\$780,790	\$323,100	\$65,500	\$3,109,704
<b>TOTAL</b>		<b>\$8,182,825</b>	<b>\$6,632,714</b>	<b>\$4,934,876</b>	<b>\$4,808,072</b>	<b>\$2,429,468</b>	<b>\$26,987,955</b>

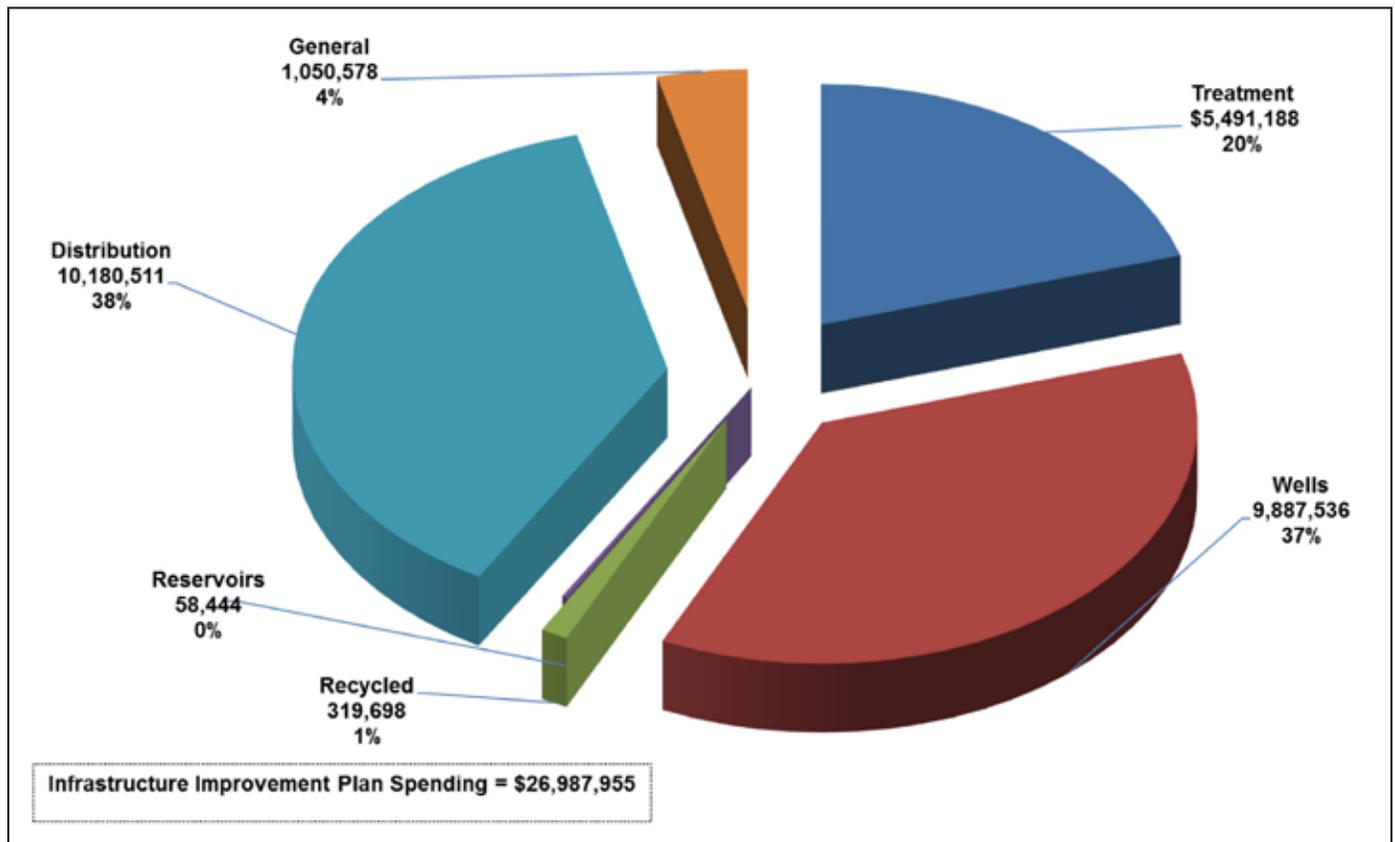
**Chart 1: Total 5-Year Capital Requirements and Spending Schedule**



**Table 2: Capital Improvement Plan, 5-Year Spending by Infrastructure Type**

Infrastructure	2015-16	2016-17	2017-18	2018-19	2019-20	TOTAL
Treatment	\$1,150,392	\$773,115	\$1,086,437	\$1,850,622	\$630,622	\$5,491,188
Wells	\$4,381,225	\$3,723,472	\$1,212,839	\$475,000	\$95,000	\$9,887,536
Recycled	\$166,470	\$68,415	\$47,813	\$37,000	-	\$319,698
Reservoirs	-	-	\$58,444	-	-	\$58,444
Distribution	\$2,320,826	\$1,748,927	\$2,379,614	\$2,196,892	\$1,534,252	\$10,180,511
General	\$163,912	\$318,785	\$149,729	\$248,558	\$169,594	\$1,050,578
<b>TOTAL</b>	<b>\$8,182,825</b>	<b>\$6,632,714</b>	<b>\$4,934,876</b>	<b>\$4,808,072</b>	<b>\$2,429,468</b>	<b>\$26,987,955</b>

**Chart 2: Capital Improvement Plan, 5-Year Spending by Infrastructure Type**



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**Table 3: IIP 2015-2020 Matrix - Regulatory Requirement or Critical Need Projects**

Ref.	Project Name	2015-16	2016-17	2017-18	2018-19	2019-20	TOTAL 5 year spend	Completion Status
<b>Regulatory Requirement or Critical Need Projects</b>								
G1-1	CDMWTP Sand Replacement in Sludge Drying Bed 2	289,837	-	-	-	-	289,837	Completed
G1-2	CDMWTP Sludge Drying Bed 3 Construction Project	331,956	123,253	-	-	-	455,209	Deferred
G1-3	CDMWTP Access Road Improvements	-	-	-	-	-	-	Deferred
G1-4	CDMWTP Low Flow Process Improvements	513,107	380	-	140,000	-	653,487	In Progress
G1-5	CDMWTP Chemical Tanks Safety Platform	15,492	414,461	16,511	-	-	446,464	Completed
G1-6	Existing Well Treatment and Facilities Upgrades	1,094,267	2,876,579	571,212	95,000	95,000	4,732,058	Ongoing
G1-12	Berkeley Well Rehabilitation Project	1,413,184	335,786	-	-	-	1,748,970	Completed
G1-13	Shirrell Well Rehabilitation Project	1,116,321	285,600	-	-	-	1,401,921	Completed
G1-14	Oak Grove #2 Well Rehabilitation Project	223,197	35,037	-	-	-	258,234	Deferred
G1-15	Santa Barbara Corporation Well Rehabilitation Project	283,127	42,822	-	-	-	325,949	Deferred
G1-16	University Well Iron and Manganese Treatment	184,973	-	2,566	-	-	187,539	Deferred
G1-17	Goleta Sanitary Recycled Water Pump Replacement	-	-	-	-	-	-	Deferred
G1-19	Recycled Water Booster Station Process and Control Upgrades	166,470	16,969	61	-	-	183,500	Completed
G1-20	Hollister Avenue Recycled Water Booster Pump Relocation	-	51,446	47,752	-	-	99,198	Deferred
G1-21	Barger Reservoir Improvements	-	-	58,444	-	-	58,444	Completed
G1-22	Ellwood Reservoir Improvements	-	-	-	-	-	-	Deferred
G1-23	Patterson Booster Pump Station Replacement	96,409	108,281	173,536	750,000	500,000	1,628,226	In Progress
G1-24	Edison Emergency Pump Project	-	-	1,839	125,000	-	126,839	In Progress
G1-25	Van Horne Emergency Pump Project	-	26,648	948	75,000	-	102,596	Ongoing
G1-26	Pump and Motor Replacements	-	-	329,010	39,230	39,230	407,470	Ongoing
G1-27	Electrical Replacements	-	11,151	25,005	64,998	44,994	146,148	Ongoing
G1-28	SCADA Replacements and Upgrades	220,449	467	4,746	49,100	49,100	323,862	Ongoing
G1-29	Water Treatment Equipment Replacements	-	-	-	30,622	30,622	61,244	Ongoing
G1-30	Emergency Main Replacements	100,554	345,320	309,157	202,410	202,410	1,159,851	Ongoing
G1-31	City, County, Caltrans Relocation Required Projects	108,930	176,328	24,605	95,000	230,000	634,863	Ongoing
G1-32	Polybutylene Service Line Emergency Replacements	159,703	27,445	305,993	80,150	80,150	653,441	Ongoing
G1-33	Copper Service Line Replacements	239,853	236,193	113,809	64,116	64,116	718,087	Ongoing
G1-34	Valve and Hydrant Replacements	230,132	210,326	408,527	391,996	391,996	1,632,977	Ongoing
G1-35	Pressure Regulating Valves Replacements	-	142,950	39,733	10,350	10,350	203,383	Ongoing
G1-36	Regulatory Fleet Replacement Program	-	-	-	-	-	-	Deferred
G1-37	Regulatory Construction Equipment Replacement Program	-	-	-	-	-	-	Deferred
G1-38	Stormwater Headquarters Master Plan	1,283	253,496	53,878	10,000	10,000	328,657	Deferred
R-1	Water Quality Maintenance at District Wells	-	15,492	432,708	380,000	-	828,200	In progress
R-2	Water Quality Maintenance at CDMWTP	-	167,458	27,899	870,000	600,000	1,665,357	In progress
R-3	Alternative Water Supply Pilot Project	-	-	-	-	-	-	Deferred
R-4	Aeration Systems at Reservoirs for THM Reduction	-	67,563	1,042,027	810,000	-	1,919,590	In progress
R-5	Ekwill, Fowler, Hollister Infrastructure Relocations	-	114,530	44,881	15,000	16,000	190,411	In progress
R-6	Conditions Assessment of 14 Miles of Critical Transmission Mains	-	-	119,239	150,000	-	269,239	In progress
R-7	Recycled Water Slough Crossing Alternative Design Study	-	-	-	37,000	-	37,000	In progress
<b>Total – Regulatory Requirement or Critical Need Projects</b>		<b>\$6,789,244</b>	<b>\$6,085,981</b>	<b>\$4,154,086</b>	<b>\$4,484,972</b>	<b>\$2,363,968</b>	<b>\$23,878,251</b>	

## CDMWTP Sand Replacement in Sludge Drying Bed 2

IIP Group No: G1-1

Project Score: N.A. (Regulatory and Critical)



### Summary

This project will replace the original sand filter bed installed in Sludge Drying Bed 2 (SDB 2). The sand is critical to the sludge drying process, as it separates water from the sludge, producing drier and more suitable organic material for off-site hauling and disposal. The sand also acts as a filter, producing low turbidity water that is returned into the headworks of the Corona Del Mar Water Treatment Plant (CDMWTP). The ability to comply with turbidity standards for the reclaimed water keeps the CDMWTP in compliance with State Water Resources Control Board- Division of Drinking Water (SWRCB-DDW) regulations.

### Background

CDMWTP uses Sludge Drying Beds (SDBs), a simple, low cost method, to dewater, dry, and store solids removed by the water treatment plant processes. Particles, including microbial contaminants, are removed by gravity in the sedimentation basins, and by filtration in the granular media filters. The organic solid material, referred to as “sludge,” is collected at the bottom of the sedimentation basins and discharged directly into the two existing SDBs. The material that accumulates on the filters is “backwashed” off the filters, discharged to the Backwash Basin (BWB) and, after settling, directed to the SDBs. In the SDBs, the organic material is effectively concentrated and separated from the water that is reclaimed and returned to the headworks of the plant.

The filtering process is accomplished by letting the sludge and solids drain water through the sand and gravel system into the underdrain collection system of the SDB. Water that is collected in the underdrain system is returned to the head of the plant under the same regulations as the BWB water is returned. The returned water must meet the turbidity standard of less than 2.0 Nephelometric Turbidity Units (NTU). Turbidity indicates the presence of suspended solids in the water and is measured through the use of refracted light in water samples.

The drying process occurs when the SDB is placed out of service in late spring and no additional water or material is added to the SDB. The water drains through the sand layer and is returned to the headworks of the plant. The resulting material left on top of the sand is dried throughout the summer by allowing air to circulate through the material as it dries. In early fall the material has dried sufficiently for removal through excavation and hauling to a licensed landfill.

The existing SDB 2 was constructed in 1974 at the time the original plant was built. According to the plant record drawings, an 18-inch sand layer was installed in the original construction, much of which has been removed over the last 40 years of operation through the filtering and dewatering processes.

**Need for Project**

The field evaluation assessing the condition of the underdrain system by the District consultant in 2012 and basic field measurements of the sand layer in SDB 1 by the Staff in 2013 confirmed that the sand layer was up to 12 inches less than the 18-inch sand layer indicated in the original record drawings. Sand has been lost with the annual sludge removals over the 40-year life of the SDB 2 and there is no record of sand replenishment in the SDB 2. Replacing the sand is necessary for proper filtration, and helps the District meet regulatory standards. Additionally, according to operations records improvements to the existing SDBs are necessary to handle high turbidity events.

The increased functionality, efficiency and capacity gained by sand replenishment in SDBs, along with the construction of SDB 3, and construction of the overflow basin will significantly enhance operational flexibility and the ability of the District to remain in compliance with regulations, preclude the need for SWRCB-DDW waivers, and provide an up-to-date processing system.

**Project Description**

The project will include the excavation and disposal of the top 1-2 inches of sand crust, scarify and level remaining sand, using care not to disturb the underlying gravel layer. Vegetation will be cleared along the slopes and top of berm, and any side slopes damaged by vegetation or erosion will be repaired with a 3 to 6 inch layer of shotcrete. The sand layer will be replenished to a minimum 18-inch thickness, with new sand media of recommended grain size and uniformity. Any liner damage encountered will be repaired, and an elevation survey will be done to document the sand level in the SDB 2. Permits will be updated or obtained from the SWRCB-DDW which sets regulations on surface water treatment facilities and water distribution system operations, and the Central Coast Regional Water Quality Control Board (CCRWQCB), which sets regulations on construction of sludge storage facilities and the removal of stored sludge.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 CDMWTP Sand Replacement in Sludge Drying Bed 2	\$289,837
<b>Total Budget:</b>	<b>\$289,837</b>

**Project Schedule**

Engineering: FY 2015-16  
 Construction: FY 2015-16

**Project Status**

Project Status as of May 2019: Completed

## CDMWTP Sludge Drying Bed 3 Construction Project

IIP Group No: G1-2

Project Score: N.A. (Regulatory and Critical)



### Summary

Sludge Drying Bed (SDB) 3 at the Corona Del Mar Water Treatment Plant (CDMWTP) was previously rough graded, but not completed due to budgetary constraints. Construction of a third SDB will improve the plant's immediate operational flexibility and increase the efficiency of the sludge handling and drying processes. The added storage and operational capacity will allow continuous operation of two SDB's while the third SDB is out of service during the peak summer months to allow sufficient time for the sun and the underdrain piping systems to remove water and moisture from the material. Dried material is easier to handle and less costly to haul to a licensed landfill. The need for more storage capacity becomes even more critical during high turbidity events that occur when heavy rainfall greatly increases the turbidity of the water delivered from Lake Cachuma. During high turbidity events, excessive backwash water is discharged into the two existing SDBs from the Backwash Basin. Due to insufficient capacity to adequately filter the water, the turbidity standards of the filtered water that is directed from the SDBs and/or Backwash Basin (return flows) to the head of the plant are difficult to meet. As a result, the District has to request a waiver from State Water Resources Control Board-Division of Drinking Water (SWRCB-DDW) which allows a temporarily exceedance of turbidity standards of the return flows if needed.

### Background

A process design study report that was completed in 2013 identified a number of design options, including a mechanical dewatering process. Based on the preliminary cost estimates, mechanical dewatering was the most expensive with an estimated construction cost of \$2,396,000. The estimated construction costs for conventional design options similar to the design of the exiting SDBs ranged from \$1,000,000 to \$1,157,000. The District selected the more advanced, but least expensive design option. As this design is new to the operations of the CDMWTP sludge drying process and plant personnel, a preliminary pilot study is necessary to accurately define the design parameters prior to construction.

**Need for Project**

Construction of SDB 3 is necessary to meet SWRCB-DDW regulatory requirements during varying source water quality changes and higher flow rates experienced during summer months. The regulations require the turbidity of sludge filtered water and backwash water, when it is returned to the head-works of the CDMWTP, to be less than 2 Nephelometric Turbidity Units (NTU). The CDMWTP is a zero liquid discharge plant. Adequate capacity for sludge handling is necessary to comply with SWRCB-DDW standards during all types of water quality variations and the higher flow rates normally experienced during summer months when one SDB must be out of service during the drying process.

**Project Description**

This project involves completing the construction of SDB 3. Construction includes the excavation and disposal of excess soil to expose the sub-grade below the bed. A sub-drain pipeline system and impermeable bed liner will be installed, with sand filter material and collection pipes above the liner.

Permits will be obtained or updated with SWRCB-DDW, which sets regulations on surface water treatment facilities and water distribution system operations, and the Central Coast Regional Water Quality Control Board (CRWQCB), which sets regulations on construction of sludge storage facilities and the removal of stored sludge.

**Project Budget**

	<b>Total Budget</b>
FY 2016-17 CDMWTP Sludge Drying Bed 3	\$331,956
FY 2017-18 CDMWTP Sludge Drying Bed 3	\$123,253
<b>Total Budget:</b>	<b>\$455,209</b>

**Project Schedule**

Pilot Testing and Basis of Design: FY 2016-17  
 Construction: FY 2017-18

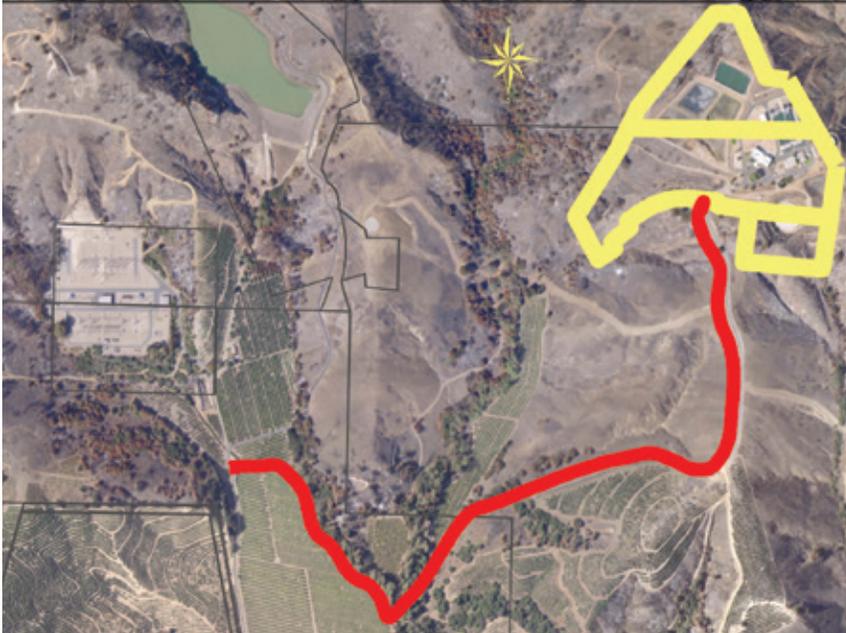
**Project Status**

Project Status as of May 2019: Deferred

## CDMWTP Access Road Improvements

IIP Group No: G1-3

Project Score: N.A. (Regulatory and Critical)



### Summary

This roadway surface improvement project will ensure that the road to the Corona Del Mar Water Treatment Plant (CDMWTP) remains accessible. The access road will be upgraded once all of the remaining major improvement projects are completed at the CDMWTP. The project is scheduled for FY 2019-20.

### Background

The access road is 1.25 miles long, with an average width of approximately 18' (about 119,000 square feet of pavement), and has been damaged over time through normal wear, weather, and other factors. Structural assessment of the main access road indicates that it has significant cracking, but most of the pavement is still in medium to large blocks. This indicates the pavement is holding its integrity over the roadbase and sub-grade that is in fairly good condition. Approximately 1,500-2,000 square feet of the road has failed and must be completely excavated and rebuilt. In minor areas exhibiting "alligator cracking," the base and/or sub-grade beneath the pavement has failed and will need to be replaced.

The access road to the treatment plant travels through a winding, hilly area of the foothills. Due to natural erosion, sliding, and occasional wildfires, there is nearly always a part of the road that is damaged to some extent. CDMWTP staff and large District trucks use the road daily. The road is also used frequently for chemical deliveries. It is critical that emergency crews with large vehicles, such as fire trucks, have reliable permanent access to the Treatment Plant in case of an earthquake or fire.

The main causes of pavement degradation are water infiltrating pavement cracks and heavy trucks deflecting the pavement. The combination of the two over a period of time can greatly accelerate deterioration. Water gets into the base and sub-grade, causing it to lose its integrity. Having lost its foundation, the pavement then deflects and cracks under load. Preventing water infiltration in the sub-grade is critical to maintaining the road. This is why many municipalities try to keep their roads "sealed" between resurfacings, through regular "crack-sealing" and "fog-seal" programs.

**Need for Project**

This project will minimize or prevent unanticipated service disruptions. This is the only access road to the CDMWTP. Keeping this road open and accessible is important because District staff, chemical delivery trucks, and emergency crews use this road to access the plant on a daily basis. Maintaining an acceptable roadway for various sized vehicles is critical to the operation of the CDMWTP.

**Project Description**

The Recycle/Reconstruct operation involves removal of the entire degraded road surface base material, grinding it up, and replacing it to form a solid new base foundation. It is then paved over with 3”to 4” of pavement. This full road reconstruction provides 30 years of service life, assuming routine maintenance and sealing of cracks and surfaces every 3 years.

**Project Budget**

		<b>Total Budget</b>
FY 2019-20 Engineering and Construction		TBD
<b>Total Budget:</b>		<b>TBD</b>

**Project Schedule**

Engineering: TBD  
 Construction: TBD

**Project Status**

Project Status as of May 2019: Deferred

## CDMWTP Low Flow Process Improvements

IIP Group No: G1-4

Project Score: N.A. (Regulatory and Critical)



### Summary

This project consists of modifications to CDMWTP to allow operation at lower flow rates below the original design capacity. These modifications may include either installing a package treatment plant that can process 1 million gallons per day (MGD) or a modified Operating Plan and new controls to provide a smooth transition between low flows and original design flows. The on-going drought emergency has resulted in historically low water levels in the Lake Cachuma and a shift in the District's supply source from surface water to groundwater. As a result, the Corona Del Mar Water Treatment Plant (CDMWTP) is being operated at lower flow rates than flow rates for which the plant was originally designed. At low flow conditions ranging from one to five MGD, the plant hydraulic profile is different, and therefore, the plant needs to be operated differently.

### Background

The CDMWTP is a conventional surface water treatment plant originally designed for continuous operation within a minimum flow rate of 5 MGD and a maximum capacity of 36 MGD. Due to the reduced flows associated with the drought, in 2015 the District installed a new 18-inch flow control valve system at the plant raw water influent line to improve the plant hydraulics during low flow conditions and to allow for operation between 3 MGD and 9 MGD. The new valve system is used to bypass the flow around the existing 54-inch raw water pipeline. However, as the drought has continued, further operational and process modifications are needed in order to automate plant operation at flow rates as low as 1 MGD. Currently, to cope with flow conditions lower than 3 MGD, the plant has to be taken off line and put back online when flows at or above 3 MGD can be sustained. Under these intermittent modes of operation, control of the overall plant hydraulics and meeting the regulatory treatment goals are difficult, and risk of equipment malfunctions is higher.

**Need for Project**

The District’s treatment and distribution system was initially designed with Lake Cachuma as the primary water source. As severe drought conditions have led to the lowest volumetric levels at the lake on record, as well as low demand periods, significantly reduced flows have created operational challenges at the plant. As low influent rates have become the regular operating conditions during the prolonged drought, modifications are needed to keep CDMWTP operating and prevent the plant from frequent shutdowns and associated unforeseen conditions in the distribution system.

**Project Description**

The project consists of design and construction of modifications to CDMWTP to allow operation at rates as low as 1 MGD. Smaller capacity metering pumps, relocation of chemical injection points, and modifications to existing unit processes are needed to process water throughout the plant. In addition, a modified operating logic and Supervisory Control and Data Acquisition (SCADA) programming needs to be developed specifically for low-flow conditions. A modified operating plan is also needed to help operation staff to smoothly transition between the low flow and normal flow conditions. A revised permit with the Division of Drinking Water is also required. Upon completion of this project, the plant personnel will be able to follow the new operating plan and controls to operate the various processes at low flows.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 CDMWTP Low Flow Process Improvements	\$513,107
FY 2016-17 CDMWTP Low Flow Process Improvements	\$380
FY 2018-19 CDMWTP Low Flow Process Improvements	\$140,000
<b>Total Budget:</b>	<b>\$653,487</b>

**Project Schedule**

Engineering: FY 2015-16, FY 2016-17, FY 2017-18

Construction: FY 2018-19

**Project Status**

Project Status as of May 2019: In Progress

## CDMWTP Chemical Tank Safety Platform

IIP Group No: G1-5

Project Score: N.A. (Regulatory and Critical)



### Summary

This project involves construction of permanent work platforms to allow staff to work efficiently and safely above and around the chemical tanks to access hatches, various instrumentation, plumbing, chemical building lighting and the rooftop mounted ventilation equipment. The permanent platforms will better meet Occupational Safety and Health Administration (OSHA) regulations and reduce the potential for injuries.

### Background

The new chemical storage building was constructed at the CDMWTP during the Phase II Upgrades in 2007. The chemical storage tanks, access hatches and ventilation device installed on the building roof require periodic inspection and maintenance. Currently, plant personnel need to install extensive temporary equipment to meet the OSHA regulations for fall protection when performing interior tank inspection and routine equipment maintenance. Setting up temporary equipment is labor intensive, costly and reduces the inspection and maintenance frequencies.

**Need for Project**

Installation of a permanent worker platform to access the tanks and the roof hatch will allow plant personnel to work efficiently above and around the access hatches and tank instrumentation. Permanent worker platforms will better meet the OSHA regulations and are safer.

**Project Description**

Through a competitive bidding process, a qualified contractor will be selected by the District to fabricate and install the worker platforms and an exterior access ladder to the roof with a OSHA compliant tie-off system. The project will include a preconstruction meeting, contractor’s submittals review and approval by the District and the design engineer, an operation sequence while construction work is taking place, construction inspection and construction completion, construction punch list and construction completion per the design plans and technical specifications. The project also includes obtaining or updating the applicable permits from the local regulatory entities.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 CDMWTP Chemical Tanks Safety Platform	\$15,492
FY 2016-17 CDMWTP Chemical Tanks Safety Platform	\$414,461
FY 2017-18 CDMWTP Chemical Tanks Safety Platform	\$16,511
<b>Total Budget:</b>	<b>\$446,464</b>

**Project Schedule**

- Construction: FY 2015-16
- Construction: FY 2016-17
- Construction: FY 2017-18

**Project Status**

Project Status as of May 2019: Completed

## Existing Well Treatment and Facilities Upgrades

IIP Group No: G1-6

Project Score: N.A. (Regulatory and Critical)



### Summary

As groundwater constitutes an increasingly critical part of the District's water supply portfolio, funding of well infrastructure is crucial for providing water to customers. The existing wells are all between 30 and 40 years old, and need capital investment to keep them producing reliably. This project provides funding for increasing capacity, and minimizing unanticipated service disruptions at the existing wells to ensure operational sustainability. The majority of the project budget will be used at the San Marcos Well, with remaining funds used to prepare plans and specs for future well rehabilitation tasks identified in the well master plans.

### Background

The District plans to rehabilitate the San Marcos Well to expand its production capacity to augment the total supply of potable water available to meet customer demand. The San Marcos Well produces approximately 450 gallons per minute (2 AFD) but with the upcoming infrastructure upgrades, an increased production capacity of 450 AFY is anticipated. Minor down-hole well rehabilitation work performed during FY 2015-16 at the San Antonio Well has already increased its production to within 95% of its original design production; therefore, further expenditure of funds initially included under this IIP project to increase production are not deemed to be cost effective. These funds will be rededicated to other tasks identified in the well master plans, including improvements of above grade wellhead improvements at San Antonio and other sites.

**Need for Project**

The San Marcos well is located at the District Headquarters and is drilled to a depth of 1100 feet with perforations beginning at 550 feet. Once rehabilitation is completed, this depth will allow the well to sustain groundwater pumping during drawdown of the groundwater table. Rehabilitation of the San Marcos Well began with a cleaning of the well casing, a new pump and motor, a programmable logic controller, as well as a necessary integration of flow meters into the SCADA system. The well currently complies with all drinking water standards, but will require additional iron and manganese filtration equipment to coincide with the increased production. Analysis and evaluation of the well will also examine the capacity of the well to operate long-term in the face of declining groundwater levels, to inform infrastructure recommendations for reliability during the drought.

**Project Description**

The District has been working closely with engineering consultants who have begun evaluation of the San Marcos Well. Evaluation has included a review of geophysical logs, historical water quality, and existing hydraulic systems. A design-build team will clean the well casing, confirm the integrity of the casing, and perform preliminary engineering work, to be followed by upgrades to the pumping and water treatment equipment, to accommodate declines in the groundwater table and water quality. Infrastructure upgrades are to most likely include:

- Filter re-rating.
- Valves & yard piping.
- Pump replacement.
- Variable frequency drive.
- Replacement of pressure vessels.
- Resizing of the backwash tank in order to ensure efficient treatment.
- Upgrading motor operated valves and flow meters. Coordination with Southern California Edison for transformer upgrades.

The well master plans identify the items for which engineering plans, specifications and estimates (PS&E) are necessary for future rehabilitation construction. The PS&E will be used to prioritize replacements and upgrades to existing wells with remaining funds.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 Existing Well Treatment and Facilities Upgrades	\$1,094,267
FY 2016-17 Existing Well Treatment and Facilities Upgrades	\$2,876,579
FY 2017-18 Existing Well Treatment and Facilities Upgrades	\$571,212
FY 2018-19 Existing Well Treatment and Facilities Upgrades	\$95,000
FY 2019-20 Existing Well Treatment and Facilities Upgrades	\$95,000
<b>Total Budget:</b>	<b>\$4,732,058</b>

**Project Schedule**

Engineering and Construction: FY 2015-16 - FY 2019-20

**Project Status**

Project Status as of May 2019: Ongoing

## Berkeley Well Rehabilitation Project

IIP Group No: G1-12

Project Score: N.A. (Regulatory and Critical)



### Summary

The District plans to rehabilitate Berkeley Well #2 to its maximum production capacity for use during the current drought and as a supplementary emergency backup supply in the future. The well system is in need of significant upgrades partly due to being out of service for over twenty four years, and partly due to a flood which significantly damaged the electrical and treatment systems. Once the well rehabilitation project is complete, the well is anticipated to reliably produce over 700 AFY, making it a key component in the District's water supply system.

### Background

The District owns four small wells and the Berkeley Well #2 is the largest producing groundwater well among the four. Constructed in 1981 at a depth of 300 feet, the well was designed to produce 440 gallons per minute (gpm) or approximately 710 acre-feet per year. The well last operated in 1991 at a declined production capacity of 300 gpm. Historically, the well has experienced iron and manganese levels in excess of the permitted levels. The well has had limited use in the past 20 years and is in need of upgrades to restore the well to reliable operational condition. The District currently has engaged an engineering consultant to assess any water quality or infrastructure constraints at the well site needed to properly design the rehabilitation plan. Upcoming tests will include a temporary pump test, including a 24-hour step drawdown procedure, as well as sampling for a full State Water Resources Control Board - Division of Drinking Water (DDW) water quality analysis. These evaluations will further determine water treatment equipment necessary to meet all DDW standards. A determination will be made on the capacity of the permanent well pump, motor and related treatment equipment.

**Need for Project**

This project will provide increased operational flexibility to access and manage the District’s groundwater supply when other wells are down for periodic maintenance. As of December 31, 2014 the District has 48,000 Acre Feet of water stored within the Central Sub-Basin of the Goleta Groundwater Basin, but pumping capacity of the District’s existing wells is limited to 400 AF per month. The District’s 2010 Groundwater Management Plan recognizes the District’s banking of stored water in the groundwater basin to establish a drought buffer. The ability to extract water from the drought buffer during times of drought is critical to securing the District’s water supply. The Berkley Well will increase the District’s ability to extract groundwater from the groundwater basin and improve the District’s ability to meet water supply requirements during periods of drought, peak demand, and emergencies. The well also has injection capability to assist with groundwater recharge.

**Project Description**

As part of the professional engineering analysis already underway, a technical memorandum will be prepared to prioritize recommended improvements. Budgeted cost estimates will aid in bids for construction and overall rehabilitation planning. Needed site, architectural, structural, electrical, and instrumentation upgrades will be constructed to support recommendations and engineering designs laid out in the anticipated technical memorandum as well as recommended site aesthetics improvements. Potential upgrades for well rehabilitation include:

- New butterfly valves, air vent valves, flow control valves.
- Replacement of chemical feed systems.
- Filter media replacement.
- Magnetic flow meters.
- Well Pump and Motor.
- PLC-driven control panels.
- Motor control rehabilitation/upgrades as necessary.
- Building renovations.

Upon receiving the design-build documents, the District will manage the construction and operation sequence plan to improve the Berkeley Well.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 Berkeley Well Rehabilitation Project	\$1,413,184
FY 2016-17 Berkeley Well Rehabilitation Project	\$335,786
<b>Total Budget:</b>	<b>\$1,748,970</b>

**Project Schedule**

Construction: FY 2015-16, FY 2016-17

**Project Status**

Project Status as of May 2019: Completed

## Shirrell Well Rehabilitation Project

IIP Group No: G1-13

Project Score: N.A. (Regulatory and Critical)



### Summary

The District plans to rehabilitate the Shirrell Well to maximize its production capacity for use during the current drought and as a supplementary emergency backup supply in the future. The well system is in need of significant upgrades partly due to being out of service since the 1990s. Once the rehabilitation project is complete, the well is anticipated to reliably produce over 300 AFY.

