

Subcommittee on Long-Term Regional Planning
Processes and Business Modeling



Integrating a Changing Climate into Metropolitan's Planning Processes

Item 3-b

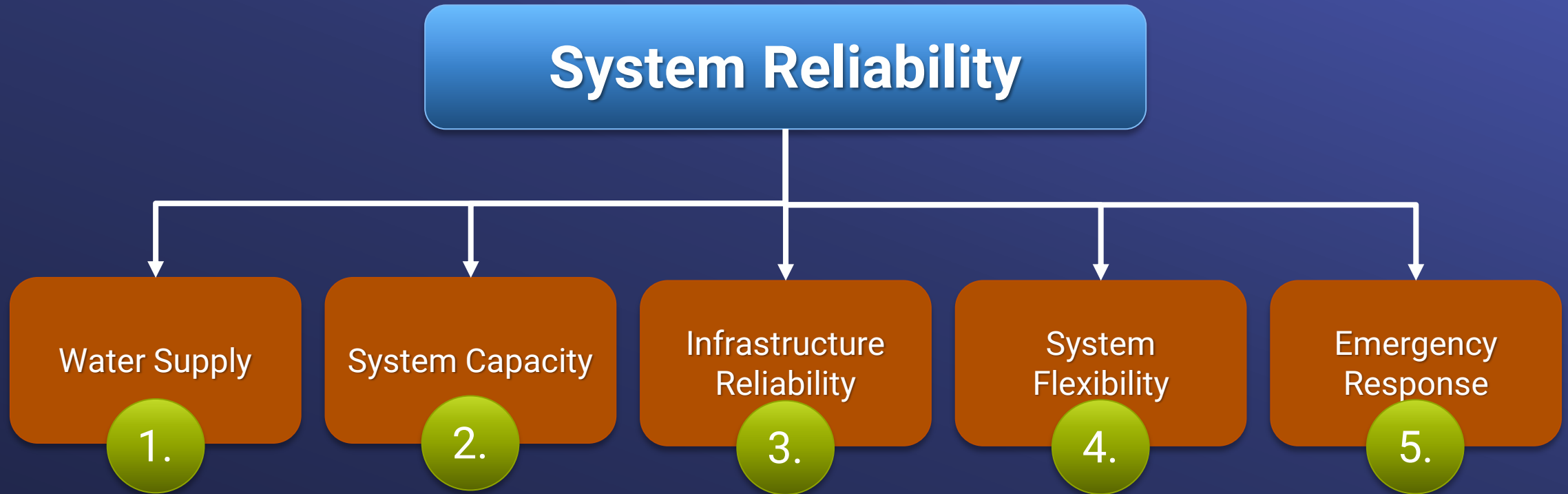
June 26, 2024

Purpose of Presentation

1. System Reliability Strategy processes
2. Processes developed since the System Reliability Strategy
3. Incorporating existing processes in CAMP4W
 - Improving processes and making them adaptive
 - Incorporating processes in the overarching CAMP4W process

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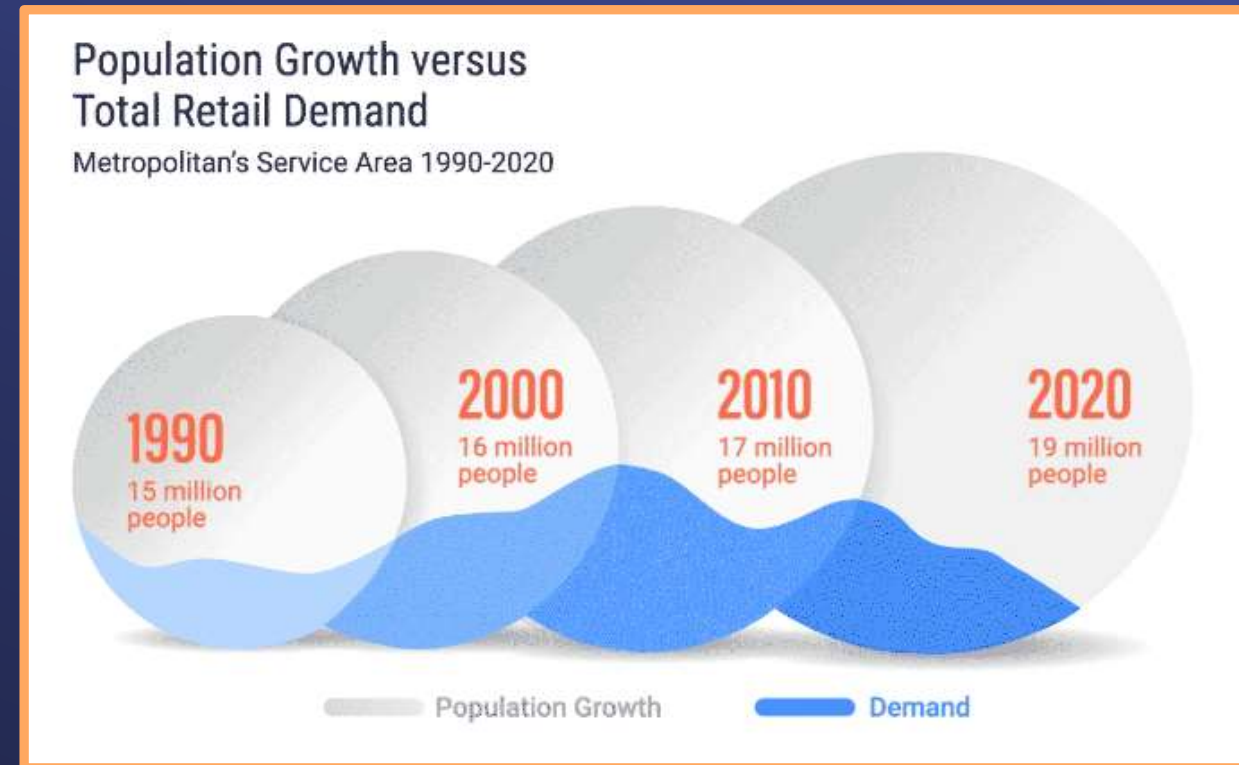


- Developed as part of 2007 Integrated Area Study
- Collaborative effort between Metropolitan and member agencies

1. Water Supply Reliability

Develop and maintain an adequate water supply portfolio to meet full-service retail demands under all foreseeable hydrologic conditions

- Urban Water Management Plan
- Integrated Water Resources Plan (IRP)
 - Sets Metropolitan’s water resource vision and strategy
 - Board Adopted (1996, 2004, 2010, 2015, 2020)
- Water Supply Reliability Goals
 - Maintain existing supplies
 - Diversify water portfolio
 - Local supply investment
 - Advance conservation



