



Regional Recycled Water Program Workshop #2

Engineering and Operations Committee

Item 9-4

October 12, 2020

Agenda for Today

1. Brief Review of the RRWP
2. Overview of White Paper #2
3. Outline of Proposed November Board Actions

Brief Review of the Regional Recycled Water Program

Regional Recycled Water Program



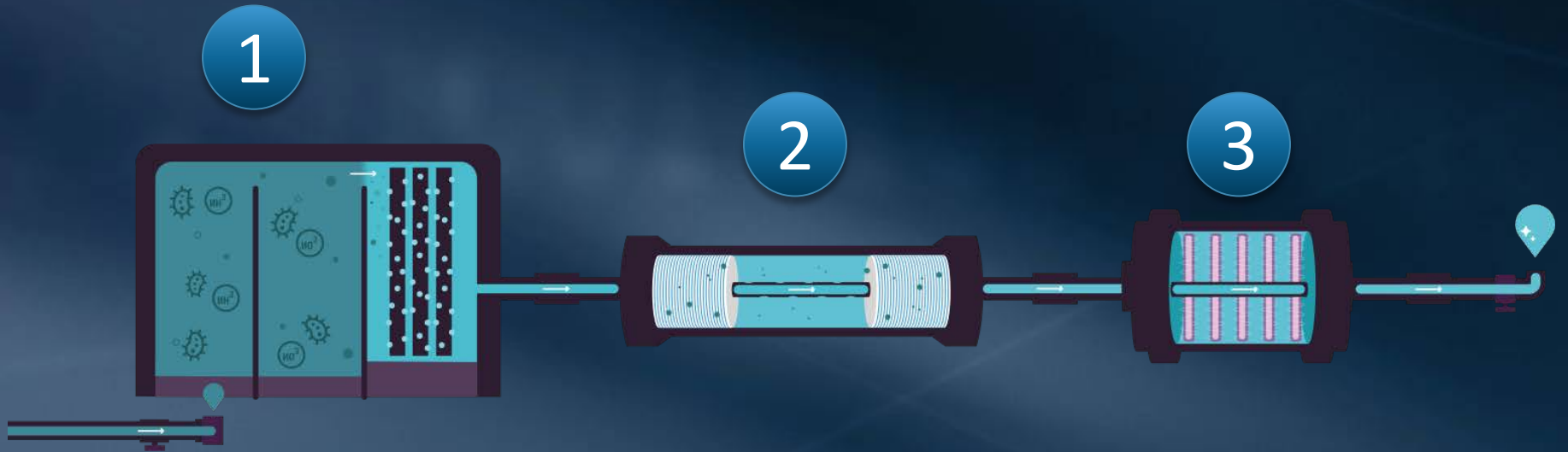
- Partnership with LACSD (2010-Present)
- Demonstration plant on-line (2019)
- Planning for potential full-scale program
 - Potential for groundwater replenishment and DPR via raw water augmentation applications
- Next steps

Joint Water Pollution Control Plant

- 2017 average flow of ~260 MGD
- Permitted capacity of 400 MGD
- Primary and secondary treatment
- Currently discharges to the ocean



Proposed Treatment Process



Membrane Bioreactors

Primary or secondary effluent treated
Microorganisms remove ammonia
Membranes filter tiny particles

Reverse Osmosis

Pressurized membranes further remove microscopic materials, eliminating more than 99% of all impurities

Ultraviolet/Advanced Oxidation Process

Ultraviolet light/oxidant destroy any remaining viruses and trace chemical compounds.

