



Finance Committee Capital Investments

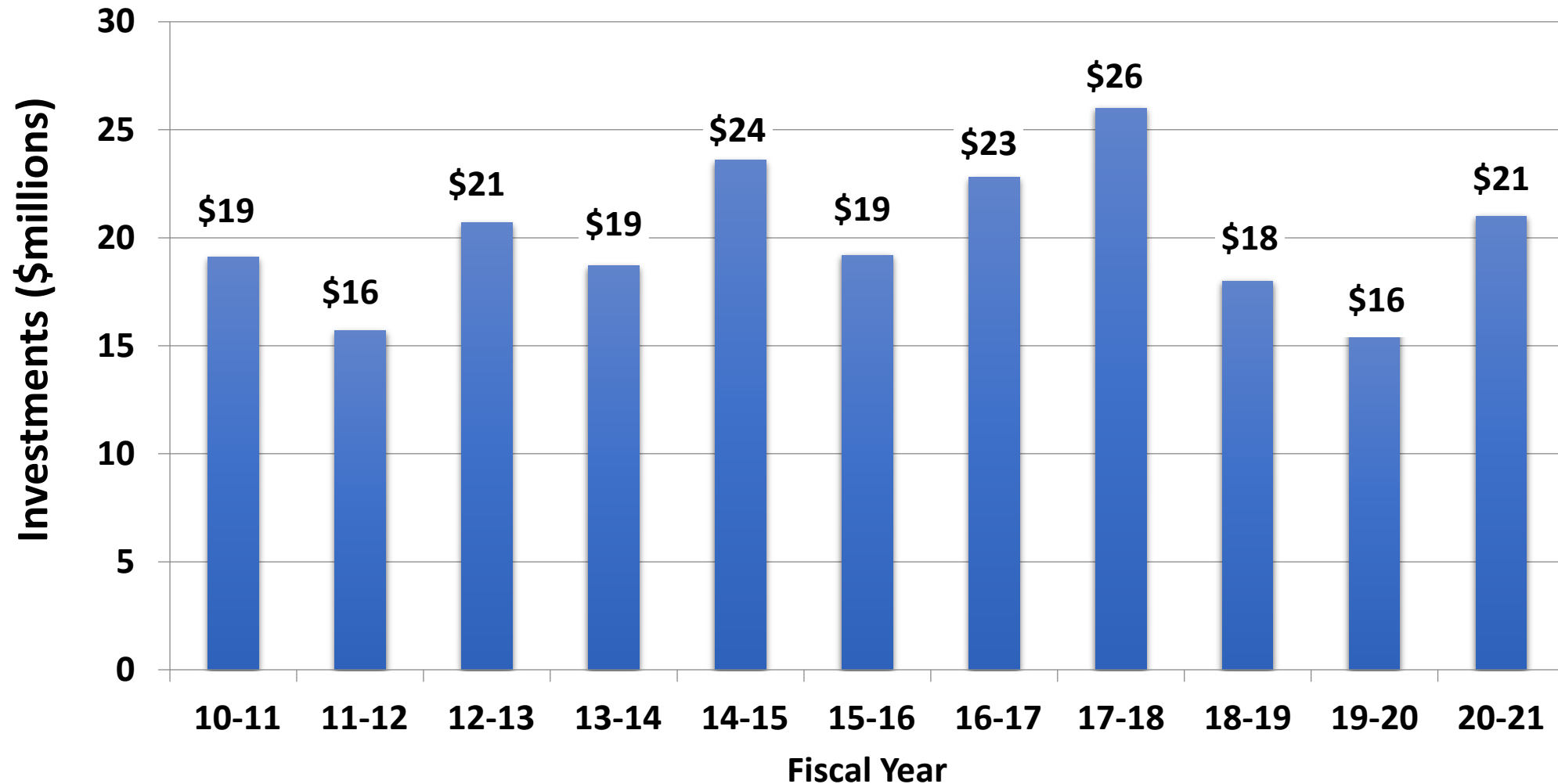
December 9, 2021



Historical and Current Capital Improvement Projects

Historical Capital Investments

10-Year Total = \$221 Million



What Have We Accomplished?

- In the last **10** years, we've invested **\$221M** in the upgrade of district infrastructure:
 - **Seismically upgraded** filters at San Geronimo and Bon Tempe Water Treatment Plants
 - Replaced **16** deficient storage tanks
 - Recoated **9** storage tanks preserving 6.2 MG of storage
 - Replaced **68** miles of deficient pipe (e.g. Sir Francis Drake)
 - Repaired Ross Reservoir Landslide
 - Repaired Porteous Tunnel

Current CIP – Projects in Planning, Design and Construction

Planning

- Bolsa Tank
- AMI
- Hind Tank
- ETSI
- LHMP
- Lake Hydraulic Actuators
- Dam EAP Updates
- Annual WSA
- Smith Saddle Tanks
- Annual DSOD Dam Inspections