1. Water Supply Reliability Examples

- Diamond Valley Lake
 - Nearly doubled in-region surface storage
 - Increased emergency storage capacity
- Local Resources Program
 - Reduce demand for imported supplies
 - Increase regional resilience
- Conservation Programs
 - Turf removal, efficiency rebates



Diamond Valley Lake West Dam & Forebay

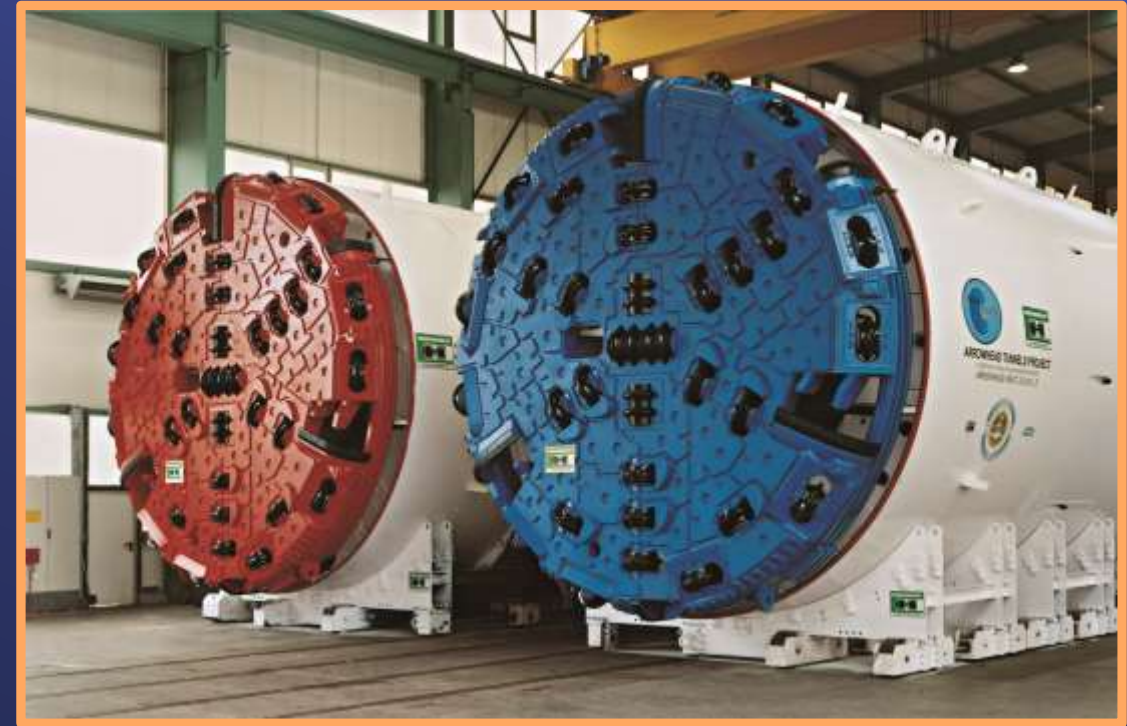
2. System Capacity

The ability to convey, treat, and distribute supplies to meet firm demands under peak condition

- System Overview Study (2004)
 - Evaluates regional facilities required to deliver imported water supplies
 - Review policies and guidelines for Infrastructure Improvements
- Integrated Area Study (2007)
 - Review policies and guidelines for Infrastructure Improvements
 - Develop portfolios of projects to meet IRP-identified gaps
- MWD Hydraulic Model

2. System Capacity Examples

- Inland Feeder
 - More than doubled water delivery capacity from SWP East Branch
 - Improved SWP/CRA blends
 - Second source of supply or multiple MWD reservoirs

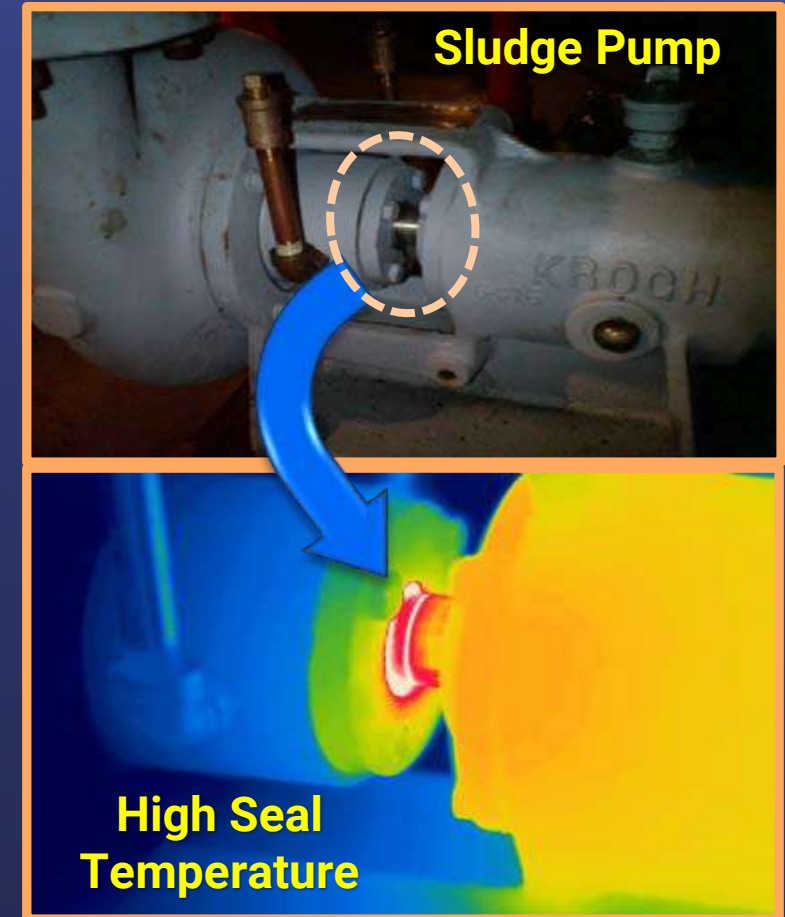


Arrowhead Tunnels Boring Machines

3. Infrastructure Reliability

Maintain facilities in state of readiness to ensure system deliveries

- Operations
 - Maintenance Management Program
 - Computerized Maintenance Management System
- Engineering
 - Special condition assessments/Monitoring
 - PCCP Monitoring & Inspection
 - Cathodic Protection
 - Vulnerability assessments
- IT infrastructure



Maintenance Management Example:
Assessment of sludge pump via thermography

3. Infrastructure Reliability Examples

- CRA Pump and Discharge Valve Rehabilitation



Iron Mountain – Crew using new crane during CRA pump and discharge valve rehab work



Iron Mountain – Impeller and Bearing Housing Removal



Iron Mountain – Working on the Pump Bearing Housing

4. System Flexibility

Respond to short-term changes in water supply, water demands, and water quality; and meet member agency needs during planned or unplanned outages

- Operational Flexibility
 - Ability to respond to short-term changes in water supply, water demands, and water quality
- Delivery Flexibility
 - Ability to meet member agency needs during planned or unplanned outages
- System Flexibility Study
 - Postulate failures in the system and examine the impact of each failure on the ability to deliver water
- Drought mitigation efforts

4. System Flexibility Example

- Inland Feeder/Lakeview Pipeline Intertie
 - Completed 2015 in response to 2014-2015 drought
 - Enabled delivery of DVL supplies to Mills WTP and Lakeview Pipeline service connections
 - Removed Mills service area from the SWP-Dependent Area
 - Saved 131 TAF between May 2021 and December 2022



IF to Lakeview Vault Construction

5. Emergency Response

The ability to respond to unplanned outages and restore service as quickly as practical.

