Sp Jt BOD and Exec Committee and Wksp on EOT Comm

Capital Investment Plan Process

Item A

June 24, 2025

Item A
Capital Investment Plan Process

Subject

Capital Investment Plan (CIP) Process

Purpose

Provide an overview of the CIP process, asset management strategies to mitigate risk, and upcoming capital projects

Next Steps

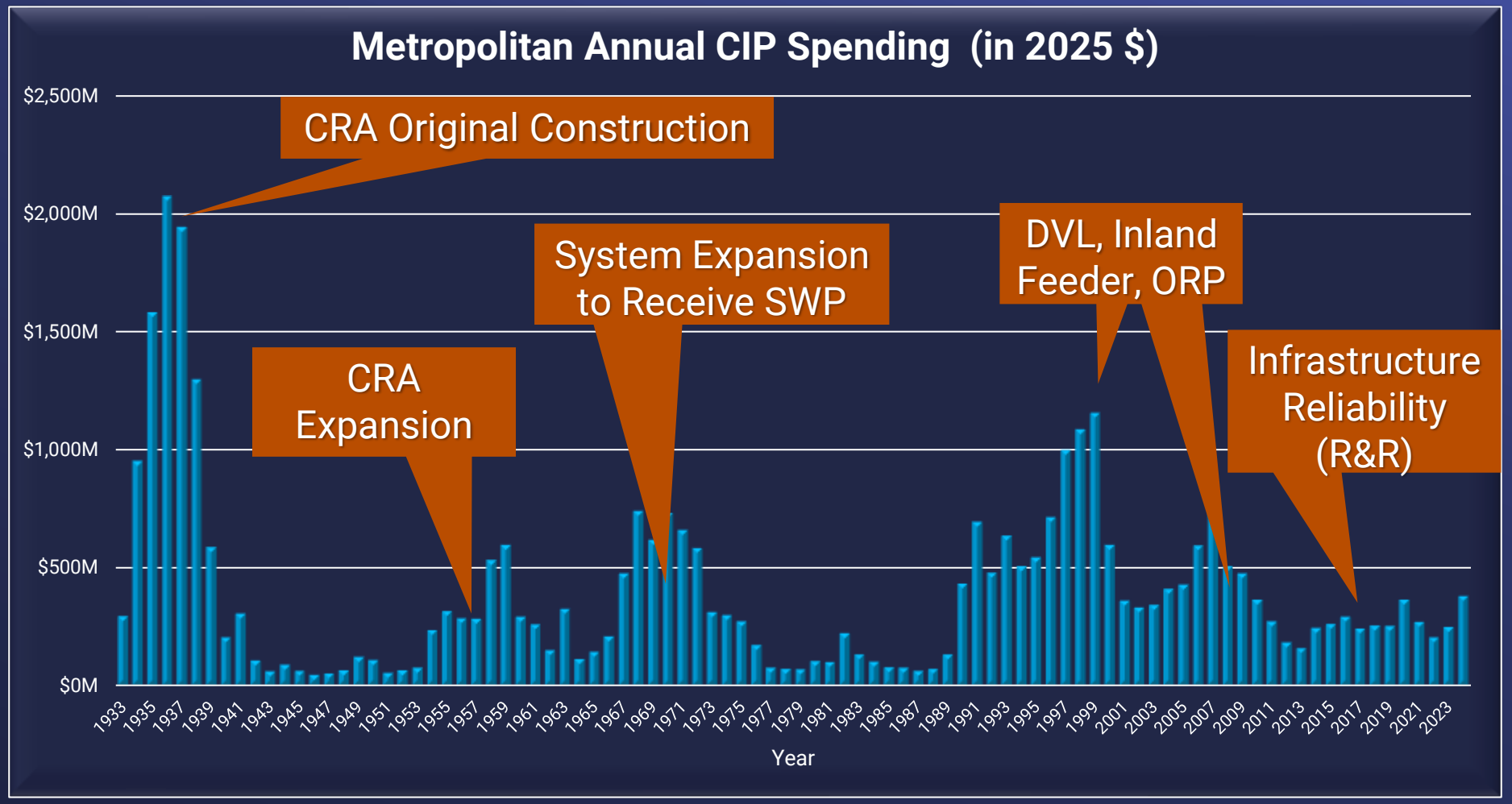
Seek Board input on CIP strategy and return with options later in 2025

Workshop
Capital Investment Plan Process

Agenda

- Metropolitan's CIP – Overview, R&R Scale, Challenges, Big Picture
- Asset Management – Sizing the CIP to manage risk
- CIP Status – Current Biennium & Next Biennium
- Next Steps

Current Spending Moderate by Historic Comparison



Current Spending Driven by R&R

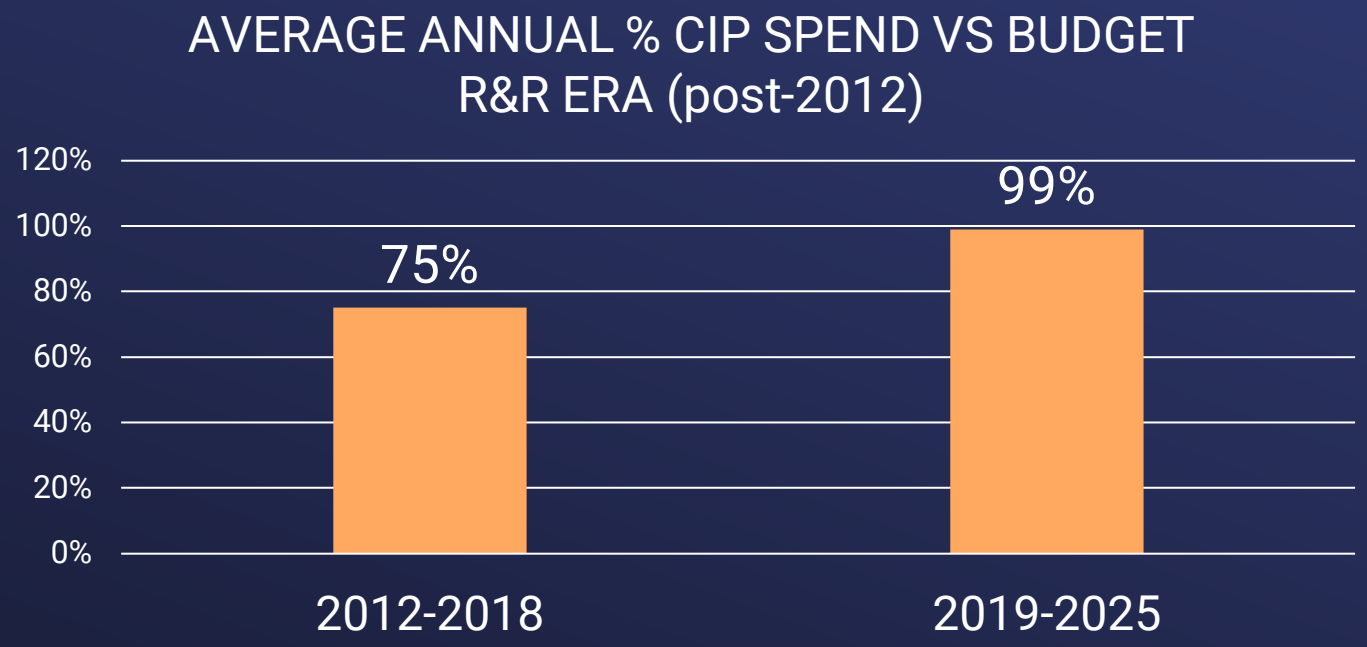
Metropolitan's Complex CIP

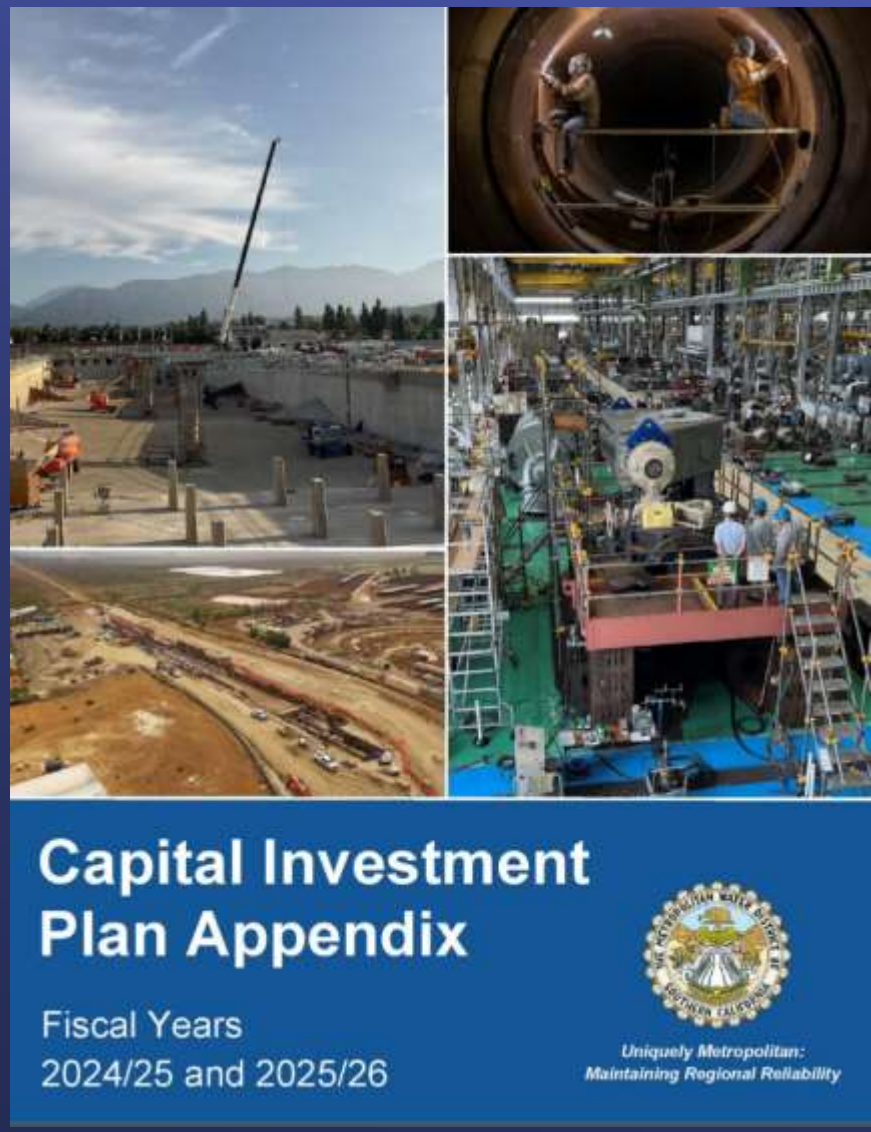
Driven by R&R, Constantly Changing, with Large Projects

- Running CIP – Includes all capital work without a sunset date
  - Call for projects every budget cycle
  - Re-prioritize and re-plan every cycle
  - Run budget scenarios with Finance
- Challenges
  - Organizational – Massive quantity of projects, over 500 non-minor cap projects in current CIP
  - Resources – Increasing ops support needed, urgent projects pull from capital work
  - Cost increases – Inflation, scope definition
  - Scale – Big infrastructure, big projects

2018 Process Change – Improved Efficiency

- CIP transition from approval by project phase to fully-appropriated CIP
- Any project in CIP Appendix to the budget can be worked at staff discretion

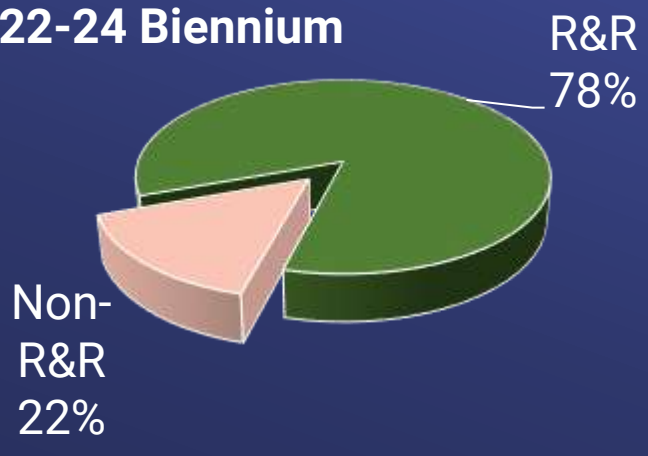




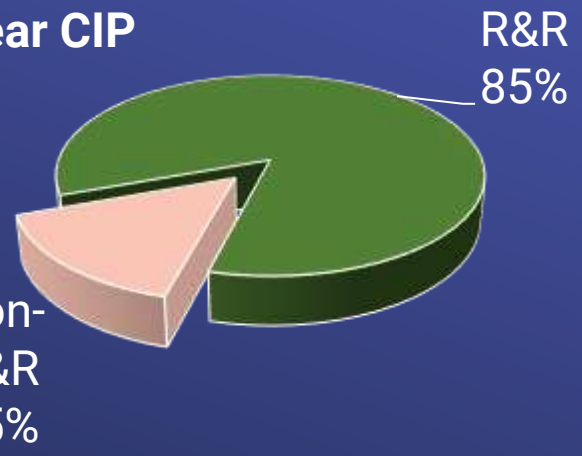
CIP is Composed Mostly of R&R Projects

"R&R" Refurbishment and Replacement Drought Projects Reduce R&R Spending

2022-24 Biennium



10-Year CIP



CRA Transformers (R&R)

Sepulveda Pumping (non-R&R)

Urgent Projects Drive Priorities

CIP is Constantly Changing

- Primary influencer of dynamic plan
- Frequent replanning based on operational & condition data
- Deferrals caused by permitting

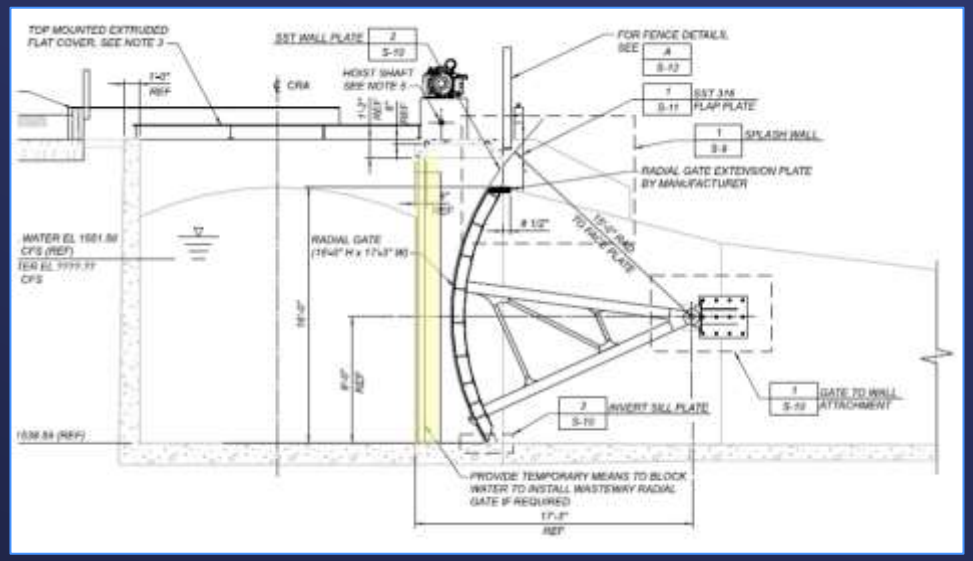
Garvey Reservoir Rehab (Prioritized)

