



## WORKSHOP MEETING OF THE BOARD OF DIRECTORS AGENDA

**MONDAY, April 22, 2024, 5:30 PM**

President- Vicki Morris Vice President- Wayne Holman Director- Wayne Norton Director- Timothy Powers Director- Seth Capron General Manager- Robert Johnson
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*The Aromas Water District Board of Directors meeting will be held at the District office. Staff and the public may attend the meeting remotely or in person. Public participation is encouraged – remote participation instructions are on the following page.*

**I. CALL TO ORDER**

**II. ROLL CALL OF DIRECTORS:** President Vicki Morris and Vice President Wayne Holman, Directors Wayne Norton, Timothy Powers, and Seth Capron.

**III. PLEDGE OF ALLEGIANCE**

**IV. STATEMENTS OF DISQUALIFICATION**

**V. ADDITIONS AND DELETIONS**

**VI. ORAL COMMUNICATION:** *Anyone wishing to address the Board on informational items, or matters not listed on the agenda may do so. Please limit your comment to three (3) minutes. The public may comment on listed Action and Public Hearing items at the time they are considered by the Board.*

**VII. WORKSHOP PRESENTATION**

**A. Consider reviewing the District’s DRAFT Capital Improvement Plan, and providing direction to staff** *p. 2-18*

Staff will present the District’s DRAFT Capital Improvement Plan, for discussion and Board recommendation.

The DRAFT Capital Improvement Plan Executive Summary and Project Summary Worksheets are attached to this agenda. If a copy of the entire District DRAFT Capital Improvement Plan is desired, please see the link below to access the full report for viewing or downloading.

DRAFT Capital Improvement Plan link:

<https://www.aromaswaterdistrict.org/2024-04-22-board-of-directors-aromas-water-district-capital-improvement-plan-workshop>

**VIII. ADJOURNMENT**

AROMAS WATER DISTRICT

# CAPITAL IMPROVEMENT PLAN

REVISED DRAFT



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MARCH 14<sup>th</sup>, 2024

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## ATTACHMENTS

- Attachment A: Aromas Water District – Marshall Well Site Assessment
- Attachment B: Evaluation of Improvements to Ballantree Zone Distribution System
- Attachment C: Orchard Hill Water Main Scoping Evaluation
- Attachment D: Proposed New Maintenance Building Layout
- Attachment E: Capital Project Cost Estimates

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**LIST OF ABBREVIATIONS**

- ADD Average Daily Demand
- ADU Accessory Dwelling Unit
- AFY Acre-Foot per Year
- APN Assessor’s Parcel Number
- asl Above Sea Level
- GAL Gallons
- GIS Geographic Information System
- GPD Gallons per Day
- GPM Gallons Per Minute
- HP Horsepower
- KW Kilowatt
- MDD Maximum Daily Demand
- MG Million Gallons
- MGD Million Gallons per Day
- MGY Million Gallons per Year
- MMD Maximum Monthly Demand
- MMDD Minimum Month Daily Demand
- NFF Needed Fire Flow
- PHD Peak Hour Demand
- PC Production Capacity
- PD Pumping Demand
- psi Pounds per Square Inch
- PVC Polyvinylchloride
- PRV Pressure Reducing Valve
- RRS Recommended Reservoir Size
- TDH Total Dynamic Head
- TM Technical Memorandum
- VFD Variable Frequency Drive



## Section 1. Executive Summary

### 1.1. System Summary

The Aromas Water District (District) provides water to approximately 970 connections in the unincorporated community of Aromas and unincorporated areas west of the City of San Juan Bautista in Monterey and San Benito Counties. Groundwater is the only water source for the District. The District’s distribution system includes approximately 38 miles of transmission lines, 182 fire hydrants, 10 water storage tanks, 8 pump stations, 3 active wells, 1 treatment plant, 1 inactive well, an office building, and an existing storage building at the Marshall Well Site (1 acre parcel).

### 1.2. Existing and Future Demands

Water usage data was analyzed over a two-year period from February 2020 to January 2022. This date range was selected because the water usage data could be analyzed by associated pressure zone. A summary of water demands for the District is presented in Table 1-1 in both million gallons per day (MGD) and GPM. The District’s existing average annual water usage during this period was 306 acre-feet per year (AFY) or approximately 100 million gallons per year (MGY). The average water use per connection was calculated to be 278 gallons per day. For the basis of planning, a 5% increase in water use from current conditions is assumed.