- Addressed through:
 - Emergency Response Plan
 - Business Continuity Plan
 - Information Technology Disaster Recovery Plan
 - Seismic Resilience Task Force
 - Mutual aid agreements
 - Prequalified emergency contractors
 - Pandemic Action Plan

5. **Emergency Response Example:**
Prepared for a Two Line-Break Emergency



Tracking Heavy Equipment for
Immediate Mobilization



Maintaining Inventory of Structural
Repair Resources



Ensuring Shop Capacity



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Advancing Reliability Since 2007

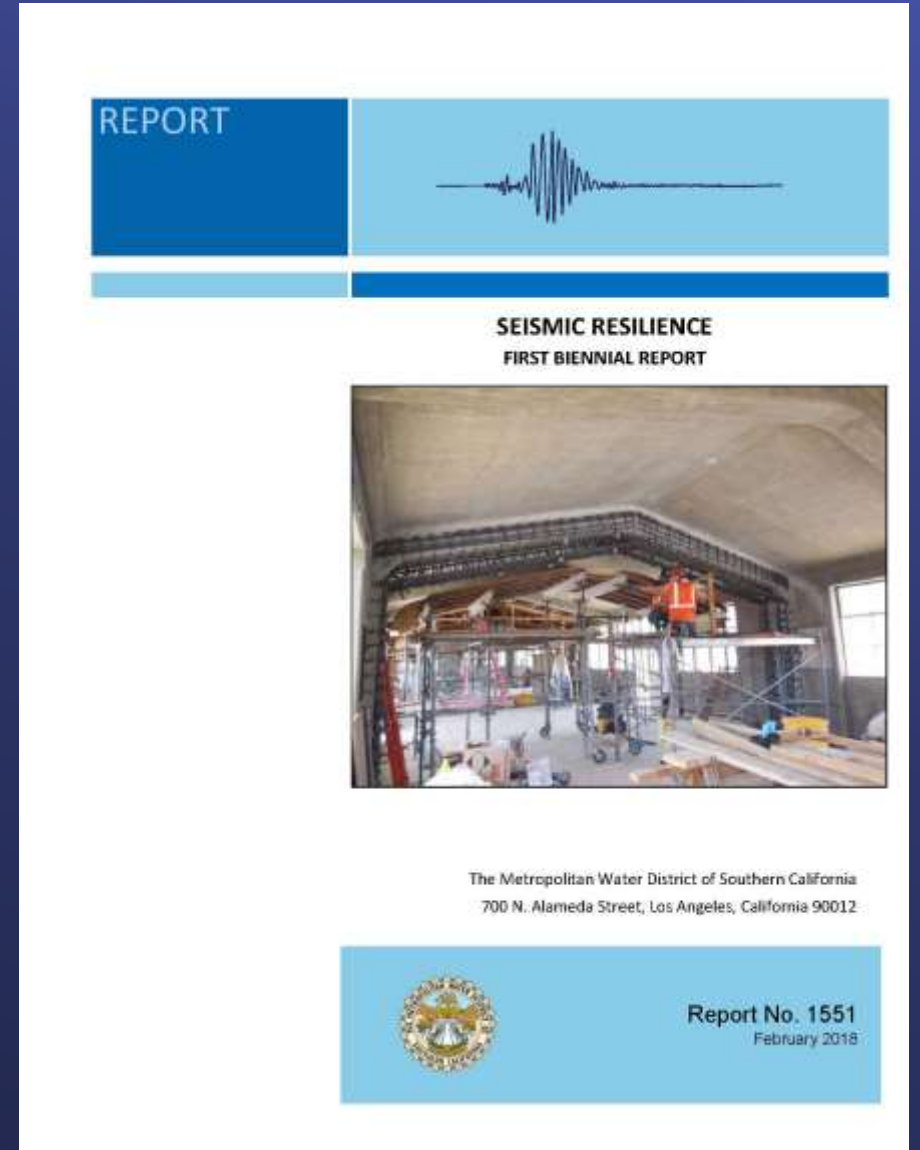
- System Reliability Strategy – provided a general framework for overall reliability goals
- Specialized plans developed to address specific vulnerabilities/ areas of concern
 - Energy Management Policy (2010) / Energy Sustainability Plan (2020)
 - Earthquakes - Seismic Resilience Strategy (2018)
 - Aging Infrastructure - Asset Management Program (2019)
 - Water Quality - WQ Event Response Guidelines
 - Pandemics - Pandemic Action Plan (2022)
 - Drought - SWPDA Drought Mitigation Actions (2023)
 - Climate Change - Climate Vulnerability and Risk Assessment (2024)
 - Resilience – Strategic Infrastructure Resilience Plan (2024 – 2025)

Energy Management / Energy Sustainability Plan

- Energy Policy Principles (2008)
 - Protect Metropolitan's investment in long-term renewable power resources such as the Hoover and Parker Dams power plants
 - Develop economically responsible renewable energy projects 
 - Promote energy conservation through water conservation
 - Promote effective and equitable legislation and regulations regarding energy-related climate change and sustainability issues
- Energy Management and Reliability Study (EMRS) (2010)
- Adoption of Energy Management Policies (2010)
 - Contain costs and reduce exposure to energy price volatility
 - Increase operational reliability by providing system redundancy
 - Provide a revenue stream to offset energy costs
 - Move Metropolitan toward energy independence 