### Background

The District owns four small wells with related treatment equipment and facilities on sites that have been inactive for 25 years; the Shirrell Well is the second-largest producing groundwater well among the four. Constructed in 1981 at a depth of 230 feet, the well is designed to produce 225 gallons per minute (gpm) or approximately 360 AFY. In order to reliably operate at full capacity, the well is currently undergoing analysis by engineering consultants to evaluate water quality, and the original treatment and hydraulic infrastructure. Upcoming tests will include a temporary pump test, including a 24-hour step drawdown procedure, as well as sampling for a full State Water Resources Control Board - Division of Drinking Water (DDW) water quality analysis. These evaluations will further determine water treatment equipment necessary to meet all DDW standards. A determination will be made on the capacity of the permanent well pump, motor and related treatment equipment. The Shirrell Well is located within a residential area and upgrades to the facility will be appropriate for a quiet, residential community.

**Need for Project**

This project will provide increased operational flexibility to access and manage the District’s groundwater supply when other wells are down for periodic maintenance. As of December 31, 2014 the District has 48,000 Acre Feet of water stored within the Central Sub-Basin of the Goleta Groundwater Basin, but pumping capacity of the District’s existing wells is limited to 400 AF per month. The District’s 2010 Groundwater Management Plan recognizes the District’s banking of stored water in the groundwater basin to establish a drought buffer. The ability to extract water from the drought buffer during times of drought is critical to securing the District’s water supply. The Shirrell Well rehabilitation is intended to increase the groundwater extraction capability of the District to utilize the drought buffer. The well also has injection capability to assist with groundwater recharge.

**Project Description**

As part of the professional engineering analysis already underway, a technical memorandum will be prepared to prioritize recommended improvements. Budgeted cost estimates will aid in bids for construction and overall rehabilitation planning. Needed site, architectural, structural, electrical, and instrumentation upgrades will be constructed to support recommendations and engineering designs laid out in the anticipated technical memorandum as well as recommended site aesthetics improvements. Items for Shirrell’s rehabilitation are to most likely to include:

- Cleaning of the well casing.
- Replacement of the pump and motor.
- Upgrading of the iron and manganese treatment facility.
- Electrical upgrades to comply with new code.
- New components and upgrades to the chemical feed system and instrumentation.

Upon receiving the design-build documents, the District will manage the construction and operation sequence plan to improve the Shirrell Well.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 Shirrell Well Rehabilitation Project	\$1,116,321
FY 2016-17 Shirrell Well Rehabilitation Project	\$285,600
<b>Total Budget:</b>	<b>\$1,401,921</b>

**Project Schedule**

Construction: FY 2015-16, FY 2016-17

**Project Status**

Project Status as of May 2019: Completed

## Oak Grove Well #2 Rehabilitation Project

IIP Group No: G1-14

Project Score: N.A. (Regulatory and Critical)



### Summary

The District plans to evaluate the Oak Grove Well #2 to determine its current and future potential maximum production. The well system is in need of significant upgrades partly due to being out of service since the 1990s. Once well redevelopment is completed and more detailed cost and water demand data are available, a cost-benefit analysis will be completed to determine whether rehabilitation of Oak Grove Well #2 makes economic sense in the context of the District well portfolio.

### Background

The District owns four small wells with related treatment equipment and facilities on sites that have been inactive for 25 years; Oak Grove Well #2 is the second smallest well of the four. Constructed in 1983 to a depth of 565 feet, the well was designed to produce 190 gallons per minute (gpm) or approximately 306 AFY. The well last produced 60 AFY in 1992. The well has a packaged Filtronics treatment system for iron and manganese removal.

The Oak Grove Well #2 is unique in that it is located at the entrance of the County complex on Calle Real Road and can provide water directly to the County Jail with existing valving in the distribution system. The County Jail is one of the two most critical customers within the District due to the number of persons housed at the facility requiring operational sanitation facilities. Due to the close proximity of the well to the customer, Oak Grove Well #2 could function independent of the rest of the distribution system and continue to provide water to the County Jail in an emergency.

A preliminary design, including 30%-level plans, specifications and cost estimates was completed in late 2015. The cost estimate associated with that effort is significantly higher than the amount included in the 2015-2020 IIP. In balancing the existing site against the potential for other projects to bring comparable amounts of water online at lower costs, the District plans to complete Phase 1 of what would be a two-phase design-build project so that a determination can be made regarding the well's rehabilitation. Phase 1 will entail well redevelopment in accordance with the preliminary design, extended pump testing, and submittal of a Guaranteed Maximum Price (GMP) based on that work by the selected design-build contractor. Once the GMP is established, staff will return to the Board with a recommendation regarding Phase 2 of the design-build contract.

**Need for Project**

Restoration of the Oak Grove #2 Well would provide increased operational flexibility to access and manage the District’s groundwater supply by bringing additional production capacity online. The District’s 2010 Groundwater Management Plan recognizes the District’s banking of stored water in the groundwater basin to establish a drought buffer, and the ability to extract water from the drought buffer during times of drought is critical to securing the District’s water supply. The Oak Grove Well #2 offers the potential to increase the groundwater extraction capability of the District to utilize the drought buffer, as well as injection capability to assist with groundwater recharge.

**Project Description**

Phase 1 of the Design-Build project will generate a Guaranteed Maximum Price for restoring the well to operational status. Improvements may include site, architectural, structural, electrical, and instrumentation upgrades such as:

- New butterfly valves, air vent valves, flow control valves.
- Replacement of chemical feed systems.
- Filter media replacement.
- Magnetic flow meters.
- Pumps.
- PLC-driven control panels.
- Motor control rehabilitation/upgrades as necessary.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 Oak Grove Well #2 Rehabilitation Project	\$223,197
FY 2016-17 Oak Grove Well #2 Rehabilitation Project	\$35,037
TBD Oak Grove Well #2 Rehabilitation Project	TBD
<b>Total Budget:</b>	<b>\$258,234</b>

**Project Schedule**

Design-Build Phase 1: FY 2015-16, FY 2016-17

Design-Build Phase 2: TBD

**Project Status**

Project Status as of May 2019: Deferred

## Santa Barbara Corporation Well Rehabilitation Project

IIP Group No: G1-15

Project Score: N.A. (Regulatory and Critical)



### Summary

The Santa Barbara Corporation Well (SB Corp Well) is in need of significant upgrades due to being out of service since the 1990s. While rehabilitating the well to maximize its production capacity for use during the current drought and as a supplementary emergency backup supply in the future remains an option, given the higher than expected cost, the District is also looking at the possibility of siting a new well on the property instead. Drilling a new and much deeper well on the same parcel, and constructing either permanent or temporary well head treatment and pumping equipment could accommodate production from one or both wells, and produce significantly more water.

### Background

The District owns four small wells with related treatment equipment and facilities on sites that have been inactive for 25 years. The SB Corp Well is the smallest of the four wells, and was constructed in 1979 to produce 60 AFY. A preliminary design, including 30%-level plans, specifications and cost estimates was completed in late 2015. The construction cost estimate resulting from that effort is significantly higher than the amount included in the 2015-2020 IIP. In balancing the existing well against the potential for other projects to bring comparable amounts of water online at lower cost, the District plans to complete Phase 1 of what would be a two-phase design-build project so that a determination can be made regarding the well's rehabilitation. Phase 1 will entail well redevelopment in accordance with the preliminary design, extended pump testing, and submittal of a Guaranteed Maximum Price (GMP) based on that work by the selected design-build contractor. Once the GMP is established, staff will return to the Board with a recommendation regarding Phase 2 of the design-build contract.

A determination will be made on the capacity of the permanent well pump, motor and related treatment equipment. As ground water in this area of the basin contains iron and manganese, the primary element of this project will involve design and installation of a treatment system to improve water quality.

The SB Corp Well is especially important as it can provide water on an ongoing basis and during emergencies to Cottage Hospital, one of the District's most critical customers. In anticipation of this project, additional valving was recently installed during the upgrades to Cottage Hospital to increase the flexibility of providing water to the facility from various directions and sources independent of other customers.

**Need for Project**

Rehabilitation of the SB Corp Well would provide increased operational flexibility to access and manage the District’s groundwater supply by increasing production capacity. The District’s 2010 Groundwater Management Plan recognizes the District’s banking of stored water in the groundwater basin to establish a drought buffer, and the ability to extract water from the drought buffer during times of drought is critical to securing the District’s water supply. The SB Corp Well offers the potential to increase the groundwater extraction capability of the District to utilize the drought buffer, as well as improve injection capability to assist with groundwater recharge.

**Project Description**

Phase 1 of the Design-Build project will generate a Guaranteed Maximum Price for restoring the well to operational status. Improvements may include site, architectural, structural, electrical, and instrumentation upgrades such as:

- New butterfly valves, air vent valves, flow control valves.
- Replacement of chemical feed systems.
- Filter media replacement.
- Magnetic flow meters.
- Pumps.
- PLC-driven control panels.
- Motor control rehabilitation/upgrades.

Upon receiving the design-build documents, the District will manage the construction and operation sequence plan to improve the Santa Barbara Corporation Well.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 Santa Barbara Corporation Well Rehabilitation Project	\$283,127
FY 2016-17 Santa Barbara Corporation Well Rehabilitation Project	\$42,822
TBD Santa Barbara Corporation Well Rehabilitation Project	TBD
<b>Total Budget:</b>	<b>\$325,949</b>

**Project Schedule**

Design-Build Phase 1: FY 2015-16

Design-Build Phase 2: TBD

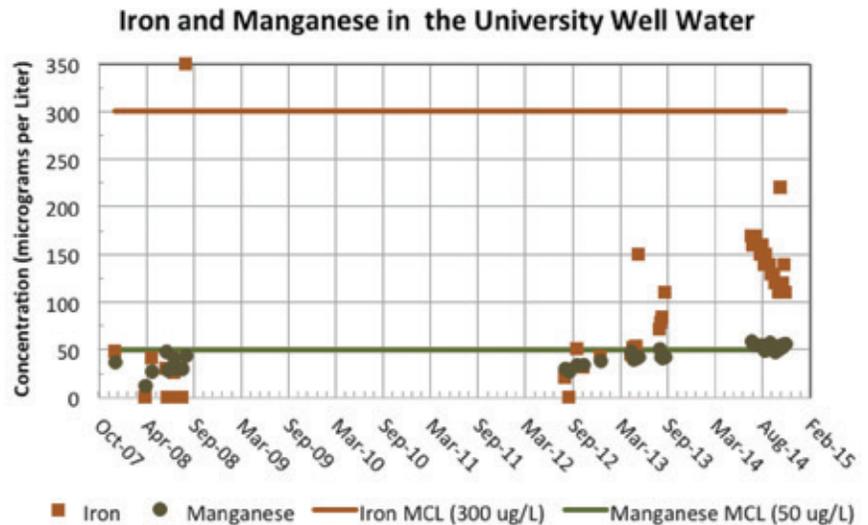
**Project Status**

Project Status as of May 2019: Deferred

## University Well Iron and Manganese Treatment

IIP Group No: G1-16

Project Score: N.A. (Regulatory and Critical)



### Summary

The project installs filtration equipment at the University Well to remove iron and manganese in the well water. The well’s concentration of manganese is above the State Water Resources Control Board – Division of Drinking Water (DDW) secondary standards.

### Background

University Well was constructed in 1973 as a production well to be used during drought conditions and as an emergency supply when flows from Lake Cachuma or Corona Del Mar Water Treatment Plant (CDMWTP) are interrupted. The District recently installed a new pump and motor in the well, increasing its capacity to 600 gallons per minute (gpm), and the well is a key component in the District’s water supply. In addition, a new degasification facility is currently under construction to remove entrained gas and thereby enhance water quality. Water samples collected from University Well over the past seven years have shown high manganese concentrations at or above the secondary Maximum Contaminant Level (MCL) of 50 micrograms per liter (ug/L), as well as iron concentrations increasing toward the secondary MCL for iron of 300 ug/L , as shown in the graph above.

Elevated iron and manganese levels in the distribution system increase build up in pipelines, pressure tanks, water heaters and water softeners, generating customer complaints and increasing maintenance costs. In addition, the elevated levels of iron and manganese result in water quality issues occurring in the distribution system. More importantly, iron and manganese concentrations above the DDW secondary standards limits the duration the well can be used on an annual basis.

**Need for Project**

As the District increasingly relies upon groundwater supplies, especially during periods of drought, strategic investment in the District’s wells and related distribution system components are needed to ensure that production capacity is maximized to meet anticipated customer demand into the future. The University Well is an important component of the District’s groundwater supply portfolio. The well can produce approximately 1,000 AFY with recent and scheduled improvements. The District’s 2010 Groundwater Management Plan recognizes the District’s banking of stored water in the groundwater basin to establish a drought buffer. The ability to extract water from the drought buffer during times of drought is critical to securing the District’s water supply. The iron and manganese treatment will enable the well to be operated continuously to maximize its production rate.

**Project Description**

An approved engineering consulting firm will be selected by the District to design the iron and manganese treatment facility. The bid-ready design plans and specifications will be used in a competitive bidding process to select a qualified contractor to construct and install the treatment facility. The new treatment facility will be built in a space already allocated for this purpose. The project will include site preparation, equipment selection, and construction of the facilities. The project will also include obtaining or updating applicable regulatory permits from the State Water Resources Control Board-Division of Drinking Water (SWRCB-DDW) and the Central Coast Regional Water Quality Control Board (CRWQCB).

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 University Well Iron and Manganese Treatment	\$184,973
FY 2017-18 University Well Iron and Manganese Treatment	\$2,566
<b>Total Budget:</b>	<b>\$187,539</b>

**Project Schedule**

FY 2015-16, FY 2017-18

**Project Status**

Project Status as of May 2019: Deferred

## Goleta Sanitary District Recycled Water Pump Replacement

IIP Group No: G1-17

Project Score: N.A. (Regulatory and Critical)



### Summary

This project will improve overall efficiency of the Recycled Water Booster Pump Station (BPS) located at Goleta Sanitary District (GSD). This project involves providing a new pump and motor for pump # 2. The new pump and motor will better interface with the variable frequency drives (VFDs) that were previously installed along with the other three pumps and motors that have been upgraded. This is the last pump and motor at the Hollister Booster Station that needs to be upgraded. The ability for all four of the large booster pumps to finally operate efficiently in unison with each other will reduce power requirements, minimize electrical usage, and reduce maintenance costs while providing reliable water supply at varying flow rates to all recycled water customers.

### Background

The District owns and operates the BPS located at the Goleta Sanitary District's wastewater treatment facility. The recycled water system requires operational flexibility to deliver recycled water in a closed-system with no storage reservoirs. Without a reservoir, the system does not have the ability to absorb pressure fluctuations that occur in the distribution system due to customer irrigation practices. The BPS must be able to react to these pressure fluctuations and flow rate changes immediately to meet customer demands. Pressure is controlled by the pumps, which are managed through the use of a recently upgraded electrical system, and the combination of variable frequency drives (VFD), soft starts, and new pumps and motors. To complete the upgrade project, the last pump and motor need to be replaced to match the performance curves of the other three pumps and related facilities.

**Need for Project**

This project will minimize and prevent unanticipated service interruptions to recycled water customers and enhance the operational flexibility of the BPS, and complete a major upgrade project. The pumps need to operate properly and in sync to meet peak recycled water demands, prevent large pressure fluctuations, and reduce the risk of main breaks.

**Project Description**

Replacing pump #2 entails replacement of the pump, motor, and line shaft. The new installation will be compatible with the other pumps, motors and other electrical equipment recently upgraded at the BPS. This project will greatly increase the operational flexibility required in this closed-system recycled water distribution system.

**Project Budget**

Total Budget	
FY 2019-20 or later GSD Recycled Water Pump Replacement	TBD
<b>Total Budget:</b>	<b>TBD</b>

**Project Schedule**

Delayed

**Project Status**

Project Status as of May 2019: Deferred

## Recycled Water Booster Station Process and Control Upgrades

IIP Group No: G1-19

Project Score: N.A.(Regulatory and Critical)



### Summary

This project will allow the District to use the existing Supervisory Control & Data Acquisition (SCADA) system to view the operation of the Recycled Water Booster Pump Station (BPS) and its critical components that impact the performance of the BPS. The BPS is located at the Goleta Sanitary District (GSD) Recycled Water Treatment Plant but is owned and operated by the District. The BPS provides the recycled water system pressure and required flow rates to all the recycled water customers through 5 pumps. This project will provide real time information on the performance of the BPS required to make adjustments in pumping allocation to improve pump efficiency and monitor production. These controls also increase the efficiency of the pump operations, thereby reducing energy costs. This increased efficiency is a result of the ability of the SCADA system to coordinate sequencing of operations of the pumps between the five pumping units, prolonging the life of the system, reducing maintenance costs, and minimizing abnormal wear and unanticipated malfunctions.

### Background

The current SCADA system lacks four critical process modules that would significantly enhance the operation and management of the BPS. Currently, to monitor the hydropneumatic tanks that maintain proper pressures, the recycled process water used by GSD in their wastewater plant, the jockey pump operations (the other 4 pumps and motors already included in the SCADA system), and the potable water supplemental connection, staff must be on site and perform manual reads. The project would install the necessary devices and upgrades to automate this information into SCADA so staff can monitor the performance of the system remotely and the local computer on site at the BPS can make operational changes as a result of the information provided to it from these critical components.

**Need for Project**

This project is essential to maintaining an efficient and effective recycled water distribution system needed to provide reliable, sustainable water service to the District’s customers at the lowest cost. The hydropneumatic tanks are critical to maintain the proper pressures in the recycled distribution system. The hydropneumatic tanks contain a mixture of air and water to provide the space to “buffer” pressure fluctuations in the system. The SCADA system will monitor this mix of air and water and will be able to control the air compressor and pumps to maintain the proper mixture. Monitoring the GSD recycled process water will allow the operator to see the total production of the BPS. Currently only partial total production is monitored as this critical flow which can be hundreds of gallons per minute is not monitored. When the recycled water system needs supplemental potable water during maintenance activities of the recycled water plant, this flow rate needs to be monitored, again to control the amount of supplemental water used to minimize its usage during these occasions. The jockey pump has a variable frequency drive (VFD) that does not display flow, or variability of the operation.

**Project Description**

An electrical or process engineer will design and lay out the sequence of operation for review by the District. The required monitoring components will be installed and a programmer / integrater will be selected to program the system and integrate the components into the SCADA system and train staff.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 Upgrades at Four Onsite Locations	\$166,470
FY 2016-17 Upgrades at Four Onsite Locations	\$16,969
FY 2017-18 Upgrades at Four Onsite Locations	\$61
<b>Total Budget:</b>	<b>\$183,500</b>

**Project Schedule**

Construction: FY 2015-16, FY 2016-17

**Project Status**

Project Status as of May 2019: Completed

## Hollister Avenue Recycled Water Booster Pump Station Relocation

IIP Group No: G1-20

Project Score: N.A (Regulatory and Critical)



### Summary

The District is being compelled to relocate its recycled water underground booster pump station beneath the sidewalk at Hollister Avenue and Glen Annie Road to accommodate the City of Goleta's planned road widening along Hollister Avenue. At a meeting with the City of Goleta and other utilities in 2016, the City of Goleta requested that utility conflicts be resolved and infrastructure relocated prior to the start of road construction in late 2018.

### Background

The District has a right to locate facilities in or beneath the City's roadways and sidewalks as long as the District's facilities do not conflict with the City's infrastructure. In the event of a conflict, the District is obligated to relocate its facilities so that they are not in conflict with the City's infrastructure.

**Need for Project**

Previous upgrades identified for the Hollister Booster Station include electrical upgrades to and an access tunnel to improve worker safety and facility reliability a critical upgrade to mitigate electrical arc flash risk to the operators who visit the site daily. The tunnel was deemed infeasible due to the location of a large natural gas main between the booster station and the new sidewalk location. A second planned project was to replace the booster pumps.

The revised project to relocate the booster station eliminates the need for electrical upgrade to the existing booster pump station (previously identified as G1-20), which was to be funded in FY 2018-19. This project also fulfills a critical pump replacement project (previously identified as G1-18), which was identified as a critical pump replacement project to be funded in FY 2016-17.

**Project Description**

The project will include design and construction of a new underground booster pump station beneath the street and sidewalk on Glen Annie Road. The facility will be constructed with submersible-rated pumps and equipment. To minimize cost, the booster pump station will be relocated a short distance from its current location so that it can continue to use the existing above-ground electrical service and control panels.

**Project Budget**

	<b>Total Budget</b>
FY 2016-17 Hollister Recycled Water Booster Pump Station Relocation	\$51,446
FY 2017-18 Hollister Recycled Water Booster Pump Station Relocation	\$47,752
FY 2019-20 Hollister Recycled Water Booster Pump Station Relocation	-
<b>Total Budget:</b>	<b>\$99,198</b>

**Project Schedule**

Engineering: FY 2016-17, FY 2017-18  
 Construction: FY 2017-18, FY 2019-20

**Project Status**

Project Status as of May 2019: Deferred

## Barger Reservoir Improvements

IIP Group No: G1-21

Project Score: N.A. (Regulatory and Critical)



### Summary

The Barger Reservoir is one of eleven District reservoirs, and a key component of the water storage and distribution system. Various improvements to the Barger Reservoir are planned to improve water quality, address sanitary and safety features, and extend the life of the reservoir. Improvements consist of interior and exterior surface repairs, retrofits to the reservoir's inlet/outlet piping for enhanced mixing of water in the reservoir for improved water quality, ladder replacements, modifications to the access hatches and vent screens, and installation of safety railings.

### Background

Constructed in 1963, the Barger Reservoir is a 1 million gallon capacity reservoir. In 2012 an engineering consultant conducted a condition assessment. The condition assessment recommended various improvements to address the sanitary and safety features of the tank, items needed to improve water quality, and coatings required to extend the useful life of the tank. No structural or seismic upgrades are needed.

**Need for Project**

Proactive maintenance on the reservoir will prolong the life of interior and exterior concrete surfaces, improve water quality, and prevent service disruptions as well as more costly and time consuming emergency repairs. Safety and maintenance upgrades are needed to ensure ANSI/OSHA compliance. The safety regulations and necessary improvements to the reservoir will improve the reliability of service to customers, and extend the useful life of the facility.

**Project Description**

The District will issue and coordinate a Request for Proposals based on the condition assessment conducted in 2012 to qualified contractors specializing in reservoir upgrades. A professional engineering firm will develop the specifications needed and complete the final design on the various ladder and vent upgrades needed. Such improvements to the reservoir include the following:

- Interior Repairs: sealing joints and cracks .
- Exterior Repairs: cleaning and repairing roof cracks and painting steel appurtenances to prevent corrosion.
- Interior ladders, roof vents, and outlet structures.
- Sanitary upgrades.

Upon receiving the design-build documents, the District will manage the construction and operation sequence plan to improve the Santa Barbara Corporation Well.

**Project Budget**

		<b>Total Budget</b>
FY 2017-18 Barger Reservoir Improvements		\$58,444
<b>Total Budget:</b>		<b>\$58,444</b>

**Project Schedule**

Construction: FY 2017-18

**Project Status**

Project Status as of May 2019: Completed

## Ellwood Reservoir Improvements

IIP Group No: G1-22

Project Score: N.A. (Regulatory and Critical)



### Summary

The Ellwood Reservoir is one of eleven District reservoirs, and a key component of the water storage and distribution system. Various improvements to the Elwood Reservoir are planned to address safety issues, upgrade sanitary equipment, and extend the useful life for the reservoir. Improvements consist of interior and roof repairs, ladder replacements, modifications to the vent screens, and installation of safety railings.

### Background

Constructed in 1974, the Ellwood Reservoir is a 1.5 Million Gallon capacity reservoir. It was temporarily removed from service in 2014 for cleaning, at which time an engineering consultant conducted a condition assessment to determine what measures were required to extend the useful life of the tank. Significant spot repairs and sealing work is required to the tank's interior and roof surfaces. Addressing these items will prevent further deterioration, prolong reservoir life expectancy, and improve overall facility safety. In addition, upgrades to the interior ladders, roof vents, and outlet structures were recommended. No structural or seismic upgrades are needed at this time.

**Need for Project**

Proactive maintenance on the reservoir will prolong the life of interior and roof concrete surfaces and prevent service disruptions as well as more costly and time consuming emergency repairs. Compliance with safety regulations and necessary improvements to the reservoir will improve the reliability of service to customers, address sanitary and safety features of the reservoir, and extend the useful life of the facility. The Ellwood Reservoir provides service to more than 2,000 customers on the west end of the water system supplying peak flows during summer and early morning hours.

**Project Description**

The District will issue and coordinate a Request for Proposals based on the assessment performed in 2014 to qualified contractors specializing in reservoir upgrades, especially sealing of concrete surfaces. A professional engineering firm will develop the specifications needed and complete the final design on the various ladder and vent upgrades needed. Such improvements to the reservoir include the following:

- • Interior Repairs: sealing joints and cracks .
- • Exterior Repairs: cleaning and repairing roof cracks and painting steel appurtenances to prevent corrosion.
- • Interior ladders, roof vents, and outlet structures.

**Project Budget**

		Total Budget
FY 2019-20 Ellwood Reservoir Improvements		-
<b>Total Budget:</b>		<b>TBD</b>

**Project Schedule**

Construction: FY 2019-20

**Project Status**

Project Status as of May 2019: Deferred

## Patterson Booster Pump Station Replacement

IIP Group No: G1-23

Project Score: N.A. (Regulatory and Critical)



### Summary

The project has been updated to expand the scope from replacing pumps at the existing Patterson Emergency Pump Station to increasing the reliability of the entire facility for regular use as a booster pump station. The project includes upgrades to the electrical system, added redundancy for the two existing pumps, installation of valves, upsizing of pipes, and the addition of SCADA for automated operation. This project improves the reliability of a component of the distribution system that is critical for meeting water quality standards, allowing the wells to operate continuously and reliably, and minimizing adverse differential mixing effects within the distribution system.

### Background

The District's emergency pump stations were not designed for regular use but rather for infrequent interruptions of CDMWTP for limited durations. Under drought conditions, however, the Patterson Emergency Booster Pump Station is being regularly used to move large volumes of water throughout the system. This is necessary to allow groundwater wells to be operated continuously, to provide pressure to the certain zones when the CDMWTP is turned off, and to mix groundwater with surface water to help ensure water quality standards are met.

**Need for Project**

To maintain water quality in the system and to allow the District’s wells to operate continuously, the Patterson Emergency Booster Pump Station needs more efficient and reliable equipment and infrastructure. Upgrading the electrical systems and pumps will extend the life of the equipment. The addition of SCADA and valves will help ensure the facility’s operation on a continuous basis during drought and periods when CDMWTP is turned off.

**Project Description**

The project includes engineering evaluation of the pumps, existing pipe capacity, and existing electrical system to identify reliability improvements. Upgrades include larger and more pumps, an upgraded electrical system, installation of valves, upsizing of pipes to process greater flows, and the addition of SCADA for automated operation for what will no longer be emergency use but regular use during periods of drought.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 Patterson Booster Pump Station Replacement	\$96,409
FY 2016-17 Patterson Booster Pump Station Replacement	\$108,281
FY 2017-18 Patterson Booster Pump Station Replacement	\$173,536
FY 2018-19 Patterson Booster Pump Station Replacement	\$750,000
FY 2019-20 Patterson Booster Pump Station Replacement	\$500,000
<b>Total Budget:</b>	<b>\$1,628,226</b>

**Project Schedule**

Engineering: FY 2015-16, FY 2016-17, FY 2017-18, FY 2018-19

Construction: FY 2018-19, FY 2019-20

**Project Status**

Project Status as of May 2019: In Progress

## Edison Emergency Pump Project

IIP Group No: G1-24

Project Score: N.A. (Critical to Maintain System Reliability for Treatment and Distribution)



### Summary

This project will replace the two existing pumps and add a third pump at the Edison Pump Station (EPBS). The EPBS delivers backup supply water to the Reduced Ellwood (440) Pressure Zone from the 230 pressure zone when there is an interruption of flows from the Corona Del Mar Water Treatment Plant (CDMWTP). The EPBS is used in combination with the Patterson and Van Horne pump stations during these interruptions to provide water to the higher elevations of the distribution system which comprise 40% of the entire system. Neither the EPBS nor the Patterson nor the Van Horne pump station was originally intended to operate on a continuous basis. This project brings the EPBS up to current standards for a station in continuous operation and improves reliability of well water delivery throughout the distribution system when groundwater is being used during drought conditions.

### Background

Currently, the Reduced Ellwood Zone is served primarily by the Glen Annie Lateral supplied by CDMWTP. If the lateral or CDMWTP were to be put out of service either due to maintenance or repair, or if sufficient water is not available from Lake Cachuma, well water from lower elevations is provided to this area of approximately 2,000 customers via the pump station. The pump capacity of each of the two existing Edison booster pumps is 750 gpm for a combined total of 1500 gpm, which is insufficient to meet the Reduced Ellwood Zone's peak winter time demands or summer daily demand. To address this, a third pump will be added at the EPBS.

**Need for Project**

Proactive replacement of the pumps and motors, along with the addition of a third pump and motor will enhance the ability of the District to operate during emergency and drought conditions. In order to keep the wells operating continuously, the EBPS along with the other pump stations must be capable of operating reliably on a continuous basis when needed.

**Project Description**

A Request for Proposals will be prepared for professional engineering services to evaluate available operational data and the existing equipment at the pump station, and to prepare plans, specifications and estimates (PS&E) for improvements as necessary. The PS&E will be utilized to prepare a bid package to solicit competitive bids for reconstruction or replacement of deficient components of the pump station. It is expected to include replacement of the two existing pumps and addition of a third pump in order to provide redundancy and sufficient flow for typical operational scenarios, provide other upgrades (e.g. sound screening from newly constructed residences in the area), protection from the elements, and connection with Supervisory Control and Data Acquisition (SCADA) components.

**Project Budget**

	<b>Total Budget</b>
FY 2017-18 Edison Emergency Pump Project	\$1,839
FY 2018-19 Edison Emergency Pump Project	\$125,000
<b>Total Budget:</b>	<b>\$126,839</b>

**Project Schedule**

Engineering: FY 2017-18, FY 2018-19

Construction: Next 5-Year IIP

**Project Status**

Project Status as of May 2019: In Progress

## Van Horne Emergency Pump Project

IIP Group No: G1-25

Project Score: N.A (Critical to Maintain System Reliability for Treatment and Distribution)



### Summary

The Van Horne Booster Pump Station (VHBPS) is used in combination with the Edison and Patterson Booster Pump stations to serve customers in the higher elevation zones, which comprise 40% of the entire system. This station was originally a limited-use facility to distribute groundwater when flows from the Corona Del Mar Water Treatment Plant (CDMWTP) were interrupted. The VHBPS is now a critical and continuously operating component of the District's distribution system. This project will begin with design of improvements necessary to increase pumping capacity through the addition of a second pump in the existing vault. Design work will also include an evaluation of the current hydraulic conditions, and provisions to increase reliability. Modifications to the suction and discharge piping will also be necessary to accommodate the additional pump. Provisions for an emergency generator, additional site security, and slope stabilization measures to prevent failure of the earthen slope on the east, south and west sides of the site are also included in this project. Once plans, specifications and construction cost estimates are completed that information will be used for future IIP amendments and budget formulation.

### Background

As groundwater has become the primary source of water for District customers, the emergency pump stations that were originally designed for short-term use have instead been placed into continuous service moving groundwater through the distribution system. In order to increase reliability of service for customers in the higher elevations, each pump station will be evaluated and reconstructed as necessary to perform reliably and operate full-time. The VHBPS improvements will also include the addition of a second pump to increase pumping capacity and provide redundancy in the event a pump needs to be taken out of service for maintenance or repairs.

**Need for Project**

The project is necessary due to the shift in water supply, which leaves the District reliant on groundwater wells during times of drought, and places increased stress on pump stations that were not designed to operate continuously over long periods of time. The existing pump, motor, control and electrical equipment will be supplemented with new, more efficient equipment right-sized for their modern function and purpose.

**Project Description**

A Request for Proposals will be prepared for professional engineering services to evaluate available operational data and the existing equipment at the pump station, and to prepare plans, specifications and estimates (PS&E) for modifications as necessary. The PS&E will be utilized to prepare a bid package to solicit competitive bids for additions to and modifications of the pump station once funds are programmed and budgeted. It is expected to include installation of an additional pump in order to provide redundancy and sufficient flow for typical operational scenarios, provisions for an emergency generator, increased security and protection from the elements, and stabilization of the earthen slope. Completed plans, specs and estimates will facilitate budgeting for future construction and will enable an expedited schedule for bidding.

**Project Budget**

	<b>Total Budget</b>
FY 2016-17 Van Horne Emergency Pump Project	\$26,648
FY 2017-18 Van Horne Emergency Pump Project	\$948
FY 2018-19 Van Horne Emergency Pump Project	\$75,000
<b>Total Budget:</b>	<b>\$102,596</b>

**Project Schedule**

Engineering: FY 2016-17, FY 2017-18, FY 2018-19

Construction: Next 5-Year IIP

**Project Status**

Project Status as of May 2019: Ongoing

## Pump and Motor Replacements

IIP Group No: G1-26

Project Score: N.A. (Regulatory and Critical)



### Summary

The Pump and Motor Replacement Project entails the replacement of various pumps and motors both at Corona De Mar Water Treatment Plant (CDMWTP) and throughout the distribution system on a proactive basis, and upon failure. When new pumps are installed, the old pumps will be refurbished to serve as spares in case of primary pump failures. If such failure does occur, the lead time for a new pump can exceed three months.