Copper Basin Discharge Valve (Permits)

CIP Budget Constraints Create Legacy Projects

Evolving CIP: New Projects Added to Old Projects Each Budget Cycle

- Although projects continuously proposed, call for projects each biennial budget cycle
  - Approx. 100 new projects each biennium
  - Some projects up to 30 years old

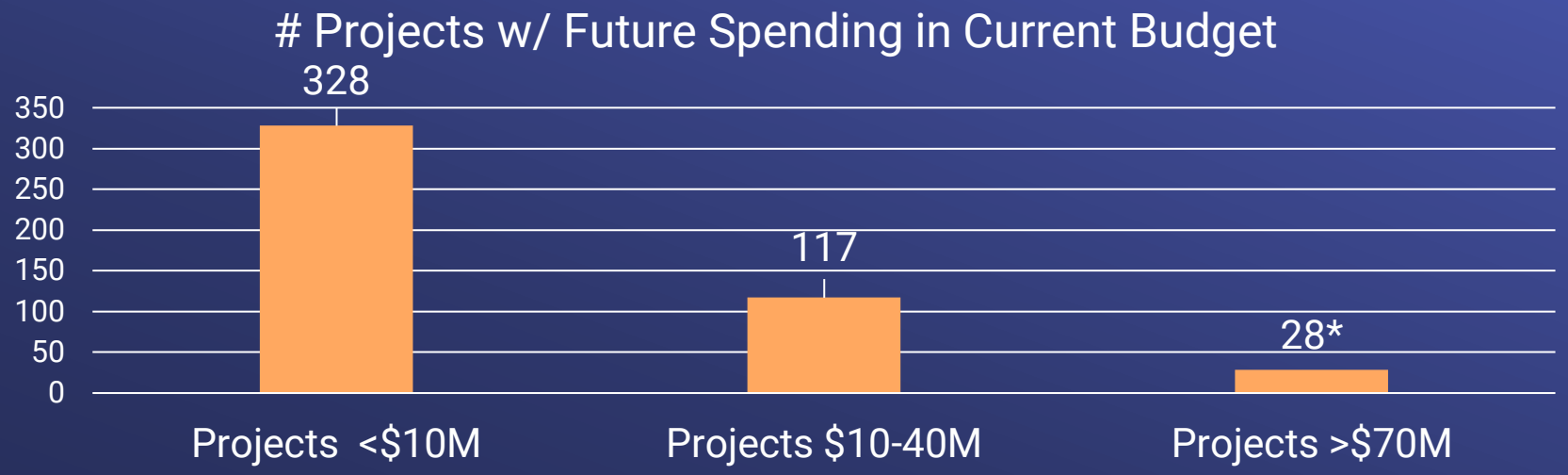


Cabazon Radial Gates (old)

Badlands Tunnel Surge Protection (new)

Big Infrastructure Means Big Projects
High $

Large Projects/Programs vs. Small Projects



- Source: Planning Worksheet, spending years 2025-2064, esc. 4%/yr
- * Includes 4 PCCP feeders condensed to one entry

PCCP Rehab Program ($50M+ each reach)

Jensen Control Room HVAC (~$1M)

Vast Amount of Work Dominated by R&R

Across Business Areas

$ in CIP (in M)*

Orange = R&R
Green = non-R&R

Jensen WTP Dewatering Facilities

Desert Housing/Security

- Source: Planning Worksheet, spending years 2025-2064, esc. 4%/yr

Mature CIP Evaluation Process

Well-Established Review/Prioritization Process – Improving Since Early 2000s

- Proposal Process – Every non-fully funded project proposed for review
- Cash Flow Process
- Risk Analysis/Framework
- CIP Evaluation Committee
- InVizion Software
- Prioritization Plan Formed Based On:
  - Budget constraints
  - Project mix

Proposals and Schedules

Every Proposed Capital Project is Necessary (and often needed immediately)

Project proposal

- Operations staff/plant engineers originate
- Includes scope, justification, alternatives analysis, customer need dates
- Reviewed by area managers and approved by group management

Cash Flow/Estimate-to-Complete

- Every project has a resource-load schedule and cash flow developed
- Cash flow estimated by phase

CIP
Budget
Process

CIP Evaluation – Diverse Reviewers and Scoring Criteria

- ALL projects reviewed by the CIP Evaluation Committee
  - Members represent all business areas
  - Each site/business area visited by committee
  - Scored on justification/driver, service impacts, Member Agency service, revenue generation, sustainability, project status, and RISK

CIP Data Management and Organization

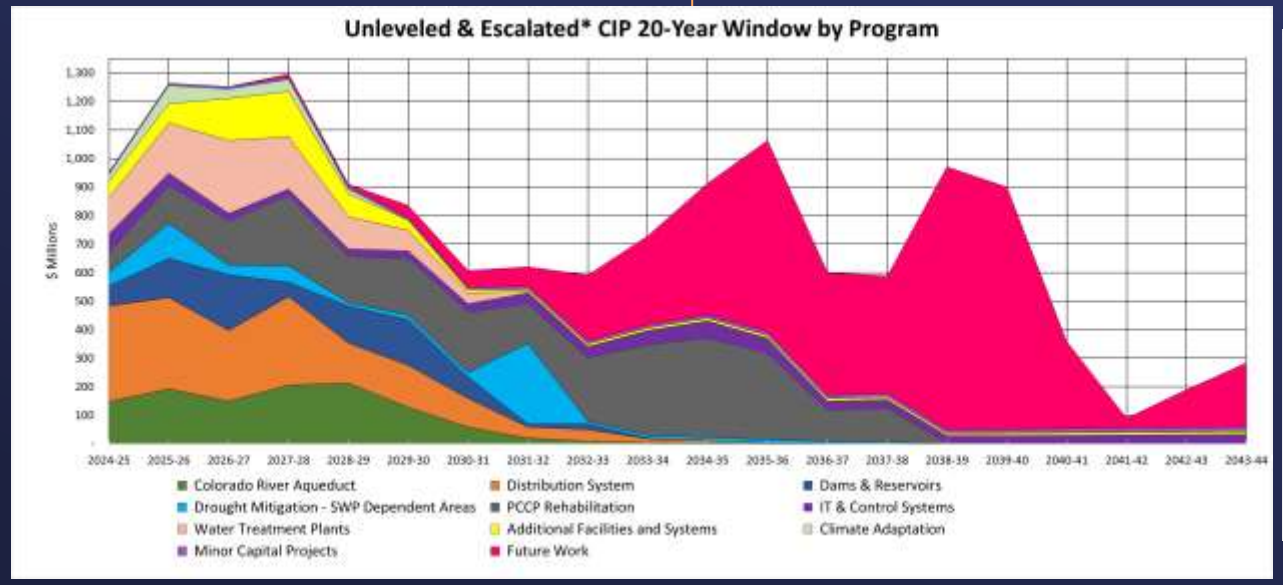
InVizion

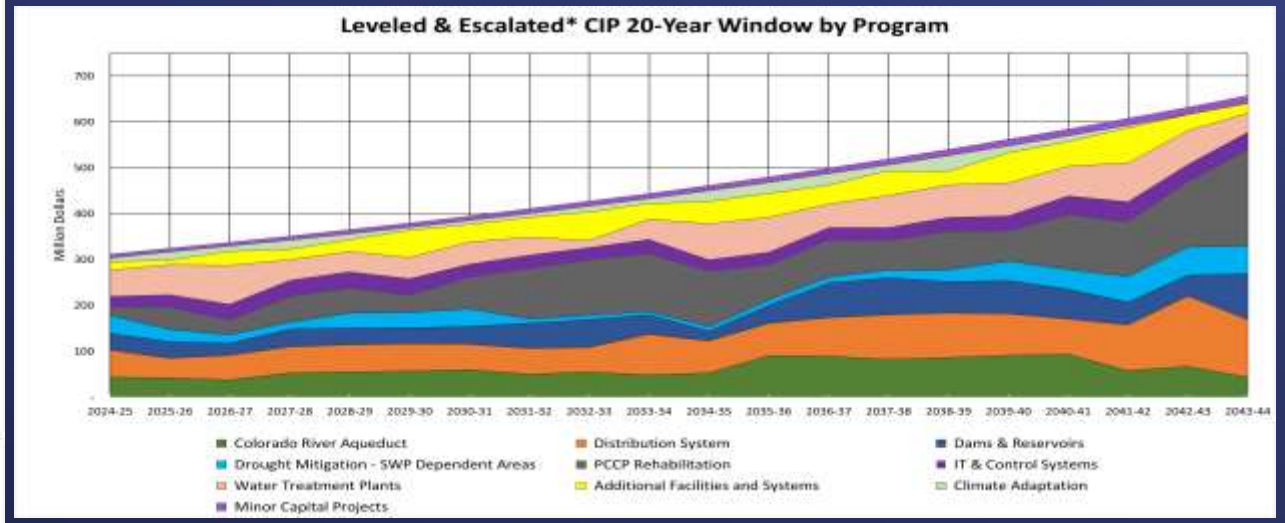
- InVizion Software integrates our project data (programs, scoring) with schedules (cash flows, phase)
  - Developed by some of the original architects of our scheduling software
  - Repository/inventory for current and historic project metadata
  - ‘Database with time’
  - Allows ‘sandboxing’ of multiple budget scenarios

Plan ‘Leveling’ and ‘Layering’

InVizion – Budget Constraint Scenario

- Software automatically schedules projects based on budget ceiling and project scoring
- LEVELING pushes projects out one-by-one that don’t fit within constraint
- LAYERING applies a project mix algorithm accounting for work across all programs