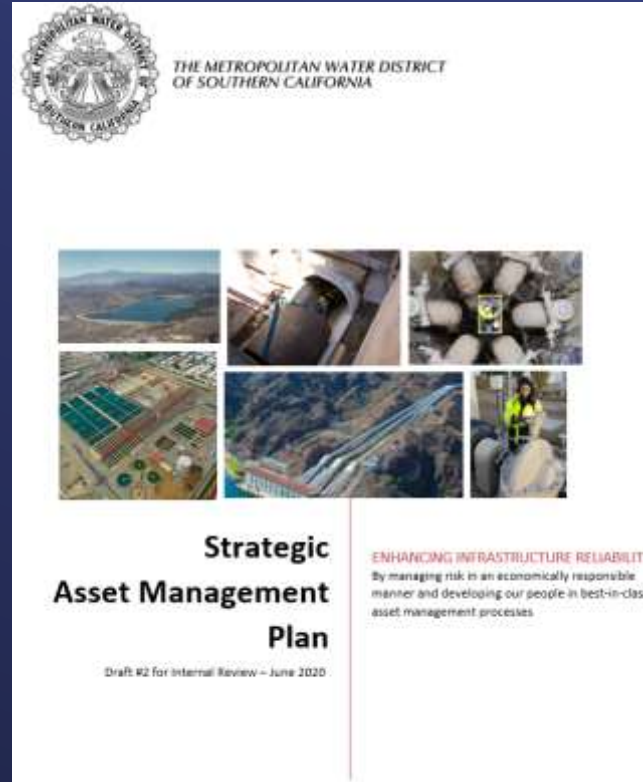
Seismic Resilience Strategy

- First Seismic Resilience Report – 2018
- Seismic Resilience Report 2020 Update
- Annual Board Updates
- Next Report 2025

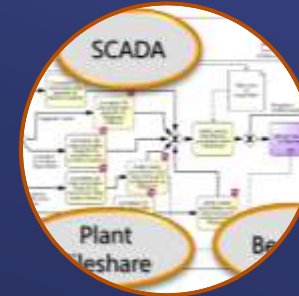


Asset Management Strategy

- Outlines the strategy and objectives for managing Metropolitan's physical assets effectively
- Ensures that assets are managed in a way that supports Metropolitan's goals



Achieve success through our people



Make our processes more effective



Maximize value from assets

SWPDA Drought Mitigation

Drought Mitigation Actions Portfolio

Cost-Effective Projects Providing Timely Relief

Projects Under Implementation

DVL to Rialto Delivery Projects

Sepulveda Feeder Pumping Project - Phase 1

★ Conceptual design to inform the Final Design of Phase 1. Full Implementation pending CAMP4W eval.

Projects Prepared for Implementation

Sepulveda Feeder Pumping Project - Phase 2

Shift of Burbank B-5 Supply to B-5A

TVMWD Miramar Pumpback Upgrade

Projects for Further Consideration in CAMP4W

Projects for Targeted Improvements

AVEK Conveyance to West Branch (Planning/Design)

East Valley Feeder Parallel (Planning/Design)

In-Region Surface Storage Benefiting SWPDA Directly

In-Region Groundwater Storage

Projects with Regional Benefits

E-W Regional Raw-Water Conveyance Line (Planning/Design)


Surface Storage w/ Regional Benefit

Flex Storage w/ Regional Benefit

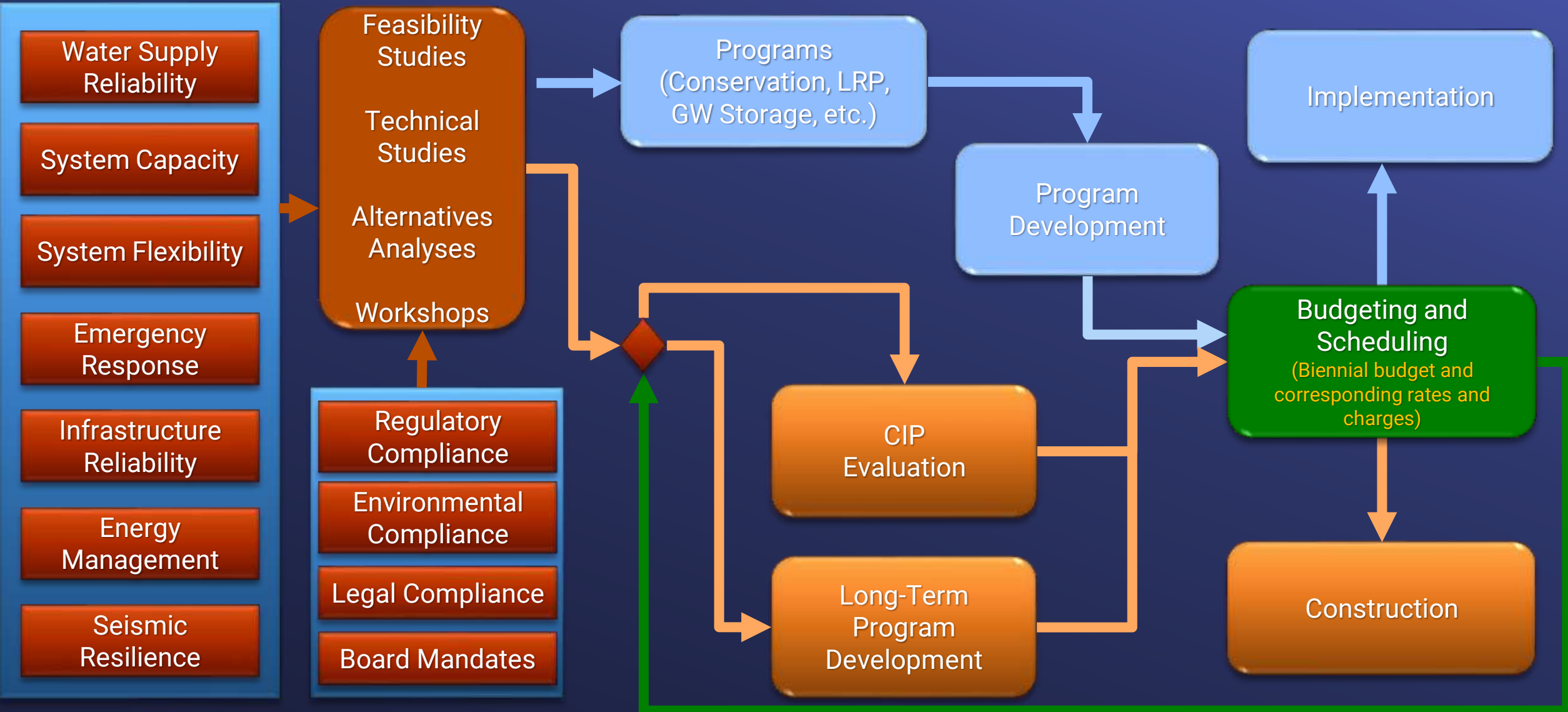
Groundwater (out of region) – AVEK Water Bank Expansion

New Supply (e.g. Recycled Water, Desalination)