### Background

Various pumps and motors are utilized throughout District operations. These units can fail prematurely or become unreliable over time. Examples of the pumps used at the CDMWTP include three pumps at the Flash Mixed Vault 1, and two sludge bed return pumps. These are submersible pumps installed in 2005. When replaced, to increase efficiency, they would be replaced with vertical turbine pumps for ease of service and labor savings, and increased reliability. These new pumps will also have variable speed drives for more efficient operation with greater control and decreased power usage. The two sludge bed return pumps are part of the filter backwash and clarifier sludge removal processes that are critical to meeting State Water Resource Control Board Department Division of Drinking Water (DDW) standard.

Other examples of pumps used in the distribution system include three booster stations on the east end of the distribution system. One of the stations, the San Antonio Pump Station, contains three pumps for specifically filling San Marcos Reservoir. San Marcos Reservoir has a capacity of 300,000 gallons, and feeds a zone containing approximately 125 customers.

**Need for Project**

By actively replacing critical pumps and related distribution system components in advance of their anticipated failure, the current high level of service can be maintained, thereby reducing the potential for unanticipated service disruptions to customers. As new pumps and motors are more efficient, this project provides energy and cost savings.

**Project Description**

The District will issue a Request for Proposals for procurement and installation services of pump and motor replacements. Improvements will be made yearly over five years. Pumps and motors will be prioritized based on condition assessments and risk factors.

**Project Budget**

	<b>Total Budget</b>
FY 2017-18 Pump and Motor Replacements	\$329,010
FY 2018-19 Pump and Motor Replacements	\$39,230
FY 2019-20 Pump and Motor Replacements	\$39,230
<b>Total Budget:</b>	<b>\$407,470</b>

**Project Schedule**

This project recurs annually beginning in FY 2017-18.

**Project Status**

Project Status as of May 2019: Ongoing

## Electrical Replacements

IIP Group No: G1-27

Project Score: N.A. (Regulatory and Critical)



### Summary

The Electrical Replacement Projects facilitates electrical upgrades at twenty one District facilities necessary to meet the National Fire Protection Association (NFPA) 2009 NFPA 70E Standard for Electrical Safety in the Workplace. Electrical equipment is maintained and replaced to meet all current electrical code requirements, to ensure a safe work environment for employees who work on the equipment, and to provide the power necessary to operate a host of mechanical and electrical equipment located throughout District facilities.

### Background

This project provides for the ongoing annual replacement and upgrading of District electrical equipment. Electrical equipment normally has a life span of 10 to 20 years depending upon the environment in which the equipment is located. District installations are subjected to harsh environmental conditions for electrical components (e.g., chemical applications, high humidity) which significantly reduce the life expectancy of the equipment. The project was recommended by the District's insurance provider Joint Powers Insurance Association (JPIA) in 2010 as a result of NFPA code changes. A complete evaluation of the District facilities was conducted to evaluate electrical equipment in terms of age and reliability, and perform an Arc Flash Hazard Assessment (AFHA). The evaluation reviewed all thirty-three sites District sites and subsequently developed a detailed budget to address deficiencies.

**Need for Project**

These electrical upgrades will protect equipment and personnel from the potential risk of high voltage electrical equipment explosions called arc flash. Arc flash is the result of a rapid release of energy due to an arcing fault at electrical cabinets and the resulting explosion can release a large blast at extreme temperatures. These explosions can cause damage to equipment and serious injury or death to associated personnel. Additionally, water production standards require operating electrical equipment. Proper electrical equipment allows the District to meet water quality regulations, and to meet both fire flow rates and customer demands.

**Project Description**

In 2012, the District received recommendations for concurrent electrical upgrades. The sites receiving electrical upgrades will be prioritized due to risk and need before engaging into an electrical upgrading contract with an electrical contractor. The project scope includes the purchase of tools and personnel protection equipment (PPE), and upgrades at the District Headquarters, the Corona Del Mar Water Treatment Plant, well sites, booster pump stations, and reservoirs. Work will also include breaker testing & exercise, cleaning, and tightening of lugs in the electrical cabinets at each site. In some cases rewiring, relocation and even replacement of cabinets will be required.

**Project Budget**

	<b>Total Budget</b>
FY 2016-17 Electrical Replacements	\$11,151
FY 2017-18 Electrical Replacements	\$25,005
FY 2018-19 Electrical Replacements	\$64,998
FY 2019-20 Electrical Replacements	\$44,994
<b>Total Budget:</b>	<b>\$146,148</b>

**Project Schedule**

This project recurs annually beginning in FY 2016-17.

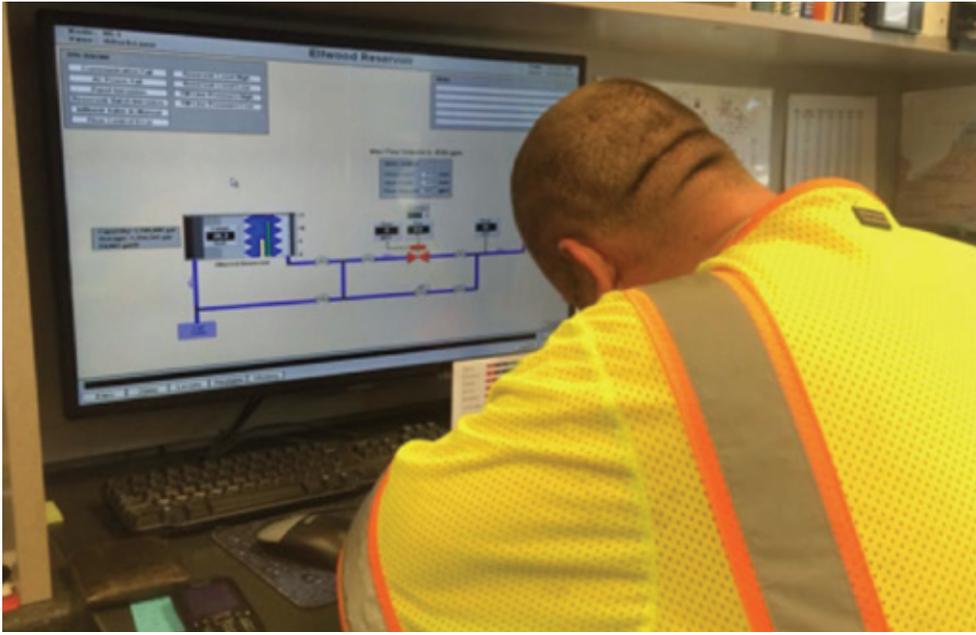
**Project Status**

Project Status as of May 2019: Ongoing

## SCADA Replacements and Upgrades

IIP Group No: G1-28

Project Score: N.A. (Regulatory and Critical)



### Summary

The Supervisory and Data Acquisition System (SCADA) includes the complex network of monitoring and controlling computer equipment located throughout District facilities. SCADA equipment monitors water production rates in relation to varying customer demands and storage reservoir levels, and maintains water quality by controlling chemical dosage rates. The equipment includes the use of Programmable Logic Controllers (PLC), various monitoring equipment, electronic apparatus, computers, and a vast radio network. SCADA gathers information, and sends signals to the main computer and various pieces of equipment to allow for adjustable operation by staff. The SCADA Replacement and Upgrades Project includes some proactive upgrading of the system, but mainly concerns yearly replacement of defective equipment.

### Background

This project initiates a program to provide for ongoing annual replacement of SCADA equipment. The District's SCADA system equipment was installed over ten years ago. Various components of the existing system have exceeded expected service life or are no longer supported by the manufacturer. The SCADA Replacement and Upgrades Project includes SCADA equipment at headquarters, the Corona Del Mar Water Treatment Plant (CDMWTP), wells, reservoirs, booster pump stations and chlorination facilities. Anticipated SCADA components under this program include remotely operated valves, pressure transmitters, level transmitters, flow transmitters, and intrusion switches.

**Need for Project**

This project will enhance operational flexibility for managing the water treatment and distribution system, and help the District remain in compliance with state drinking water regulations. When SCADA fails, a portion of the system needs to be operated manually. Accordingly, the implementation of a practical, ongoing replacement program is critical. Water production cannot be reliably maintained without this equipment operating properly. Water quality regulations would not be able to be met, resulting in insufficient water production to meet customer demands and/or fire flow rates.

**Project Description**

Ongoing research, analysis and planning to replace the District’s ageing SCADA equipment has revealed a pressing need to speed up planned upgrades beyond what was originally anticipated. Accordingly, the project budget has been significantly increased for FY 15-16. The revised budget provides for the installation of new equipment at the District’s pump stations and at three critical transmission interconnections. Prior to this year, these facilities were operated manually meaning that operating parameters could not be effectively measured, monitored, or alarmed. Given the criticality of these facilities to move water from the wells throughout the system during the drought, these projects will be completed by the end of FY 15-16. This work has been in addition to yearly replacement of defective equipment.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 Replace SCADA Equipment	\$220,449
FY 2016-17 Replace SCADA Equipment	\$467
FY 2017-18 Replace SCADA Equipment	\$4,746
FY 2018-19 Replace SCADA Equipment	\$49,100
FY 2019-20 Replace SCADA Equipment	\$49,100
<b>Total Budget:</b>	<b>\$323,862</b>

**Project Schedule**

This project recurs annually beginning in FY 2015-16.

**Project Status**

Project Status as of May 2019: Ongoing

## Water Treatment Equipment Replacements

IIP Group No: G1-29

Project Score: N.A. (Regulatory and Critical)



### Summary

Water treatment equipment is critical to the ongoing production of potable water at the Corona Del Mar Water Treatment Plant (CDMWTP) and District well sites. Water treatment also includes two chlorination facilities located on the Goleta West Conduit. The chemical feed equipment used for treatment is automated and controlled by the Supervisory and Data Acquisition System (SCADA) located at each site, and the dose rates vary with water flow rates. Properly operated automated equipment provides the consistency necessary to maintain desired levels of treatment. This project includes funding for replacement of water treatment equipment to ensure continuous operation.

### Background

This project initiates a program to provide for the ongoing annual replacement of equipment. Some equipment installed over the previous years is coming to the end of its expected service life. The primary chemical systems at the CDMWTP are the liquid alum, sodium hypochlorite (SHC) and chemical lines to the injection points. Large tanks in the chemical building store the liquid alum and SHC. The chemicals are delivered by metering pumps to injection points via a network of tubing contained in electrical conduit. Liquid Alum is delivered at the front end of the treatment process. Liquid Alum combines with suspended solids so they can fall out of the water column in the sedimentation tank. Sodium hypochlorite is added as the final step in the treatment process. SHC is the chemical most utilized at the well sites and Goleta West Conduit. These chemical feed equipment installations also periodically require replacements

Examples of chemical feed equipment that may need to be replaced over the next few years include chemical piping tubing; pulsa feeder metering pumps; flash mix fault No. 2 variable frequency drive; valve actuators, superscrapers, hydraulic ram; and various lab equipment used to monitor the effectiveness of the treatment process. Repairing and replacing equipment is critical to preventing chemical spills from aging equipment and reduces the risk of accidents.

**Need for Project**

This project will help the District meet current and future regulatory standards. State regulations require continuous monitoring to ensure consistency is maintained while water is being produced and distributed into the system. Water quality cannot be maintained without this equipment operating properly. This project will enhance the ability of the District to meet current and future State Water Resource Control Board Department of Drinking Water (DDW) regulations for water quality.

**Project Description**

The project involves yearly replacement of defective water treatment equipment on an as-needed basis. The level of expenditures varies each year but an assumed average has been calculated based on both proactive replacement and replacement of failed equipment. Proactive upgrades to equipment are also included. This type of equipment has a life expectancy of 5 to 10 years and in some instances is currently over 5 years old and therefore failures are expected.

**Project Budget**

	<b>Total Budget</b>
FY 2018-19 Water Treatment Equipment Replacements	\$30,622
FY 2019-20 Water Treatment Equipment Replacements	\$30,622
<b>Total Budget:</b>	<b>\$61,244</b>

**Project Schedule**

This project recurs annually beginning in FY 2018-19.

**Project Status**

Project Status as of May 2019: Ongoing

## Emergency Main Replacements

IIP Group No: G1-30

Project Score: N.A. (Regulatory and Critical)



### Summary

The District has 1,425,000 feet of distribution main pipelines running along Cathedral Oaks and Hollister Avenue. The Emergency Main Replacements Project involves the anticipated replacement of water main lines throughout the District distribution system. According to historical leak records, an estimated average of thirteen replacements are necessary annually. By proactively addressing aging water mains, the District will prevent damage to surrounding water facilities and water services, and minimize disruption to fire protection, police service, and the City of Goleta. Preventing potential breaks also saves water, which can be lost at a rate of 5,000 gallons per minute in the event of a main break. Age, condition, and capacity will be used to prioritize projects.

### Background

This project provides for the ongoing annual replacement of water mains. When water main lines fail, they affect not only the customers served by that particular water main line, but also the surrounding community, including residential and commercial customers, and impact traffic due to road shut downs. Existing waterlines are constructed of various materials such as asbestos concrete, galvanized steel, PVC and ductile iron, which due to corrosion and other factors, tend to fail after extended periods of time. It is impossible to determine or predict when a waterline will fail, but the District can prioritize the most aged or at risk main lines for replacement.

Emergency main line repairs require intense coordination, and restoration of service is typically completed within eight hours. However, the isolation of valves, hydrants and hydrant valves, laterals, service and meter replacements, as well as repairs to roads and surrounding above ground facilities mean service disruption is not insignificant.

**Need for Project**

This project will minimize or prevent unanticipated service disruptions. Many existing waterlines are substandard in diameter and provide inadequate water pressure and flows to District customers. These need to be replaced with appropriate sized waterlines to extend the reliability of these lines to provide water to District customers.

**Project Description**

There are approximately 250 miles of buried waterline within the District distribution system. The program proposes to replace on average, approximately 2,700 lineal feet of water main per year at the approximate cost of \$300 per lineal foot of pipe.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 Emergency Main Replacements	\$100,554
FY 2016-17 Emergency Main Replacements	\$345,320
FY 2017-18 Emergency Main Replacements	\$309,157
FY 2018-19 Emergency Main Replacements	\$202,410
FY 2019-20 Emergency Main Replacements	\$202,410
<b>Total Budget:</b>	<b>\$1,159,851</b>

**Project Schedule**

This project recurs annually beginning in FY 2015-16.

**Project Status**

Project Status as of May 2019: Ongoing

## City, County, Caltrans Relocation Required Projects

IIP Group No: G1-31

Project Score: N.A. (Regulatory and Critical)



### Summary

Various city, county, and CalTrans infrastructure improvement projects occur each year. When water facilities need to be relocated due to these projects, the District is required to fund the relocations if the water facilities are not in an easement that has prior rights over the public right of way. This project provides funding at the level of activity anticipated for each of the next five years, based on a review of projects. The funding level proposed is based on historical activities and existing projects that are planned for the next five years.

### Background

A number of City, County, and Caltrans projects may occur over the next few years necessitating relocations and determination of prior rights once the projects become a reality. One project proposed for construction in 2016 through 2018 involves the City of Goleta's project to replace the Hollister Avenue bridge and construct two new road extensions across Old Town Goleta south of Hollister Avenue to reduce the traffic volume on Hollister as shown in the above photo. Approximately 100' of existing 12" steel main will need to be realigned to be consistent with a proposed Hollister Avenue bridge replacement project, and relocations of various existing waterline facilities and appurtenances. The project will also incorporate intersection capacity improvements (roundabouts) at the Hollister Avenue and Route 217 ramp intersections. The District is currently establishing a determination of prior rights on all the areas impacted by this project. If the City of Goleta has jurisdictional authority the District will need to cover the cost of moving the infrastructure.

**Need for Project**

This project will minimize or prevent unanticipated service disruptions by protecting and relocating District infrastructure when required by jurisdictional authority. When agencies have jurisdictional authority over the right-of-way, they can direct the District to realign, relocate or otherwise adjust District facilities at District cost to accommodate and conform with the proposed project.

**Project Description**

For all projects, the District will engage in a thorough review to establish whether or not jurisdictional authority requires the District to cover the cost to move the facilities. The District will obtain the services of an engineering firm to design the appropriate relocations required. The District will oversee the construction using contractors, or for the minor relocations District staff will be utilized.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 City, County, Caltrans Relocation Required Projects	\$108,930
FY 2016-17 City, County, Caltrans Relocation Required Projects	\$176,328
FY 2017-18 City, County, Caltrans Relocation Required Projects	\$24,605
FY 2018-19 City, County, Caltrans Relocation Required Projects	\$95,000
FY 2019-20 City, County, Caltrans Relocation Required Projects	\$230,000
<b>Total Budget:</b>	<b>\$634,863</b>

**Project Schedule**

Engineering: FY 2018-19, FY 2019-20

Construction: Next 5-Year IIP

**Project Status**

Project Status as of May 2019: Ongoing

## Polybutylene Service Line Emergency Replacements

IIP Group No: G1-32

Project Score: N.A. (Regulatory and Critical)



### Summary

Polybutylene (PBT) service lines were installed throughout the District system in the early 1970s. At that time, PBT was considered a “state of the art” material because it was more economical and easier to produce than copper service lines. However, PBT service lines proved unreliable and their use was discontinued at the District and throughout the industry. This project involves the emergency replacement of failed PBT service lines with copper lines throughout the District’s system. Approximately eighteen emergency PBT failures occur annually. These must be replaced to prevent service disruption and property damage to the customer that relies on this service line for their water supply.

### Background

This project provides annual funding for PBT replacement. As the material ages, the PBT service lines become hard and brittle, allowing hairline fractures that evolve into large fractures or even complete separations. This can cause major water loss and property damage. There are more service line leaks during seasonal temperature fluctuations, as temperatures vary from hot to cold, or cold to hot. In 2014, PBT service leaks accounted for sixteen of the twenty eight service leaks repaired by service crews. The District estimates that on average, twenty five PBT service line leaks per calendar year will fail and need emergency replacement based on trends in the past two years. There are an estimated several hundred PBT service lines still in use throughout the District’s system.

### Need for Project

This project is critical to prevent property damage, lost water resources, and potential safety issues to the public and District employees. Replacement of PBT is necessary to prevent service outages, property damage, and lost water resources. A proactive replacement of service lines will provide continued reliable water service for more than 16,600 District customers, and prevent more costly and time consuming repairs.

### Project Description

Leaking PBT service lines are replaced by excavating down to the water connection and closing the valve to stop the leakage. Upon completion of excavation a new copper service line is pulled from the distribution line to the meter box, eliminating the PBT service line. The average emergency PBT service line replacement, regardless of size, costs approximately \$11,000.

### Project Budget

	Total Budget
FY 2015-16 Polybutylene Service Emergency Replacements	\$159,703
FY 2016-17 Polybutylene Service Emergency Replacements	\$27,445
FY 2017-18 Polybutylene Service Emergency Replacements	\$305,993
FY 2018-19 Polybutylene Service Emergency Replacements	\$80,150
FY 2019-20 Polybutylene Service Emergency Replacements	\$80,150
<b>Total Budget:</b>	<b>\$653,441</b>

### Project Schedule

This project recurs annually beginning in FY 2015-16.

### Project Status

Project Status as of May 2019: Ongoing

## Copper Service Line Replacements

IIP Group No: G1-33

Project Score: N.A. (Regulatory and Critical)



### Summary

This project consists of replacing aging copper water service lines that connect meters to water mains. Old copper lines that are beyond their expected service life are susceptible to leaks and flow restrictions from accumulated mineral deposits. When these copper service lines fail, they often affect not only the customer served by that particular service line, but also the surrounding community, including residential and commercial customers within the immediate area, due to a shutdown or traffic control. The failed copper lines must be replaced to prevent service disruption and potential property damage to the customers that rely on these service lines for their water supply.

### Background

This project provides for the ongoing installation of new copper water lines. Underground infrastructure requires continual maintenance and monitoring to address emergency breaks and disruption of service to customers. In calendar year 2014, twelve of the District's 28 service line leaks were on aging copper service lines. The District has over 16,000 copper service lines throughout the system with some over 50 years old. The copper service lines are performing extremely well considering the number in use versus the failure rate, but replacement of aging lines is necessary. A service replacement averages 25 feet, but can range from 10 feet to 60 feet in replacement length.

Although replacement of failed service lines is critical, the twenty eight failures in calendar year 2014, (including 12 copper services and 16 polybutylene services) represent a very low failure rate (0.07%). This indicates that copper service lines are generally in good condition throughout the District.

### Need for Project

Proactive replacement of old copper service lines will prevent service disruptions as well as more costly and time consuming emergency repairs due to unanticipated water system failures. Each year copper service lines fail due to age and corrosion and need to be addressed immediately to restore service or eliminate the leakage from continuing.

### Project Description

The best and most cost effective way to replace a copper service line is to do a complete installation of copper from the corporation stop valve at the main to the angle stop valve at the meter. This is done by pulling the new copper service line directly through the existing failed line, which is the preferred method of replacing service lines. Taking this approach greatly reduces the impacts to our customers within the community. Replacing a failed service line completely with a new line reduces the chances of returning to this same service line for repairs in the foreseeable future. The District on average replaces 12 copper service lines per year. The average cost for a single copper service line replacement, considering all sizes, is estimated at \$5,000.

### Project Budget

	Total Budget
FY 2015-16 Copper Service Line Replacements	\$239,553
FY 2016-17 Copper Service Line Replacements	\$236,193
FY 2017-18 Copper Service Line Replacements	\$113,809
FY 2018-19 Copper Service Line Replacements	\$64,116
FY 2019-20 Copper Service Line Replacements	\$64,116
<b>Total Budget:</b>	<b>\$718,087</b>

### Project Schedule

This project recurs annually beginning in FY 2015-16.

### Project Status

Project Status as of May 2019: Ongoing

## Valve and Hydrant Replacements

IIP Group No: G1-34

Project Score: N.A. (Regulatory and Critical)



### Summary

This program replaces inoperable fire hydrants and valves to enhance service reliability and increase flow rates to improve fire protection capability. As these items age, replacement due to mechanical failure is a common occurrence. District distribution crews actively identify fire hydrants and water main valves that are nearing or have exceeded their expected service life, or are failing. These vital repairs are needed to ensure that emergency services personnel have easy access to hydrants with sufficient water pressure and flow rates to fight a fire.

### Background

The District has approximately 6,000 valves and 1,500 fire hydrants located throughout the distribution system. Old fire hydrants can have reduced flow rates, resulting in water pressures and flows below optimal levels for fire protection. Some fire hydrants have also been obstructed by landscaping and are not easily accessible to emergency services personnel. The fire hydrant replacement program improves community safety by replacing aged hydrants. The valve replacement program is an ongoing effort as a result of the valve maintenance program and subsequent distribution improvement projects. These valves are critical to isolate the distribution pipes when leaks occur or planned maintenance activities are required. District staff routinely operates all valves in the system on a 5 year schedule identifying valves needing replaced on a proactive basis. In addition, during emergency shutdowns and planned construction projects other valves are operated and also are found to be inoperable.

**Need for Project**

Fire hydrants are one of the most important tools firefighters utilize during fire protection operations. Hydrant maintenance is of key concern to District customers. Valves allow distribution operators to minimize property damage during emergency leak repairs, reduce the amount of customers impacted by shutdowns, and protect water resources. In addition, operators depend on valves while conducting planned flushing activities to manipulate flow directions to improve water quality.

**Project Description**

The Hydrant and Valve Replacement Program removes and replaces faulty valves and hydrants when they are frozen or stuck, have broken stems, sheared operating nuts, poor closing ability, excessive leak-by, cracked bonnets and leaking packing, or are hard to operate. Under this program failed isolation valves will also be replaced when they are identified, ensuring the system is maintained or repaired with the least impact to customers.

On an annual average the District experiences approximately 15 fire hydrants that need replaced and approximately 40 valves are found inoperable. The costs of replacements vary widely depending upon the construction difficulty encountered especially with surrounding underground utilities and the possible damage incurred when leaking prior to repairs. The funding is based on a historically-based average.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 Valve and Hydrant Replacements	\$230,132
FY 2016-17 Valve and Hydrant Replacements	\$210,326
FY 2017-18 Valve and Hydrant Replacements	\$408,527
FY 2018-19 Valve and Hydrant Replacements	\$391,996
FY 2019-20 Valve and Hydrant Replacements	\$391,996
<b>Total Budget:</b>	<b>\$1,632,977</b>

**Project Schedule**

This project recurs annually beginning in FY 2015-16.

**Project Status**

Project Status as of May 2019: Ongoing

## Pressure Regulating Valves Replacements

IIP Group No: G1-35

Project Score: N.A. (Regulatory and Critical)



### Summary

Goleta Water District's 144 Pressure Regulating Valves (PRV) control the hydraulics of the distribution system and manage set points to 24 pressure zones and 8 storage tanks within the system. Ongoing maintenance, repair and replacement allow for proper valve operation and ensure stable service to customers. Replacing the PRV's is a top distribution system priority, as PRV's are the primary point of control for the system. In addition, the stations protect downstream piping and appurtenances from failure due to excess pressure. The failure of control valves which regulate the pressures into the various pressure zones in the distribution system can impact thousands of customer accounts depending upon which valve in the system fails.

### Background

This project facilitates an ongoing maintenance program to inspect and overhaul PRVs and combination air and vac valves. Maintenance of PRVs consists of two distribution system operators overhauling the pilot controls annually, with a complete rebuild and overhaul of the valve bodies every other year. Maintenance of combination air and vac valves is done as fill in work for the distribution system operators and consists of general inspection, exercising the valve to verify proper operation, and cleanup of the surrounding valve area. Maintenance involves the replacement of various parts to extend the life of units as long as possible, but general wear may require replacement. Failed block valves and damaged control valves are replaced when identified.

**Need for Project**

Without ongoing maintenance, repair and replacement of PRVs, there is a risk of loss of pressure resulting in outages and equipment failure, over pressurization which can cause water hammer resulting in property damages, main breaks and water loss. Replacement of damaged PRV is critical to preventing damage to pipelines and diminished service levels.

**Project Description**

The project includes replacement of failed block valves, damaged control valves and the purchase of parts needed for annual valve maintenance.

**Project Budget**

	<b>Total Budget</b>
FY 2016-17 Pressure Regulating Valve Replacements	\$142,950
FY 2017-18 Pressure Regulating Valve Replacements	\$39,733
FY 2018-19 Pressure Regulating Valve Replacements	\$10,350
FY 2019-20 Pressure Regulating Valve Replacements	\$10,350
<b>Total Budget:</b>	<b>\$203,383</b>

**Project Schedule**

This project recurs annually beginning in FY 2016-17.

**Project Status**

Project Status as of May 2019: Ongoing

## Regulatory Fleet Replacement Program

IIP Group No: G1-36

Project Score: N.A. (Regulatory and Critical)



### Summary

The California Air Recourse Board (CARB) regulations require diesel trucks and buses operating in California to be upgraded to reduce emissions. Newer heavy trucks and buses were required to meet particulate matter (PM) filter requirements as of January 1, 2012. Starting January 1, 2015, similar regulations apply to light trucks and older heavy trucks. Currently, the District has retrofitted all diesel trucks in the fleet with the necessary particulate filters to meet the CARB regulations, effectively extending their life until January 1, 2020. By 2020, however, three large service trucks, three dump trucks and the water truck have diesel engines that will exceed 2019-20 CARB emission requirements. By January 1, 2023, nearly all fleet vehicles must have 2010 model year engines or equivalent.

### Background

In 2011 the District retrofitted all the diesel trucks with particulate filters to meet the CARB regulations. The regulation applies to all privately and federally-owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds.

To stay in compliance with CARB and not be subject to daily fines, the District must schedule vehicle replacements to meet air quality compliance deadlines. Two of the dump trucks and the water truck will require replacement by FY 2019-2020. Based on the age and condition of these vehicles (18+ years old), replacement is the most cost effective option.

Under CARB regulations the District received credit for three other large service trucks which had filters installed in 2011 extending compliance until 2023. These three are scheduled for replacement during FY 2020-23.

**Need for Project**

Meeting regulatory requirements for vehicles is critical in order to ensure daily operations are not interrupted. If the CARB schedule and deadlines are not met, the District will be out of compliance and be subject to daily fines of up to \$1,000 per vehicle per day.

**Project Description**

Staff will develop specifications for replacement trucks and ancillary equipment. A Request for Proposals will be issued to various truck dealerships for the vehicle to be replaced. Once the contract is awarded, the District will have the replacement vehicles fitted with field and safety equipment for District operations. Updated compliance information will be provided to CARB after each vehicle replacement.

**Project Budget**

		Total Budget
TBD Regulatory Fleet Replacement		TBD
<b>Total Budget:</b>		<b>TBD</b>

**Project Schedule**

TBD beginning in FY 2019-20.

**Project Status**

Project Status as of May 2019: Deferred

## Regulatory Construction Equipment Replacement Program

IIP Group No: G1-37

Project Score: N.A. (Regulatory and Critical)



### Summary

The California Air Resource Board (CARB) regulations require off road diesel equipment such as backhoes and other heavy equipment that operate in California to be upgraded to reduce emissions. Particulate matter (PM) filter requirements for backhoes were required as of January 1, 2012. By 2020, a combination of new regulations and credits on the equipment replaced versus the total number in the fleet will require the District to replace three additional backhoes. By January 1, 2023, two additional backhoes will need to be replaced.

### Background

The District currently owns only one backhoe purchased after 2010 that meets the CARB engine requirements. The oldest backhoe is over 20 years old. Currently, the District has retrofitted all diesel backhoes with particulate filters to meet the CARB regulations, effectively extending their use until January 1, 2020. Replacing the engines to comply with CARB regulations is not cost effective. Contractors and public utilities industry have generally moved away from retrofitting older backhoes as they negatively affect the backhoe's operation, and the retrofit could constitute a safety hazard as it obstructs visibility for the operator.

**Need for Project**

Large construction related equipment is needed to repair and replace the District’s aging infrastructure system and to respond to emergencies. Meeting regulatory requirements for equipment is critical in order to ensure day-to-day operations are not interrupted. This equipment plays a vital role in everyday operations for both distribution and treatment purposes. If the CARB schedule and deadlines are not met, the District will be out of compliance and be subject to daily fines of up to \$1,000 per piece of equipment per day.

**Project Description**

The Regulatory Construction Equipment Replacement Program replaces equipment that will no longer comply with CARB regulation in 2020. At a minimum the District has three tier 0 backhoes that need replacement within the next 4 years.

**Project Budget**

		<b>Total Budget</b>
TBD Regulatory Construction Equipment Replacement		TBD
<b>Total Budget:</b>		<b>TBD</b>

**Project Schedule**

TBD beginning in FY 2019-20.

**Project Status**

Project Status as of May 2019: Deferred

## Stormwater Headquarters Master Plan

IIP Group No: G1-38

Project Score: N.A. (Regulatory and Critical)



### Summary

The District's Stormwater Headquarters Master Plan is designed to comply with the new State Water Resources Control Board (SWRCB) Industrial General Permit (IGP) regulations for regulating stormwater discharge when they become effective on July 1, 2015. Preliminary conceptual designs for ten structural improvements that follow the requirements of the new IGP and Santa Barbara County's Low Impact Development Guide were presented to the Board of Directors in 2014. These conceptual designs are intended to slow, detain, or infiltrate stormwater runoff leaving District property to reduce the impact on neighboring creeks, groundwater, and the ocean. Additionally, these designs ensure that the District complies with annual reporting, as well as meets District goals outlined in the Board adopted Sustainability Plan. The conceptual designs will be phased according to the priority to meet near-term regulatory compliance requirements.

### Background

Stormwater is managed in accordance with the Federal Clean Water Act of 1989 and the Environmental Protection Agency's National Pollutant Discharge Elimination System requirements. In California, the State Water Resource Control Board (SWRCB) issued a statewide IGP that would apply to all stormwater discharge associated with industrial activities.

The District's current IGP requires a Storm Water Pollution Prevention Plan (SWPPP) that details the site-specific requirements needed to comply with the SWRCB. The SWPPP includes a water monitoring program that designates two stormwater discharge monitoring points to be sampled during storm events of significant discharge. The first monitoring point is located in the southwest corner of the Operations Yard where water is discharged to the neighboring flood control channel (MP-1). The second monitoring point is the storm drain located at the fence line between the Operations Yard and the customer parking lot (MP-2). The current IGP requires stormwater sampling at MP-1 and MP-2 during the first two storm events of the reporting year (July 1 - June 30). Samples are sent to a certified laboratory to be tested for total suspended solids, specific conductance, dissolved oxygen, oils and grease. These samples are subsequently reported to the Central Coast Regional Water Quality Control Board in an Annual Report.

**Need for Project**

The new IGP establishes a designation between minimum and advanced Best Management Practices (BMPs), new observation criteria, and more stringent regulations regarding stormwater sampling. First, BMPs must be divided into either minimum BMPs or advanced BMPs that reflect best industry practice considering available technology and economic practicality. Second, stormwater sampling events have increased from sampling the first two storms of the reporting year to four sampling events. Lastly, the new IGP has instituted annual and instantaneous maximum numeric action levels. These levels institute a benchmark measure applicable to total suspended solids, pH, oils and grease. If exceedances are tested in the stormwater samples, the discharger would engage in a Level 1 status. Level 1 Status requires the hiring of a Qualified Industrial Storm Water Practitioner to evaluate the site, and subsequently submit a Level 1 Report specifying all required revisions to the discharger’s SWPPP to the SWRCB. If exceedances occur while in Level 1 Status, the discharger engages in Level 2 Status requiring action plans, technical reports, and the installment of large, structural improvements to treat stormwater discharge. Overall, the new IGP aims to strongly regulate stormwater discharge by specifying more stringent requirements of the discharger.

**Project Description**

Each phase of the Stormwater Headquarters Master Plan will begin with professional design and analysis work to incorporate the projects within each phase. Professional design work will be followed with construction and contracting work to install the relative projects.

Phase 1: The existing bulk material storage area presents a risk of exceeding compliance levels shall be relocated to the unpaved area of the Operations Yard. An extension of the concrete pad at the fueling area to be beneath vehicles when fueling shall decrease the risk of a fuel spill infiltrating the unpaved area. An asphalt berm shall separate the unpaved area from the paved portion of the Operations Yard to decrease sediment runoff.

