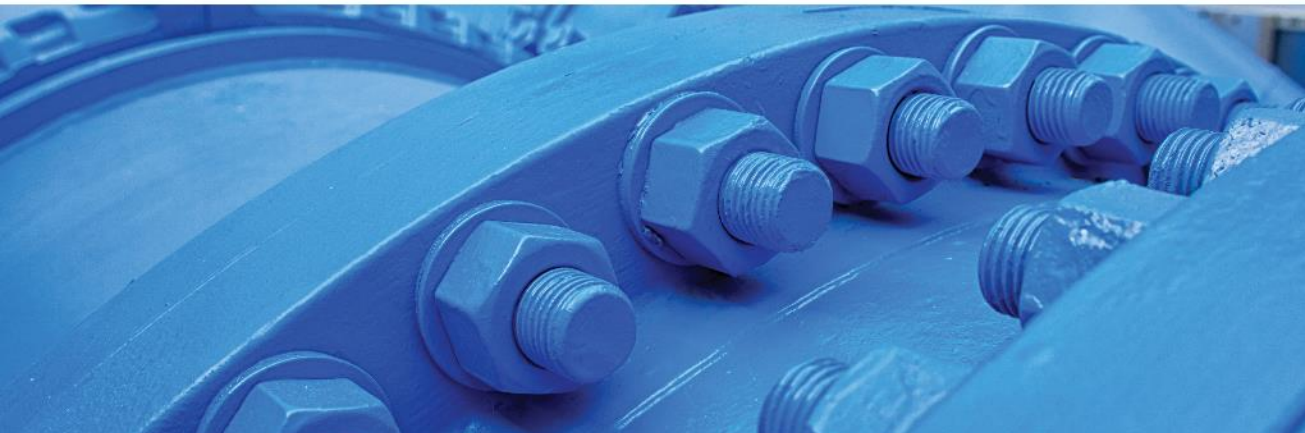




Capital Improvement Plan Process

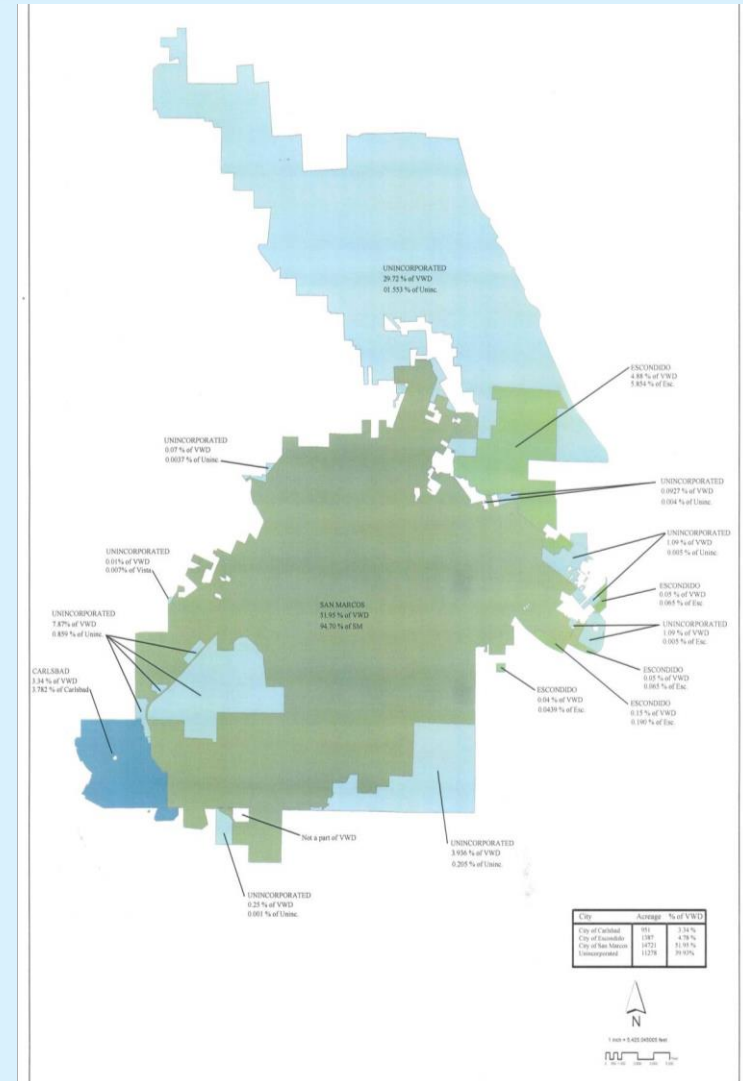
James Gumpel P.E., Assistant General Manager



Serving San Marcos and Adjacent Areas



- Vallecitos provides water, wastewater collection and treatment, and water reclamation services.
- Service is provided to the City of San Marcos, the Community of Lake San Marcos, and parts of Vista, Carlsbad, Escondido and unincorporated portions of San Diego County.



More about our systems



- 20 storage tanks totaling over 120,000,000 gallons of storage
- Over 323 miles of distribution and transmission pipelines ranging in size from 6-inch to 48-inch
- 5 connections to the San Diego County Water Authority
- 1 Desal Connection
- Approximately 4,650 distribution system valves
- 29 Pressure Zones
- 29 Pressure Reducing Stations
- 10 Water Pump Stations