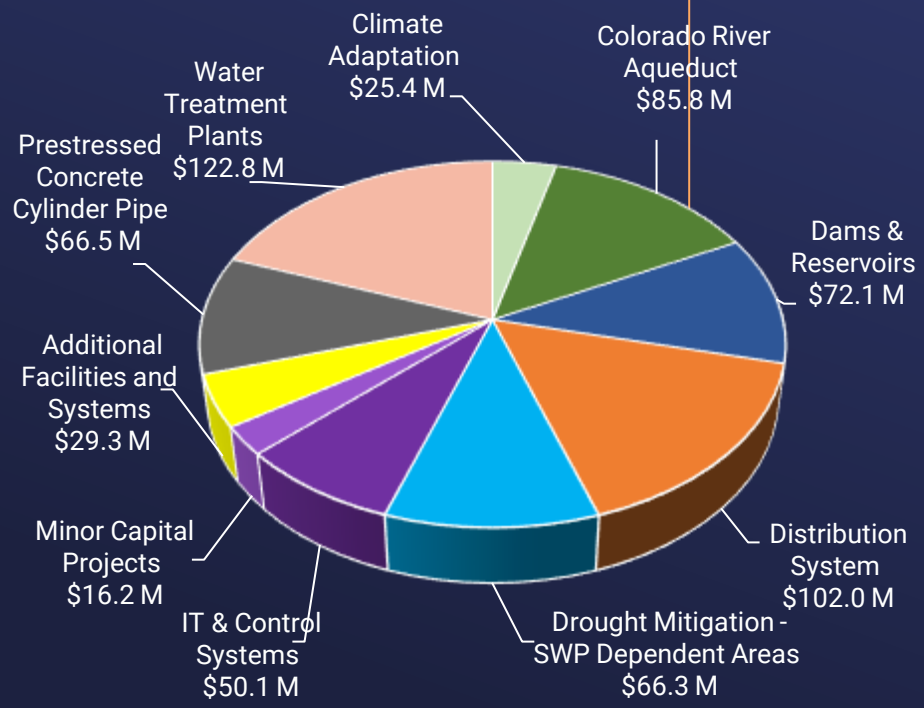


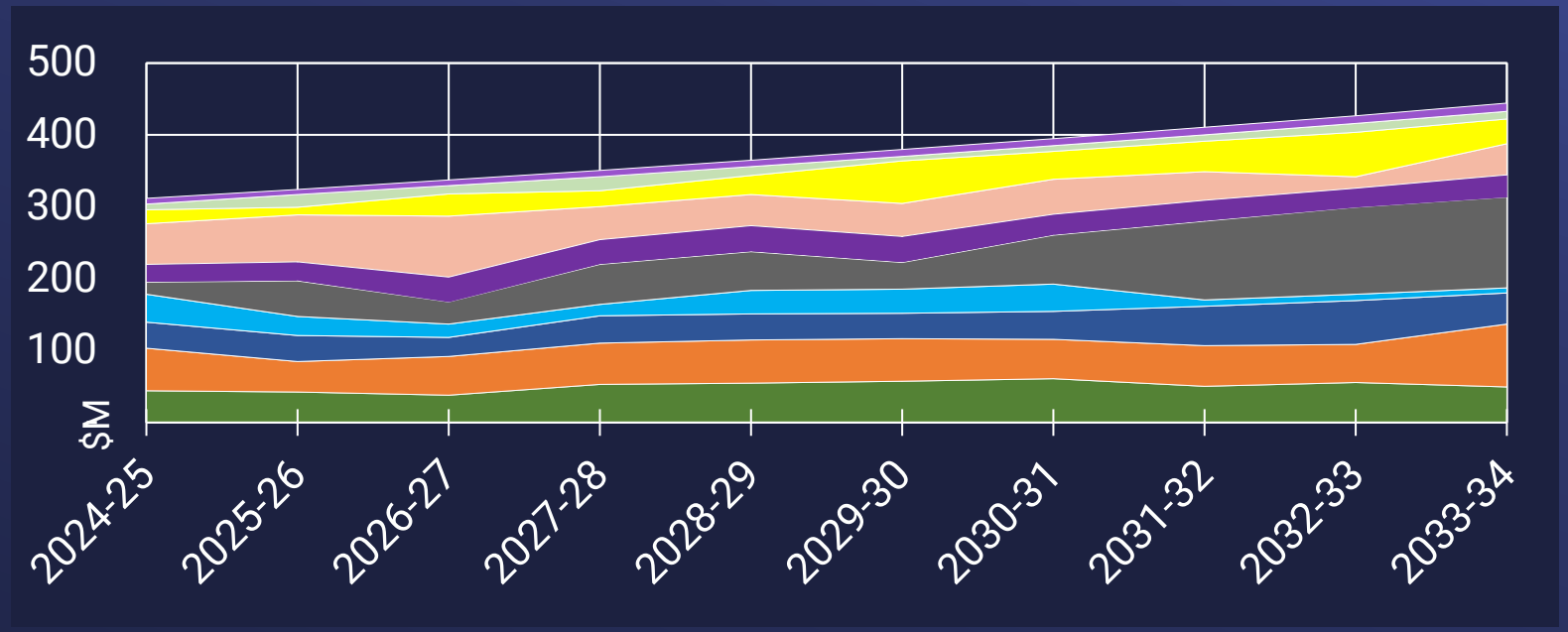


Results for Current Budget Cycle

- Budget set at $300M/yr in 2022, escalated at 4%
- Split amongst 10 Programs

2024/26 Biennium





Extending CIP Beyond 10 Years

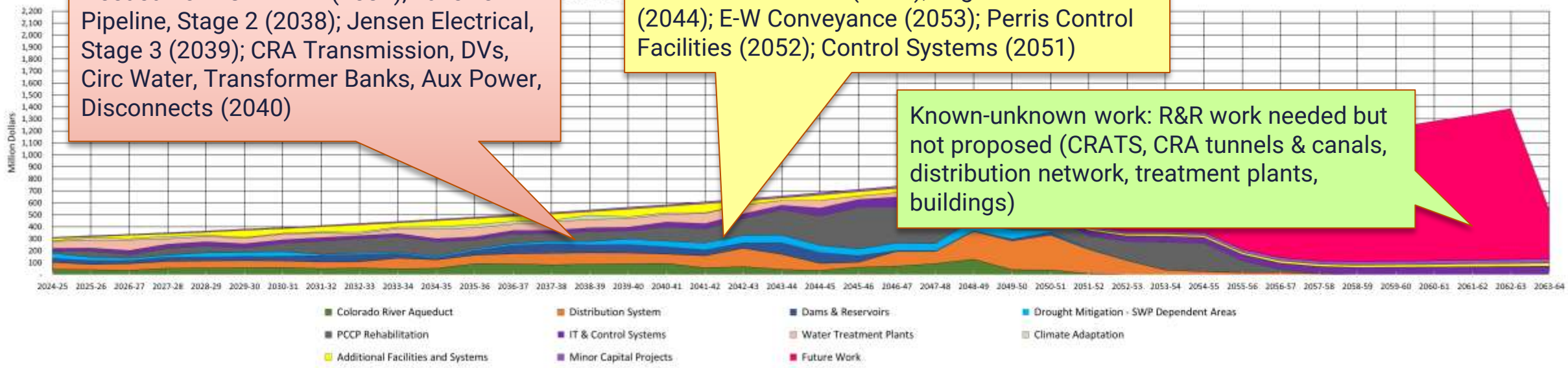
Pushing R&R Projects Out Increases Risk

- Projects prioritized by needed now, needed soon
- At current 4% escalation, projects will take 40+ years to work off
- Snapshot below, new projects added every 2 years
- Adding risk

Needed now: CRAMPR (2039); Lakeview Pipeline, Stage 2 (2038); Jensen Electrical, Stage 3 (2039); CRA Transmission, DVs, Circ Water, Transformer Banks, Aux Power, Disconnects (2040)

Needed soon: East region vault rehabs (2044); Lake Skinner Outlet (2041); Eagle Rock Tower (2044); E-W Conveyance (2053); Perris Control Facilities (2052); Control Systems (2051)

Known-unknown work: R&R work needed but not proposed (CRATS, CRA tunnels & canals, distribution network, treatment plants, buildings)

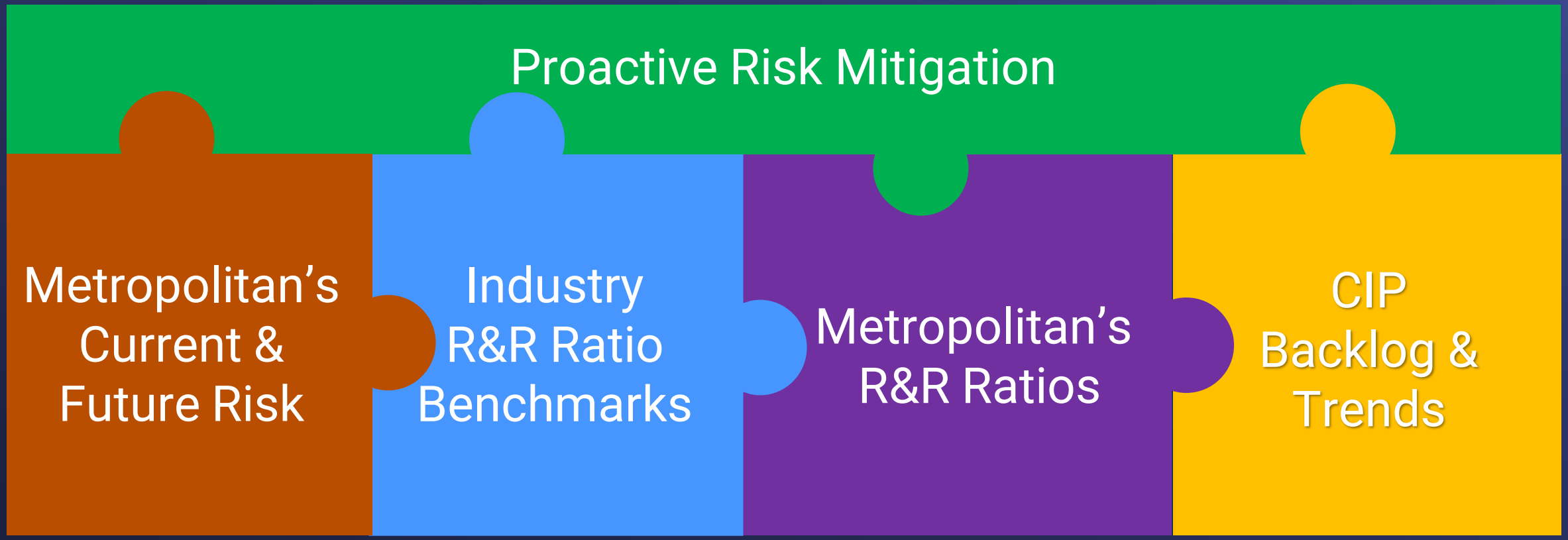


Asset Management

Ricardo Hernandez – Unit Manager
Operations Projects & Asset Management Unit

Best-in-Class Asset Management Approach

- Finding solutions by assessing inputs & data from various sources



Metropolitan's Infrastructure

$31B
Repl. Cost New

Adjusted for inflation only

$46B
Est. Repl. Cost

Adjusted for code & environ. costs

5 Water Treatment Plants

15 Hydroelectric Facilities

6 Pumping Plants

24 Dams & Reservoirs

G.F. Napolitano Pure Water Demo Plant

830 mi. of Distribution Pipelines

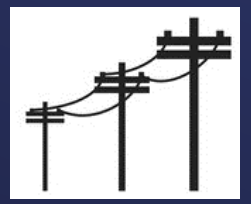
79 mi. of Canals

218 mi. of Tunnels, Siphons, Conduits

450 Chemical/Auxiliary Storage Tanks

11,500 Water Regulating Valves (2 in. to 21 ft dia)

5,000 Motors & Pumps



308 mi. of Power Transmission Lines + 1,200 High Voltage Towers

500 Buildings, Shops, & Other Structures

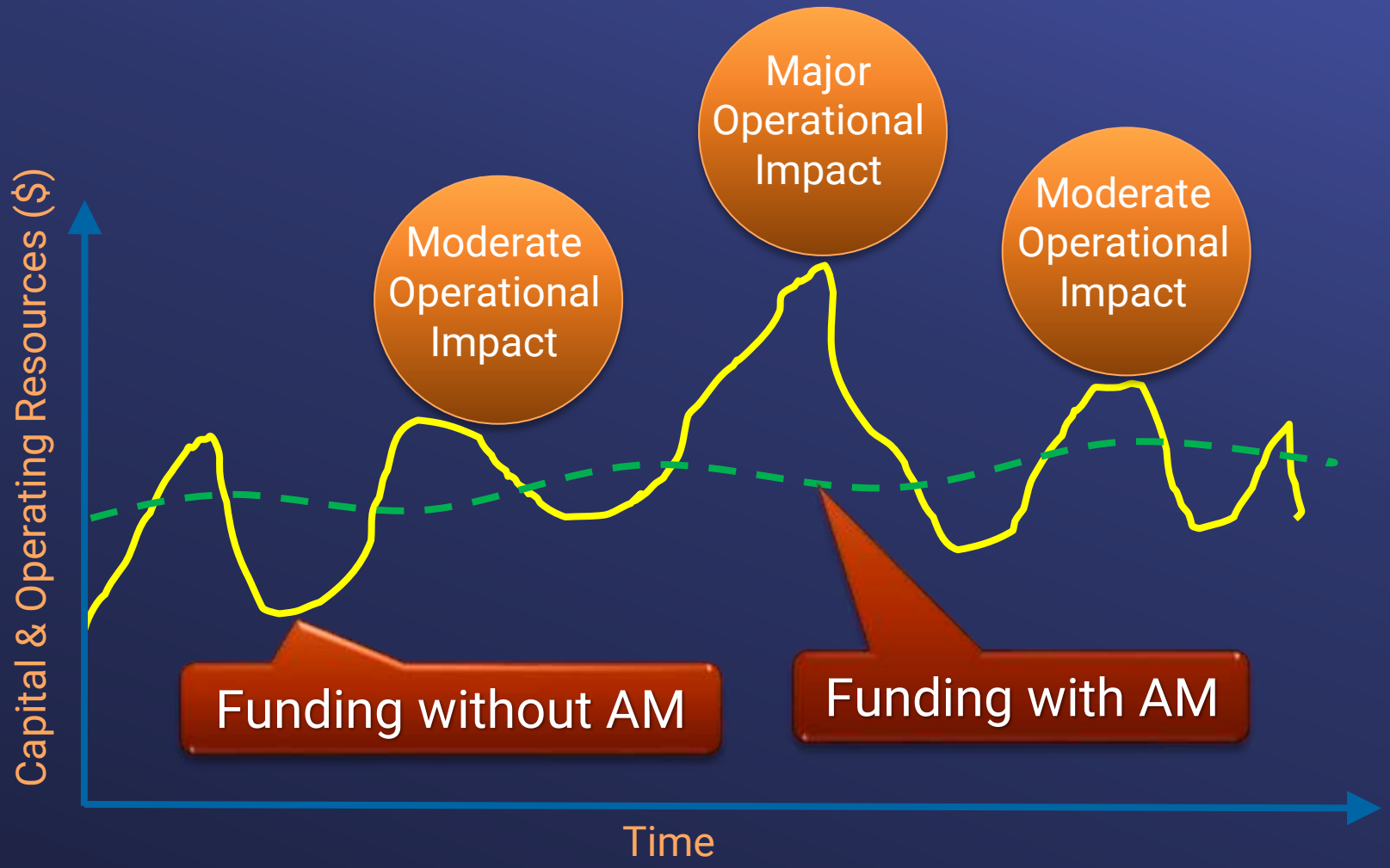
1,000 mi. of Unpaved Road

Achieve more stable funding over time

- Enhances generational equity for asset investments

AM Value Proposition

Transparent & defensible investments at the right time



Risk Framework
Metropolitan's best-in-class approach

- Proactively manage risk of aging infrastructure

Uniform definition of risk

Be aligned with best-in-class

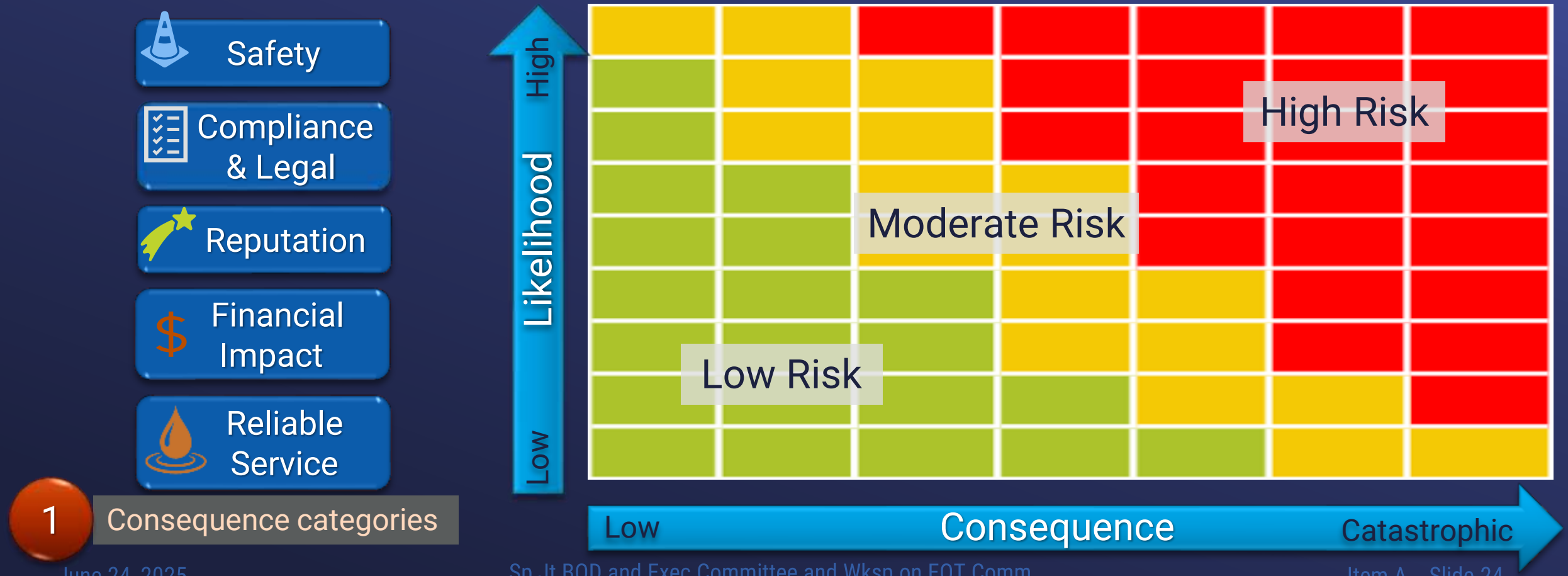
Capture expert knowledge

Repeatable & sustainable process

Risk Framework

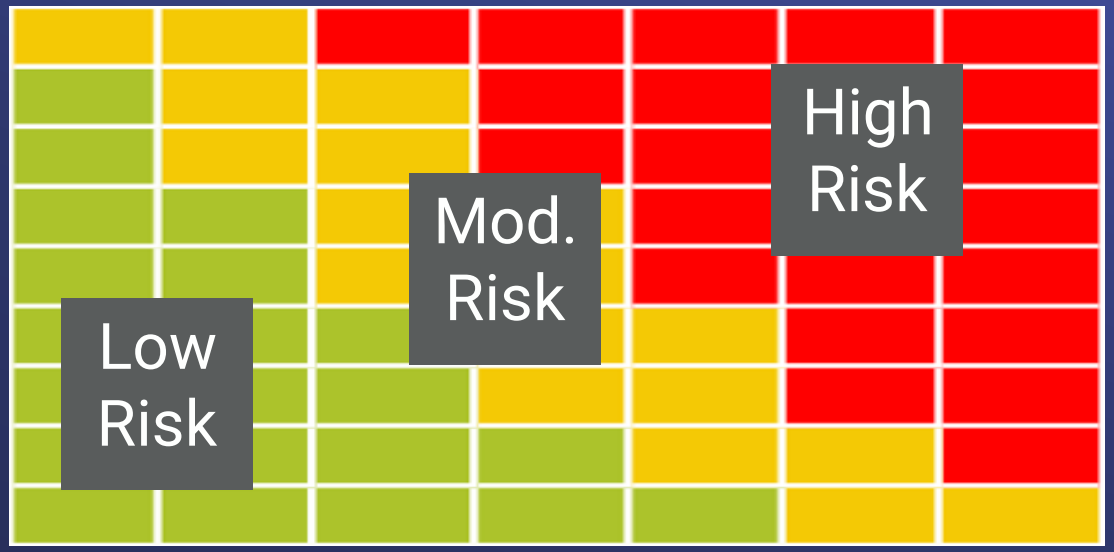
How does it work?