Summary of Work to Date

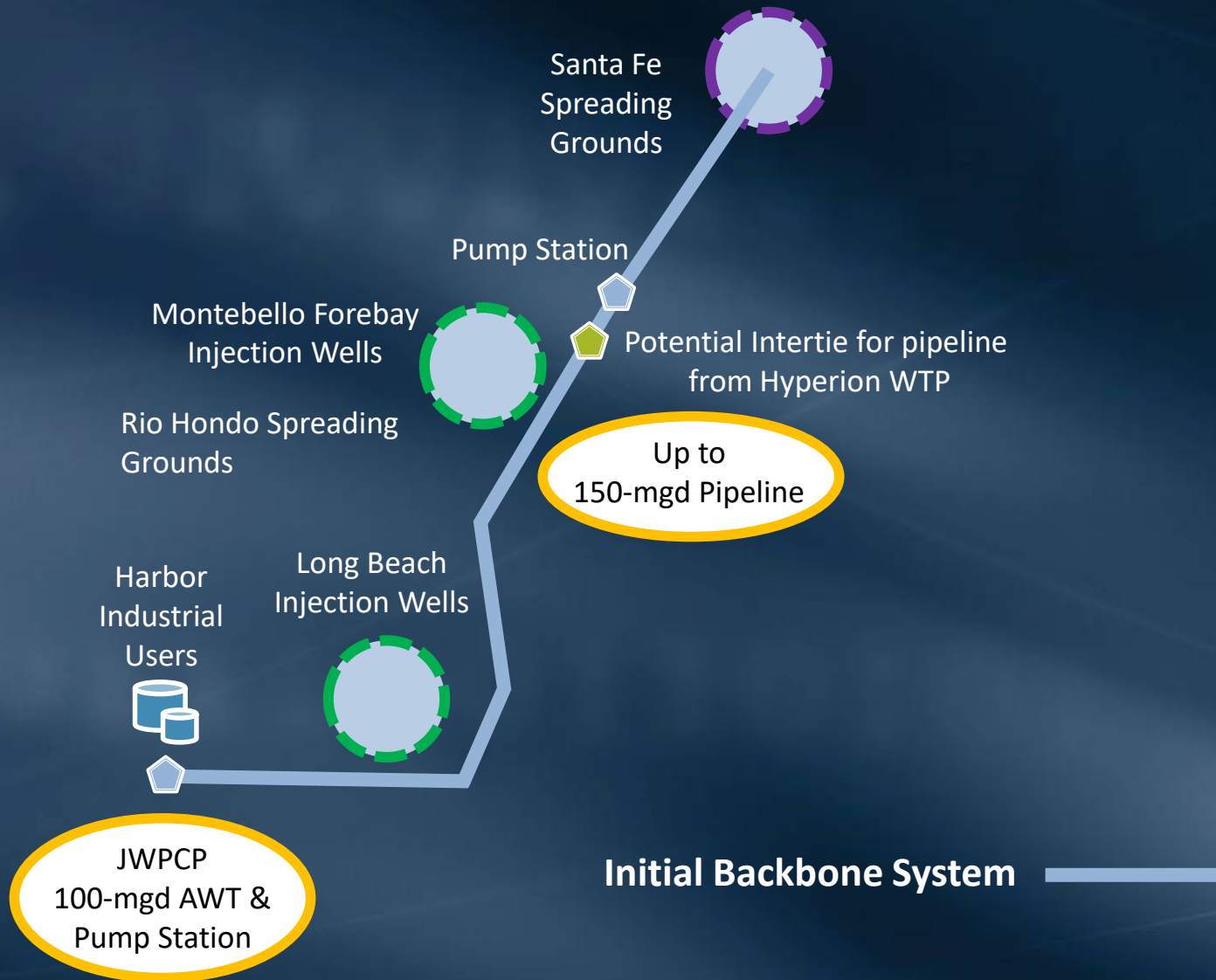
- Pilot Scale Studies (2012)
- Feasibility Study Report (2016)
- Conceptual Planning Studies Report (2019)
- Demonstration Plant (2019)
- White Paper #1 (2019)
- White Paper #2 (2020)