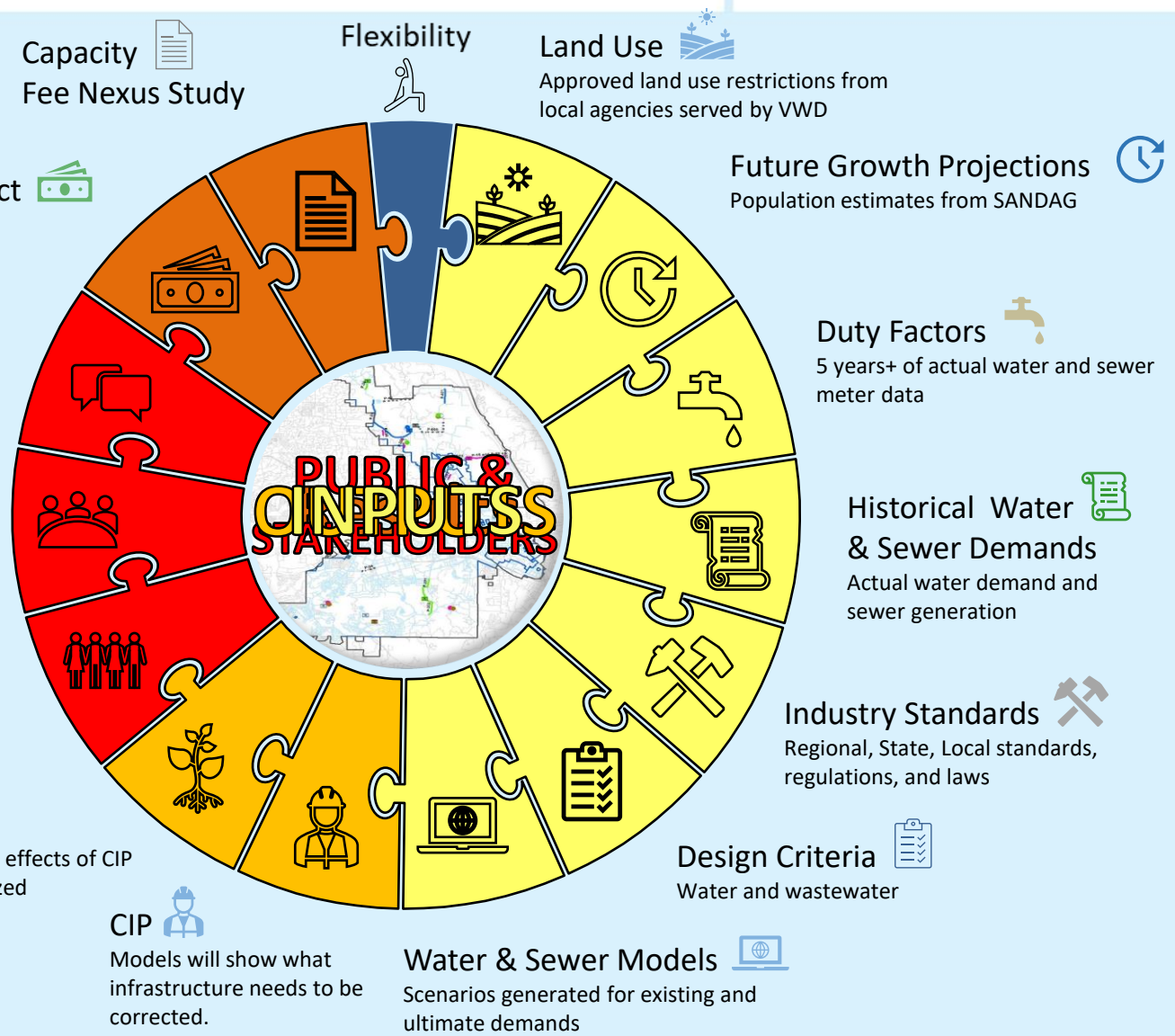
Wastewater Collection and Conveyance



- 2 Wastewater Treatment Plants
 - MRF 5 mgd
 - 24% owner of EWA
- 4 Lift Stations
- 6,684 Manholes
- 7.7 Mile Failsafe Line
- 12.0 Mile Land Outfall to Encina
- 272 Miles of pipe (4" to 42")



Developing a CIP



Capacity
Fee Nexus Study

Mitigation Fee Act

Flexibility

Land Use
Approved land use restrictions from local agencies served by VWD

Future Growth Projections
Population estimates from SANDAG

BIA & Development Community Input

Duty Factors
5 years+ of actual water and sewer meter data

Organizations
Non-governmental organizations (NGO) and various agencies give input.

Historical Water & Sewer Demands
Actual water demand and sewer generation

General Public
Gives input on master plan, CIP projects, and PEIR

Industry Standards
Regional, State, Local standards, regulations, and laws

PEIR
Environmental effects of CIP projects analyzed

Design Criteria
Water and wastewater

CIP
Models will show what infrastructure needs to be corrected.

Water & Sewer Models
Scenarios generated for existing and ultimate demands

Historical Water Demands & Future Demand Projections

Master Plan Edition	Existing Demand at Time of Master Plan (MGD)	Projected Ultimate Demand (MGD)
1975 MP	2.5	38.8
1981 MP Update	6.1	38.8
1986 Draft MP	9.1	39.1
1991 MP	9.3	42.3
1997 MP Update	11.7	38.2
2002 MP Update	13.0	31.9
2008 MP	18.3	34.1
2018 MP	14.8	33.6



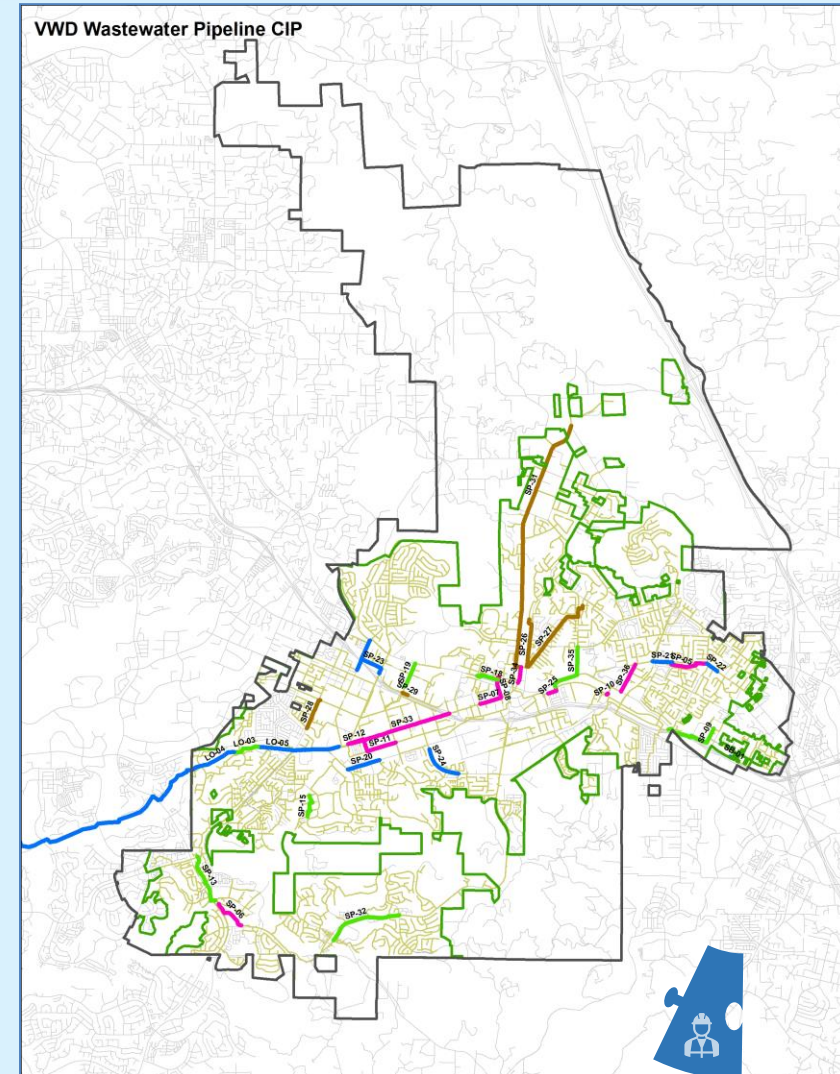
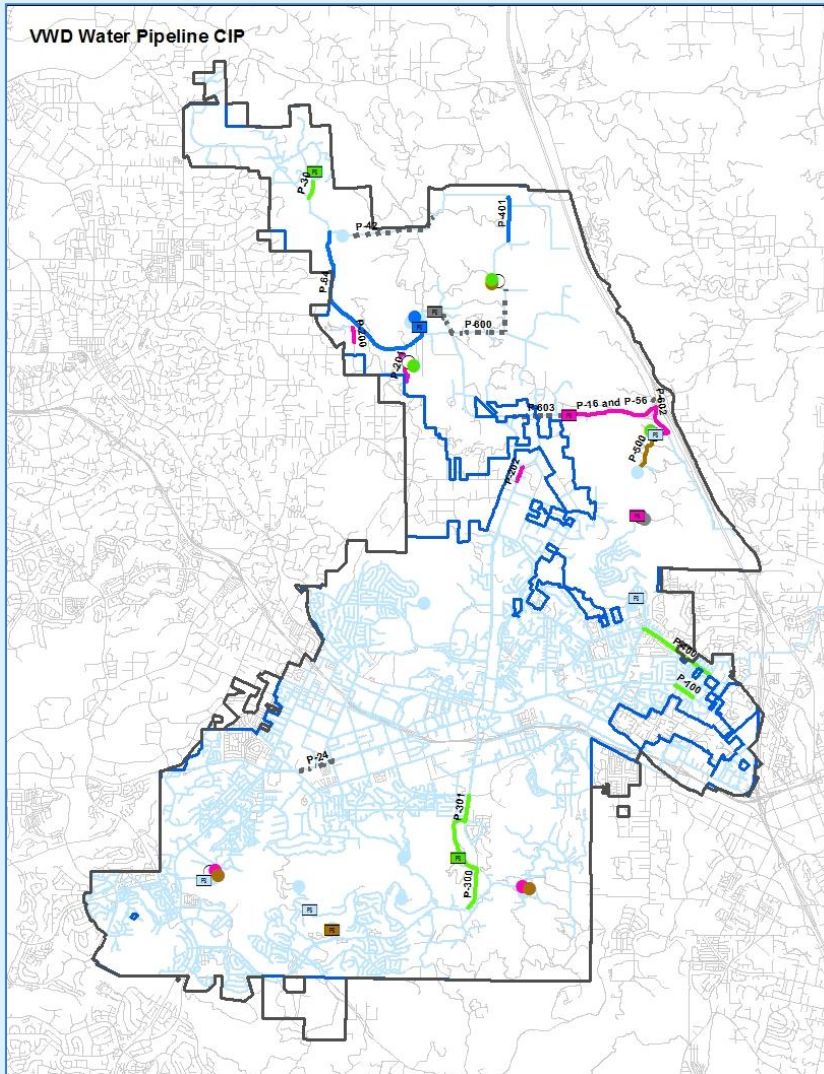
Historical Wastewater Flows & Future Flow Projections