- Considers impact of hazards to Metropolitan's mission
- Heatmap boundaries reflect Metropolitan's risk tolerance



High risk is undesirable & mitigation is high priority

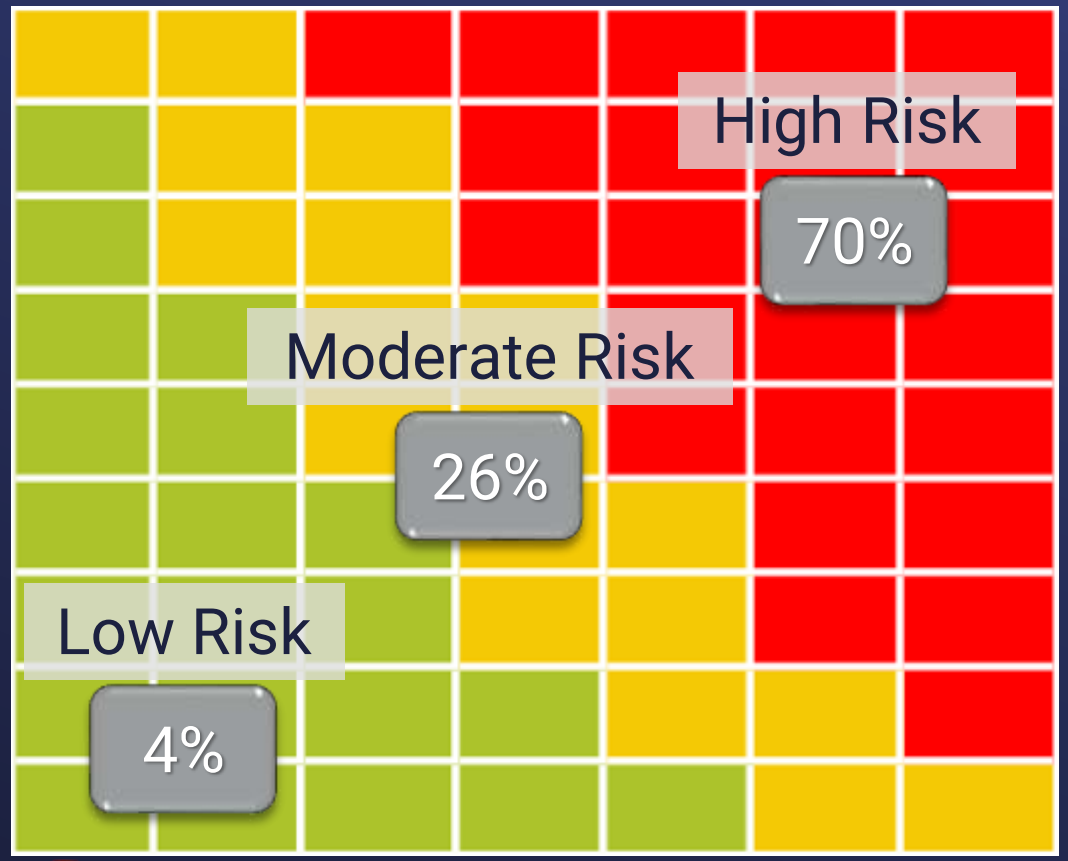
What does the “High Risk” zone mean?

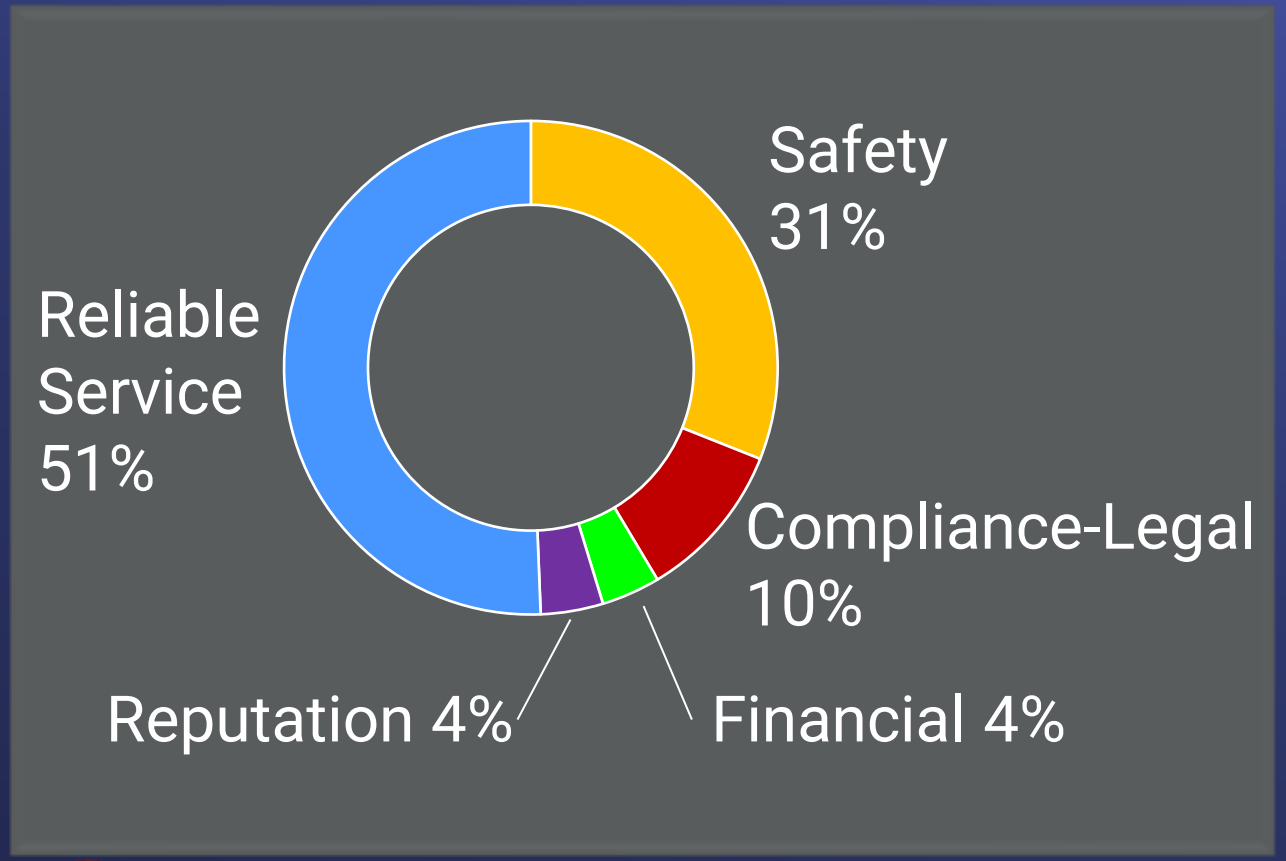


- Examples Consequences
  - Personnel Safety: Single injury requiring medical attention
  - Water Quality: Boil water advisory

Risk scores for more than 500 projects were collected last biennium

- Risk drivers gathered for each project
- Current risk will increase as R&R projects continue to be deferred





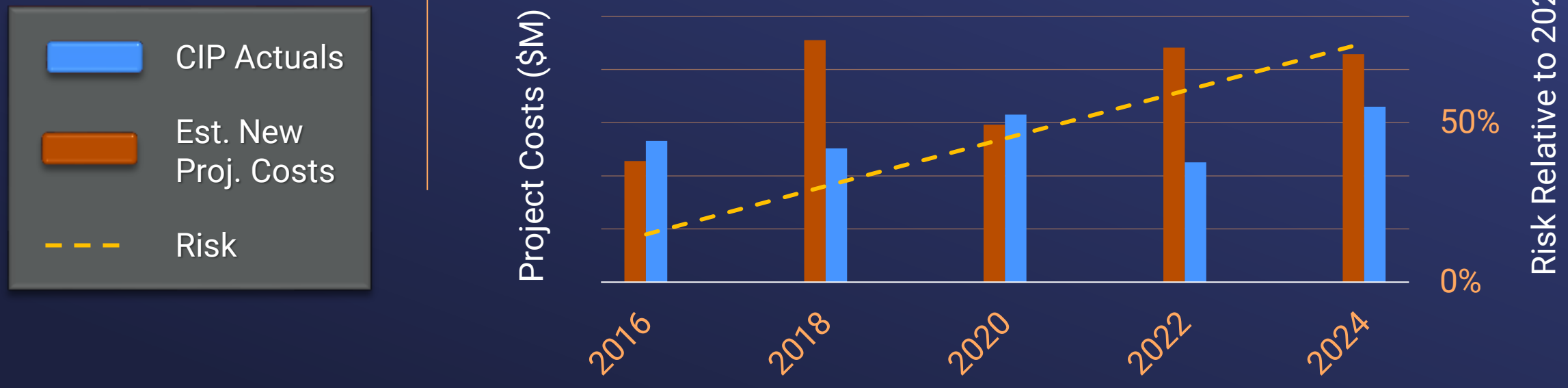
1 Risk exposure for known CIP projects

2 Risk drivers for known CIP projects

Expected Future Risk Trends

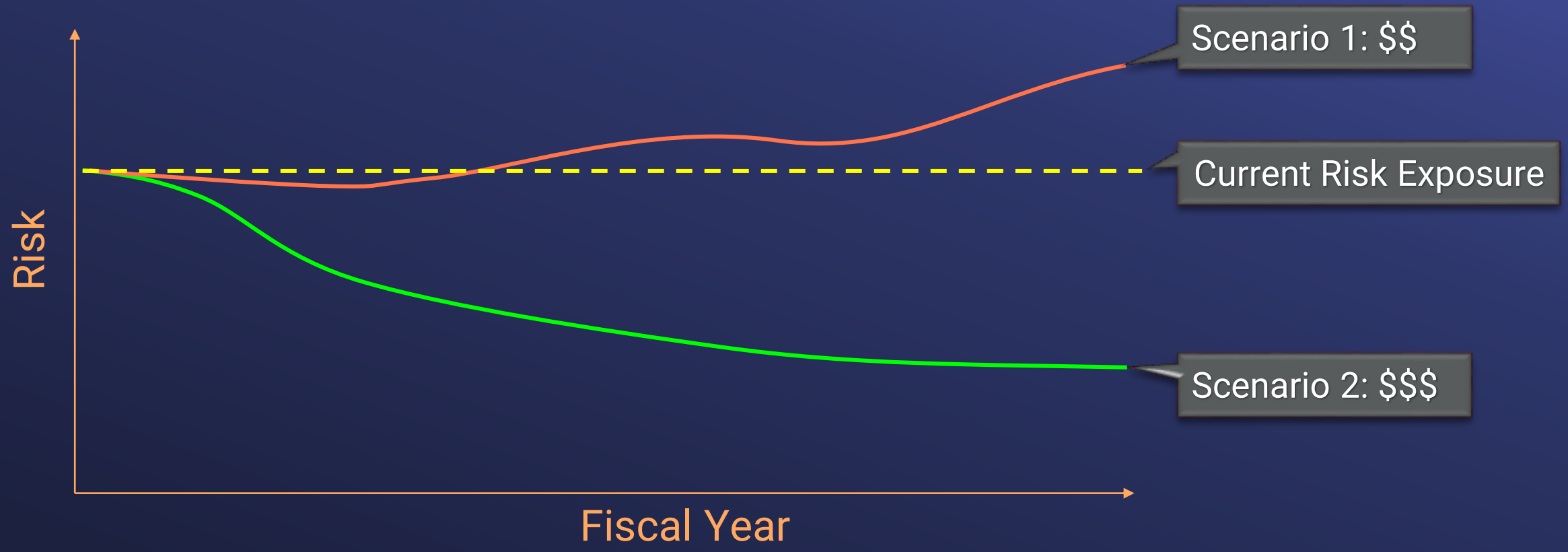
Risk increases each year as new projects identified

- Approx. 100 new projects per biennium added to backlog
- Avg. project duration: 10-yrs
  - Due to resource constraints



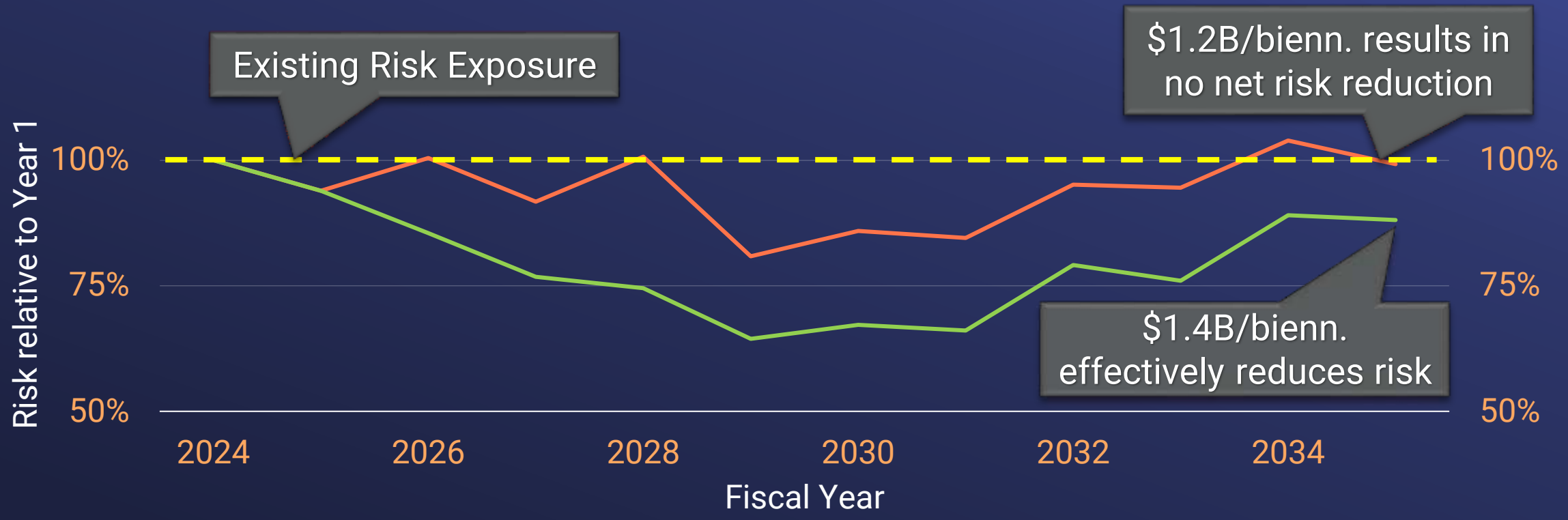
Capital investments should keep up with growing risk backlog