*Table 1-1 Summary of Existing and Future System Water Demand*

Criteria	Existing Demand (MGD)	Existing Demand (GPM)	Future Demand (MGD)	Future Demand (GPM)
MMDD	0.15	103	0.16	108
ADD	0.27	185	0.28	194
MDD	0.63	435	0.66	457
PHD	0.94	652	0.99	685

### 1.3. Supply Analysis

The District’s existing water supplies consist of three local groundwater production wells. There are no connections to any other water systems and the District is not pursuing any sources other than groundwater. The three existing water wells can supply the existing and estimated future annual demand for the system, but there is a lack of redundancy, and an additional water source is recommended. The District is actively looking into drilling a new groundwater well which will provide both short- and long-term water supply reliability, as well as sustainability through changes in climate regimes.

### 1.4. Storage Analysis

The District owns ten tanks with a total storage capacity of over one million gallons. A storage analysis was conducted to evaluate if the existing storage facilities are sufficient to meet existing and future needs, as well as provide water for fire protection. The recommended reservoir size for four of the pressure zones was determined to be greater than the existing storage reservoirs in each of these zones. To address storage deficiencies, a variety of recommendations have been developed. These recommendations include multiple approaches to best serve the needs of the District and minimize costs; the recommended improvements include tank replacement, combining pressure zones to share storage facilities, and replacement of tanks with pressure reducing facilities.

### 1.5. Capital Improvement Projects

Capital improvement projects were developed based on the results of the evaluations performed in preparation of this Capital Improvement Plan (Plan). A preliminary estimate of project costs for each of the identified capital projects was developed. As a basis for developing an implementation plan, the recommended projects were assigned a priority number between one and ten based on project necessity; with a priority number of one being the highest priority. Assigned priorities and budgetary project costs are summarized in Table 1-2.

Table 1-2 Capital Project Cost Estimates

Capital Project	Project Priority	Budgetary Implementation Cost Estimate
Project G-1: Rate Study	1	\$60,000
Project G-2: Hydraulic Model	1	\$80,000
Project G-3: Full System Conditions Assessment and Seismic Evaluation	2	\$50,000
Project G-4: New Maintenance Building	2	\$1,280,000
Project G-5: Electric Fleet Augmentation	3	\$120,000
Project G-6: Facility and Cyber Security Plan	3	\$75,000
Project S-1: New Well Development	2	\$4,992,000
Project S-2: San Juan Well New Generator and Electrical Improvements	4	\$483,000
Project ST-1: Ballantree Tank	4	\$2,064,000
Project ST-2: School Road Tank Replacement with Pressure Reducing Valve	1	\$440,000
Project ST-3: Pine Tree Tank Replacement and/or Additional Tank	5	\$2,720,000
Project P-1: Carr Booster Backup	5	\$656,000
Project P-2: Leo Lane Pump Station New Generator	6	\$160,000
Project P-3: Upper Oakridge Booster New Generator	6	\$160,000
Project P-4: Carr Booster Pump Plant Rehabilitation	8	\$256,000
Project D-1: Hydrant and Valve Flushing and Condition Assessment	5	\$30,000
Project D-2: Hydrant and Valve Repair and Replacement	6	\$608,000
Project D-3: Steel Saddle Replacement	7	\$400,000
Project D-4: Annual Water Main Replacement, Year 1 of 4	6	\$4,000,000
Project D-5: Annual Water Main Replacement, Year 2 of 4	7	\$4,000,000
Project D-6: Annual Water Main Replacement, Year 3 of 4	8	\$4,000,000
Project D-7: Annual Water Main Replacement, Year 4 of 4	9	\$4,000,000
Project D-8: System Operational Reliability Modifications	3	\$216,000
<b>Total</b>		<b>\$30,850,000</b>

All costs are in 2024 dollars. Budgets for projects in future years should be escalated based on an assumed inflation estimate of 3-6% annually. Capital projects should be implemented over a reasonable schedule to reduce single year expenditures and balanced with District staffing availability.

# Aromas Water District Capital Improvement Plan

## Project Information Sheets

**Project Number:** G-1

**Project Name:** Rate Study

**Project Description:**

The most recent Rate Study for the Aromas Water District was completed in June 2019. Based on the recommendations of this Plan, the current rates are insufficient to fund projected capital needs.