Master Plan Edition	Existing Flows at Time of Master Plan (MGD)	Projected Ultimate Flows (MGD)
1986 Draft MP	3.6	14.4
1991 MP	4.0	18.7
1997 MP Update	5.0	16.4
2002 MP Update	6.0	13.3
2008 MP	6.7	13.3
2018 MP	7.5	14.4



2018 Master Plan Water and Wastewater CIP



2018 Master Plan

Water and Wastewater CIP

- 11 Water Pipeline Projects
 - 55,900 Total Linear Feet of Pipe
- 10 Reservoir Projects
 - 38.9 Total Million Gallons of Storage
- 7 Water Pump Station Projects
 - 29,400 Total Gallons per Minute of Capacity
- 25 Sewer Pipeline Projects
 - 73,900 Total Linear Feet of Pipe
- 1 Sewer Lift Station Replacement Project
 - 400 Gallons per Minute of Capacity
- Parallel Land Outfall Project
 - 34,000 Total Linear Feet of Pipe
- Wastewater Treatment



Projected CIP Cost Estimates Water Storage Projects - 10



Project Name	Size	Unit Cost (\$/gal)	Scaling Factor	CIP Cost
Meadowlark #3	2.47 MG	1.39	1.0	\$3,400,000
Coronado Hills #2	2.60 MG	1.39	1.0	\$3,600,000
Deer Springs #2; Demolition of Deer Springs #1	1.00 MG	1.39	1.0	\$1,400,000
Coggan #2	6.00 MG	1.39	1.0	\$8,300,000
North Twin Oaks #3	3.60 MG	1.39	0.8	\$4,000,000
Meadowlark #4; Demolition of Meadowlark #1	3.50 MG	1.39	1.2	\$5,800,000
Palos Vista Rehabilitation & Expansion	0.53 MG	1.39	1.5	\$1,100,000
Coronado Hills #3	7.50 MG	1.39	1.0	\$10,400,000
Twin Oaks #3	8.00 MG	1.39	1.0	\$11,100,000
Coggan #3	3.70 MG	1.39	1.0	\$5,100,000
Total	38.90 MG			\$54,200,000

Projected CIP Cost Estimates Water Pump Station Projects – (7)



Project Name	Firm Capacity	Unit Cost (\$/gpm)	Scaling Factor	CIP Cost
High Point Hydropneumatic Pump Station	1,200 gpm	1,100	0.5	\$700,000
Deer Springs Pump Station Expansion	3,400 gpm	1,100	1.0	\$3,700,000
Mountain Belle 1330 Pump Station	3,000 gpm	1,100	1.0	\$3,300,000
North Twin Oaks Pump Station Expansion	6,800 gpm	1,100	1.0	\$7,500,000
Southlake Pump Station Expansion	6,500 gpm	1,100	1.0	\$7,200,000
Coggan Pump Station Expansion	5,400 gpm	1,100	1.0	\$5,900,000
Schoolhouse 1115 Pump Station Expansion	3,100 gpm	\$150,000/ pump	3.0	\$500,000
Total	29,400 gpm			\$28,800,000

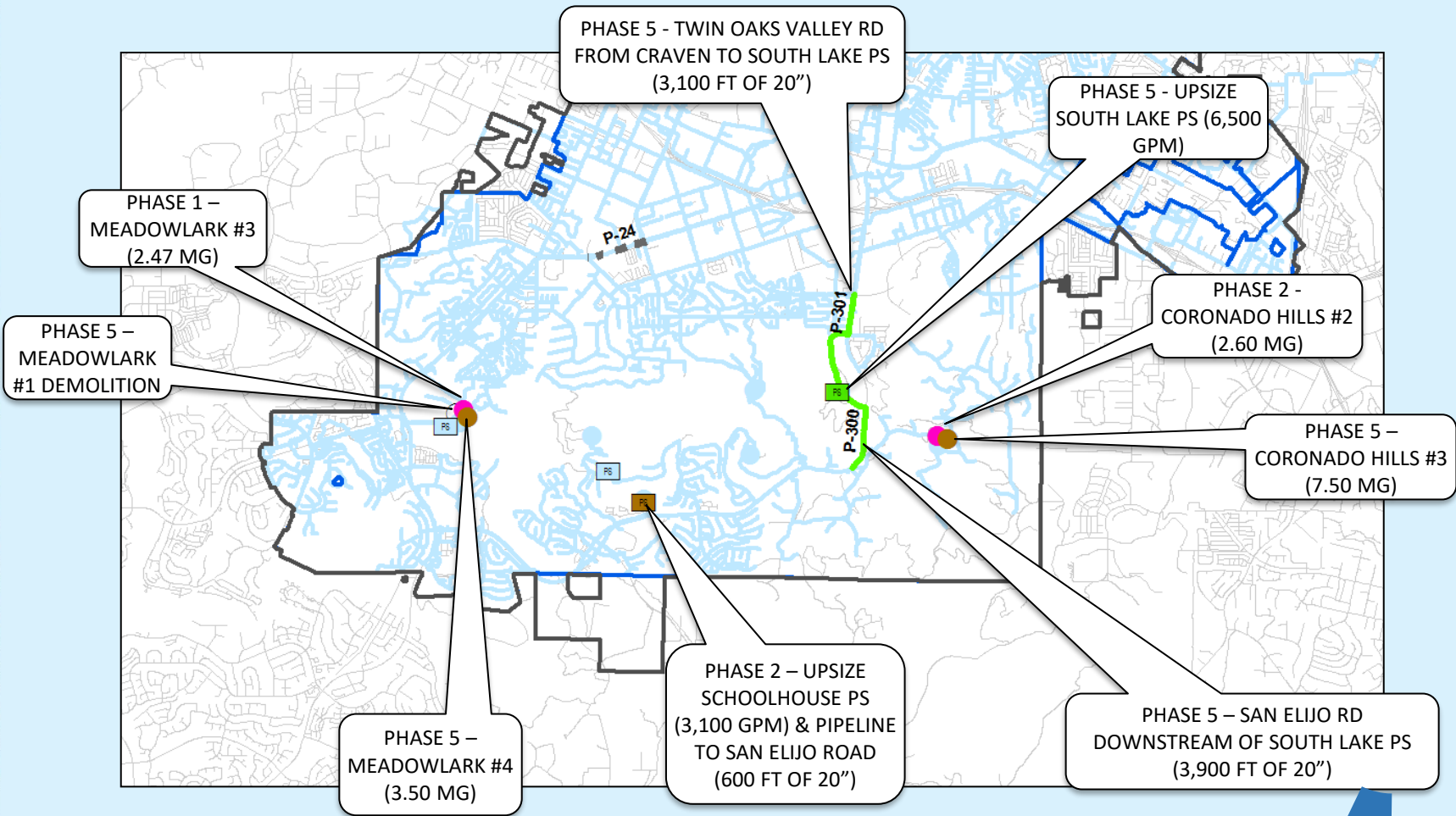
Projected CIP Cost Estimates Water Pipeline Projects - (11)



