

## CHAPTER 10 – CAPITAL IMPROVEMENT PROGRAM

This chapter provides a summary of the recommended domestic water system improvements to mitigate existing capacity deficiencies and to accommodate anticipated future growth. The chapter also presents the cost criteria and methodologies for developing the capital improvement program. Finally, a capacity allocation analysis, usually used for cost sharing purposes, is also included.

### 10.1 COST ESTIMATE ACCURACY

Cost estimates presented in the CIP were prepared for general master planning purposes and, where relevant, for further project evaluation. Final costs of a project will depend on several factors including the final project scope, costs of labor and material, and market conditions during construction.

The Association for the Advancement of Cost Engineering (AACE International), formerly known as the American Association of Cost Engineers has defined three classifications of assessing project costs. These classifications are presented in order of increasing accuracy: Order of Magnitude, Budget, and Definitive.

- **Order of Magnitude Estimate.** This classification is also known as an “original estimate”, “study estimate”, or “preliminary estimate”, and is generally intended for master plans and studies.

This estimate is not supported with detailed engineering data about the specific project, and its accuracy is dependent on historical data and cost indexes. It is generally expected that this estimate would be accurate within -30 percent to +50 percent.

- **Budget Estimate.** This classification is also known as an “official estimate” and generally intended for predesign studies. This estimate is prepared to include flow sheets and equipment layouts and details. It is generally expected that this estimate would be accurate within -15 percent to +30 percent.
- **Definitive Estimate.** This classification is also known as a “final estimate” and prepared during the time of contract bidding. The data includes complete plot plans and elevations, equipment data sheets, and complete specifications. It is generally expected that this estimate would be accurate within -5 percent to + 15 percent.

Costs developed in this study should be considered “Order of Magnitude” and have an expected accuracy range of **-30 percent** and **+50 percent**.

## 10.2 COST ESTIMATE METHODOLOGY

Cost estimates presented in this chapter are opinions of probable construction and other relevant costs developed from several sources including cost curves, Akel experience on other master planning projects, and input from District staff on the development of public and private cost sharing. Where appropriate, costs were escalated to reflect the more current Engineering News Records (ENR) Construction Cost Index (CCI).

This section documents the unit costs used in developing the opinion of probable construction costs, the Construction Cost Index, the land acquisition costs, and markups to account for construction contingency and other project related costs.

### 10.2.1 Unit Costs

The unit cost estimates used in developing the Capital Improvement Program are summarized on **Table 10.1**. Domestic water pipeline unit costs are based on length of pipes, in feet. Storage reservoir unit costs are based on capacity, per million gallons (MG). Pump Station costs are based on an equation that replaces the pump curve. Valve improvements are a flat cost based on previous projects constructed by the District.

The unit costs are intended for developing the Order of Magnitude estimate and do not account for site specific conditions, labor and material costs during the time of construction, final project scope, implementation schedule, detailed utility and topography surveys for reservoir sites, investigation of alternative routings for pipes, and other various factors. The capital improvement program included in this report accounts for construction and project-related contingencies as described in this chapter.

### 10.2.2 Construction Cost Index

Costs estimated in this study are adjusted utilizing the Engineering News Record (ENR) Construction Cost Index (CCI), which is widely used in the engineering and construction industries.

The costs in this Water System Master Plan were benchmarked using a 20-City national average ENR CCI of 12,112 reflecting a date of June 2021.

### 10.2.3 Construction Contingency Allowance

Knowledge about site-specific conditions for each proposed project is limited at the master planning stage; therefore, construction contingencies were used. The estimated construction costs in this master plan include a **30 percent** contingency allowance to account for unforeseen events and unknown field conditions.

## Table 10.1 Unit Costs

Water Master Plan

San Lorenzo Valley Water District

Pipelines	
Pipe Size (in)	Cost (\$/Lineal Foot)
6	188
8	202
10	217
12	233
16	280
18	301
20	345
24	378
30	418
36	493
Valves <sup>2</sup>	
New Valve	\$32,000 per Valve
Booster Pump Station	
Estimated Pumping Station Unit Cost (\$/gpm), where Q is equal to the total station capacity in gpm	
Construct New Pump	Unit Cost = $209.70 \times e^{-0.0001 \times Q}$
Upgrade Existing Pump	Unit Cost = $175.82 \times e^{-0.00008 \times Q}$
Storage <sup>2</sup>	
\$3.11 / gallon	

**AKEL**  
ENGINEERING GROUP, INC.

9/7/2021

Notes :

1. Construction costs estimated using June 2021 ENR CCI of 12,112.
2. Unit costs based on comparable projects shown in SLVWD Capital Improvement Projects.

#### 10.2.4 Project Related Costs

The capital improvement costs also account for project-related costs, comprising of engineering design, project administration (developer and District staff), construction management and inspection, and legal costs. The project related costs in this master plan were estimated by applying an additional **30 percent** to the estimated construction costs.

### 10.3 CAPITAL IMPROVEMENT PROGRAM

This section documents the capital improvement program, contingencies included in the costs, and the allocation of costs to meet the requirements of AB1600.

#### 10.3.1 Capital Improvement Identifiers

Each improvement was assigned a unique coded identifier associated with the improvement type and pressure zone and is summarized graphically on [Figure 10.1](#). These identifiers were assigned as described below.

Each improvement begins with characters corresponding to its facility type, as follows:

- Pipeline improvement identifiers begin with **P**
- Tank improvement identifiers begin with **T**
- Pump Station improvement identifiers begin with **PS**
- Pressure Reducing Valve improvement identifiers begin with **PRV**
- Other Valve improvement identifiers begin with **VLV**

Each improvement is then given a number representing the pressure zone it services, followed by a numerical value unique to each improvement of a specific type within the zone.

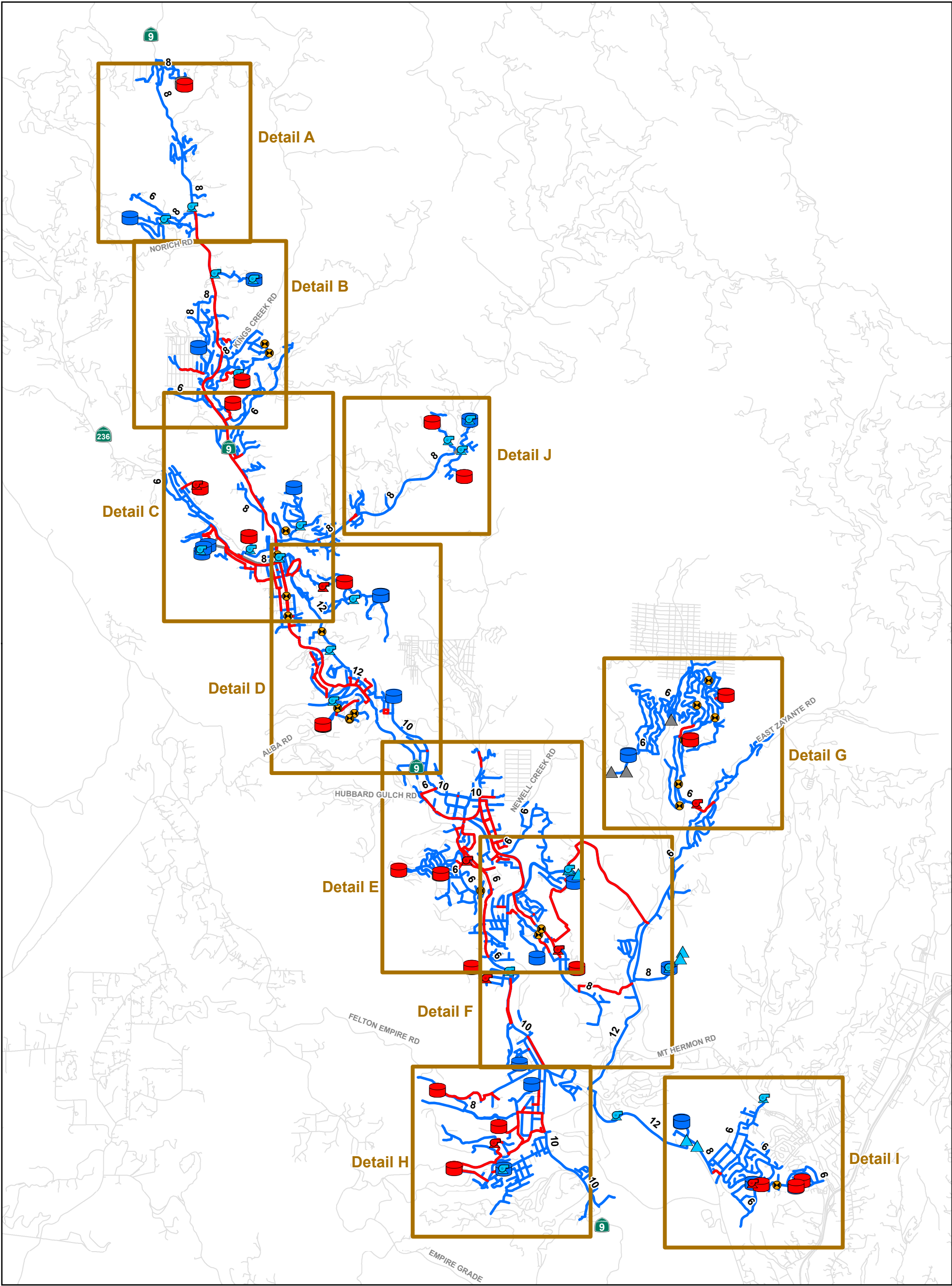
#### 10.3.2 Capital Improvement Costs

The Capital Improvement Program costs for the projects identified in this master plan for mitigating existing system deficiencies and for serving anticipated future growth throughout the District are summarized on [Table 10.2](#).

The estimated construction costs include the baseline costs plus **30 percent** contingency allowance to account for unforeseen events and unknown field conditions, as described in a previous section. Capital improvement costs include the estimated construction costs plus **30 percent** project-related costs (engineering design, project administration, construction management and inspection, and legal costs).

#### 10.3.3 Recommended Cost Allocation Analysis

Cost allocation analysis is needed to identify improvement funding sources, and to establish a nexus between development impact fees and improvements needed to service growth. In compliance with the provisions of Assembly Bill AB 1600, the analysis differentiates between the



**Legend**

- |                                 |                        |                           |
|---------------------------------|------------------------|---------------------------|
| <b>Recommended Improvements</b> | <b>Existing System</b> | <b>Existing Pipelines</b> |
| Pump Station                    | Pump Station           | Existing Pipelines        |
| Tank                            | Wells                  | Abandoned Pipelines       |
| Pipelines                       | Wells (Inactive)       |                           |
|                                 | Existing Tank          |                           |
|                                 | Abandoned Tank         |                           |
|                                 | Valve                  |                           |

Update: July 12, 2021

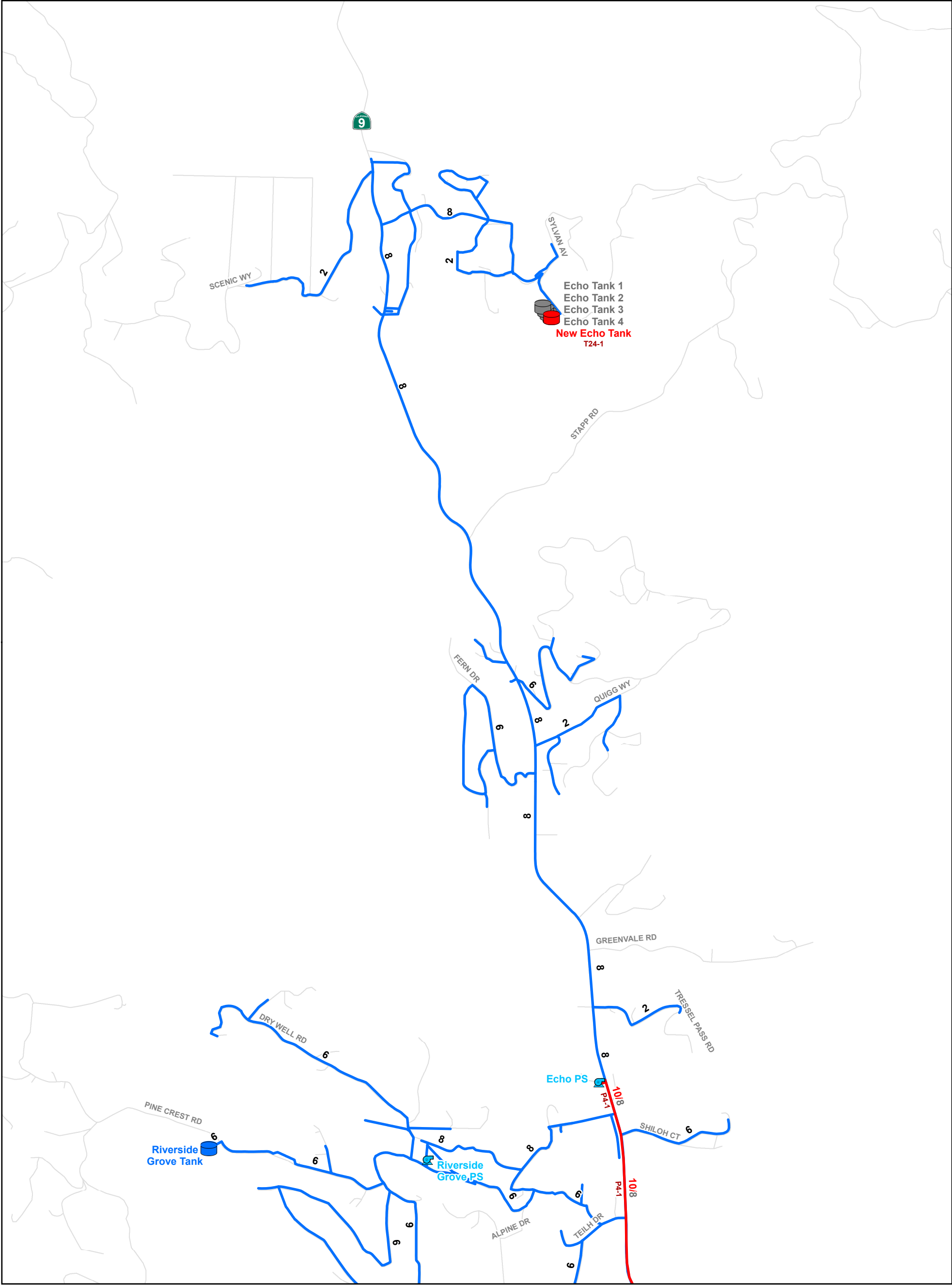
0 0.25 0.5 1  
Mile



**Figure 10.1**  
**Capital Improvement**  
**Program**

Water Master Plan  
San Lorenzo Valley Water District





Legend

Recommended Improvements Existing System

- |              |                    |
|--------------|--------------------|
| Pump Station | Pump Station       |
| Tank         | Existing Tank      |
| Pipelines    | Abandoned Tank     |
|              | Valve              |
|              | Existing Pipelines |