**Project Cost Estimate Table:**

Project G-1: Rate Study		
Item No.	Item Description	Opinion of Cost (\$)
1	Rate Study	\$60,000
<b>Subtotal</b>		<b>\$60,000</b>
Construction Contingency (30%)		\$0
Engineering & Administration (30%)		\$0
<b>Total</b>		<b>\$60,000</b>

**Project Number:** G-2

**Project Name:** Hydraulic Model

**Project Description:**

This project includes preparation of a water system hydraulic model using computerized modeling software. The model will be developed and calibrated using water system data and fire hydrant flow testing. The model will be used to evaluate current and future performance of the water system, verify operation of pumps, verify recommended pipe sizes for water main replacements, and to estimate fire flow availability and operating pressures throughout the System.

**Project Cost Estimate Table:**

Project G-2: Hydraulic Model		
Item No.	Item Description	Opinion of Cost (\$)
1	Hydraulic Model	\$80,000
<b>Subtotal</b>		<b>\$80,000</b>
Construction Contingency (30%)		\$0
Engineering & Administration (30%)		\$0
<b>Total</b>		<b>\$80,000</b>

# Aromas Water District Capital Improvement Plan

## Project Information Sheets

**Project Number:** G-3

**Project Name:** Full Condition Assessment and Seismic Evaluation

**Project Description:**

In addition to project G-2, a full condition assessment and seismic evaluation of the District’s above ground facilities, including an electrical and mechanical field testing and observation, is needed to provide a comprehensive assessment of the water system. A complete condition assessment was not included in this Plan. Some known condition issues are discussed and addressed by the recommendations of this Plan, other known and unknown issues are not addressed due to the relative uncertainty of the issue. One such project is determining the reason the Carr Pump Booster is only pumping 125 GPM, when it is designed for 250 GPM.

**Project Cost Estimate Table:**

Project G-3: Full System Condition Assessment and Seismic Evaluation		
Item No.	Item Description	Opinion of Cost (\$)
1	Full Condition Assessment and Seismic Evaluation	\$50,000
	<b>Subtotal</b>	<b>\$50,000</b>
	<b>Construction Contingency (30%)</b>	<b>\$0</b>
	<b>Engineering &amp; Administration (30%)</b>	<b>\$0</b>
	<b>Total</b>	<b>\$50,000</b>

**Project Number:** G-4

**Project Name:** New Maintenance Building

**Project Description:**

This project consists of the construction of a new single story maintenance building for the District located at the District’s operations yard, a property currently owned by the District. Site improvements associated with this project include, site grading and paving, septic tank and leach field, new maintenance building, rehabilitation of the existing maintenance building, abandonment of the out-of-service Marshall Well, and miscellaneous site improvements. The new maintenance building will incorporate onsite power generation in the form of roof mounted solar panels and electric vehicle charging stations.

**Project Cost Estimate Table:**

Project G-4: New Maintenance Building		
Item No.	Item Description	Opinion of Cost (\$)
1	New Maintenance Building	\$1,500,000
	<b>Subtotal</b>	<b>\$1,500,000</b>
	<b>Construction Contingency (30%)</b>	<b>\$450,000</b>
	<b>Engineering &amp; Administration (30%)</b>	<b>\$450,000</b>
	<b>Total</b>	<b>\$2,400,000</b>



# Aromas Water District Capital Improvement Plan

## Project Information Sheets

**Project Number:** G-5

**Project Name:** Electric Fleet Augmentation

**Project Description:**

This project consists of purchasing two electric vehicles (EVs) and the necessary infrastructure for charging EVs. The new maintenance building, project G-4, and the existing District office will be outfitted with level II charging stations.

**Project Cost Estimate Table:**

Project G-5: Electric Fleet Augmentation		
Item No.	Item Description	Opinion of Cost (\$)
1	Electric Vehicles (2 x \$60,000 each)	\$120,000
	<b>Subtotal</b>	<b>\$120,000</b>
	<b>Construction Contingency (30%)</b>	<b>\$0</b>
	<b>Engineering &amp; Administration (30%)</b>	<b>\$0</b>
	<b>Total</b>	<b>\$120,000</b>

**Project Number:** G-6

**Project Name:** Cyber Security Improvement Project

**Project Description:**

This project includes enhancement of cyber security for the District’s computer systems. The District will retain a cyber security firm to assist in implementing an updated cyber security system.