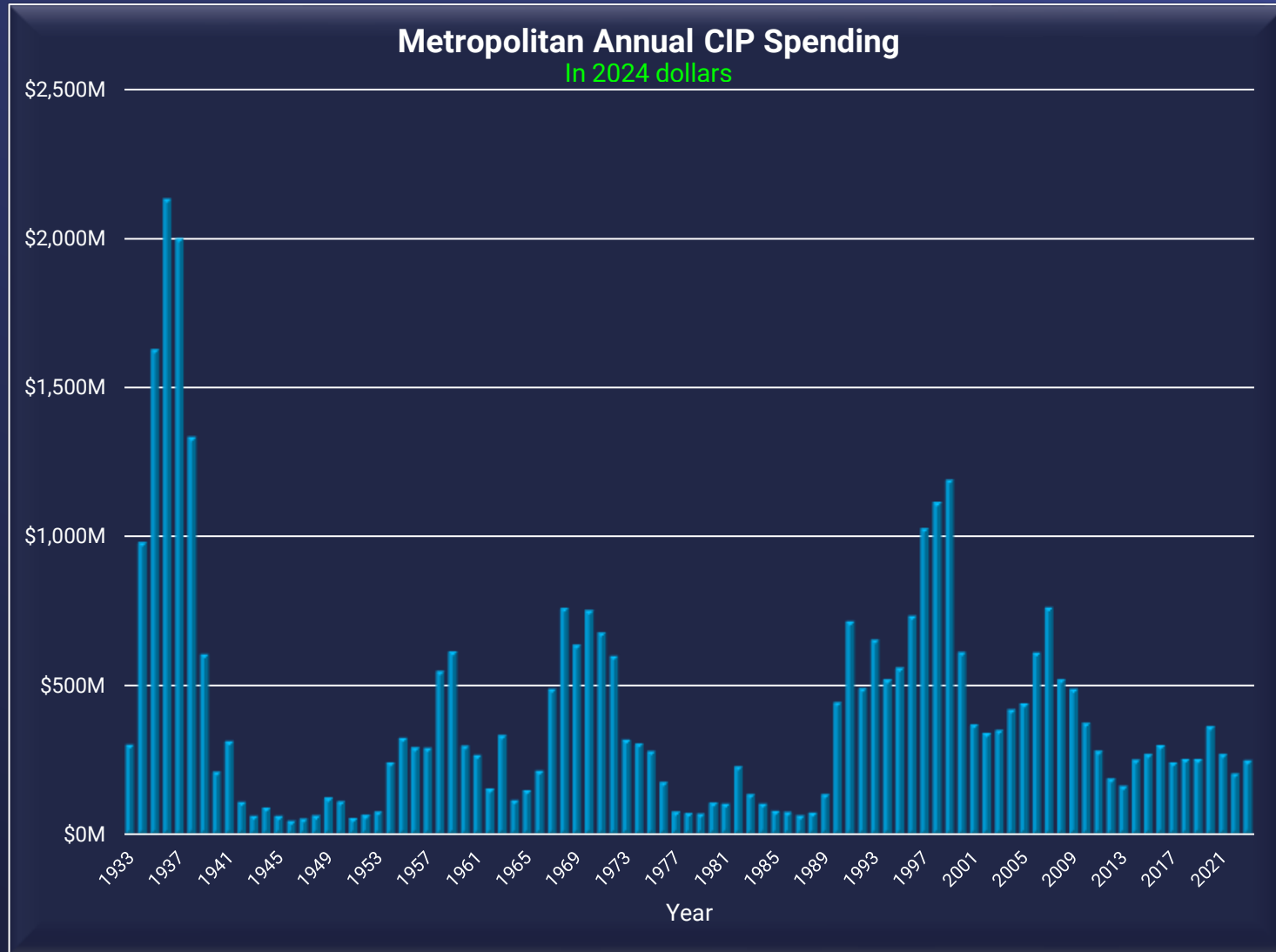
Climate Vulnerability & Risk Assessment

- Establish the framework for an adaptive management process in the face of a changing climate
- Identifies how Metropolitan is currently managing risk associated with climate change
- Provide structural recommendations that will enable Metropolitan to better adapt
- Recommendations:
 1. Characterization of a broad range of climate hazards
 2. Assessment of vulnerabilities to infrastructure, operations, workforce, and business model
 3. Development of climate adaptation actions that can build Metropolitan's resilience 

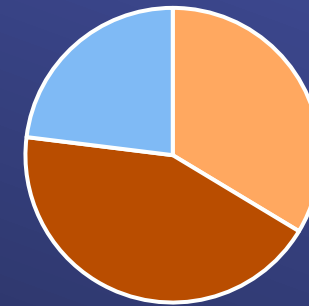
Current Project Development Process



Recent Historic CIP Spending



CIP 2001-2010



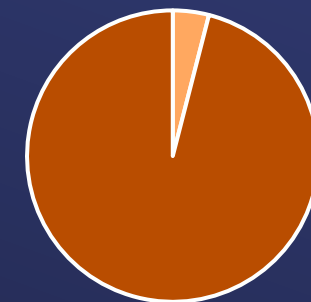
- Ozone/Treatment Expansion
- R&R/Other
- Inland Feeder