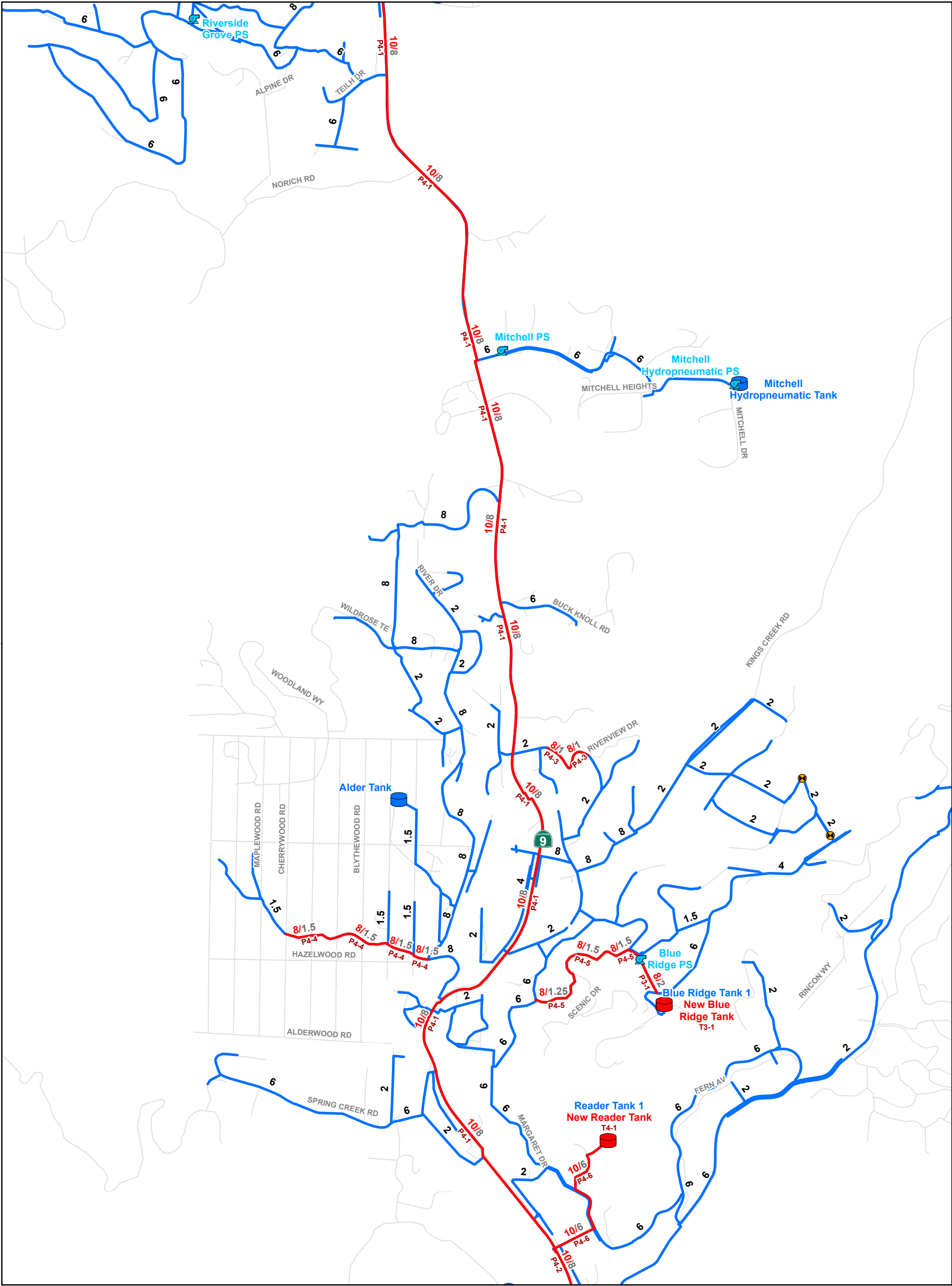


**Detail A**  
**Capital Improvement**  
**Program**

Water Master Plan  
San Lorenzo Valley Water District







Legend

Recommended Improvements Existing System

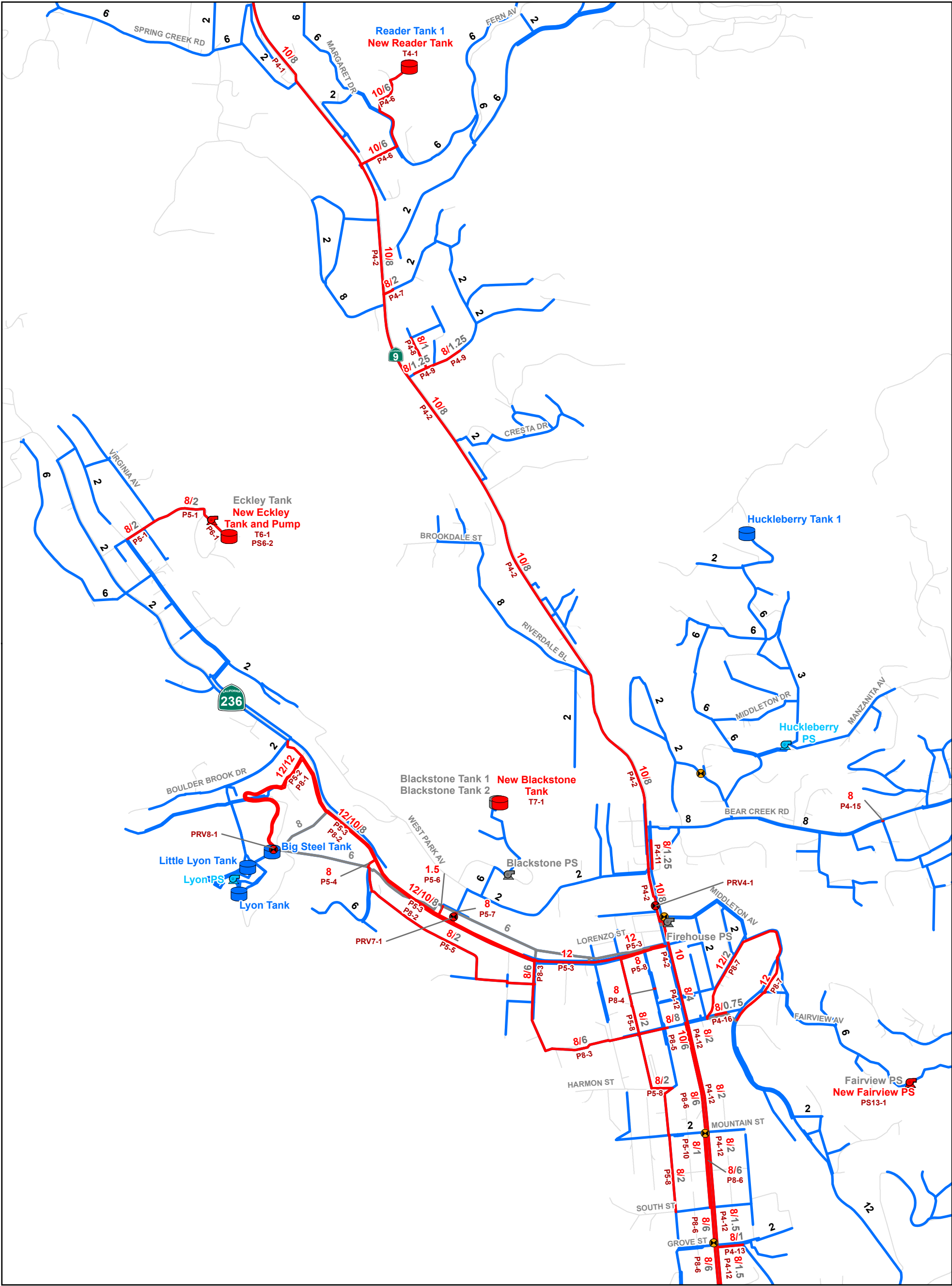
- |              |                    |
|--------------|--------------------|
| Pump Station | Pump Station       |
| Tank         | Tank               |
| Pipelines    | Valve              |
|              | Existing Pipelines |



**Detail B**  
**Capital Improvement**  
**Program**

Water Master Plan  
San Lorenzo Valley Water District





**Legend**

- | Recommended Improvements |              | Existing System |                        |
|--------------------------|--------------|-----------------|------------------------|
|                          | Pump Station |                 | Pump Station           |
|                          | Tank         |                 | Abandoned Pump Station |
|                          | PRV          |                 | Existing Tank          |
|                          | Pipelines    |                 | Abandoned Tank         |
|                          |              |                 | Valve                  |
|                          |              |                 | Existing Pipelines     |
|                          |              |                 | Abandoned Pipelines    |

**AKEL**  
ENGINEERING GROUP, INC.

Update: September 10, 2021

0 250 500 1,000  
Feet



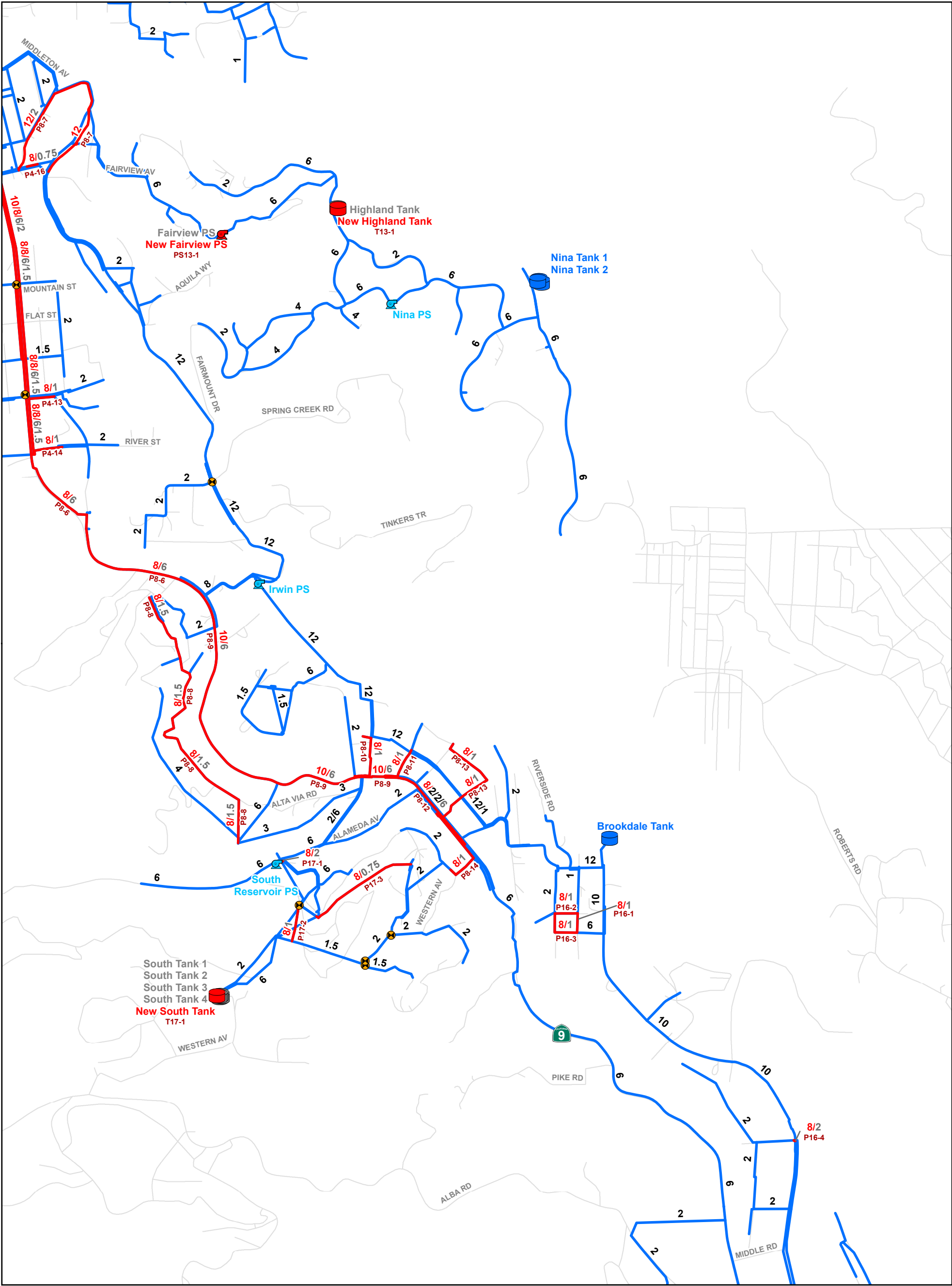
File Path: P:\GIS\GIS\_P\Projects\San\_Lorenzo\_Valley\_WDI\Final\SLVWD\_Fig10-1\_DetailC\_CIP\_091021.mxd

**Detail C**  
**Capital Improvement**  
**Program**

Water Master Plan  
San Lorenzo Valley Water District







Legend

Recommended Improvements Existing System

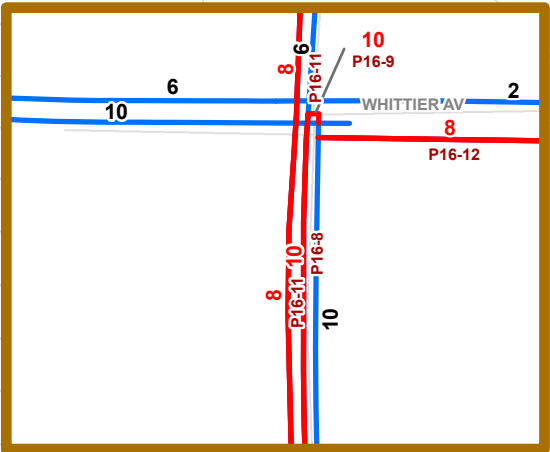
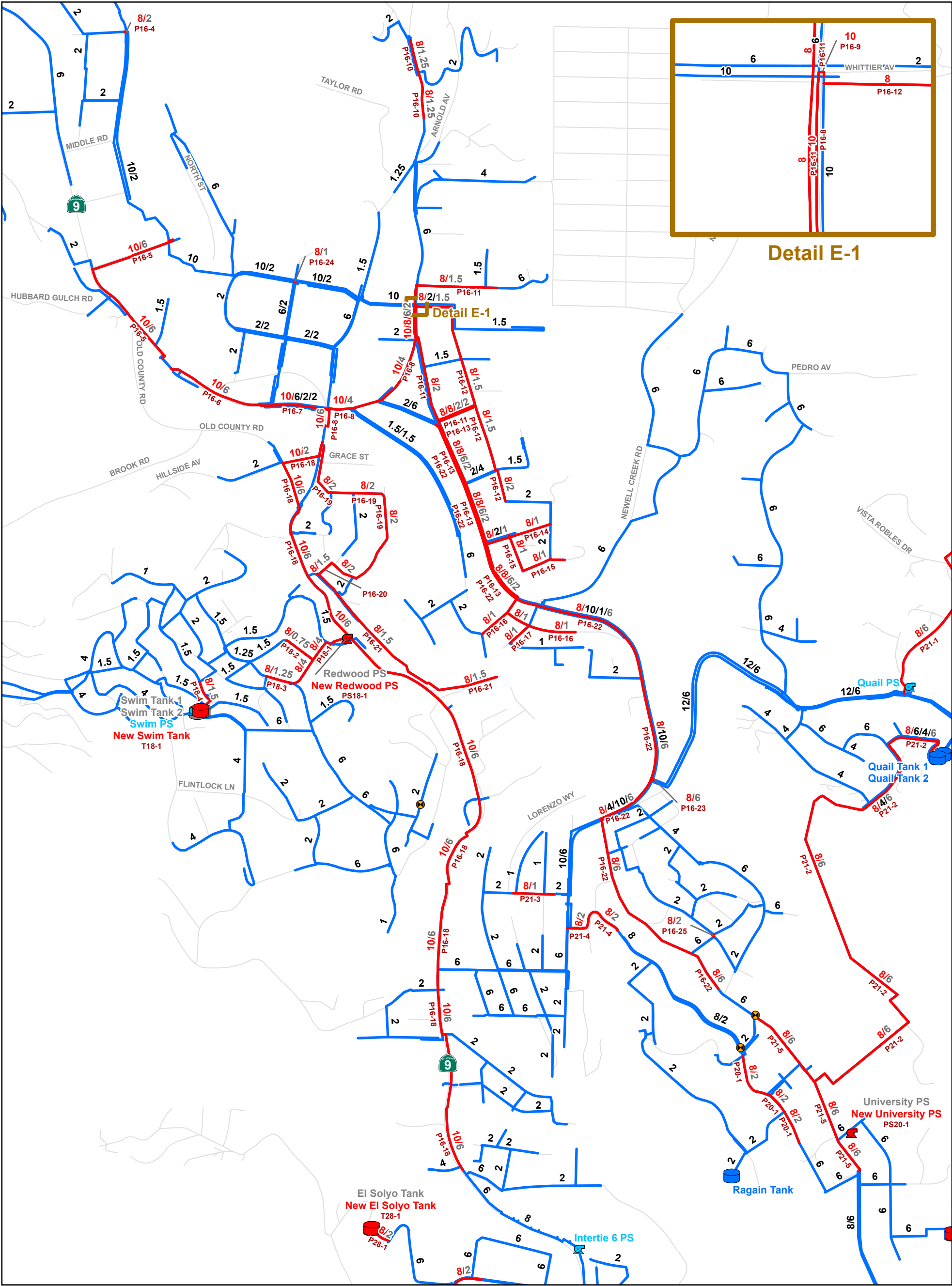
- |              |                    |
|--------------|--------------------|
| Pump Station | Pump Station       |
| Tank         | Existing Tank      |
| Pipelines    | Abandoned Tank     |
|              | Valve              |
|              | Existing Pipelines |