**Project Cost Estimate Table:**

Project G-7: Facility and Cyber Security Plan		
Item No.	Item Description	Opinion of Cost (\$)
1	Facility and Cyber Security Plan	\$75,000
	<b>Subtotal</b>	<b>\$75,000</b>
	<b>Construction Contingency (30%)</b>	<b>\$0</b>
	<b>Engineering &amp; Administration (30%)</b>	<b>\$0</b>
	<b>Total</b>	<b>\$75,000</b>

# Aromas Water District Capital Improvement Plan

## Project Information Sheets

**Project Number:** S-1

**Project Name:** New Well Development

**Project Description:**

The three existing operational wells meet current system demands but the District needs another well to provide supply redundancy and improve system reliability. This project includes land acquisition for the well site just to the northeast of the intersection of Quarry Road and Rogge Lane, a test well, a 1,000 GPM production well, an iron and manganese treatment system, and a 600-foot pipeline connecting the new production well to the existing water distribution system, including a crossing under the Union Pacific Railroad track. The District has previously considered drilling a new production well near the existing out-of-service Marshall Well. A 2022 pilot boring was drilled at the Marshall Well Site, and it was determined there was insufficient available groundwater at this location.

**Project Cost Estimate Table:**

Project S-1: New Well Development		
Item No.	Item Description	Opinion of Cost (\$)
1	Land Acquisition	\$400,000
2	Drilling Test Well	\$100,000
3	Drilling Production Well	\$1,000,000
5	Well Equipping	\$750,000
6	Wellhead Treatment	\$600,000
7	Railroad Crossing	\$150,000
8	Discharge Pipeline	\$120,000
<b>Subtotal</b>		<b>\$3,120,000</b>
<b>Construction Contingency (30%)</b>		<b>\$936,000</b>
<b>Engineering &amp; Administration (30%)</b>		<b>\$936,000</b>
<b>Total</b>		<b>\$4,992,000</b>

**Project Number:** S-2

**Project Name:** San Juan Well New Generator and Electrical Improvements

**Project Description:**

The Ballantree Pump Station is the only source of water for the Ballantree and Oakridge Zones. Currently there is no emergency power supply for the Ballantree Booster Pump Station. In the event of an electrical power outage, the pump station is unable to supply water to the zones. This project consists of installing an emergency 250KW generator, or larger, to operate this facility under the load conditions noted in the Ballantree TM, included in Attachment A. In addition, this project includes minor electrical improvements to bring the site up to date.

**Project Cost Estimate Table:**

Project S-2: San Juan Road Well New Generator and Electrical Improvements		
Item No.	Item Description	Opinion of Cost (\$)
1	Emergency 250KW Generator	\$225,000
2	Site Improvements and Generator Slab	\$65,000
3	Electrical/Communications	\$12,000
<b>Subtotal</b>		<b>\$302,000</b>
<b>Construction Contingency (30%)</b>		<b>\$90,600</b>
<b>Engineering &amp; Administration (30%)</b>		<b>\$90,600</b>
<b>Total</b>		<b>\$483,000</b>

# Aromas Water District Capital Improvement Plan

## Project Information Sheets

**Project Number:** ST-1

**Project Name:** Ballantree Tank

**Project Description:**

The Ballantree Pump Station is the only source of water for the Ballantree and Oakridge Zones. Currently there is no emergency power supply for the Ballantree Booster Pump Station. In the event of an electrical power outage, the pump station is unable to supply water to the zones. This project consists of installing an emergency 250KW generator, or larger, to operate this facility under the load conditions noted in the Ballantree TM, included in Attachment A. In addition, this project includes minor electrical improvements to bring the site up to date.

