

June 25, 2019



CITY OF ASHLAND WATER MASTER PLAN STATUS UPDATE

AGENDA

- Chapter 5 System Analysis Update
- Chapter 6 CIP Update
- Draft Water Master Plan

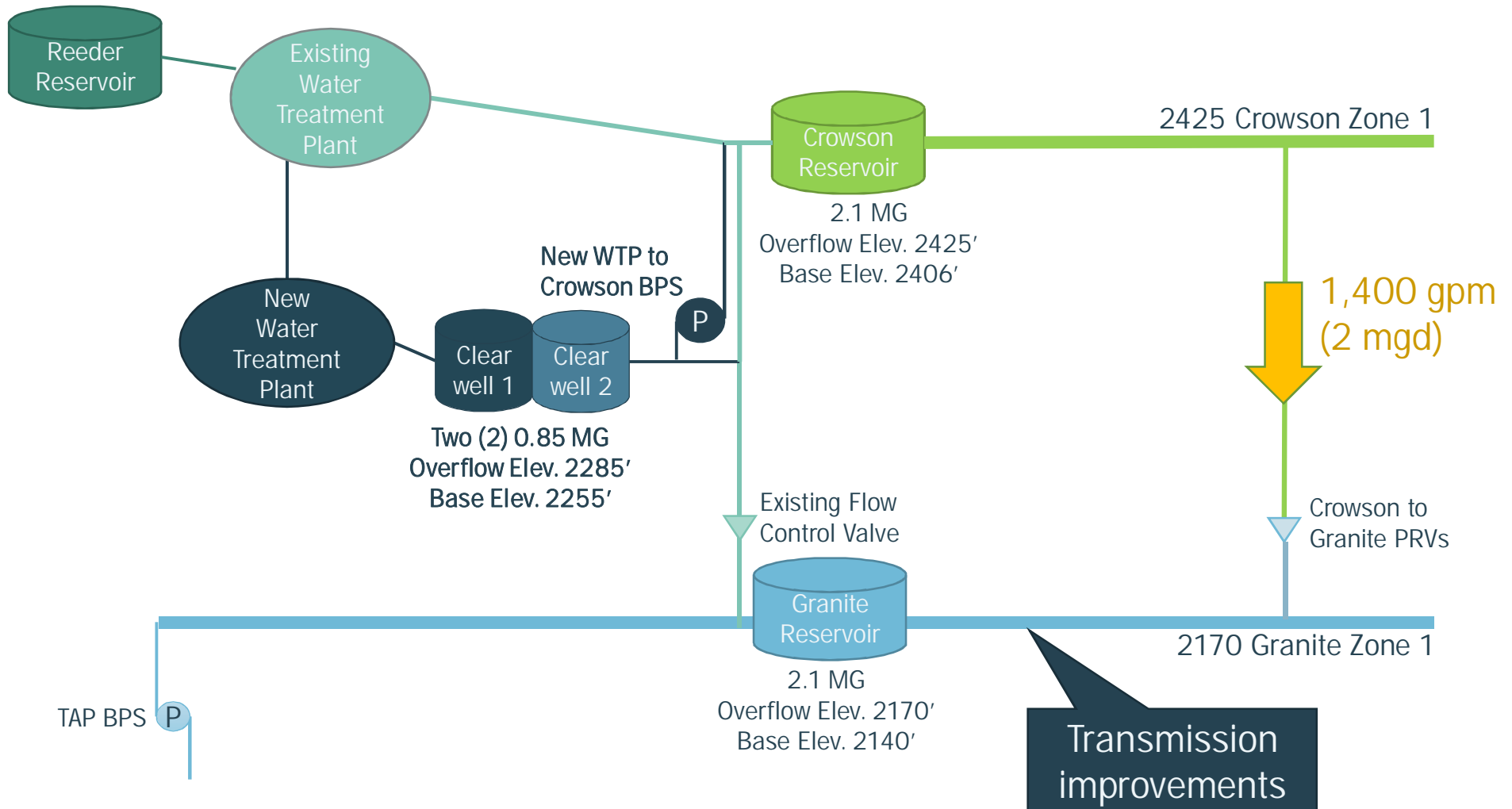
CHAPTER 5

SYSTEM ANALYSIS

WATER SYSTEM CHALLENGES

1. Moving from a Gravity System to a Partial Gravity System
2. Granite Reservoir is Aging and in a Poor Location
3. Oversized Alsing Reservoir
4. Fire Flow Deficiencies at Highest Customers (Park Estates and South Mountain)
5. TAP Emergency Supply Cannot Reach Crowson Zones
6. Pressure Extremes in Many Locations
7. Inability to Meet Higher Fire Flow Standards
8. Potential Storage Deficiency
9. Many Aging, Undersized Pipes

INTEGRATION OF THE NEW WTP



INTEGRATION OF THE NEW WTP - APPROACH

Phase 1

- Build the WTP to Crowson BPS to current demand needs (continue to rely on Crowson to Granite PRVs)
 - BPS Capacity = 3,200 gpm
- Reduce Crowson to Granite PRV settings to reduce flow
- Temporary replace PRV 9 (Grandview & Wimer)