**Detail D**  
**Capital Improvement**  
**Program**

Water Master Plan  
San Lorenzo Valley Water District





Detail E-1

Legend

Recommended Improvements Existing System

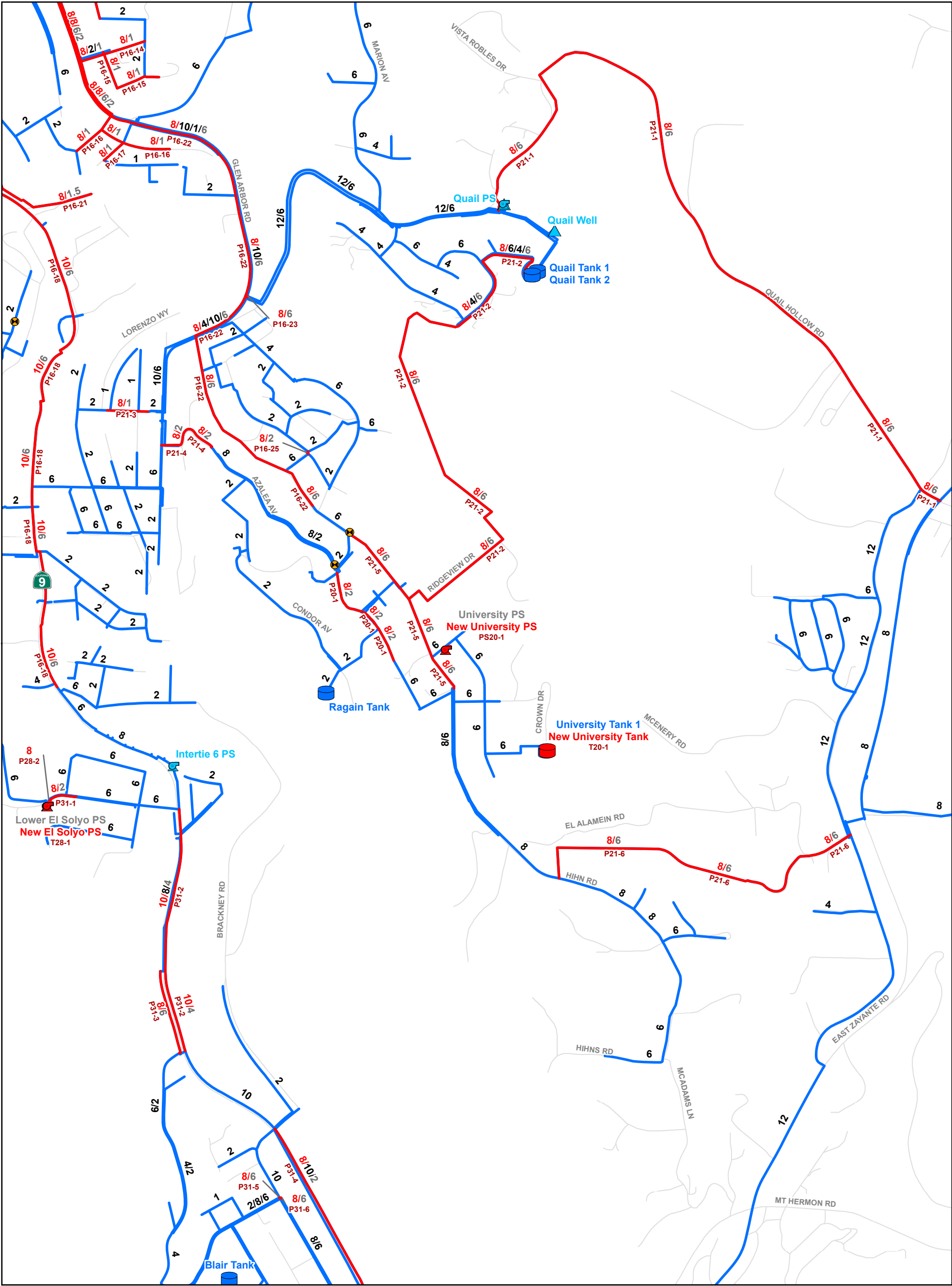
- |              |                    |
|--------------|--------------------|
| Pump Station | Pump Station       |
| Tank         | Existing Tank      |
| Pipelines    | Abandoned Tank     |
|              | Valve              |
|              | Existing Pipelines |



**Detail E**  
**Capital Improvement**  
**Program**

Water Master Plan  
San Lorenzo Valley Water District





Legend

Recommended Improvements Existing System

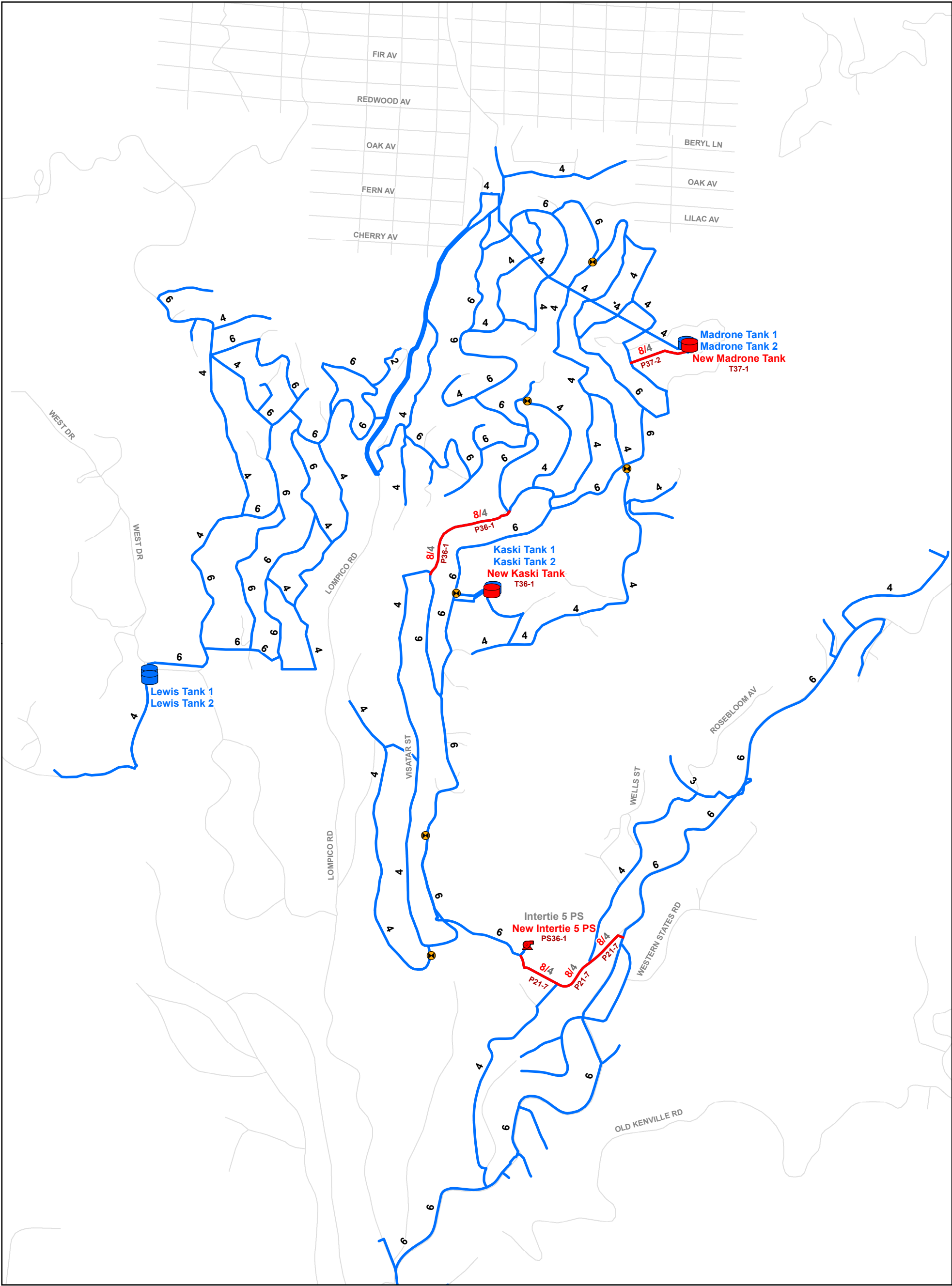
- |              |                    |
|--------------|--------------------|
| Pump Station | Pump Station       |
| Tank         | Wells              |
| Pipelines    | Wells (Inactive)   |
|              | Tank               |
|              | Valve              |
|              | Existing Pipelines |



## Detail F Capital Improvement Program

Water Master Plan  
San Lorenzo Valley Water District





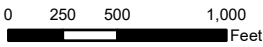
**Legend**

**Recommended Improvements   Existing System**

- |              |                    |
|--------------|--------------------|
| Pump Station | Pump Station       |
| Tank         | Wells              |
| Pipelines    | Existing Tank      |
|              | Abandoned Tank     |
|              | Valve              |
|              | Existing Pipelines |



Update: September 10, 2021



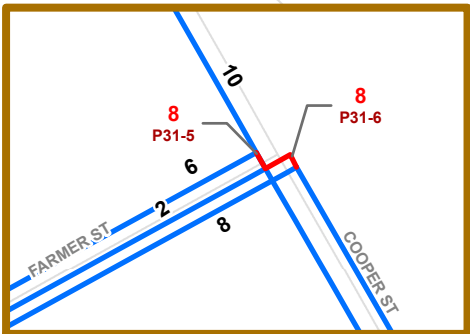
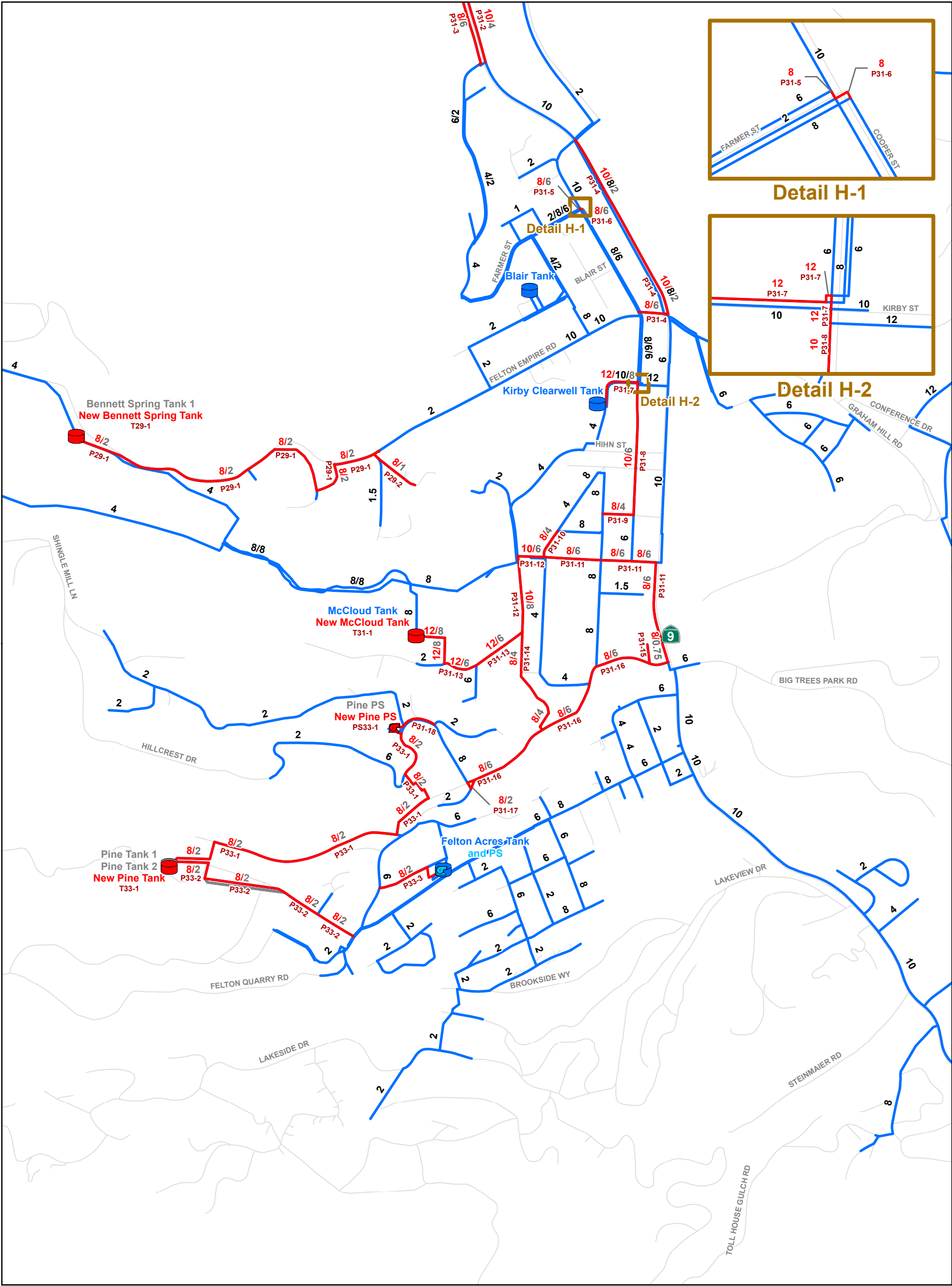
File Path: P:\wGIS\GIS\_P\Projects\San\_Lorenzo\_Valley\_WD\Final\SLVWD\_Fig10-1\_DetailG\_CIP\_091021.mxd

**Detail G**  
**Capital Improvement**  
**Program**

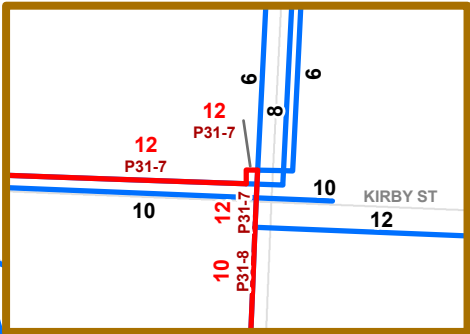
Water Master Plan  
San Lorenzo Valley Water District







Detail H-1



Detail H-2

Legend

- |                                 |                        |
|---------------------------------|------------------------|
| <b>Recommended Improvements</b> | <b>Existing System</b> |
| Pump Station                    | Pump Station           |
| Tank                            | Existing Tank          |
| Pipelines                       | Abandoned Tank         |
|                                 | Valve                  |
|                                 | Existing Pipelines     |
|                                 | Abandoned Pipelines    |