Design

- Azalea Hill Project
- Pint Mountain Tunnel
- Wolfback Ridge Landslide
- Lag Creek Project
- Santa Margarita Valves
- Peacock Gap Recycled Water
- Manual T Freitas PRP
- Blithedale PRP
- Treehaven FFIP
- Courtwright Tank
- Phoenix Lake Transfer Pumps
- San Geronimo Creek Crossing
- Alpine Dam Cathodic Protection
- Emergency Intertie Project

Construction

- 3rd Street PRP
- Sunny Oaks PRP
- Monterey Ave FFIP
- Southern Heights Blvd Bridge PRP
- Berry Lane PRP
- Souther Marin Phase II
- Ridge Road
- Welded Steel Pipe Order
- Kastania Pump Station

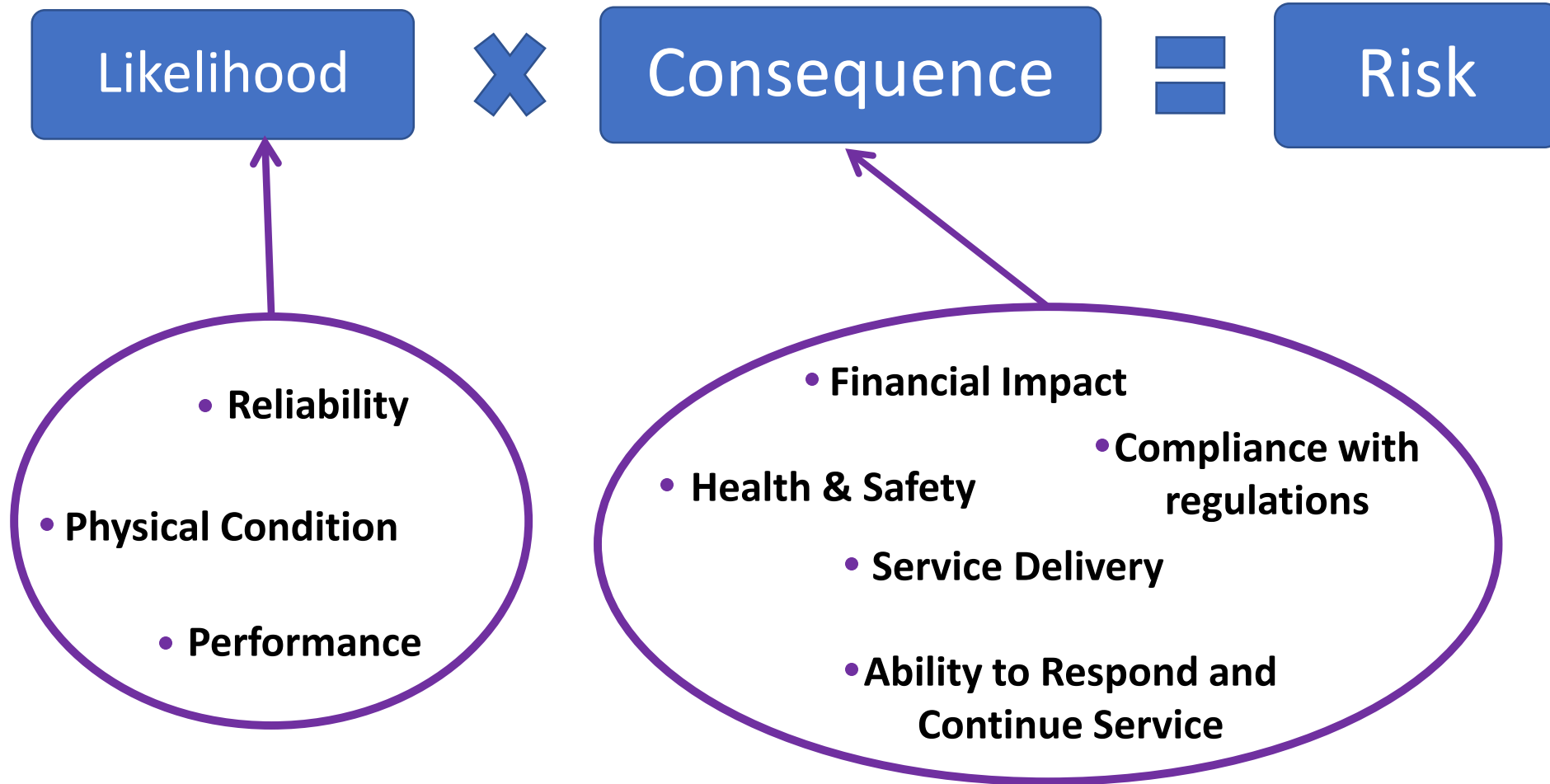
Current Baseline Large Projects Schedule