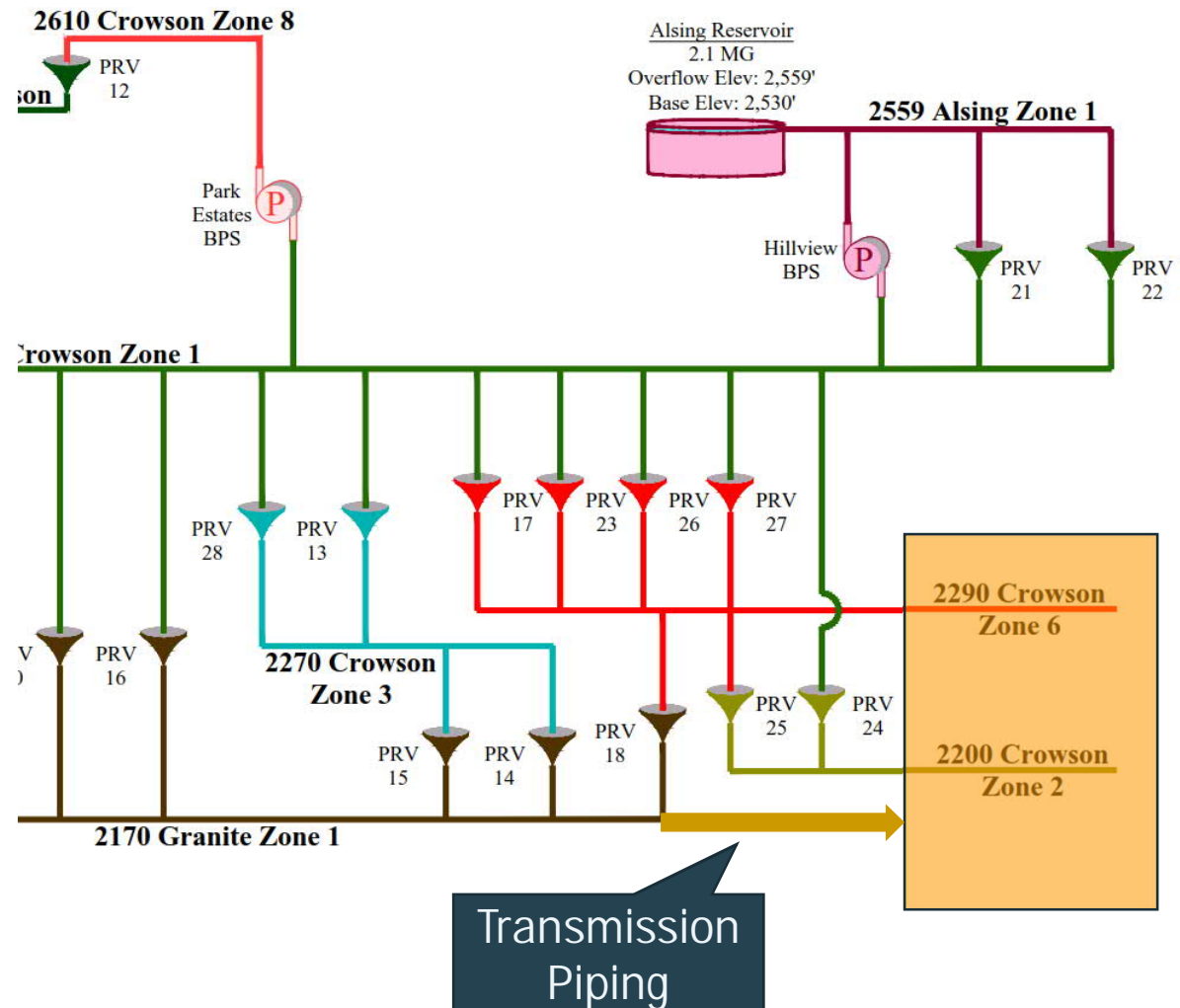
Phase 2

- Build Granite Zone Transmission Improvements
 - 16-inch Granite Street Pipe (FY30)
 - 12-inch Scenic Dr/Nutley St Pipe (Mid-Term)

INTEGRATION OF THE NEW WTP - APPROACH

Phase 3

- Rezone low-elevation Crowson zones to Granite
- WTP to Crowson BPS Capacity = 1,650 gpm



WATER SYSTEM CHALLENGES

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STORAGE REQUIREMENTS

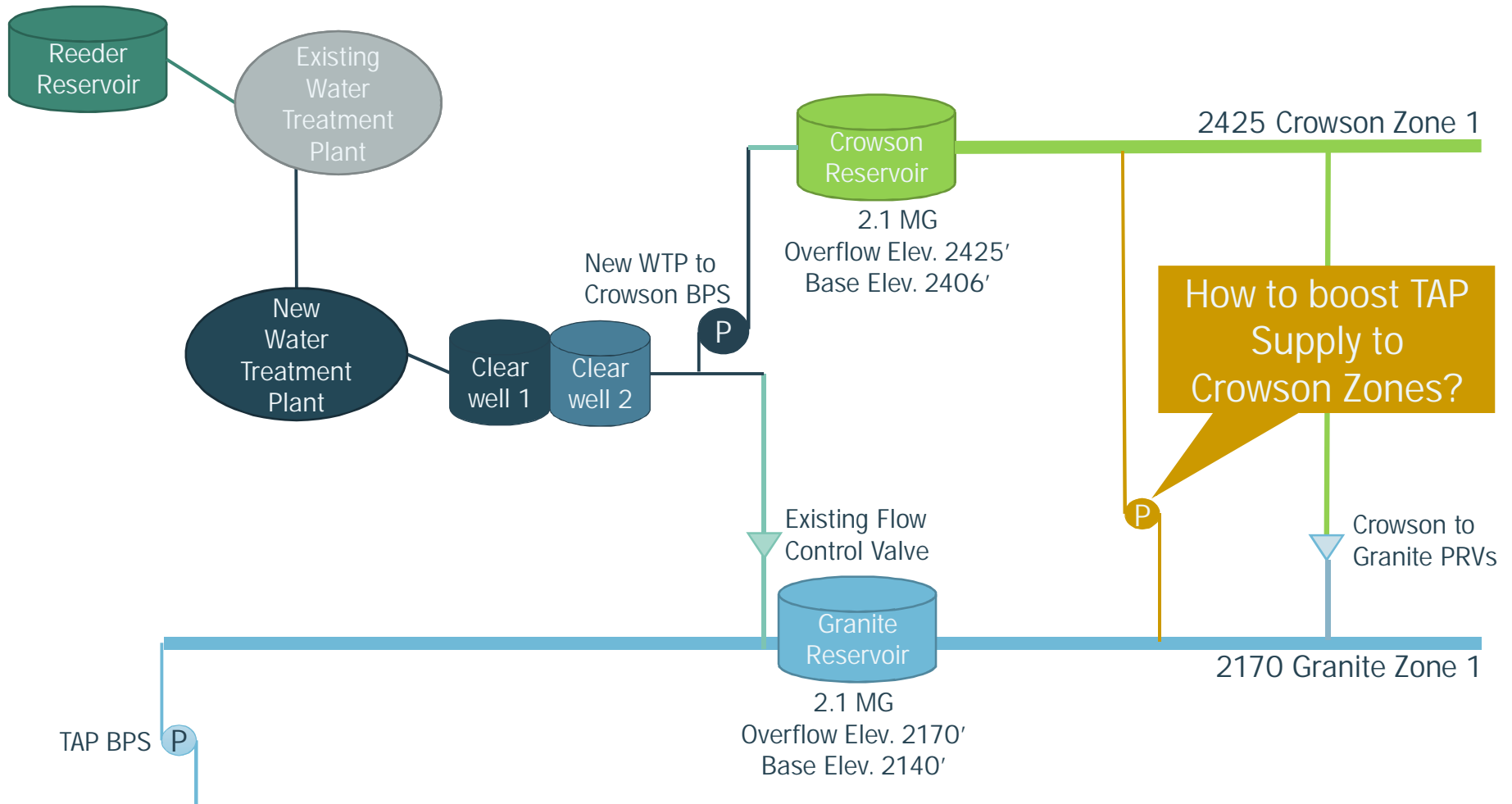
- Under current conditions and storage criteria, City is 0.37 MG deficient (1.34 MG in the future)
- Recommendations
 - Revise criteria to reflect emergency TAP supply and a new reliable, resilient WTP
 - Expand Alsing Zone
 - Implement conservation
- Results in excess storage capacity

GRANITE RESERVOIR REPLACEMENT

- Aging
- Requires major improvements (>\$500k for basic improvements)
- Poor location



GRANITE RESERVOIR IS CRITICAL FOR THE TAP SUPPLY OPERATION



GRANITE RESERVOIR ALTERNATIVES

1. Repair Granite Reservoir
2. Replace (relocate) Granite Reservoir
3. Abandon Granite Reservoir, modify TAP BPS
4. Abandon Granite Reservoir, rely on new Granite to WTP BPS with complex operations