Project Name	Size & Length	Unit Cost (\$/ft)	Scaling Factor	CIP Cost
Deer Springs PS to Deer Springs Reservoir	16-inch; 8,700 feet	400	1.0	\$3,500,000
Mountain Belle Reservoir to 1330 Zone	16-inch; 1,800 feet	400	1.0	\$700,000
North Twin Oaks #2 to Huckleberry Ln	12-inch; 6,400 feet	290	1.0	\$1,900,000
High Point Hydro Station to Wulff Reservoir	12-inch; 3,000 feet	290	1.0	\$900,000
North Twin Oaks PS to North Twin Oaks Res	20-inch; 12,600 feet	520	1.0	\$6,600,000
Rock Springs Rd – Bennett Ave to Rees Rd	10-inch; 1,600 feet	255	1.0	\$400,000
Schoolhouse Pump Station to San Elijo Rd	20-inch; 600 feet	520	1.0	\$300,000
South Lake Pump Station to San Elijo Rd	20-inch; 3,900 feet	520	1.3	\$2,600,000
Twin Oaks Valley Rd – Craven to South Lake	20-inch; 3,100 feet	520	1.3	\$2,100,000
El Notre Pkwy – Rees Rd to Woodland Pkwy	20-inch; 5,300 feet	520	1.5	\$4,100,000
Coggan Pump Station to Coggan Reservoir	20-inch; 8,900 feet	520	1.3	\$6,000,000
Total	55,900 feet			\$29,100,000