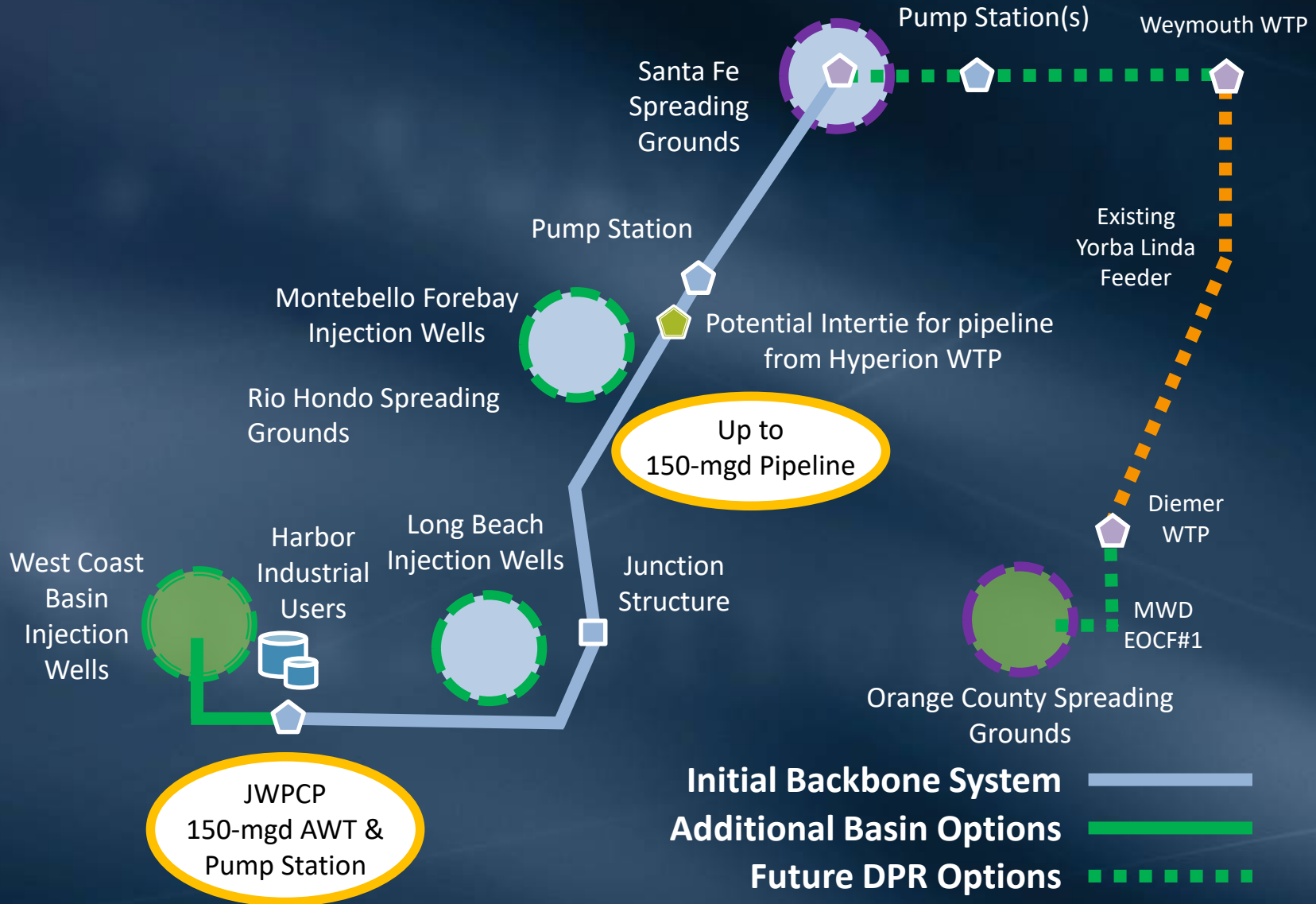
Conceptual Planning Studies

- Concepts for required facilities
- Potential to Phase Program
 - 100 MGD initially
 - 50 MGD at later date
- Conservative assumptions carried forward
 - Treatment process includes tertiary MBR, all new facilities, no retrofits
 - Pipe alignments includes connection to Orange County and full diameter pipeline to MSG
 - 2018 cost estimate includes 35% contingency
- Flexibility to add DPR applications in the future

Phase 1: Backbone System



DPR Option: Northern Route



DPR Option: Southern Route



Program Cost (2018 costs)

Cost Description	Backbone System (2018 Dollars)	Full Program (2018 Dollars)
Production Capacity (mgd)	100	150
Capital Program Cost ¹	\$2.6 billion	\$3.4 billion
Annual O&M Cost (\$/year)	\$69 million	\$129 million
Program Unit Cost of Yield		
Capital Unit Cost	\$1,181/AF	\$1,054/AF
<u>O&M Unit Cost</u>	<u>\$631/AF</u>	<u>\$772/AF</u>
Total Program Unit Cost	\$1,813/AF	\$1,826/AF

1. Costs are from the Conceptual Planning Studies Report (2018 dollars). Costs will be updated during the PEIR phase, if approved by the Board. Does not include cost of DPR

White Paper #1 & Workshop No. 1

- Discussed multiple potential approaches to program implementation
 - Approach 1: Traditional
 - Approach 2: Accelerated Construction
 - Approach 3: Accelerated Water Delivery
- Outlined potential for DPR applications
 - Raw water augmentation at Metropolitan's treatment plants
 - Regulations in development
- White Paper No. 2 – Planning, Financial Considerations, and Agreements

Overview of White Paper #2

White Paper #2: Key Questions



What kind of institutional arrangements or agreements would be required?