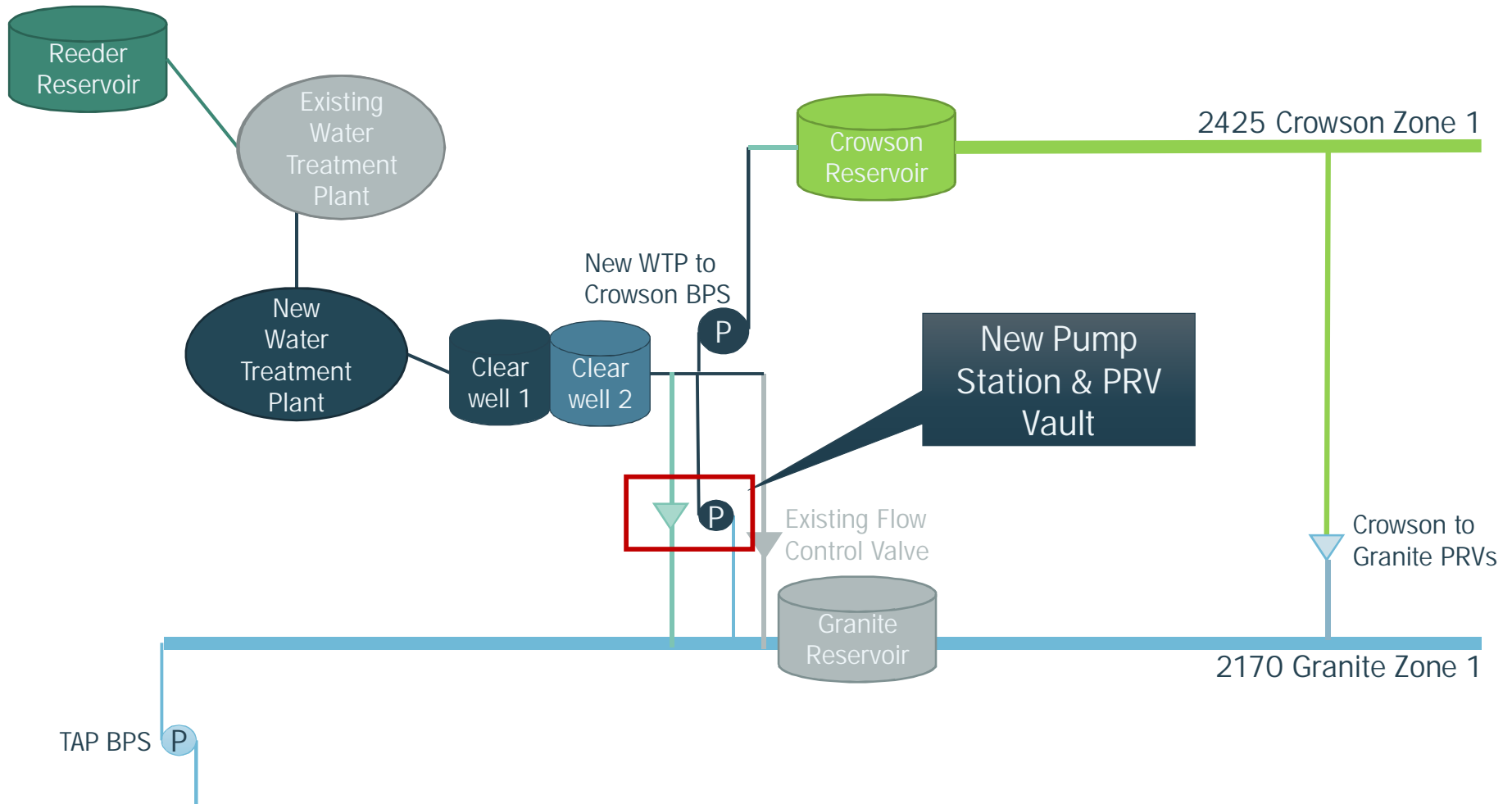
ALT 1 – REPAIR GRANITE RESERVOIR

- Pros
 - No change to current system hydraulics
 - Continues to simplify TAP Emergency Supply operations
 - Eliminates need for second WTP clearwell
- Cons
 - Costly repairs
 - Reservoir remains in a high risk location

ALT 3 – ABANDON GRANITE RESERVOIR, MODIFY TAP BPS

- Pros
 - No repairs needed for Granite Reservoir
 - Low cost
- Cons
 - Limits expansion of TAP BPS to 3.0 mgd
 - Creates a more complex operation
 - May require other transmission improvements to achieve an even hydraulic grade

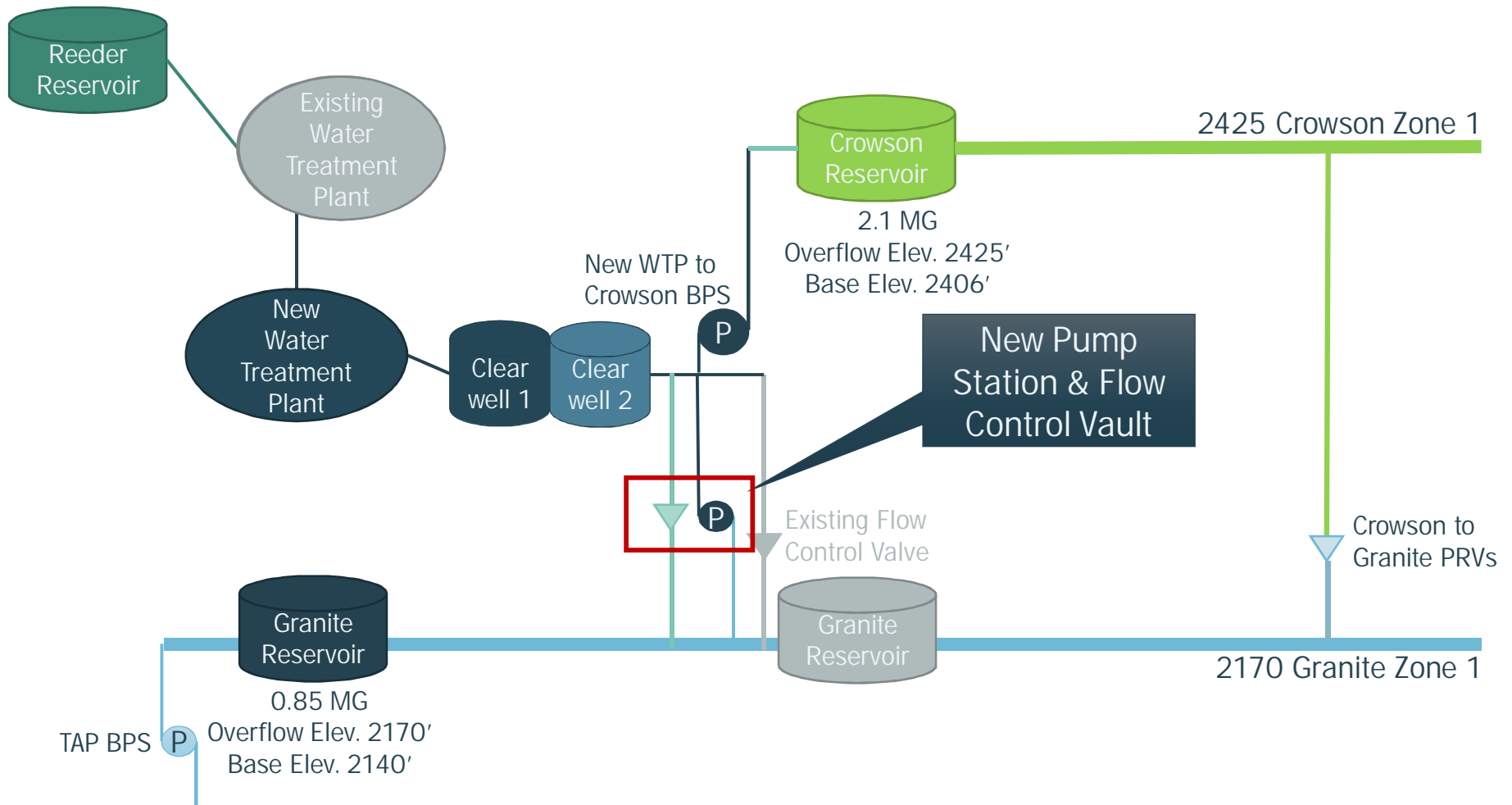
ALT 4 – ABANDON GRANITE RESERVOIR, NEW GRANITE TO WTP BPS, COMPLEX OPERATIONS



ALT 4 – ABANDON GRANITE RESERVOIR, NEW GRANITE TO WTP BPS, COMPLEX OPERATIONS

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- Cons
 - Creates a complex operation
 - May require other transmission improvements to achieve an even hydraulic grade