- Overall risk will increase if projects continue to be deferred
  - Results in future risk higher than present risk



Risk Optimization Model – Preliminary 12-yr forecast

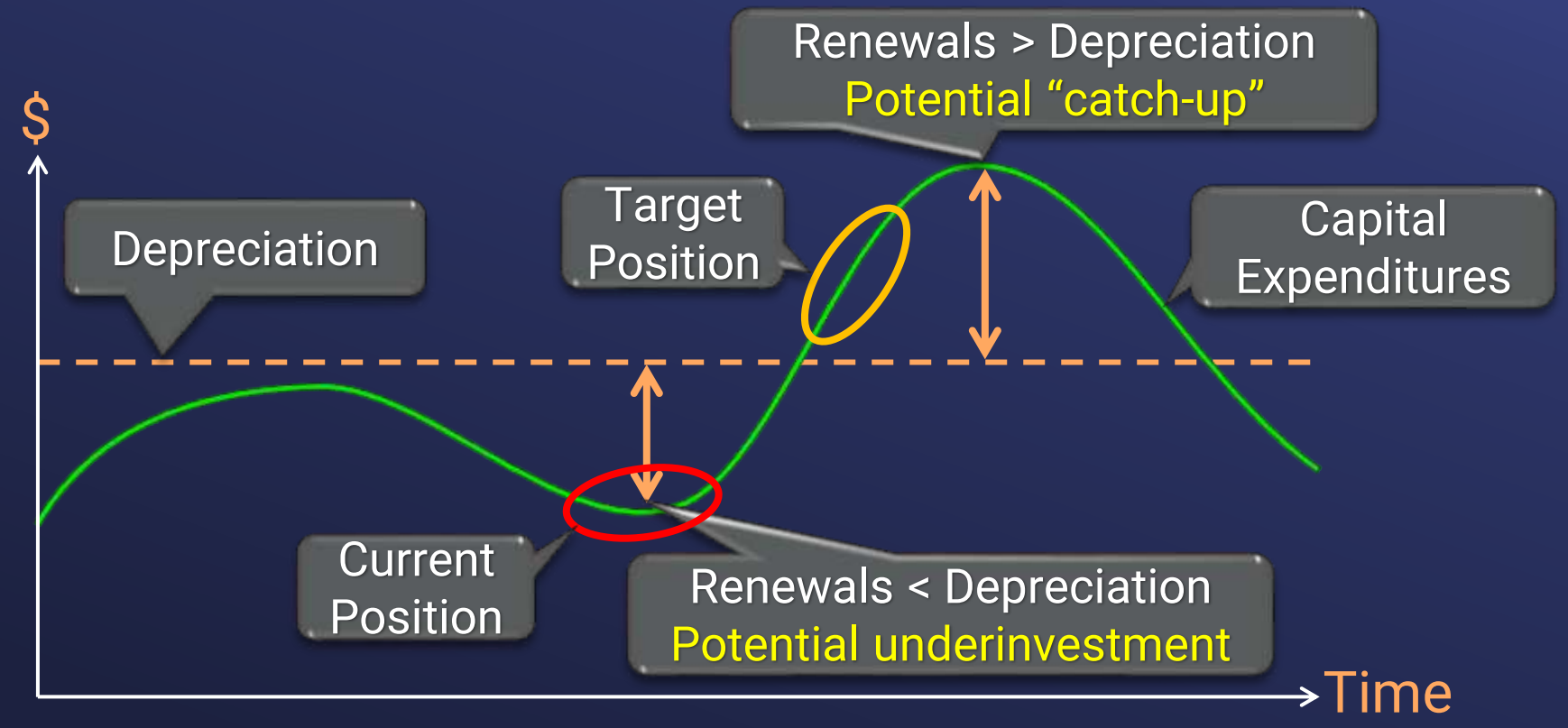
- Based on Metropolitan data from each project
- Considers both existing risk & potential future risks
- Low capital investments will not result in overall risk reduction



Common Financial Metrics

Asset Sustainability Ratio (ASR)

- Ratio of capital expenditures to depreciation over time
- Long-term Target ASR: 100%

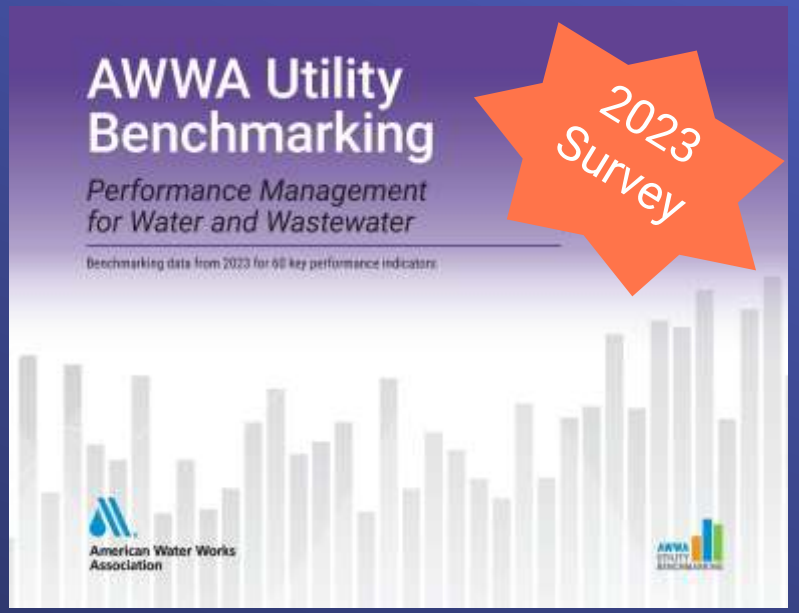


	Metropolitan 5-yr Avg ASR*
2019	89%
2020	97%
2021	86%
2022	72%
2023	74%
2024	82%

Decreasing

* 2024 Fitch Rating report: Water/Sewer Wholesale Medians – Overall

Industry Benchmarks
System R&R Ratios



- 2023 survey for water transmission & distribution pipe networks (aggregate)
- Values are for R&R only & $46B ERC
- ERC = Estimated replacement cost
- Independent literature search confirmed 0.9% to 2.3%

Percentile of Respondents	25th	Median	75th
Annual R&R Spend as % of ERC	0.6%	1%	2%
Equiv. Annual R&R Target	$276M	$460M	$920M
Equiv. Biennium R&R Target	$552M	$920M	$1.84B

Metropolitan's System R&R Ratio

R&R Ratio is the Inverse of Expected Useful Life

- Example: Electrical Equipment
  - Expected useful life: 50 years
  - Est. Annual R&R rate: 2% per year
  - Est. Repl. Costs (Electr Equip only): $850M

Range of Est. Annual R&R in CIP (Electrical Equipment Only)	=	$17M

Metropolitan's System R&R Ratio
Estimate for Metropolitan

- Est. min. R&R for Metropolitan: 1.1%
  - Based on expected useful life of current asset groups

Asset Group	Abbrev	Total 2024 Replac. Cost New ($M) RCN	Est. Repl Costs ($M) ERC	Est. Useful Life	R&R rate	R&R spend ($M) ERC
Pipeline - Major	PL	$ 8,299	$ 12,449	150	0.7%	$ 83.0
Water Treatment	WT	$ 4,587	$ 6,881	100	1.0%	$ 68.8
Reservoir - Raw	RR	$ 4,190	$ 6,286	100	1.0%	$ 62.9
Tunnel	TN	$ 4,983	$ 7,474	150	0.7%	$ 49.8
Chemical System	CH	$ 673	$ 1,010	30	3.3%	$ 33.7
Control System	CT	$ 168	$ 252	10	10.0%	$ 25.2
Building - Operations	BO	$ 1,243	$ 1,865	75	1.3%	$ 24.9
Roads and Fences	RD	$ 410	$ 615	25	4.0%	$ 24.6
Pumping Facility	PU	$ 1,166	$ 1,750	75	1.3%	$ 23.3
Electrical Equipment	EE	$ 567	$ 850	50	2.0%	$ 17.0
Structural	ST	$ 531	$ 796	60	1.7%	$ 13.3
Siphon	SP	$ 1,119	$ 1,678	150	0.7%	$ 11.2
Pipeline - Minor	PM	$ 308	$ 462	50	2.0%	$ 9.2
Communications	CM	$ 112	$ 167	20	5.0%	$ 8.4
Control Facility	CF	$ 415	$ 623	75	1.3%	$ 8.3
Conduit	CD	$ 771	$ 1,156	150	0.7%	$ 7.7
Instrumentation	IN	$ 50	$ 75	10	10.0%	$ 7.5
Power Plant	PP	$ 361	$ 541	75	1.3%	$ 7.2
Canal	CN	$ 686	$ 1,028	150	0.7%	$ 6.9
Metered Connection	MC	$ 219	$ 329	50	2.0%	$ 6.6
Mechanical Equipment	ME	$ 86	$ 130	20	5.0%	$ 6.5
Building - Shops	BS	$ 177	$ 266	50	2.0%	$ 5.3
Reservoir - Finished	RF	$ 268	$ 402	100	1.0%	$ 4.0
Operations Equipment	OE	$ 42	$ 64	25	4.0%	$ 2.5
Building - Residence	BR	$ 51	$ 76	40	2.5%	$ 1.9
HVAC	HV	$ 13	$ 19	15	6.7%	$ 1.3
Flow Meter	FM	$ 29	$ 43	50	2.0%	$ 0.9
Grand Total		**$ 31,524**	**$ 47,285**			**$ 522**
					Overall RR =	**1.10%**

Est. Range of Asset Repl. Cost	$46B
Min. Annual R&R Target (1.1%)	$522M
Min. Biennium R&R Target (1.1%)	$1.04B

Overall RR = 1.10%

Metropolitan's Historic R&R Ratios*

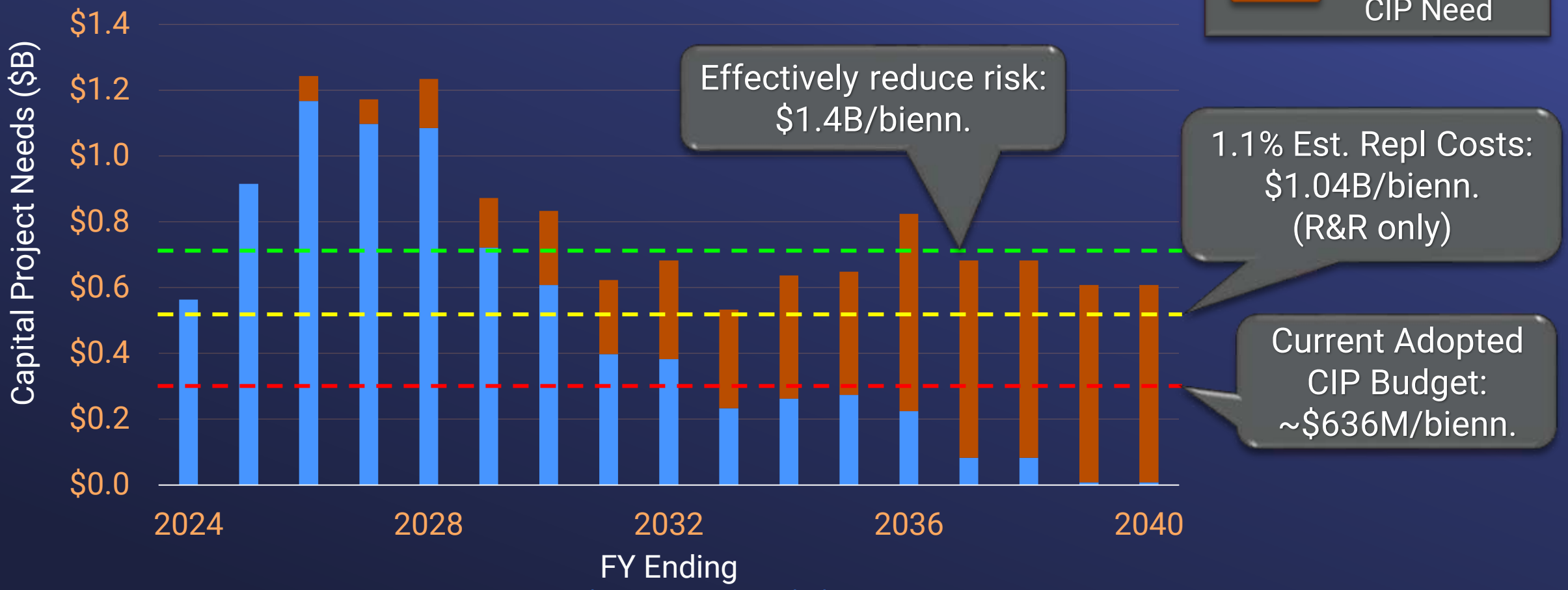
- Historic range of R&R ratios appear to be less than AWWA median
- Some adjustment to R&R moving forward may be needed

* 2024 dollars. Includes PCCP

Actual CIP Backlog & Future Trends

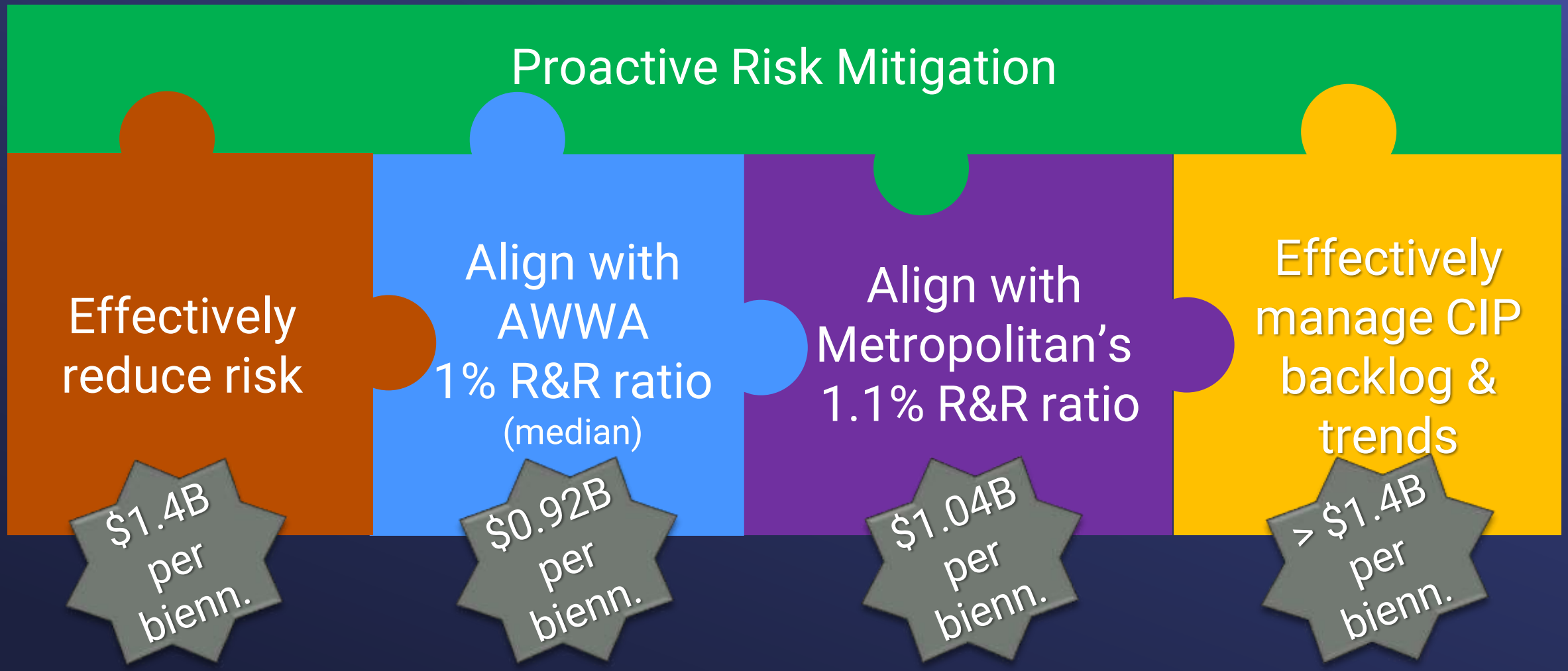
- Capital needs identified by staff*
- Includes all CIP projects (R&R, drought, etc.)

