

Subcommittee on Long-Term Regional Planning  
Processes and Business Modeling



# Integrating a Changing Climate into Metropolitan's Planning Processes

Item 3-b

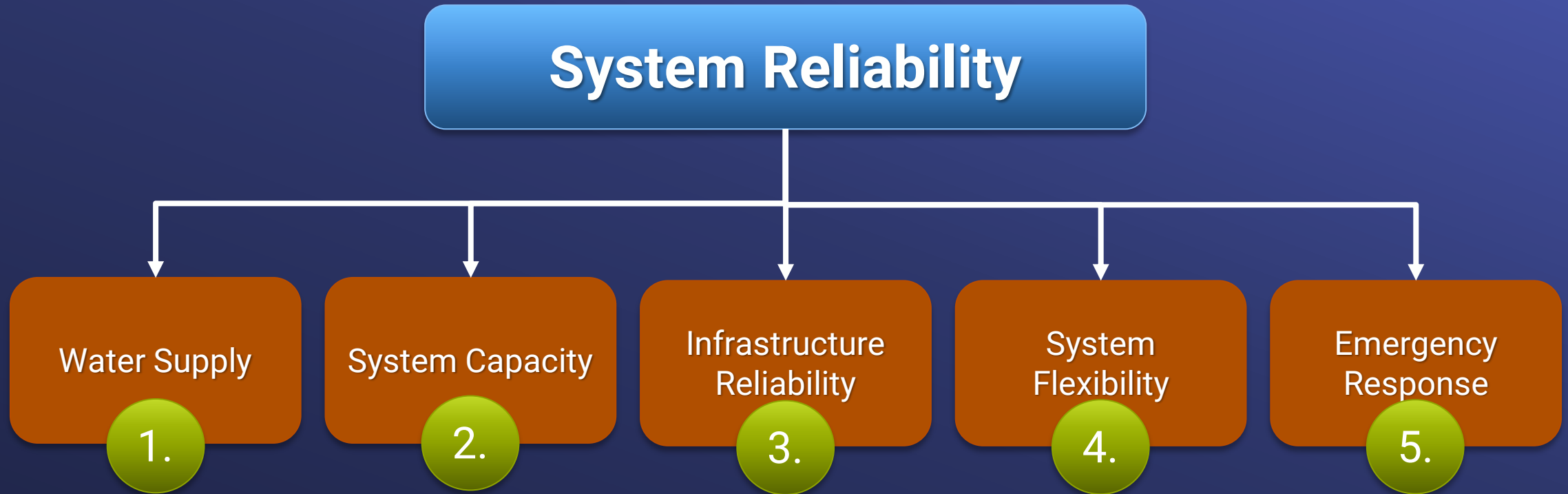
June 26, 2024

# 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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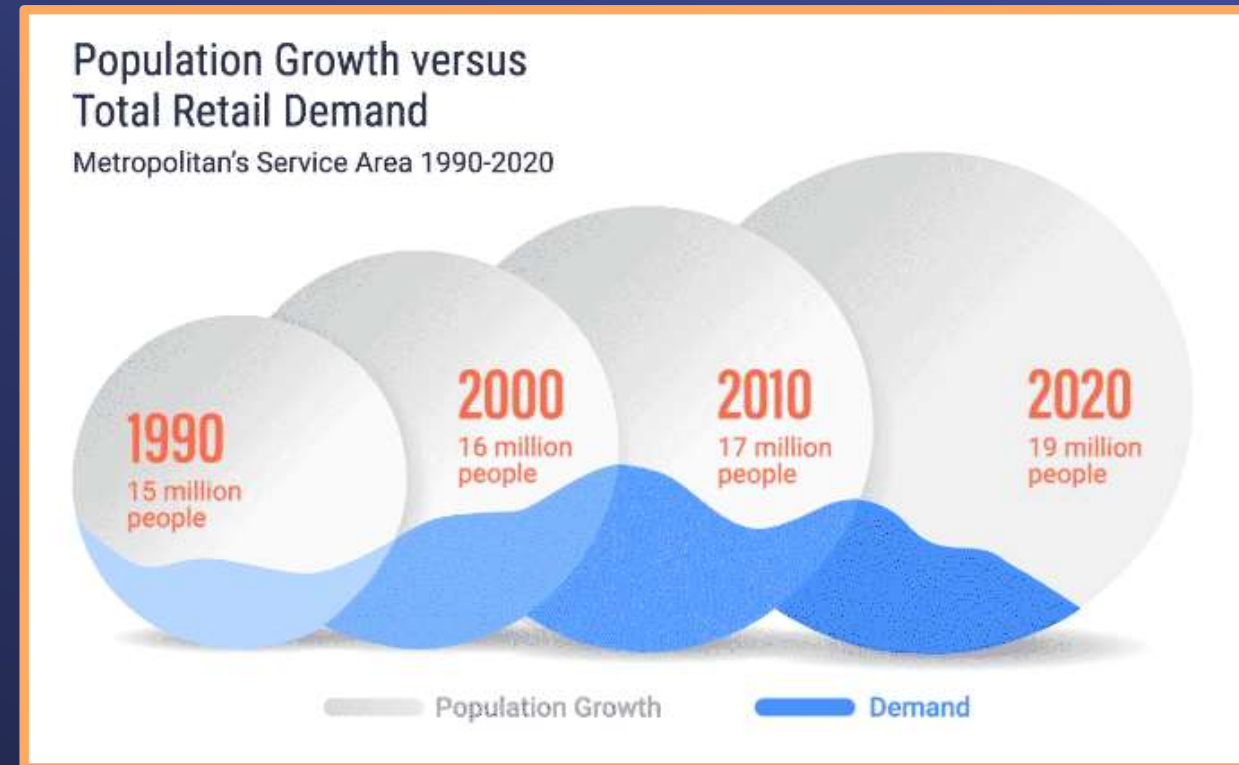