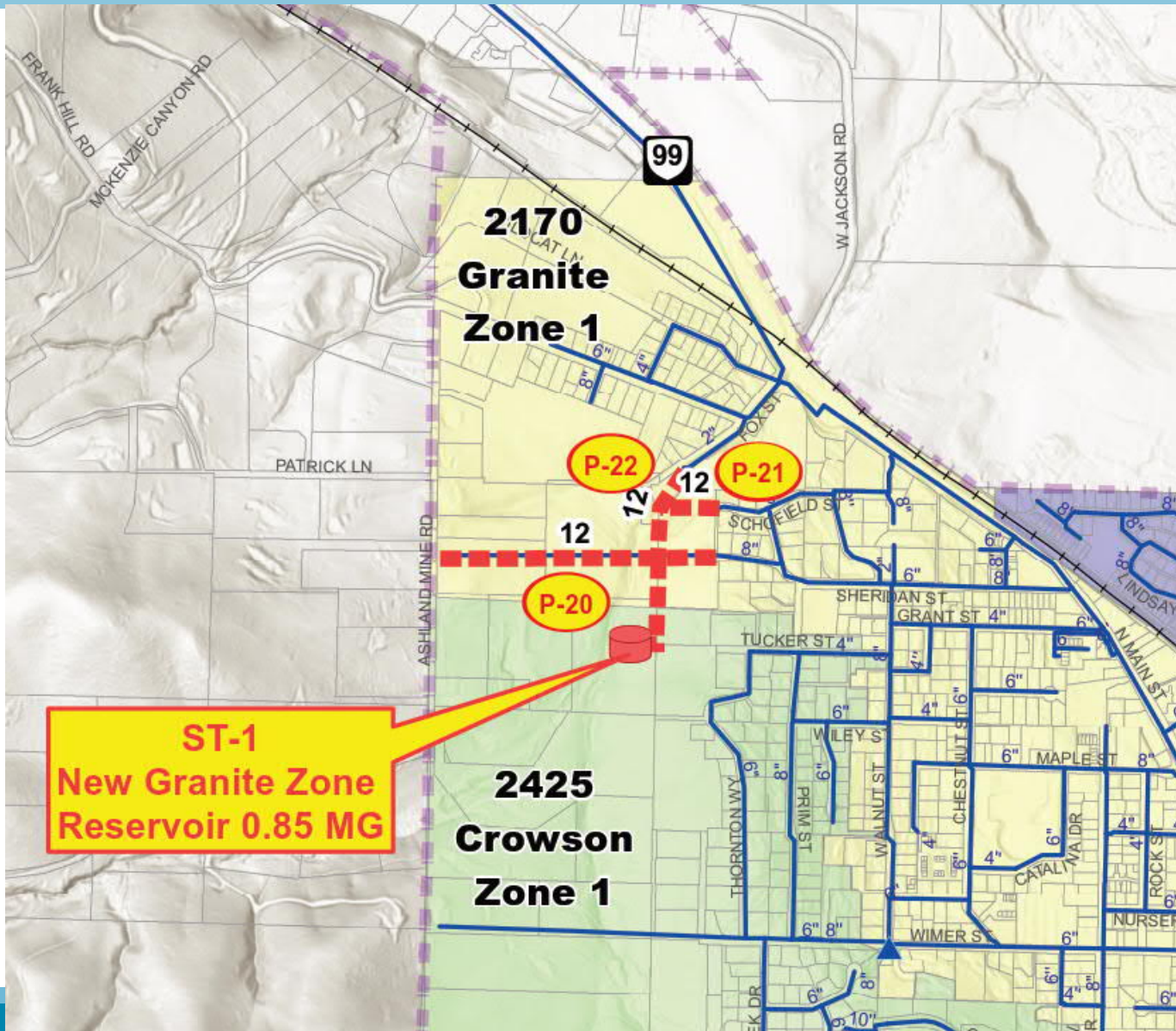
ALT 2 – RELOCATE GRANITE RESERVOIR & BUILD TAP BPS



ALT 2 – RELOCATE GRANITE RESERVOIR & BUILD TAP BPS

- Pros
 - Ideal for operation of Granite Zone and TAP Emergency Supply
 - Eliminates need for second clearwell
 - Reduces cost of Granite Street pipe improvement
 - Coincides with pipes needed for new development
- Cons
 - Highest Cost
 - Requires short-term continued reliance on existing Granite Reservoir

NEW GRANITE RESERVOIR CONCEPTUAL LOCATION



NEW GRANITE RESERVOIR STRATEGY

1. Increase pipe size in Fox Street (scheduled for FY20)
2. Property acquisition
3. 16-inch pipe in Granite Street & 12-inch pipe in Scenic Dr/Nutley
4. New Granite to WTP Pump Station & Flow Control Valve
5. New Granite Reservoir & piping
6. Abandon existing Granite Reservoir