*2024 dollars unescalated



Summary of Various Perspectives

- All signs point to an increase in capital investments to mitigate risk



Key Takeaways

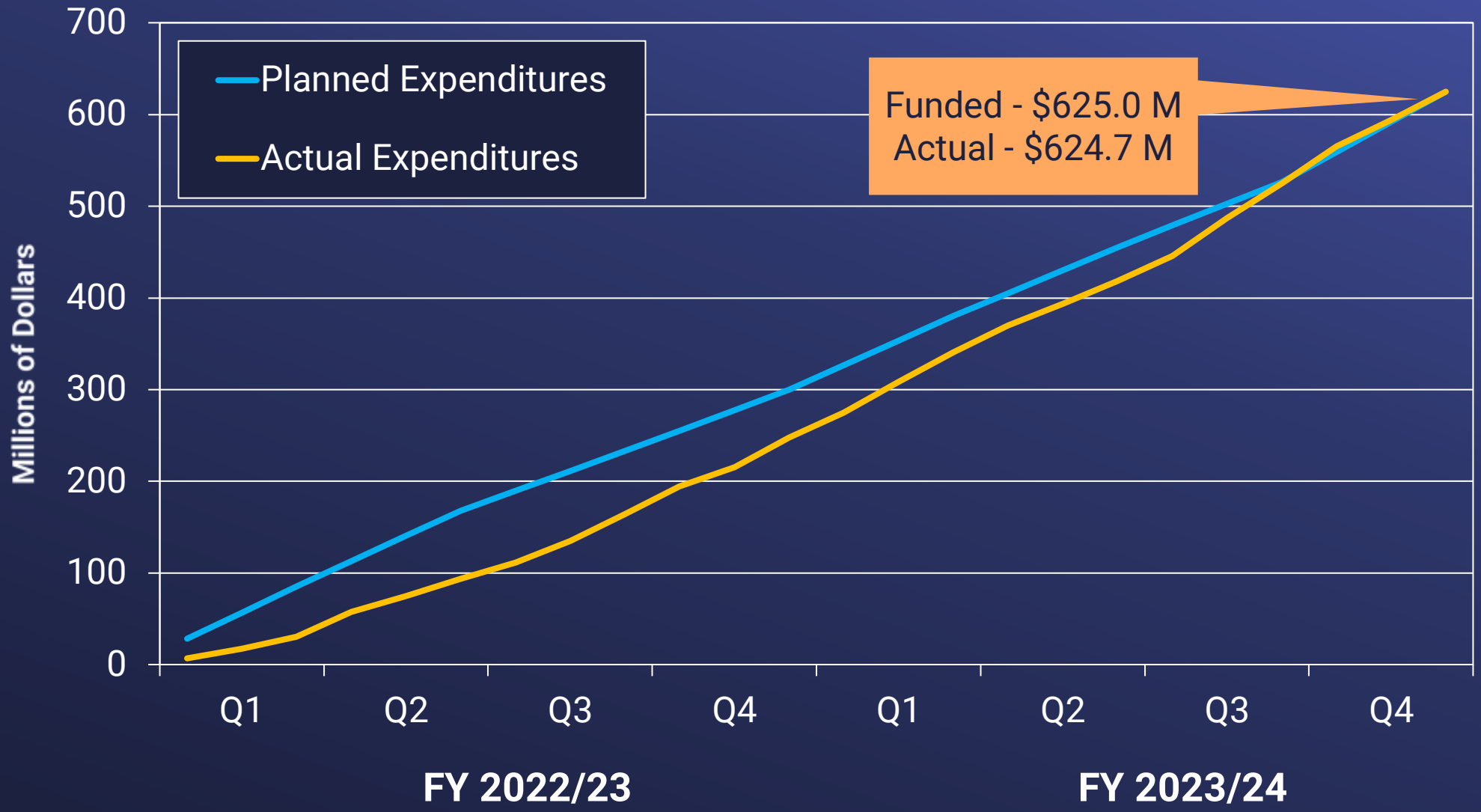
Elevated risk due to deferring R&R needs

- Planned Adopted CIP Budget
  - Insufficient to keep up & may impact reliability
- Benchmarks & metrics
  - Potentially underinvesting in R&R
- Increased investment is needed to reduce risk over time
  - Keeping up with R&R requires more staff
- Considerations point to an aspirational R&R biennial spend over $1 billion
  - Developing strategy for increased ramp-up

Update on Capital Investment Funding

Francisco Becerra – Section Manager
Program Management Section

Last Biennium CIP Cashflow



Current Biennium – R&R Projects in Construction

CRA Domestic Water

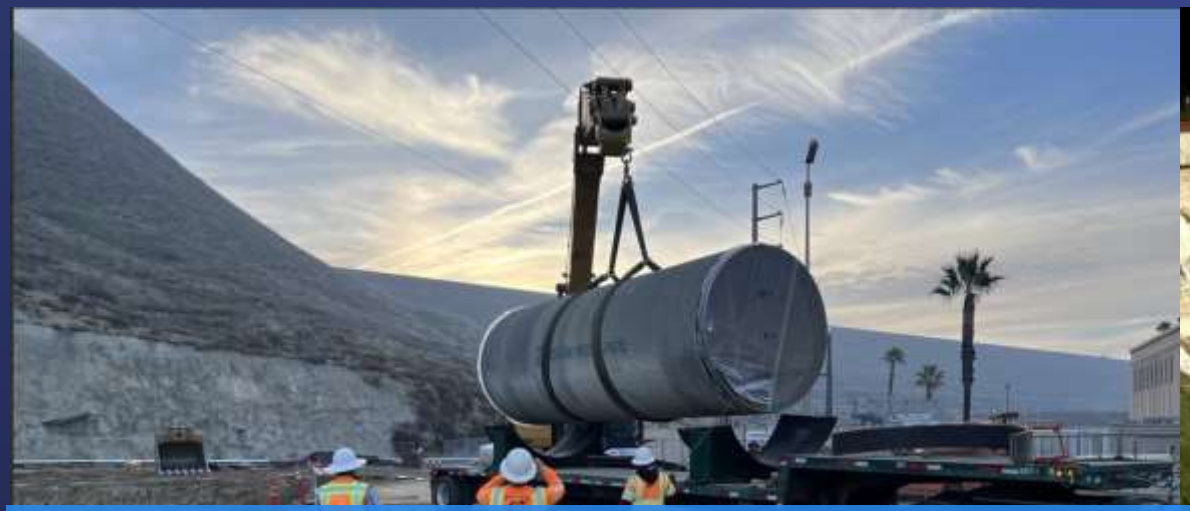
5-8 - $95 M

AMP PCCP Rehab.- $46 M

Second Lower Feeder 3B - $70 M

Perris Valley Pipeline - $60 M

Drought Projects in Construction



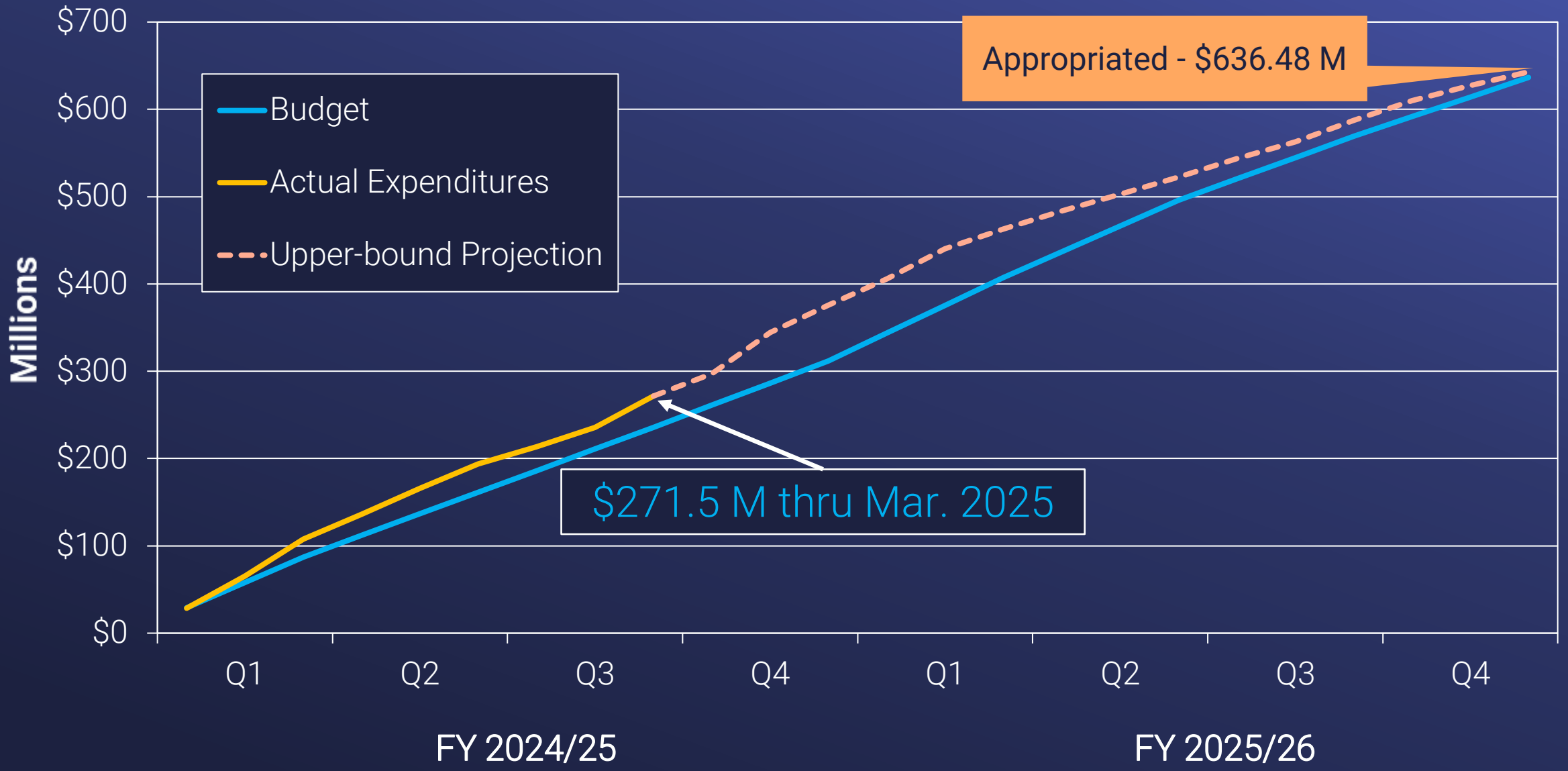
Wadsworth Bypass - $16 M

Badlands Surge Protection - $19 M

Sepulveda P.S. Phase 1 - $50 M

IF/Rialto Intertie - $16 M

Managing the Current Biennium CIP



Additional Critical Project Awards For This Biennium

Contracts under $10 Million

- Diemer Chemical Tanks Improvements
- Mills Plant Data Communications Conduits
- San Jacinto (S.J.) Diversion Structure Slide Gates Replacement

Contracts $10 to $40 Million

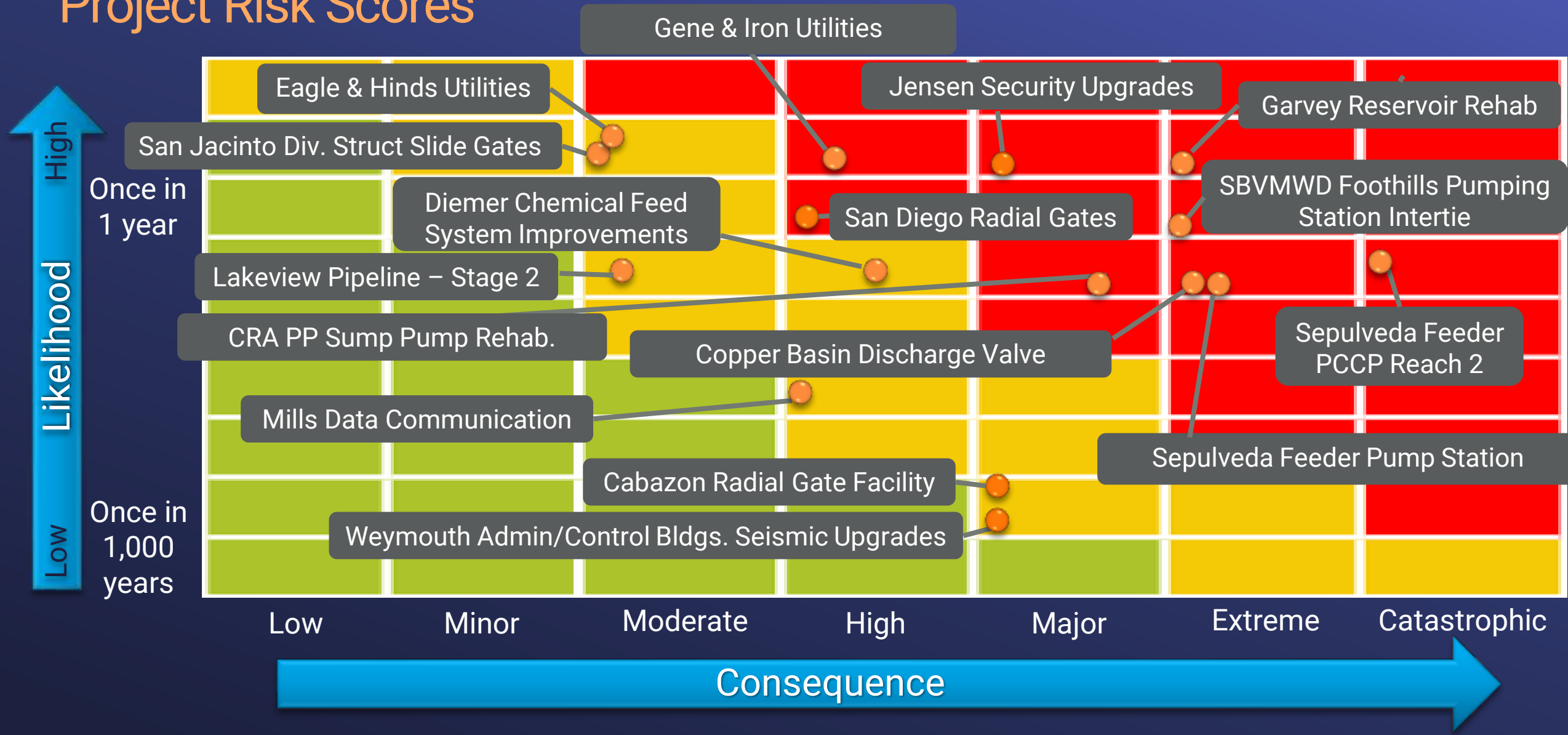
- Cabazon Radial Gate Facility Rehabilitation
- Copper Basin Discharge Valve Replacement
- Eagle & Hinds Pumping Plants Utilities Replacement
- Foothill Pump Station/Inland Feeder Intertie**
- Gene & Iron Mtn. Utilities Replacement
- Jensen Security Upgrades
- Lakeview Pipeline Stage 2A Relining
- San Diego Canal Radial Gates Rehabilitation
- Weymouth Admin. Bldg. Seismic Upgrade
- CRA Pumping Plants Sump Rehabilitation