Collaboration and Funding

LOIs and MOUs developed

- WRD
- City of Long Beach
- City of Torrance

- MSG Watermaster
- Three Valleys MWD
- USGVMWD

Up to 80
TAFY

60-80
TAFY

Metropolitan's Weymouth
Water Treatment Plant

Metropolitan's Diemer
Water Treatment Plant

- LACFCD
- LADWP

LACSD

Orange
County
Basin

- SNWA
- CAP/AZ-DWR

Collaboration and Funding

More than \$ 2 million in Grants Awarded to Date

Program	Amount
USBR Title XVI Reuse Research Grant	<ul style="list-style-type: none">• Awarded \$750,000 to study MBR pathogen removal
California Water Recycling Funding Program (WRFP) State Prop 1 /68	<ul style="list-style-type: none">• Awarded \$1M for Demonstration Plant• Awarded \$300,000 for four groundwater basin planning studies

Collaboration and Funding

Potential Future Grants and Loans

Program	Type	Amount
USBR Title XVI	Grant	Up to \$20M for future construction
California Water Recycling Funding Program (WRFP) State Prop 1 /68	Grant	Up to \$5M for construction
USEPA Water Infrastructure Finance and Innovation Act (WIFIA) program	Loan	49% of eligible costs up to \$20M
California Clean Water State Revolving Fund (CWSRF)	Loan	Up to 50% of eligible costs

White Paper #2: Key Questions



What kind of institutional arrangements or agreements would be required?



How does the RRWP fit into Metropolitan's regional resource planning?