Phase 2: A bioretention area will be installed along the west edge of the customer parking lot to allow for water to be infiltrated into the ground instead of the storm drain.

Phase 3: Replacement of the base material in the unpaved area will prevent fine sediments from entering stormwater runoff. Pervious pavement will replace existing impervious pavement in the stalls of the customer parking lot. The replacement of the customer parking lot islands with modular wetlands will catch and infiltrate stormwater runoff.

Phase 4: An Underground Infiltration Systems will be installed below the ground surface in the south-west corner of the Operations Yard and will receive runoff through an inlet pipe, allowing for the infiltration of stormwater before it discharges as surface runoff.

**Project Budget**

	Total Budget
FY 2015-16 Stormwater Headquarters Master Plan	\$1,283
FY 2016-17 Stormwater Headquarters Master Plan	\$253,496
FY 2017-18 Stormwater Headquarters Master Plan	\$53,878
FY 2018-19 Stormwater Headquarters Master Plan	\$10,000
FY 2019-20 Stormwater Headquarters Master Plan	\$10,000
<b>Total Budget:</b>	<b>\$328,657</b>

**Project Schedule**

This project recurs annually beginning in FY 2015-16.

**Project Status**

Project Status as of May 2019: Deferred

## Water Quality Maintenance at District Wells and Distribution System

IIP Group No: R-1

Project Score: N.A. (Regulatory and Critical)



### Summary

The project will analyze and model historical, current, and future water quality at District wells and distribution system. Of particular concern is corrosivity and disinfection byproducts. The study will determine the capabilities of existing treatment processes to handle changes in water quality, and identify additional treatment processes or modifications necessary to continue to meet state and federal drinking water standards. This project may necessitate amendment of the District's regulatory permits to obtain approval from the Department of Drinking Water (DDW) to operate the wells, reservoirs, or other facilities with new and/or modified treatment processes.

### Background

As part of the District's drought response, the water supply portfolio has changed significantly since 2011. While Lake Cachuma traditionally provided the majority of the water served to customers under normal conditions, groundwater is now the primary source of supply to meet customer demand. The increased use of groundwater and changing groundwater levels are anticipated to result in changing water quality conditions. Further, water quality from Lake Cachuma continues to change as lake levels drop due to drought and wildfires increase lake sediment and organic loading. These changing conditions necessitate a review of existing treatment options at each of the District's groundwater well facilities and distribution system.

**Need for Project**

Changing water supplies and changing water quality are known to be risk factors for drinking water systems. A comprehensive analysis of well water in the Goleta Water District potable water distribution system will characterize the current condition of the system and identify corrosion control measures to ensure compliance with the new revision of the federal Lead and Copper Rule (LCR). Additionally, comprehensive analysis of existing and recommended strategies for controlling disinfection byproducts, such as trihalomethanes, will allow the District to ensure drinking water meets regulatory standards as water supplies and conditions change.

**Project Description**

The project will evaluate each of the District wells and distribution system to look for problems with corrosivity, water age, and disinfection byproduct formation. The project will also include hydraulic modeling of different mixing and valving scenarios to optimize water quality via well production settings and hydraulic controls in the distribution system. Based on recommendations made for needed infrastructure improvements, the District will design and start construction on projects to benefit water quality from wells or within the distribution system.

**Project Budget**

	<b>Total Budget</b>
FY 2016-17 Water Quality Maintenance at District Wells	\$15,492
FY 2017-18 Water Quality Maintenance at District Wells	\$432,708
FY 2018-19 Water Quality Maintenance at District Wells	\$380,000
FY 2019-20 Water Quality Maintenance at District Wells	-
<b>Total Budget:</b>	<b>\$828,200</b>

**Project Schedule**

Engineering: FY 2018-19, FY 2019-20  
 Construction: FY 2019-20

**Project Status**

Project Status as of May 2019: In Progress

## Water Quality Maintenance at CDMWTP

IIP Group No: R-2

Project Score: N.A. (Regulatory and Critical)



### Summary

The project will analyze historical, current, and future surface water quality for trihalomethanes (THMs), organic content, corrosivity, and other chemical parameters to determine the capability and compatibility of existing treatment processes at the Corona Del Mar Water Treatment Plant (CDMWTP) and to identify additional treatment processes or modifications necessary to comply with all existing and new state and federal drinking water standards.

### Background

As a result of drought, wildfire, and fluctuating lake levels, the District's primary surface water supply has experienced and continues to experience changing water quality conditions. Impacts from the Rey, Whittier, and Thomas Fires within the Cachuma watershed and the decay of submerged vegetation are expected to contribute to declining water quality for at least several years.

**Need for Project**

Increasing levels of organic matter in Lake Cachuma are expected to result in exceedance of regulatory standards for trihalomethanes (THMs), a disinfection byproduct. Development of a long term treatment solution is needed to respond to what is expected to be a prolonged water quality challenge. Additionally, changing water supplies and changing water quality are known to be risk factors for increased corrosion in drinking water systems. Any new treatments proposed for reducing organic levels may also require implementation of corrosion control measures to ensure compliance with the new revision of the federal Lead and Copper Rule (LCR). Corrosion control of distribution systems typically requires using chemical conditioning of the source water at CDMWTP.

**Project Description**

The project includes studies, tests, monitoring and designs for maintaining water quality at CDMWTP. Subjects will include organic levels, disinfection chemicals, disinfection byproducts, organic levels, and corrosivity at CDMWTP. Hydraulic modeling will be performed to simulate different mixing scenarios. Jar, pilot, and full scale plant testing will be performed to simulate conditions of anticipated water quality blends.

**Project Budget**

	<b>Total Budget</b>
FY 2016-17 Water Quality Maintenance at CDMWTP	\$167,458
FY 2017-18 Water Quality Maintenance at CDMWTP	\$27,899
FY 2018-19 Water Quality Maintenance at CDMWTP	\$870,000
FY 2019-20 Water Quality Maintenance at CDMWTP	\$600,000
<b>Total Budget:</b>	<b>\$1,665,357</b>

**Project Schedule**

Engineering: FY 2016-17, FY 2017-18, FY 2018-19, FY 2019-20  
 Construction: FY 2019-20

**Project Status**

Project Status as of May 2019: In Progress

## Alternative Water Supply Pilot Project

IIP Group No: R-3

Project Score: N.A. (Critical to Development of Sustainable Water Supply)



### Summary

The District is currently completing two studies evaluating options to develop additional alternative water supplies. The purpose of these studies is to determine the feasibility of a project, identify potential project sites, and establish estimates for how much water could be produced. Once the feasibility study is completed, it is recommended that a pilot project be selected to demonstrate proof of concept. This project provides the funding necessary to secure a grant for implementing a pilot project.

The Recycled Water Feasibility Study examines options to expand the use of recycled water, and is expected to recommend either an indirect and direct potable reuse (IPR/DPR) project. IPR involves the injection of purified water into an aquifer where it mixes with existing groundwater supplies prior to its extraction for treatment and delivery. DPR involves delivering highly treated wastewater directly into a potable distribution system. A Stormwater Master Plan is also being prepared, and is expected to recommend a project and identify potential sites for capturing and diverting stormwater for groundwater recharge or surface water treatment.

### Background

Prolonged drought conditions have the ability to significantly impact District water supplies. During the current drought, Lake Cachuma has been reduced from the primary source of supply to essentially a conveyance facility, with a zero allocation for two years in a row. Water supply on the South Coast is further challenged by delivery capacity and reliability issues, and forthcoming environmental requirements for the Cachuma Project. These challenges have highlighted the important role played by a diverse local water supply. Alternative sources of water supply are emerging as a critical source of news supply to meet customer demand into the future.

**Need for Project**

During prolonged drought conditions, available groundwater and surface water supplies may be insufficient to meet customer demand in the future. Additionally, to support management of the basin, the District is actively looking at injection to recharge beyond what occurs naturally through rainfall or when the lake spills. A pilot test of IPR/DPR technology will demonstrate, in a partnership with GSD, the potential to provide an additional source of purified, potable water to District customers that could decrease use of groundwater, or provide a source for injection. Alternatively, a pilot project for stormwater capture could demonstrate the potential to provide an additional source of water for groundwater recharge, or use as potable water.

**Project Description**

The details of the pilot projects are pending the completion of feasibility studies that will recommend specific technology and location of the project. The decision on which pilot project to pursue is pending direction from the Board, following the presentation and review of the feasibility studies. Matching funding for the potable reuse or a stormwater capture project are anticipated from State and Federal grants.

**Project Budget**

		<b>Total Budget</b>
TBD Alternative Water Supply Pilot Project		TBD
<b>Total Budget:</b>		<b>TBD</b>

**Project Schedule**

Engineering: TBD

Construction: TBD

**Project Status**

Project Status as of May 2019: Deferred

## Aeration Systems at Reservoirs for THM Reduction

IIP Group No: R-4

Project Score: N.A. (Regulatory and Critical)



### Summary

The project will include design, procurement and installation of aeration systems at selected District reservoirs to help meet regulatory standards for trihalomethanes (THMs) in potable water. THMs are produced when chlorine used for disinfection reacts with the naturally occurring organic material in the raw water. THM concentrations increase in the distribution system the longer the water is in the system. Thus, remote areas of the distribution system and places where low flows are observed often experience the highest THM concentrations.

### Background

Drought and stormwater runoff from wildfire burn areas have resulted in increased levels of organic material in Lake Cachuma, resulting in elevated THM concentrations in the District's distribution system, especially during warmer months. These conditions are more than the CDMWTP was initially designed to treat. Maintaining THM levels below the regulatory threshold in the potable distribution system is presently infeasible without aeration.

**Need for Project**

Removal of THMs from the treated water is needed to comply with Federal drinking water standards. Aeration at the reservoirs is among the most cost effective means of reducing THMs.

**Project Description**

The project includes design, procurement and installation of aeration systems at Corona, Ellwood, and Fairview reservoirs. These systems are anticipated to reduce THM levels by 20-60%. The project will also include the design and construction electrical upgrades needed to supply the aeration systems’ power demands.

**Project Budget**

	<b>Total Budget</b>
FY 2016-17 Aeration Systems at Reservoirs for THM Reduction	\$67,563
FY 2017-18 Aeration Systems at Reservoirs for THM Reduction	\$1,042,027
FY 2018-19 Aeration Systems at Reservoirs for THM Reduction	\$810,000
FY 2019-20 Aeration Systems at Reservoirs for THM Reductio	-
<b>Total Budget:</b>	<b>\$1,919,590</b>

**Project Schedule**

Engineering: FY 2018-19, FY 2019-20  
 Construction: FY 2018-19, FY 2019-20

**Project Status**

Project Status as of May 2019: In Progress

## Ekwill, Fowler, Hollister Infrastructure Relocations

IIP Group No: R-5

Project Score: N.A. (Regulatory)



### Summary

This project will relocate waterlines, hydrants, valve cans, service lines, backflow preventers, meters, and other infrastructure to accommodate the City of Goleta's planned road improvements at Ekwill Street, Fowler Road, and Hollister Avenue.

### Background

Goleta Water District is one of eight utilities obligated to relocate its infrastructure as a result of \$23M in federally funded road improvements by the City of Goleta. The District has a right to be in the City's roadways and sidewalks as long as the District's facilities do not conflict with the City's infrastructure, but in the event of a conflict the District is obligated to relocate its facilities to accommodate city infrastructure.

**Need for Project**

The proposed road improvements will require the relocation of District facilities at several locations. Road improvements will include the Ekwil Street road extension and roundabout installation at Pine Avenue, the Fowler Road extension from Kellogg Avenue, and the installation of two roundabouts and bridge replacement on Hollister Avenue at Highway 217.

New City infrastructure, including storm drains, will conflict with existing buried District waterlines. These conflicts will require the District waterlines to be re-routed around the new infrastructure. Demolition and relocation of existing sidewalks and construction of new sidewalks will require relocation of hydrants, valve cans, service lines, and meters. Resurfacing existing roads will require raising of valve cans.

Construction of new roads will require excavation and compaction atop existing buried District waterlines. In many instances, sufficient cover exists to prevent immediate damage to waterlines from construction activities. The majority of these waterlines are steel pipe and were installed by the USBR in the 1950s. While their condition is currently unknown, there have been no main breaks in the project area in the last three years.

Demolition of the existing Hollister Avenue bridge and construction of a new bridge will require the removal of the existing 12-inch main before and throughout construction.

**Project Description**

The project includes design and construction of relocated pipelines and other infrastructure. To minimize costs to the District and because total replacement of all infrastructure in the affected areas is not critical to the District, the project will leave in place as much infrastructure as possible and relocate only those facilities where conflicts exist or pipelines are at high risk of sustaining damage from the City’s planned construction activities.

**Project Budget**

	<b>Total Budget</b>
FY 2016-17 Ekwil, Fowler, Hollister Infrastructure Relocations	\$114,530
FY 2017-18 Ekwil, Fowler, Hollister Infrastructure Relocations	\$44,881
FY 2018-19 Ekwil, Fowler, Hollister Infrastructure Relocations	\$15,000
FY 2019-20 Ekwil, Fowler, Hollister Infrastructure Relocations	\$16,000
<b>Total Budget:</b>	<b>\$190,411</b>

**Project Schedule**

Engineering: FY 2018-19 through FY 2019-20

Construction: FY 2019-20 and next 5-Year IIP

**Project Status**

Project Status as of May 2019: In Progress

## Conditions Assessment of 14 Miles of Critical Transmission Mains and Other Assets

IIP Group No: R-6

Project Score: N.A. (Critical to Maintain System Reliability for Treatment and Distribution)



### Summary

This project will initiate a conditions assessment of half of the District's critical transmission mains. Robots and/or personnel with video equipment and sensors are inserted into dewatered pipelines to make observations of pipeline conditions, corrosion, and other potential problems. The collected data will allow the District to determine the remaining useful life of the pipe, the need for repairs or replacement, and reduce the risk of catastrophic pipe failure..

### Background

The District distribution system consists of approximately 270 miles of pipeline. More than 53 miles or 20% of this pipeline is over 60 years old and is nearing the end of its reported expected useful life, estimated by the American Waterworks Association (AWWA) to be 70 years. The District has never performed conditions assessments on its pipelines. Distribution pipelines include 14 miles of critical transmission mains, 10 miles of Goleta West Conduit, and 10 miles of recycled water mains. Failure of critical transmission mains could result in prolonged outages to a large number of customers and could result in costly damage to public and private properties.

**Need for Project**

Conditions assessments are an essential component of any utility’s asset management program and infrastructure replacement planning. Conditions assessments can help reduce risk of pipe failure by identifying problems early, extending the useful life of pipe by relying on empirical data rather than theoretical estimates of useful life, and providing baseline data for future assessments.

**Project Description**

The project will include a consultant inserting a remotely controlled robot and/or personnel with video cameras into transmission mains to gather visual and electromagnetic data about pipeline corrosion, separation, leaks or other potentially problematic conditions. The results of the assessment will be used to recommend localized pipeline repairs and/or replacements and establish a baseline for future conditions assessments.

**Project Budget**

	<b>Total Budget</b>
FY 2017-18 Conditions Assessment of 14 Miles of Critical Transmission Mains and Other Assets	\$119,239
FY 2018-19 Conditions Assessment of 14 Miles of Critical Transmission Mains and Other Assets	\$150,000
FY 2019-20 Conditions Assessment of 14 Miles of Critical Transmission Mains and Other Assets	-
<b>Total Budget:</b>	<b>\$269,239</b>

**Project Schedule**

Engineering: FY 2017-18, FY 2018-19, FY 2019-20

Construction: N.A.

**Project Status**

Project Status as of May 2019: In Progress

## Recycled Water Slough Crossing Alternative Design Study

IIP Group No: R-7

Project Score: N.A. (Critical to Maintain System Reliability for Treatment and Distribution)



### Summary

This project will identify and compare design alternatives for the District's recycled water main crossing through the Goleta Slough that supplies 100% of recycled water demand. The current pipeline crossing is located 25 feet below the ground surface and underneath the slough. Eventual failure of the recycled water main would require a lengthy replacement design, permitting, and construction. Additionally, a pipeline and/or valve failure at this location could cause accidental and uncontrolled discharge of a significant volume of highly chlorinated water into sensitive estuarine habitat. This alternative design study will shorten the service outage and, if the crossing is replaced prior to pipeline failure, may prevent the environmental impacts associated with a pipeline or valve failure.

### Background

The District's recycled water system provides approximately 1.5 million gallons per day of recycled water to institutional, government, and commercial customers. The District's recycled water distribution system is not looped, meaning that a pipeline failure near the start of the distribution system could result in a complete outage for all of the District's customers and increase potable water demand by 1.5 million gallons per day to replace the lost recycled water supply. The most vulnerable portion of the system happens to be located near the start of the distribution system where it crosses Goleta Slough 25 feet below the ground surface. A failure at this location could cause a lengthy service outage of several months to the recycled water customers due to the time needed to design, permit, and construct a replacement beneath or over sensitive ecological habitat in the Coastal Zone.

**Need for Project**

To minimize the service outage time and/or avoid potential catastrophic pipeline failure that would cause prolonged service outage and potentially necessitate substantial new potable water demand, this project will initiate the crossing replacement design process.

**Project Description**

The project includes an alternative study to identify and develop up to three different conceptual designs for replacing the recycled water main crossing the slough, to provide pipeline replacement permitting guidance and cost and schedule estimates to inform future capital planning.

**Project Budget**

		<b>Total Budget</b>
FY 2018-19 Recycled Water Slough Crossing Alternative Design Study		\$37,000
<b>Total Budget:</b>		<b>\$37,000</b>

**Project Schedule**

Engineering: FY 2017-18, FY 2018-19

Construction: Next 5-Year IIP

**Project Status**

Project Status as of May 2019: In Progress

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The second group includes **Projects Vital to Sustain Infrastructure** that ranked highly in an objective evaluation process for their ability to ensure service reliability; produce operational cost savings; create opportunities for grant funding, or generate revenue.

**Table 4: IIP 2015-2020 Matrix – Projects Vital to Sustain Infrastructure**

Ref.	Project Name	2015-16	2016-17	2017-18	2018-19	2019-20	TOTAL 5 year spend	Completion Status
<b>Projects Vital to Sustain Infrastructure</b>								
G2-1	Small Meter Replacement Program	1,162,161	273,292	225,586	50,000	50,000	1,761,039	Ongoing
G2-2	CDMWTP Overflow Basin Construction Project	-	-	-	-	-	-	
G2-3	Airport Area New Well Project	66,156	131,989	206,152	-	-	404,297	Deferred
G2-4	Transmission Main Area New Well Project	-	-	-	-	-	-	
G2-5	Additional Injection Wells	-	-	201	-	-	201	Deferred
G2-6	New Monitoring Wells	-	167	-	-	-	167	Deferred
G2-7	Reservoir Hatch Replacements	-	-	-	-	-	-	Deferred
G2-8	Future Tank Repairs	-	-	-	-	-	-	Deferred
G2-9	Upsizing of Mains	-	-	5,025	-	-	5,025	Ongoing
G2-10	Cathodic Protection Upgrades	2,635	87,147	272,980	99,540	-	462,302	Ongoing
G2-11	Fleet Replacements	-	2,927	44,808	95,000	-	142,735	Ongoing
G2-12	Equipment Replacements	48,590	-	-	5,600	15,500	69,690	Ongoing
G2-13	Information Technology Upgrades	114,039	51,211	26,038	72,960	-	264,248	Ongoing
<b>Total – Projects Vital to Sustain Infrastructure</b>		<b>\$1,393,581</b>	<b>\$546,733</b>	<b>\$780,790</b>	<b>\$323,100</b>	<b>\$65,500</b>	<b>\$3,109,704</b>	

**Table 5: IIP 2015-2020 Scoring – Projects Vital to Sustain Infrastructure**

Ind.	PROJECT NAME/DESCRIPTION	Reliability of Service		O&M Impact		Employee Health & Safety Upgrade		Size of Population Benefitted		Depreciable Service Life of Facility		Resource Conservation		Co-Funding Potential		Discr.	Total Score
		Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score		
		WF = 9		WF = 6.5		WF = 9		WF = 9		WF = 3.5		WF = 6.5		WF = 6.5			
G2-1	Small Meter Replacement Program	3	27	3	20	1	9	3	27	3	11	3	20	0	0	0	<b>114</b>
G2-2	CDMWTP Overflow Basin Construction Project	3	27	0	0	0	0	3	27	0	0	1	7	0	0	20	<b>81</b>
G2-3	Airport Area New Well Project	3	27	3	20	0	0	3	27	0	0	3	20	3	20	0	<b>113</b>
G2-4	Transmission Main Area New Well Project	3	27	3	20	0	0	3	27	0	0	3	20	3	20	0	<b>113</b>
G2-5	Additional Injection Wells	3	27	3	20	0	0	3	27	0	0	2	13	0	0	0	<b>87</b>
G2-6	New Monitoring Wells	3	27	0	0	0	0	3	27	0	0	1	7	0	0	20	<b>81</b>
G2-7	Reservoir Hatch Replacements	3	27	0	0	3	27	3	27	2	7	0	0	0	0	0	<b>88</b>
G2-8	Future Tank Repairs	3	27	1	7	3	27	3	27	1	4	0	0	0	0	0	<b>91</b>
G2-9	Upsizing of Mains	2	18	1	7	0	0	2	18	0	0	0	0	3	20	20	<b>82</b>
G2-10	Cathodic Protection Upgrades	3	27	3	20	1	9	3	27	3	11	3	20	0	0	0	<b>113</b>
G2-11	Fleet Replacements	3	27	2	13	1	9	3	27	3	11	1	7	0	0	0	<b>93</b>
G2-12	Equipment Replacements	3	27	1	7	1	9	3	27	3	11	0	0	0	0	0	<b>80</b>
G2-13	Information Technology Upgrades	3	27	2	13	0	0	3	27	3	11	1	7	0	0	0	<b>84</b>

## Small Meter Replacement Program

IIP Group No: G2-1

Project Score: 114



### Summary

This project facilitates replacement of approximately 16,000 water service meters 1 ½” and smaller with new, more accurate water meters. The meters would measure water use accurately at both high and low flow rates, allowing the District to account for all water use while preventing water loss.

### Background

In spring of 2015, the District completed phase one of the Districtwide meter replacement program by replacing all 800 large meters 2” and greater. As part of the budget process in the spring of 2015 the Board of Directors added the Small Meter Replacement Program. This project will replace existing small meters with like-size digital ultrasonic meters that record water use electronically. In contrast to mechanical meters, electronic meters measure volumetric flow extremely accurately at any flow rates, allowing the District to fully account for water use, reducing unintended water loss and simultaneously promoting conservation.

**Need for Project**

Approximately 50% of total District production is measured through these small meters, which on average are over 15 years old and near the end of their useful service life. Older meters often under-register actual water use. New generation meters will provide more accurate data for both the customer and the District while reducing service calls for failed meters. Replacement of meters is considered an industry best practice to encourage conservation through customer demand hardening.

**Project Description**

The cadence of the Small Meter Replacement Program is decreasing, and has been retimed for implementation over four years instead of two. FY 2015-16 includes the installation of a limited number of small meters and equipment under the Advanced Metering Infrastructure (AMI) program being implemented by June 2016. \$1 million has been scheduled for FY 16-17, and will prioritize the largest by volume of the remaining small meters for replacement. The revised schedule allows the District to achieve coverage of 89% of total water usage in the system by the end of FY 16-17. The remainder of small meters will be replaced over the subsequent two years. A contractor will be hired to assist the District with the installation of the meters.

The payback period is 5-10 years, based on the level of demand hardening and additional conservation behavior exhibited by customers. Once all of the small meters are in place, annual water conservation is expected to be 5 percent of total sales, or 350 AFY District-wide. Over the life of the meters, this equates to a demand reduction of 5,250 AF.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 Small Meter Replacement	\$1,162,161
FY 2016-17 Small Meter Replacement	\$225,586
FY 2017-18 Small Meter Replacement	\$293,374
FY 2018-19 Small Meter Replacement	\$50,000
FY 2019-20 Small Meter Replacement	\$50,000
<b>Total Budget:</b>	<b>\$1,761,039</b>

**Project Schedule**

Replacement: FY 2015-16 through FY 2019-20

**Project Status**

Project Status as of May 2019: Ongoing

## CDMWTP Overflow Basin Construction Project

IIP Group No: G2-2

Project Score: 81



### Summary

The Corona Del Mar Water Treatment Plant (CDMWTP) operates as a “zero liquid discharge” facility. All process waste streams (i.e., settled sludge, filter backwash, filter-to-waste, and drains) must be contained, equalized, treated (as applicable) and returned to the plant. Additionally, CDMWTP is required to maintain a maximum instantaneous recycle flowrate less than 10% of the raw water plant influent flow at all times, and the recycle water turbidity must be less than 2 Nephelometric Turbidity Units (NTU). Additional storage capacity achieved by this project is critical to many plant operations during heavy rainfall events when the turbidity of the water delivered from Lake Cachuma greatly increases, and the plant capacity to process high turbidity water can be exceeded. During heavy rainfall events, the sedimentation basins generate more solids, and the filters require more frequent cleaning. Hence, higher volumes of sludge and backwash water are directed to the Sludge Drying Beds (SDBs) and the Backwash Water Basin (BWB), respectively. Once the BWB capacity is reached, the excess backwash water is discharged into the SDBs. When the SDBs are filled, the excess water is not treated sufficiently and water with elevated turbidity above the turbidity standard (2 NTU) may have to be returned to the head of the plant. Having an additional overflow basin provides the CDMWTP with more flexibility and capacity to process high turbid water captured during heavy rainfall events, thereby allowing the District to meet regulatory standards now in place for turbidity in reclaimed water.

### Background

During periods of heavy rain, turbidity from Lake Cachuma substantially increases. Turbidity indicates the presence of suspended solids in the water. It is measured through the use of refracted light in water samples and expressed in Nephelometric Turbidity Units (NTU). The elevated turbidity levels challenge the normal plant operations and may persist over extended periods of time. Turbidity levels may also remain high in the BWB and during heavy rain events, increasing the backwash water turbidity up to 7 NTU. When the backwash water cannot be treated sufficiently, the turbidity of the recycled water exceeds the regulatory turbidity standard of the recycled water. In this case, a SWRCB-DDW waiver is required, allowing temporary non-compliance for recycled water to be returned to the head of the plant. According to the historical plant data, during some of heavy rain fall events, the plant had to be shut down due to a substantially large hydraulic loading capacity. In 2013, as part of its 5-year Infrastructure Improvement Plan (IIP), the District awarded a contract to an engineering consulting firm to conduct a design study of the CDMWTP processes. The results of the study included recommendations for construction of a backwash overflow basin in order to improve solids handling and sludge management at the plant.

**Need for Project**

Construction of a new overflow basin will serve as an important all-purpose sludge and backwash water storage area that will have the capability of ensuring District compliance with the State Water Resources Control Board-Division of Drinking Water (SWRCB-DDW) and the Central Coast Regional Water Quality Control Board (CCRWQCB) regulations during large storm events, unusually long turbidity periods, or any other incident which may require the assistance of a readily available water or sludge storage area for evaluation, and later, controlled discharge and disposal. The new overflow basin will increase the plant operational flexibility, provide emergency storage and alleviate the hydraulic loading capacity constraints during occasional storm events. The current SDBs and Backwash Basin (BWB) cannot meet the SWRCB-DDW turbidity regulation of the recycled water during extreme weather conditions. Failing to complete this project would prevent the District from consistently meeting current and future regulatory standards.

**Project Description**

This project will complete the construction of the Overflow Basin at the CDMWTP. The basin will be constructed in the space originally allocated and previously rough graded for future construction of either an overflow basin or a Sludge Drying Bed (SDB). As an overflow basin, the new bed will be lined, but will not have a pumping and sludge sub-drain system as is the case for the existing SDBs. The basin may be constructed deeper with provisions for an underdrain system if it needs to be converted to a sludge drying bed in the future. The key components of this project include excavation and disposal of excess soil, construction of the basin side slopes, installation of an impermeable bed liner and finishing fill materials. The overflow basin will be used to store excess decant from the backwash basin, excess sludge from the sludge drying beds and/or flow from the clarifier effluent channel. Appropriate valving and piping need to be implemented to allow for an emergency gravity overflow or manual decant of the BWB to the overflow basin and to route backwash overflow to the backwash basin. Pumping capabilities need to be considered for backwash overflow to return to the head of the plant.

**Project Budget**

		<b>Total Budget</b>
FY 2019-20 CDMWTP Overflow Basin Construction		TBD
<b>Total Budget:</b>		<b>TBD</b>

**Project Schedule**

Construction: TBD

**Project Status**

Project Status as of May 2019: Deferred

## Airport Area New Well Project

IIP Group No: G2-3

Project Score: 113



### Summary

This project will provide a new production well in the vicinity of the Santa Barbara Airport. The new well will enhance the District's pumping capacity to increase reliable supplies of potable water, and facilitate extraction of water from the Goleta Groundwater Basin during potential emergencies and periods of drought. The new well also provides for additional groundwater injection capacity to support the Aquifer Storage Recovery (ASR) program, part of a long term groundwater management and basin protection strategy. As of December 31, 2014 the District has 48,000 Acre Feet of water stored within the Central Sub-Basin of the Goleta Groundwater Basin, but pumping capacity of the District's existing wells is limited to 400 AF per month. The new well will be centrally located within the District service area.

### Background

The District's 2010 Groundwater Management Plan recognizes the District's banking of stored water in the groundwater basin to establish a drought buffer. The ability to extract water from the drought buffer during times of drought is critical to securing the District's water supply, and consultants have been hired to update the District's groundwater model and study the addition of new wells. This project provides for an additional well in the vicinity of the Airport, which has higher groundwater levels than other areas of the basin.

**Need for Project**

As the District increasingly relies upon groundwater supplies, especially during periods of drought, strategic investment in the District’s wells and related distribution system components are to ensure that production capacity is maximized and can meet anticipated customer demand into the future. The new Airport well is anticipated to operate at 500 gpm, providing an additional 720 AFY a year.

**Project Description**

The project includes land acquisition for locating the proposed well. It also includes obtaining the necessary permits, groundwater modeling for site assessment, preliminary engineering, final design, and installation. Construction will include drilling the proposed well, and installing the wellhead improvements. Wellhead improvements will include new well buildings, pumps, motors, piping, treatment equipment, tanks, electrical equipment, and control panels. All preliminary engineering work, final design, and construction will solicit various vendors through the Request for Proposals process.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 Airport Area New Well Project	\$66,156
FY 2016-17 Airport Area New Well Project	\$131,989
FY 2017-18 Airport Area New Well Project	\$206,152
<b>Total Budget:</b>	<b>\$404,297</b>

**Project Schedule**

Engineering: FY 2016-17  
 Construction: FY 2016-17

**Project Status**

Project Status as of May 2019: Deferred

## Transmission Main Area New Well Project

IIP Group No: G2-4

Project Score: 113



### Summary

This project will provide a new production well along the District's transmission main. The new well will enhance the District's pumping capacity to increase reliable supplies of potable water, and facilitate extraction of water from the Goleta Groundwater Basin during potential emergencies and periods of drought. The new well also provides for additional groundwater injection capacity to support the Aquifer Storage Recovery (ASR) program, part of a long term groundwater management and basin protection strategy. As of December 31, 2014 the District has 48,000 Acre Feet of water stored within the Central Sub-Basin of the Goleta Groundwater Basin, but pumping capacity of the District's existing wells is limited to 400 AF per month. The new well location offers proximity to the transmission main to facilitate the blending of water and ease of distribution throughout the system.

### Background

The District's 2010 Groundwater Management Plan recognizes the District's banking of stored water in the groundwater basin to establish a drought buffer. The ability to extract water from the drought buffer during times of drought is critical to securing the District's water supply, and consultants have been hired to update the District's groundwater model and study the addition of new wells. A well installed along the transmission main will require fewer pipelines to connect into the distribution system and possibly less treatment facilities by blending directly into the transmission main. Additionally, the District's transmission main line is located in the recharge area of the Goleta Groundwater Basin, which is a sustainable location for groundwater extraction throughout longer periods of drought.

**Need for Project**

As the District increasingly relies upon groundwater supplies, especially during periods of drought, strategic investment in the District’s wells and related distribution system components are to ensure that production capacity is maximized and can meet anticipated customer demand into the future. An additional well operating at 500 gpm provides approximately an additional 720 AFY. Construction of the well allows the District to utilize a greater portion of the stored groundwater during water emergencies or drought scenarios greatly increasing the operational flexibility of the District and enhancing its drought preparedness.

**Project Description**

The project includes land acquisition for locating the proposed well. It also includes obtaining the necessary permits, groundwater modeling for site assessment, preliminary engineering, final design, and installation. Construction will include drilling the proposed well, and installing the wellhead improvements. Wellhead improvements will include new well buildings, pumps, motors, piping, treatment equipment, tanks, electrical equipment, and control panels. All preliminary engineering work, final design, and construction will solicit various vendors through the Request for Proposals process.

**Project Budget**

		<b>Total Budget</b>
TBD Transmission Main Area New Well Project		TBD
<b>Total Budget:</b>		<b>TBD</b>

**Project Schedule**

Engineering: TBD  
 Construction: TBD

**Project Status**

Project Status as of May 2019: Deferred

## Additional Injection Wells

IIP Group No: G2-5

Project Score: 87



### Summary

The project proposes additional injection wells to increase groundwater replenishment rates for the Goleta Groundwater Basin. As part of the District's Aquifer Storage and Recovery (ASR) and groundwater management plan, water is injected back into the basin when available during wet years. The capacity of the District's current injection wells is approximately 2.9 million gallons per day (MGD), or 10 Acre Feet per day (AFD). By comparison, the design capacity of the Corona Del Mar Water Treatment Plant (CDMWTP) is 24 MGD. When the Bradbury Dam at Lake Cachuma spills, great potential exists to inject water into the groundwater basin allowing the District to make use of this excess water at a later time as well as to speed the recovery of groundwater in the basin to optimize the basin's storage capacity.