Large Project Schedule

FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Kastania Pump Station								
		SA Hub						
		Courtwrt Tank	Hind Tank	Bolsa Tank	Scenic Ave Tank	Madera Tank		
	Pine Mountain Tunnel Replacement							
					Ross Reservoir Replacement			
	S Marin Culverts	Kent Pump Rd Culverts		Cross Marin Culverts				
	Lagunitas Toilets		Lagunitas Residence					
	Azalea Hill Project							
	Server Upgrades / GIS / SAP Replacement							

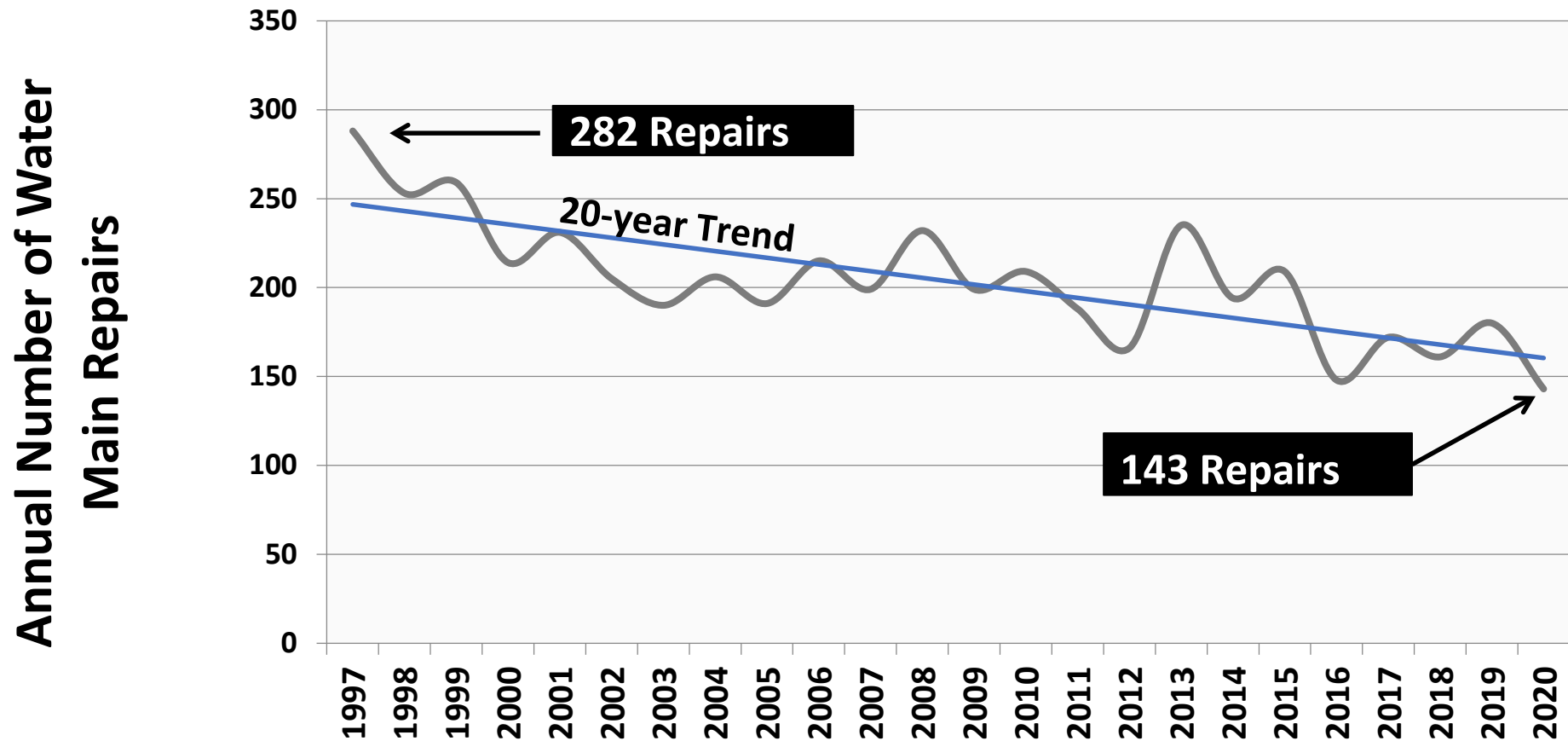
Planning for Future Long Term Capital Investments