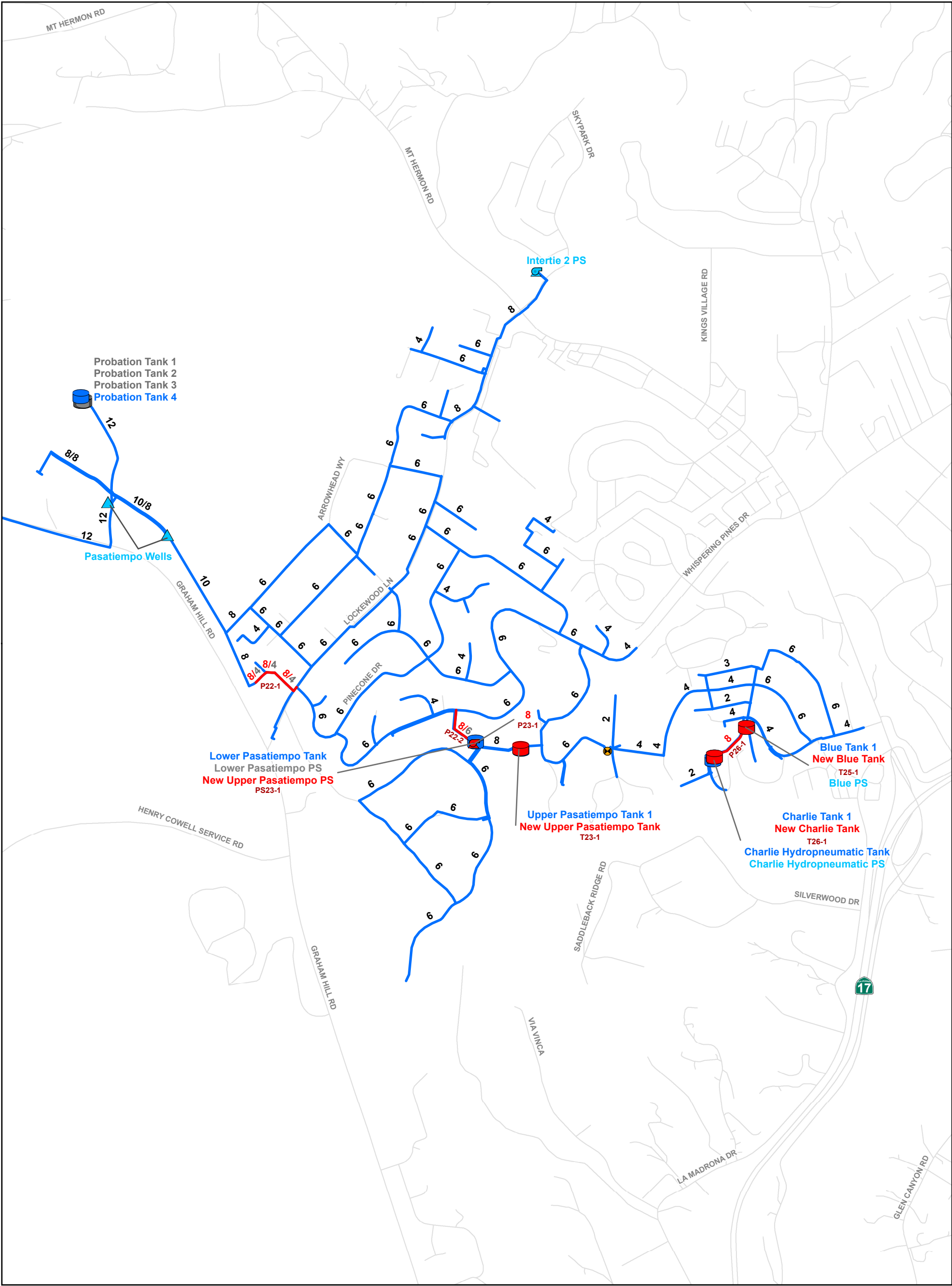


**Detail H**  
**Capital Improvement**  
**Program**

Water Master Plan  
San Lorenzo Valley Water District











Legend


- Recommended Improvements


 Pump Station


 Tank


 Pipelines
- Existing System


 Pump Station


 Existing Tank

 Abandoned Tank

 Wells

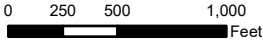
 Wells (Inactive)

 Valve

 Existing Pipelines



Update: September 10, 2021

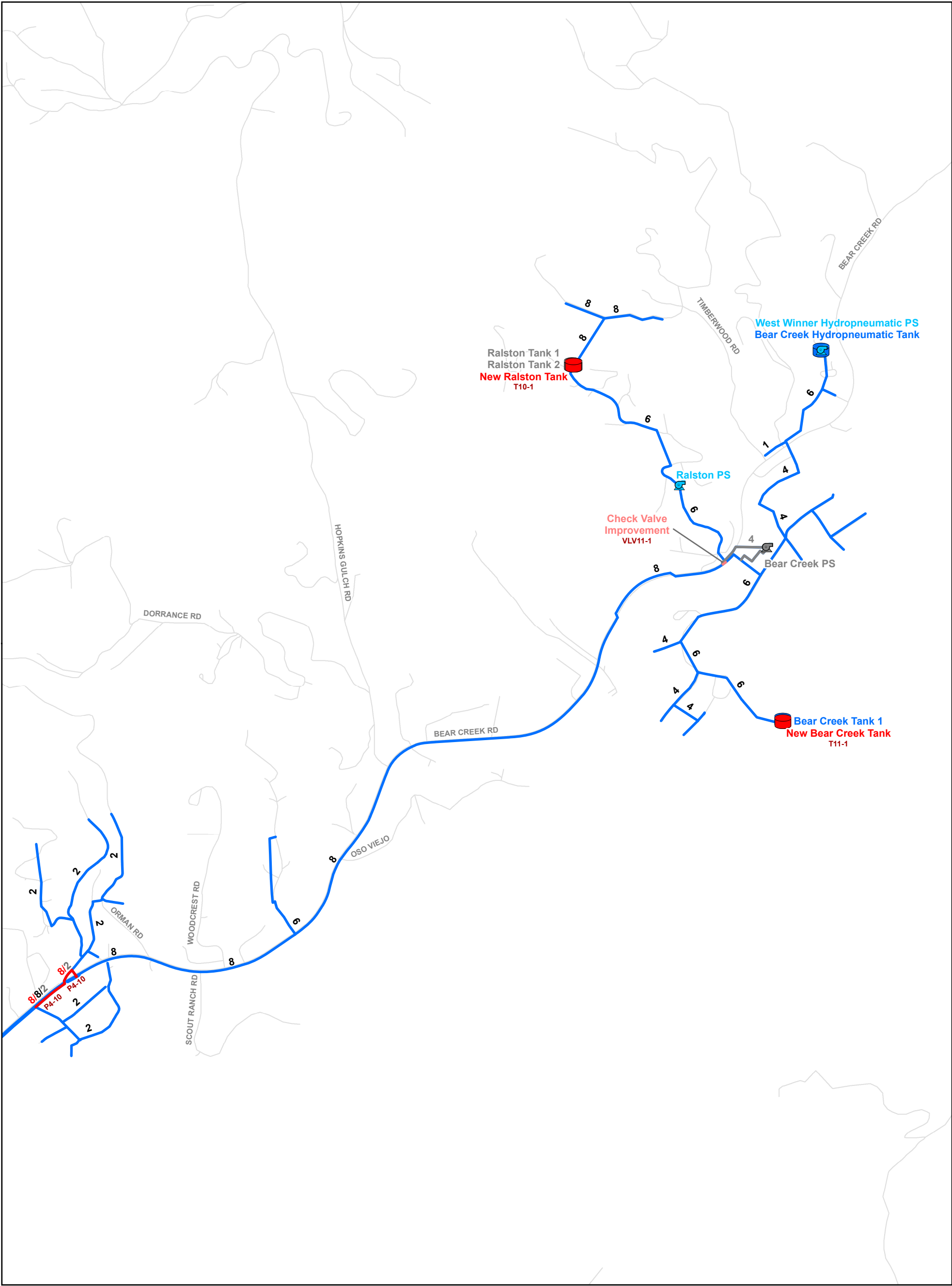


File Path: P:\xGIS\GIS\_Projects\San\_Lorenzo\_Valley\_WD\Final\SLVWD\_Fig10-1\_Detail\_CIP\_091021.mxd

Detail I  
Capital Improvement  
Project

Water Master Plan  
San Lorenzo Valley Water District





Legend

- |                         |                        |
|-------------------------|------------------------|
| Pump Station            | Pump Station           |
| Tank                    | Abandoned Pump Station |
| Pipelines               | Existing Tank          |
| Check Valve Improvement | Abandoned Tank         |
|                         | Valve                  |
|                         | Existing Pipelines     |
|                         | Abandoned Pipelines    |



**Detail J**  
**Capital Improvement**  
**Project**

Water Master Plan  
San Lorenzo Valley Water District



Table 10.2 Capital Improvement Program  
Water Master Plan  
San Lorenzo Valley Water District

Improv. No.	Pressure Zone	Improv. Type	Alignment	Limits	Priority	Direct Service to Disadvantaged Communities (%)	Improvement Details				Infrastructure Costs		Baseline Construction Cost	Estimated Construction Cost <sup>1</sup>	Capital Improvement Cost <sup>2</sup>	Construction Trigger	Suggested Cost Allocation		Cost Sharing	
											Unit Cost (\$/unit)	Infr. Cost (\$)					Existing Users	Future Users	Existing Users (\$)	Future Users (\$)
Pipeline Improvements							Existing Diameter (in)	New/ Replace	Diameter (in)	Length (ft)										
P3-1	Blue Ridge	Existing Deficiency	Grove Dr	From Blue Ridge PS to Blue Ridge Dr	1	0%	2	Replace	8	320	202	64,700	64,700	84,200	109,500	Existing Deficiency	100%	0%	109,500	0
P4-1	Reader	Fire Flow Reliability	Hwy 9	From Echo PS to approx. 700' se/o Douglas Ave	3	0%	4 / 6 / 8	Replace	10	13,100	217	2,840,100	2,840,100	3,692,200	4,799,900	As Funding is Available	100%	0%	4,799,900	0
P4-2	Reader	Existing Deficiency / Fire Flow Reliability	Hwy 9	From approx. 700' se/o Douglas Ave to approx. 250' s/o Big Basin Wy	1	9%	8	Replace	10	7,920	217	1,717,100	1,717,100	2,232,300	2,902,000	Existing Deficiency	100%	0%	2,902,000	0
P4-3	Reader	Capacity	Riverview Dr	From Old Country Hwy to approx. 520' e/o Old Country Hwy	3	0%	1	Replace	8	520	202	105,100	105,100	136,700	177,800	2 EDUs	94%	6%	167,400	10,400
P4-4	Reader	Existing Deficiency	Band Rd	From River Dr to approx. 450' w/o Baywood Rd	1	0%	1.5	Replace	8	1,300	202	262,700	262,700	341,600	444,100	Existing Deficiency	100%	0%	444,100	0
P4-5	Reader	Existing Deficiency	Scenic Dr / Blue Ridge Dr	From Hoot Owl Wy to Blue Ridge PS	1	0%	1.25 / 1.5 / 2	Replace	8	1,400	202	282,900	282,900	367,800	478,200	Existing Deficiency	100%	0%	478,200	0
P4-6	Reader	Existing Deficiency / Fire Flow Reliability	Dolores Dr / Douglas Ave	From Reader Reservoir to Hwy 9	1	22%	6	Replace	10	1,410	217	305,700	305,700	397,500	516,800	As Funding is Available	100%	0%	516,800	0
P4-7	Reader	Capacity	Brookside Dr	From Hwy 9 to approx 110' e/o Hwy 9	3	0%	2	Replace	8	110	202	22,300	22,300	29,000	37,700	8 EDUs	96%	4%	36,400	1,300
P4-8	Reader	Existing Deficiency	Orchard Dr	From approx. 330' n/o Juanita Rd to Juanita Rd	1	0%	1	Replace	8	330	202	66,700	66,700	86,800	112,900	Existing Deficiency	100%	0%	112,900	0
P4-9	Reader	Existing Deficiency	Juanita Rd	From approx. 150' w/o Orchard Dr to approx. 250' e/o Apple Ln	1	0%	1.25 / 2	Replace	8	500	202	101,100	101,100	131,500	171,000	Existing Deficiency	100%	0%	171,000	0
P4-10	Reader	Existing Deficiency	Hiawatha Rd	From Keller Dr to approx. 400' ne/o Keller Dr	1	100%	1 / 1.25 / 2	Replace	8	510	202	103,100	103,100	134,100	174,400	Existing Deficiency	100%	0%	174,400	0
P4-11	Reader	Capacity	Hwy 9	From approx. 150' s/o Bear Creek Rd to Park Ave	3	0%	1.25	Replace	8	270	202	54,600	54,600	71,000	92,300	4 EDUs	93%	7%	86,100	6,200
P4-12	Reader	Fire Flow Reliability	Central Ave	From approx. 250' s/o Big Basin Wy to River St	3	0%	1.5 / 2 / 4	Replace	8	3,200	202	646,500	646,500	840,500	1,092,700	As Funding is Available	100%	0%	1,092,700	0
P4-13	Reader	Existing Deficiency	Grove St	From Central Ave to Lorenzo Ave	1	0%	1	Replace	8	250	202	50,600	50,600	65,800	85,600	Existing Deficiency	100%	0%	85,600	0
P4-14	Reader	Existing Deficiency	River St	From Central Ave to approx. 250' w/o Lorenzo Ave	1	0%	1	Replace	8	320	202	64,700	64,700	84,200	109,500	Existing Deficiency	100%	0%	109,500	0
P4-15	Reader	Existing Deficiency	ROW	From Irene Ave to approx. 10' w/o Irene Ave	1	100%	1.5	Replace	8	10	202	2,100	2,100	2,800	3,700	Existing Deficiency	100%	0%	3,700	0
P4-16	Reader	Existing Deficiency	ROW	From Lomond St to approx. 110' e/o Lomond St	1	0%	0.75	Replace	8	110	202	22,300	22,300	29,000	37,700	Existing Deficiency	100%	0%	37,700	0
P5-1	Lyon	Existing Deficiency	Ridge Dr	From Park Ave to Eckley PS	1	0%	2	Replace	8	970	202	196,000	196,000	254,800	331,300	Existing Deficiency	100%	0%	331,300	0
P5-2	Lyon	Capacity	Redwood Dr / Madrone Dr	From Big Steel Reservoir site to Big Basin Wy	1	0%	-	New	12	1,570	233	365,300	365,300	474,900	617,400	As Funding is Available	100%	0%	617,400	0
P5-3	Lyon	Capacity	Big Basin Wy	From Boulder Brook Dr to Central Ave	1	0%	-	New	12	4,570	233	1,063,300	1,063,300	1,382,300	1,797,000	Construction of P5-2	100%	0%	1,797,000	0
P5-4	Lyon	Capacity	St Francis Dr	From Big Basin Wy to approx. 120' s/o Big Basin Wy	1	0%	-	New	8	120	202	24,300	24,300	31,600	41,100	Construction of P5-2	100%	0%	41,100	0
P5-5	Lyon	Existing Deficiency	St Francis Dr / Davidson Wy / Sunshine Ln	From approx. 100' s/o Big Basin Wy to Redwood Ave	1	0%	2 / 6	Replace	8	2,200	202	444,500	444,500	577,900	751,300	Existing Deficiency	100%	0%	751,300	0
P5-6	Lyon	Capacity	ROW	From Big Basin Wy to approx. 100' n/o Big Basin Wy	1	0%	-	New	8	100	202	20,300	20,300	26,400	34,400	Construction of P5-2	100%	0%	34,400	0
P5-7	Lyon	Capacity	ROW	From Big Basin Wy to approx. 110' n/o Big Basin Wy	1	0%	-	New	8	110	202	22,300	22,300	29,000	37,700	Construction of P5-2	100%	0%	37,700	0
P5-8	Lyon	Existing Deficiency	Big Basin Wy / Oak St / Boulder St	From Hwy 9 to South St	1	0%	2	Replace	8	3,120	202	630,400	630,400	819,600	1,065,500	Existing Deficiency	100%	0%	1,065,500	0
P5-9	Lyon	Existing Deficiency	South St	From Central Ave to approx. 30' w/o Central Ave	1	0%	1	Replace	10	30	217	6,600	6,600	8,600	11,200	Existing Deficiency	100%	0%	11,200	0
P5-10	Lyon	Existing Deficiency	Central Ave	From South St to Mountain St	1	0%	1	Replace	8	720	202	145,500	145,500	189,200	246,000	Existing Deficiency	100%	0%	246,000	0
P6-1	Eckley	Existing Deficiency	Ridge Dr	From Eckley PS to Eckley Reservoir	1	0%	2	Replace	8	240	202	48,500	48,500	63,100	82,100	Existing Deficiency	100%	0%	82,100	0
P8-1	Big Steel	Capacity	Redwood Dr / Madrone Dr / Big Basin Wy	From Big Steel Reservoir to approx. 600' se/o Redwood Dr	1	0%	-	New	12	2,120	233	493,300	493,300	641,300	833,700	As Funding is Available	100%	0%	833,700	0
P8-2	Big Steel	Fire Flow Reliability	Big Basin Wy	From approx. 600' se/o Redwood Dr to Redwood Ave	3	0%	8	Replace	10	2,480	217	537,700	537,700	699,100	908,900	As Funding is Available	100%	0%	908,900	0
P8-3	Big Steel	Fire Flow Reliability	Redwood Ave / Lomond St	From Big Basin Wy to Central Ave	3	0%	6	Replace	8	2,080	202	420,300	420,300	546,400	710,400	As Funding is Available	100%	0%	710,400	0
P8-4	Big Steel	Existing Deficiency	ROW	From Pine St to approx. 20' w/o Pine St	1	0%	1	Replace	8	20	202	4,100	4,100	5,400	7,100	Existing Deficiency	100%	0%	7,100	0
P8-5	Big Steel	Fire Flow Reliability	Central Ave	From Lomond St to approx. 420' s/o Lomond St	4	0%	6/ 8	Replace	10	420	217	91,100	91,100	118,500	154,100	As Funding is Available	100%	0%	154,100	0
P8-6	Big Steel	Fire Flow Reliability	Central Ave / Lorenzo Ave	From approx. 400' s/o Lomond St to Irwin Wy	3	0%	6	Replace	8	4,660	202	941,500	941,500	1,224,000	1,591,200	As Funding is Available	100%	0%	1,591,200	0