RRWP Role in Regional Planning

Integrated resources plan

25-year plan to ensure reliability

Evolves over time

2020 IRP will include scenario planning

Changed conditions in past 5 years

Declining demand

Unmet local resource goal

Climate change

Constituents of concern

RRWP

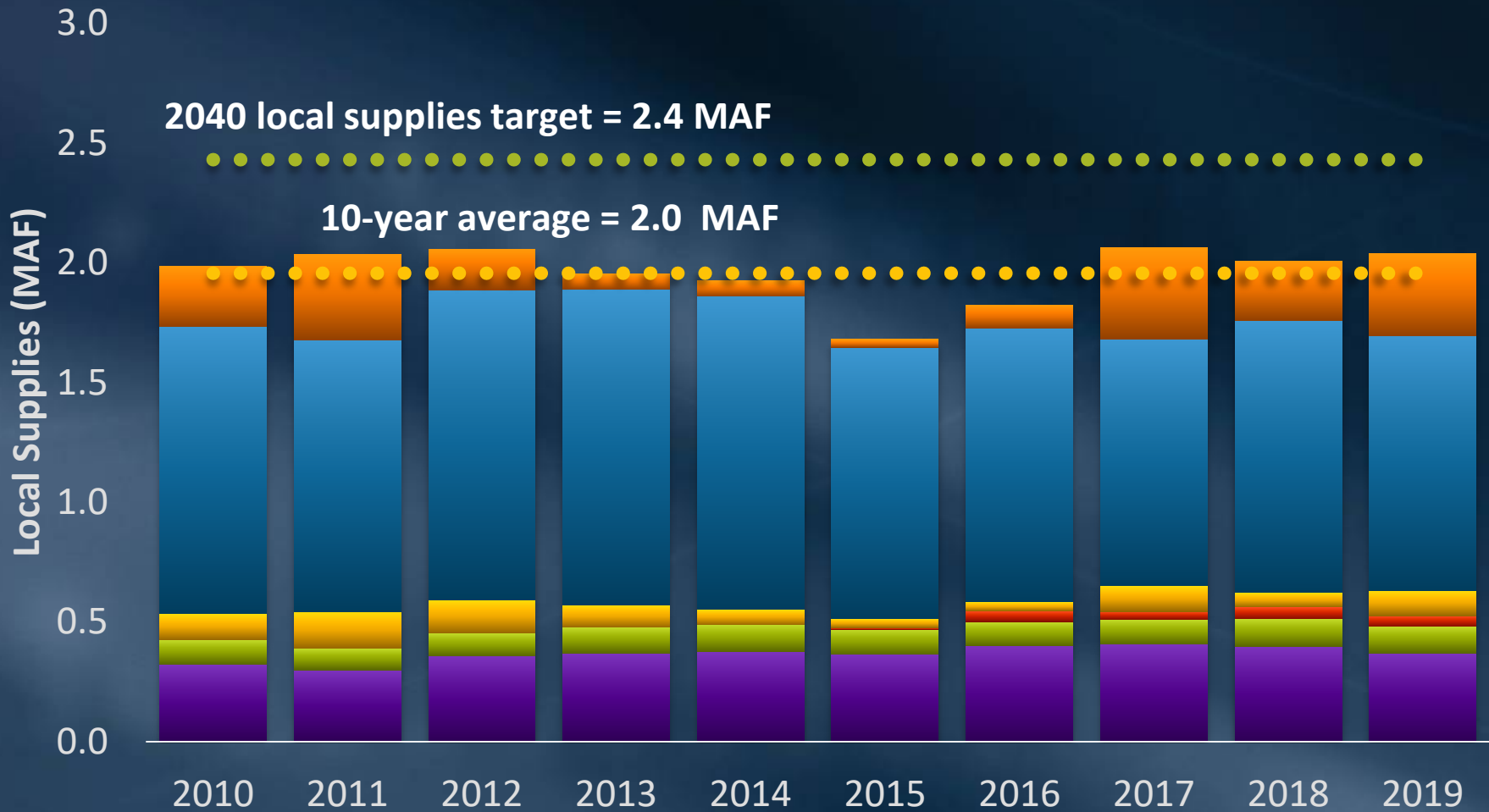
Increases local supplies

Supports GW & DPR

Has regional benefits

Has stakeholder support