2018 Asset Management - Risk Evaluation



Analysis Revealed Reduction in the Probability of Pipe Failure

- Capital investments **reduced** water main repair rate by nearly **50%**



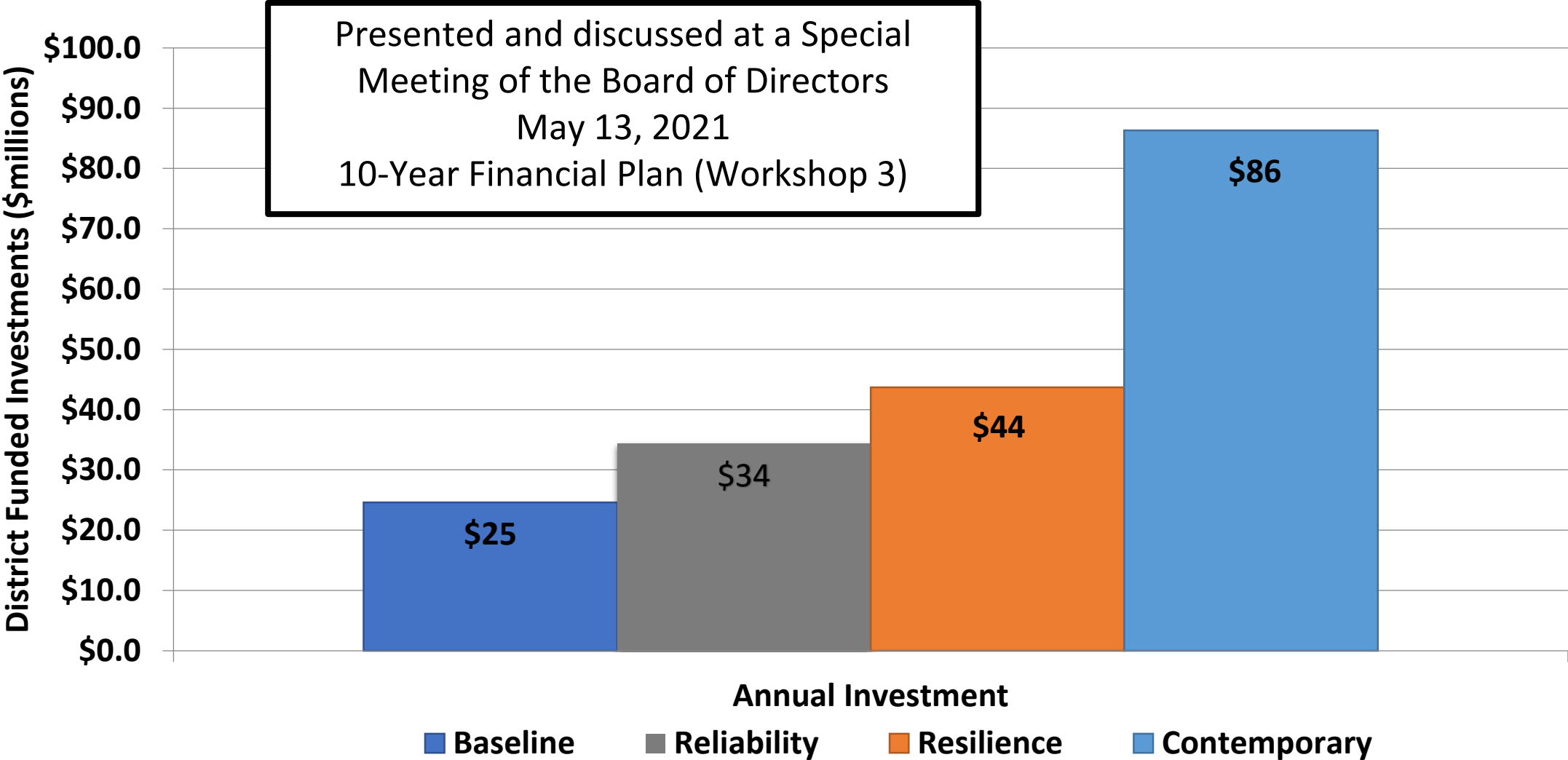
Revision of Pipeline Replacement Rate

Parameter	Rate	System Replacement
Target: Industry Standard 100-Year Replacement Rate	9 miles/year	100 years
Replacement Rate Over <u>the Last 20 years</u>	8.1 miles/year	111 years
Recommended 10-Year CIP Pipeline Replacement Rate	7 miles/year	129 years

Identification of Priority Projects

- March 2017 – Water Resources Plan 2040 Report
- August 2018 – Asset Management Program Launch
- June 2020 – Urban Water Management Plan
- December 2020 – Board Retreat – Water System Master Plan Kick-off and 10-yr Financial Plan (Workshop 1A)
- January 2021 - 10-yr Financial Plan Workshop 1B
- March 2021 - 10-yr Financial Plan Workshop 2
- May 2021 – 10-yr Financial Plan Workshop 3