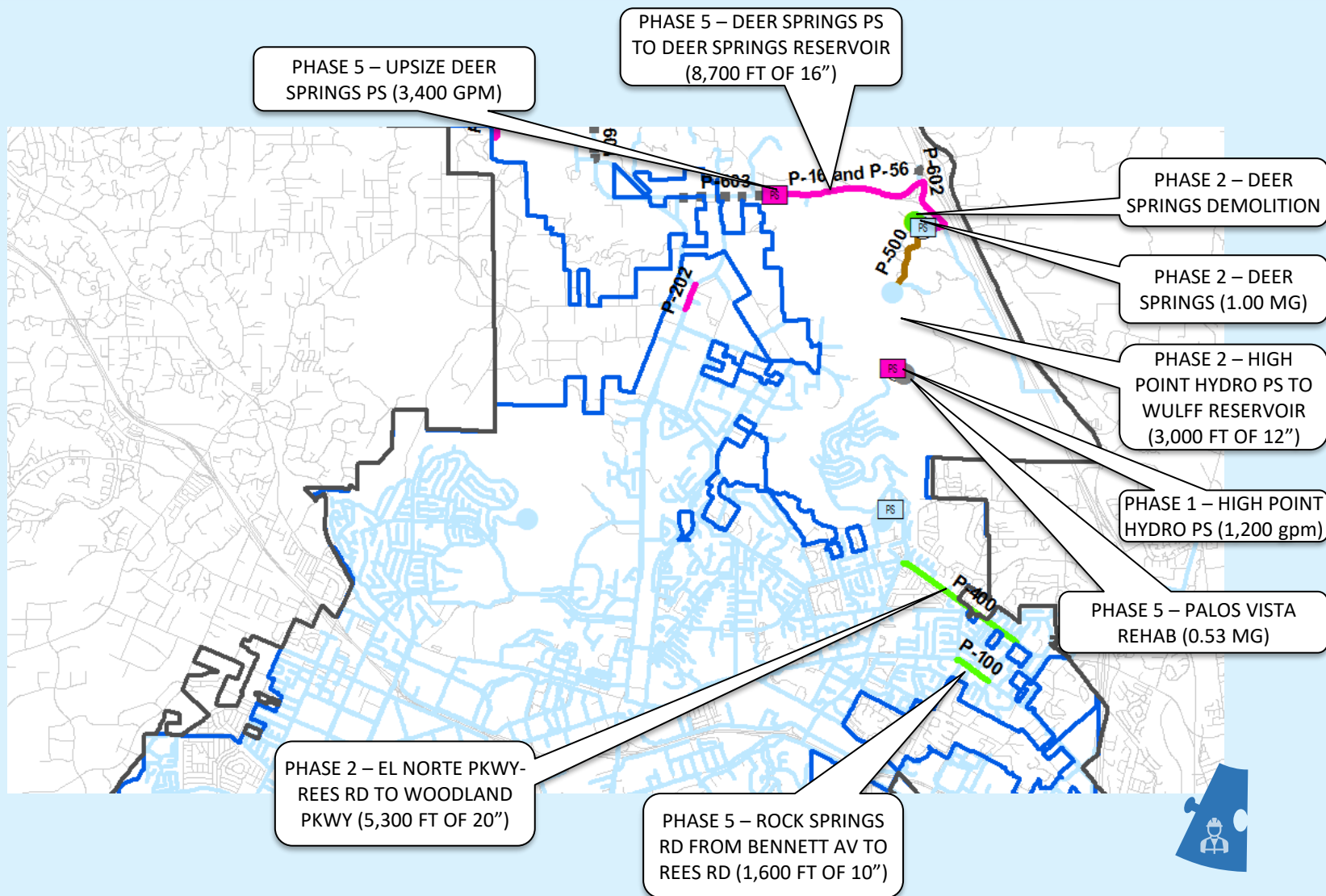
2018 Master Plan

Water CIP – Southern Area



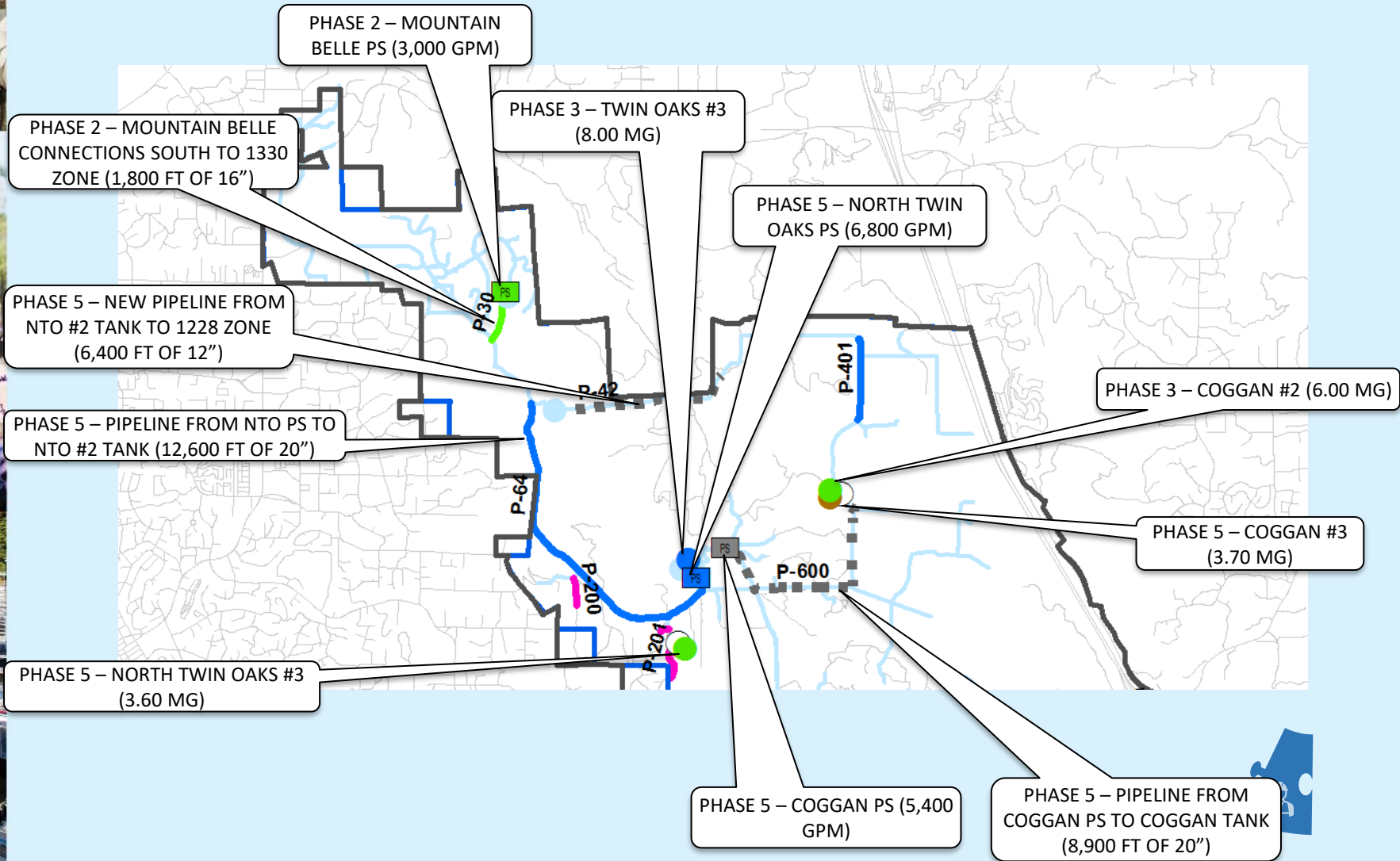
2018 Master Plan

Water CIP – Central Area



2018 Master Plan

Water CIP – Northern Area



Projected CIP Cost Estimates Wastewater Projects – (26)



Project Name	Size & Length	Unit Cost (\$/ft)	Scaling Factor	CIP Cost
Montiel Lift Station	400 gpm (including stand-by)	1,100/gpm	3.5	\$1,500,000
Rock Springs Rd Sewer	12 & 15-inch; 2,600 feet	310/375	4.0	\$3,500,000
SM Interceptor Phase II	42-inch; 1,900 feet	1020	3.0	\$5,800,000
SM Interceptor Phase III	42-inch; 1,800 feet	1020	3.0	\$5,500,000
Pico Ave Sewer	12-inch; 1,400 feet	310	1.1	\$500,000
Mission Alley Pipeline	12-inch; 1,500 feet	310	1.0	\$500,000
Diamond Siphon	15-inch; 200 feet	375	10.0	\$800,000
Old Questhaven Rd	36-inch; 2,100 feet	880	1.0	\$1,800,000
Bingham Sewer	12-inch; 700 feet	310	1.0	\$200,000
Craven Rd Sewer	12-inch; 2,700 feet	310	1.0	\$800,000
San Marcos Blvd West	12-inch; 6,600 feet	310	2.0	\$4,100,000
Camino de Amigos Sewer	12-inch; 3,500 feet	310	1.0	\$1,100,000
Nordahl Shopping Center	12 & 15-inch; 3,800 feet	310/375	1.5	\$2,100,000