**Project Cost Estimate Table:**

Project ST-1: Ballantree Tank		
Item No.	Item Description	Opinion of Cost (\$)
1	Repair Road	\$280,000
2	100,000-gal Bolted Steel Water Storage Tank	\$560,000
3	Site Development, Grading, and Retaining Wall	\$280,000
4	Piping Connecting Rea and Ballantree Zones	\$80,000
5	Electrical, Communications, and Lighting	\$55,000
6	Existing Tank Removal and Disposal	\$35,000
<b>Subtotal</b>		<b>\$1,290,000</b>
<b>Construction Contingency (30%)</b>		<b>\$387,000</b>
<b>Engineering &amp; Administration (30%)</b>		<b>\$387,000</b>
<b>Total</b>		<b>\$2,064,000</b>

**Project Number:** ST-2

**Project Name:** School Road Tank Replacement with Pressure Reducing Valve

**Project Description:**

The School Road Tanks provide a break in pressure for the School Zone service, which is part of the Carr Pressure Zone. A PRV located upstream of the tanks reduces the pressure going into the School Tanks. The School Road Tanks are showing signs of wear and are a continuing target for vandalism. In this project, the School Road Tanks will be replaced with a new pressure reducing valve. Due to low water demand in the School Zone, storage in the School Tanks is not required.

**Project Cost Estimate Table:**

Project ST-2: School Road Tank Replacement with Pressure Reducing Valve		
Item No.	Item Description	Opinion of Cost (\$)
1	Demolish Existing School Road Tanks	\$30,000
2	Security Fencing	\$15,000
3	Electrical and I&C Improvements	\$100,000
4	Supply/Discharge Piping	\$50,000
5	Pressure Reducing Valve and Appurtenances	\$80,000
<b>Subtotal</b>		<b>\$275,000</b>
<b>Construction Contingency (30%)</b>		<b>\$82,500</b>
<b>Engineering &amp; Administration (30%)</b>		<b>\$82,500</b>
<b>Total</b>		<b>\$440,000</b>

# Aromas Water District Capital Improvement Plan

## Project Information Sheets

**Project Number:** ST-3

**Project Name:** Pine Tree Tank Replacement and/or Additional Tank

**Project Description:**

The Pine Tree tank was damaged in an earthquake. As one of the most critical elements in the system, if this tank was rendered unusable, maintaining water supply would be challenging throughout the System. Section 5 also demonstrates the Pine Tree Tank is undersized. This project is to replace the existing tank with two 150,000-gallon tanks which would create redundancy in the system, meet recommended storage requirements, and address the existing tank condition issues. Alternatively, the existing tank could remain in service, and an additional 100,000-gallon tank could be constructed adjacent to the existing tank; to reduce project costs, a budget for this reduced scope project is not included. Based on the hydraulic profile, an altitude valve could be used on the Pine Tree Tank to avoid overflow when utilizing the PRV to move water from higher zones down into this lower zone.

**Project Cost Estimate Table:**

<b>Project ST-3: Pine Tree Tank Replacement and/or Additional Tank</b>		
<b>Item No.</b>	<b>Item Description</b>	<b>Opinion of Cost (\$)</b>
1	Excavation and Site Preparation	\$150,000
2	Demolish Existing Pine Tree Tank	\$50,000
3	Two 150,000-gal bolted Steel Tanks	\$1,200,000
4	Electrical, Communications, and Lighting	\$50,000
5	Site Piping and Misc. Improvements	\$250,000
	<b>Subtotal</b>	<b>\$1,700,000</b>
	<b>Construction Contingency (30%)</b>	<b>\$510,000</b>
	<b>Engineering &amp; Administration (30%)</b>	<b>\$510,000</b>
	<b>Total</b>	<b>\$2,720,000</b>



# Aromas Water District Capital Improvement Plan

## Project Information Sheets

**Project Number:** P-1

**Project Name:** Carr Booster Backup

**Project Description:**

This project includes a new backup pump station between the Cole Tank and the Carr Tank. It is assumed this facility would consist of a package booster pump station. A Backup generator is not included. The new pump station would add redundancy and enable water to be transferred directly from the Cole Tank to the Carr Tank. Currently, when the Carr Pumping Plant is offline, there is no way for water to reach the Carr Tank. The new pump station could be located at the Cole Tank Site. This project needs to be verified by the hydraulic model and full system condition assessment, Projects G- 2 and G-3. A pump station with a pumping capacity matching the existing Carr Pump Plant of 250 GPM is used as the basis for budgeting for this project.