Table 10.2 Capital Improvement Program  
Water Master Plan  
San Lorenzo Valley Water District

Improv. No.	Pressure Zone	Improv. Type	Alignment	Limits	Priority	Direct Service to Disadvantaged Communities (%)	Improvement Details				Infrastructure Costs		Baseline Construction Cost	Estimated Construction Cost <sup>1</sup>	Capital Improvement Cost <sup>2</sup>	Construction Trigger	Suggested Cost Allocation		Cost Sharing	
											Unit Cost (\$/unit)	Infr. Cost (\$)					Existing Users	Future Users	Existing Users (\$)	Future Users (\$)
P8-7	Big Steel	Capacity	Lomond St / Irwin Wy	From Railroad Ave to approx. 700' sw/o Maple Wy	1	0%	-	New	12	2,170	233	504,900	504,900	656,400	853,400	As Funding is Available	100%	0%	853,400	0
P8-8	Big Steel	Capacity	Monan Wy / Alta Via Dr	From Prospect Ave to approx. 450' s/o Alta Via Dr	3	0%	2	Replace	8	2,970	202	600,100	600,100	780,200	1,014,300	13 EDUs	93%	7%	944,400	69,900
P8-9	Big Steel	Fire Flow Reliability	Hwy 9	From Irwin Wy to Alameda Ave	3	0%	6	Replace	10	3,610	217	782,700	782,700	1,017,600	1,322,900	As Funding is Available	100%	0%	1,322,900	0
P8-10	Big Steel	Existing Deficiency	Reed St / ROW	From approx. 50' w/o Reed St to Pacific St	1	0%	1	Replace	8	610	202	123,300	123,300	160,300	208,400	Existing Deficiency	100%	0%	208,400	0
P8-11	Big Steel	Existing Deficiency	Cascade St / ROW	From Center St to approx. 100' w/o Cascade St	1	0%	1 / 2	Replace	8	420	202	84,900	84,900	110,400	143,600	Existing Deficiency	100%	0%	143,600	0
P8-12	Big Steel	Fire Flow Reliability	Hwy 9	From Alameda Ave to Larkspur St	4	0%	6	Replace	8	730	202	147,500	147,500	191,800	249,400	As Funding is Available	100%	0%	249,400	0
P8-13	Big Steel	Existing Deficiency	Berkeley Wy / ROW	From Alameda Ave to approx. 250' sw/o Center St	1	0%	1	Replace	8	1,070	202	216,200	216,200	281,100	365,500	Existing Deficiency	100%	0%	365,500	0
P8-14	Big Steel	Existing Deficiency	ROW / Western Ave / High St	From approx. 300' nw/o Larkspur Ave to approx. 100' nw/o Western Ave	1	0%	1 / 1.5	Replace	8	860	202	173,800	173,800	226,000	293,800	Existing Deficiency	100%	0%	293,800	0
P16-1	Brookdale	Existing Deficiency	Redwood St	From Hazel St to Fern St	1	0%	1	Replace	8	190	202	38,400	38,400	50,000	65,000	Existing Deficiency	100%	0%	65,000	0
P16-2	Brookdale	Existing Deficiency	Hazel St	From Redwood St to Riverside Rd	1	0%	1	Replace	8	220	202	44,500	44,500	57,900	75,300	Existing Deficiency	100%	0%	75,300	0
P16-3	Brookdale	Existing Deficiency	Riverside Rd / Fern St	From Hazel St to Redwood St	1	0%	1	Replace	8	390	202	78,800	78,800	102,500	133,300	Existing Deficiency	100%	0%	133,300	0
P16-4	Brookdale	Existing Deficiency	California Ave	From approx. 30' w/o Riverside Dr to Riverside Dr	1	0%	2	Replace	8	30	202	6,100	6,100	8,000	10,400	Existing Deficiency	100%	0%	10,400	0
P16-5	Brookdale	Fire Flow Reliability	Brown Gables Rd / Hwy 9	From approx. 800' e/o Hwy 9 to approx. 100' se/o Marshall Creek Ct	3	0%	6	Replace	10	1,980	217	429,300	429,300	558,100	725,600	As Funding is Available	100%	0%	725,600	0
P16-6	Brookdale	Fire Flow Reliability	Mill St	From Hwy 9 to approx. 100' w/o Main St	4	0%	6	Replace	10	950	217	206,000	206,000	267,800	348,200	As Funding is Available	100%	0%	348,200	0
P16-7	Brookdale	Fire Flow Reliability	Mill St	From approx. 100' w/o Main St to Oak St	3	0%	-	New	10	670	217	145,300	145,300	188,900	245,600	As Funding is Available	100%	0%	245,600	0
P16-8	Brookdale	Existing Deficiency / Fire Flow Reliability	Hwy 9 / Brookside Ave	From approx. 100' s/o Brookside Ave to Whittier Ave	1	0%	4 / 6	Replace	10	1,720	217	372,900	372,900	484,800	630,300	Existing Deficiency	100%	0%	630,300	0
P16-9	Brookdale	Fire Flow Reliability	Brookside Ave	From approx. 50' w/o Brookside Ave to Whittier Ave	3	0%	-	New	10	20	217	4,400	4,400	5,800	7,600	As Funding is Available	100%	0%	7,600	0
P16-10	Brookdale	Existing Deficiency	Love Creek Rd	From Roberts Rd to approx. 350' s/o Berts Rd	1	100%	1.25	Replace	8	760	202	153,600	153,600	199,700	259,700	Existing Deficiency	100%	0%	259,700	0
P16-11	Brookdale	Existing Deficiency	Kipling Ave / Live Oak Ave / Pine St	From Longfellow Ave to Manzanita Ave	1	100%	1.5 / 2	Replace	8	2,470	202	499,100	499,100	648,900	843,600	Existing Deficiency	100%	0%	843,600	0
P16-12	Brookdale	Existing Deficiency	Whittier Ave / Manzanita Ave	From Brookside Ave to approx. 300' s/o Locust St	1	100%	1.5 / 2	Replace	8	2,280	202	460,700	460,700	599,000	778,700	Existing Deficiency	100%	0%	778,700	0
P16-13	Brookdale	Existing Deficiency	Pine St / Glen Arbor Rd / Madrone Ave	From Manzanita Ave to Railroad Ave	1	100%	1 / 2	Replace	8	2,410	202	486,900	486,900	633,000	822,900	Existing Deficiency	100%	0%	822,900	0
P16-14	Brookdale	Existing Deficiency	Hillcrest Ave	From Hwy 9 to Manzanita Ave	3	100%	1	Replace	8	640	202	129,300	129,300	168,100	218,600	Existing Deficiency	100%	0%	218,600	0
P16-15	Brookdale	Existing Deficiency	Circle Dr / Urbana Ln	From Hillcrest Ave to approx. 50' e/o Manzanita Ave	1	100%	1	Replace	8	790	202	159,600	159,600	207,500	269,800	Existing Deficiency	100%	0%	269,800	0
P16-16	Brookdale	Existing Deficiency	Madrone Ave / Railroad Ave	From approx. 300' sw/o Railroad Ave to approx. 450' e/o Oak Ave	1	0%	1	Replace	8	1,000	202	202,100	202,100	262,800	341,700	Existing Deficiency	100%	0%	341,700	0
P16-17	Brookdale	Existing Deficiency	Oak Ave	From Railroad Ave to Riverside Park Dr	1	0%	1	Replace	8	250	202	50,600	50,600	65,800	85,600	Existing Deficiency	100%	0%	85,600	0
P16-18	Brookdale	Existing Deficiency / Fire Flow Reliability	Hwy 9	From approx. 100' n/o Hillside Ave to Glen Lomond Ln	1	0%	2 / 4 / 6	Replace	10	8,210	217	1,780,000	1,780,000	2,314,000	3,008,200	Existing Deficiency	100%	0%	3,008,200	0
P16-19	Brookdale	Existing Deficiency	Hwy 9 / Lorenzo Ave / Woodland Dr	From approx. 100' n/o Hillside Ave to Madrona Way	1	0%	2	Replace	8	2,200	202	444,500	444,500	577,900	751,300	Existing Deficiency	100%	0%	751,300	0
P16-20	Brookdale	Existing Deficiency	ROW	From Redwood Dr to Woodland Dr	1	0%	1.5	Replace	8	170	202	34,400	34,400	44,800	58,300	Existing Deficiency	100%	0%	58,300	0
P16-21	Brookdale	Existing Deficiency	Woodland Dr / ROW / Shadowbrook Rd	From Hwy 9 to approx. 650' e/o Hwy 9	1	0%	1.5 / 2	Replace	8	2,200	202	444,500	444,500	577,900	751,300	Existing Deficiency	100%	0%	751,300	0
P16-22	Brookdale	Fire Flow Reliability	Glen Arbor Rd / Hihn Rd	From Pine St to Eleana Dr	4	41%	6	Replace	8	7,070	202	1,428,400	1,428,400	1,857,000	2,414,100	As Funding is Available	100%	0%	2,414,100	0
P16-23	Brookdale	Fire Flow Reliability	ROW	From Glen Arbor Rd to approx. 40' e/o Glen Arbor Rd	4	0%	6	Replace	8	40	202	8,100	8,100	10,600	13,800	As Funding is Available	100%	0%	13,800	0
P16-24	Brookdale	Existing Deficiency	Sunnyside Ave	From approx. 20' w/o Main St to Main St	1	0%	1	Replace	8	20	202	4,100	4,100	5,400	7,100	Existing Deficiency	100%	0%	7,100	0
P16-25	Brookdale	Existing Deficiency	Larita Dr	From Archer Wy to approx. 40' se/o Archer Wy	1	0%	2	Replace	8	40	202	8,100	8,100	10,600	13,800	Existing Deficiency	100%	0%	13,800	0
P17-1	South	Existing Deficiency	Clear Creek Rd	From South PS to High St	1	0%	2	Replace	8	90	202	18,200	18,200	23,700	30,900	Existing Deficiency	100%	0%	30,900	0
P17-2	South	Existing Deficiency	Melwin	From Oak St to Logan Wy	1	0%	1	Replace	8	330	202	66,700	66,700	86,800	112,900	Existing Deficiency	100%	0%	112,900	0

Table 10.2 Capital Improvement Program  
Water Master Plan  
San Lorenzo Valley Water District