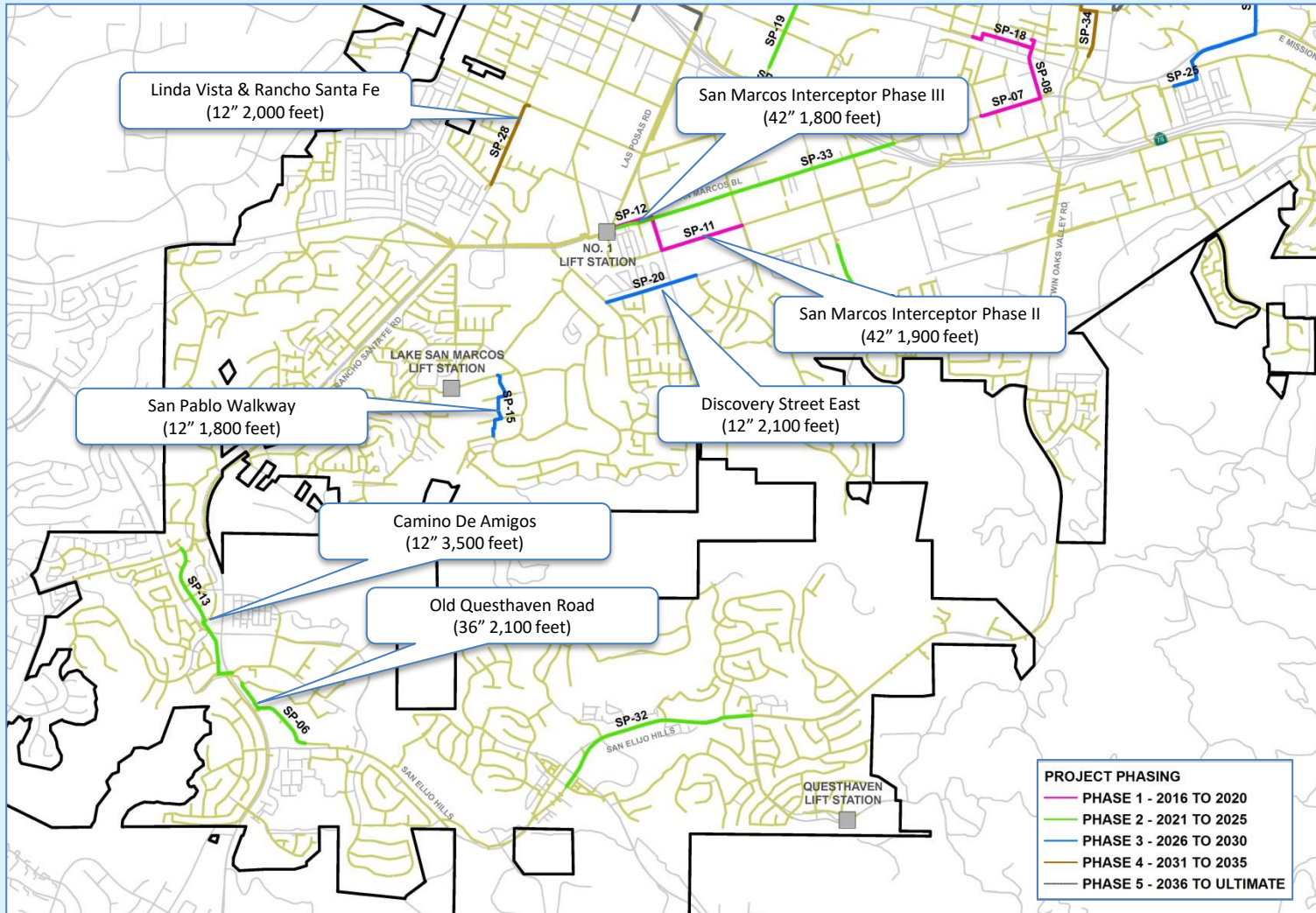


Projected CIP Cost Estimates Wastewater Projects – (26)



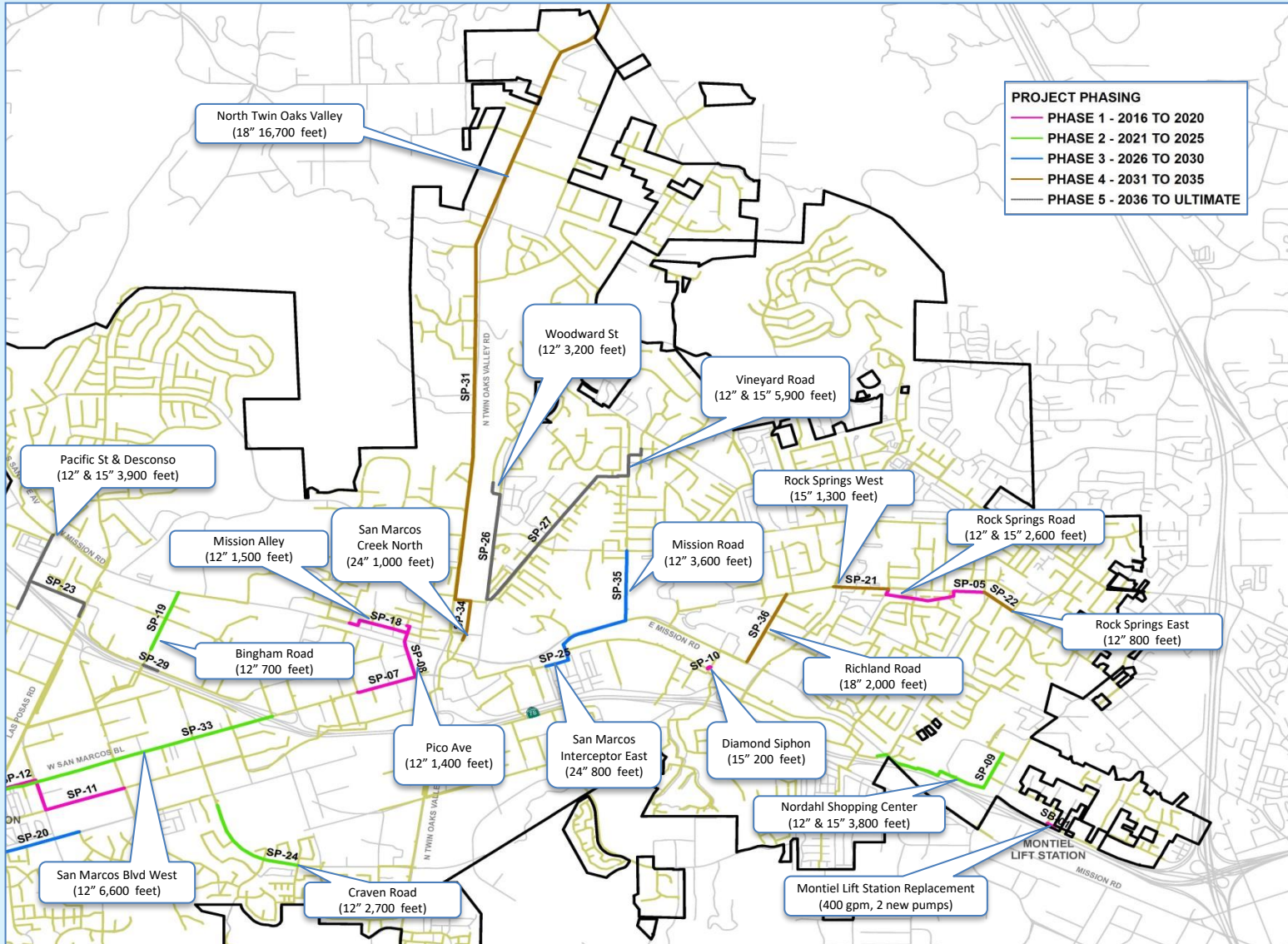
Project Name	Size & Length	Unit Cost (\$/ft)	Scaling Factor	CIP Cost
San Pablo Walkway	12-inch; 1,800 feet	310	3.0	\$1,700,000
Discovery St East Sewer	12-inch; 2,100 feet	310	1.0	\$700,000
SM Interceptor East	24-inch; 800 feet	670	1.5	\$800,000
Mission Rd & Mulberry	12-inch; 3,600 feet	310	1.5	\$1,700,000
Rock Springs Rd West	15-inch; 1,300 feet	375	1.0	\$500,000
Rock Springs Rd East	12-inch; 800 feet	310	1.0	\$200,000
Linda Vista/Rancho Santa Fe Intersection	12-inch; 2,000 feet	310	2.0	\$1,200,000
North Twin Oaks Valley Rd	18-inch; 16,700 feet	495	1.0	\$8,300,000
San Marcos Creek North	24-inch; 1,000 feet	670	2.0	\$1,300,000
Richland Rd Sewer	18-inch; 2,000 feet	495	1.0	\$1,000,000
Woodward St Sewer	12-inch; 3,200 feet	310	1.0	\$1,000,000
Vineyard Rd Sewer	12 & 15-inch; 5,900 feet	310/375	1.0	\$2,000,000
Pacific St & Descanso	12 & 15-inch; 3,900 feet	310/375	1.1	\$1,500,000
Total	73,900 feet			\$50,100,000