### Background

The Goleta Groundwater Basin was one of the first groundwater basins in California to institute an ASR program to capture surface water and store it underground for future use. The injection of spill water from Lake Cachuma began in the late seventies. In 1985, the first District injection records indicate between 600 AFY to 2,500 acre AFY were injected into the aquifer as spill water became available. In 1999, production wells were modified to allow for their use as injection wells. A total of 18 wells are currently available for injection purposes (three of which belong to La Cumbre Mutual Water Company). All current injection wells rely solely on gravity and none pressurize the wells for injection since all were designed initially for production and not pressurization. Various small abandoned wells are also utilized for injection purposes.

**Need for Project**

The District has increasingly relied on the drought buffer, increasing groundwater pumping to make up for decreasing surface water supplies. The District proposes adding additional injection capacity to capture and store spill water from Lake Cachuma and other water sources that maybe available in non-drought conditions to help speed the recovery of the groundwater basin, thereby maximizing the ability of the basin to serve as the primary supply source when needed. Wells designed specifically for injection can inject greater volumes.

**Project Description**

The project consists of identifying existing and new well sites for injection, analyzing the optimal rechargeable zones of the basin, determining the distribution system capacity to deliver the injection water to various locations, and determining the most cost effective plan. The average injection rate of the existing production wells is 200 gpm per well. The project may include new pressurized injection wells, installation of pipelines to deliver the injection water at the flows and pressures desired at the various optimal locations for replenishment of the basin, or upgrading the existing Aquifer, Storage, and Recovery (ASR) wells currently in use.

The project will begin with a Request for Proposals to determine feasibility and the most cost effective plan to increase injection capacity. The consultant will analyze both the compatibility of existing structures as well as sites for new injection systems in conjunction with the distribution capacity to deliver the replenishment water relative to the ideal locations in the basin for replenishment activities. The District will then coordinate a contract to manage the design and development of the specifications needed to construct the new facilities. Finally, construction contracts will be bid and put in place to complete the project.

**Project Budget**

Total Budget	
FY 2017-18 Injection Piping to Existing Wells	\$201
<b>Total Budget:</b>	<b>\$201</b>

**Project Schedule**

Engineering: FY 2019-20  
 Construction: FY 2019-20

**Project Status**

Project Status as of May 2019: Deferred

## New Monitoring Wells

IIP Group No: G2-6

Project Score: 81



### Summary

This project would provide the District with ten new monitoring well sites within the Goleta Central Sub-Basin for the purpose of obtaining more accurate data on groundwater levels within the basin. More monitoring points will account for any abnormally high or low spots when forecasting aquifer use or injection. The point elevations provided by the additional monitoring wells will improve the District’s ability to model, analyze, and make determinations on how best to manage, operate and protect the Basin.

### Background

The opportunity to identify and add monitoring wells is present each time a developer applies for new water service. Submitted plans are required to show wells registered with the Department of Water Resources, and well logs submitted to the county. District staff review plans and determine if the well is to be abandoned or used by the District as a monitoring well. Once the well is dedicated to the District, staff will determine if it should be added to the list of wells the USGS monitors as part of a Joint Funding Agreement. Groundwater levels are currently measured twice a year, or as needed, such as when the basin is artesian in certain areas. The 2010 Groundwater Management Plan identifies the need for at least four more wells in the Central Sub Basin. The plan also recommends a monitoring well in the Goleta Slough area to serve as a early warning sentinel for detecting potential seawater intrusion. As groundwater comprises an increasingly significant portion of the District water supply portfolio, having sufficient monitoring wells is critical to basin management.

**Need for Project**

This project will enhance and improve the District’s water supply portfolio and reliability. Monitoring wells are the District’s best gauge of how much water is available at any given time throughout the year within the Central Sub Basin. The more that is known about the groundwater basin the better this critical resource can be sustainably managed and protected.

**Project Description**

Monitoring wells sites have not yet been determined, but the general area for the new wells is illustrated on the Monitoring Well Location Map. The areas of consideration include along San Pedro Creek North of 101, between Fairview and Kellogg north of 101, along San Antonio Creek North of 101, just north of the Airport along Hollister, Old Town, Hwy 217 and Hollister, along Maria Ignacio Creek north of Hollister, the agricultural area south of Ekwil, near the Goleta Sanitary District, and near Goleta County Beach. The first steps is to identify if any of the existing private wells can be used as monitoring wells, and if so, develop an access easement. Of the wells dedicated to the District by developers an inventory is needed, and then an assessment can be made. If private and dedicated wells cannot be used, the District is prepared to drill new monitoring wells. The Groundwater Management Plan describes “multiple completion monitoring wells” which have perforations nested at different depths which provide information that is not available from a production well. Monitoring wells will be 3 to 4 inches in diameter and will be drilled to depths ranging from 400 to 800 feet, with a casing perforated at intervals matching the permeable layer. A secure lid will be set at grade to access the well when monitoring.

**Project Budget**

	<b>Total Budget</b>
FY 2016-17 Install 10 Monitoring Wells	\$167
<b>Total Budget:</b>	<b>\$167</b>

**Project Schedule**

Construction: FY 2019-20

**Project Status**

Project Status as of May 2019: Deferred

## Reservoir Hatch Replacements

IIP Group No: G2-7

Project Score: 88



### Summary

The project replaces four reservoir access hatches. Reservoir hatches safeguard drinking water against tampering and contamination. The hatches provide access to the tank's interior and are fitted with intrusion alarms. Upgrading to newer and lighter hatch lids will protect water quality while also providing safe access for inspection and maintenance purposes, reducing the risk of worker injury.

### Background

There are eight storage reservoirs within Goleta Water District's distribution system. These reservoirs have aging reservoir hatches, with some over forty years old. The hatches have degraded and require replacement. Newer hatches offer significant seal improvements, decreased weight and lift assist mechanisms that increase facility security and protect employees by reducing the risk of injury.

**Need for Project**

Although the sanitary portion of these hatches have been preserved by replacing screens and other important aspects of the access hatches, heavy lids and malfunctioning springs and latches are making it increasingly more difficult for operators to open and close hatches while performing periodic maintenance activities. By replacing the hatches with more ergonomic devices, risk of injury is decreased, and protection and security of the reservoir is enhanced.

**Project Description**

The existing hatches will be replaced with new aluminum lids and stainless steel springs and latches.

**Project Budget**

		<b>Total Budget</b>
TBD Replace 4 Reservoir Hatches		TBD
<b>Total Budget:</b>		<b>TBD</b>

**Project Schedule**

Construction: TBD

**Project Status**

Project Status as of May 2019: Deferred

## Future Tank Repairs

IIP Group No: G2-8

Project Score: 91



### Summary

The project provides for two condition assessments on District reservoirs to determine needed improvements, and funding for recommended repairs. Seven of Goleta Water District's eleven storage reservoirs (including three located at the Corona Del Mar Water Treatment Plant (CDMWTP) are at least 40 years old. Recent condition assessments of two of the District reservoirs indicated corrective maintenance is needed in order to prolong the useful life of the storage reservoirs, and comply with current OSHA requirements. The project anticipates continued improvements will be needed on the remaining nine reservoirs once the condition assessments are completed.

### Background

Condition assessments have indicated a general need for corrective maintenance to the tanks on interior and exterior surfaces, as well as several equipment upgrades to address safety deficiencies that were noted in the reports. Interior work may include replacement of telemetry piping and corroded pipe brackets, overflow pipe flange cleaning, replacement of the interior ladder, installation of a safe climbing devices, and implementation of inlet/outlet piping improvements. Exterior work may include replacing the tank's exterior ladder, roof access manhole modifications, installation of a roof safety railing, and the addition of a flexible coupling to the tank's inlet/outlet piping.

**Need for Project**

Proactive assessment and repair of the District’s reservoirs will prevent service disruptions as well as more costly and time consuming emergency repairs due to unanticipated water system failures. Storage reservoirs are integral components of the District facilities and provide the necessary water to meet peak demands and operational requirements in addition to providing ample storage during emergency situations or planned maintenance activities of water production equipment. Conducting condition assessments and subsequent upgrades prolongs the life expectancy of these critical reservoirs and maintains the facilities to current code requirements. Reservoirs properly maintained and upgraded provide a long term asset available for many years into the future.

**Project Description**

The District will conduct condition assessments of the reservoirs through issuance of an RFP to engineering consultants with expertise in this area. Upon completion of the assessments the recommended improvements will be included in an RFP for contractors accustomed to performing this type of work. District staff will manage the process and oversee all engineering work and construction.

**Project Budget**

		<b>Total Budget</b>
TBD Repair Two Reservoirs		TBD
	<b>Total Budget:</b>	<b>TBD</b>

**Project Schedule**

Construction: TBD

**Project Status**

Project Status as of May 2019: Deferred

## Upsizing of Mains

IIP Group No: G2-9

Project Score: 82



### Summary

The upsizing of waterlines beyond the standard 8 inch diameter is an ongoing annual program specific to developer projects as outlined in Chapter 5.24 in the GWD Code. To accommodate water service demands and improve fire protection, developers may be required to upsize waterlines along the frontage of projects and even beyond the project limits to connect to the existing distribution system. If improvements are required, the developer will provide the design and construction of the oversized pipeline. The District is responsible for the cost difference between the standard pipeline size and the required upsized pipeline.

### Background

The purpose of this project is to accommodate future planned development, thereby ensuring sufficient system pressures and flow. The applicant pays for all the cost associated with the installation of extensions or upsized waterlines required for their project. If the District requires the upsizing of an extension or the existing distribution line to be larger than necessary for future demands, the cost shall be borne by the District. As properties are developed along an upsized waterline, applicants will be charged a “benefited property charge” prorated on the size of the property to reimburse the District for upsizing the waterlines. This project identifies an average yearly funding amount for the District to budget for reimbursing developers for upsizing the waterlines beyond the demand placed on the system by their project.

**Need for Project**

This project facilitates an ongoing District pipeline replacement program. The best opportunity to upsize mains is at the time the developer is installing the initial pipe needed to serve the project. If waterlines are not upsized in conjunction with demand, flow and pressure may drop below an acceptable level of service. If aging waterlines are not upsized concurrently with new development, future repairs are more costly.

**Project Description**

This project involves the upsizing of waterlines above the standard 8-inch diameter size when a project is being developed. As development projects are submitted to the District for approval, the District evaluates each project for waterline requirements. Currently there are seven large developer projects with the potential need to upsize waterlines. For two of the seven there are upsize agreements in place. The projects are still in the planning phase and the design is being performed by the applicant’s engineer. When the project is constructed, the entire development will be inspected by the District. Inspection of the upsized waterlines is incidental to inspection as a whole. The projects will be closed out with record drawing and dedication of the facilities to the District.

**Project Budget**

	<b>Total Budget</b>
FY 2017-18 Waterline Upsizing	\$5,025
FY 2019-20 Waterline Upsizing	-
<b>Total Budget:</b>	<b>\$5,025</b>

**Project Schedule**

This project recurs annually beginning in FY 2017-18.

**Project Status**

Project Status as of May 2019: Ongoing

## Cathodic Protection Upgrades

IIP Group No: G2-10

Project Score: 113



### Summary

This project maintains and upgrades the District's Cathodic Protection (CP) system. CP systems are active systems which rely on the application of direct current to control corrosion. Electrochemical corrosion occurs naturally when steel pipe is buried in the ground. It affects the entire length of pipe, resulting in the deterioration of the waterline. CP is an essential component of the District's steel waterline maintenance program, and can prevent significant damage annually by identifying problems early. The District's steel pipe distribution infrastructure comprises approximately 50% of the District's distribution system or 125 miles of steel pipe impacting service levels to approximately 8,000 customer accounts. Corrosion is an ongoing problem with the potential to cause extensive damage. A robust CP program is critical to minimizing service interruptions and costly repairs.

### Background

Soon after the United States Bureau of Reclamation (USBR) finished construction of the District's pipeline network, the District began to experience failures in the steel pipelines due to external corrosion. CP system controls the corrosion of metal piping by making it the cathode of an electrochemical cell. The simplest method of CP includes connecting the metal pipe to be protected with another more easily corroded metal to act as the anode of the electrochemical cell. Cathodic protection is the most viable alternative for the prevention of steel pipe corrosion. As additional CP components such as deep well anodes, rectifiers, and test stations are added to the present District CP systems, further monitoring and testing will be performed. Based upon the results of those tests, the District can determine what improvements to the CP system need to be made, while also identifying steel waterlines that are in need of replacement or repair.

**Need for Project**

This project is essential to maintaining an effective distribution system that provides regular and consistent water service to the District’s customers. It provides for the ongoing annual upgrade and replacement of CP equipment. If the CP system is not properly monitored, maintained and upgraded, the cost of repairing and replacing the District’s steel piping system will increase.

There are basically four methods of corrosion control:

- Design modifications to the system or component.
- Use of protective coatings.
- Modifications to the environment with the use of inhibitors.
- The application of cathodic or anodic protection.

Failure to implement this project would put the District’s steel distribution waterline infrastructure at risk of costly corrosion damage. Regular preventative maintenance is cost effective.

**Project Description**

The project will provide for further annual field testing to confirm continuity of the steel waterline system, provide for construction of additional deep well anodes, rectifiers and CP test stations, as well as maintenance of the CP system. In addition the District’s CP data within the GIS system will be updated.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 Cathodic Protection Upgrades	\$2,635
FY 2016-17 Cathodic Protection Upgrades	\$87,147
FY 2017-18 Cathodic Protection Upgrades	\$272,980
FY 2018-19 Cathodic Protection Upgrades	\$99,540
FY 2019-20 Cathodic Protection Upgrades	-
<b>Total Budget:</b>	<b>\$462,302</b>

**Project Schedule**

This project recurs annually beginning in FY 2015-16.

**Project Status**

Project Status as of May 2019: Ongoing

## Fleet Replacement Program

IIP Group No: G2-11

Project Score: 93



### Summary

This project replaces District fleet vehicles that are at least 10 years old and have over 100,000 miles. Once both criteria are met, vehicle replacements are prioritized based on condition, intended use, frequency of maintenance issues, and accumulated expenses. Vehicles included in the program are small pickups currently used by meter readers, small service trucks, and pool vehicles. As a part of field operations, utility vehicles are subjected to strenuous conditions, including regular stop and go driving, and hauling substantial weight. These vehicles drive on both paved and unpaved roads. Vehicles that run on rough terrain are subjected to suspension and frame problems. Continued use of aged problematic vehicles increases maintenance costs and reduces reliability of service to customers. Additionally, the replacement of the meter reading trucks with electric or hybrid vehicles for meter reading duties provides an economic benefit by cutting fuel costs and emissions dramatically, lowering the District's carbon footprint and helping to meet established sustainability goals.

### Background

Recurring maintenance issues are costly and increase the risk of serious engine or transmission failure as time passes. A common problem is burning oil, which indicates serious mechanical issues and impending drivetrain failure. In the event of failure, new engines cost between \$4,000 and \$6,000, new transmissions cost \$4,000 to \$5,000, and rear differentials can cost \$1,000 to \$3,000. Vehicles ready for replacement are worth less than \$2000, making repair no longer a cost efficient option.

A range of public agencies employ similar criteria for fleet replacements, referencing mounting maintenance costs and inefficiency as the rationale for replacement. For example, the City of Santa Barbara's program retires work vehicles at 11 years old. Reasons behind this rule include the positive environmental benefits of getting an older model vehicle off the road and replacing it with a more fuel efficient vehicle. Most of the District's fleet vehicles are in operation on the public streets daily. They play a vital role in the safe, reliable and effective response to the water related issues and are essential to supporting District operations.

## Need for Project

District vehicles perform essential daily tasks related to valve operation, meter reading, service line and main repairs and installations, water quality sampling, well operation, and pump station and reservoir maintenance. Failure of these vehicles over time negatively impacts the level of the district's service and the quality of customer experience, in addition to increasing operational costs through continued vehicle maintenance. The critical vehicle replacement project addresses ten utility/meter shop vehicles that are older than 12 years and have accumulated more than 100,000 miles. These vehicles have been prioritized based on their age, mileage, usage tasks, maintenance issue history, reliability, and overall condition.

## Project Description

In the FY 15-16, the schedule calls for replacement of a meter reading vehicle and a 4x4 utility truck. The current meter reading vehicle is a Ford F-150 that can be replaced with a smaller pickup truck with a fuel efficient hybrid engine or an electric vehicle. The 4x4 is used by the valve crew, who need the 4-wheel-drive to traverse unpaved and ranch roads. These vehicles need to be replaced with a vehicle with a 4x4 feature. For the FY 2016-17 year the schedule includes one utility truck and one meter reading vehicle. The following FY 2017-18 includes the replacement of two large trucks, but the 4x4 feature is not needed. For FY 2018-19, a small truck and either an electric vehicle or hybrid are needed. Finally for FY 2019-20, another large 4x4 utility truck and a small truck are scheduled for replacement with an electric vehicle or hybrid.

## Project Budget

	Total Budget
FY 2016-17 Fleet Replacements	\$2,927
FY 2017-18 Fleet Replacements	\$44,808
FY 2018-19 Fleet Replacements	\$95,000
FY 2019-20 Fleet Replacements	-
<b>Total Budget:</b>	<b>\$142,735</b>

## Project Schedule

This project recurs annually beginning in FY 2016-17.

## Project Status

Project Status as of May 2019: Ongoing

## Equipment Replacements

IIP Group No: G2-12

Project Score: 80



### Summary

To maintain District field operations, aging heavy equipment, includes trailers, backhoes, traffic control equipment, vacuums, generators, pumps and other equipment is periodically replaced. This equipment is used on a daily basis and critical for operations and maintenance. Aging, dysfunctional equipment often breaks down, leading to inefficiency. Failing equipment also jeopardizes employee safety. When the maintenance cost and the age of equipment rises, it becomes more cost-effective to replace rather than repair.

### Background

Regular District work requires heavy machinery, including valve operation, meter box clean outs, service line repairs, main repairs and installations, well operation, pump station and reservoir maintenance. Use of older equipment is appropriate, provided the equipment is reliable, safe and that the continued cost of maintenance is reasonable. Equipment can be repaired and maintained; however, interruptions in work due to unreliable equipment adversely affect productivity and customer expectations.

The vacuum trailer and boring tool are recommended for replacement based on age and degree of deterioration. Replacing this equipment will reduce maintenance costs that would otherwise continue to mount over time. The other three pieces of equipment scheduled for replacement -- the compact track loader, tilt bed trailer, and shoring box -- are impacting the efficiency of service work and employee safety.

Replacement of equipment will also provide the District with better tools for routine jobs. The proposed compact track loader includes attachments for a bucket, a mower capable of mowing large areas (for use at the Corona Del Mar Water Treatment Plant), 42" forks for lifting pipes and other equipment, and a sweeper and collector kit for cleanup of construction job sites. The cleanup kit will reduce reliance on water for site cleanup, thereby conserving water. The new tilt bed dump trailer will be able to be used on jobs that require the hauling of small amounts of rock, sand or mud, reducing the use of large, heavy fuel-consuming dump trucks for smaller loads.

**Need for Project**

Equipment needs to be maintained in proper running order, especially since heavy equipment is used in emergency situations and for urgent repairs. Without replacing and or purchasing these pieces of equipment, the District risks its ability to complete important tasks in distribution, treatment, and maintenance of the system. Failure to replace heavy equipment will lead to continuously increasing costs due to accelerating maintenance.

**Project Description**

A piece of equipment is eligible for replacement evaluation when it reaches 10 years of age, and/or exhibits major maintenance issues. The maintenance history, overall condition, and reliability of the piece of equipment are reviewed when determining replacement necessity. A projection is made of the future maintenance costs, based on recurring or predictable issues. This information is compared to the cost of replacing the equipment to determine if replacement is a cost-effective option. The project entails a replacement plan that targets one piece of equipment per year, prioritizing the equipment most in need. This priority ranking is based on age, condition, and the intended use. The boring tool is scheduled for FY 2015-16, the vacuum trailer for FY 2016-17, the compact track loader for FY 2017-18, the tilt bed dump trailer for FY 2018-19, and finally the shoring box equipment for FY 2019-20.

**Project Budget**

	<b>Total Budget</b>
FY 2015-16 Equipment Replacements	\$48,590
FY 2018-19 Equipment Replacements	\$5,600
FY 2019-20 Equipment Replacements	\$15,500
<b>Total Budget:</b>	<b>\$69,690</b>

**Project Schedule**

This project recurs annually beginning in FY 2015-16.

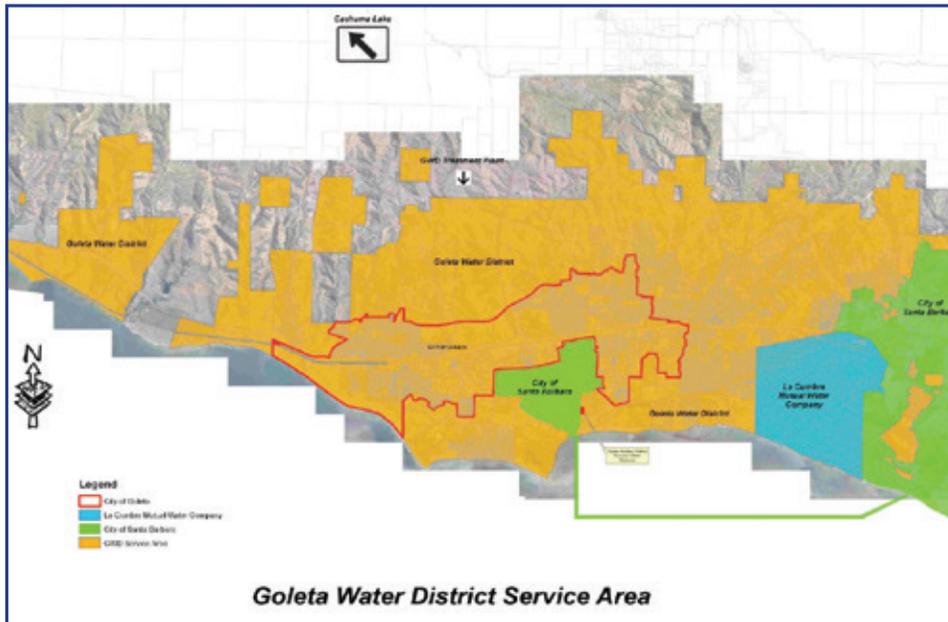
**Project Status**

Project Status as of May 2019: Ongoing

## Information Technology Upgrades

IIP Group No: G2-13

Project Score: 84



### Summary

This project addresses the need to update various District software and hardware systems on an annual basis. Updates ensure that District staff have the tools necessary to maintain and operate the District's water system as efficiently and cost effectively as possible. Updates will focus on the following core programs that provide a variety of important functions:

- Enterprise client-servers allow the sharing of resources and information among interconnected devices. As part of the device update, approximately 50 desktop and laptop computers are in need of periodic replacement.
- The Geographic Information System (GIS) is an important set of tools that captures, integrates, stores, edits, analyzes, manages, presents, shares, and displays geographic information for the Operations, Engineering and Administration Departments to assist them in making informed decisions. This project upgrades and maintains a centralized GIS database that can be accessed by web and desktop applications.
- Computer Aided Design and Drafting (CADD) is an important planning tool utilized by the District's Engineering Department. Its purpose is to create accurate and detailed engineering drawings (plan & profile), and maps for capital improvements projects.
- Brava Desktop is a Windows-based application that makes it easy to view, annotate, print and mark up plan checks. It is completely customizable and easy to embed into larger solutions.
- InfoWater is a fully GIS integrated water distribution modeling and management software application. It allows for powerful GIS analysis and hydraulic modeling in a single environment using a single dataset. Water network models can be created, edited, modified, run, mapped, analyzed, designed and optimized, and simulation results can be instantly reviewed, queried and displayed within ArcGIS
- The valve exercise program (InfraMAP) is an important tool to ensure that the water system remains in good working condition. It allows for the status of the entire distribution system to be reviewed, and aids in complying with various regulations and mandates.

## Background

This project provides for the ongoing annual replacement of software (client-server operating systems, third party software, etc.) and hardware (servers, laptops, tablet PC, GPS units, etc.) Depending upon the software or hardware purchased, consultant services may not be required. As many software updates do not require consultant services and can be installed by District personnel, neither the involvement of software developers / consultants, nor the District's contracted IT consultants, are included in the project. Annual costs for software license maintenance are also excluded.

## Need for Project

Updates are required to maintain and operate the District's water system efficiently and cost effectively. In addition, upgrades make the system more responsive, intuitive and user friendly. Maintenance of accurate facility records, billing, and customer information within various computer systems are also of vital importance to the efficient operation of the District's water system and customer service. The computer systems support the District in collecting revenue, operating at industry standards, and providing customer service and satisfaction.

## Project Description

Periodic updates to the District IT infrastructure ensures the business operations systems remain responsive, intuitive and user friendly. Maintenance of accurate facility records, billing, and customer information within various computer systems is also vital to the efficient operation of the District's water system and customer service functions by supporting the District in collecting and tracking revenue, managing asset records, operating at industry standards, and accounting for expenditures appropriately.

## Project Budget

	Total Budget
FY 2015-16 Information Technology Upgrades	\$114,039
FY 2016-17 Information Technology Upgrades	\$51,211
FY 2017-18 Information Technology Upgrades	\$26,038
FY 2018-19 Information Technology Upgrades	\$72,960
FY 2019-20 Information Technology Upgrades	-
<b>Total Budget:</b>	<b>\$264,248</b>

## Project Schedule

This project recurs annually beginning in FY 2015-16.

## Project Status

Project Status as of May 2019: Ongoing

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## APPENDIX SUMMARY

The Infrastructure Improvement Plan (IIP) for 2015-2020 is designed to capture the minimum level of investment necessary to meet critical and regulatory needs. The Appendix contains important projects which help meet the mission of the Goleta Water District to provide an adequate supply of quality water to present and future customers within the District, but these projects are not required by regulation, or to address a critical issue in the existing infrastructure. While these projects are important, they were evaluated utilizing the scoring criteria developed in the IIP and did not rank high enough at the present time to be included in the immediate five year funding plan. The projects and their needs will be reviewed and re-evaluated annually. Particularly in light of the current drought and the critical water supply challenges facing the District, the opportunity to revisit projects as conditions change is important. Review and re-evaluation will take into account evolving challenges, regulatory issues, water supply, aging infrastructure and priorities associated with changing resources available to meet District needs and goals. In addition, scoring will be reviewed, and the project costs will also be updated annually.

78 projects are included in the Appendix with a total cost of approximately \$112,287,000. Appendix 1 contains projects for future consideration, while Appendix 2 contains revenue generating projects. The projects address water supply reliability, replacement of aging and deteriorating infrastructure and build redundancy in the water delivery system. Each Appendix project is presented with a score, described briefly, and includes an estimated budget. The scoring methodology used was developed for the IIP and is described in the Overview section.

An example of the important projects included in Appendix 1 that may be reprioritized as water supply conditions change are plans for a second 3MG Ellwood Reservoir tank to increase groundwater storage, and a well centralization study to evaluate the feasibility of implementing a centralized treatment facility for the District's existing water production wells. While these projects did not rank highly enough to be included in the current round of extremely limited funding, as the District enhances groundwater production and capacity, projects addressing the treatment and timing of water delivery to customers will grow in importance. An additional project that may warrant reevaluation within the five year period covered by the IIP is the City of Santa Barbara Interconnect Project. This project allows two adjacent and major water agencies of the South Coast to provide each other with large volumes of water in times of emergency or major maintenance interruptions. Other Appendix 1 projects address the installation of additional transmission lines to facilitate water distribution, the installation of generators on the wells to enhance emergency service, and additional reservoir tanks on the potable and recycled water systems.

Appendix 2 contains 7 revenue generating projects that would be both beneficial and free up funds to support District operations and other projects. Many of these projects utilize renewable energy technologies, which offset rising energy costs and also help the District meet stewardship goals defined in the Sustainability Plan adopted by the Board of Directors. These revenue generating projects were not ranked as their phasing will likely depend on a variety of factors, including their ability to attract cofounding opportunities, the availability of rebate and incentive opportunities, and other work that may be occurring on each site.

The ability to increase the speed and scope of capital investment is largely dependent upon financial resources. Each year these appendix projects will be reevaluated and scored to determine if the priorities have changed based on updated information. At the present time it has been determined that these projects are not essential to pursue within the next 5 years to meet the goals set forth by the District Board of Directors.

Appendix Projects Cost Estimates

Table 6: Appendix – Projects for Future Consideration – Cost Estimates

Ind.	Project Name/Description	Estimated Project Cost
A1-1	District-Wide Fixed Base Meter Reading System	\$4,384,000
A1-2	Recycled Water Hollister Booster Station Relocation Project	\$2,515,000
A1-3	Recycled Water 1 MG Reservoir Project	\$2,500,000
A1-4	Transmission Main 36" Parallel Pipeline Project	\$13,000,000
A1-5	GWD-City of SB Interconnect Project	\$1,246,000
A1-6	Infrastructure Improvement Plan & Advanced Infrastructure Management Program	\$400,000
A1-7	Distribution Flow Improvements for Well Water	\$1,500,000
A1-8	Long Term Waterline Replacement Program	\$405,000
A1-9	Service Line Replacement Program	\$400,000
A1-10	Electronic Document Management System	\$450,000
A1-11	CDMWTP Filter Trough Improvement Project	\$350,000
A1-12	CDMWTP Floc/Sed/Filter Enclosure Project	\$5,259,000
A1-13	Pavement Maintenance Project (Except CDMWTP)	\$50,000
A1-14	Wells Backwash Tank Replacement Project - EC, SA & SM	\$250,000
A1-15	Cathedral Oaks 20" Bypass Waterline	\$5,515,000
A1-16	3 MG Ellwood Reservoir	\$5,000,000
A1-17	2 MG Chaparral Reservoir, BPS & Waterline Project	\$8,344,000
A1-18	Recycled Water Hollister Booster Station Pump Rebuild Project	\$20,000
A1-19	Transmission Main - 3 New Valves	\$434,000
A1-20	Vault Maintenance & Painting Project	\$41,000
A1-21	Generators at All Reservoir Sites (8)	\$160,000
A1-22	CDM Filter Gallery Corrosion Correction Project	\$120,000
A1-23	Replacement of Known Problem Service Lines	\$50,000
A1-24	Cathedral Oaks-Hwy 101 Overcrossing Project (Phase 2a)	\$744,000
A1-25	Van Horne Reservoir Slope Repair Project	\$372,000
A1-26	CDMWTP TU4/Chemical Bldg Road Improvements	\$15,000
A1-27	CDMWTP Lab Equipment for Nitrates Analysis	\$90,000
A1-28	Recycled Waterline Annual Preventative Maintenance Program	\$20,000
A1-29	CDMWTP Recoat Wash Water Tanks	\$250,000

Appendix Projects Cost Estimates (continued)

Table 6: Appendix – Projects for Future Consideration – Cost Estimates

Ind.	Project Name/Description	Estimated Project Cost
A1-30	Anita Well Emergency Power Generator Installation	\$200,000
A1-31	Airport Well Emergency Power Generator Installation	\$200,000
A1-32	El Camino Well Emergency Power Generator Installation	\$200,000
A1-33	San Antonio Well Emergency Power Generator Installation	\$200,000
A1-34	San Marcos Well Emergency Power Generator Installation	\$200,000
A1-35	University Well Emergency Power Generator Installation	\$200,000
A1-36	Point-to-Point Radio Link Project	\$53,000
A1-37	CDMWTP Creek Crossing Improvement Project	\$830,000
A1-38	Ocean Rd-UCSB 12" Waterline Project 3,000'	\$1,689,000
A1-39	CDMWTP Clarifier Improvements	\$5,789,000
A1-40	Airport Well Backwash Tank Interior Coating	\$15,000
A1-41	Well Centralization Study of Well Water Treatment	\$119,000
A1-42	Recycled Water System Corrosion Study	\$39,000
A1-43	Recycled Water System Connection to Potable System	\$60,000
A1-44	Office Repaving of Yard	\$125,000
A1-45	Replace Ellwood Chlorination Station	\$70,000
A1-46	San Antonio Booster Station Relocation Project	\$1,603,000
A1-47	CDMWTP Filter Buildings Modifications	\$85,000
A1-48	Additional Fire Hydrants in Various Areas	\$51,000
A1-49	Distribution Main Tie-ins for Improved Water Quality & Flows	\$1,500,000
A1-50	GWC Potable Connection Project	\$23,380,000
A1-51	Recycled Waterline in Fairview Rd - Hollister Ave	\$3,564,000
A1-52	Recycled Waterline at Goleta Beach	\$630,000
A1-53	Recycle Water PR Vault Relocation at Glen Annie Golf Course	\$150,000
A1-54	Kellogg 20" Waterline Extension/Upsize 2,000'	\$1,684,000
A1-55	Covington 10" Waterline Upsize (Valdez - Fairview) 2,800'	\$1,682,000
A1-56	Cathedral Oaks 20" Waterline Upsize (Paseo del Pinon-Northgate) 1,900'	\$1,654,000
A1-57	Ekwill 12" Waterline Extension 1,500'	\$1,036,000
A1-58	Cathedral Oaks-Hwy 101 Overcrossing Project (Phase 2b)	\$768,000

Appendix Projects Cost Estimates (continued)

Table 6: Appendix – Projects for Future Consideration – Cost Estimates

Ind.	Project Name/Description	Estimated Project Cost
A1-59	Operations Department Facilities Update	\$500,000
A1-60	GWC Repair Project	\$797,000
A1-61	Old Town Goleta - Waterline Replacement Project	\$119,000
A1-62	District Headquarters Facilities Evaluation	\$35,000
A1-63	Creek Crossing Inspection & Repair Program	\$150,000
A1-64	Dry-Barrel Fire Hydrants Replacement	\$350,000
A1-65	Relocate La Gama PRV Vault	\$150,000
A1-66	Recycled Waterline Extensions for New Customers	\$50,000
A1-67	CDMWTP Shop Building Remodel	\$350,000
A1-68	CDM Storm & Wastewater Improvements	\$420,000
A1-69	8" Waterline Loop at La Vista-Alta Mira Booster Stations 850'	\$313,000
A1-70	GWC Storage Reservoir	\$2,500,000
A1-71	CDMWTP FM-1 Entry Modifications	\$8,000
<b>TABLE 8 – SUB -TOTAL</b>		<b>\$107,402,000</b>