10 Year Financial Plan Scenarios



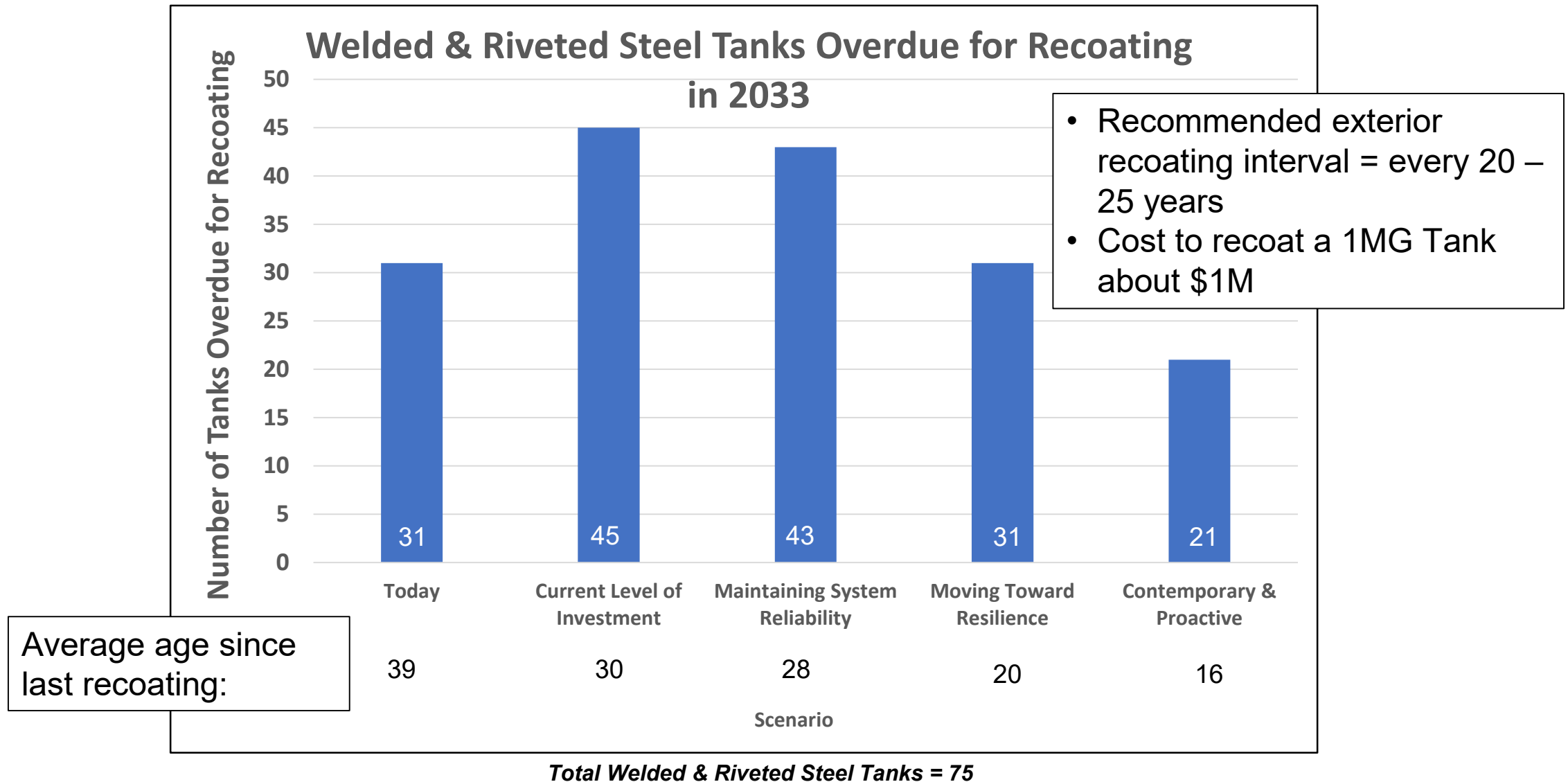
Proposed Projects by Asset Class & Scenario

Storage Tanks

Scenario	Projects	Cost, \$M
Current Level of Investment	Replacement of Ross Reservoir, Pine Mountain Tunnel, & remaining Redwood Tanks; Recoating of Alto Tanks plus 8 additional tanks, Cathodic Protection, Water Quality Improvement	\$43.2
Maintaining System Reliability	Chlorine Analyzers	\$1
	Smith Saddle Tanks Replacement	\$20
	Seismic Retrofits of Steel Tanks	\$3
Moving Toward Resilience	Recoating of 12 additional Steel Tanks	\$11
	Major Storage Tanks	\$6
Contemporary & Proactive	Recoating of 10 additional Steel Tanks	\$9
	Riveted Tank Replacement	\$5.5
	Bolted Steel Tank Replacement	\$17

May 2021 – Board Feedback

Storage Tanks



Watershed

Scenario	Projects	Cost, \$M
Current Level of Investment	BFFIP/Fuel Reduction, Watershed Road Repair, Watershed Recreation Improvements, Watershed Capital Investment	\$23
Maintaining System Reliability	Natural Resources Restoration	\$1
	Accelerated Culvert Repair	\$4
	BFFIP/Fuel Reduction 15% Increase	\$2.4
	Wildfire Preparedness	\$1
Moving Toward Resilience	BFFIP/Fuel Reduction 20% Increase	\$0.5
	Road to Trail Improvements	\$0.8
Contemporary & Proactive	BFFIP/Fuel Reduction 25% Increase	\$0.4
	West Peak Restoration	\$5