Contracts over $70 Million

- Garvey Reservoir Rehabilitation
- Sepulveda Pump Stations PDB**
- Sepulveda PCCP Reach 2

**Drought Projects

Project Risk Scores



Option 1 – Biennium CIP Expenditure Consistent with Budget

- FY 2024/26: No additional CIP funding this biennium
  - Proceed with 6 high-priority contracts this biennium
  - Proceed with smaller contracts (approx. 12) under $1 M
  - Defer remaining projects

SWP-Dependent Area Drought Project

- Sepulveda Pump Stations

R&R Projects

- Various Plant Data Communication Conduits
- S.J. Diversion Structure Slide Gates Replacement
- Eagle & Hinds P.P. Utilities Replacement
- Diemer Chemical Tanks Improvements
- Garvey Reservoir Rehabilitation

Sepulveda Feeder Pump Stations

- Scope
  - Construct pump stations at Sepulveda & Venice Pressure Control Facilities
  - Reverses flows to deliver 30 cfs to the western SWP dependent areas
- Purpose
  - Improves drought mitigation
  - Improves redundancy
- Current Approach - Progressive Design-Build
  - Stage board award of construction packages
    - July 2025 – Venice Pump Station
    - Sepulveda Pump Station
  - Constr. Contract Estimate - $55 M to $65 M (Venice)
    - Total contract cost - $190 M to $240 M

Rendering of
Venice Pump Station

Garvey Reservoir Rehabilitation

- Scope
  - Rehabilitate reservoir including replacement of floating cover, liner & strengthening of outlet tower
- Purpose
  - Improves seismic performance
  - Provides operational flexibility during drought operations
  - Complies with Division of Drinking Water regulations
- Constr. Contract Estimate – $75 M to $90 M
- Board Award – October 2025

Garvey Reservoir

Eagle Mountain & Hinds Utilities Replacement

- Scope
  - Replace potable & non-potable water distribution piping systems, & wastewater piping
- Purpose
  - Replaced deteriorating water distribution pipe
    - Replaces broken & clogged wastewater pipes & odor issues
  - Reduces repair costs & allows staff to focus on maintenance of CRA system
- Contract Cost: $18 M to $20 M
- Planned Board Award: Aug. 2025

Domestic Water Line Failure

Option 2 – Request Additional CIP Funds

FY 2024/26: Appropriate $40 M additional CIP funding

- Proceed with key drought project
- Proceed with contracts identified in Option 1 & four additional R&R contracts
- Defer remaining projects

SWP-Dependent Area Drought Project

Foothill/Inland Feeder Intertie

Additional R&R Projects

Copper Basin Reservoir Discharge Valve Replacement

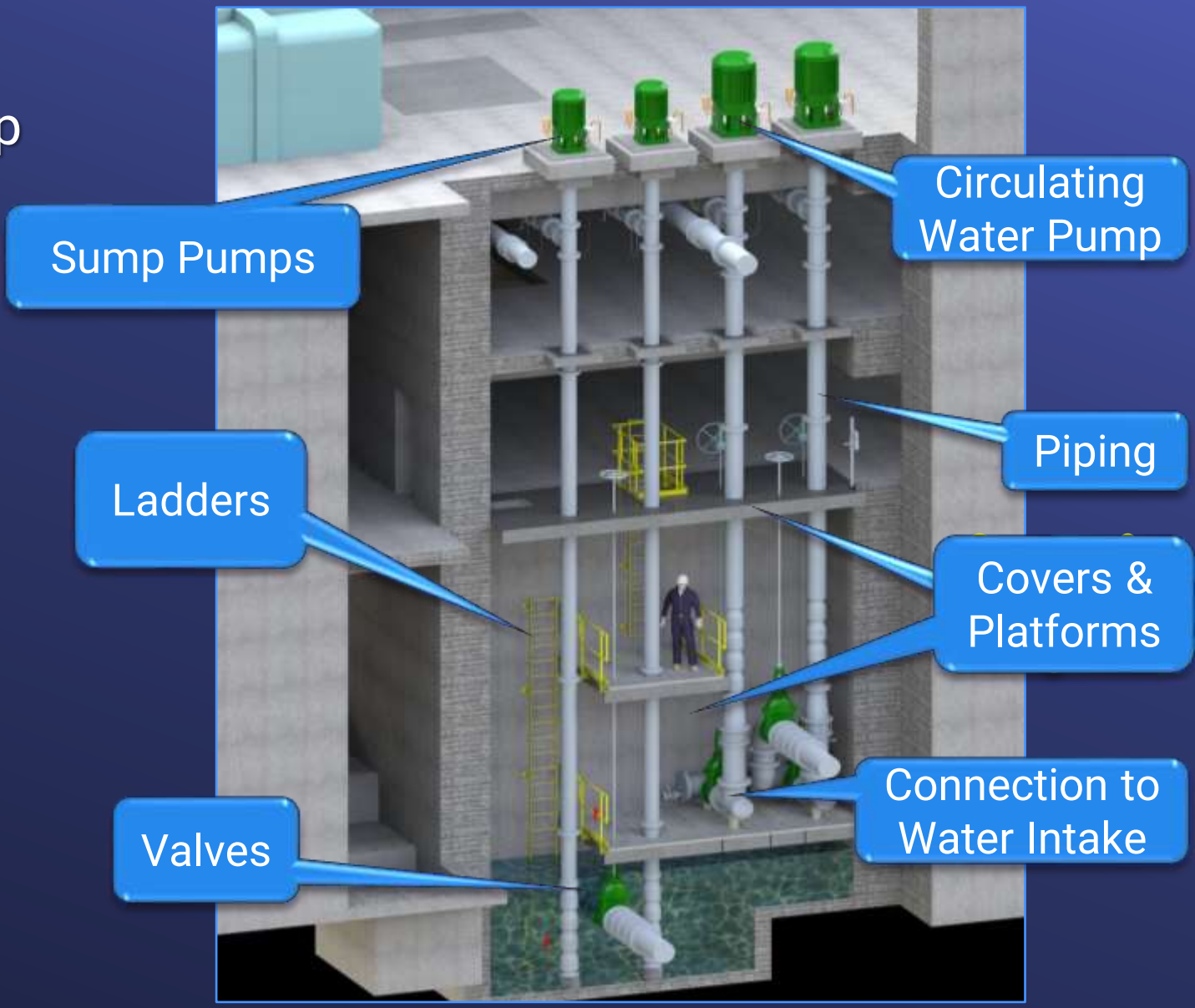
Gene & Iron Utilities Replacement

CRA Sump Piping Replacement

Sepulveda Feeder PCCP Rehab. – Reach 2

Circulating Water/Sump Discharge Systems – Scope of Work

- Scope
  - Replace circulating water & sump discharge systems
- Purpose
  - Enhances CRA water reliability
  - Reduces costly repairs
  - Allows staff to focus on maintenance activities
- Constr. Contract Estimate - $30 M to $35 M
- Board Award – Nov. 2025



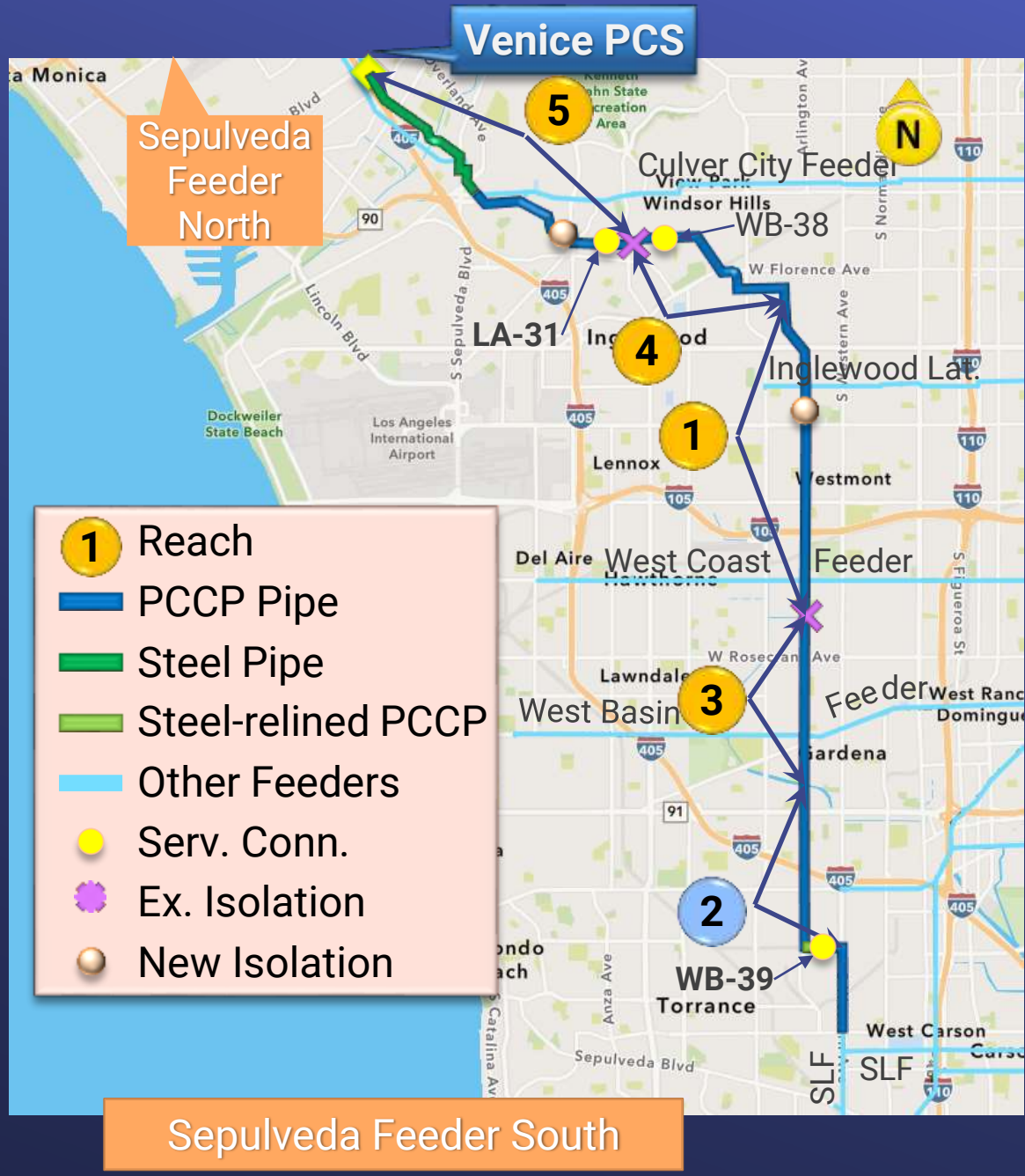
CRA Copper Discharge Valve Replacement

- Scope
  - Replaces emergency discharge valve, upstream gate valve, corroded catwalk & ladders
  - Makes safety improvements to access road
- Purpose
  - Enhances ability to drain reservoir in emergencies
    - Maintains compliance with Division of Safety of Dams
  - Improves safety by improving road & replacing ladders
- Constr. Contract Estimate - $15 M to $20 M
- Board Award – Dec. 2025