- Developed as part of 2007 Integrated Area Study
- Collaborative effort between Metropolitan and member agencies

# 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

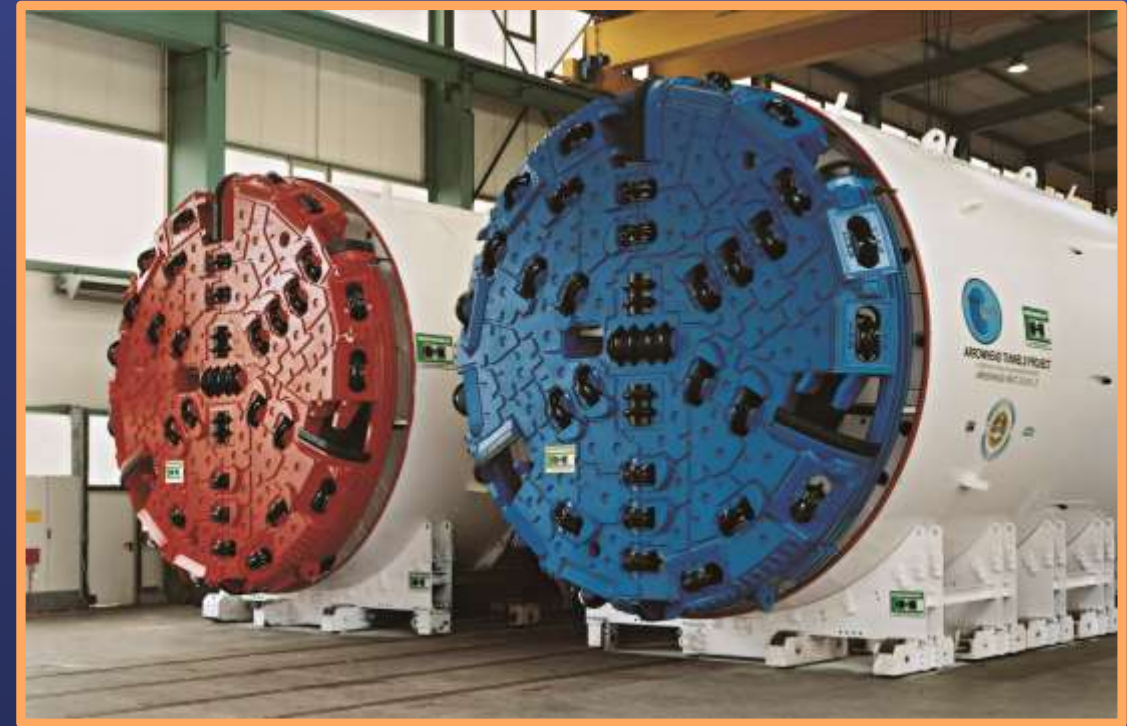
## 2. System Capacity

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