Table 7: Appendix – Revenue Generating Projects – Cost Estimates

Ind.	Project Name/Description	Estimated Project Cost
A2-1	Patterson Reservoir Power Generation	\$450,000
A2-2	Ellwood Reservoir Power Generation	\$280,000
A2-3	Fairview Reservoir Power Generation	\$330,000
A2-4	COMBINED Power Generation NEW	\$710,000
A2-5	Solar Projects	\$2,900,000
A2-6	Lighting Upgrades - Main Office	\$80,000
A2-7	Office HVAC Replacement	\$135,000
<b>TABLE 9 – SUB -TOTAL</b>		<b>\$4,885,000</b>
<b>TOTAL</b>		<b>\$112,287,000</b>

Appendix Projects Scoring

Table 8: Appendix – Projects for Future Consideration – Scoring

Ref.	PROJECT NAME/DESCRIPTION	Reliability of Service		O&M Impact		Employee Health & Safety Upgrade		Size of Population Benefitted		Depreciable Service Life of Facility		Resource Conservation		Co-Funding Potential		Discr.	Total Score
		Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score		
		WF = 9		WF = 6.5		WF = 9		WF = 9		WF = 3.5		WF = 6.5		WF = 6.5			
A1-1	District-Wide Fixed Base Meter Reading System	-	-	3	19.5	1	9	3	27	1	4	2	13	1	7	-	79
A1-2	Recycled Water Hollister Booster Station Relocation Project	1	9	2	13	3	27	1	9	-	-	2	13	1	7	-	78
A1-3	Recycled Water 1 MG Reservoir Project	1	9	3	20	-	-	3	27	-	-	2	13	1	7	-	75
A1-4	Transmission Main 36" Parallel Pipeline Project	3	27	-	-	-	-	3	27	-	-	1	7	2	13	-	74
A1-5	GWD-City of SB Interconnect Project	3	27	-	-	-	-	3	27	-	-	-	-	3	20	-	74
A1-6	Infrastructure Improvement Plan & Advanced Infrastructure Management Program	3	27	3	19.5	-	-	3	27	-	-	-	-	-	-	-	74
A1-7	Distribution Flow Improvements for Well Water	3	27	2	13	-	-	3	27	-	-	1	6.5	-	-	-	74
A1-8	Long Term Waterline Replacement Program	2	18	1	7	1	9	1	9	3	11	2	13	1	7	-	73
A1-9	Service Line Replacement Program	2	18	1	7	1	9	1	9	3	11	2	13	-	-	-	73
A1-10	Electronic Document Management System	-	-	-	-	-	-	3	27	2	7	2	13	-	-	25	72
A1-11	CDMWTP Filter Trough Improvement Project	3	27	1	7	-	-	3	27	3	11	-	-	-	-	-	71
A1-12	CDMWTP Floc/Sed/Filter Enclosure Project	3	27	1	7	1	9	3	27	-	-	-	-	-	-	-	70
A1-13	Pavement Maintenance Project (Except CDMWTP)	2	18	2	13	1	9	2	18	3	11	-	-	-	-	-	69
A1-14	Wells Backwash Tank Replacement Project - EC, SA & SM	1	9	3	20	-	-	1	9	3	11	3	20	-	-	-	68
A1-15	Cathedral Oaks 20" Bypass Waterline	3	27	-	-	-	-	3	27	-	-	1	-	1	7	-	67
A1-16	3 MG Ellwood Reservoir	3	27	-	-	-	-	3	27	-	-	-	-	2	13	-	67
A1-17	2 MG Chaparral Reservoir, BPS & Waterline Project	3	27	-	-	-	-	3	27	-	-	-	-	2	13	-	67
A1-18	Recycled Water Hollister Booster Station Pump Rebuild Project	1	9	3	20	1	9	1	9	-	-	3	20	-	-	-	66
A1-19	Transmission Main - 3 New Valves	2	18	1	7	1	9	2	18	-	-	2	13	-	-	-	65
A1-20	Vault Maintenance & Painting Project	2	18	1	7	2	18	2	18	1	4	-	-	-	-	-	64
A1-21	Generators at All Reservoir Sites (8)	3	27	-	-	1	9	3	27	-	-	-	-	-	-	-	63
A1-22	CDM Filter Gallery Corrosion Correction Project	3	27	-	-	1	9	3	27	-	-	-	-	-	-	-	63
A1-23	Replacement of Known Problem Service Lines	1	9	2	13	1	9	2	18	-	-	2	-13	-	-	-	62
A1-24	Cathedral Oaks-Hwy 101 Overcrossing Project (Phase 2a)	2	18	-	-	-	-	2	18	-	-	2	13	-	-	-	62
A1-25	Van Horne Reservoir Slope Repair Project	3	27	1	7	-	-	3	27	-	-	-	-	-	-	-	61

Appendix Projects Scoring (continued)

Table 8: Appendix – Projects for Future Consideration – Scoring

Ref.	PROJECT NAME/DESCRIPTION	Reliability of Service		O&M Impact		Employee Health & Safety Upgrade		Size of Population Benefitted		Depreciable Service Life of Facility		Resource Conservation		Co-Funding Potential		Discr.	Total Score	
		Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score			
		WF = 9		WF = 6.5		WF = 9		WF = 9		WF = 3.5		WF = 6.5		WF = 6.5				
A1-26	CDMWTP TU4/Chemical Bldg Road Improvements	3	27	1	7	-	-	3	27	-	-	-	-	-	-	-	-	61
A1-27	CDMWTP Lab Equipment for Nitrates Analysis	3	27	1	7	-	-	3	27	-	-	-	-	-	-	-	-	61
A1-28	Recycled Waterline Annual Preventative Maintenance Program	1	9	3	20	1	9	1	9	-	-	2	13	-	-	-	-	60
A1-29	CDMWTP Recoat Wash Water Tanks	3	27	-	-	-	-	3	27	1	4	-	-	-	-	-	-	58
A1-30	Anita Well Emergency Power Generator Installation	3	27	-	-	-	-	3	27	-	-	-	-	-	-	-	-	54
A1-31	Airport Well Emergency Power Generator Installation	3	27	-	-	-	-	3	27	-	-	-	-	-	-	-	-	54
A1-32	El Camino Well Emergency Power Generator Installation	3	27	-	-	-	-	3	27	-	-	-	-	-	-	-	-	54
A1-33	San Antonio Well Emergency Power Generator Installation	3	27	-	-	-	-	3	27	-	-	-	-	-	-	-	-	54
A1-34	San Marcos Well Emergency Power Generator Installation	3	27	-	-	-	-	3	27	-	-	-	-	-	-	-	-	54
A1-35	University Well Emergency Power Generator Installation	3	27	-	-	-	-	3	27	-	-	-	-	-	-	-	-	54
A1-36	Point-to-Point Radio Link Project	3	27	-	-	-	-	3	27	-	-	-	-	-	-	-	-	54
A1-37	CDMWTP Creek Crossing Improvement Project	3	27	-	-	-	-	3	27	-	-	-	-	-	-	-	-	54
A1-38	Ocean Rd-UCSB 12" Waterline Project 3,000'	3	27	-	-	-	-	3	27	-	-	-	-	-	-	-	-	54
A1-39	CDMWTP Clarifier Improvements	3	27	-	-	-	-	3	27	-	-	-	-	-	-	-	-	54
A1-40	Airport Well Backwash Tank Interior Coating	1	9	1	7	-	-	3	27	3	11	-	-	-	-	-	-	53
A1-41	Well Centralization Study of Well Water Treatment	0	-	3	20	-	-	3	27	-	-	1	7	-	-	-	-	53
A1-42	Recycled Water System Corrosion Study	1	9	3	20	-	-	1	9	-	-	2	13	-	-	-	-	51
A1-43	Recycled Water System Connection to Potable System	1	9	3	20	-	-	1	9	-	-	2	13	-	-	-	-	51
A1-44	Office Repaving of Yard	3	27	2	13	-	-	-	-	3	10.5	-	-	-	-	-	-	51
A1-45	Replace Ellwood Chlorination Station	1	9	3	20	1	9	1	9	1	4	-	-	-	-	-	-	50
A1-46	San Antonio Booster Station Relocation Project	2	18	-	-	-	-	2	18	-	-	2	13	-	-	-	-	49
A1-47	CDMWTP Filter Buildings Modifications	1	9	-	-	2	18	-	-	3	11	1	7	-	-	-	-	44
A1-48	Additional Fire Hydrants in Various Areas	2	18	-	-	2	18	-	-	1	7	-	-	-	-	-	-	43
A1-49	Distribution Main Tie-ins for Improved Water Quality & Flows	2	18	-	-	-	-	2	18	-	-	1	6.5	-	-	-	-	43
A1-50	GWC Potable Connection Project	1	9	-	-	-	-	1	9	0	0	0	0	3	20	-	-	38

Appendix Projects Scoring (continued)

Table 8: Appendix – Projects for Future Consideration – Scoring

Ref.	PROJECT NAME/DESCRIPTION	Reliability of Service		O&M Impact		Employee Health & Safety Upgrade		Size of Population Benefitted		Depreciable Service Life of Facility		Resource Conservation		Co-Funding Potential		Discr.	Total Score
		Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score		
		WF = 9		WF = 6.5		WF = 9		WF = 9		WF = 3.5		WF = 6.5		WF = 6.5			
A1-51	Recycled Waterline in Fairview Rd - Hollister Ave	1	9	-	-	-	-	1	9	-	-	2	13	1	7	-	38
A1-52	Recycled Waterline at Goleta Beach	1	9	2	13	-	-	1	9	-	-	1	6.5	-	-	-	38
A1-53	Recycle Water PR Vault Relocation at Glen Annie Golf Course	1	9	-	-	2	18	1	9	-	-	-	-	-	-	-	36
A1-54	Kellogg 20" Waterline Extension/Upsize 2,000'	2	18	-	-	-	-	2	18	-	-	-	-	-	-	-	36
A1-55	Covington 10" Waterline Upsize (Valdez - Fairview) 2,800'	2	18	-	-	-	-	2	18	-	-	-	-	-	-	-	36
A1-56	Cathedral Oaks 20" Waterline Upsize (Paseo del Pinon-Northgate) 1,900'	2	18	-	-	-	-	2	18	-	-	-	-	-	-	-	36
A1-57	Ekwill 12" Waterline Extension 1,500'	2	18	-	-	-	-	2	18	-	-	-	-	-	-	-	36
A1-58	Cathedral Oaks-Hwy 101 Overcrossing Project (Phase 2b)	-	-	-	-	-	-	1	9	-	-	2	13	2	13	-	35
A1-59	Operations Department Facilities Update	-	-	-	-	3	27	-	-	-	-	1	7	-	-	-	34
A1-60	GWC Repair Project	1	9	1	7	-	-	1	9	-	-	1	7	-	-	-	31
A1-61	Old Town Goleta - Waterline Replacement Project	1	9	-	-	-	-	1	9	-	-	2	13	-	-	-	31
A1-62	District Headquarters Facilities Evaluation	-	-	-	-	2	18	-	-	-	-	2	13	-	-	-	31
A1-63	Creek Crossing Inspection & Repair Program	1	9	1	7	-	-	1	9	-	-	1	7	-	-	-	31
A1-64	Dry-Barrel Fire Hydrants Replacement	1	9	-	-	1	9	1	9	1	4	-	-	-	-	-	31
A1-65	Relocate La Gama PRV Vault	1	9	-	-	1	9	1	9	1	4	-	-	-	-	-	31
A1-66	Recycled Waterline Extensions for New Customers	-	-	-	-	-	-	1	9	-	-	2	13	1	7	-	29
A1-67	CDMWTP Shop Building Remodel	-	-	-	-	3	27	-	-	-	-	-	-	-	-	-	27
A1-68	CDM Storm & Wastewater Improvements	1	9	-	-	-	-	1	9	2	7	-	-	-	-	-	25
A1-69	8" Waterline Loop at La Vista-Alta Mira Booster Stations 850'	1	9	-	-	-	-	1	9	-	-	1	7	-	-	-	25
A1-70	GWC Storage Reservoir	1	9	-	1	-	-	1	9	-	-	-	-	-	-	-	25
A1-71	CDMWTP FM-1 Entry Modifications	-	-	-	1	1	9	-	-	-	-	-	-	-	-	-	16

## SECTION II

### Appendix 1 Projects for Future Consideration

## District-Wide Fixed Base Meter Reading System

IIP Group No: A1-1

Project Score: 79



### Summary

This Automated Meter Reading (AMR) project proposes to provide an improved meter reading service to the 16,600 meters located in the District. It provides accurate data that is readily accessible to the customer and the District.

The District-wide fixed base meter reading system consists of transmitters (meters) and receivers (reading software). These systems can be either hard wired with information sent through cable or telephone lines, or wireless with repeater towers or antennas. This software is also able to detect customer leaks and monitor for highly abnormal water use patterns to prevent wasting of water and potential property damage.

This AMR project serves the customer as well as the District, enabling real time meter reading that could show customers an accurate chart of their water usage. Additionally, the software is able to detect reverse flow events through the meter, assisting the District with any potential contaminant backflow issues and water quality concerns. This project also eliminates the need to send a service person to the location of the meter to obtain final and initial readings on customer accounts lowering costs to customers. In addition, with the communication system in place, additional hardware could be installed to detect large system leaks and provide the ability to remotely disconnect service.

An outside contractor would install the necessary hardware and software to integrate AMR into the District's existing metering system. A contractor would also be hired to assist District personnel in the installation of the meters, depending upon the time frame of the project.

The estimated cost of the project is \$4,384,000, with a payback period anticipated to be 10 years.

## Recycled Water Hollister Booster Station Relocation Project

IIP Group No: A1-2

Project Score: 78



### Summary

The existing Recycled Water Hollister Booster Pumping Station is in an underground vault. On the occasion of flooding in this area, or with a safety equipment failure in the vault, the vault can fill with water and damage the motors and related electrical equipment. This project is needed to eliminate the potential for flooding and safety problems associated with the existing below ground booster pumping station.

This underground Recycled Water Booster Pumping Station is 15 years old and has some poor design features. For example, too many 90 degree bends in the piping cause unintended friction losses that compromise facility efficiency. A new, above ground Booster Pumping Station would be more efficient, safer, and more easily accessible.

This project involves land or easement acquisition, and complete relocation and reconstruction of the booster station above ground. Modification and extension of the recycled waterlines in the vicinity of the booster station will also be required. The booster station will be redesigned for greater efficiency and to minimize operations and maintenance costs.

All existing deteriorated pumping equipment, such as pumps, motors, and electrical equipment will be replaced.

The estimated cost of the project is \$2,515,000.

## Recycled Water 1 MG Reservoir Project

IIP Group No: A1-3

Project Score: 75



### Summary

This project will provide for the construction of a 1 Million Gallon (MG) recycled water reservoir in order to reduce pumping costs associated with the distribution of recycled water. It will also provide a storage facility for the recycled water.

Currently, recycled water is provided by the Reclamation Plant located at the Goleta Sanitary District's Wastewater Treatment Plant. It is distributed through the booster pump station located at the Plant as well as the GWD Hollister booster pump station. Relying on sequential pump stations to distribute the recycled water is inefficient and causes unacceptable service interruptions when a malfunction occurs with one of the pump stations or with pumps throughout the system. Building a reservoir would assist in the distribution of recycled water and provide the system with continuous operations during power outages, preventative maintenance and emergency pump failures.

A 1 MG underground or partially covered recycled water reservoir will be constructed for additional recycled water storage and distribution. The potential location of the proposed reservoir site is within the Ellwood 440 Zone. The proposed tie-in to the existing recycled water distribution system would be located at Cathedral Oaks Road or potentially at the Glen Annie Golf Course.

The estimated cost of the project is \$2,500,000.

## Transmission Main 36" Parallel Pipeline Project

IIP Group No: A1-4

Project Number: 74



### Summary

This project will install a second 36" transmission main from the Corona del Mar Water Treatment Plant (CDMWTP) to Cathedral Oaks Road and is needed to provide an emergency backup transmission line.

This existing single transmission main is aging; thus raising the need to consider adding redundancy should an emergency failure occur on the existing main. The 42" Transmission Main runs from CDMWTP southerly to Cathedral Oaks Road and then easterly along Cathedral Oaks Road. The transmission main feeds a number of water laterals which feed several District reservoirs. These reservoirs provide water service to several thousand District Customers. A second transmission main could be utilized in an emergency situation, or while the existing main is down for maintenance and inspection. A vaulted 36" butterfly valve would also be installed as part of this project.

The estimated cost of the project is \$13,000,000.

## GWD–City of SB Interconnect Project

IIP Group No: A1-5

Project Score: 74



### Summary

The Interconnect Project involves construction of a new connection (interconnect) between the water distribution systems of the Goleta Water District (GWD) and the City of Santa Barbara. The project is needed so neighboring agencies can provide mutual assistance to one another in the event of an emergency such as a transmission line failure, earthquake, wildfire, or for a planned system shut down for repairs or maintenance.

Currently, the Goleta Water District and the City of Santa Barbara are limited in their ability to supply or transfer water from one system to another in the event of an emergency or major water treatment plant problem.

Should water facilities of the District or the City of Santa Barbara fail, water service for customers from either the District or the City would be compromised without the interconnection.

This project entails the construction of the interconnection and a pump station so City of Santa Barbara water can be pumped into the main transmission main of GWD, thereby enabling this water to be provided to all customers of GWD and not just the customers in close proximity of the existing small interconnections that currently exist between the two water systems.

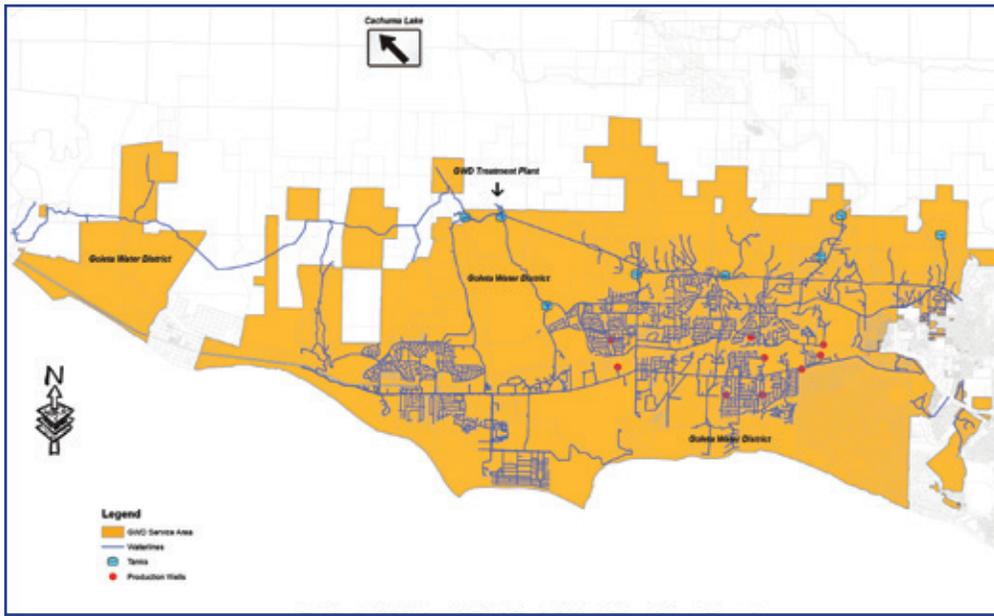
The estimated cost of the project is \$1,246,000.



## Distribution Flow Improvements for Well Water

IIP Group No: A1-7

Project Score: 74



### Summary

This project involves installing distribution and transmission water lines in close proximity to the District's existing and future wells. These lines are needed to be able to more efficiently move well water into all reaches of the District's potable water system. As the district increases its well water capacity, the Distribution System becomes more constrained in its overall ability to move large quantities of ground water to key locations in short timeframes. Accordingly, improvements will be necessary to ensure continued reliability of service to customers.

This project will add approximately 2 miles of additional distribution pipe in strategic locations, utilizing the District's hydraulic modeling system. This project will let the District make use of the groundwater wells to their full potential. The risk of not doing the project is that when wells need to function at capacity, the Distribution System would be unable to move the water.

The estimated cost of the project is \$1,500,000.

## Long Term Waterline Replacement Program

IIP Group No: A1-8

Project Score: 73



### Summary

This project initiates a proactive program to replace all District waterlines over the 100 years of the project. Existing waterlines are constructed of various materials such as asbestos concrete, galvanized steel, PVC and ductile iron. Due to wear, corrosion and other factors, waterlines fail after a period of time. It is impossible to determine or predict when a waterline will fail.

In addition, many existing waterlines are substandard in diameter and therefore, provide inadequate water pressure and flows to District customers. These need to be replaced with appropriate diameter waterlines.

This program is needed to keep a regular schedule of waterline and appurtenance replacement in place to stay ahead of any potential problems.

This ongoing program of replacing aging and substandard sized waterlines will improve water system reliability and ensure continued water service to our customers, saving operations and maintenance costs. There are approximately 250 miles of buried waterline within the Goleta Water District. The program proposes to replace on average, approximately 2,700 lineal feet of water main per year at the approximate cost of \$150 per lineal foot of pipe.

The estimated annual cost of the project is \$405,000.

## Service Line Replacement Program

IIP Group No: A1-9

Project Score: 73



### Summary

This is a proactive program to replace the District's water service lines throughout the system and is necessary to improve water service and long-term reliability to all District customers. There are currently more than 16,600 water meters in the Goleta Water District. Water service lines run from the waterline in the street to the customer meter, vary in length, and generally range from 3/4" to 2" in diameter. (Water service lines from the water meter to the premises are owned and maintained by customers). Based on water system history, failure of service lines is more problematic than failure of the main water lines in the street. Therefore, over time the scheduled Service Line Replacement Program becomes a cost-effective prevention maintenance program, averaging 83 service line replacements each year.

The estimated cost of the project is \$400,000.

## Electronic Document Management System

IIP Group No: A1-10

Project Score: 72



### Summary

The District currently has Worksite MP document management software integrated with the Geographic Information System (GIS). Any documents or photos associated with District facilities are stored in the Worksite MP for easy access.

This project is intended to be a proactive program to enhance the District's ability to comprehensively organize all of its files. Over the years, thousands of important documents have been developed and currently are managed across departments and buildings. When performing necessary analysis and research, the lack of a consolidated and comprehensive document management system challenges the District's ability to retrieve supporting documents and identify the relevant information that should be incorporated into decision-making. Today's inefficient manual documentation practices result in documents being moved, mislocated, or redundant copies being made by departments.

As currently conceived, the project would be divided into 3 phases. Phase 1 would assess the District's current ability and needs, afterwards developing alternative approaches to this project. Phase 2 would take the District's archived documents, which include management documents, operational documents, easement documents, contracts, maps and similar information, and reproduce them in electronic form for improved retrieval capability. The goals of this phase would be to capture electronic images of existing paper documents by utilizing scanners or multifunctional printers or by utilizing optical character recognition software in order to convert digital images into machine readable text. Phase 3 would incorporate newly developed documents into an electronic document management system. For all phases, the goal is to create a user friendly system that will have a number of capabilities, including:

- Indexing and tracking electronic documents.
- Storing electronic documents.
- Retrieving electronic documents from storage utilizing multiple key words or phrases.
- Document security.
- Workflow utilization so that the document can be accessed where and when necessary.
- Reproduction of documents.

The estimated cost of the project is \$450,000.

## CDMWTP Filter Trough Improvement Project

IIP Group No: A1-11

Project Score: 71



### Summary

As part of the potable water treatment process at the CDMWTP, water enters each of the six (6) filters through four (4) fiberglass troughs (24 total). The four troughs in each filter disperse water evenly over the top of the filter media when in the filtration mode, and remove water evenly from the filter when it is in backwash mode. This project will replace the old fiberglass filter troughs with new stainless steel troughs, which are more durable and will provide extended service life.

The filter troughs at the Corona del Mar Water Treatment Plant are the original units installed during plant construction in 1974. Due to constant exposure to sunlight over the 36 years the plant has been in operation, they are now deteriorating and have been chipping during the periodic cleaning process.

In filtration mode, water comes from the clarifier, and runs through these troughs into the filters. In backwash mode, water runs through these same troughs and is then piped into the backwash water recovery basin. They are in near constant use, and the chipping problem will continue and worsen until they are replaced with stainless steel troughs.

The estimated cost of the project is \$350,000.

## CDMWTP Floc/Sed/Filter Enclosure Project

IIP Group No: A1-12

Project Score: 70



### Summary

This project will involve designing and constructing an enclosure, which will cover and protect the Corona del Mar Water Treatment Plant Flocculation/Sedimentation Basins with a lightweight structure topped with photovoltaic solar panels. This project is important because the enclosure will protect the 4 basins from weather, floating debris, bird nesting and pests, and vastly reduce algae growth.

The Coagulation/Flocculation/Sedimentation and Filtration processes are key components of the water treatment plant. Coagulation is the first process, which involves injecting chemicals at a very high mixing energy to destabilize the charge of colloids and suspended solids. The next step is Flocculation, which gently mixes the coagulated water to accelerate the rate of particle collision and form into larger/heavier particles referred to as “floc”. This water proceeds into a Sedimentation basin, where the water velocity is slowed down, allowing the “floc” to fall to the bottom of the basin. The Sedimentation process will typically remove the majority of solids that can settle to the bottom by gravitational force. The water then continues on to the Filtration process, which removes any remaining colloidal matter after leaving the sedimentation basins.

Covering these basins and filters will reduce or eliminate algal growth, and optimize sedimentation basin performance by eliminating thermal stratification and reducing turbidity. The enclosure will also eliminate bird nesting, provide for all weather operation and maintenance, and provide a potential support structure for a substantial amount of photovoltaic panels to produce electricity.

This project is needed to improve performance, eliminate pests, and provide all weather servicing to a majority of the plant’s major treatment processes. The project will consist of the design and construction of an enclosure to cover the CDMWTP Flocculation/Sedimentation Basins (4), Filter Control rooms (2) and Filters (6).

The estimated cost of the project is \$5,259,000.

## Pavement Maintenance Project (Except CDMWTP)

IIP Group No: A1-13

Project Score: 69



### Summary

This project is a maintenance program to pave and keep all Goleta Water District access roads accessible. (This particular project excludes the Corona del Mar access road handled under a separate project).

The District has many sites with access roads and parking areas of different sizes. Some of these sites are in the hills and are prone to erosion damage and flooding, which causes them to deteriorate faster than normal.

It is important to have around the clock access to District facilities (Reservoirs, Well sites, pump stations, RP Vaults, Operations yard, etc.). Maintaining these roads and facilities is less expensive than letting them deteriorate and then having to completely replace surfaces. Many of the access roads to District facilities are cracking and in need of re-surfacing in order to maintain their integrity. Maintaining these roads helps to keep them intact in flood prone areas and prevents the development of potholes.

This project involves the paving or slurry seal of roads used to access District facilities, which will minimize and eliminate road damage. This will allow for proper and safe access to our facilities in order to perform inspections and routine maintenance.

The estimated cost of the project is \$50,000.

## Wells Backwash Tank Replacement Project – El Camino, San Antonio and San Marcos Wells

IIP Group No: A1-14

Project Score: 68



El Camino Well



San Antonio Well



San Marcos Well

### Summary

This project involves replacement of the existing aging backwash tanks at 3 District well sites, shown in photos above. This project is necessary because the existing tanks are deteriorating and undersized for current and future anticipated operating environments.

The existing backwash tanks are approximately 50 years old and no longer meet modern tank standards and specifications. Replacing these tanks with new, correctly-sized backwash tanks will increase treatment process.

Specifications require backwash tanks to be able to hold three times the backwash volume. The present tanks, which were reused from a previous GWD facility and are now an estimated 50 years old, can only accommodate one backwash, and are starting to deteriorate. Operationally, the new tanks would provide for more efficient operations with shorter start up time and longer run times. This will reduce water discharges to the sewer system. Completion of this project will help in the reliability of these facilities, and help meet projected water demands.

The estimated cost of the project is \$250,000.

## Cathedral Oaks 20" Bypass Waterline

IIP Group No: A1-15

Project Score: 67



### Summary

This project maintains adequate potable water and fire service to approximately 4,000 District customers in the event of a failure of an upper portion of either the Glen Annie Lateral or the 42-inch Transmission Main that runs along Cathedral Oaks Road. These areas have experienced major wildfires in the past few years, so fire protection is very important in this region. Should either line fail, alternative water service would need to be provided in an effort to maintain an acceptable level of service to the District's customers. The project consists of installing approximately 8,500 feet of 20-inch waterline in Cathedral Oaks Road between Glen Annie Road and Camino Laguna Vista. At Glen Annie Road, the proposed waterline will connect to the District's Glen Annie Lateral. At Camino Laguna Vista, the proposed waterline will connect to the District's 42-inch Transmission Main. The construction of the proposed waterline would loop the two transmission mains. The project also includes construction of a pressure reducing station along the proposed waterline.

The Glen Annie Lateral is a 22-inch water lateral that runs southerly from the Elwood Reservoir along Glen Annie Road. This lateral currently serves the District's reduced 440 pressure zone and the communities that lie west of Glen Annie Road and north of Hollister Avenue. The 42" Transmission Main runs from the Corona del Mar Water Treatment Plant (CDMWTP) easterly along Cathedral Oaks Road and is the main transmission main for approximately 75% of the District's customers.

Should an upper portion of the Glen Annie Lateral fail, customers served by the lateral would need to receive water service from the 230 pressure zone to the south where two booster pumps at the Edison Booster Station would be employed to convey the water. However, even with both pumps in operation, sufficient water service cannot currently be provided during the summer higher peak periods. This type of failure occurred in 1997, resulting in significant expense to the District and diminished service levels.

The estimated cost of the project is \$5,515,000.

## 3 MG Ellwood Reservoir

IIP Group No: A1-16

Project Score: 67



### Summary

This project is for the proposed construction of a new 3 million gallon (MG) reservoir to be located at the existing Ellwood reservoir site. The new 3 MG reservoir is needed to provide District customers in the 440 pressure zone with additional water storage. Each pressure zone of the water system should have adequate storage capacity to supply water during a failure of a transmission waterline or some other unexpected system situation.

The capacity of the existing Ellwood reservoir is 1.5 MG which is below optimal levels to meet peak hourly flows and fire flows, especially during summer months. Should an emergency arise, such as a wild fire or a transmission line failure, storage capacity of the existing reservoir could be insufficient to meet the flow demand and supply for District customers of the outer 440 pressure zone, which includes approximately 4,000 customers. More importantly, the outer 440 zone is not looped hydraulically, so the only back-up supply system for the area is the emergency pumps at the Edison Pump Station, which cannot meet the water related demands of the District customers located in this area during the summer peak periods.

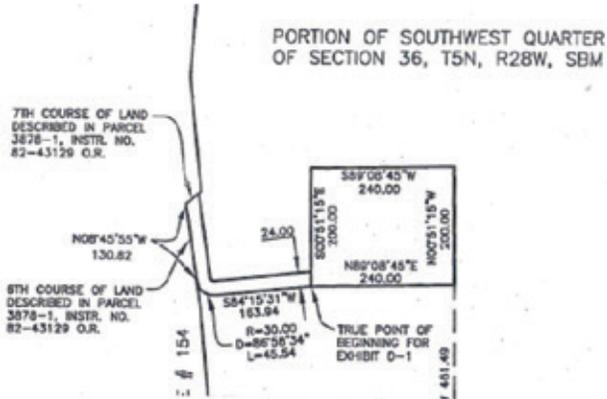
The proposed *Cathedral Oaks 20" Bypass Waterline 8,500'* project would create a loop system between the Glen Annie Lateral and the 42-inch transmission main in Cathedral Oaks and would provide alternative water service from the 42" Transmission Main in Cathedral Oaks Road to the East. This would also assist in addressing the situation of providing alternative water supply sources to this pressure zone during varying operating conditions.

The estimated cost of the project is \$5,000,000.

## 2 MG Chaparral Reservoir, Booster Pump Station & Waterline Project

IIP Group No: A1-17

Project Score: 67



### Summary

This project will provide a new 2 million gallon (MG) reservoir for supplemental storage and a booster pump station (BPS) in order to improve the reliability of water service to the Corona Pressure Zone. This reservoir will provide storage for pressurized fire water flow to the fire prone San Marcos Pressure Zone. To fill the reservoir and distribute additional water to the San Marcos Zone, approximately 1 ¾ miles of waterline will need to be constructed along with the BPS and is included in this project's scope.

The transmission main pressure is at a Hydraulic Grade of 440 feet. It supplies water to most of the lower pressure zones throughout the District service area running west to east. If there is break in the transmission main, that section of the transmission main needs to be shut down by inline isolation valves. Depending on where the break is, water is routed around it by using the Van Horne and Patterson BPS's to re-establish the flow of water downstream of the break. The District is limited by the pump capacity at the Garret Van Horne and Patterson reservoirs. The pump capacity of Garret Van Horne BPS is 900 gallons per minute (gpm). The capacity of the Patterson BPS is 500 gpm. To keep up with the demand over a prolonged period of time, the City of Santa Barbara interconnect and District wells would need to be utilized. An additional 2 MG of supplemental storage at an elevation at or above the Corona del Mar Reservoir on the east side of the District boundary would provide 2 MG of reservoir water at a higher flow rate because it would be gravity fed.

In order to furnish additional water to the San Marcos pressure zone, the waterline that connects Chaparral Reservoir to the San Marcos Zone needs to be pressurized. A second waterline with a BPS is needed to supply additional water to that zone with a hydraulic grade line of 166 feet or higher.

The proposed site of the reservoir is just north of the Preserve at San Marcos development on the Stevenson Ranch.

The estimated cost of the project is \$8,344,000.