Improv. No.	Pressure Zone	Improv. Type	Alignment	Limits	Priority	Direct Service to Disadvantaged Communities (%)	Improvement Details				Infrastructure Costs		Baseline Construction Cost	Estimated Construction Cost <sup>1</sup>	Capital Improvement Cost <sup>2</sup>	Construction Trigger	Suggested Cost Allocation		Cost Sharing	
											Unit Cost (\$/unit)	Infr. Cost (\$)					Existing Users	Future Users	Existing Users (\$)	Future Users (\$)
P17-3	South	Existing Deficiency	ROW	From Azalea Ave to Forest Wy	1	0%	0.75	Replace	8	1,070	202	216,200	216,200	281,100	365,500	Existing Deficiency	100%	0%	365,500	0
P18-1	Swim	Existing Deficiency	Greenfield St	From Redwood Park PS to Park Dr	1	0%	4	Replace	8	720	202	145,500	145,500	189,200	246,000	Existing Deficiency	100%	0%	246,000	0
P18-2	Swim	Existing Deficiency	Hillcrest Dr	From approx. 310' nw/o Greenfield St to Greenfield St	1	0%	0.75	Replace	8	310	202	62,700	62,700	81,600	106,100	Existing Deficiency	100%	0%	106,100	0
P18-3	Swim	Existing Deficiency	Scenic Wy	From approx. 250' nw/o Greenfield St to Greenfield St	1	0%	1.25	Replace	8	250	202	50,600	50,600	65,800	85,600	Existing Deficiency	100%	0%	85,600	0
P18-4	Swim	Existing Deficiency	Country Club Dr / Mountain View Dr	From approx. 250' n/o Mountain View Dr to Swim PS	1	0%	1.5 / 4	Replace	8	390	202	78,800	78,800	102,500	133,300	Existing Deficiency	100%	0%	133,300	0
P20-1	University	Existing Deficiency	Melin Ave	From Condor Ave to approx. 1,060' se/o Condor Ave	1	0%	2	Replace	8	1,060	202	214,200	214,200	278,500	362,100	Existing Deficiency	100%	0%	362,100	0
P21-1	Quail	Fire Flow Reliability	Quail Hollow Rd	From Cumora Ln to approx. 200' e/o Derick Ln	4	0%	6	Replace	8	7,740	202	1,563,700	1,563,700	2,032,900	2,642,800	As Funding is Available	100%	0%	2,642,800	0
P21-2	Quail	Fire Flow Reliability	Quail Ter / Webster Dr / Ridgeview Dr	From Quail Reservoirs to Hihn Rd	4	0%	6	Replace	8	5,730	202	1,157,600	1,157,600	1,504,900	1,956,400	As Funding is Available	100%	0%	1,956,400	0
P21-3	Quail	Existing Deficiency	Arden Ave	From Lorenzo Wy to approx. 150' w/o Glen Arbor Rd	1	0%	1	Replace	8	390	202	78,800	78,800	102,500	133,300	Existing Deficiency	100%	0%	133,300	0
P21-4	Quail	Existing Deficiency	Azalea Ave	From Glen Arbor Rd to approx. 300' e/o Cook Wy	1	0%	2	Replace	8	660	202	133,400	133,400	173,500	225,600	Existing Deficiency	100%	0%	225,600	0
P21-5	Quail	Fire Flow Reliability	Hihn Rd	From Condor Ave to approx. 150' s/o Stanford Dr	4	0%	6	Replace	8	1,800	202	363,700	363,700	472,900	614,800	As Funding is Available	100%	0%	614,800	0
P21-6	Quail	Fire Flow Reliability	Kim Wy / Bahr Dr / Moon Meadow Ln	From Hihn Rd to Zayante Rd	4	0%	6	Replace	8	3,420	202	691,000	691,000	898,300	1,167,800	As Funding is Available	100%	0%	1,167,800	0
P21-7	Quail	Capacity	Zayante Dr	From Intertie 5 PS to approx. 400' ne/o Rosebloom Ave	3	0%	4	Replace	8	1,310	202	264,700	264,700	344,200	447,500	Construction of PS-Z36	100%	0%	447,500	0
P22-1	Probation	Existing Deficiency	Casera Wy	From approx. 100' sw/o Caseta Ct to Lockwood Ln	1	0%	4 / 6	Replace	8	520	202	105,100	105,100	136,700	177,800	Existing Deficiency	100%	0%	177,800	0
P22-2	Probation	Capacity	Tank Rd	From Whispering Pines Dr to Lower Pasatiempo PS	2	0%	4 / 6	Replace	8	420	202	84,900	84,900	110,400	143,600	Construction of PS-Z23	100%	0%	143,600	0
P23-1	Upper Pasatiempo	Capacity	Tank Rd	Parallel lines from Lower Pasatiempo PS to approx. 20' se/o Lower Pasatiempo PS	3	0%	4	Replace	8	20	202	4,100	4,100	5,400	7,100	Construction of PS-Z23	100%	0%	7,100	0
P25-1	Blue	Existing Deficiency	ROW	From approx. 100' sw/o Miraflores Rd to Blue PS	1	0%	2	Replace	8	20	202	4,100	4,100	5,400	7,100	Existing Deficiency	100%	0%	7,100	0
P26-1	Charlie	Existing Deficiency	ROW	From Blue PS to Charlie Reservoir	1	0%	2	Replace	8	430	202	86,900	86,900	113,000	146,900	Existing Deficiency	100%	0%	146,900	0
P28-1	El Solyo	Existing Deficiency	El Solyo Heights Dr	From El Solyo Reservoir to approx. 210' se/o El Solyo Reservoir	1	0%	2	Replace	8	210	202	42,500	42,500	55,300	71,900	Existing Deficiency	100%	0%	71,900	0
P28-2	El Solyo	Existing Deficiency	ROW	From El Solyo Heights Dr to approx. 30' s/o El Solyo Heights Dr	1	0%	2	Replace	8	30	202	6,100	6,100	8,000	10,400	Existing Deficiency	100%	0%	10,400	0
P29-1	Bennett Spring	Existing Deficiency	Felton Empire Rd	From Bennett Spring Reservoir to Blair PRV	1	0%	2	Replace	8	3,520	202	711,200	711,200	924,600	1,202,000	Existing Deficiency	100%	0%	1,202,000	0
P29-2	Bennett Spring	Existing Deficiency	Ley Rd	From Felton Empire Rd to approx. 500' se/o Felton Empire Rd	1	0%	1 / 1.5	Replace	8	500	202	101,100	101,100	131,500	171,000	Existing Deficiency	100%	0%	171,000	0
P31-1	McCloud	Existing Deficiency	El Solyo Heights Dr	From approx. 100' e/o Hillview Dr to El Solyo PS	1	0%	2	Replace	8	370	202	74,800	74,800	97,300	126,500	Existing Deficiency	100%	0%	126,500	0
P31-2	McCloud	Fire Flow Reliability	Hwy 9	From El Solyo Heights Dr to Fall Creek Dr	3	0%	4 / 8	Replace	10	2,340	217	507,400	507,400	659,700	857,700	As Funding is Available	100%	0%	857,700	0
P31-3	McCloud	Existing Deficiency	Hwy 9	From approx. 300' n/o Fall Creek Dr to Fall Creek Dr	1	0%	6	Replace	8	820	202	165,700	165,700	215,500	280,200	Existing Deficiency	100%	0%	280,200	0
P31-4	McCloud	Fire Flow Reliability	Hwy 9 / Felton Empire Rd	From Clearview PI to Gushee St	4	0%	2 / 6	Replace	8	2,170	202	438,400	438,400	570,000	741,000	As Funding is Available	100%	0%	741,000	0
P31-5	McCloud	Capacity	Cooper St	From approx. 10' nw/o Farmer St to Farmer St	3	0%	6	Replace	8	10	202	2,100	2,100	2,800	3,700	Construction of P31-6 and P31-7	100%	0%	3,700	0
P31-6	McCloud	Existing Deficiency	Farmer St	From approx. 20' sw/o Cooper St to Cooper St	1	0%	-	New	8	20	202	4,100	4,100	5,400	7,100	Existing Deficiency	100%	0%	7,100	0
P31-7	McCloud	Existing Deficiency	Wright St / Kirby St	From Kirby WTP to Gushee St	1	0%	6 / 8 / 10	Replace	12	560	233	130,300	130,300	169,400	220,300	Existing Deficiency	100%	0%	220,300	0
P31-8	McCloud	Capacity	Gushee St	From Kirby St to Russell Ave	2	0%	6	Replace	10	1,240	217	268,900	268,900	349,600	454,500	Construction of P31-6 and P31-7	100%	0%	454,500	0
P31-9	McCloud	Capacity	Russell Ave	From Valley Dr to Gushee St	2	0%	4	Replace	8	300	202	60,700	60,700	79,000	102,700	Construction of P31-6 and P31-7	100%	0%	102,700	0
P31-10	McCloud	Capacity	Plateau Ave	From Ada Ave to Laurel Dr	2	0%	2 / 4	Replace	8	290	202	58,600	58,600	76,200	99,100	Construction of P31-6 and P31-7	100%	0%	99,100	0
P31-11	McCloud	Capacity	Laurel Dr / Hwy 9	From Plateau Dr to Redwood Dr	2	0%	6	Replace	8	2,030	202	410,200	410,200	533,300	693,300	Construction of P31-6 and P31-7	100%	0%	693,300	0
P31-12	McCloud	Capacity	Laurel Dr / Hillside Dr	From Plateau Dr to Orchard Rd	2	0%	6 / 8	Replace	10	970	217	210,300	210,300	273,400	355,500	Construction of P31-6 and P31-7	100%	0%	355,500	0
P31-13	McCloud	Existing Deficiency	Orchard Rd	From McCloud Reservoir to Hillside Dr	1	0%	6 / 8	Replace	12	1,360	233	316,500	316,500	411,500	535,000	Existing Deficiency	100%	0%	535,000	0



Table 10.2 Capital Improvement Program  
Water Master Plan  
San Lorenzo Valley Water District

Improv. No.	Pressure Zone	Improv. Type	Alignment	Limits	Priority	Direct Service to Disadvantaged Communities (%)	Improvement Details				Infrastructure Costs		Baseline Construction Cost	Estimated Construction Cost <sup>1</sup>	Capital Improvement Cost <sup>2</sup>	Construction Trigger	Suggested Cost Allocation		Cost Sharing	
											Unit Cost (\$/unit)	Infr. Cost (\$)					Existing Users	Future Users	Existing Users (\$)	Future Users (\$)
P31-14	McCloud	Capacity	Hillside Dr	From Orchard Rd to Redwood Dr	2	0%	4	Replace	8	1,060	202	214,200	214,200	278,500	362,100	Construction of P31-6 and P31-7	100%	0%	362,100	0
P31-15	McCloud	Existing Deficiency	ROW	From approx. 190' n/o Redwood Dr to Redwood Dr	1	0%	0.75	Replace	8	190	202	38,400	38,400	50,000	65,000	Existing Deficiency	100%	0%	65,000	0
P31-16	McCloud	Existing Deficiency	Redwood Dr	Hillcrest Dr to Hwy 9	1	0%	2 / 6	Replace	8	2,440	202	493,000	493,000	640,900	833,200	Existing Deficiency	100%	0%	833,200	0
P31-17	McCloud	Existing Deficiency	ROW / Oak Dr	From Redwood Dr to Redwood Dr	1	0%	2	Replace	8	160	202	32,400	32,400	42,200	54,900	Existing Deficiency	100%	0%	54,900	0
P31-18	McCloud	Existing Deficiency	Hillcrest Dr	From Skyline Dr to Upper Hillcrest PS	1	0%	2 / 6	Replace	8	520	202	105,100	105,100	136,700	177,800	Existing Deficiency	100%	0%	177,800	0
P33-1	Pine	Existing Deficiency	Hillcrest Dr / Pleasant Wy / Brookside Dr	From Upper Hillcrest PS to Pine Reservoir	1	0%	2	Replace	8	3,830	202	773,800	773,800	1,006,000	1,307,800	Existing Deficiency	100%	0%	1,307,800	0
P33-2	Pine	Existing Deficiency	Pine Dr	From Pine Reservoir to Redwood Dr	1	0%	2	Replace	8	2,090	202	422,300	422,300	549,000	713,700	Existing Deficiency	100%	0%	713,700	0
P33-3	Pine	Existing Deficiency	Madrona Dr	From Redwood Dr to Felton Acres PS	1	0%	2	Replace	8	720	202	145,500	145,500	189,200	246,000	Existing Deficiency	100%	0%	246,000	0
P36-1	Kaski	Existing Deficiency	Lake Blvd	From approx. 1,000' n/o Ocean View Ave to Madrone PS	1	0%	4	Replace	8	1,070	202	216,200	216,200	281,100	365,500	Existing Deficiency	100%	0%	365,500	0
P37-1	Madrone	Existing Deficiency	Lake Blvd	From Madrone PS to Lakeshore Blvd	1	0%	4	Replace	8	20	202	4,100	4,100	5,400	7,100	Existing Deficiency	100%	0%	7,100	0
P37-2	Madrone	Existing Deficiency	Whilaway Ave	From Madrone Ave to Madrone Reservoir	1	0%	4	Replace	8	550	202	111,200	111,200	144,600	188,000	Existing Deficiency	100%	0%	188,000	0
							Subtotal - Pipeline Improvements					33,876,400	33,876,400	44,045,100	57,263,400				57,175,600	87,800
Valve Improvements							Existing Capacity (MG)	New/Replace	Capacity (gpm)	Valve Size (in)										
PRV4-1	Reader	PRV	Hwy 9 & Lorenzo St		1	11%	-	New	2,403	8		32,000	32,000	41,600	54,100	As Funding is Available	100%	0%	54,100	0
PRV7-1	Blackstone	PRV	Big Basin Wy & Blackstone Dr		1	0%	-	New	1,005	6		32,000	32,000	41,600	54,100	As Funding is Available	100%	0%	54,100	0
PRV8-1	Big Steel	PRV	Existing Big Steel Tank Site		1	0%	-	New	2,071	8		32,000	32,000	41,600	54,100	As Funding is Available	100%	0%	54,100	0
VLV11-1	Bear Creek	Check Valve	Bear Creek Rd & Deerwood Dr		2	0%	-	New	2,023	8		32,000	32,000	41,600	54,100	As Funding is Available	100%	0%	54,100	0
							Subtotal - Valve Improvements					128,000	128,000	166,400	216,400				216,400	0
Booster Station Improvements							Existing Capacity (gpm)	New/Replace	Capacity (gpm)	No. of Pumps										
PS1-2	Riverside Grove	Booster Pump	Existing Riverside Grove Pump Station		2	0%	-	New	100	1	174	17,442	17,442	22,700	29,600	Existing Deficiency	100%	0%	29,600	0
PS6-2	Eckley	Booster Pump	Existing Eckley Pump Station		1	0%	-	New	15	1	176	2,634	2,634	3,500	4,600	Existing Deficiency	100%	0%	4,600	0
PS13-1	Highland	Booster Pump	Existing Fairview Pump Station		1	27%	50	Replace	220	2	205	45,130	45,130	58,700	76,400	Existing Deficiency	100%	0%	76,400	0
PS18-1	Swim	Booster Pump	Existing Redwood Park Pump Station		3	0%	180	Replace	240	2	205	49,135	49,135	63,900	83,100	Existing Deficiency	100%	0%	83,100	0
PS20-1	University	Booster Pump	Existing University Pump Station		3	0%	170	Replace	200	2	206	41,110	41,110	53,500	69,600	Existing Deficiency	100%	0%	69,600	0
PS23-1	Upper Pasatiempo	Booster Pump	Existing Upper Pasatiempo Pump Station		2	0%	150	Replace	440	2	201	88,296	88,296	114,800	149,300	Existing Deficiency	100%	0%	149,300	0
PS28-1	El Solyo	Booster Pump	Existing Lower El Solyo Pump Station		2	0%	60	Replace	300	2	204	61,051	61,051	79,400	103,300	Existing Deficiency	100%	0%	103,300	0
PS33-1	Pine	Booster Pump	Existing Hillcrest Pump Station		3	0%	120	Replace	400	2	201	80,591	80,591	104,800	136,300	Existing Deficiency	100%	0%	136,300	0
PS36-1	Kaski	Booster Pump	Existing Intertie 5 Pump Station		3	0%	140	Replace	400	2	201	80,591	80,591	104,800	136,300	Existing Deficiency	100%	0%	136,300	0
							Subtotal - Booster Station Improvements					465,979	465,979	606,100	788,500				788,500	0
Reservoir Improvements							Existing Capacity (gal)	New/Replace	Capacity (gal)											
T3-1	Blue Ridge	Storage Reservoir	Existing Blue Ridge Tank Site		1	0%	40,000	Replace	200,000			622,000	622,000	808,600	1,051,200	Existing Deficiency	100%	0%	1,051,200	0
T4-1	Reader	Storage Reservoir	Existing Reader Tank Site		3	11%	-	New	420,000			1,306,200	1,306,200	1,698,100	2,207,600	Existing Deficiency	100%	0%	2,207,600	0
T6-1	Eckley	Storage Reservoir	Existing Eckley Tank Site		2	0%	5,000	Replace	130,000			404,300	404,300	525,600	683,300	Existing Deficiency	100%	0%	683,300	0
T7-1	Blackstone	Storage Reservoir	Existing Blackstone Tank Site		2	0%	24,000	Replace	130,000			404,300	404,300	525,600	683,300	Existing Deficiency	100%	0%	683,300	0

Table 10.2 Capital Improvement Program  
Water Master Plan  
San Lorenzo Valley Water District

Improv. No.	Pressure Zone	Improv. Type	Alignment	Limits	Priority	Direct Service to Disadvantaged Communities (%)	Improvement Details			Infrastructure Costs		Baseline Construction Cost	Estimated Construction Cost <sup>1</sup>	Capital Improvement Cost <sup>2</sup>	Construction Trigger	Suggested Cost Allocation		Cost Sharing	
										Unit Cost (\$/unit)	Infr. Cost (\$)					Existing Users	Future Users	Existing Users (\$)	Future Users (\$)
T10-1	Ralston	Storage Reservoir	Existing Ralston Tank Site		2	0%	20,000	Replace	130,000	404,300	404,300	525,600	683,300	Existing Deficiency	100%	0%	683,300	0	
T11-1	Bear Creek	Storage Reservoir	Existing Bear Creek Tank Site		3	100%	-	New	310,000	964,100	964,100	1,253,400	1,629,500	Existing Deficiency	100%	0%	1,629,500	0	
T13-1	Highland	Storage Reservoir	Existing Highland Tank Site		1	100%	60,000	Replace	130,000	404,300	404,300	525,600	683,300	Existing Deficiency	100%	0%	683,300	0	
T17-1	South	Storage Reservoir	Existing South Tank Site		2	0%	36,400	Replace	130,000	404,300	404,300	525,600	683,300	Existing Deficiency	100%	0%	683,300	0	
T18-1	Swim	Storage Reservoir	Existing Swim Tank Site		1	0%	19,600	Replace	210,000	653,100	653,100	849,100	1,103,900	Existing Deficiency	100%	0%	1,103,900	0	
T19-1	Spring	Storage Reservoir	Existing Spring Tank Site		3	0%	-	New	60,000	186,600	186,600	242,600	315,400	Existing Deficiency	100%	0%	315,400	0	
T20-1	University	Storage Reservoir	Existing University Tank Site		3	0%	-	New	80,000	248,800	248,800	323,500	420,600	Existing Deficiency	100%	0%	420,600	0	
T23-1	Upper Pasatiempo	Storage Reservoir	Existing Upper Pasatiempo Tank Site		3	0%	-	New	50,000	155,500	155,500	202,200	262,900	Existing Deficiency	100%	0%	262,900	0	
T24-1	North Boulder Creek	Storage Reservoir	Existing Echo Tank Site		1	0%	75,000	Replace	400,000	1,244,000	1,244,000	1,617,200	2,102,400	Existing Deficiency	100%	0%	2,102,400	0	
T25-1	Blue	Storage Reservoir	Existing Blue Tank Site		3	0%	-	New	140,000	435,400	435,400	566,100	736,000	Existing Deficiency	100%	0%	736,000	0	
T26-1	Charlie	Storage Reservoir	Existing Charlie Tank Site		3	0%	-	New	80,000	248,800	248,800	323,500	420,600	Existing Deficiency	100%	0%	420,600	0	
T28-1	El Solyo	Storage Reservoir	Existing El Solyo Tank Site		2	0%	20,000	Replace	160,000	497,600	497,600	646,900	841,000	Existing Deficiency	100%	0%	841,000	0	
T29-1	Bennett Spring	Storage Reservoir	Existing Bennett Spring Tank Site		1	0%	6,000	Replace	130,000	404,300	404,300	525,600	683,300	Existing Deficiency	100%	0%	683,300	0	
T31-1	McCloud	Storage Reservoir	Existing McCloud Tank Site		1	0%	-	New	40,000	124,400	124,400	161,800	210,400	Existing Deficiency	100%	0%	210,400	0	
T33-1	Pine	Storage Reservoir	Existing Pine Tank Site		2	0%	18,500	Replace	230,000	715,300	715,300	929,900	1,208,900	Existing Deficiency	100%	0%	1,208,900	0	
T36-1	Kaski	Storage Reservoir	Existing Kaski Tank Site		3	0%	-	New	50,000	155,500	155,500	202,200	262,900	Existing Deficiency	100%	0%	262,900	0	
T37-1	Madrone	Storage Reservoir	Existing Madrone Tank Site		3	0%	-	New	30,000	93,300	93,300	121,300	157,700	Existing Deficiency	100%	0%	157,700	0	
							Subtotal - Reservoir Improvements			10,076,400	10,076,400	13,100,000	17,030,800				17,030,800	0	
Total Water System Improvement Costs																			
							Pipeline Improvements			33,876,400	33,876,400	44,045,100	57,263,400				57,175,600	87,800	
							Valve Improvements			128,000	128,000	166,400	216,400				216,400	0	
							Booster Station Improvements			465,979	465,979	606,100	788,500				788,500	0	
							Reservoir Improvements			10,076,400	10,076,400	13,100,000	17,030,800				17,030,800	0	
							Total - Improvement Cost			44,546,779	44,546,779	57,917,600	75,299,100				75,211,300	87,800	