CIP 2011-2019



- Ozone
- R&R/Other

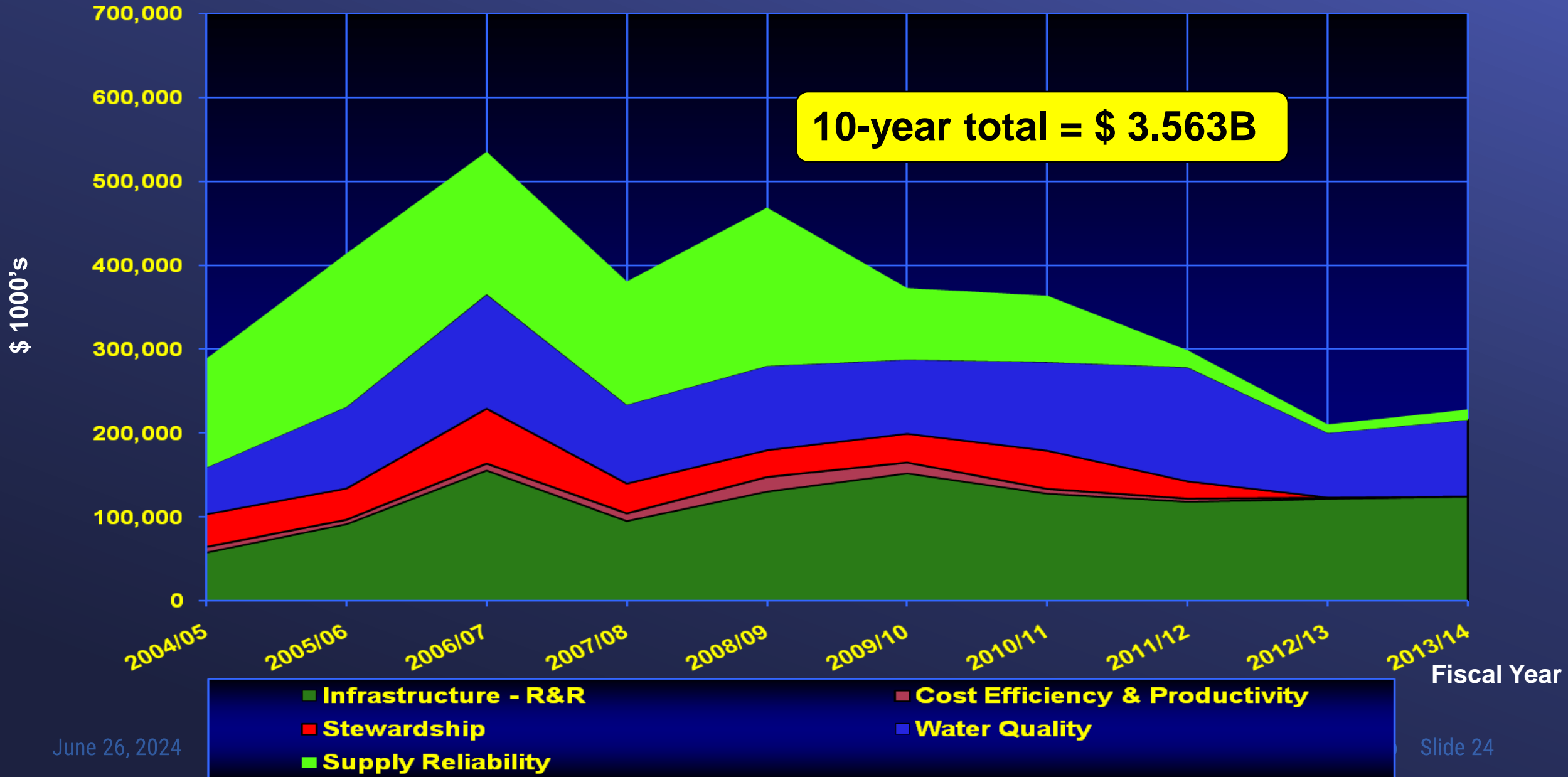
CIP 2020-2024



- Drought

- As the system ages, R&R work has been taking a larger portion of the annual CIP budget

FY 2008/2009 CIP 10 Year Period 2004/05 – 2013/14



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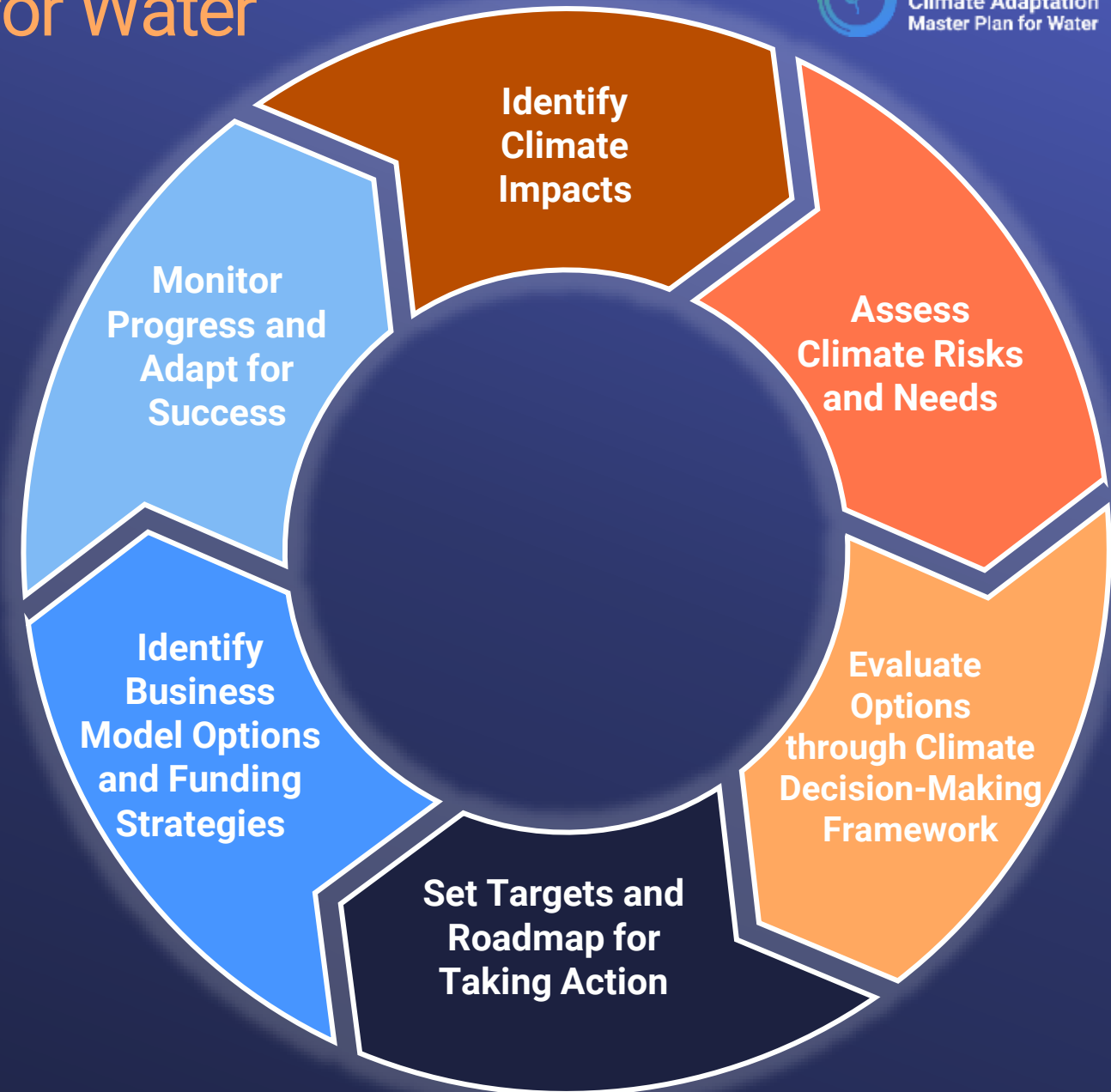
Climate Adaptation Master Plan for Water

A comprehensive, adaptive
planning process

The CAMP4W integrates

- water resources planning
- infrastructure development
- climate adaptation
- finance planning

into one interconnected process.