CIP Schedule for Mid-Term

WATER SYSTEM CHALLENGES

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ALSING RESERVOIR EXPANSION

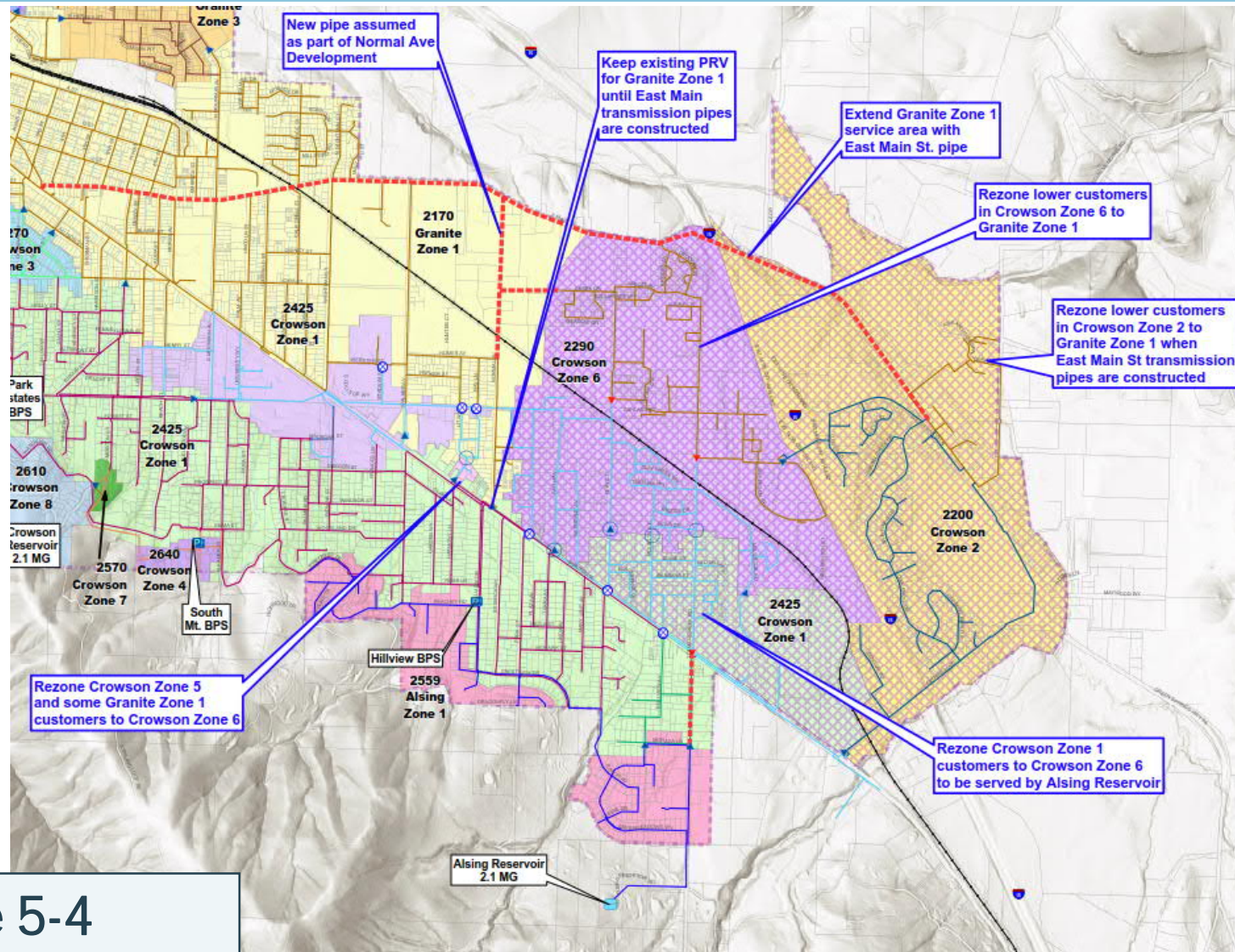
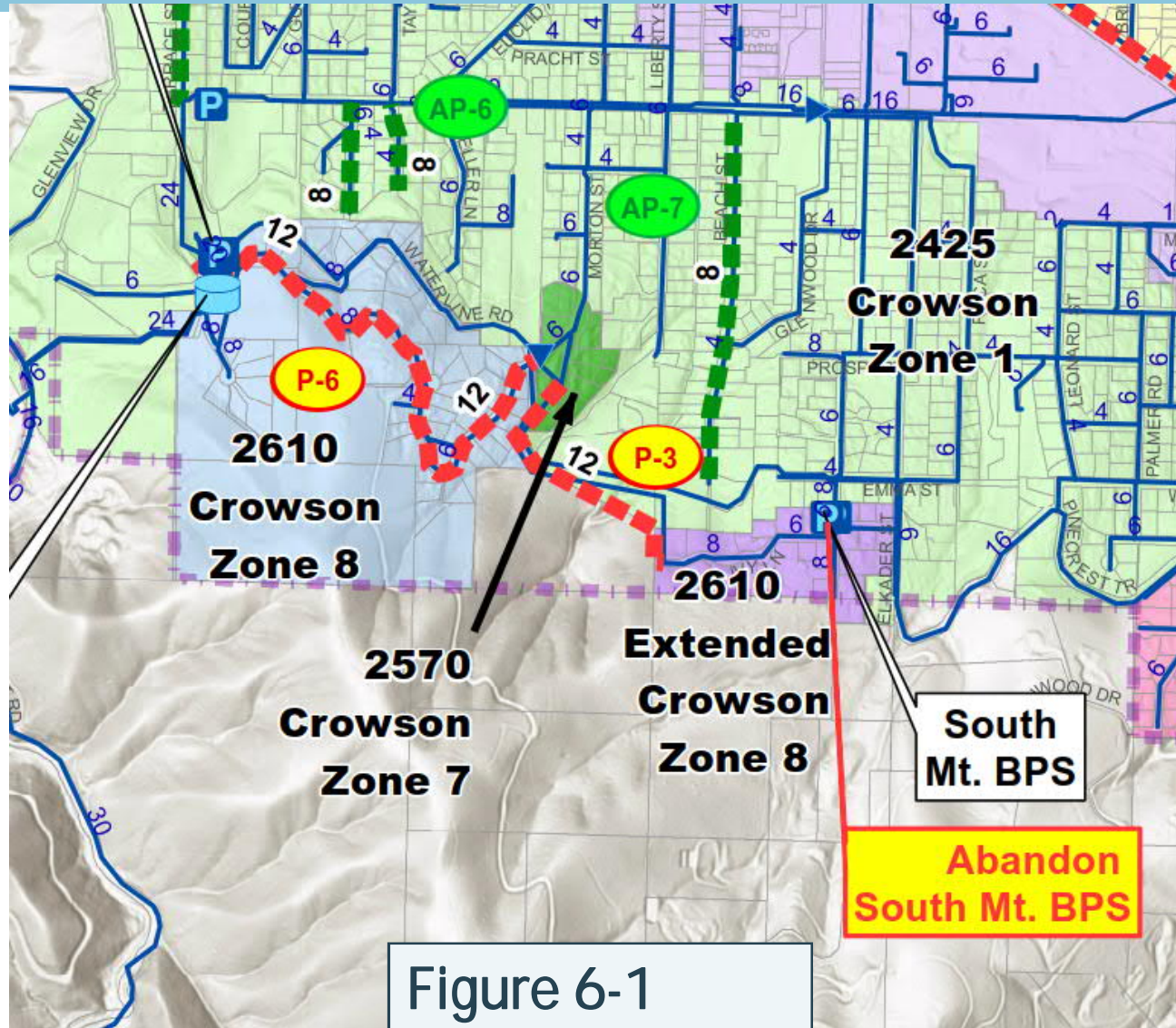