**Project Cost Estimate Table:**

Project P-1: Carr Booster Backup		
Item No.	Item Description	Opinion of Cost (\$)
1	Supply & Discharge Piping	\$40,000
2	Pump Station Foundation	\$30,000
3	Package Pump Station	\$300,000
4	Site Improvements	\$10,000
4	Electrical and I&C Improvements	\$30,000
<b>Subtotal</b>		<b>\$410,000</b>
<b>Construction Contingency (30%)</b>		<b>\$123,000</b>
<b>Engineering &amp; Administration (30%)</b>		<b>\$123,000</b>
<b>Total</b>		<b>\$656,000</b>

**Project Number:** P-2

**Project Name:** Leo Lane Pump Station New Generator and Electrical Upgrade

**Project Description:**

The Leo Lane Pump Station does not currently have back-up power. A power outage results in reduced pressure or loss of service for the Leo Lane Zone. This project includes a new permanent generator and an automatic transfer switch at the Leo Lane Pump Station. The current electrical system for the pumping station is in an underground vault. The electrical system will be moved above ground.

**Project Cost Estimate Table:**

Project P-2: Leo Lane Pump Station New Generator		
Item No.	Item Description	Opinion of Cost (\$)
1	Site Work	\$10,000
2	Generator	\$60,000
3	Electrical Improvements	\$30,000
<b>Subtotal</b>		<b>\$100,000</b>
<b>Construction Contingency (30%)</b>		<b>\$30,000</b>
<b>Engineering &amp; Administration (30%)</b>		<b>\$30,000</b>
<b>Total</b>		<b>\$160,000</b>

# Aromas Water District Capital Improvement Plan

## Project Information Sheets

**Project Number:** P-3

**Project Name:** Upper Oakridge Booster New Generator

**Project Description:**

The Upper Oakridge Booster Pump Station does not currently have back-up power. A power outage results in reduced pressure or loss of service for the Upper Oakridge Zone. This project includes a new permanent generator and automatic transfer switch at the Upper Oakridge Booster Pump Station.

**Project Cost Estimate Table:**

<b>Project P-3: Upper Oakridge Booster New Generator</b>		
Item No.	Item Description	Opinion of Cost (\$)
1	Site Work	\$10,000
2	Generator	\$60,000
3	Electrical Improvements	\$30,000
<b>Subtotal</b>		<b>\$100,000</b>
<b>Construction Contingency (30%)</b>		<b>\$30,000</b>
<b>Engineering &amp; Administration (30%)</b>		<b>\$30,000</b>
<b>Total</b>		<b>\$160,000</b>

**Project Number:** P-4

**Project Name:** Carr Pump Plant Rehabilitation/Upgrade

**Project Description:**

The two pumps at the Carr Pump Plant are designed for a combined flow rate of 250 GPM. Currently, the flow rate is approximately 125 GPM with one pump operating and 140 GPM with both pumps operating. The pump station hydraulic and pumping efficiency need to be evaluated as a basis for rehabilitation or replacement. The addition of a PRV at the Carr Pumping Plant would enable water to be moved from the Carr Zone into the lower zones. Based on the results of the hydraulic model and full system condition assessment, Projects G-2 and G-3, increasing the pumping capacity of this pumping plant should be considered.

**Project Cost Estimate Table:**

<b>Project P-4: Carr Pump Plant Rehabilitation</b>		
Item No.	Item Description	Opinion of Cost (\$)
1	Carr Pump Plant PRV	\$40,000
2	Carr Pump Plant Pump Replacement and Piping Modifications	\$80,000
3	Electrical Improvements	\$40,000
<b>Subtotal</b>		<b>\$160,000</b>
<b>Construction Contingency (30%)</b>		<b>\$48,000</b>
<b>Engineering &amp; Administration (30%)</b>		<b>\$48,000</b>
<b>Total</b>		<b>\$256,000</b>

# Aromas Water District Capital Improvement Plan

## Project Information Sheets

**Project Number:** D-1

**Project Name:** Hydrant and Valve Flushing and Condition Assessment

**Project Description:**

This project consists of contracting with a firm to complete a field assessment of existing fire hydrants and hydrant valves within the distribution system. The firm will flush each hydrant and exercise all valves in the system to determine operability and document the equipment's performance as well as provide recommendations for repairs. This project should include recoating and basic hydrant and valve maintenance as part of the field assessment. This is the first phase of work to evaluate and upgrade system valves and hydrants prior to repairs completed as Project D-2.