Why we need to focus our processes and what are the benefits

- Informed Investment Decisions:
 - Comprehensive Evaluation:
 - Enable the organization to evaluate all potential projects comprehensively rather than in isolation
 - A holistic view helps in making more informed investment decisions
 - Raises awareness of the changing conditions through evaluative criteria
 - Criteria based on themes of reliability, resilience, financial sustainability, affordability, and equity
 - Resource Allocation:
 - Better integration ensures that resources are allocated to projects that align with strategic goals and offer the best return on investment
 - Consider Climate Risk:
 - All projects are looked at from a climate lens
 - Consider Equity more holistically:
 - Considers how underserved communities are impacted
 - Measures workforce development
 - Goes beyond our past efforts for SBEs and MBEs

Why we need to focus our processes and what are the benefits

- Portfolio Identification and Management:
 - Strategic Alignment:
 - Instead of making decisions on a project-by-project basis, allows for the comparison of projects against each other
 - Helps in building a portfolio of projects that align with organizational values and strategic objectives
 - Balanced Project Selection:
 - A focused approach ensures that the selected portfolio of projects meets the diverse needs of the community and balances risk and reward effectively
 - Ensuring all processes are aligned, reduces variability, and enhances consistency in project selection
 - Unified Decision Framework:
 - An integrated approach ensures that decisions are made within a unified framework, enhancing coherence and strategic alignment

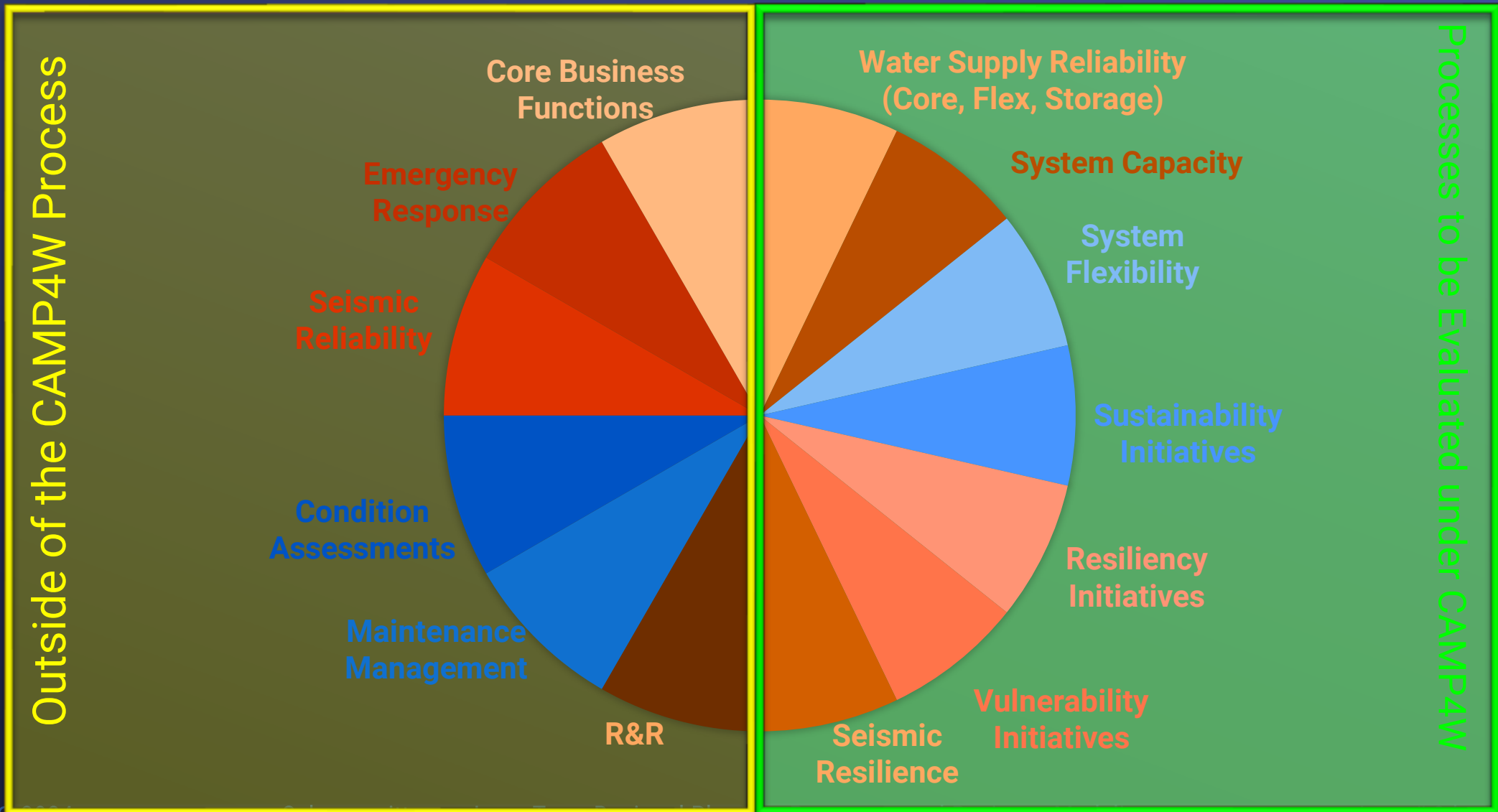
Determining if an investment is subject to CAMP4W consideration

A “yes” answer to any of the following three questions means a project or program will be considered through the CAMP4W process.