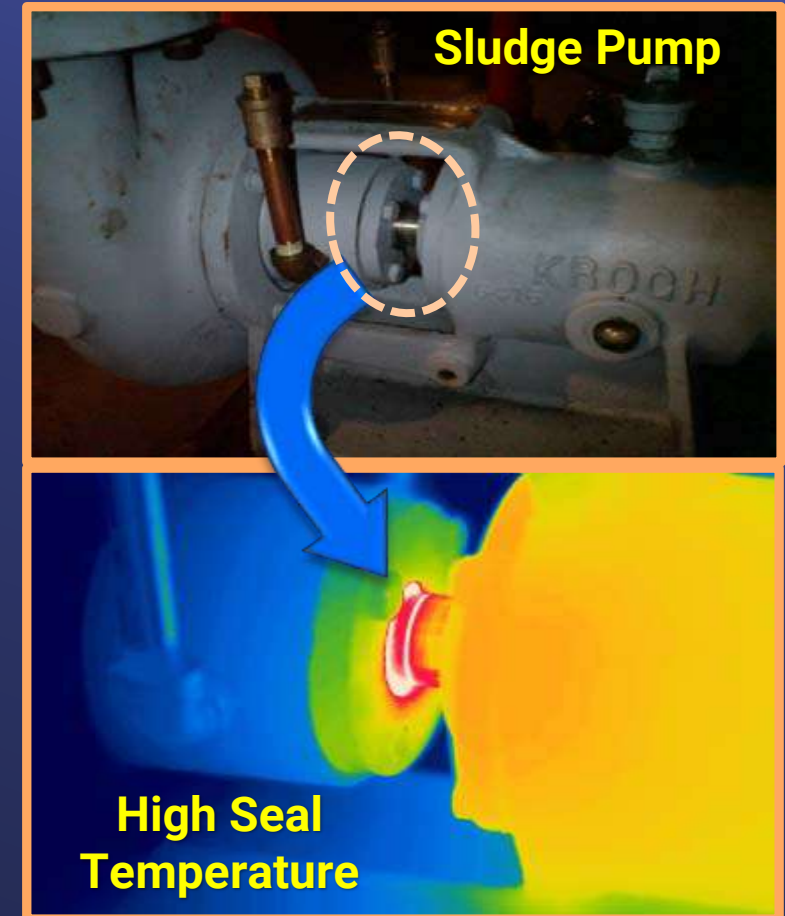
Arrowhead Tunnels Boring Machines



### 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)

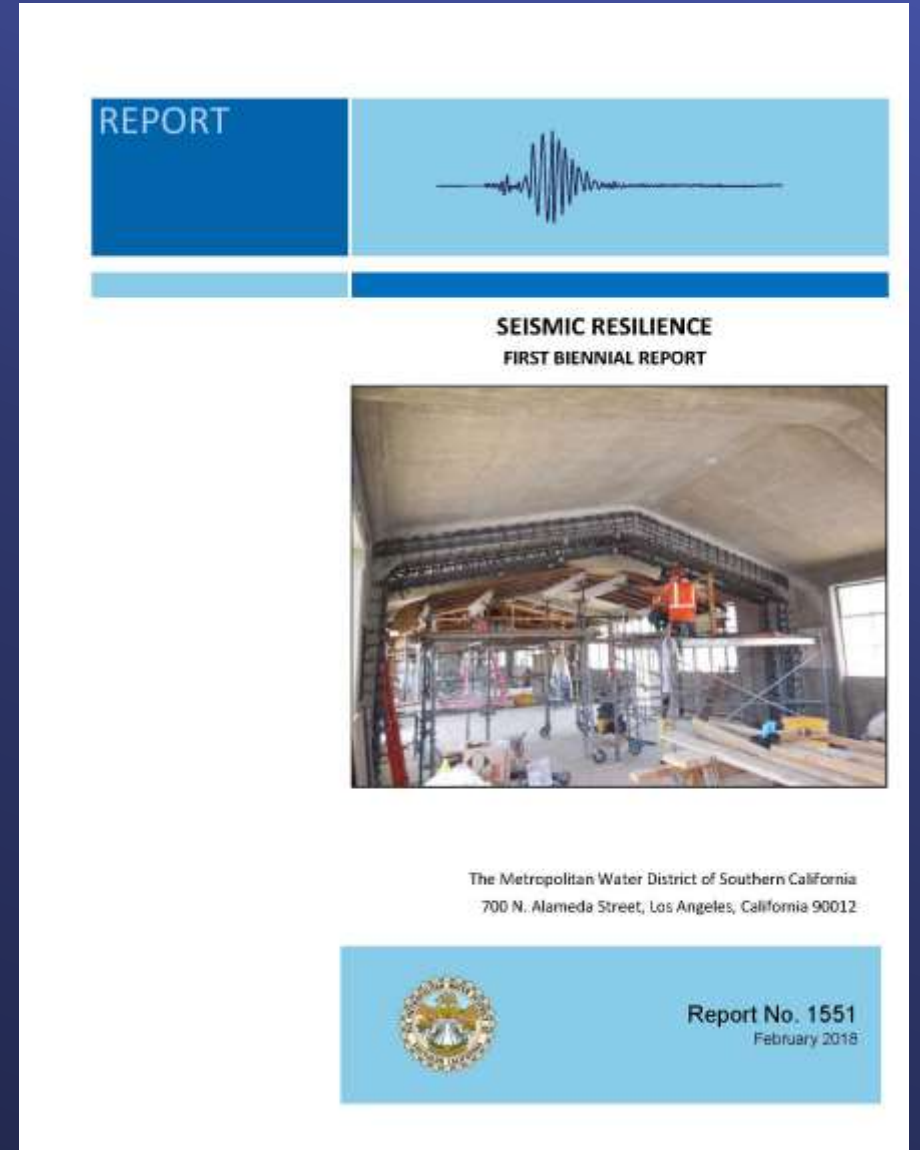
# Energy Management / Energy Sustainability Plan