Figure 5-4

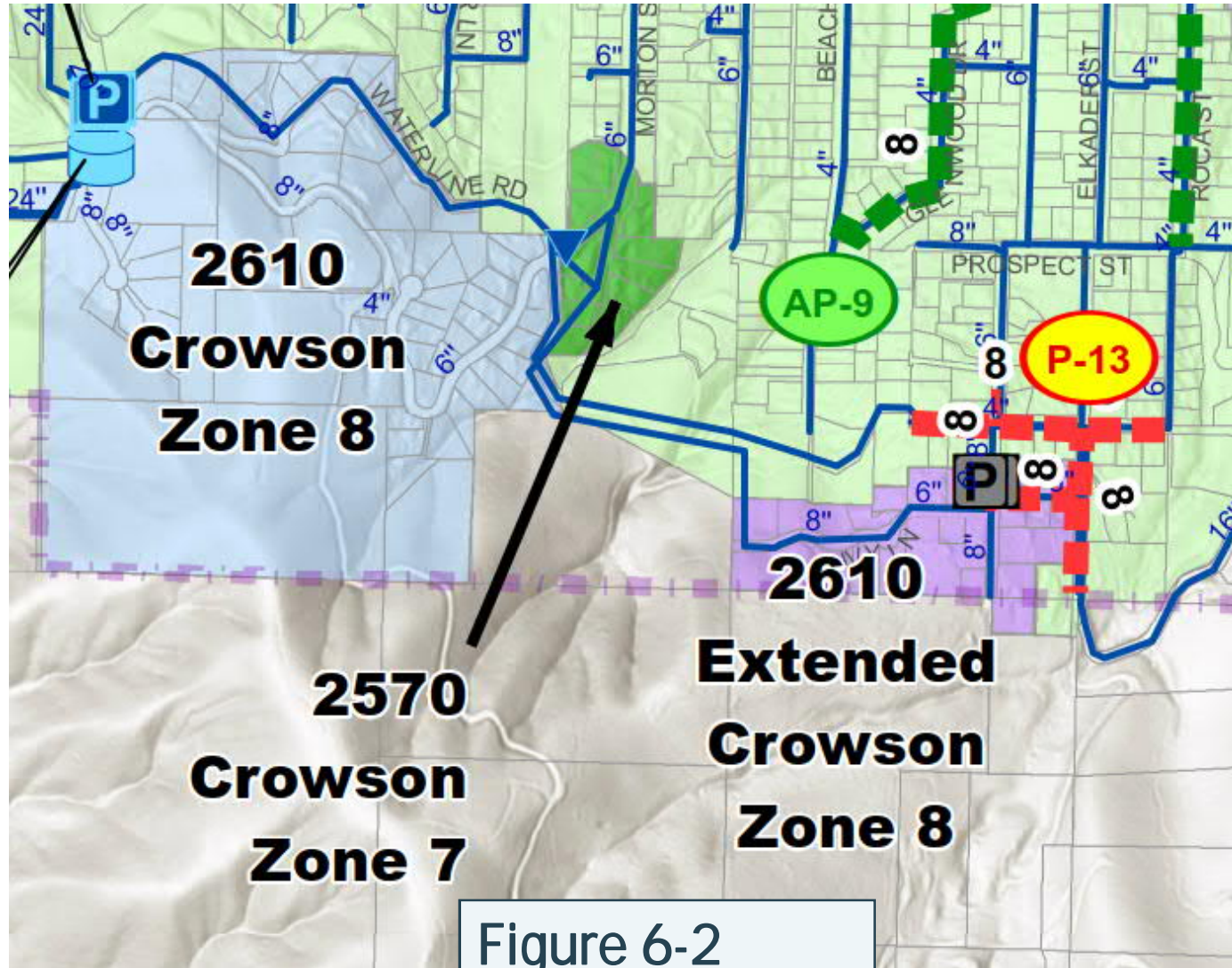
WATER SYSTEM CHALLENGES

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P-3 AND P-6 CONNECT CROWSON ZONES 7 & 8, ABANDON SOUTH MTN BPS



P-13 REZONING STUDY AND PIPE IMPROVEMENTS



WATER SYSTEM CHALLENGES

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PIPE IMPROVEMENTS

- Rezone Studies
- Annual pipe improvement budget
- Focus on replacing undersized, aging pipes
- Focus on low fire flow areas, then on meeting new criteria



CHAPTER 6

CAPITAL IMPROVEMENT PLAN

PROJECT PRIORITIZATION

1. Currently planned projects for next two years
 - Current CIP
 - New WTP and associated infrastructure
 - Park Estates Pump Station and infrastructure
2. Projects that resolve significant fire flow deficiencies (<50 percent of criteria)
3. Projects that reduce supply from Crowson to Granite Zones (for improved operational efficiency)
4. Projects that correct high pressure conditions

CHANGES SINCE MAY AWAC MEETING

- Added a long-term planning period (FY40+)
- Incorporated City direction on Granite Reservoir and boosting of TAP Supply
- Adjusted timing of several projects
- Pipe Projects
 - Kept annual pipe improvements to ~\$1M
 - Allocated smaller projects to \$300,000 annual repair program
 - Identified/verified other projects
 - Removed some projects

CAPITAL IMPROVEMENT PLAN – SUPPLY

PROJECT NO.	DESCRIPTION	TOTAL PROJECT COST	PLANNING PERIOD (YEARS)			SDC ELIGIBILITY (%)
			SHORT-TERM	MID-TERM	LONG-TERM	
			FY20-29	FY30-39	FY40+	
S-1	Dam Safety Improvements	\$4.8M	\$4.8M	\$ -	\$ -	13%
S-2	Ashland (TID) Canal Piping	\$3.5M	\$3.5M	\$ -	\$ -	66%
S-3	East and West Forks Transmission Line Rehab	\$2.1M	\$2.1M	\$ -	\$ -	0%
S-4	Reeder Reservoir Intake Repairs	\$0.1M	\$0.1M	\$ -	\$ -	0%
S-5	Reeder Reservoir Sediment Removal	\$1.7M	\$0.6M	\$0.6M	\$0.6M	75%
S-6	7.5-MGD Water Treatment Plan	\$30.7M	\$30.7M	\$ -	\$ -	10%
S-7	WTP Backwash Recovery System	\$2.8M	\$ -	\$2.8M	\$ -	10%
S-8	TAP System Improvements	\$50K	\$50K	?	?	10%
S-9	Deferred WTP Improvement Projects	?	\$ -	?	?	10%
	Total Supply Projects	\$45.8M	\$41.9M	\$3.4M	\$0.6M	

CAPITAL IMPROVEMENT PLAN – STORAGE

PROJECT NO.	DESCRIPTION	TOTAL PROJECT COST	PLANNING PERIOD (YEARS)			SDC ELIGIBILITY (%)
			SHORT-TERM	MID-TERM	LONG-TERM	
			FY20-29	FY30-39	FY40+	
ST-1	New 0.85-MG Granite Zone Reservoir	\$2.8M	\$ -	\$2.8M	\$ -	33%