Progress in Local Supply Development



Recycled Water

Groundwater Recovery

Seawater Desalination

Surface Reservoir

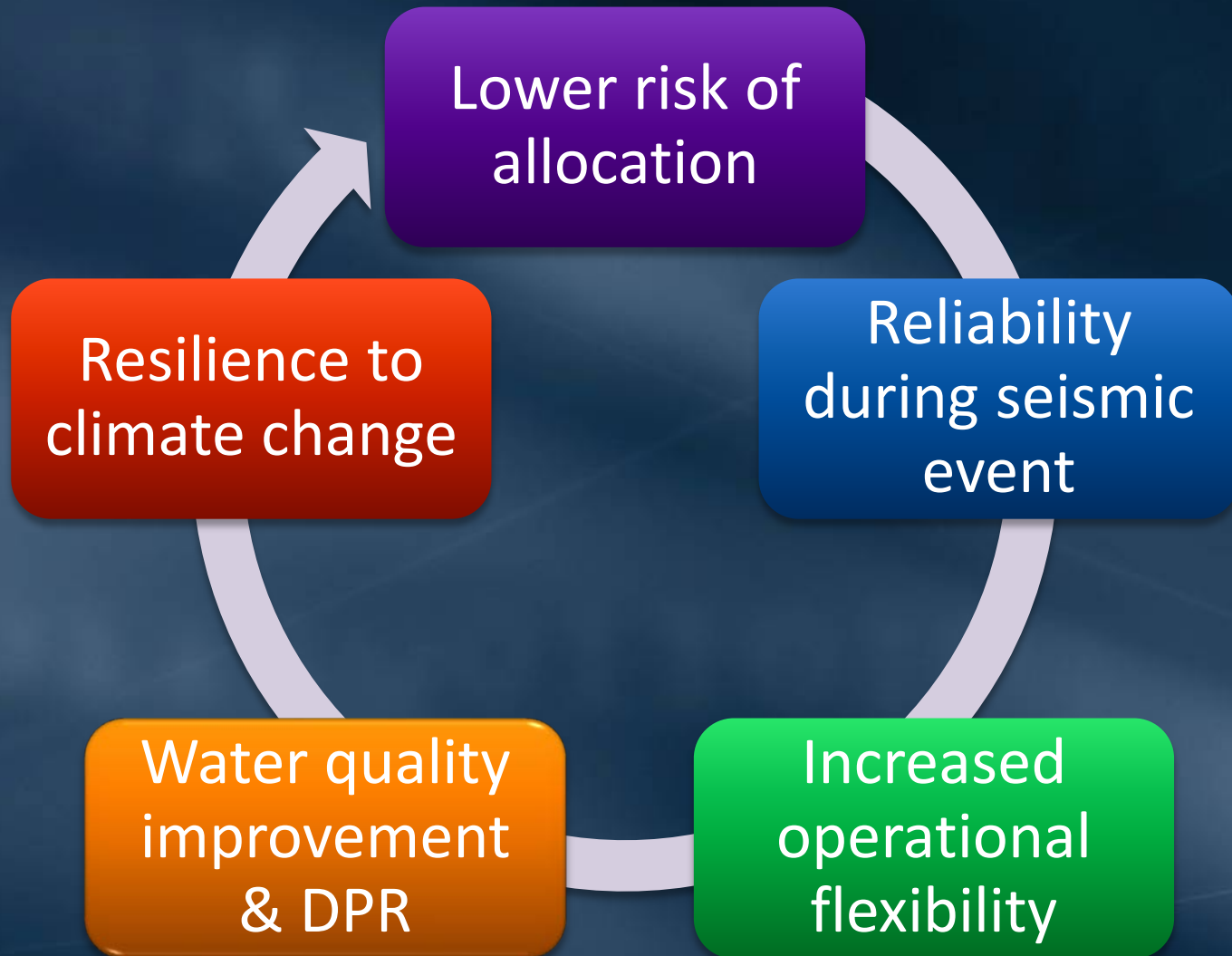
Groundwater

Los Angeles Aqueduct

Average

Local Resources Target

A Selection of Benefits to the Region from Implementing the RRWP



White Paper #2: Key Questions



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How does the RRWP fit into Metropolitan's regional resource planning?