**Project Cost Estimate Table:**

Project D-1: Hydrant and Valve Flushing and Condition Assessment		
Item No.	Item Description	Opinion of Cost (\$)
1	Fire Hydrants and Valve Assessment	\$30,000
	<b>Subtotal</b>	<b>\$30,000</b>
	<b>Construction Contingency (30%)</b>	-
	<b>Engineering &amp; Administration (30%)</b>	-
	<b>Total</b>	<b>\$30,000</b>

**Project Number:** D-2

**Project Name:** Hydrant and Valve Repair and Replacement

**Project Description:**

The project includes replacement and repairs of existing fire hydrants and valves based on the results of the work completed by Project D-1. As part of this project, breakoff check valves will be installed on all hydrants. Due to the unknown scope required, an assumed value has been designated for the cost of replacement and repairs.

**Project Cost Estimate Table:**

Project D-2: Hydrant and Valve Repair and Replacement		
Item No.	Item Description	Opinion of Cost (\$)
1	Repair / Replace Failed/Broken Fire Hydrants & Valves	\$200,000
2	Install 180 Brake-Off Check Valves	\$180,000
	<b>Subtotal</b>	<b>\$380,000</b>
	<b>Construction Contingency (30%)</b>	<b>\$114,000</b>
	<b>Engineering &amp; Administration (30%)</b>	<b>\$114,000</b>
	<b>Total</b>	<b>\$608,000</b>

# Aromas Water District Capital Improvement Plan

## Project Information Sheets

**Project Number:** D-3

**Project Name:** Steel Saddle Replacement

**Project Description:**

The project is to replace steel saddles on existing mains which have reached the end of their useful service life. The District owns laterals from the main line to the customer’s meter including the service saddle. There are many steel saddle failures in the Rea Zone. The saddles near the Carr Booster Station should also be replaced to avoid failures due to increased pressure from the proposed new high flow pump recommended for the Carr Booster Station. The project includes budget to replace 100 steel service saddles.

**Project Cost Estimate Table:**

Project D-3: Steel Saddle Replacement		
Item No.	Item Description	Opinion of Cost (\$)
1	Replace 100 Steel Service Saddles	\$250,000
	<b>Subtotal</b>	<b>\$250,000</b>
	<b>Construction Contingency (30%)</b>	<b>\$75,000</b>
	<b>Engineering &amp; Administration (30%)</b>	<b>\$75,000</b>
	<b>Total</b>	<b>\$400,000</b>

**Project Number:** D-4 through D-7

**Project Name:** Annual Water Main Replacement, Year 1 to Year 4

**Project Description:**

The project includes replacing a minimum of 2% of the water mains in the system each year for a total replacement every 50 years. There are approximately 200,000 linear feet of main in the District. The replacement should be prioritized based on condition (leaks and failures), age, amount of water and number of connections affected, and hydraulics including fire flow capacity, with a goal to initially replace all 4” and smaller mainline pipes. The piping on Pleasant Acres Lane is known to be in poor condition, has non-standard pipe types, and should be replaced. This project needs to be verified by the hydraulic model and full system condition assessment, Projects G-2 and G-3 to confirm prioritization and pipe sizing.

**Project Cost Estimate Table:**

Project D-4: Annual Water Main Replacement, Year 1 of 4		
Item No.	Item Description	Opinion of Cost (\$)
1	Replace 6” or 8” Water Main (10,000 LF @ \$250/LF)	\$2,500,000
	<b>Subtotal</b>	<b>\$2,500,000</b>
	<b>Construction Contingency (30%)</b>	<b>\$750,000</b>
	<b>Engineering &amp; Administration (30%)</b>	<b>\$750,000</b>
	<b>Total</b>	<b>\$4,000,000</b>



# Aromas Water District Capital Improvement Plan

## Project Information Sheets

**Project Number:** D-4 through D-7 (continued)

**Project Name:** Annual Water Main Replacement, Year 1 to Year 4

**Project Description:**

The project includes replacing a minimum of 2% of the water mains in the system each year for a total replacement every 50 years. There are approximately 200,000 linear feet of main in the District. The replacement should be prioritized based on condition (leaks and failures), age, amount of water and number of connections affected, and hydraulics including fire flow capacity, with a goal to initially replace all 4” and smaller mainline pipes. The piping on Pleasant Acres Lane is known to be in poor condition, has non-standard pipe types, and should be replaced. This project needs to be verified by the hydraulic model and full system condition assessment, Projects G-2 and G-3 to confirm prioritization and pipe sizing.