## Recycled Water Hollister Booster Station Pump Rebuild Project

IIP Group No: A1-18

Project Score: 66



### Summary

This project will provide for the rebuilding of Recycled Water Hollister Booster Station Pump #1, (P8201) which is needed to prevent the failure of this pump, a critical distribution facility in the District's recycled water system.

Pump #1 is currently going through mechanical seals prematurely because it is overdue for a complete rebuild. Due to wear, corrosion and reliability issues, Operations staff had pump #2 (P8202) rebuilt in December of 2009.

An approved contractor will remove, inspect and rebuild pump P8201. Similar to pump #2, the work needed on pump #1 will include but will not be limited to, balancing the rotating assembly, replacement of all bearings and gaskets and resurfacing of the pump shaft sleeves, cases and all contact surfaces to ensure proper function of future mechanical seals.

The estimated cost of the project is \$20,000.

## Transmission Main – 3 New Valves

IIP Group No: A1-19

Project Score: 65



### Summary

The project adds two (2) new valves along the transmission main in Cathedral Oaks Road and replaces the existing Bishop Ranch valve. Water valves are essential for controlling water flow through the District's piping system. In the case of pipeline failure or waterline improvement construction, valves allow the District to isolate specific segments or runs of pipe by closing the valves along those segments undergoing construction or repair work, thereby minimizing service interruptions to customers. Currently, there are not enough inline valves along the transmission main in Cathedral Oaks Road between Fairview Avenue and Lorraine Avenue. In the case of a transmission main failure or waterline construction anywhere along that portion of the transmission main, a large number of customers would be isolated without water service and fire protection for the duration of the repair work or construction. An alternative water supply source would have to be provided. Additional inline valves will considerably limit the areas of customer isolation and the need for alternative water supply.

These additional installations will provide continued reliable service in the event of a waterline failure or construction along the respective line segments.

As Cathedral Oaks Road is a State Highway (State Hwy. 192), the District will need to obtain the appropriate encroachment permits for construction within the right-of-way from the State of California.

The estimated cost of the project is \$434,000.

## Vault Maintenance and Painting Project

IIP Group No: A1-20

Project Score: 64



### Summary

This project initiates a recurring scheduled program of painting valves and piping inside District vaults, which is important to extend the life of District facilities. If not taken care of, equipment inside these vaults will quickly rust and corrode.

There are approximately 35 underground equipment vaults owned and maintained by the District. Underground vaults have the potential for flooding in winter storm events. Between flooding, occasional leaks and condensation that can occur in these vaults, a professional paint job assists in keeping District equipment in good working order.

Much of the piping inside District vaults is corroding and in need of resurfacing. Painting the equipment inside the vaults reduces corrective maintenance costs, stops corrosion and prolongs the life of District assets.

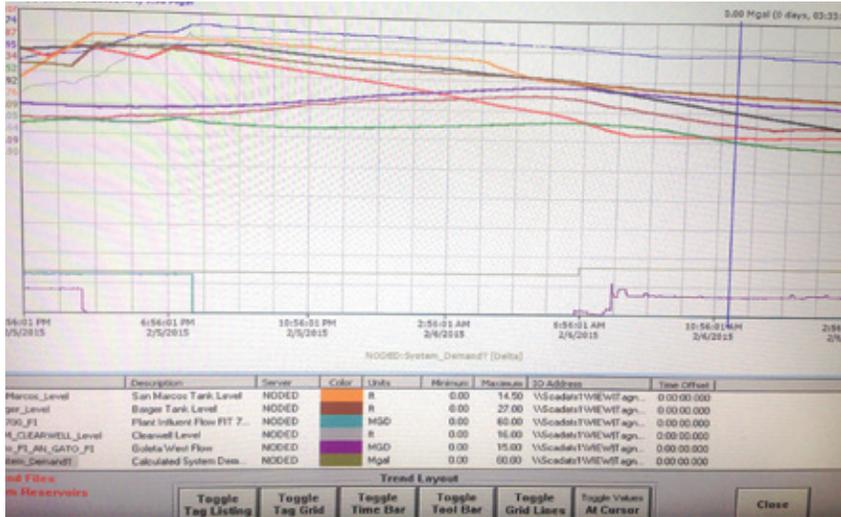
This project comprises preparation and painting (with epoxy) of all valves and piping inside various PR vaults throughout the Distribution System.

The estimated cost of the project is \$41,000.

## Generators at All Reservoir Sites

IIP Group No: A1-21

Project Score: 63



### Summary

This project involves the installation of small gas generators at eight reservoir sites to enable SCADA monitoring and level control in the event of a power outage. Existing control cabinets contain UPS backups for short-term disruption in power. These backup batteries do not provide power for prolonged outages. Once the backups fail, reservoir fill valves can fail, causing tanks to spill and distribution operators to lose the ability to monitor reservoir levels and make critical changes in the distribution system. Installation of emergency generators at reservoir sites will improve reliability of service by ensuring that these critical facilities can continue to function when the power goes down.

An RFP will be developed and awarded. The contractor will determine appropriate size of equipment needed and provide a quote to perform electrical installation necessary for the generator to run the control cabinet automatically in the event that line power is lost.

The estimated cost of the project is \$160,000.

## CDMWTP Filter Gallery Corrosion Correction Project

IIP Group No: A1-22

Project Score: 63



### Summary

The 40-year-old treatment plant is showing numerous signs of early deterioration around the original filter gallery piping connections embedded in concrete, and in some concrete floor seams. This project involves investigation, design and rehabilitation of associated piping and concrete at the Corona Del Mar Water Treatment Plant (CDMWTP). CDMWTP was constructed and placed in service in 1974; the plant normally runs 24 hours a day, 7 days a week, 365 days a year and is the largest water production facility in the District's asset portfolio.

The treatment plant filter gallery is one of the major working components of the plant. Critical filter control valves for each of the six filters, backwash and domestic water pumps are located in this area. Millions of dollars worth of additional equipment is also located in the filter gallery. Allowing the deterioration to continue could allow the possibility of metal or concrete failure during a seismic event, which has the potential to flood the filter gallery, destroying all the electrical equipment and shutting down the plant for an extended period of time for repairs.

The project would involve identifying causes of corrosion, designing and repairing piping, and installing new concrete in the filter gallery.

The estimated project cost is \$120,000.

## Replacement of Known Problem Service Lines

IIP Group No: A1-23

Project Score: 62



### Summary

This initiates a proactive program to replace problem water service lines before they break, which will help eliminate unacceptable property damage and unmetered water loss.

There are currently more than 16,600 water meters in the Goleta Water District. All of these meters have water service lines of varying lengths running from the waterline in the street to the water meter. Some of these service lines are made of polybutylene, which is now known to be an undesirable material, due to pipe bursting. There are also some existing water service lines made of galvanized pipe and PVC, which are also undesirable materials for service lines. This program involves replacing these water service lines with copper pipe, which is much more dependable and easier to work with.

This project is important as it will improve the reliability of water service to all District customers and ensure that all undesirable and unreliable service pipe materials have been replaced prior to the actual failure of the pipe occurring.

Water service lines that are known to be of an undesirable material will be removed and replaced. The goal of this project is to replace approximately 25 problem service lines per year. This is a preventive maintenance program that will eliminate much of the leakage and property damage, as well as unmetered water loss, caused by defective water service lines.

The estimated annual cost of the project is \$50,000.

## Cathedral Oaks Rd and Hwy 101 Overcrossing Project (Phase 2A)

IIP Group No: A1-24

Project Score: 62



### Summary

Phase 2A of this project proposes to keep the District's recycled waterline in the roadway of the newly realigned section of Hollister Avenue. Also important is looping the potable waterline system in this area. This phase of the Cathedral Oaks Road/ Highway 101 Overcrossing Project involves realignment of a portion of Hollister Avenue. Phase I of the project included installation of sleeves for the potable and recycled water lines in the overcrossing bridge and was completed in 2012.

Phase 2A of this project will include such components as:

- 12" PVC recycled waterline (approximately 500') in Hollister Avenue, replacing an older 12" section of waterline that no longer aligns with the new roadway. The old section of 12" recycled waterline will be abandoned in place. This will ensure waterline accessibility in any future maintenance or repair project.
- 80' of 10" steel potable waterline and approximately 500' of 8" HDPE waterline across the Highway 101 overcrossing. The 8" HDPE waterline will be inserted into the 12" steel casing pipes installed in the bridge overcrossing as part of Phase 1.
- 880' of 10" potable PVC waterline on Calle Real. This will connect on the west at the intersection of the Hwy 101 overcrossing and Calle Real, and travel east to the intersection of Calle Real and Winchester Place where it will connect to the existing 10" PVC potable waterline. This will effectively loop the potable water system in this area.

The estimated cost of the project is \$744,000.

## Van Horne Reservoir Slope Repair Project

IIP Group No: A1-25

Project Score: 61



### Summary

This project will repair the manufactured westerly slope at the base of the Van Horne Reservoir which has begun to slip, causing the access road surrounding the reservoir to crack and separate. This project prevents further deterioration of the slope and access road to the Van Horne Reservoir. It is important to note that District engineers have determined that the slope does not have structural implications.

The District's 6.4 million gallon Van Horne Reservoir was constructed in 2002. Over time, a portion of the manufactured slope around the Van Horne Reservoir has experienced sliding. This condition will continue to worsen until the westerly slope beneath the reservoir is reconstructed at the proper slope ratio and grade.

The project consists of the reconstruction of a portion of the manufactured fill slope on the westerly side of the Van Horne Reservoir. In addition, approximately 400 linear feet of reservoir access road (including 6" curb and gutter) will be removed and replaced.

The estimated cost of the project is \$372,000.

## CDMWTP TU4 – Chemical Building Road Improvements

IIP Group No: A1-26

Project Score: 61



### Summary

This project involves maintenance and improvements to access roads and walkways around the Corona del Mar Water Treatment Plant necessary to maintain a safe working environment for District personnel working at the treatment plant, and for visitors to the plant consistent with District standards and industry specifications.

The roads and walkways surrounding and through the treatment plant are used on a regular basis by employees, chemical delivery trucks, contractors, and visitors.

Treatment plant staff, large trucks and visitors use these roads and walkways within the plant. Improvements would reduce the risk of injury to employees and visitors and maintain the access roads and walkways within the Plant site at acceptable conditions.

The estimated cost of the project is \$15,000.

## CDMWTP Lab Equipment for Nitrate Analysis

IIP Group No: A1-27

Project Score: 61



### Summary

This project proposes the purchase of an ion chromatograph to fully meet California State Water Resources Control Board Division of Drinking Water reporting requirements for Nitrate testing. The laboratory's current method for nitrate testing utilizes older equipment and makes consistent results difficult to achieve at times.

An ion chromatograph will allow for a larger volume of analyses and can also be used to measure the concentrations of other water quality parameters. The ion chromatograph would reduce the amount of outsourced analyses and shipping costs. An analysis will review the ion chromatographs from different vendors as well as price and the cost of maintenance, training, and parts. This will also include reagents that need reordering, ease of use, and waste disposal versus the cost of completely outsourcing the testing of Nitrates. A cost benefit analysis will be performed and the most economical method will be utilized.

The estimated cost of the project is \$90,000.

## Recycled Waterline Preventative Maintenance Program

IIP Group No: A1-28

Project Score: 60



### Summary

This project initiates a proactive maintenance program to repair or replace sections of the District's recycled waterline system before corrosion caused leaks or breaks in the recycled waterlines occur. This project proposes to address potential problem areas before they occur, which will save the District the money that would be involved in repairing a recycled waterline pipe failure under emergency response conditions and eliminate unplanned interruptions in service.

Installation of steel waterlines in aggressive soil, as well as water conditions and the corrosive nature of the recycled water are reasons for the leaks that have been experienced. These leaks are expensive to repair, have to be reported to the Regional Water Quality Control Board (RWQCB), and the leakage of the water contained as sufficiently as possible. The leaks cause service disruptions to the irrigation programs of parks, golf courses, shopping centers, and UCSB's irrigation areas. In addition, there are a few restroom facilities that use recycled water. These facilities' services can be interrupted in the event of any problems.

By repairing the known bad areas before they leak, this will save time and money spent due to a controlled environment of repair versus response to emergencies. Emergency repairs can take days to complete, depending on the type, size, and depth of pipe, traffic and environmental constraints associated with the emergency repair.

The estimated annual cost of the project is \$20,000.

## CDMWTP Recoat Wash Water Tanks

IIP Group No: A1-29

Project Score: 58



### Summary

This project involves inspection, repair, and painting of two steel wash water tanks at the Corona del Mar Water Treatment Plant. This project is important because this type of maintenance is needed to protect the integrity of the steel wash water tanks and the process water they store.

There are 2 wash water tanks at the treatment plant. The larger 600,000 gallon tank was built during the original plant construction in 1974. The smaller 200,000 gallon tank was built in 2002. These tanks are drained, cleaned, and inspected at a minimum of every 3 years, and a maximum of every 5 years.

These tanks hold the wash water for CDMWTP filters. The wash water is an integral component of the water treatment process, ensuring clean water for backwashing each filter. Neglecting these tanks could result in Plant process interruption.

The project includes inspection, repair and painting of the interiors of CDMWTP's Wash Water Tanks 1 and 2 with National Sanitary Foundation (NSF) 61 approved epoxy recoat. Additionally, a new heavy duty coating will be applied to exteriors of the tanks. This project will be contracted with Engineering and Inspection support.

The estimated cost of the project is \$250,000.

## Anita Well Emergency Power Generator Installation

IIP Group No: A1-30

Project Score: 54



### Summary

This project provides for the installation of an onsite diesel generator which is needed to provide emergency power to the Anita Well when commercial power is lost. Currently, the Anita Well is a standby well.

If needed, the Anita Well would provide water service for a large number of District customers. Electricity that enables the well to operate is provided commercially. If that power is lost for any reason, the well could not function. Water service, including fire protection could be lost.

This infrastructure improvement project will insure that Anita Well will be able to provide water in an emergency situation when there is no utility power. By providing an onsite generator, the reliability of this facility during fire, storm or other SCE event would be greatly improved.

Currently, there is no viable alternative that could provide for the production of electricity in the event of an emergency.

The estimated cost of the project is \$200,000.

## Airport Well Emergency Power Generator Installation

IIP Group No: A1-31

Project Score: 54



### Summary

This project provides for the installation of an onsite diesel generator which is needed to provide emergency power to the Airport Well when commercial power is lost. The Airport Well is an active well.

If needed, the Airport Well would provide essential water service for a large number of District customers. Electricity that enables the well to operate is provided commercially. If that power is lost for any reason, the well could not function. Water service, including fire protection could be lost.

This infrastructure improvement project will insure that Airport Well will be able to provide water in an emergency situation when there is no utility power. By providing an onsite generator, the reliability of this facility during fire, storm or other SCE event would be greatly improved.

Currently, there is no viable alternative that could provide for the production of electricity in the event of an emergency.

The estimated cost of the project is \$200,000.

## El Camino Well Emergency Power Generator Installation

IIP Group No: A1-32

Project Score: 54



### Summary

This project provides for the installation of an onsite diesel generator which is needed to provide emergency power to the El Camino Well when commercial power is lost. The El Camino Well is an active well.

If needed, the El Camino Well would provide essential water service for a large number of District customers. Electricity that enables the well to operate is provided commercially. If that power is lost for any reason, the well could not function. Water service, including fire protection could be lost.

This infrastructure improvement project will insure that El Camino Well will be able to provide water in an emergency situation when there is no utility power. By providing an onsite generator, the reliability of this facility during fire, storm or other SCE event would be greatly improved.

Currently, there is no viable alternative that could provide for the production of electricity in the event of an emergency.

The estimated cost of the project is \$200,000.

## San Antonio Well Emergency Power Generator Installation

IIP Group No: A1-33

Project Score: 54



### Summary

This project provides for the installation of an onsite diesel generator which is needed to provide emergency power to the San Antonio Well when commercial power is lost. The San Antonio Well is an active well.

If needed, the San Antonio Well would provide essential water service for a large number of District customers. Electricity that enables the well to operate is provided commercially. If that power is lost for any reason, the well could not function. Water service, including fire protection could be lost.

This infrastructure improvement project will insure that San Antonio Well will be able to provide water in an emergency situation when there is no utility power. By providing an onsite generator, the reliability of this facility during fire, storm or other SCE event would be greatly improved.

Currently, there is no viable alternative that could provide for the production of electricity in the event of an emergency.

The estimated cost of the project is \$200,000.

## San Marcos Well Emergency Power Generator Installation

IIP Group No: A1-34

Project Score: 54



### Summary

This project provides for the installation of an onsite diesel generator which is needed to provide emergency power to the San Marcos Well when commercial power is lost. The San Marcos Well is an active well.

If needed, the San Marcos Well would provide essential water service for a large number of District customers. Electricity that enables the well to operate is provided commercially. If that power is lost for any reason, the well could not function. Water service, including fire protection could be lost.

This infrastructure improvement project will insure that San Marcos Well will be able to provide water in an emergency situation when there is no utility power. By providing an onsite generator, the reliability of this facility during fire, storm or other SCE event would be greatly improved.

Currently, there is no viable alternative that could provide for the production of electricity in the event of an emergency.

The estimated cost of the project is \$200,000.

## University Emergency Power Generator Installation

IIP Group No: A1-35

Project Score: 54



### Summary

This project provides for the installation of an onsite diesel generator which is needed to provide emergency power to the University Well when commercial power is lost. The University Well is an active well.

If needed, the University Well would provide essential water service for a large number of District customers. Electricity that enables the well to operate is provided commercially. If that power is lost for any reason, the well could not function. Water service, including fire protection could be lost.

This infrastructure improvement project will insure that University Well will be able to provide water in an emergency situation when there is no utility power. By providing an onsite generator, the reliability of this facility during fire, storm or other SCE event would be greatly improved.

Currently, there is no viable alternative that could provide for the production of electricity in the event of an emergency.

The estimated cost of the project is \$200,000.

## Point-to-Point Radio Link Project

IIP Group No: A1-36

Project Score: 54



### Summary

This project would conduct field testing to confirm proper location and size of antennas at the CDMWTP and the Hollister Avenue headquarters location, while providing for the installation of equipment to establish a point-to point radio link between these locations. This project would replace the T-1 line that is currently in use that supplies this communication link between the two facilities.

This infrastructure improvement project would provide an alternative or replacement communication link between the remote Corona del Mar Water Treatment Plant, located at 1510 Glen Annie Road and the headquarters facility at 4699 Hollister Ave. The T1 com link presently in use has proven unreliable as it experiences approximately 5 service interruptions per year. The new radio link will replace the T1 link after preliminary evaluations provide the necessary data to insure reliable communications and improve upon the T-1 service performance.

The estimated cost of the project is \$53,000.

## CDMWTP Creek Crossing Improvement Project

IIP Group No: A1-37

Project Score: 54



### Summary

This project will modify and raise the McCoy Creek crossing on the access road to the Corona del Mar Water Treatment Plant. This keeps the access road to the treatment plant open at all times for emergency responders and plant personnel.

During winter storm events in the past, this creek crossing on the access road to the treatment plant has flooded, cutting off access for plant personnel until the water recedes. The photos above are an example of how much water can flow through this area during heavy rain periods.

The access road is a short, low fair- weather creek crossing which can become flooded during heavy winter storm events. Treatment plant staff cannot access the treatment plant when the road is flooded.

This project is proposed to keep the access road to the Corona del Mar Water Treatment Plant open during winter storm events, when flooding is a real possibility in the area. The project would modify the existing McCoy Creek crossing to raise the level of the access road at the bottom gate and improve drainage and access to the plant during heavy rains.

The estimated cost of the project is \$830,000.

## Ocean Road – UCSB 12” Waterline Project 3,000’

IIP Group No: A1-38

Project Score: 54



### Summary

This project proposes to loop the Isla Vista water system, which will improve overall water quality, pressure, and water system reliability in the area. There are many undersized waterlines and dead end waterlines in this part of Isla Vista. The dead end waterlines create stagnant water, which is detrimental to water quality. A new 12” waterline on Ocean Road will allow for some of these dead end runs to be connected to a new, larger diameter waterline. This keeps water flowing, improving water quality. Isla Vista has grown much more populated than planned for when these original waterlines were installed, and a new 12” waterline running from El Colegio Road to Del Playa Drive will be a big step in improving water quality, pressure, and water system reliability.

Many of the waterlines in Isla Vista were designed to serve a smaller population. Now these waterlines are too small. The District has had a continuing program of systematically upsizing old, undersized waterlines in Isla Vista over the last several years. However, there are still many waterlines in the area that are either dead end runs or just too small for current conditions.

It is proposed that a new 12” waterline be installed in Isla Vista on Ocean Road, from El Colegio Road to Del Playa Drive. In order to connect dead end waterlines on several streets to the proposed 12” waterline, the waterline needs to be a straight run from El Colegio Road south to Del Playa Drive. However, Ocean Road is not a straight run from El Colegio Road to Del Playa Drive, so an easement will be required for approximately 1,300’. The proposed 12” PVC distribution waterline will connect to the existing 12” Steel distribution waterline on El Colegio Road and travel south to Trigo Road, a distance of approximately 2,200’. The waterline will then downsize to 8” PVC from Trigo Road south to Del Playa Drive and connect to the 8” PVC distribution waterline in Del Playa Drive, a distance of approximately 800’. The total length of the proposed waterline is approximately 3,000’. Future projects will connect the existing dead end waterline runs on perpendicular streets to the new 12” waterline in Ocean Road, further looping the water system.

The estimated cost of the project is \$1,689,000.

## CDMWTP Clarifier Improvements

IIP Group No: A1-39

Project Score: 54



### Summary

This project involves installing plate settlers and piping modifications to the Clarifier at the Corona del Mar Water Treatment Plant (CDMWTP). These new installations will assist in removing turbidity from the water during the treatment process.

Installing plate settlers and modifying how clarified water enters the Clarifier Effluent Channel (CEC) will optimize plant performance by reducing turbidity leaving the sedimentation basins and reducing floc shear forces on water entering the CEC. This will also increase the effectiveness of the plant filtration process, providing longer filter runs at higher flow rates, along with better turbidity reduction from the sedimentation process during high raw water turbidity events, also extending filter runs.

This project involves the design and construction of modifications to the CDMWTP Sedimentation Basins (4) and CEC by installing plate settlers and piping modifications.

The estimated cost of the project is \$5,789,000.

## Airport Well Backwash Tank Interior Coating

IIP Group No: A1-40

Project Score: 53



### Summary

The interior of the Backwash Tank at the Airport Well has not been re-coated since 1984. The industry standard for re-coating is typically every 15 years, making this procedure long overdue. This project is important because the cracking and flaking inside the tank could affect water treatment and shorten the life of the backwash tank.

With this project, the District will hire a Coatings Contractor to prepare, clean and coat the interior of Airport Well Backwash Tank.

The estimated cost of the project is \$15,000.

## Well Centralization Study of Well Water Treatment

IIP Group No: A1-41

Project Score: 53



### Summary

This project proposes to study the feasibility of implementing a centralized treatment facility for the District's existing water production wells. This project includes review of the District's existing wells and wellhead treatment, identification of possible centralized treatment sites, and evaluation of the feasibility of creating a centralized well water treatment facility.

Currently all existing District wells have localized wellhead treatment equipment at each individual well site. This results in the need for several small scale treatment units and the need for chemical deliveries in small quantities to these scattered sites, as well as varying water quality results that while meeting standards can affect the perception of the quality of the water by the customer.

Creation of a centralized well water treatment facility would allow raw well water to be piped to a central location for treatment and distribution, boosting water quality consistency and uniform blending into the distribution system. Although significant new piping may be required, this has the potential to reduce operating costs, and improve customer satisfaction in regards to the well water use. A study of the feasibility and cost effectiveness of such a centralized system is necessary to determine if this should be integrated into the District's supply system.

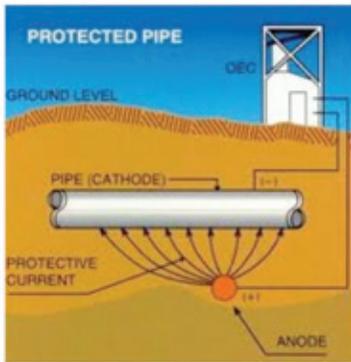
An approved consultant would be selected to conduct the study, present a number of alternatives and recommend the most viable options.

The estimated cost of the project is \$119,000.

## Recycled Water System Corrosion Study

IIP Group No: A1-42

Project Score: 51



### Summary

This project provides for field tests to confirm current flow continuity in relation to the District's recycled waterlines and install necessary upgrades as needed. This is needed to evaluate the condition of the recycled waterlines and establish an organized program to upgrade the cathodic protection (CP) system. Cathodic protection facilities are necessary for protecting steel waterlines from corrosion.

Cathodic protection is the most viable means of preventing steel pipe corrosion. CP is a technique used to control the corrosion of metal piping by making the pipe the cathode of an electrochemical cell. The simplest method to apply CP is by connecting the metal pipe to be protected with another more easily corroded metal to act as the anode of the electrochemical cell. Corrosion of steel waterlines ultimately leads to failure of the pipe and the necessity to replace the waterlines. Currently, replacement of waterlines in existing streets and landscaped areas costs approximately \$300 per foot of installation. The recycled water system consists of approximately 51,000 feet of steel waterlines. Test results from this study would enable the District to determine the location of new anode beds and rectifiers.

The estimated cost of the project is \$39,000.

## Recycled Water System Connection to Potable System

IIP Group No: A1-43

Project Score: 51



### Summary

This project will provide a back-up connection to the recycled water system from the potable distribution system. This is needed in the event that the booster pump station at Goleta Sanitary District (GSD) fails, or the reclamation plant is out of service for major maintenance. This proposed connection also pressurizes the recycled water system using the potable water system, which is needed in the event that the GSD pump station is inoperable. Currently, potable water can be supplied to the recycled water system through a connection at the GSD reservoir, but this water must be pumped by the GSD pump station to reach the recycled water customers.

Recycled water is produced at the GSD Reclamation Plant. It is distributed through recycled waterlines by means of a booster pump station. Should the Plant or the Pump Station be out of service, a backup system would be needed to continue recycled water service and to provide the pressure needed by District customers. Installing a connection to the District's potable water system and utilizing the pressure of the potable water system would provide that backup system.

The estimated cost of the project is \$60,000.

## Office Repaving of Yard Project

IIP Group No: A1-44

Project Score: 51



### Summary

This pavement replacement project will ensure that the Operations yard parking lot is usable and accessible for District personnel and vendors. The parking lot asphalt and base has an average thickness of approximately 12 inches. This totals almost 66,000 square feet of pavement, which gets damaged due to normal wear, weather, and other factors. Keeping this parking lot usable and accessible is critical to day-to-day operations. District staff, delivery trucks, and emergency crews use this parking lot every day to load and unload materials and equipment, fuel their vehicles, and receive deliveries from several critical vendors.

The number of heavy trucks that use this parking lot is much higher than a standard parking lot due to the nature of the work that is conducted on a daily basis. The main causes of pavement degradation are water infiltrating pavement cracks and heavy trucks deflecting the pavement. The combination of the two over a period of time can greatly accelerate deterioration. In addition to affecting day-to-day operations, failure to maintain the parking lot could result in an increase of vehicle maintenance issues dealing with suspension, alignment and premature tire repairs.

The Operations parking lot replacement has been postponed over the years due to budgetary restraints and priorities. Therefore the approach has been to spot patch and repair as a band-aid approach. In 2014 the Operations parking lot was slurry sealed with a fog seal which adds another 5 years of longevity. This type of repair is a longer-term band-aid approach than spot patching but not a long-term fix. In FY 2020-21 this parking lot will require a complete removal and replacement.

The project is estimated to cost \$125,000.

## Ellwood Chlorination Station Replacement

IIP Group No: A1-45

Project Score: 50



### Summary

This project will replace the existing hypochlorite generator for the Goleta West Conduit with an improved modern unit. The project's proposed generator will incorporate advancements in on-site hypochlorite generation and safety. This is needed to maintain adequate chlorine feed rates.

Chlorine and/or Sodium Hypochlorite (also known as Bleach) are widely used to kill bacteria in water. On-Site Sodium Hypochlorite Generator Systems are critical to the processing of chlorine in the water treatment process.

The existing unit was installed in 2000. This unit is producing hypochlorite with less concentration strength and therefore additional dosage rates are needed to maintain the same level of chlorine. The existing unit requires increased cleaning and maintenance to stay operational and parts are becoming difficult to locate due to the existing unit no longer being manufactured.

The estimated cost of the project is \$70,000.

## San Antonio Booster Station Relocation Project

IIP Group No: A1-46

Project Score: 49



### Summary

This project involves relocating the San Antonio Booster Station from San Antonio Creek Road to the La Riata Reservoir off of La Riata Road. This project is important because currently the waterline in San Antonio Road that runs through the booster station is 8", which is undersized for supplying water to the San Marcos Reservoir.

The San Antonio Booster Station is currently located on San Antonio Creek Road, and is fed by a long section of undersized 8" waterline. The existing pumps discharge to an 8" waterline which furnishes water to the San Marcos Reservoir and the San Marcos pressure zone. This long undersized section of suction piping restricts the flow capacity of the existing booster station.

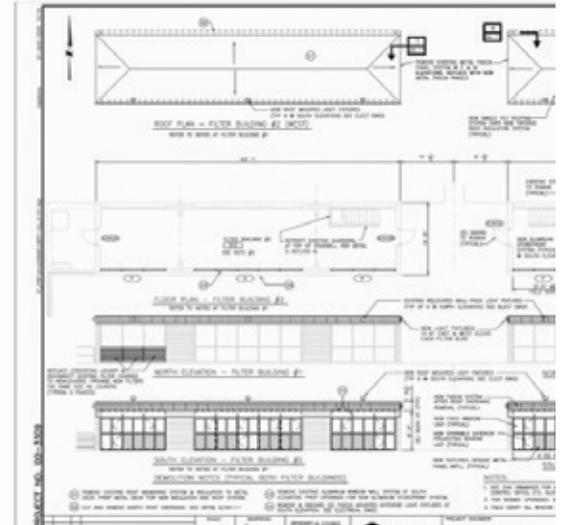
The San Antonio Booster Station needs to be relocated next to the La Riata Reservoir and larger diameter waterlines in order to furnish a greater amount of water to the San Marcos Reservoir and to improve fire flow capacity to the San Marcos pressure zone. The proposed new location for the booster station is off of La Riata Lane, near the existing La Riata Reservoir. New 12" diameter piping will be constructed and the new booster station will be fed by a short section of 12" waterline from the La Riata Reservoir. This will significantly improve the booster station's ability to fill the San Marcos Reservoir and deliver greater fire flow capacity to the San Marcos pressure zone.

The estimated cost of the project is \$1,603,000.

## CDMWTP Filter Buildings Modifications

IIP Group No: A1-47

Project Score: 44



### Summary

This project will involve upgrades to Filter Buildings 1 and 2 at the Corona del Mar Water Treatment Plant. These buildings are 36 years old and in need of seismic upgrades and an interior remodel.

The Filter Buildings were built in 1974 when the Treatment Plant was constructed. Filter Building No. 1 contains electrical equipment that requires temperature control. Insulating the roof will help to achieve this. The bulk of the existing windows in these buildings are not operable. New operable windows will help with ventilation.

Previously defined work from the CDMWTP, Phase 2 Upgrades and Modifications, Sub-Contract Work Package: S-09A identified this as a needed project. Engineered drawings and specifications were completed at that time. The project however was cancelled due to budgetary restraints.

The estimated cost of the project is \$85,000.

## Additional Fire Hydrants in Various Areas

IIP Group No: A1-48

Project Score: 43



### Summary

This project involves a program of installing fire hydrants in areas of the Goleta Water District most lacking in fire protection.

A study was completed in 2009 with the purpose of determining areas of the District that are lacking in fire protection. The Fire Department requirements regarding placement of fire hydrants for new construction is 500 feet apart in single family residential areas and 300 feet apart in multi-family residential or industrial/commercial areas.

Given the pattern of development over the last 65 years, there are many areas where there are now large gaps between fire hydrants. Recent wildfires have emphasized the need for additional fire hydrants. This project will allow the District to place fire hydrants where needed, starting with the areas considered to be most substandard.

This project is required to install much needed fire hydrants at various locations throughout the District where spacing between fire hydrants is far greater than required. The project will install 6 fire hydrants per year, with the first priority going to areas most needing extra fire protection. The installations include connections to existing District waterlines.

The estimated annual cost of the project is \$51,000.

## Distribution Main Tie-ins for Improved Water Quality and Flows

IIP Group No: A1-49

Project Score: 43



### Summary

This project installs mains throughout the distribution system where current pipes dead end, creating a flow restriction in the system. This project identifies those locations, utilizing the District's hydraulic modeling system and making tie-ins from one dead-end main to another dead-end main, thus eliminating the flow restriction. This creates a more networked system that improves water quality and fire protection service, as well as provides backup service and redundancy in case of a main failure on a dead-end. The additional ability to shut off valves will minimize customer interruptions due to maintenance or repair activities.

Not completing this project will create the need to perform periodic flushing of the main to maintain water quality in the dead-end pipes. This will result in periodic customer interruptions for main repairs and maintenance. This project offers labor and water savings, and increases reliability of service to customers.

The estimated cost of the project is \$1,500,000.

## GWC Potable Connection Project

IIP Group No: A1-50

Project Score: 38



### Summary

This project would evaluate the alternatives for delivering potable water to customers served by the Goleta West Conduit (GWC) water system. Currently bottled water is provided by the District. As a result of the study and consequent construction of water facilities, the project would supply these customers with a source of potable water.

The District currently provides unfiltered/chlorinated water to customers served by the Goleta West Conduit system's pipeline. The District has been allowed by California Department of Public Health (CDPH) to provide bottled water to these customers as an alternative source of potable water until such time that potable water can be provided directly by the water system to the customers.

One method of delivering potable water to GWC customers is through a dedicated potable waterline, operated and maintained by the District. Such a supply's water is processed through the Corona del Mar Water Treatment Plant which provides the potable supply of water to the separate pipeline.