May 2021 – Board Feedback

Pipelines

Scenario	Projects	Cost, \$M
Current Level of Investment	7 miles of pipeline replaced annually, 25% plastic service replacement, valve replacement, meter replacement	\$123.4
Maintaining System Reliability	Annual replacement of 1 additional mile of pipeline	\$15
	North Marin Line	\$6
Moving Toward Resilience	Annual replacement of 1 additional mile of pipeline	\$15
	San Quentin Transmission Bottleneck	\$3
	50% plastic service replacement	\$8.8
Contemporary & Proactive	Annual replacement of 1 additional mile of pipeline	\$15
	100% plastic service replacement	\$18.8

May 2021 – Board Feedback

Pipelines

- North Marin Line
 - Sole transmission from Nicasio and Kent to San Geronimo Treatment Plant
 - 33" ACCP installed in 1957



North Marin Line
Crossing Lagunitas
Creek

Pump Stations

Scenario	Projects	Cost, \$M
Current Level of Investment	Replacement of 5 critical pump stations, Refurbishment of 5 distribution pump stations, 10 transmission pump replacements, reactive maintenance	\$17.5
Maintaining System Reliability	Structure Hardening of 20 pump stations	\$2.5
Moving Toward Resilience	Replacement of 5 critical pump stations	\$7.5
	Install 17 permanent generators	\$3.8
	Refurbishment of 8 pump stations	\$6
Contemporary & Proactive	Install 12 permanent generators	\$2.8
	Refurbishment of 8 pump stations	\$6
	Structure Hardening of 44 pump stations	\$5

May 2021 – Board Feedback

Structure Hardening (Wildfire Resiliency)

- Utilization of non-combustible materials, such as concrete blocks, metal roofs, & screens



Hind Pump Station
Installed 1955



Conifer Upper Pump Station
Installed 2019

Treatment Plants

Scenario	Projects	Cost, \$M
Current Level of Investment	Preventative maintenance, Minor repairs, LGVSD	\$4
Maintaining System Reliability	SGTP Clarifier Replacement	\$17.5
Moving Toward Resilience	Fill/Settle/Draw Basins (SGTP & BTTP)	\$0.3
	Electrical System Replacement (SGTP & BTTP)	\$0.5
Contemporary & Proactive	Ozone (SGTP & BTTP)	\$35
	BTTP Clarifier Replacement	\$15.1
	SGTP Solids Handling	\$10.5

May 2021 – Board Feedback

Facilities/Capital Equipment

Scenario	Projects	Cost, \$M
Current Level of Investment	Facilities repairs, Capital Equipment purchases, IT investment, SAP replacement, ranger vehicles	\$30.2
Maintaining System Reliability	Wildland firefighting equipment & water tender	\$1
	Valve exercising vehicle & equipment	\$0.2
Moving Toward Resilience	EOC upgrade	\$5
	Sky Oaks generator improvements	\$0.4
Contemporary & Proactive	Increased vehicle purchases	\$2
	Permanent generators for Administration Building & Corp Yard	\$2.5
	Administration Building replacement	\$20

May 2021 – Board Feedback

Operations

Scenario	Projects	Cost, \$M
Current Level of Investment	Ranger FTE	\$1.8
Maintaining System Reliability	Employee Development FTE	\$2
	Valve exercising FTE	\$2
Moving Toward Resilience	Watershed recreation plan	\$0.3
	In-situ T&O lake study	\$0.5
Contemporary & Proactive	N/A	--