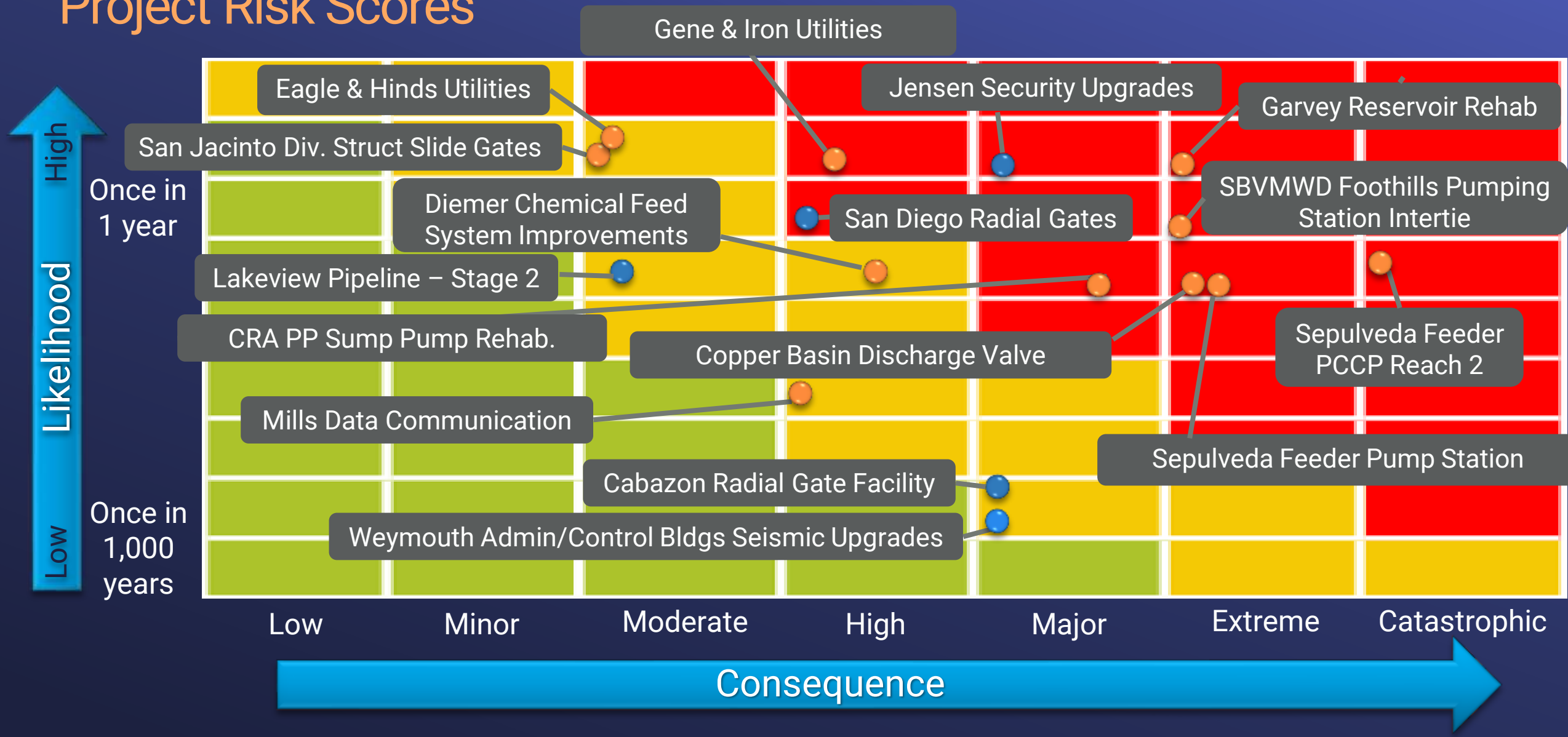
Copper Basin Discharge Structure

Sepulveda Feeder Reach 2

- Scope
  - Steel line 3.8 miles of PCCP
- Purpose
  - Extends lifespan of pipeline
  - Mitigates PCCP vulnerability
    - Risk of stray current from cathodically protected oil pipelines
    - Addresses 58 pipe segments with wire breaks
- Constr. Contract Estimate
  - $80 M to $90 M
- Board Award – Fall 2025



Project Risk Scores



Funding Options for FY 2024/26 Biennium

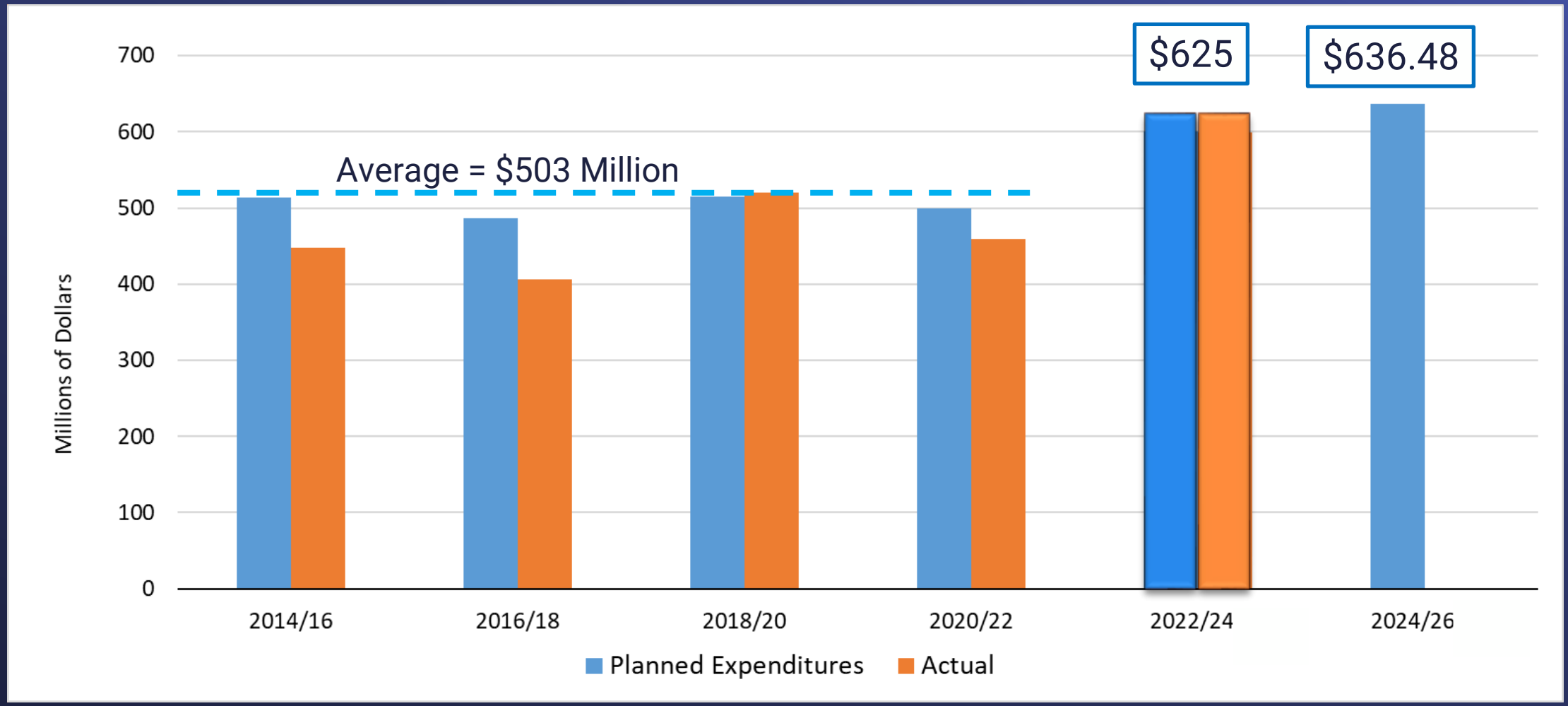
- Planned – April 2024 CIP plan
- Option 1 - No additional CIP funding
  - Proceed with 6 high-priority contracts
  - Proceed with smaller contracts (approx. 12) under $1 M
  - Defer at least 10 projects
- Option 2 - Appropriate $40 M additional CIP funding
  - Proceed with 11 high-priority contracts
  - Proceed with smaller contracts (approx. 12) under $1 M
  - Defer at least 5 projects
  - Allows construction of critical R&R projects

Construction Awards this Biennium

- Sepulveda Pump Stations
- Mills Plant Data Communication Conduits
- S.J. Diversion Structure Slide Gates Replacement
- Eagle & Hinds P.P. Utilities Replacement
- Diemer Chemical Tanks Improvements
- Garvey Reservoir Rehabilitation
- Foothill/Inland Feeder Intertie
- Copper Basin Reservoir Discharge Valve Replacement
- Gene & Iron Utilities Replacement
- CRA Sump Piping Replacement
- Sepulveda Feeder PCCP Rehab. – Reach 2

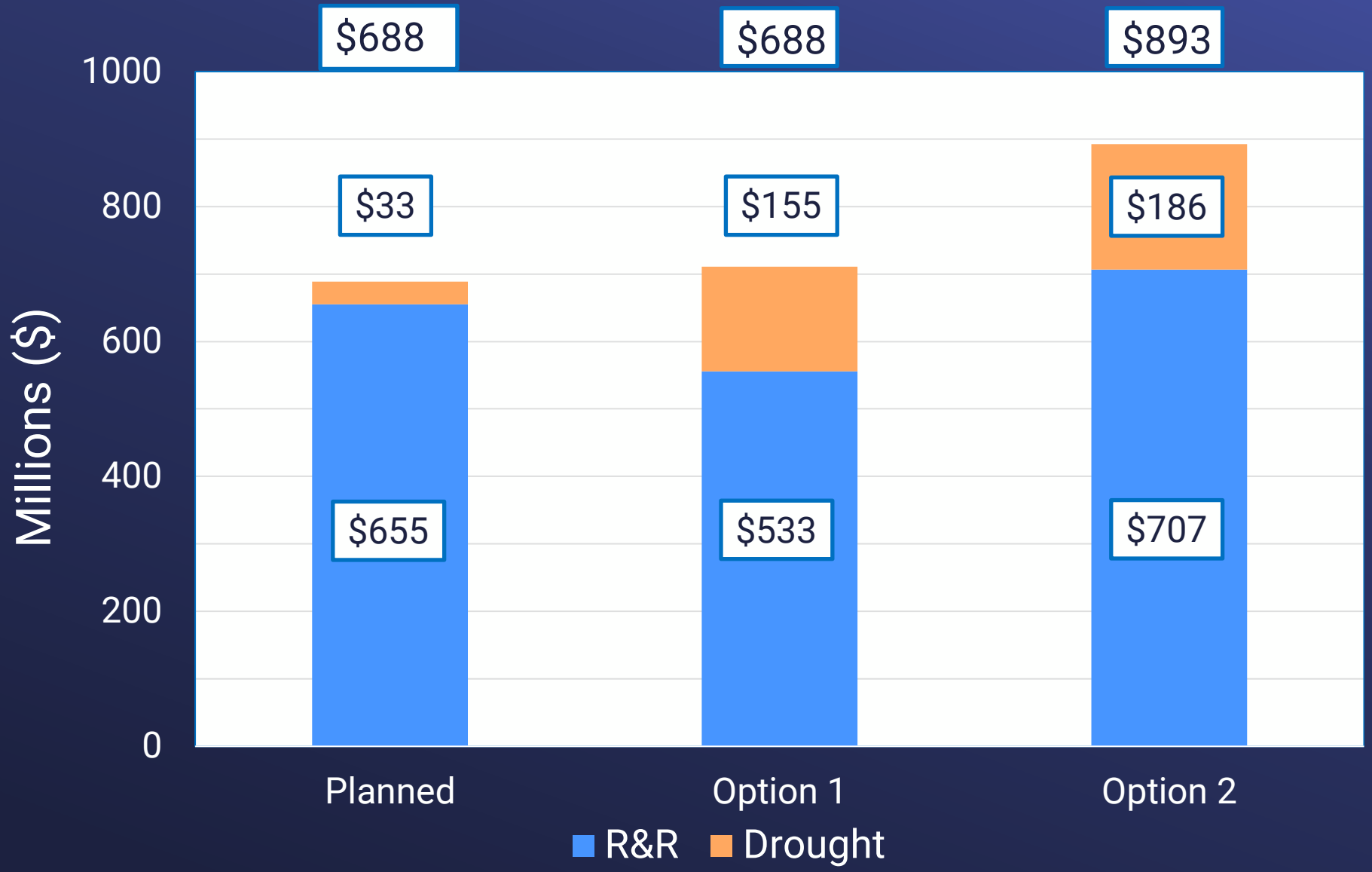
- Option 1 = Projects in Blue
- Option 2 = Projects in Blue & Orange

Planned & Actual CIP Expenditures

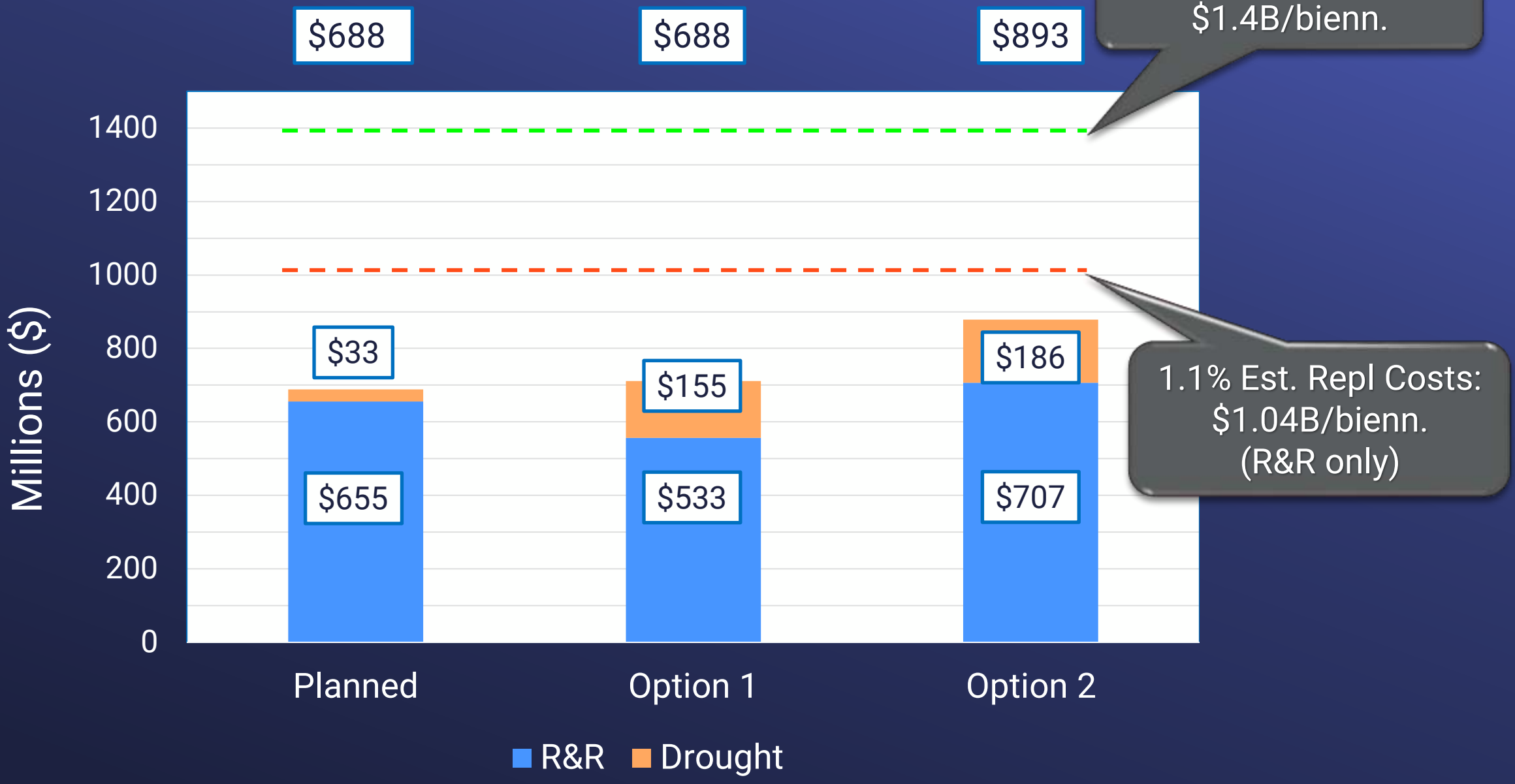


Considerations for CIP Budget for FY 2026/28

Decisions in current biennium affect next biennium



Projected CIP Budget Next Biennium



Next Steps

- Continue to manage current biennium budget
- Board Actions for this biennium
  - July – Action to award GMP#1 for the Sepulveda Pump Stations Project
  - August – Information item on CIP funding & fiscal impacts
  - September – Action item to increase CIP funding for this biennium
- Develop CIP and R&R funding strategy for subsequent biennia


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928