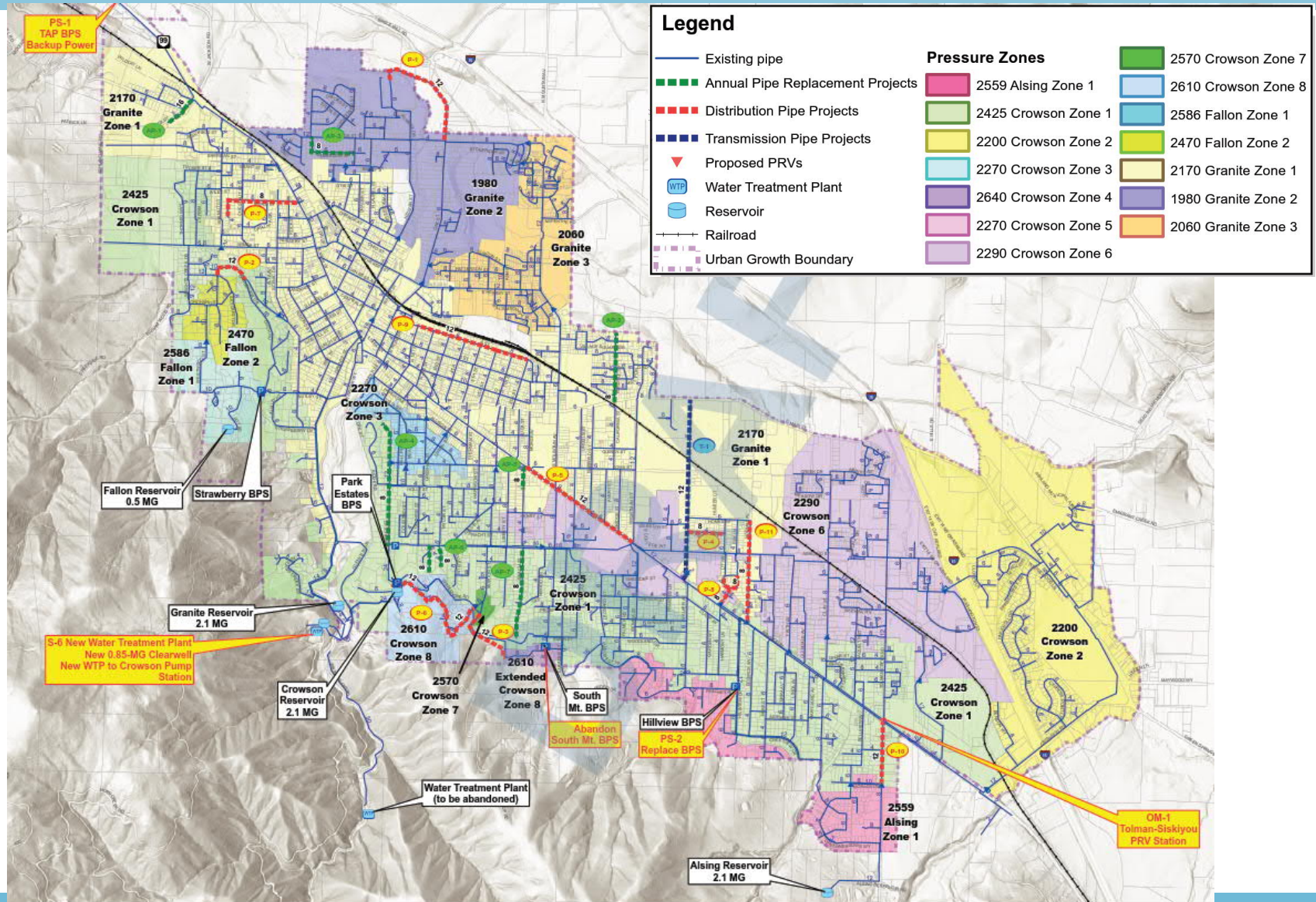
CAPITAL IMPROVEMENT PLAN – PUMPING

PROJECT NO.	DESCRIPTION	TOTAL PROJECT COST	PLANNING PERIOD (YEARS)			SDC ELIGIBILITY (%)
			SHORT-TERM	MID-TERM	LONG-TERM	
			FY20-29	FY30-39	FY40+	
PS-1	TAP BPS Backup Power	\$0.4M	\$0.4M	\$ -	\$ -	10%
PS-2	Hillview BPS Replacement	\$1.5M	\$1.5M	\$ -	\$ -	8%
PS-3	Granite to WTP BPS	\$0.6M	\$ -	\$0.6M	\$ -	10%
	Total Pumping Projects	\$2.5M	\$1.9M	\$0.6M	\$ -	

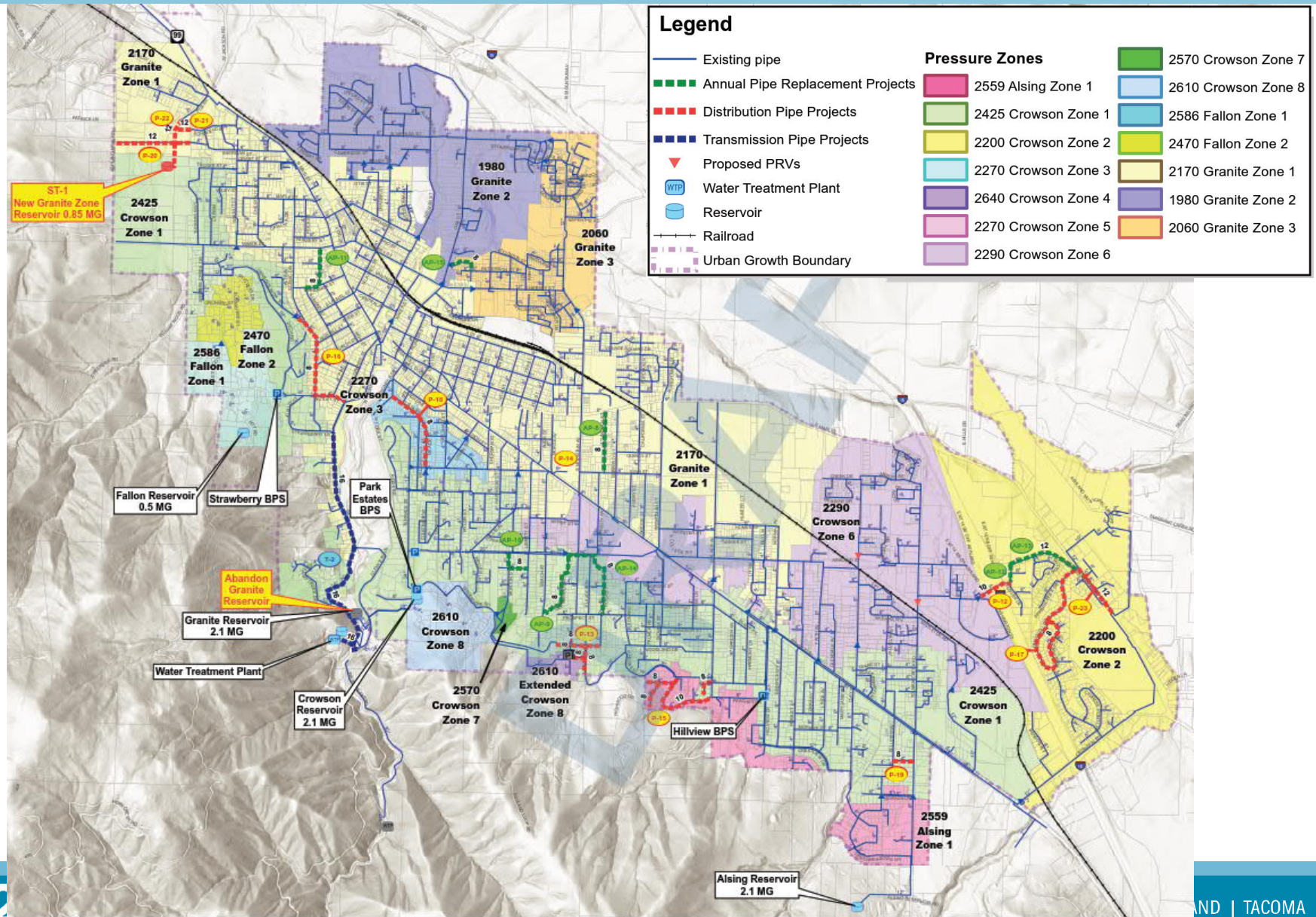
CAPITAL IMPROVEMENT PLAN – PIPING

PROJECT NO.	DESCRIPTION	TOTAL PROJECT COST	PLANNING PERIOD (YEARS)			SDC ELIGIBILITY (%)
			SHORT-TERM	MID-TERM	LONG-TERM	
			FY20-29	FY30-39	FY40+	
AP-1 to AP-25	Annual Pipe Replacement	\$9.0M	\$3.0M	\$3.0M	\$3.0M	10%
P-1 to P-32	Distribution Pipe Projects	\$15.5M	\$6.4M	\$7.1M	\$2.0M	10%
T1-T5	Transmission Pipe Projects	\$9.0M	\$0.6M	\$2.2M	\$6.2M	80%
	Total Pipe Projects	\$33.5M	\$10.0M	\$12.3M	\$11.2M	