- 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



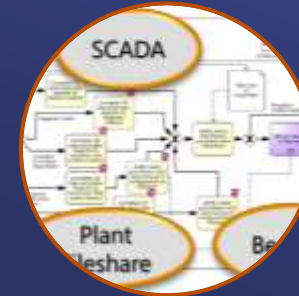


# Asset Management Strategy

- 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

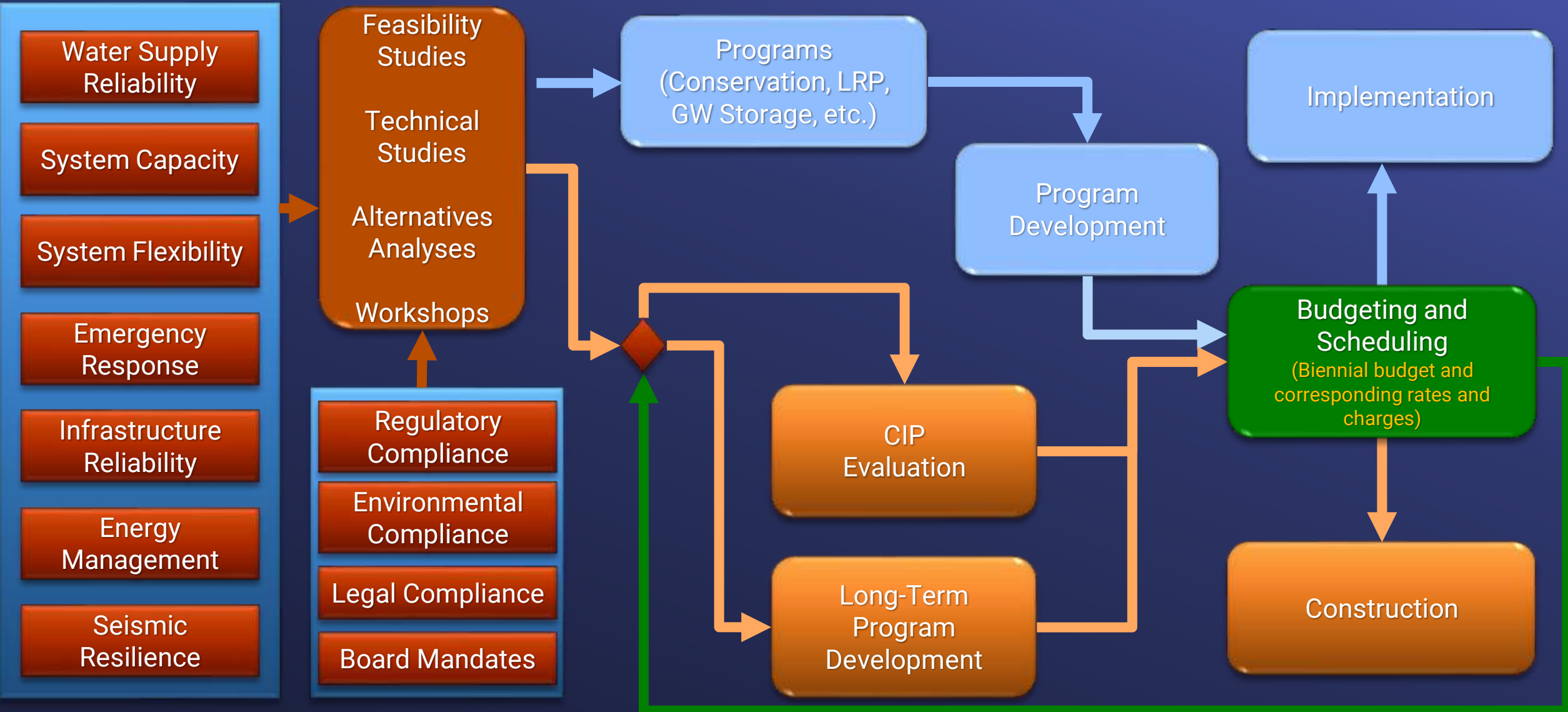
Groundwater (out of region) – AVEK Water Bank Expansion

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

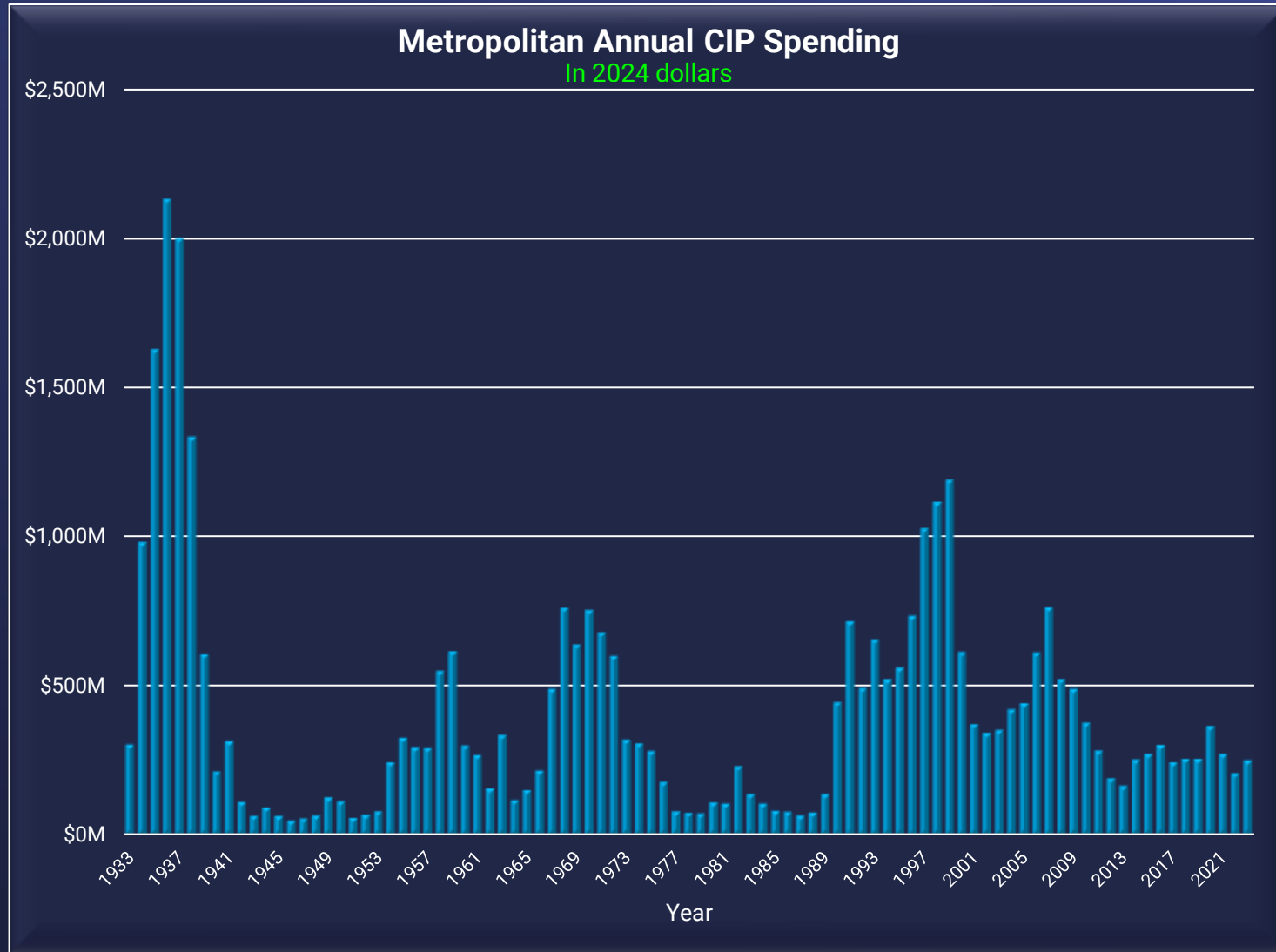
# Climate Vulnerability & Risk Assessment