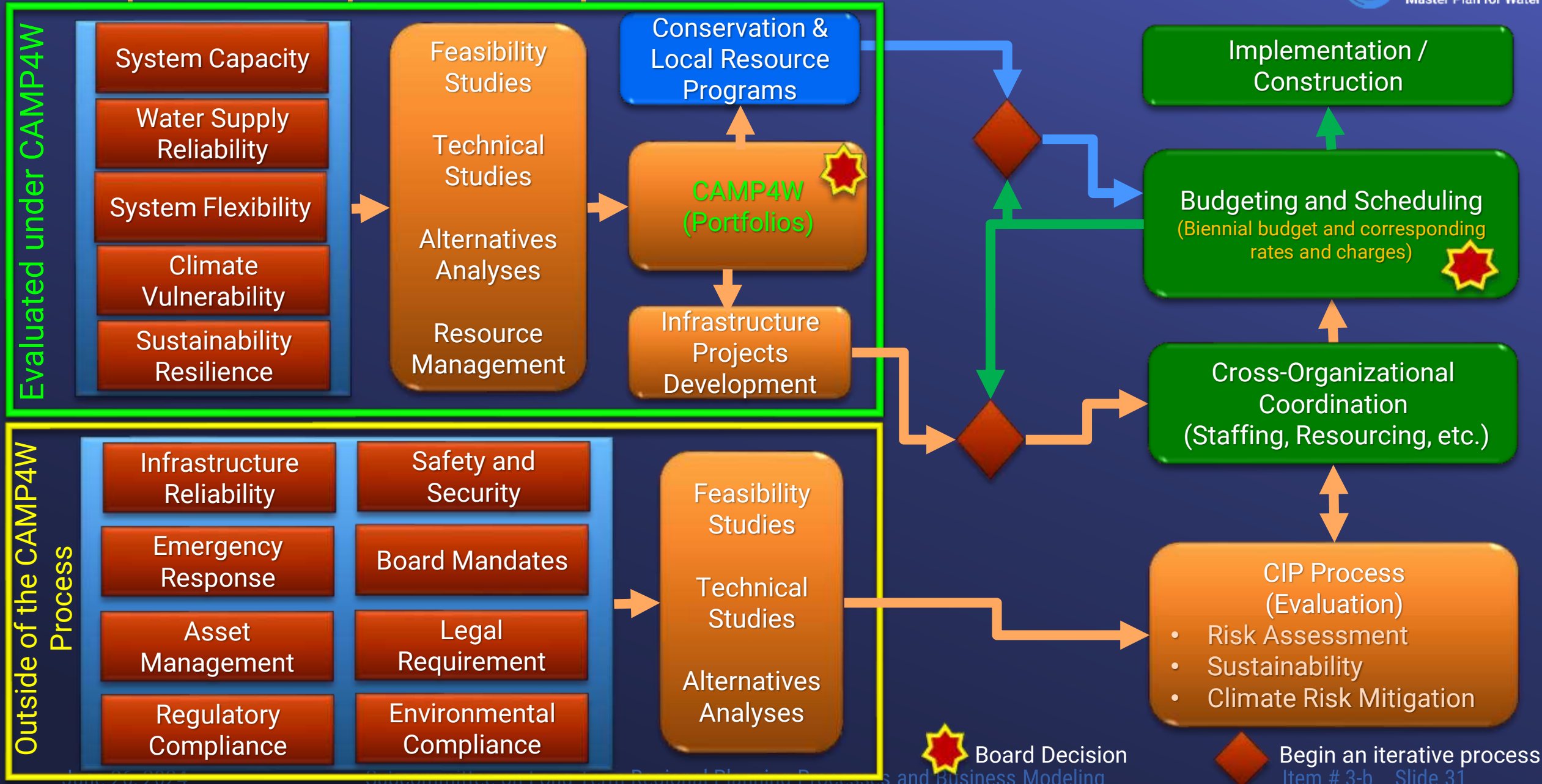
- Is project or program providing or supporting
 - New core supply
 - Flex supply
 - Storage
- Is the project or program addressing a known vulnerability to an asset(s), and does it involve improvements beyond what would be required to maintain the current level of system reliability?
- Does the project or program exceed a certain
 - Flow-based threshold (CFS or AFY)
 - Cost threshold (capital or O&M cost)?

Select Processes and their Relationships to CAMP4W

Incorporated in the Biennial budget and corresponding rates and charges



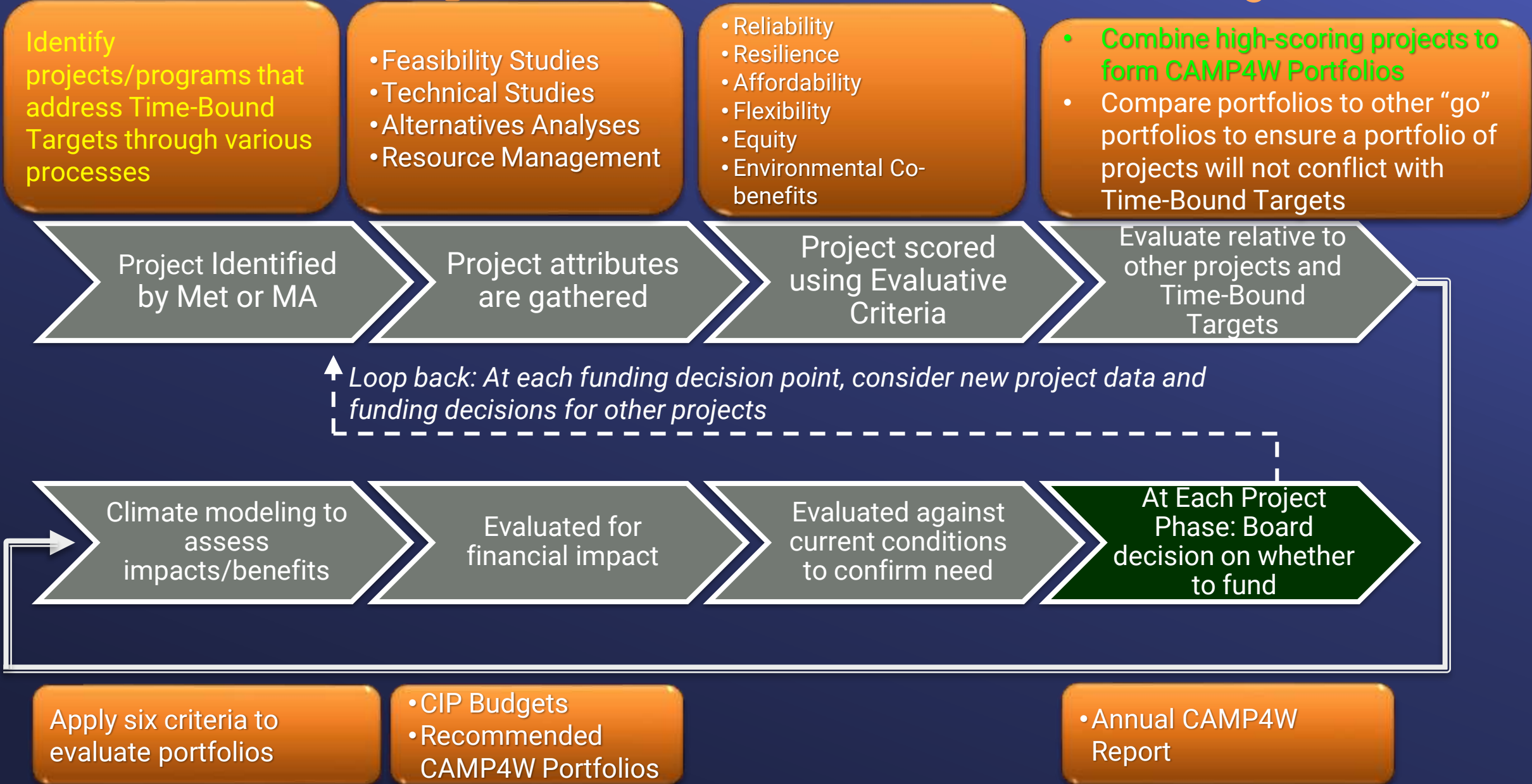
Proposed Project Development Processes



Board Decision

Begin an iterative process

Climate Decision-Making Framework: Process for Decision-Making



CAMP4W Process - a Roadmap for Infrastructure Development and Implementation

- Allow for a holistic look at all the problems that need to be solved
- Develop a roadmap for the implementation of a portfolio of projects and capital investments that
 - Reflect the values of Metropolitan and its Member Agencies
 - Prioritize Metropolitan's capital investments
 - Confront our new climate reality
 - Meet our Member Agency water demands (Reliability)
 - Improve our ability to withstand and recover from disruptions (Resilience)
 - Fair, just, and inclusive to everyone in the Southern California Community (Equitable)