Notes:  
1. Baseline construction costs plus 30% to account for unforeseen events and unknown conditions.  
2. Estimated construction costs plus 30% to cover other costs including: engineering design, project administration (developer and District staff), construction management and inspection, and legal costs.

project needs of servicing existing users and for those required to service anticipated future developments. The cost responsibility is based on model parameters for existing and future land use, and may change depending on the nature of development. [Table 10.2](#) lists each improvement, and separates the cost by responsibility between existing and future users.

#### **10.3.4 Improvements Servicing Disadvantaged Communities**

There are regions within the District's service area that are identified as disadvantaged communities ([Figure 10.2](#)). During the system evaluation there were several improvements identified which partially or fully service these areas, and may be eligible for grant funding. These improvements, and the portion of demands served which are attributable to the disadvantage communities, are identified on [Table 10.2](#). As part of this Master Plan a separate technical memorandum has been developed to address the improvements within (or directly servicing) these disadvantaged communities, this technical memorandum can be found in [Appendix B](#).

#### **10.3.5 Construction Triggers**

As part of this master planning process, construction triggers were developed in an effort to plan the expansion of the water system in an orderly manner. The construction triggers for multiple improvements are based on mitigating an existing system deficiency, increasing hydraulic reliability, or continuing improvements currently planned by the District. Other improvements will replace existing infrastructure that is not currently deficient but will violate master plan criteria with the construction of other improvements or with future development. The construction triggers quantify the amount of additional development that may occur before the improvement becomes necessary.

### **10.4 SUGGESTED EXPENDITURE BUDGET**

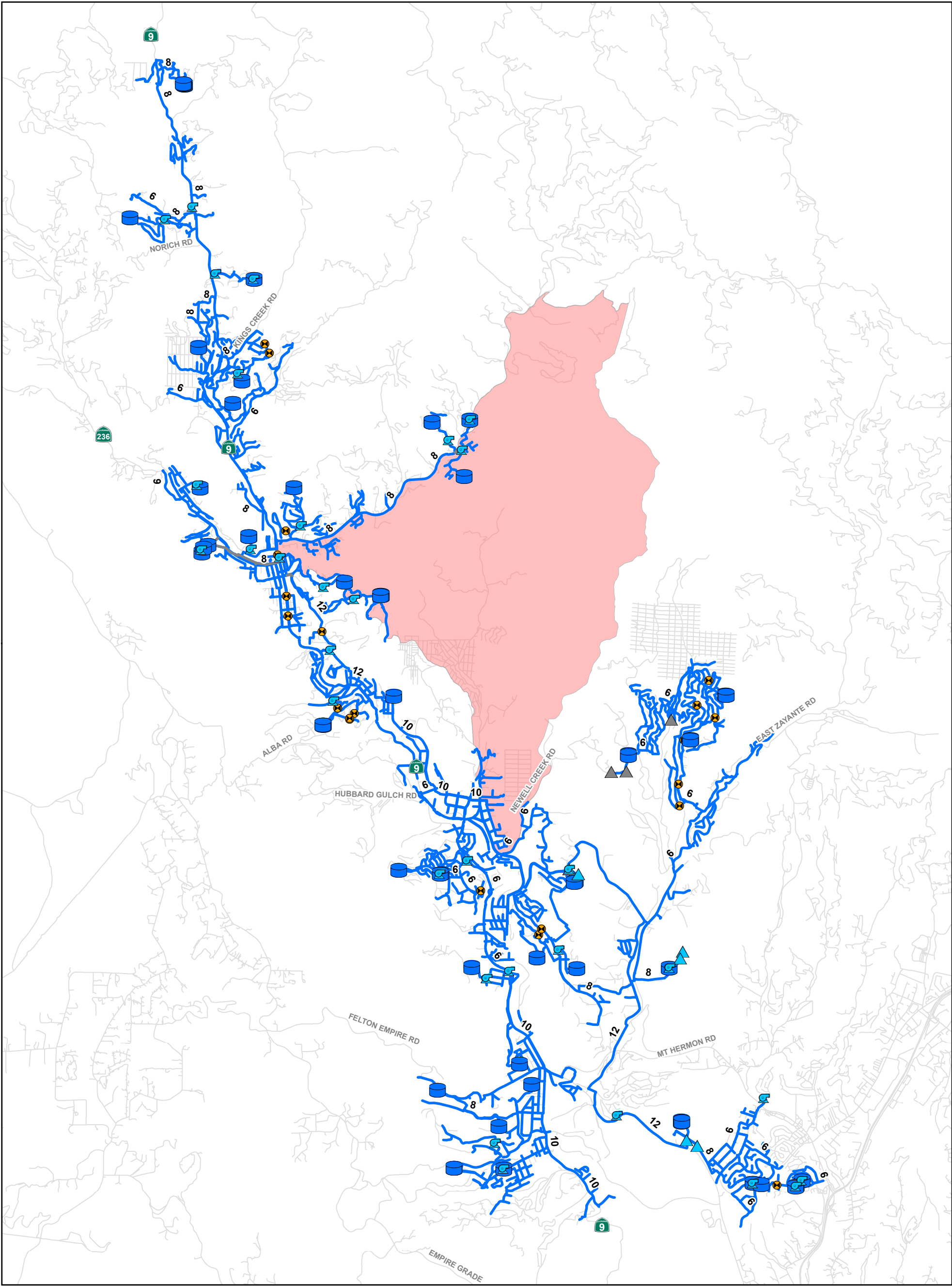
This section discusses the suggested expenditure budget for the capital improvement plan horizon as well as the recommended sequence of construction for capital improvement planning.

#### **10.4.1 Sequence of Construction**

Suggested expenditure budget phasing is intended to provide general guidance for implementing the capital improvement projects listed in this master plan. The sequence of construction for the improvements takes into consideration the existing system deficiencies (fire flow and capacity) along with the risk assessment and replacement priorities identified in the renewal and replacement section. [Table 10.3](#) summarizes the reasoning for prioritization for each facility type. Additional improvements may be constructed as development occurs and the phasing and implementation of a sequence of construction is subject to the approval of the District Engineer.

#### **10.4.2 5-Year Capital Improvement Costs and Phasing**

The capital improvement program costs and phasing for the next five fiscal years (FY) are summarized on [Table 10.4](#); this plan includes the total costs for pipelines, tanks, booster stations, and valves to be constructed. The improvements listed are also categorized by improvement



- Legend**
- Existing System**
- Existing Pipelines
  - Abandoned Pipelines
  - Disadvantaged Communities
  - Pump Station
  - Abandoned Pump Station
  - Wells
  - Wells (Inactive)
  - Tank
  - Valve



**Figure 10.2**  
**Disadvantaged**  
**Communities**  
Water Master Plan  
San Lorenzo Valley Water District



### Table 10.3 Capital Improvement Prioritization

Water Master Plan

San Lorenzo Valley Water District

Priority	Pipeline Prioritization	Valve Prioritization	Booster Station Prioritization	Reservoir Prioritization
1	Existing Deficiency	Supply Capacity Improvement Triggered by Pipeline Capacity Improvement	Supply Capacity Improvement <b>Extreme</b> Risk	<b>High</b> or <b>Extreme</b> Likelihood of Failure
2	<b>High</b> or <b>Extreme</b> Risk Capacity Improvement	Other Valve Improvements	Reliability Improvement <b>High</b> Risk	<b>Moderate</b> Likelihood of Failure
3	Other Capacity Improvement <b>High</b> or <b>Extreme</b> Risk Fire Flow Reliability Improvements	-	Other Booster Station Improvement	Other Reservoir Improvement
4	Other Fire Flow Reliability Improvement	-	-	-



Table 10.4 20-Year Improvement Phasing  
Water Master Plan  
San Lorenzo Valley Water District

CIP ID	Pressure Zone	Project Description	Fiscal Year Improvement Phasing								
			FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027 - 2031	FY 2032 - 2036	FY 2037 - 2041	Total Cost
			(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
Pipeline Improvements											
P3-1	Blue Ridge	Replace existing 2-inch pipelines with new 8-inch pipelines in Grove Dr						109,500			109,500
P4-1	Reader	Replace existing 4-inch, 6-inch, and 8-inch pipelines with new 10-inch pipelines in Hwy 9						4,799,900			4,799,900
P4-2	Reader	Replace existing 8-inch pipelines with new 10-inch pipelines in Hwy 9	2,902,000								2,902,000
P4-3	Reader	Replace existing 1-inch pipelines with new 8-inch pipelines in Riverview Dr						177,800			177,800
P4-4	Reader	Replace existing 1.5-inch pipelines with new 8-inch pipelines in Band Rd						444,100			444,100
P4-5	Reader	Replace existing 1.25-inch, 1.5-inch, and 2-inch pipelines with new 8-inch pipelines in Scenic Dr and Blue Ridge Dr						478,200			478,200
P4-6	Reader	Replace existing 6-inch pipelines with new 10-inch pipelines in Dolores Dr and Douglas Ave	516,800								516,800
P4-7	Reader	Replace existing 2-inch pipelines with new 8-inch pipelines in Brookside Dr						37,700			37,700
P4-8	Reader	Replace existing 1-inch pipelines with new 8-inch pipelines in Orchard Dr						112,900			112,900
P4-9	Reader	Replace existing 1.25-inch and 2-inch pipelines with new 8-inch pipelines in Juanita Rd						171,000			171,000
P4-10	Reader	Replace existing 1-inch, 1.25-inch, and 2-inch pipelines with new 8-inch pipelines in Hiawatha Rd						174,400			174,400
P4-11	Reader	Replace existing 1.25-inch pipelines with new 8-inch pipelines in Hwy 9						92,300			92,300
P4-12	Reader	Replace existing 1.5-inch, 2-inch, and 4-inch pipelines with new 8-inch pipelines in Central Ave						1,092,700			1,092,700
P4-13	Reader	Replace existing 1-inch pipelines with new 8-inch pipelines in Grove St						85,600			85,600
P4-14	Reader	Replace existing 1-inch pipelines with new 8-inch pipelines in River St						109,500			109,500
P4-15	Reader	Replace existing 1.5-inch pipelines with new 8-inch pipelines within ROW						3,700			3,700
P4-16	Reader	Replace existing 0.75-inch pipelines with new 8-inch pipelines within ROW						37,700			37,700
P5-1	Lyon	Replace existing 2-inch pipelines with new 8-inch pipelines in Ridge Dr	331,300								331,300
P5-2	Lyon	Construct new 12-inch pipelines in Redwood Dr and Madrone Dr	617,400								617,400
P5-3	Lyon	Construct new 12-inch pipelines in Big Basin Wy	1,797,000								1,797,000
P5-4	Lyon	Construct new 8-inch pipelines in St Francis Dr	41,100								41,100
P5-5	Lyon	Replace existing 2-inch and 6-inch pipelines with new 8-inch pipelines in St Francis Dr, Davidson Wy, and Sunshine Ln	751,300								751,300
P5-6	Lyon	Construct new 8-inch pipelines within ROW	34,400								34,400
P5-7	Lyon	Construct new 8-inch pipelines within ROW	37,700								37,700
P5-8	Lyon	Replace existing 2-inch pipelines with new 8-inch pipelines in Big Basin Wy, Oak St, and Boulder St	1,065,500								1,065,500
P5-9	Lyon	Replace existing 1-inch pipelines with new 10-inch pipelines in South St	11,200								11,200
P5-10	Lyon	Replace existing 1-inch pipelines with new 8-inch pipelines in Central Ave	246,000								246,000
P6-1	Eckley	Replace existing 2-inch pipelines with new 8-inch pipelines in Ridge Dr	82,100								82,100
P8-1	Big Steel	Construct new 12-inch pipelines in Redwood Dr, Madrone Dr, and Big Basin Wy	833,700								833,700

Table 10.4 20-Year Improvement Phasing  
Water Master Plan  
San Lorenzo Valley Water District