- 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 

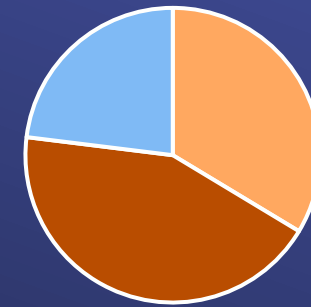
# Current Project Development Process



# Recent Historic CIP Spending



CIP 2001-2010



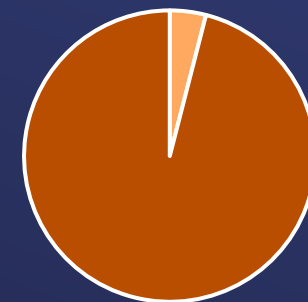
- Ozone/Treatment Expansion
- R&R/Other
- Inland Feeder

CIP 2011-2019



- Ozone
- R&R/Other

CIP 2020-2024

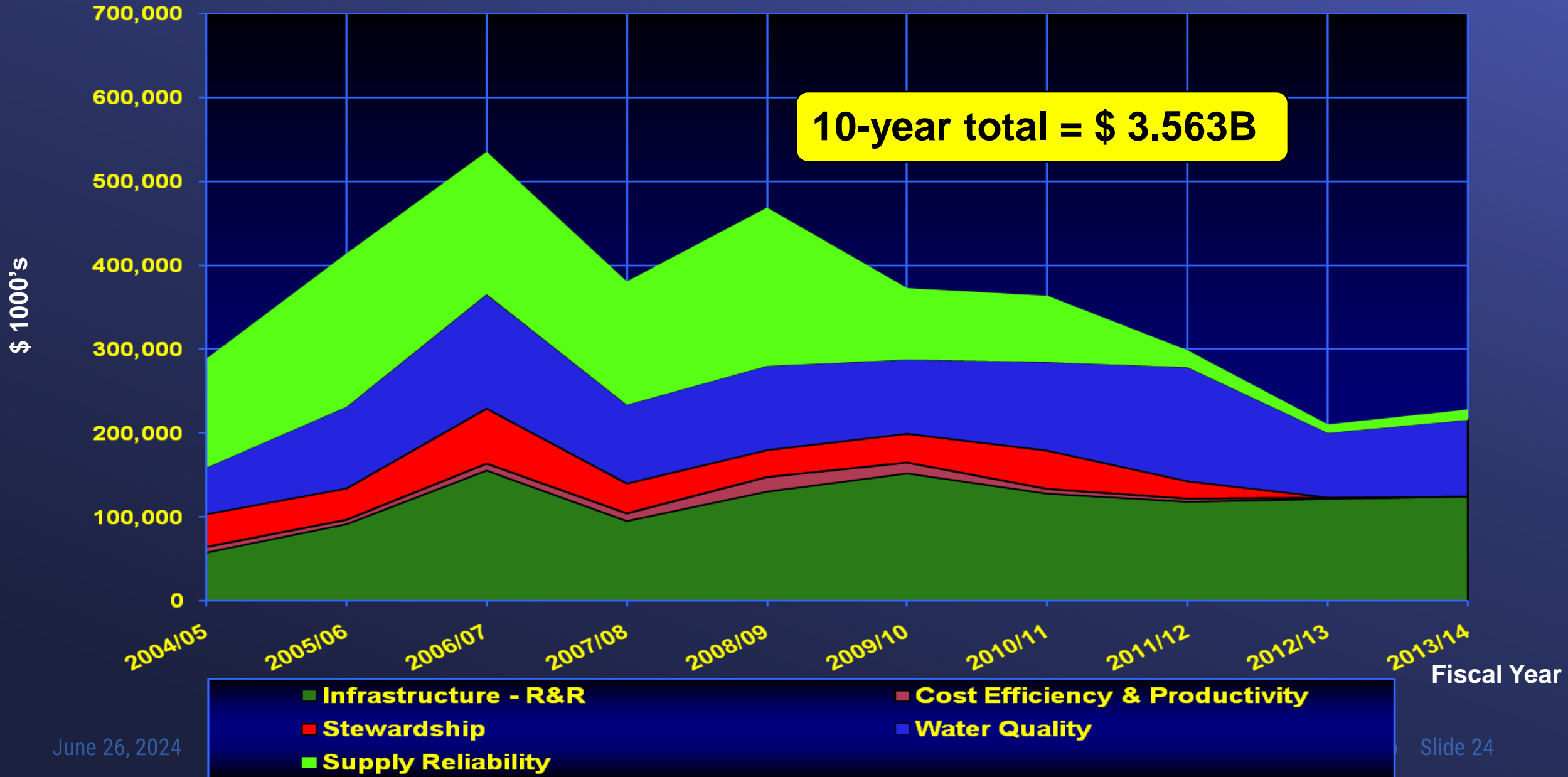


- Drought

- 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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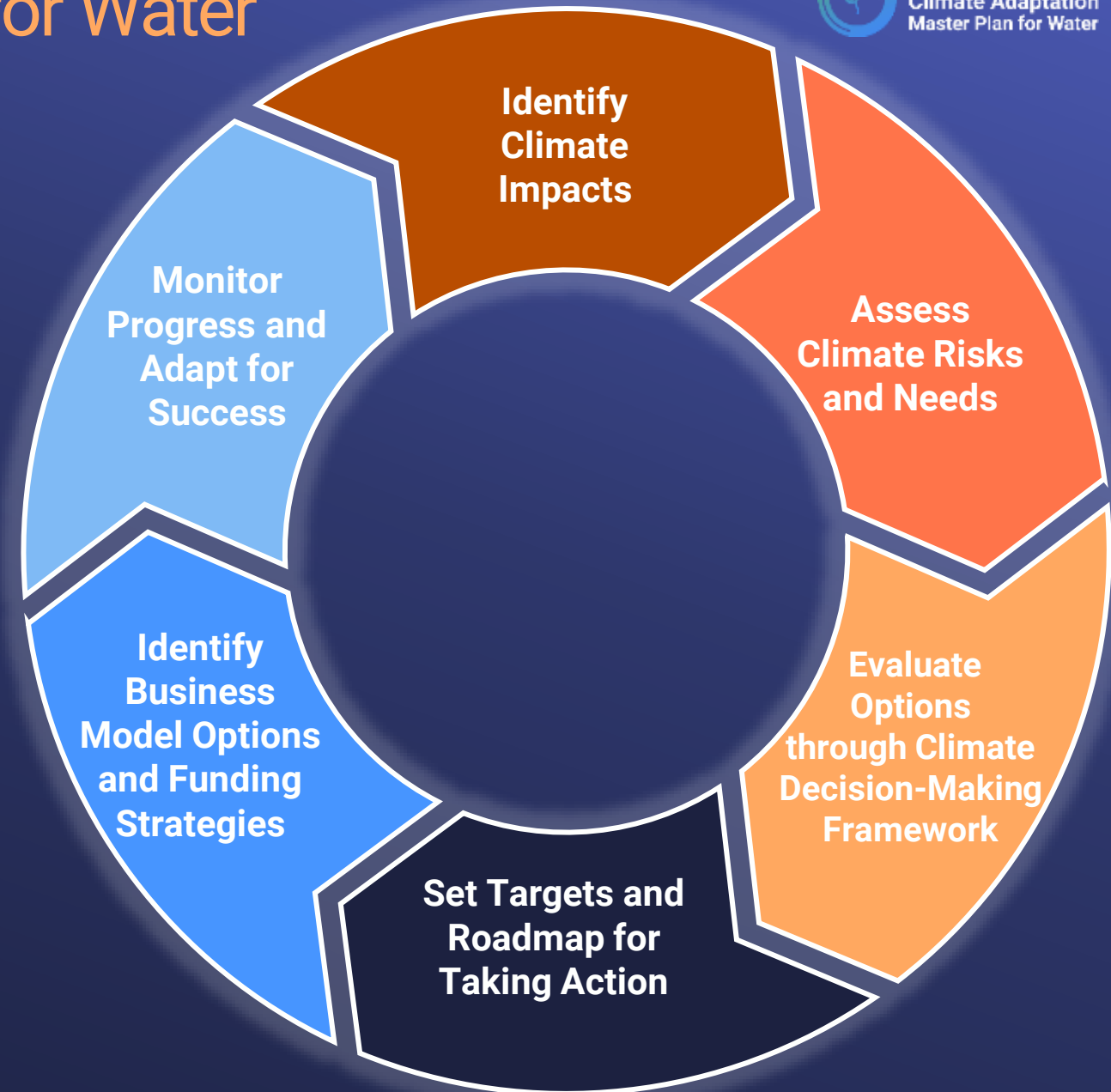
# Climate Adaptation Master Plan for Water