2018 Master Plan Wastewater CIP – Southern Area



2018 Master Plan

Wastewater CIP – North & Central



2018 Master Plan Land Outfall CIP

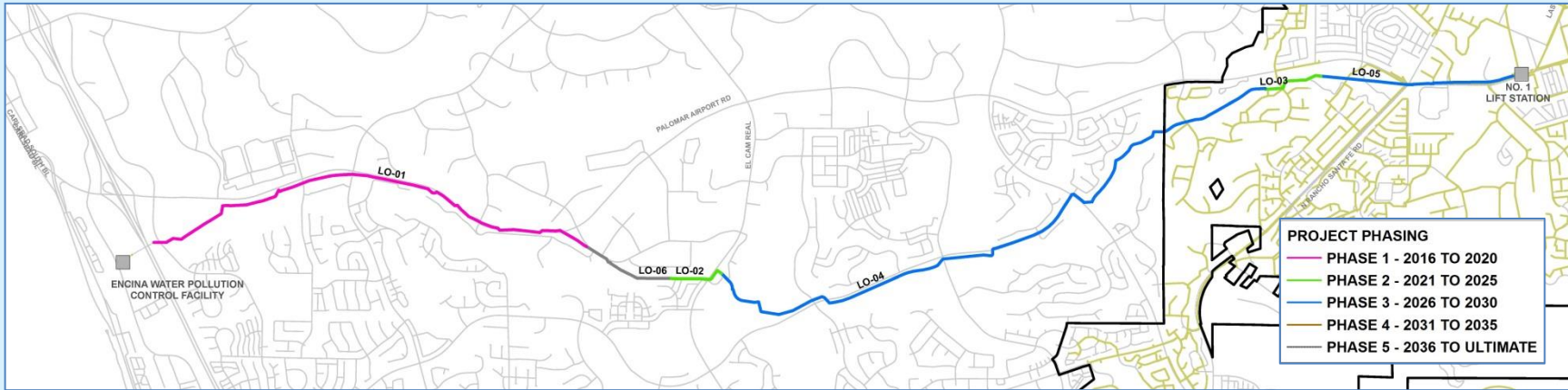


Land Outfall Section	Length and Type of Project	Size	Phase Needed
Gravity Section D	Replace 7,900 feet of gravity sewer	36" to 48"	1
Gravity Section A – Tunnel Section to Siphon A	Replace 1,500 feet of gravity sewer	42"	2
Gravity Section B – Main Section	Replace 1,500 feet of gravity sewer	36"	3
Siphon Section A	Parallel 18,200 feet of inverted siphon sewer	30"	3
Gravity Section D	Replace 4,900 feet of gravity sewer	36" to 42"	5



2018 Master Plan

Wastewater CIP – Land Outfall



- 8 miles long
- Pipe diameter ranging from 24-inch to 48-inch
- Sized to transport ultimate peak dry weather flow of 22.65 MGD
- Total projected cost: \$44,800,000

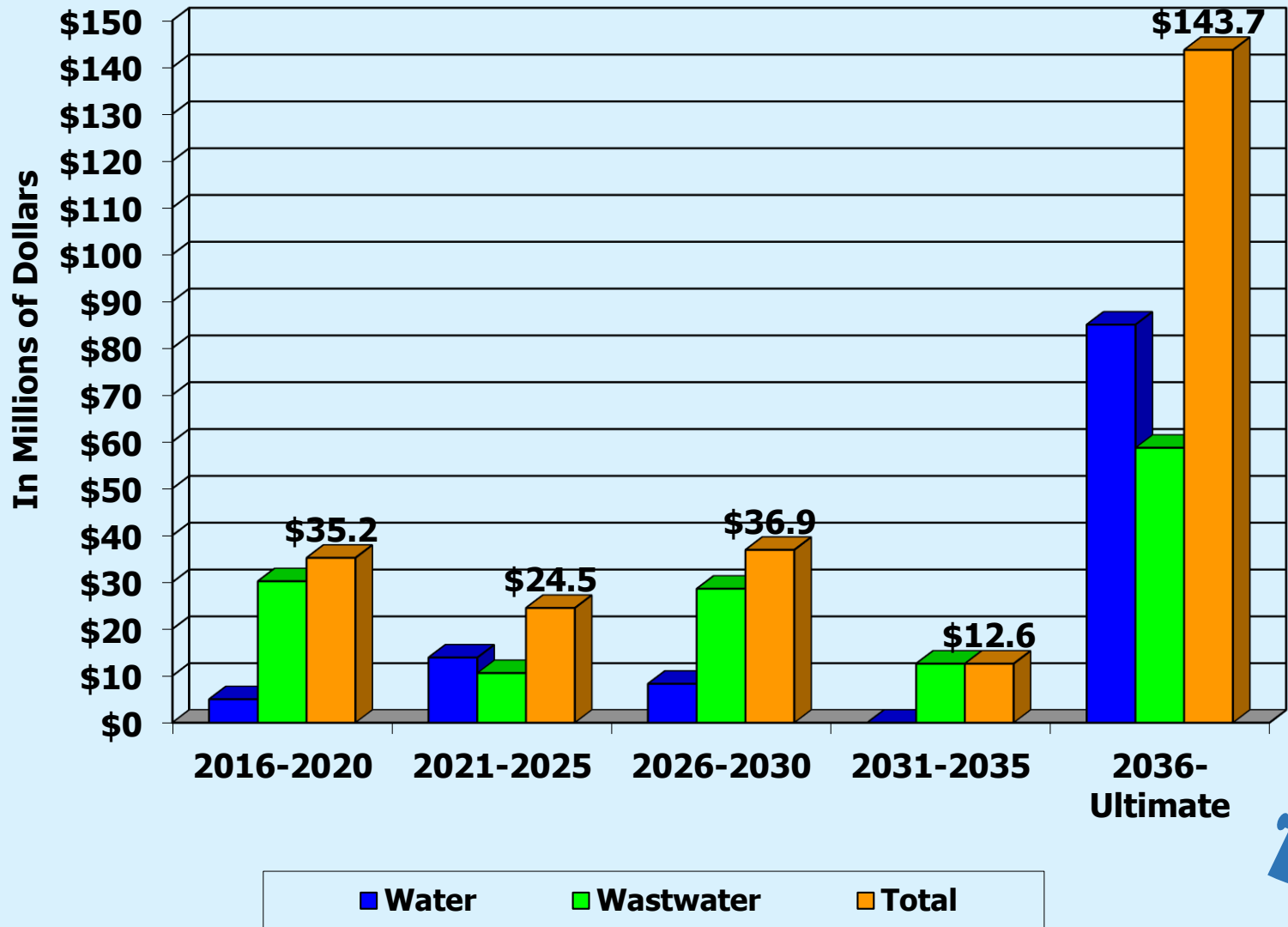


CIP Cost Estimate Comparison

Component	Current CIP Cost Estimate
Water Storage	\$54,200,000
Water Pump Station	\$28,800,000
Water Pipelines	\$29,100,000
Wastewater Pipelines	\$50,100,000
Wastewater Land Outfall	\$44,800,000
Wastewater Treatment	\$45,900,000
Total Cost Estimates	\$252,900,000