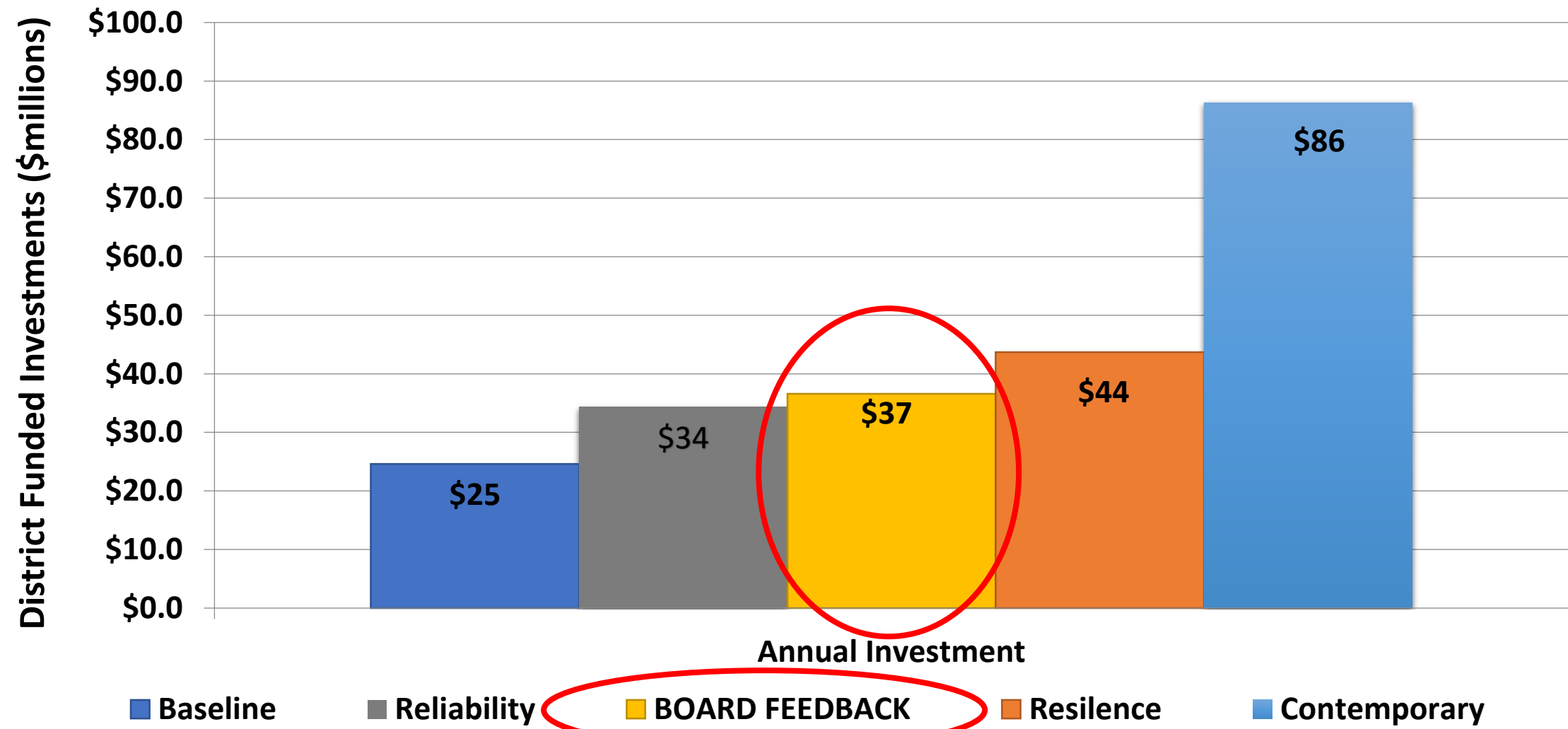
May 2021 – Board Feedback

Water Supply

Scenario	Projects	Cost, \$M
Current Level of Investment	Dam capital improvements	\$3
Maintaining System Reliability	Enhanced conservation – Program A	\$18.7
Moving Toward Resilience	Soulajule electrification	\$6
	Groundwater conjunctive use	\$2
	Enhanced conservation – Program B (includes Program A)	\$23.7
Contemporary & Proactive	Enhanced conservation – Program C (Includes Programs A + B)	\$36.2
	Automated metering infrastructure (AMI)	\$20
	San Quentin recycled water expansion	\$9.2
	Peacock Gap recycled water expansion	\$11
	Phase I recycled water expansion	\$46
	Soulajule environmental enhancement	\$8
	Desalination – 5 MGD	\$150