CIP ID	Pressure Zone	Project Description	Fiscal Year Improvement Phasing								
			FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027 - 2031	FY 2032 - 2036	FY 2037 - 2041	Total Cost
			(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
P8-2	Big Steel	Replace existing 8-inch pipelines with new 10-inch pipelines in Big Basin Wy							908,900		908,900
P8-3	Big Steel	Replace existing 6-inch pipelines with new 8-inch pipelines in Redwood Ave and Lomond St							710,400		710,400
P8-4	Big Steel	Replace existing 1-inch pipelines with new 8-inch pipelines in ROW			7,100						7,100
P8-5	Big Steel	Replace existing 6-inch and 8-inch pipelines with new 10-inch pipelines in Central Ave								154,100	154,100
P8-6	Big Steel	Replace existing 6-inch pipelines with new 8-inch pipelines in Central Ave and Lorenzo Ave							1,591,200		1,591,200
P8-7	Big Steel	Construct new 12-inch pipelines in Lomond St and Irwin Wy			853,400						853,400
P8-8	Big Steel	Replace existing 1.5-inch pipelines with new 8-inch pipelines in Monan Wy and Alta Via Dr							1,014,300		1,014,300
P8-9	Big Steel	Replace existing 6-inch pipelines with new 10-inch pipelines in Hwy 9							1,322,900		1,322,900
P8-10	Big Steel	Replace existing 1-inch pipelines with new 8-inch pipelines in Reed St and within ROW			208,400						208,400
P8-11	Big Steel	Replace existing 1-inch and 2-inch pipelines with new 8-inch pipelines in Cascade St and within ROW			143,600						143,600
P8-12	Big Steel	Replace existing 6-inch pipelines with new 8-inch pipelines in Hwy 9								249,400	249,400
P8-13	Big Steel	Replace existing 1-inch pipelines with new 8-inch pipelines in Berkeley Wy and within ROW			365,500						365,500
P8-14	Big Steel	Replace existing 1-inch and 1.5-inch pipelines with new 8-inch pipelines in Western Ave, High St, and within ROW			293,800						293,800
P16-1	Brookdale	Replace existing 1-inch pipelines with new 8-inch pipelines in Redwood St						65,000			65,000
P16-2	Brookdale	Replace existing 1-inch pipelines with new 8-inch pipelines in Hazel St						75,300			75,300
P16-3	Brookdale	Replace existing 1-inch pipelines with new 8-inch pipelines in Riverside Rd and Fern St						133,300			133,300
P16-4	Brookdale	Replace existing 2-inch pipelines with new 8-inch pipelines in California Ave						10,400			10,400
P16-5	Brookdale	Replace existing 6-inch pipelines with new 10-inch pipelines in Brown Gables Rd and Hwy 9						725,600			725,600
P16-6	Brookdale	Replace existing 6-inch pipelines with new 10-inch pipelines in Mill St								348,200	348,200
P16-7	Brookdale	Construct new 10-inch pipelines in Mill St							245,600		245,600
P16-8	Brookdale	Replace existing 4-inch and 6-inch pipelines with new 10-inch pipelines in Hwy 9 and Brookside Ave				630,300					630,300
P16-9	Brookdale	Construct new 10-inch pipelines in Brookside Ave							7,600		7,600
P16-10	Brookdale	Replace existing 1.25-inch pipelines with new 8-inch pipelines in Love Creek Rd						259,700			259,700
P16-11	Brookdale	Replace existing 1.5-inch and 2-inch pipelines with new 8-inch pipelines in Kipling Ave, Live Oak Ave, and Pine St						843,600			843,600
P16-12	Brookdale	Replace existing 1.5-inch and 2-inch pipelines with new 8-inch pipelines in Whittier Ave and Manzanita Ave						778,700			778,700
P16-13	Brookdale	Replace existing 1-inch and 2-inch pipelines with new 8-inch pipelines in Pine St, Glen Arbor Rd, and Madrone Ave						822,900			822,900
P16-14	Brookdale	Replace existing 1-inch pipelines with new 8-inch pipelines in Hillcrest Ave							218,600		218,600
P16-15	Brookdale	Replace existing 1-inch pipelines with new 8-inch pipelines in Circle Dr and Urbana Ln						269,800			269,800
P16-16	Brookdale	Replace existing 1-inch pipelines with new 8-inch pipelines in Madrone Ave and Railroad Ave						341,700			341,700
P16-17	Brookdale	Replace existing 1-inch pipelines with new 8-inch pipelines in Oak Ave						85,600			85,600

Table 10.4 20-Year Improvement Phasing  
Water Master Plan  
San Lorenzo Valley Water District

CIP ID	Pressure Zone	Project Description	Fiscal Year Improvement Phasing								
			FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027 - 2031	FY 2032 - 2036	FY 2037 - 2041	Total Cost
			(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
P16-18	Brookdale	Replace existing 2-inch, 4-inch, and 6-inch pipelines with new 10-inch pipelines in Hwy 9	3,008,200								3,008,200
P16-19	Brookdale	Replace existing 2-inch pipelines with new 8-inch pipelines in Hwy 9, Lorenzo Ave, and Woodland Dr						751,300			751,300
P16-20	Brookdale	Replace existing 1.5-inch pipelines with new 8-inch pipelines within ROW						58,300			58,300
P16-21	Brookdale	Replace existing 1.5-inch and 2-inch pipelines with new 8-inch pipelines in Woodland Dr, Shadowbrook Rd, and within ROW						751,300			751,300
P16-22	Brookdale	Replace existing 6-inch pipelines with new 8-inch pipelines in Glen Arbor Rd and Hihn Rd								2,414,100	2,414,100
P16-23	Brookdale	Replace existing 6-inch pipelines with new 8-inch pipelines within ROW								13,800	13,800
P16-24	Brookdale	Replace existing 1-inch pipelines with new 8-inch pipelines in Sunnyside Ave						7,100			7,100
P16-25	Brookdale	Replace existing 2-inch pipelines with new 8-inch pipelines in Larita Dr						13,800			13,800
P17-1	South	Replace existing 2-inch pipelines with new 8-inch pipelines in Clear Creek Rd						30,900			30,900
P17-2	South	Replace existing 1-inch pipelines with new 8-inch pipelines in Melwin						112,900			112,900
P17-3	South	Replace existing 0.75-inch pipelines with new 8-inch pipelines within ROW						365,500			365,500
P18-1	Swim	Replace existing 4-inch pipelines with new 8-inch pipelines in Greenfield St						246,000			246,000
P18-2	Swim	Replace existing 0.75-inch pipelines with new 8-inch pipelines in Hillcrest Dr						106,100			106,100
P18-3	Swim	Replace existing 1.25-inch pipelines with new 8-inch pipelines in Scenic Wy						85,600			85,600
P18-4	Swim	Replace existing 1.5-inch and 4-inch pipelines with new 8-inch pipelines in Country Club Dr and Mountain View Dr						133,300			133,300
P20-1	University	Replace existing 2-inch pipelines with new 8-inch pipelines in Melin Ave						362,100			362,100
P21-1	Quail	Replace existing 6-inch pipelines with new 8-inch pipelines in Quail Hollow Rd								2,642,800	2,642,800
P21-2	Quail	Replace existing 6-inch pipelines with new 8-inch pipelines in Quail Ter, Webster Dr, and Ridgeview Dr								1,956,400	1,956,400
P21-3	Quail	Replace existing 1-inch pipelines with new 8-inch pipelines in Arden Ave						133,300			133,300
P21-4	Quail	Replace existing 2-inch pipelines with new 8-inch pipelines in Azalea Ave						225,600			225,600
P21-5	Quail	Replace existing 6-inch pipelines with new 8-inch pipelines in Hihn Rd								614,800	614,800
P21-6	Quail	Replace existing 6-inch pipelines with new 8-inch pipelines in Kim Wy, Bahr Dr, and Moon Meadow Ln								1,167,800	1,167,800
P21-7	Quail	Replace existing 4-inch pipelines with new 8-inch pipelines in Zayante Dr						447,500			447,500
P22-1	Probation	Replace existing 4-inch and 6-inch pipelines with new 8-inch pipelines in Casera Wy						177,800			177,800
P22-2	Probation	Replace existing 4-inch and 6-inch pipelines with new 8-inch pipelines in Tank Rd						143,600			143,600
P23-1	Upper Pasatiempo	Replace existing 4-inch pipelines with new 8-inch pipelines in Tank Rd						7,100			7,100
P25-1	Blue	Replace existing 2-inch pipelines with new 8-inch pipelines within ROW						7,100			7,100
P26-1	Charlie	Replace existing 2-inch pipelines with new 8-inch pipelines within ROW						146,900			146,900
P28-1	El Solyo	Replace existing 2-inch pipelines with new 8-inch pipelines in El Solyo Heights Dr						71,900			71,900
P28-2	El Solyo	Replace existing 2-inch pipelines with new 8-inch pipelines within ROW						10,400			10,400

Table 10.4 20-Year Improvement Phasing  
Water Master Plan  
San Lorenzo Valley Water District

CIP ID	Pressure Zone	Project Description	Fiscal Year Improvement Phasing								
			FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027 - 2031	FY 2032 - 2036	FY 2037 - 2041	Total Cost
			(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
P29-1	Bennett Spring	Replace existing 2-inch pipelines with new 8-inch pipelines in Felton Empire Rd						1,202,000			1,202,000
P29-2	Bennett Spring	Replace existing 1-inch and 1.5-inch pipelines with new 8-inch pipelines in Ley Rd						171,000			171,000
P31-1	McCloud	Replace existing 2-inch pipelines with new 8-inch pipelines in El Solyo Heights Dr						126,500			126,500
P31-2	McCloud	Replace existing 4-inch and 8-inch pipelines with new 10-inch pipelines in Hwy 9						857,700			857,700
P31-3	McCloud	Replace existing 6-inch pipelines with new 8-inch pipelines in Hwy 9					280,200				280,200
P31-4	McCloud	Replace existing 2-inch and 6-inch pipelines with new 8-inch pipelines in Hwy 9 and Felton Empire Rd							741,000		741,000
P31-5	McCloud	Replace existing 6-inch pipelines with new 8-inch pipelines in Cooper St					3,700				3,700
P31-6	McCloud	Construct new 8-inch pipelines in Farmer St				7,100					7,100
P31-7	McCloud	Replace existing 6-inch, 8-inch, and 10-inch pipelines with new 12-inch pipelines in Wright St and Kirby St				220,300					220,300
P31-8	McCloud	Replace existing 6-inch pipelines with new 10-inch pipelines in Gushee St					454,500				454,500
P31-9	McCloud	Replace existing 4-inch pipelines with new 8-inch pipelines in Russell Ave					102,700				102,700
P31-10	McCloud	Replace existing 2-inch and 4-inch pipeline with new 8-inch pipelines in Plateau Ave					99,100				99,100
P31-11	McCloud	Replace existing 6-inch pipelines with new 8-inch pipelines in Laurel Dr and Hwy 9					693,300				693,300
P31-12	McCloud	Replace existing 6-inch and 8-inch pipelines with new 10-inch pipelines in Laurel Dr and Hillside Dr					355,500				355,500
P31-13	McCloud	Replace existing 6-inch and 8-inch pipelines with new 12-inch pipelines in Orchard Rd					535,000				535,000
P31-14	McCloud	Replace existing 4-inch pipelines with new 8-inch pipelines in Hillside Dr						362,100			362,100
P31-15	McCloud	Replace existing 0.75-inch pipelines with new 8-inch pipelines within ROW						65,000			65,000
P31-16	McCloud	Replace existing 2-inch and 6-inch pipelines with new 8-inch pipelines in Redwood Dr						833,200			833,200
P31-17	McCloud	Replace existing 2-inch pipelines with new 8-inch pipelines in Oak Dr and within ROW						54,900			54,900
P31-18	McCloud	Replace existing 2-inch and 6-inch pipelines with new 8-inch pipelines in Hillcrest Dr						177,800			177,800
P33-1	Pine	Replace existing 2-inch pipelines with new 8-inch pipelines in Hillcrest Dr, Pleasant Wy, and Brookside Dr						1,307,800			1,307,800
P33-2	Pine	Replace existing 2-inch pipelines with new 8-inch pipelines in Pine Dr						713,700			713,700
P33-3	Pine	Replace existing 2-inch pipelines with new 8-inch pipelines in Madrona Dr						246,000			246,000
P36-1	Kaski	Replace existing 4-inch pipelines with new 8-inch pipelines in Lake Blvd						365,500			365,500
P37-1	Madrone	Replace existing 4-inch pipelines with new 8-inch pipelines in Lake Blvd						7,100			7,100
P37-2	Madrone	Replace existing 4-inch pipelines with new 8-inch pipelines in Whilaway Ave						188,000			188,000
Subtotal - Pipeline Improvements			3,361,300	3,832,200	3,945,800	3,865,900	4,141,100	14,138,900	13,675,800	10,302,400	57,263,400

Table 10.4    20-Year Improvement Phasing  
Water Master Plan  
San Lorenzo Valley Water District

CIP IDPressure ZoneProject Description			Fiscal Year Improvement Phasing									
			FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027 - 2031	FY 2032 - 2036	FY 2037 - 2041	Total Cost	
			(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	
Valve Improvements												
PRV4-1	Reader	Construct new 8-inch PRV near Hwy 9 and Lorenzo St	54,100								54,100	
PRV7-1	Blackstone	Construct new 6-inch PRV near Big Basin Wy and Blackstone Dr	54,100									54,100
PRV8-1	Big Steel	Construct new 8-inch PRV near the existing Big Steel tank site	54,100									54,100
VLV11-1	Bear Creek	Construct new 8-inch check valve near Bear Creek Rd and Deerwood Dr	54,100								54,100	
Subtotal - Valve Improvements			108,200	108,200	0	0	0	0	0	0	216,400	
Booster Station Improvements												
PS1-2	Riverside Grove	Construct additional pump at Riverside Grove Pump Station for reliability	29,600								29,600	
PS6-2	Eckley	Construct additional pump at Eckley Pump Station for reliability	4,600								4,600	
PS13-1	Highland	Upgrade the existing Fairview Pump Station with larger capacity pumps						76,400			76,400	
PS18-1	Swim	Upgrade the existing Redwood Park Pump Station with larger capacity pumps						83,100			83,100	
PS20-1	University	Upgrade the existing University Pump Station with larger capacity pumps						69,600			69,600	
PS23-1	Upper Pasatiempo	Upgrade the existing Lower Pasatiempo Pump Station with larger capacity pumps						149,300			149,300	
PS28-1	El Solyo	Upgrade the existing Lower El Solyo Pump Station with larger capacity pumps						103,300			103,300	
PS33-1	Pine	Upgrade the existing Upper Hillcrest Pump Station with larger capacity pumps						136,300			136,300	
PS36-1	Kaski	Upgrade the existing Lompico Pump Station with larger capacity pumps						136,300			136,300	
Subtotal - Booster Station Improvements			0	34,200	0	0	0	76,400	0	677,900	788,500	
Reservoir Improvements												
T3-1	Blue Ridge	Construct additional storage at existing Bear Creek tank site						1,051,200			1,051,200	
T4-1	Reader	Replace existing Blackstone storage tanks						2,207,600			2,207,600	
T6-1	Eckley	Replace existing Blue Ridge storage tank						683,300			683,300	
T7-1	Blackstone	Replace existing Eckley storage tank						683,300			683,300	
T10-1	Ralston	Replace existing Highland storage tank						683,300			683,300	
T11-1	Bear Creek	Replace existing Echo storage tanks						1,629,500			1,629,500	
T13-1	Highland	Replace existing Ralston storage tanks						683,300			683,300	
T17-1	South	Construct additional storage at existing Reader tank site						683,300			683,300	
T18-1	Swim	Replace existing South storage tanks						1,103,900			1,103,900	
T19-1	Spring	Construct additional storage at existing Spring tank site						315,400			315,400	
T20-1	University	Replace existing Swim storage tanks						420,600			420,600	



Table 10.4 20-Year Improvement Phasing  
Water Master Plan  
San Lorenzo Valley Water District

CIP ID	Pressure Zone	Project Description	Fiscal Year Improvement Phasing								
			FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027 - 2031	FY 2032 - 2036	FY 2037 - 2041	Total Cost
			(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
T23-1	Upper Pasatiempo	Construct additional storage at existing University tank site								262,900	262,900
T24-1	North Boulder Creek	Construct additional storage at existing Madrone tank site								2,102,400	2,102,400
T25-1	Blue	Construct additional storage at existing Blue tank site								736,000	736,000
T26-1	Charlie	Construct additional storage at existing Charlie tank site								420,600	420,600
T28-1	El Solyo	Construct additional storage at existing Upper Pasatiempo tank site								841,000	841,000
T29-1	Bennett Spring	Replace existing Lower El Solyo storage tank								683,300	683,300
T31-1	McCloud	Construct additional storage at existing McCloud tank site								210,400	210,400
T33-1	Pine	Replace existing Bennett Spring storage tank							1,208,900		1,208,900
T36-1	Kaski	Construct additional storage at existing Kaski tank site								262,900	262,900
T37-1	Madrone	Replace existing Pine storage tanks							157,700		157,700
Subtotal - Reservoir Improvements			0	0	0	0	0	3,416,700	6,044,700	7,569,400	17,030,800
Total Water System Improvement Costs											
Fiscal Year Total			3,469,500	3,974,600	3,945,800	3,865,900	4,141,100	17,632,000	19,720,500	18,549,700	75,299,100
Cumulative Total			3,469,500	7,444,100	11,389,900	15,255,800	19,396,900	37,028,900	56,749,400	75,299,100	75,299,100

classification, indicating whether the improvement is intended to expand or replace the existing water distribution system infrastructure.

**10.4.3 Suggested Expenditure Budget (20yr)**

The suggested 20-year expenditure budget is shown on [Table 10.4](#), and includes the total costs for pipelines, tanks, pump stations, valves, and wells phased by 5-year fiscal periods through the year 2041.