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



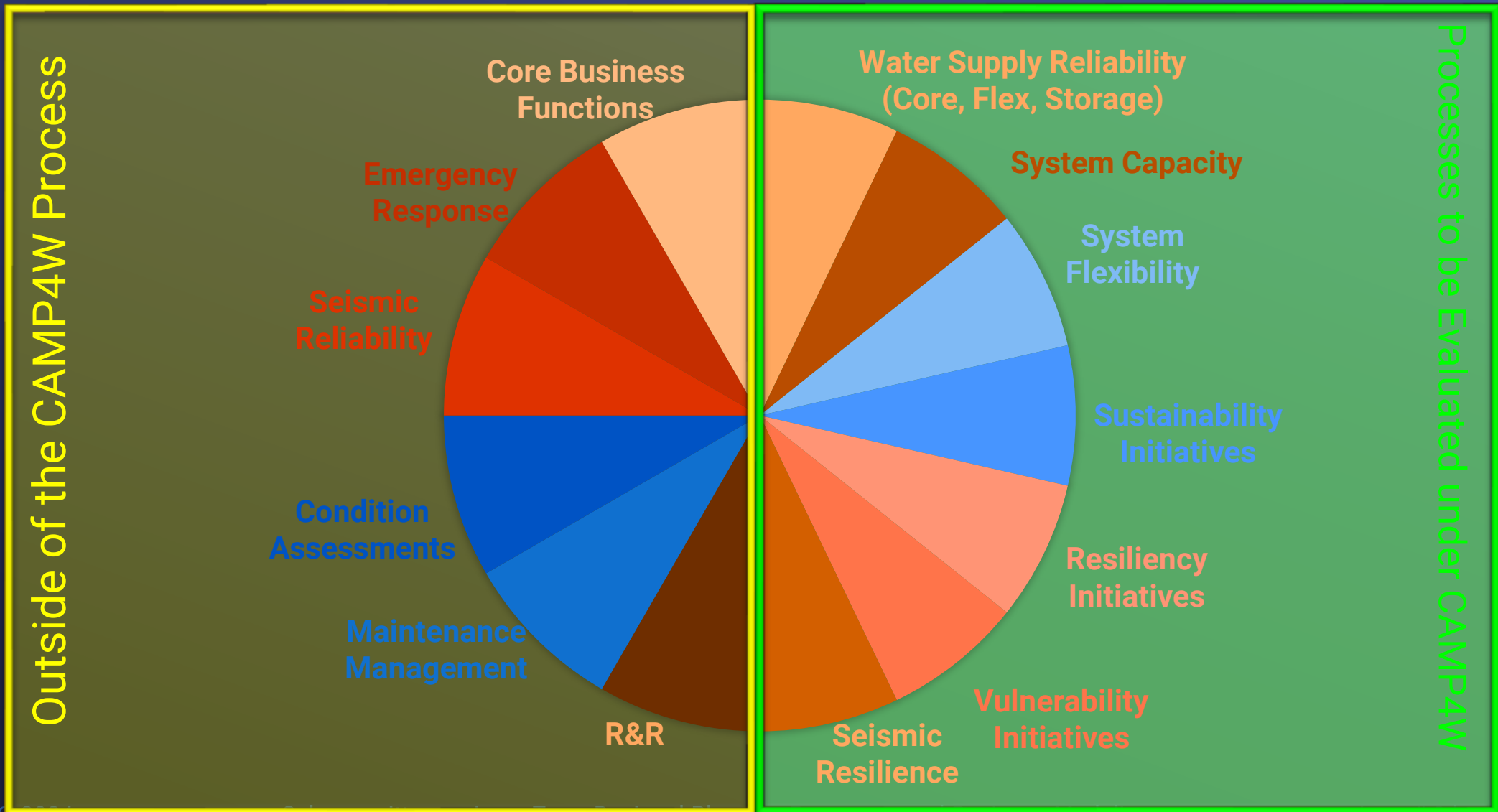
# Determining if an investment is subject to CAMP4W consideration

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

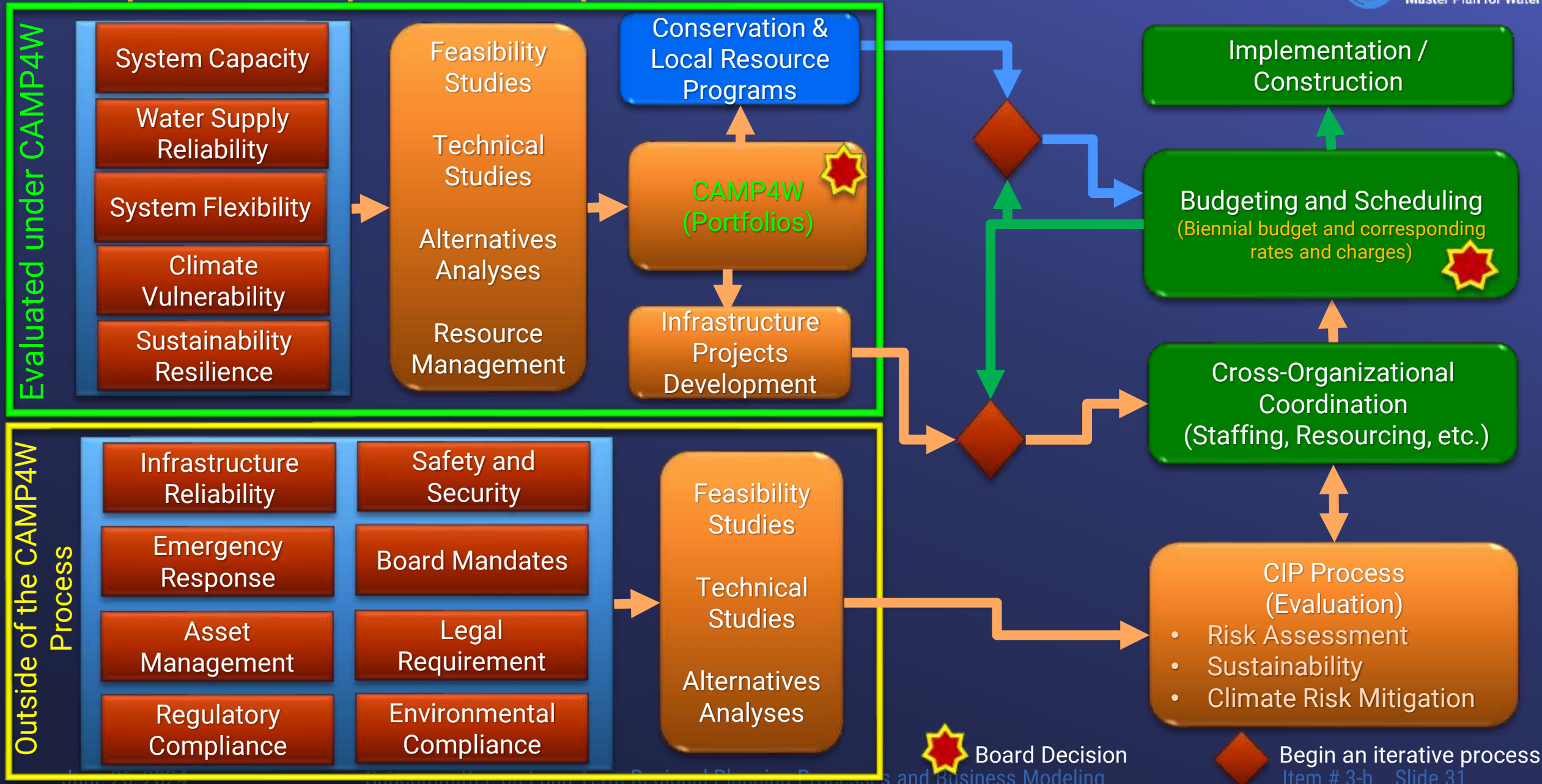
- Is project or program providing or supporting
  - New core supply
  - Flex supply
  - Storage
- Is the project or program addressing a known vulnerability to an asset(s), and does it involve improvements beyond what would be required to maintain the current level of system reliability?
- Does the project 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