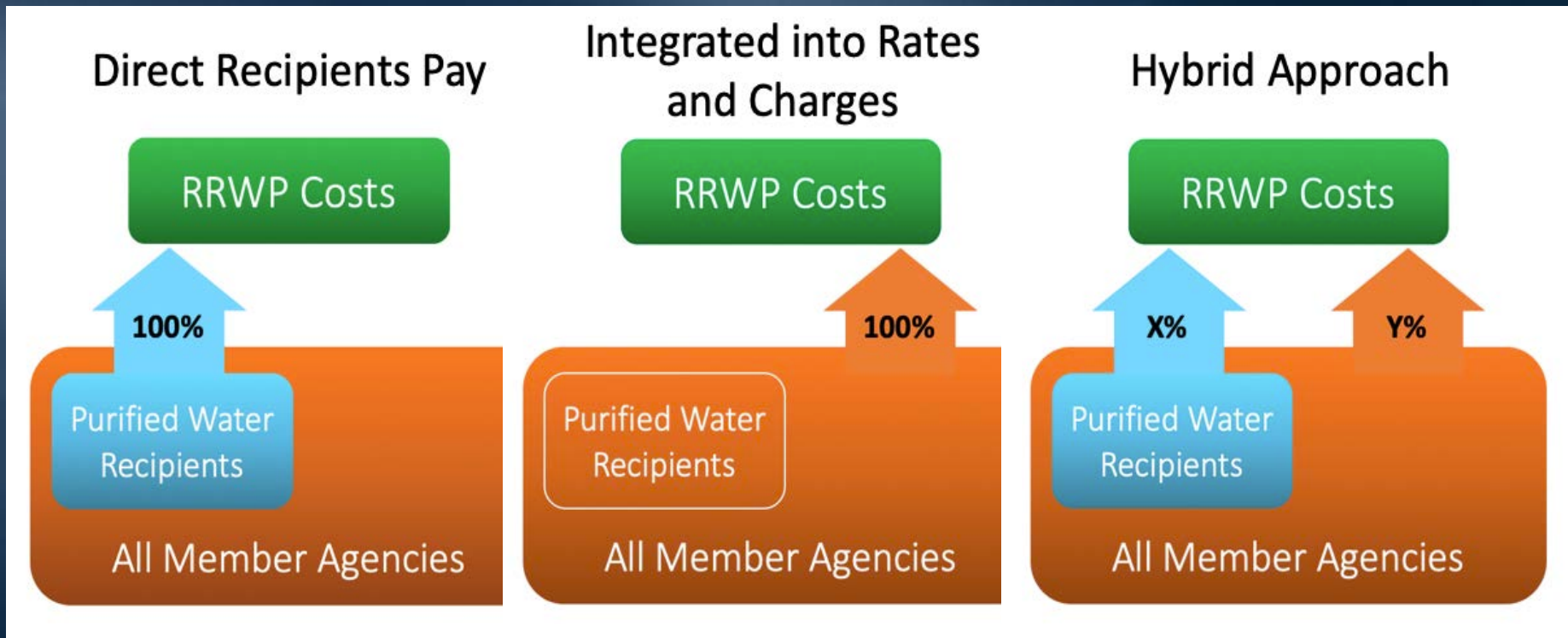


How could the Program's costs be recovered by Metropolitan?

Potential Cost Recovery Approaches

Overview

- Preliminary evaluation in the context of Metropolitan's organizational structure and systems



Potential Cost Recovery Approaches

Examples of Significant Factors Used in Evaluation

Is it
reasonable?

Is there a significant cost impact to direct recipients to meet same replenishment demands?

Does the cost recovery approach account for regional benefits?

Are firm commitments from direct recipients mandatory?

Potential Cost Recovery Approaches

Summary of Significant Factors

Factor	Direct Recipients Pay 100%	Integrated Approach	Hybrid Approach
Cost impact to Direct Recipients for Same Service	Significant increase in cost to direct recipients	No significant increase in cost because cost recovery is through current rate structure	The cost impact is unclear and depends on the hybrid selected
Accounts for regional benefits	No	Yes	Depends upon how hybrid approach is implemented
Firm commitments mandatory	Yes	Yes	Yes
Reasonable	No	Yes	Unlikely

Outline of Proposed November Board Actions

Proposed November Board Action

July 2019

October 2020

November 2020

DONE

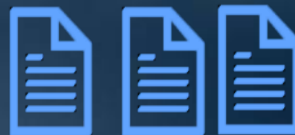
Workshop #1:
Implementation and DPR
Considerations

Workshop #2:
Planning, Agreements and
Financial Considerations
RRWP Information

Board Action to start CEQA
Amend LACSD Agreement
Approve SNWA Agreement
Amend NWRI Agreement



White Paper #1



Letters of Intent
White Paper #2



Board Letter

Proposed November Board Actions

Board Action 1

- Authorize staff to commence Environmental Planning phase for RRWP

Board Action 2

- Amend existing LACSD Agreement
- Provide support for the RRWP Environmental Planning phase

Board Action 3

- Amend existing NWRI Agreement
- Provide continued support for Demo Plant testing program

Board Action 4

- New SNWA Agreement
- Provide support for RRWP Environmental Planning phase

Environmental Planning Phase

- Proposed Scope of Work
 - Program Environmental Impact Report
 - Engineering & Technical Support Studies
 - Treatment
 - Conveyance
 - Public Outreach support
- \$30 million included in approved 2020/21 and 2021/2022 biennial O&M budget
- Potential contributions from Program partners

LACSD Amendment No. 1

- 2015 Agreement for demonstration plant and term sheet for future full-scale projects
- Amendment to add Environmental phase work
- Scope will cover the following:
 - CEQA documentation
 - Engineering assistance
 - Associated technical studies
 - Public outreach
- Potential LACSD financial contribution \$5M - \$6M
- Approval requested at November Board meeting
- FORCO remediation up to \$50 million

Southern Nevada Water Authority

Letter of Intent

- LOI approved in March 2020
- Scope of LOI
 - Work together to implement the RRWP
 - Provide resources to assist with the planning, design, and construction
 - Discuss exchanges of water volumes
- LOI is non-binding
- Anticipates future coordination on 2026 Colorado River Operating Guidelines

Southern Nevada Water Authority New Agreement

- Agreement with SNWA will include:
 - Funding contribution for environmental phase
 - Partnership and collaboration for environmental phase work
- Approval to be requested at November Board meeting
 - Additional terms to be provided

NWRI Agreement

- Independent Scientific Advisory Panel (ISAP) facilitation
 - Supports ongoing work at Demonstration Plant
- Agreement signed in 2018
 - Initial Budget: \$245,000
- Proposed Amendment
 - Additional workshops and reports
 - \$200,000 already included in O&M budget
 - Time extension through June of 2022

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Discussion