This study would also consider the costs of design and construction of the potable water system for Goleta West Conduit customers.

Other water system alternatives would include but not be limited to the following:

- Individual point of use treatment systems to each customer at the entry point of the water from the GWC waterline to the customer
- A small water treatment plant at the connection point of the GWC to COMB's South Coast Conduit
- Potable water would be supplied by means of newly constructed wells which would pump and treat the groundwater through treatment systems before being delivered to GWC customers

The estimated cost of the project is \$23,380,000.

## Recycled Waterline in Fairview Road – Hollister Avenue

IIP Group No: A1-51

Project Score: 38



### Summary

This project proposes the installation of several large diameter waterlines in order to loop the recycled water system and significantly improve reliability of service to District customers.

The recycled waterline is configured in a linear fashion. If the recycled waterline breaks or needs repair, all customers downstream from where service is interrupted will be out of recycled water (UCSB, Bacara, Glen Annie Golf Course). A loop system will allow recycled water to be supplied to customers from a different area of the distribution system. Only customers between the recycled water reservoir and the break/repair would be out of service. As an example, UCSB could be out of water, but the District could still supply water to Bacara and Glen Annie Golf Course. The end of the first phase of the recycled waterline extension will provide the opportunity for Twin Lakes Golf Course to irrigate with recycled water.

This project includes installation of 5000' of large diameter C905 PVC recycled waterline. The various waterline diameters are 20", 16" and 12". This is the first phase of looping the system, representing approximately 1/3rd of the length of the pipeline required to complete the loop at Storke and Hollister. The point of connection (POC) for the recycled waterline is just outside of the GSD WWTP. From the POC, the line will be aligned to the north in Moffett Place. The alignment will continue in the roads that border the Airport on the east. The alignment of the recycled waterline will continue from Moffett Place, east on Fowler Road, north on Fairview Avenue and west on Hollister. The recycled waterline will continue west on Hollister Avenue and end approximately 300' past the San Pedro Creek at Twin Lakes Golf Course.

The estimated cost of the project is \$3,564,000.

## Recycled Waterline Relocation Project at Goleta Beach

IIP Group No: A1-52

Project Score: 38



### Summary

This project is required because Santa Barbara County has been directed by the Coastal Commission to allow the beach sand at Goleta Beach to accumulate naturally. An overall accumulation of sand is anticipated along with local erosion in the area which will impact the District's existing recycled waterline. This will require the relocation of approximately 800' of 18" waterline which runs through Goleta Beach State Park in order to prevent possible damage resulting from ongoing beach erosion. This waterline conveys approximately 1,000 acre feet per year of recycled water to the 19 large recycled water customers including UCSB, various golf courses and other large landscaped areas. It will be relocated to a proposed Caltrans utility corridor adjacent to State Highway 217.

Leaving the recycled waterline in its current location is not a viable option. The direction of local and state agencies is to allow natural forces to affect the limits of the beach. It is that decision that ultimately results in the District assessing what can be done to protect and maintain the existing recycled waterline. Consequently, the District is obligated to cooperate with the other agencies and utilities in relocating its recycled waterline.

In an effort to remain consistent with California Coastal Commission requirements, the County of Santa Barbara Parks Department and the California Department of Transportation (Caltrans) are recommending the relocation of existing utility lines. This involves relocation of a high pressure gas line, a pressurized sewer line and the District's 18" recycled waterline to a proposed 60 foot-wide utility corridor that would run adjacent to State Highway No. 217.

The estimated cost of the project is \$630,000.

## Recycle Water PR Vault Relocation at Glen Annie Golf Course

IIP Group No: A1-53

Project Score: 36



### Summary

This project involves relocating the existing pressure reducing vault from the Glen Annie Golf Course to a more accessible location.

This PR vault is located on a public golf course. It is difficult to access the vault with a work vehicle nearby for tools. This project will alleviate this problem.

This valve is on private property and District operators need to coordinate with Golf course staff to travel to the site via the golf course. This makes accessing the vault difficult during emergencies and limits our ability to transport tools and equipment.

The estimated cost of the project is \$150,000.

## Kellogg 20" Waterline Extension/Upsize 2,000'

IIP Group No: A1-54

Project Score: 36



### Summary

This project proposes to provide a more reliable and improved potable water and fire protection system for the Old Town Goleta area.

Currently, the entire Old Town Goleta area is served by a 6-inch waterline in Fairview Avenue that connects to a 10" waterline in Hollister Avenue. From this, the Old Town area is typically served by a number of 6" waterlines, which are substandard in size. In addition, due to the commercial and apartment developments in the area, there is a high water demand in the Old Town Goleta area.

The installation of the 20" waterline will extend a major transmission waterline to service the area and would establish a looped system, thereby providing more reliable and improved potable water service and fire protection. A looped water system also provides customers with improved options for maintaining water service during water facilities construction or repairs. In addition, the 20" waterline extension would accommodate future waterline size upgrading in the area.

This project will extend the 20" waterline in Kellogg Avenue to the existing 12" waterline in Hollister Avenue. The project consists of approximately 2,000' of 20" waterline extending from an existing 20" waterline in Kellogg Avenue (south of U.S. Highway 101) southerly to an existing 12" waterline at the intersection of Kellogg Avenue and Hollister Avenue.

The estimated cost of the project is \$1,684,000.

## Covington 10" Waterline Upsize (Valdez – Fairview) 2,800'

IIP Group No: A1-55

Project Score: 36



### Summary

The existing waterline on Covington Way and Berkeley Road between Fairview Avenue and Valdez Avenue was installed in 1961, and varies between 6" and 8" in diameter. On Covington Way just west of Valdez Avenue, the existing waterline is 10". There have been many years of home construction in the area since 1961, requiring larger demands on the water system. District Operations personnel have concluded that a 10" waterline be installed, replacing the 6" and 8" sections.

This project is required because the existing 6" and 8" waterlines on Covington Way between Fairview Avenue and Valdez Avenue are insufficient for current conditions. GWD Standards and Specifications cite an 8" minimum waterline installation. However, upsizing to a 10" waterline will be consistent with the existing 10" waterline on Covington Way west of Valdez Avenue. Upsizing will decrease frictional loss, while increasing fire safety. This will also increase water pressure to homes in the area and improve fire protection capabilities.

The length of the proposed waterline is approximately 2,800'. Existing water meters and fire hydrants on Covington Way and Berkeley Road will need to be disconnected at the existing 6" and 8" waterlines to be abandoned and reconnected to the new 10" PVC waterline. Additionally, waterlines on seven cross streets will need to be reconnected to the new 10" PVC waterline. 3 new fire hydrants will be added to this stretch of road to ensure adequate fire protection.

The estimated cost of the project is \$1,682,000.

## Cathedral Oaks 20" Waterline Upsize (Paseo del Pinon – Northgate)

IIP Group No: A1-56

Project Score: 36



### Summary

This project proposes to increase the size of the waterline in this section of Cathedral Oaks Road because the existing waterline is only 12" in diameter, which is now undersized for existing conditions. On the east side of this project at Northgate Drive, the waterline in Cathedral Oaks Road is 20". On the west side of this project at Paseo del Pinon, the waterline in Cathedral Oaks Road is 16". This project will install a new section of 20" PVC waterline between Northgate Drive and Paseo del Pinon.

This section of 12" waterline on Cathedral Oaks Road between Northgate Drive and Paseo del Pinon was originally installed in 1969. District Operations personnel have determined that this section of waterline needs to be upsized. Installing a 20" PVC waterline will have a positive effect in increased water pressure to homes in the area. Water flow to existing fire hydrants in this area will also be boosted, ensuring sufficient protection in the event of a wildfire.

A 20" PVC transmission waterline will be installed on Cathedral Oaks Road between Paseo del Pinon and Northgate Drive, replacing the older 12" AC waterline. The distance is approximately 1,900'. The new 20" waterline will connect to an existing 16" PVC waterline at Paseo del Pinon (the west end of construction), and an existing 20" PVC waterline at Northgate Drive (the east end of construction). Existing fire hydrants and water meters on Cathedral Oaks Road and a 10" AC waterline on Brandon Drive will need to be disconnected at the existing 12" AC waterline to be abandoned and reconnected to the new 20" PVC waterline.

The estimated cost of the project is \$1,654,000.

## Ekwill 12" Waterline Extension 1,500'

IIP Group No: A1-57

Project Score: 36



### Summary

The City of Goleta plans to construct a new road south of Hollister Avenue to reduce the traffic volume on Hollister. Ekwill will be the new road, which will be aligned between the existing streets, Kellogg Way to the east and the Pine Avenue to the west. The distance between the existing streets is approximately 1500'. Existing waterlines run along both Kellogg Way and Pine Avenue. To connect to the existing waterlines, a cut-in connection will be made to install a line valve. The installation of the new 12" waterline can then be isolated from the existing waterline and conveniently brought on-line after construction of the new road is complete.

This project is needed to loop the waterline south of Old Town Goleta to increase the reliability of the water supply to the area. The public right-of-way of the new road presents an opportunity to install a new waterline. The installation of the waterline is less expensive when performed concurrently with the road construction.

The estimated cost of the project is \$1,036,000.

## Cathedral Oaks – Hwy 101 Overcrossing Project (Phase 2B)

IIP Project No: A1-58

Project Score: 35



### Summary

Phase 2B of this project proposes to extend the District’s recycled water system to the north side of Hwy 101 for landscape irrigation at the Winchester Commons development. This project involves installing an 8” waterline inside the newly built Cathedral Oaks/ Highway 101 overcrossing, achieving the goal of getting recycled water across the highway. Once across the highway, the new 10” recycled waterline will continue north, north east on Cathedral Oaks Road to Winchester Circle, where the waterline will stub out for future use.

The City of Goleta, in conjunction with Caltrans, recently constructed a new overcrossing over Highway 101 by extending Cathedral Oaks Road from Calle Real over the highway to Hollister Avenue. District personnel from the Engineering and Operations departments concluded that during construction of the overcrossing would be the only opportunity to extend potable and recycled waterlines through the overcrossing to the north side of Highway 101.

Phase 2B of the project includes the installation of approximately 500’ of 8” HDPE and approximately 120’ of 10” steel recycled waterline on Cathedral Oaks Road. The waterline will start on Hollister Avenue, connecting to the existing 12” recycled waterline installed as part of Phase 2A of this project. There will be short stretches of 10” steel waterline on each side of the overcrossing, changing to the 8” HDPE waterline to travel through the overcrossing. The 8” HDPE will be inserted into a 12” steel casing pipe through the overcrossing, installed as part of Phase 1. The recycled waterline will then upsize back to 10” PVC, crossing Calle Real and continuing north, north east for approximately 1,550’ on Cathedral Oaks Road to the intersection of Cathedral Oaks and Winchester Circle. A tee will be installed at that intersection, and approximately 100’ of 6” PVC recycled waterline will be installed heading south to stub out in Winchester Circle for future recycled water service to Winchester Commons.

The estimated cost of the project is \$768,000.

## Operations Department Facilities Update

IIP Group No: A1-59

Project Score: 34



### Summary

This project will provide for the construction of an Operations Department locker room with shower facilities and additional meeting space. Operations staff routinely performs physically intensive work where they are exposed to dust, dirt, water, chemicals, as well as extreme temperatures and varying weather conditions. Their work often involves cleaning solutions and other potentially hazardous materials. Shower facilities provide for the health and sanitary needs of employees, and allow them to change out of soiled clothing or equipment worn during construction.

An expanded meeting room is included to provide adequate space for field staff to complete paperwork as well as for staff meetings and training events. Existing facilities are undersized. An approved contractor will be selected by the District to design and construct the shower/locker rooms and meeting room.

The estimated cost of the project is \$500,000.

## Goleta West Conduit Repair Project

IIP Group No: A1-60

Project Score: 31



### Summary

This project would repair and/or relocate the waterline at creek crossings and other locations where it has been exposed due to erosion in the area of the Goleta West Conduit (GWC). This is needed to provide reliable water service to GWC customers served by the system.

The GWC extends from Glen Annie Canyon west to El Capitan Ranch, approximately 9.5 miles. The GWC provides unfiltered water to the District's customers west of Glen Annie Road. This project consists of repairing and/or relocating the pipe at creek crossings and other locations where the waterline has been exposed due to erosion.

The GWC serves approximately 25 customer accounts and an area of approximately 5,000 acres. Proactive repair of the waterlines will prevent waterline breaks, thus preventing service outages, conserving water, and providing uninterrupted service levels.

The estimated cost of the project is \$797,000.

## Old Town Goleta – Waterline Replacement Project

IIP Group No: A1-61

Project Score: 31



### Summary

This project proposes to replace three old and deteriorated sections of 2" steel distribution waterline in this area, which are now undersized for the current conditions. These waterlines run through parking lots and driveways where walls and other structures have been built on top of them over the years. This project will allow for the abandonment of these undersized waterlines, and for the relocation of the water meters attached to these lines. New service waterlines to the relocated meters will be installed and connected to the larger existing waterlines in Hollister Avenue, Fairview Avenue, and side street streets in the area.

The three 2" steel waterlines that this project involves were installed in 1952 with no concept of how much this area would ultimately grow. The District's Standards and Specifications require a minimum of 8" for waterline installations. The existing waterlines have had leaks in recent years, and the longer these waterlines stay in operation, the more leaks are to be expected.

This project will abandon three sections of 2" steel waterline in the Old Town area of Goleta. A total of 14 water meters which are currently connected to the 2" waterlines will be relocated out to the sidewalk area where they will be more accessible for maintenance and meter reading. New service waterlines for the meters will be installed and connected to the larger existing waterlines on Hollister Avenue, Fairview Avenue, Orange Avenue, or Magnolia Avenue. The three existing 2" waterlines are currently located in easements on private property. After these waterlines are out of service and abandoned in place, the District will be able to abandon the three easements.

The estimated cost of the project is \$119,000.

## District Headquarters Facilities Evaluation

IIP Group No: A1-62

Project Score: 31



### Summary

This project periodically evaluates District facilities to ensure that office space and meeting room configurations are adequate to meet the changing needs of the organization. The evaluation and associated construction will ensure a comfortable, safe and productive work environment, consistent with prevailing standards and regulations.

The project will examine the ergonomics of workspaces to prevent repetitive stress injuries, the ability of current office configurations to ensure privacy and HIPPA compliance on sensitive matters, and evaluate the space needs and location of offices for various Departments depending on their current staffing levels. Currently, some District offices are configured as open work spaces without noise barriers. Several of these spaces house staff whose job functions are not supported by the current layout. For example, the warehouse has limited heating and no air conditioning. In addition, some Departments lack access to conference rooms that are adequately sized for periodic, routine staff meetings.

An evaluation will be performed by District staff, and an approved contractor will be selected by the District to design and construct any recommended office space modifications. Alterations may include the moving or addition/removal of interior walls, and the purchase of office furniture and modular equipment for work stations.

The estimated cost of the project is \$35,000

## Creek Crossing Inspection and Repair Program

IIP Group No: A1-63

Project Score: 31



### Summary

This project will continue the District's maintenance program to inspect, identify and repair exposed distribution piping at creek crossings. This is necessary to maintain adequate water flow to District customers.

Currently there are approximately 100 known locations where District water mains span either over or under creek crossings. These crossings require periodic inspection to determine recent erosion and the need to either repair or relocate the pipe if extensive erosion has occurred. This will help prevent waterline failure or emergency events in the future. Out of the 100 crossings, staff has identified 10 sites that require improvement.

The estimated cost per crossing is \$150,000.

## Dry-Barrel Fire Hydrants Replacement

IIP Group No: A1-64

Project Score: 31



### Summary

This project proposes the removal and replacement of the dry barrel fire hydrants throughout the District's distribution system. It is needed to provide consistent fire facilities for use by fire crews.

Currently, there are a number of dry barrel fire hydrants throughout the District. There is no advantage to retaining the dry barrel fire hydrant. Generally, the main reason for maintaining a dry barrel fire hydrant system is to protect the hydrant in colder climates, an application that does not fit the Goleta and Santa Barbara areas.

The need to remove and replace the dry barrel fire hydrants throughout the District's distribution system is based upon the following reasons.

- Fire crews would prefer to see consistency throughout the water system.
- The concept and design purpose of a dry barrel fire hydrant isn't applicable to the weather in Santa Barbara.
- The engine range of hookups varies depending on whether they are connecting to a wet or dry barrel (both outlets are hot from one stem).
- Dry barrel hydrants only contain two 2/1/2" outlets and no 4" connection.
- In an emergency, bigger is better. Wet barrels contain 4" outlets which provide greater flow capabilities.
- Firemen need to shut down all flow to a dry barrel to augment or correct any connections made to outlets after flow has begun.
- Wet barrels allow you to continue fighting a fire with one outlet while making changes to the other.

District forces will be able to remove the dry barrel hydrants and replace them with wet barrel hydrants.

The estimated cost of the project is \$350,000.

## La Gama Pressure Reducing Vault Relocation

IIP Group No: A1-65

Project Score: 31



### Summary

This project will provide for the relocation of the pressure reducing (PR) vault at Turnpike Road and La Gama Way. Currently this PR vault is located in the middle of Turnpike Road. In order to access the vault, District operators are exposed to considerable vehicular traffic. Given its current location, this PR vault needs to be moved to a safer and more practical location for maintenance purposes.

An approved contractor would be selected by the District to relocate the pressure reducing vault and facilities.

The estimated cost of the project is \$150,000.

## Recycled Waterline Extensions

IIP Group No: A1-66

Project Score: 29



### Summary

This project proposes the initiation of a proactive program to add connections to the existing recycled water system. This increases the use of recycled water while decreasing the use of potable water, thereby increasing the level of conservation of potable water.

This project will provide for the installation of recycled waterlines in close proximity to the existing recycled waterlines to convert existing customers who use potable water for irrigation and non potable uses to recycled water. This project will support the goal of reducing potable water use.

The estimated cost of the project is \$50,000 per year.

## CDMWTP Shop Buildings Remodel

IIP Group No: A1-67

Project Score: 27



### Summary

This project proposes to remodel the Shop/Maintenance and Control Systems Technicians (CST)/Operator On-call quarters buildings to make the best use of an existing building.

Building upgrades had previously been defined by the CDMWTP, Phase 2 Upgrades and Modifications, Sub-Contract Work Package: S-09A. Engineered drawings and specifications had been completed. The project however was cancelled due to budgetary constraints at that time.

When upgrades are made to the building, seismic improvements will be addressed as well, providing a safer, more maintainable and presentable environment for visitors and GWD staff.

The project will complete the work recommended from the original project. The work will include the following:

- Asbestos Abatement
- Strip and replace the roofing
- Glazing
- Seismic upgrades
- Interior remodel

The estimated cost of the project is \$350,000.

## CDMWTP Storm and Wastewater Improvements

IIP Group No: A1-68

Project Score: 25



### Summary

A 2014 study by Kennedy Jenks Consultants reviewed the storm water discharge system at the Corona Del Mar Water Treatment Plant (CDMWTP), as well as the plant's waste water treatment system. The study found the District to be in compliance with all regulatory standards, but also included recommendations for best management practices for waste water and storm water. This project would implement best management practices recommended in the report, including improvements such as laboratory pre-treatment, the addition of two new subsurface drip irrigation fields, and a diversion of hillside over hill drainage from the leech field area. Items for improvement to storm water best management practices included increasing the storage facilities to capture the initial run-off, and to improve the treatment of that captured first run-off water. Such facilities could include detention basins, decanting skimmers, debris screens, intercepting ditches, and related piping and appurtenances.

The estimated cost of the project is \$420,000.

## 8" Waterline Loop at La Vista-Alta Mira Booster Stations 850'

IIP Group No: A1-69

Project Score: 25



### Summary

The project provides for the installation of approximately 850' of 8" PVC waterline at the north ends of La Vista Road and Alta Mira Drive to connect and loop the existing waterlines in these roads, adding additional fire protection and improved water system reliability for the area.

The existing waterlines in La Vista Road and Alta Mira Drive come to dead ends several hundred feet short of creating a looped water system. There are no fire hydrants beyond where the waterlines currently end. These dead end waterlines are fed by the La Vista and Alta Mira Booster Stations.

The project also facilitates the installation of a new fire hydrant at the high point of the proposed loop waterline. In addition, it will connect the piping for the two booster stations thus improving water service reliability and allow for adjustments to be made to the two booster stations to reduce operations and maintenance costs.

The estimated cost of the project is \$313,000.

## Goleta West Conduit Storage Reservoir

IIP Group No: A1-70

Project Score: 25



### Summary

This project involves the design and construction of a reservoir and associated piping on the Goleta West Conduit (GWC). The GWC currently operates directly off the Glen Annie Turnout (GATO), and is limited to the amount of water flowing from Lake Cachuma, through the Tecolote Tunnel and into GATO. During shutdowns of the Tecolote Tunnel the water supply to GWC is limited to less than 200 gpm from El Capitan Mutual Water Company (ECMWC), contingent on water being available from that source.

Water flowing into the GWC is unfiltered and often contains small fresh water clam or snail shells that settle in the lower parts of the pipes, causing taste and odor issues as well as premature wear of district flow meters. During low flow periods, the chlorination system has difficulty maintaining a chlorine residual in the GWC.

Construction of a storage reservoir on GWC would help address these operating limitations. During shutdowns of the Tecolote Tunnel, a reservoir would supply water to GWC for an extended period. During peak demand the reservoir would virtually eliminate unwanted flow reductions downstream of GATO. A reservoir with controlled fill valves would keep flow rates through the chlorination system in a better operating range to maintaining a chlorine residual in the GWC, maintaining required State Water Resource Control Board Department of Drinking Water standards. A reservoir would also allow a settling area for small fresh water clam or snail shells, which would prevent them from entering pipes. Cleaning of the reservoir would reduce staff time devoted to flushing the main pipeline.

The project would involve identifying a location, design, and construction of a storage reservoir, estimated at this time to be 1 million gallons.

This project is estimated to cost \$2,500,000.

## CDMWTP Flash Mix 1 Entry Modifications

IIP Group No: A1-71

Project Score: 16



### Summary

This project proposes to design and construct an ergonomically friendly and secure enclosure over the stairway leading to Flash Mix Vault 1. This project will eliminate the current lifting hazard posed to operators, secure the treatment process within the vault and protect the facility against weather and bird nesting.

The existing access opening for Flash Mix Vault 1 has a large and heavy aluminum door, which must be manually lifted to open. Operators are required to enter the vault once per shift to inspect this critical part of the treatment process. Due to the potential lifting injury to staff, it is currently left in the open position. This does not properly secure the vault and allows rain water and birds to nest in the stairway. This project will eliminate the lifting hazard, secure the treatment process, and protect against weather and bird nesting.

An approved contractor will be selected by the District to design and manufacture the vault door.

The estimated cost of the project is \$8,000.

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## Patterson Reservoir Hydro Turbine Design and Installation

IIP Group No: A2-1

Project Score: N.A. (Revenue Generating)



### Summary

This project includes design, permitting, and purchase of equipment needed to install a hydroelectric turbine at the Patterson Reservoir. An engineering study conducted in late 2013 outlined various potential locations for new hydroelectric turbine installations throughout the District's distribution system, and identified the Patterson Reservoir as the next proposed installation site. The Patterson Reservoir is filled through an altitude valve supplied by the Lateral 9 Pressure Reducing Valve (LAT-9 PRV) Station off of the Corona 440 zone. The 2013 engineering study recommended the hydro turbine be placed at the same location as the existing altitude valve and flow control valve. Piping for the turbine on the Patterson tank fill pipeline would need to be configured in such a way so as not to affect pressures elsewhere in the system. Additional work to activate the facility would require working with Southern California Edison, the Western Renewable Energy Generation Information System and the California Energy Commission to meet regulatory and other requirements.

The hydroelectric turbine would utilize pressure and flowing water within the distribution system to spin turbines and generate electricity. The electricity generated from this facility could generate up to \$95,000 per year of additional revenue depending on the type of system selected. The additional revenue would help support District operations and offset increasing energy costs, while assisting in the overall goals of the District to reduce carbon emissions.

The estimated cost of the project is \$450,000.

## Ellwood Reservoir Hydro Turbine Design and Installation

IIP Group No: A2-2

Project Score: N.A. (Revenue Generating)



### Summary

This project includes design, permitting, and purchase of equipment needed to install a hydroelectric turbine at the Ellwood Reservoir. An engineering study conducted in late 2013 outlined various potential locations for new hydroelectric turbine installations throughout the District's distribution system, and identified the Ellwood reservoir as the third best potential installation site. The Ellwood Reservoir is filled through an altitude valve located at the Corona Del Mar Water Treatment Plant from the Corona Reservoir. Additional work to activate the facility would require working with Southern California Edison, the Western Renewable Energy Generation Information System and the California Energy Commission to meet regulatory and other requirements.

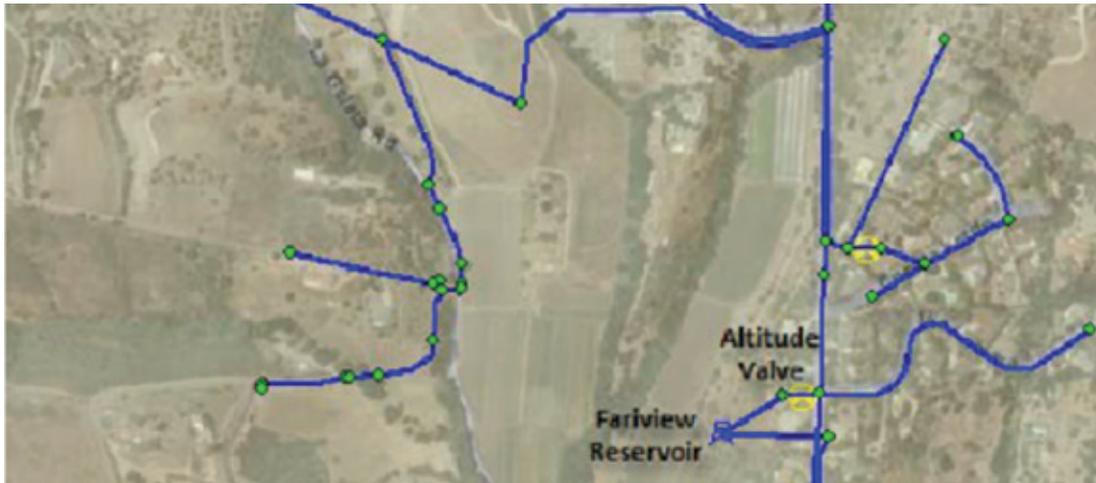
The hydroelectric turbine would utilize pressure and flowing water within the distribution system to spin turbines and generate electricity. The electricity generated from this facility could produce up to \$45,000 per year of additional revenue depending on the type of system selected. The additional revenue would help support District operations and offset increasing energy costs, while assisting in the overall goals of the District to reduce carbon emissions.

The estimated cost of the project is \$280,000.

## Fairview Reservoir Power Generation

IIP Group No: A2-3

Project Score: N.A. (Revenue Generating)



### Summary

This project includes design, permitting, and purchase of equipment needed to install a 50 kilowatt hydroelectric turbine at the Fairview Reservoir. An engineering study conducted in late 2013 outlines various potential locations for new hydroelectric turbine installations throughout the District's distribution system, and identified the Fairview Reservoir as a prospective installation site. The Fairview Reservoir is filled through an altitude valve that is supplied by the Lateral 5 Pressure Reducing Valve (LAT-5 PRV) Station. Estimated flow into the Fairview Reservoir varies stepwise from about 800 gallons per minute (gpm) to 1,200 gpm, during tank fill periods, and remains at 0 gpm otherwise. Additional work to activate the facility would require working with Southern California Edison, the Western Renewable Energy Generation Information System, and the California Energy Commission to meet regulatory and other requirements.

The hydroelectric turbine would utilize pressure and flowing water within the distribution system to spin turbines and generate electricity. The facility would produce up to 200,000 kilowatt hours per year and up to \$25,000 per year of additional revenue depending on the type of system selected. The additional revenue would help support District operations and offset increasing energy costs, while assisting in the overall goals of the District to reduce carbon emissions.

The estimated cost of the project is \$330,000.

## Hydroelectric Turbine Power Generation

IIP Group No: A2-4

Project Score: N.A. (Revenue Generating)



### Summary

This project would include study, design, permitting, and purchase of equipment needed to install hydroelectric turbines at up to twenty nine sites on the District's distribution system, and the possibility of microturbines at various locations. An engineering study conducted in late 2013 outlines various potential locations for new hydroelectric turbine installations, including sites such as the La Riata Reservoir, the Sterrett Pressure Reducing Valve, Lateral 7, La Gama Pressure Reducing Valve, and the Glenn Annie Pressure Reducing Valve. Estimated flow into these locations varies from approximately 100-1000 gallons per minute (gpm) during tank fill periods. Additional work to activate the facilities would require working with Southern California Edison, the Western Renewable Energy Generation Information System, and the California Energy Commission to meet regulatory and other requirements.

The hydroelectric turbines would utilize pressure and flowing water within the distribution system to spin turbines and generate electricity. The electricity generated from these facilities could produce between 6,000 and 35,000 kilowatt hours of electricity per year, and up to \$3,900 of additional annual revenue per site depending on the type of system selected. The additional revenue would help support District operations and offset increasing energy costs, while assisting in the overall goals outlined in the Sustainability Plan adopted by the Board of Directors.

These projects will be reevaluated on a periodic basis as SCE rates change, technology improvements lower the costs of equipment, and improved measurements of flow rates are available that could make the projects much more economically viable. The possibility of using inline microturbines in the distribution system, which require less supporting infrastructure and lower costs, will also be evaluated. The hydraulic model and pressures in the system will be used to determine the best location for these microturbines within the distribution system pipes. The installation of microturbines would also regulate pressure within the system, reducing water loss and usage.

The estimated cost of the project varies by site. The total cost is estimated at \$710,000.

## Solar Projects

**IIP Group No: A2-5**

**Project Score: N.A. (Revenue Generating)**



### Summary

This project includes exploring opportunities for solar installations on District-owned properties such as at the administration offices and the Corona Del Mar Water Treatment Plant. For example, a solar trellis system installation at District Administrative Headquarters would provide protection for District vehicles and equipment, helping to extend their useful life by reducing wear and tear while offsetting energy use and related expenses. At CDMWTP, solar can also serve a dual purpose by generating energy and covering the settling basins, which would then limit algae growth decreasing the cost of operation. An energy audit conducted by Southern California Edison in 2013 also identified several roof areas of the administration buildings that could house solar panels.

This project includes installation, as well as a comprehensive solar assessment that will identify the optimum installation site(s), types and sizes of solar systems, as well as rebates and incentive opportunities currently available to provide financial support for the projects.

The benefits of this project include offsetting energy use and related expenditures at the District headquarters and CDMWTP, which are two of the most energy intensive locations among District facilities. Reducing the use of traditional non-renewable energy resources also increases resource security and independence. Money saved through these revenue generating projects can support District operations and offset increasing energy costs, while assisting in the overall District goal of reducing carbon emissions.

The estimated cost of the project is \$2.9 million.

## Lighting Upgrades – Main Office

IIP Group No: A2-6

Project Score: N.A. (Revenue Generating)



### Summary

This project will replace and upgrade existing standard fluorescent interior lighting and improve some exterior lighting at the main administration headquarters. Many areas of the administration building are very old and lighting is inefficient and inadequate by modern standards. A lighting survey report completed in 2012 and an energy audit completed in 2013 identified and recommended several improvements to lighting in and around the buildings that would increase energy efficiency, reduce energy costs, improve design, and comply with industry standards. These energy efficiencies would translate into cost reductions that could generate significant savings over time.

For interior lighting, the T12 fluorescent lighting in the building currently utilized by the District Operations Department was rendered obsolete by the Energy Act of 2005 and is no longer manufactured. Energy usage in this building would be improved with a combination of new fixtures, skylights, and new controls. The maintenance, storage, and warehouse buildings are very old with inefficient lighting, and would be improved with skylights that utilize natural light, as well as new fixtures and controls. The buildings currently occupied by the Administrative, Engineering, and Water Supply & Conservation Departments were remodeled within that last 10 years using the best technology available at the time, but there are opportunities to save energy and money through the use of improved lighting controls.

Exterior lighting could be improved with more efficient and more locally controlled fixtures. This would include adding lighting to currently unlit areas of the building and surrounding gardens, improving lighting on the pedestrian walkway at the corner of Puente and Hollister, and improving the lighting serving the entry to the Board meeting room. Better, more intuitive controls would increase the functionality of the lighting, while motion sensors could brighten lights in the parking lot with movement and illuminate areas that are currently dark.

The estimated cost of the project is \$80,000.

## Office HVAC Replacement

IIP Group No: A2-7

Project Score: N.A. (Revenue Generating)



### Summary

This project would replace the existing Heating Ventilation and Cooling (HVAC) System with a high efficiency model, which would offer significant savings over time due to decreased energy consumption, and reduced maintenance costs as the system is now past its expected service life. A comprehensive assessment of the administration headquarters buildings and existing system will help the District identify the appropriate upgrades. Work could include installing new temperature and humidity sensors, control panels, duct system, and an electronic digital system with energy management programming to allow more efficient operation. In addition to energy savings, the upgraded system will improve airflow throughout the various buildings covered by the system.

The existing HVAC system at the District headquarters building is over fifteen years old, with some components over twenty five years old. The standard lifespan for HVAC equipment is typically twelve to fifteen years. The existing equipment is outdated, energy intensive, poorly designed, and frequently broken. Proactive replacement and upgrading of the HVAC system is needed to avoid costly emergency repair, particularly during the summer or winter when demands on the system are highest. Upgrading of the HVAC system is identified as a component of an ongoing initiative in the District Sustainability Plan to make building envelope improvements that increase energy efficiency, reduce operational and maintenance costs, and improve employee comfort in the workplace.

Money saved through these upgrades can support District operations and offset increasing energy costs, while assisting in the overall District goal of reducing carbon emissions.

The estimated cost of the project is \$135,000.

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