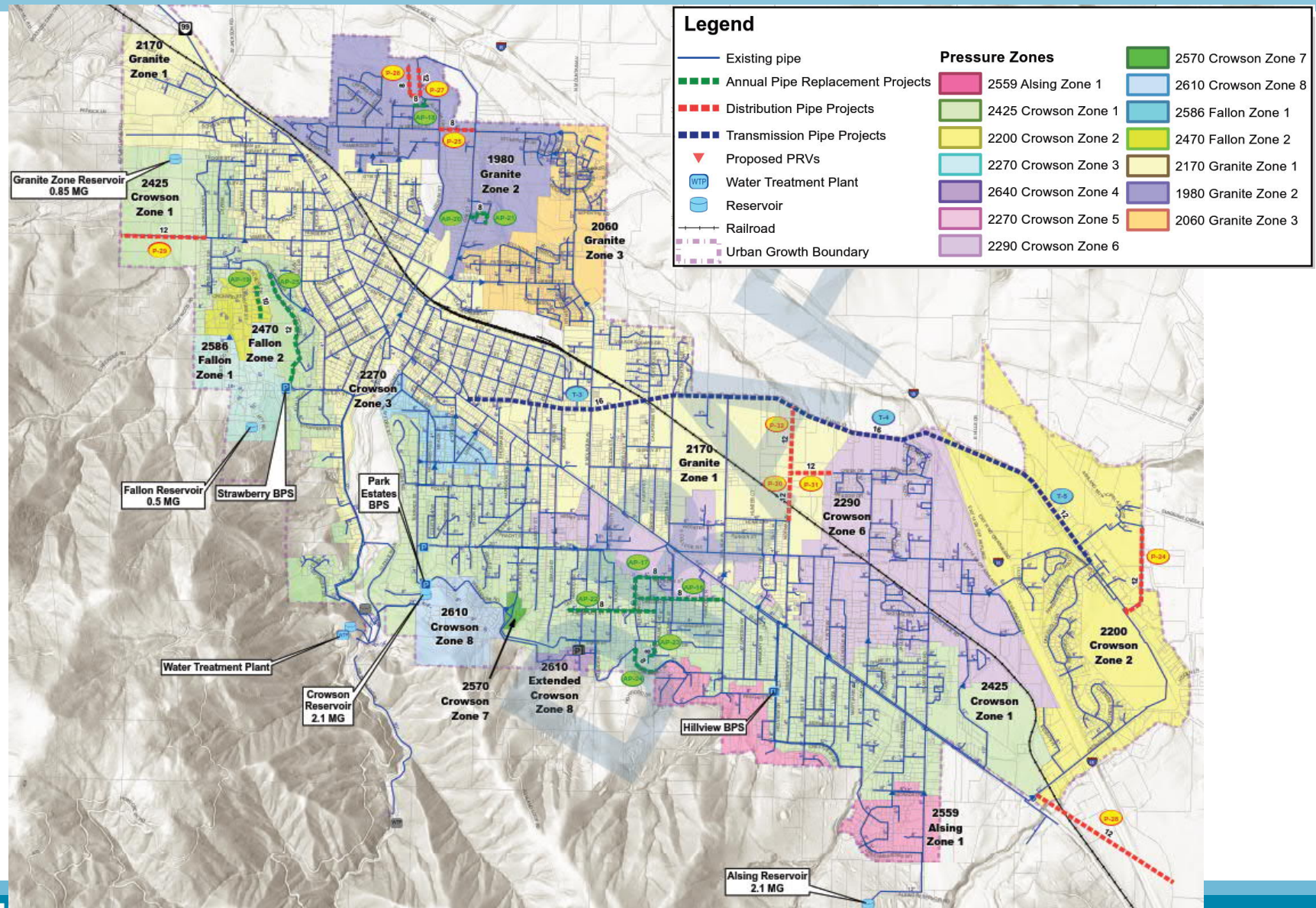
CIP FIGURE 6-1 SHORT-TERM



CIP FIGURE 6-2 MID-TERM



CIP FIGURE 6-3 LONG-TERM



CAPITAL IMPROVEMENT PLAN – O&M

PROJECT NO.	DESCRIPTION	TOTAL PROJECT COST	PLANNING PERIOD (YEARS)			SDC ELIGIBILITY (%)
			SHORT-TERM	MID-TERM	LONG-TERM	
			FY20-29	FY30-39	FY40+	
OM-1	Tolman Creek Road PRV Station	\$75K	\$75K	\$ -	\$ -	8%
OM-2	Hydrant Replacement Program	\$2.2M	\$0.6M	\$1.6M	\$ -	0%
OM-3	Telemetry Upgrades	\$80K	\$80K	\$ -	\$ -	10%
OM-4	AMI/AMR Evaluation	\$60K	\$60K	\$ -	\$ -	10%
OM-5	Pipe Connection/PRV Adjustments from Rezone Studies	\$200K	\$ -	\$200K	\$ -	0%
OM-6	Clay St and Tolman Creek Road PRV Stations	\$150K	\$ -	\$150K	\$ -	10%
OM-7	Pressure Relief Valves	?	?	\$ -	\$ -	10%
	Total O&M Projects	\$2.8M	\$0.9M	\$2.0M	\$ -	

CAPITAL IMPROVEMENT PLAN – STUDIES

PROJECT NO.	DESCRIPTION	TOTAL PROJECT COST	PLANNING PERIOD (YEARS)			SDC ELIGIBILITY (%)
			SHORT-TERM	MID-TERM	LONG-TERM	
			FY20-29	FY30-39	FY40+	
RS-1	TAP Water Master Plan & Future Updates	\$150K	\$50K	\$50K	\$50K	10%
RS-2	Risk and Resilience Assessment and Emergency Response Plan	\$150K	\$150K	\$ -	\$ -	10%
RS-3	Rezoning Study	\$50K	\$50K	\$ -	\$ -	10%
RS-4	Water Master Plan Updates	\$600K	\$100K	\$250K	\$250K	100%
	Total Recommended Studies	\$950K	\$350K	\$300K	\$300K	

TOTAL CIP

CATEGORY	TOTAL PROJECT COST	PLANNING PERIOD (YEARS)		
		SHORT-TERM	MID-TERM	LONG-TERM
		FY20-29	FY30-39	FY40+
SUPPLY	\$45.8M	\$41.9M	\$3.4M	\$0.6M
STORAGE	\$2.8M	\$ -	\$2.8M	\$ -
PUMP STATION	\$2.5M	\$1.9M	\$0.6M	\$ -
PIPES	\$33.5M	\$10.0M	\$12.3M	\$11.2M
OPERATIONS AND MAINTENANCE	\$2.8M	\$0.9M	\$2.0M	\$ -
RECOMMENDED STUDIES	\$1.0M	\$0.4M	\$0.3M	\$0.3M
TOTAL CIP	\$88.3M	\$55.0M	\$21.3M	\$12.0M



DRAFT WATER MASTER PLAN

WATER MASTER PLAN CHAPTERS

- Chapter 1 – Introduction
- Chapter 2 – Existing System
- Chapter 3 – Land Use & Population
- Chapter 4 – Demand Projections
- Chapter 5 – System Analysis
- Chapter 6 – Capital Improvement Plan
- Chapter 7 – Financial Analysis



QUESTIONS?