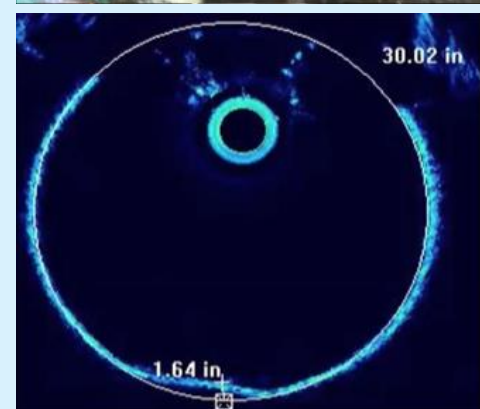
CIP Costs per Phase



Pipeline Condition Assessment Program Overview

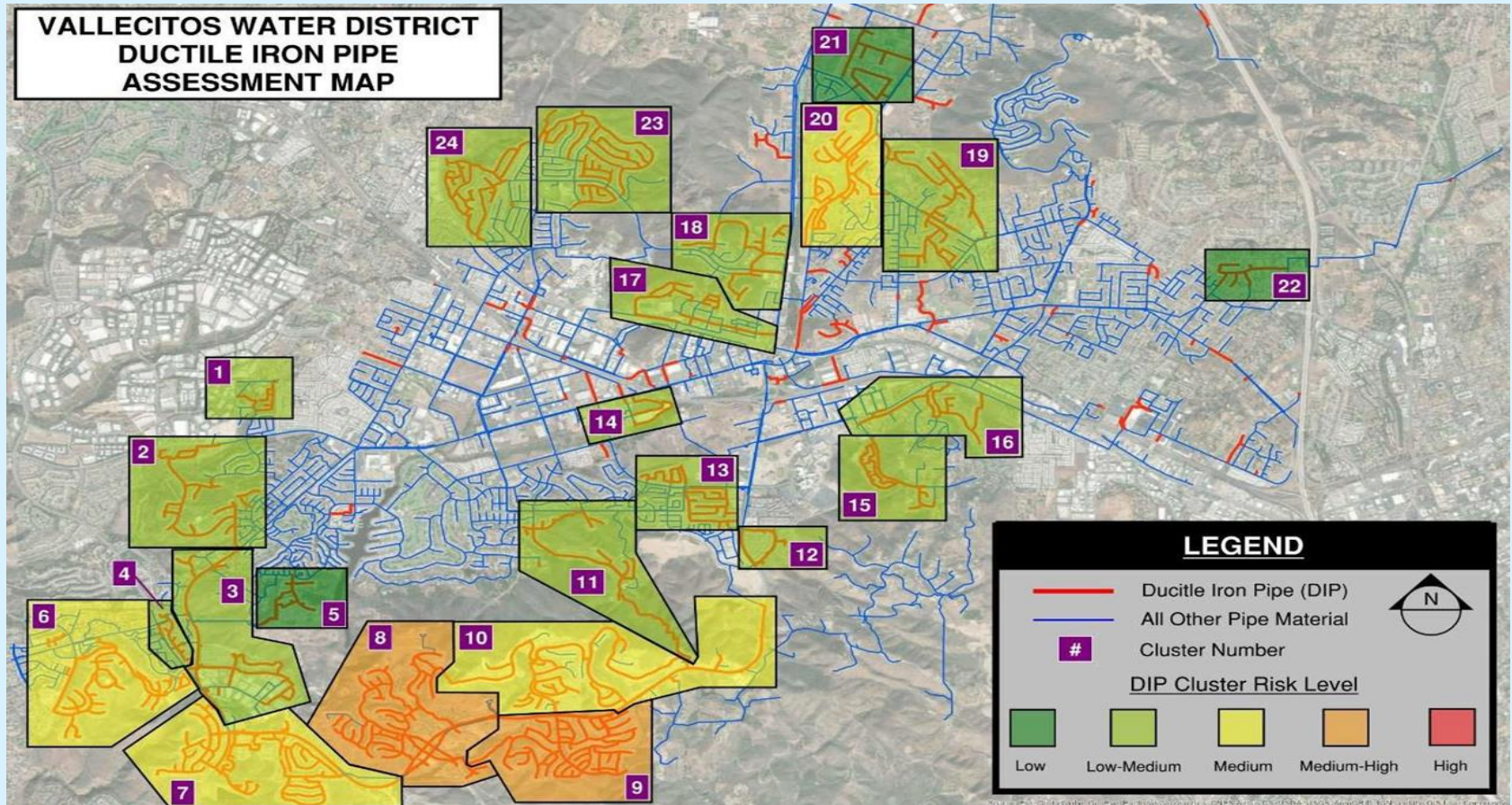


- Condition assessments will provide necessary information to determine which pipes require repair, rehabilitation, or full replacement.
- VWD will implement a phased, multi-year condition assessment program to collect this information. Assess 1-2 miles of DI or CML&C per year
- Currently VWD has @ 200 miles of DI pipe
- Develop an Asset Management Plan to forecast the renewal and replacements needed from the Condition Assessments



Asset Management

- District-wide Ductile Iron Pipe assessment and renewal/replacement planning



5-Year CIP Schedule Water Projects



Project Name	CIP Budget	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26
Palos Vista PS RVSS Replacement	\$517,000	X				
Sage Canyon Tank Refurbishment	\$1,155,000	X				
Las Posas Waterline Replacement	\$503,000	X				
Rock Springs Valve Replacement	\$300,000		X			
Tres Amigos Waterline Replacement Ph I	\$3,035,000		X			
Coggan Pump Station Genset	\$325,000		X			
Richland I Tank Exterior Refurbishment	\$405,000		X			
Coronado Hills Tank Exterior Refurbishment	\$460,000		X			
Mountain Belle Tank Exterior Refurbishment	\$455,000			X		
Tres Amigos Water Line Replacement Phase II	\$3,850,000				X	X
El Norte Parkway Water Line Extension	\$4,100,000					X
Subtotal	\$15,105,000					



5-Year CIP Schedule Wastewater Projects



Project Name	CIP Budget	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26
Emergency Bypass Rehab Project	\$3,210,000	X				
Sewer Lining and Rehab 2021	\$870,000	X				
Montiel Lift Station and Forcemain Replacement	\$5,580,000	X	X			
Failsafe Rehabilitation (Buena Reach)	\$2,985,000	X	X			
Rancheros Drive Sewer Replacement	\$300,000		X			
Lake San Marcos Lift Station Improvements	\$235,000		X			
Camino de Amigos Sewer Replacement	\$1,380,000		X	X		
Richland Invert Replacement	\$1,540,000		X	X		
Land Outfall Parallel Siphon Sewer Section A, Ph I	\$11,320,000			X	X	
Land Outfall Gravity Sewer Sec D PH I	\$8,700,000				X	X
San Marcos Blvd. West Sewer Replacement	\$4,100,000					X
Land Outfall Parallel Siphon Section A, Phase II	\$14,200,000					X
Subtotal	\$54,420,000					

5-Year CIP Schedule

Meadowlark WRF Projects

Project Name	CIP Budget	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26
Tertiary Structural Rehab and Repairs	\$715,000	X				
Conversion to Sodium Hypochlorite	\$1,845,000		X			
Chlorine Contact Tank Expansion	\$4,719,000		X	X		
Subtotal	\$7,279,000					



5-Year CIP Program Summary



Fiscal Year	Total CIP Budget
2021-2022	\$9,760,000
2022-2023	\$13,710,000
2023-2024	\$9,935,000
2024-2025	\$11,935,000
2025-2026	\$21,575,000
Total	\$67,000,000

More Information



2018 Master Plan

<https://www.vwd.org/home/showpublisheddocument/10656>

Adopted CIP Budget

<https://www.vwd.org/home/showpublisheddocument/13086>





Questions?