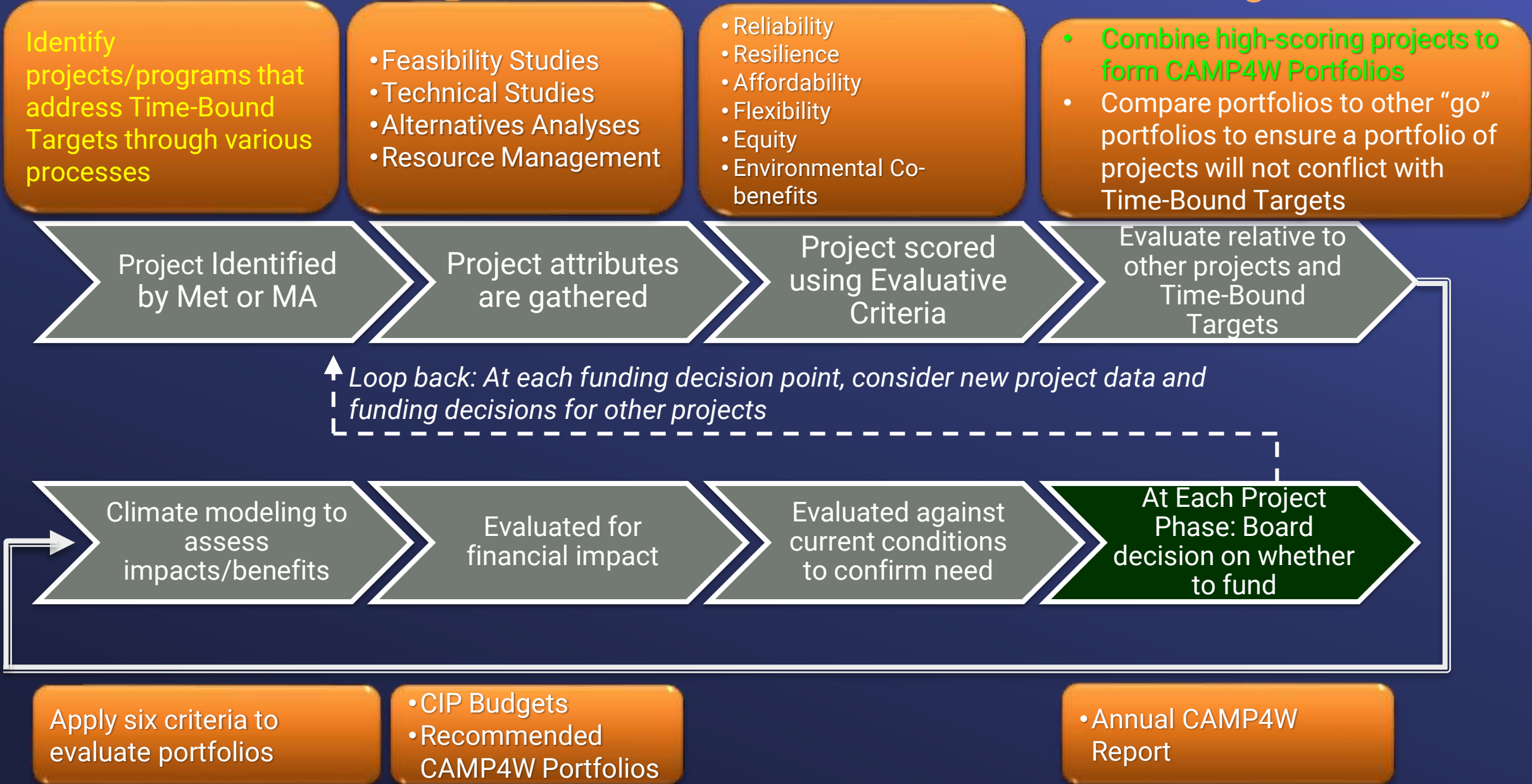
Incorporated in the Biennial budget and corresponding rates and charges



# Proposed Project Development Processes



# 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)