**Project Cost Estimate Tables:**

Project D-5: Annual Water Main Replacement, Year 2 of 4		
Item No.	Item Description	Opinion of Cost (\$)
1	Replace 6" or 8" Water Main (10,000 LF @\$250/LF)	\$2,500,000
	<b>Subtotal</b>	<b>\$2,500,000</b>
	<b>Construction Contingency (30%)</b>	<b>\$750,000</b>
	<b>Engineering &amp; Administration (30%)</b>	<b>\$750,000</b>
	<b>Total</b>	<b>\$4,000,000</b>

Project D-6: Annual Water Main Replacement, Year 3 of 4		
Item No.	Item Description	Opinion of Cost (\$)
1	Replace 6" or 8" Water Main (10,000 LF @\$250/LF)	\$2,500,000
	<b>Subtotal</b>	<b>\$2,500,000</b>
	<b>Construction Contingency (30%)</b>	<b>\$750,000</b>
	<b>Engineering &amp; Administration (30%)</b>	<b>\$750,000</b>
	<b>Total</b>	<b>\$4,000,000</b>

Project D-7: Annual Water Main Replacement, Year 4 of 4		
Item No.	Item Description	Opinion of Cost (\$)
1	Replace 6" or 8" Water Main (10,000 LF @\$250/LF)	\$2,500,000
	<b>Subtotal</b>	<b>\$2,500,000</b>
	<b>Construction Contingency (30%)</b>	<b>\$750,000</b>
	<b>Engineering &amp; Administration (30%)</b>	<b>\$750,000</b>
	<b>Total</b>	<b>\$4,000,000</b>

# Aromas Water District Capital Improvement Plan

## Project Information Sheets

**Project Number:** D-8A

**Project Name:** Carr-Cole Isolation Valve Replacement

**Project Description:**

The isolation valve between the Carr and Cole Pressure Zones is showing signs of aging and needs to be replaced. A new combination backpressure sustaining and pressure reducing isolation valve will be installed in its place.

**Project Number:** D-8B

**Project Name:** Pressure Reducing Valve at Oakridge Pump Station

**Project Description:**

This project is to install a new PRV on a bypass line at the Oakridge Pump Station. This will allow water from the Oakridge Tank to enter the Ballantree Pressure Zone and help achieve the fire flow requirements in the Ballantree Zone. Details of this project are discussed in the Ballantree TM, included in Attachment A. Prior to execution, this project needs to be verified by the hydraulic model and full system condition assessment, Projects G-2 and G-3.

**Project Number:** D-8C

**Project Name:** Pressure Reducing Valve at Rea Booster Pump

**Project Description:**

This project is to replace the existing below ground PRV between the Rea and the Pine Tree Pressure Zones with a new above ground PRV. The existing PRV, between these zones, was constructed in the 1940's, has not been used since 1979, and is in poor condition. This project will allow for water from the Rea Tank to enter the Pine Tree Pressure Zone and help achieve the required fire flow and recommended storage for the Pine Tree Zone. The new PRV could be located on a bypass line on the Rea Booster Pump or in place of the Rea Backup Booster. As part of this project, the Rea Backup Booster will be removed. The Rea Backup Booster is redundant and has not been used in recent memory. Prior to execution, this project needs to be verified by the hydraulic model and full system condition assessment, Projects G-2 and G-3.

**Project Cost Estimate Table:**

Project D-8: System Operational Reliability Modifications		
Item No.	Item Description	Opinion of Cost (\$)
D-8A	Carr-Cole Isolation Valve Replacement	\$50,000
D-8B	Pressure Reducing Valve at Oakridge Pump Station	\$25,000
D-8C	Pressure Reducing Valve at Rea Booster Pump, Demolish/Abandon Rea Back-up Booster and PRV	\$60,000
<b>Subtotal</b>		<b>\$135,000</b>
<b>Construction Contingency (30%)</b>		<b>\$40,500</b>
<b>Engineering &amp; Administration (30%)</b>		<b>\$40,500</b>
<b>Total</b>		<b>\$216,000</b>