May 2021 – Board Feedback

10 Year Plan Financial Scenarios



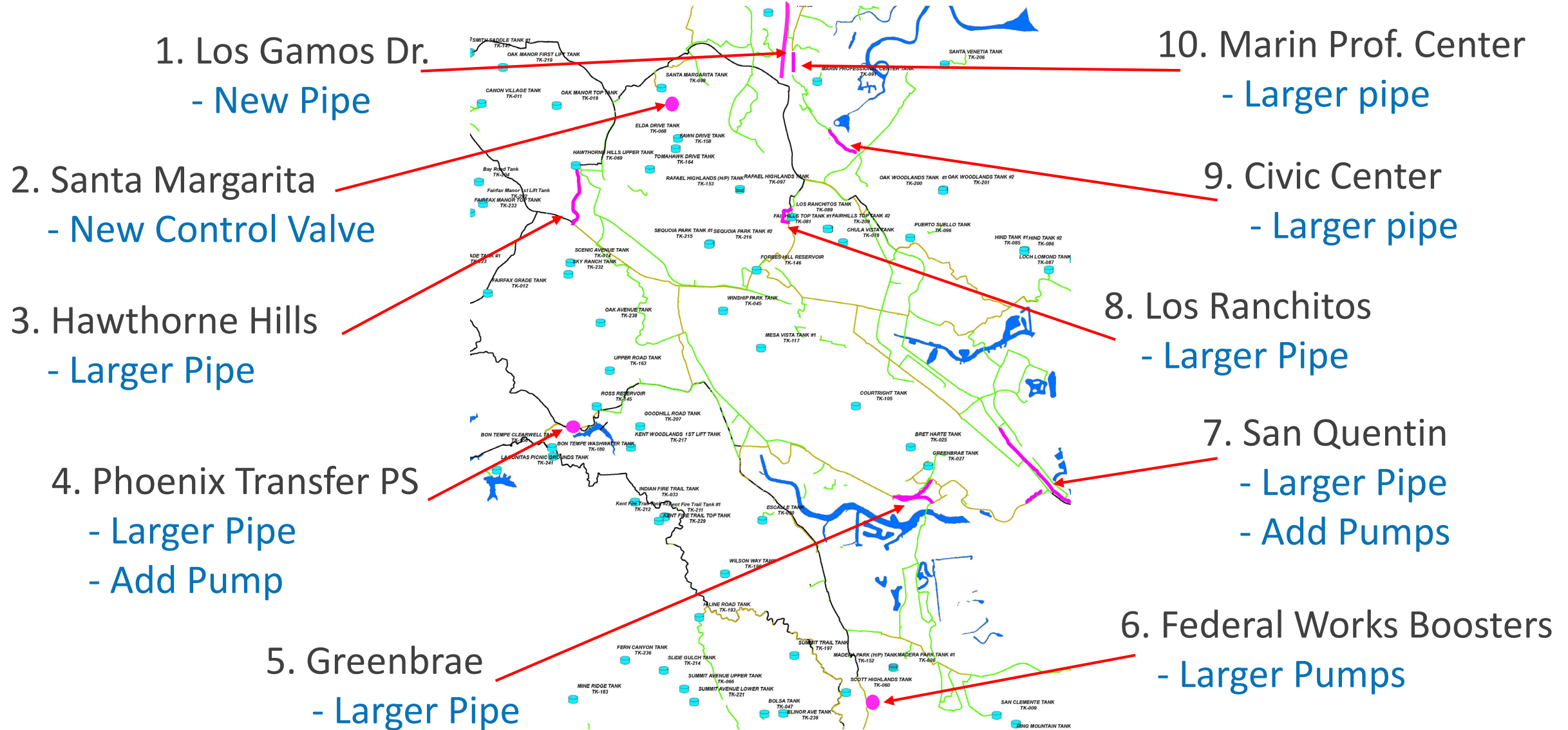
Emergency Transmission System Improvement Project (New Project)

Emergency Transmission System Improvement Project

- **Goal:** Increase operational efficiency to realize contractual import allotments and/or additional winter water supply from the Sonoma County Water Agency.

- Process:**
- 1 Identify flow restrictions in MMWD/NMWD/SCWA transmission pipeline.
 - 2 Model, verify, and rank proposed system improvement projects using hydraulic modeling software.
 - 3 Prioritize projects by implementation timeline and cost.

Identification of Flow Restrictions



Preliminary Model Results, Costs, and Priorities

Project Number	Project Name	Flow Increase (mgd) *	Estimated Total Capital Cost **
1	Santa Margarita Altitude Valve	0.84	\$150,000
2	San Quentin Suction and Discharge Improvements	1.36	\$4,700,000
3	San Quentin Pump addition	0.33	\$280,000
4	Los Ranchitos Tank Bypass	3.01	\$7,200,000
5	Hawthorne Hills Bypass Pipe	0.15	\$6,900,000
6	Civic Loop Pipe	0.04	
7	Los Gamos Pipeline	1.51	\$4,900,000
8	Greenbrae Pipe Upsizing	0.06	\$1,600,000
9	Federal Works Pump Improvements	3.60	
10	Phoenix Transfer Pump Improvements		
11	Civic Center Santa Venetia Intertie	0.06	
	Total	10.96	\$ 25,630,000

* Increase in flow is preliminary from consultant, still being vetted by MMWD Staff.

** Estimated Capital Cost is preliminary, likely change as scope is refined.

Funded versus Unfunded Projects

Project	Cost, \$M
Current Funded Capital Investments	\$24.6M / Yr
Pine Mountain Tunnel Replacement	\$20M
Unfunded Projects:	
North Marin Line	\$6
Seismic Retrofits	\$3
Smith Saddle Tanks	\$20
Recoating of 12 additional tanks	\$11
Structure Hardening 20 pump stations	\$2.5
SGTP Clarifier replacement	\$17.5
Wildfire preparedness	\$1
Enhanced Conservation – Program C	\$36.2
AMI	\$20
Valve exercising FTE, vehicle, equipment	\$2.2
Watershed Recreation Plan	\$0.3
Emergency Transmission System Improvements	\$20

**Additional Unfunded
Projects add \$139.7M to
Baseline**

Potential
Projects for
Bond
Funding

Historical and Future Revenue Bonds

Bond Financing History

<u>Bonds</u>	<u>Original Issue</u>	<u>Purpose</u>	<u>Outstanding 6/30/2021</u>
2010 Revenue Bonds	\$32.2	New Money	
2016 Refunding Bonds	\$31.4	Refund 2010 Bnds	\$31.4
2012 Refunding	\$85.0	Refund 2002 Bnds & 2004 COPS	\$76.5
2022 Forward Refund	\$67.5	Refund 2012 Bnds	
2017 Subord Rev Bonds	\$36.1	New Money	\$34.2