

Old Colony Planning Council Regional Water Plan


Workshop 5
Economic Resilience and Sustainable Water Supply

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July 31, 2024

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Agenda

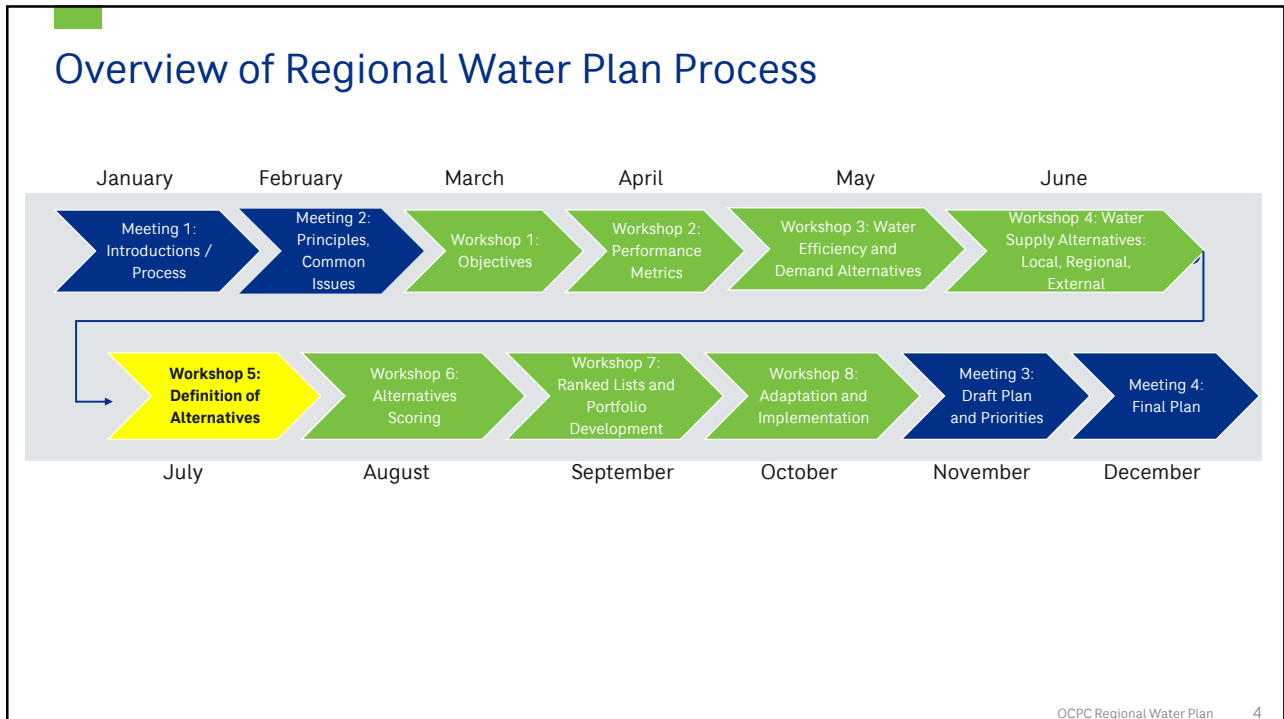
1. Public Comment
2. Demand Projections Review
3. Long Term Local and Regional Alternatives
-  Coffee Break
4. Short Term Local and Regional Alternatives
5. Public Outreach Update

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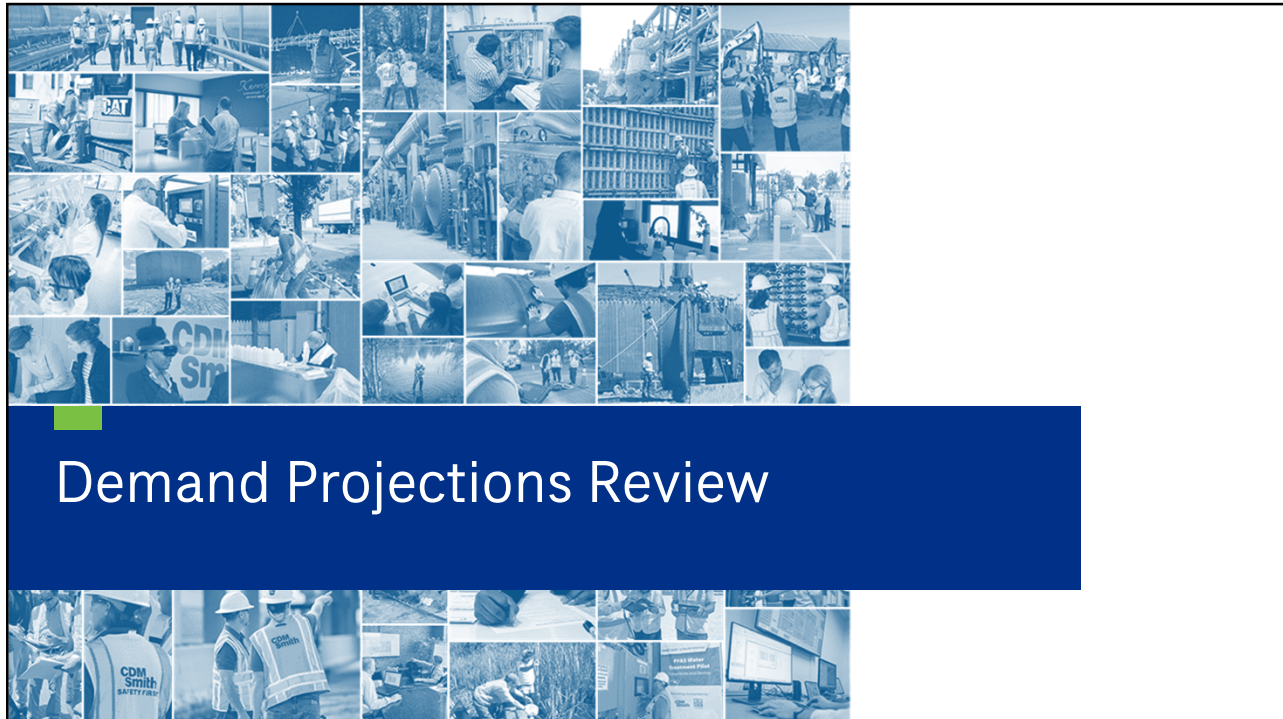
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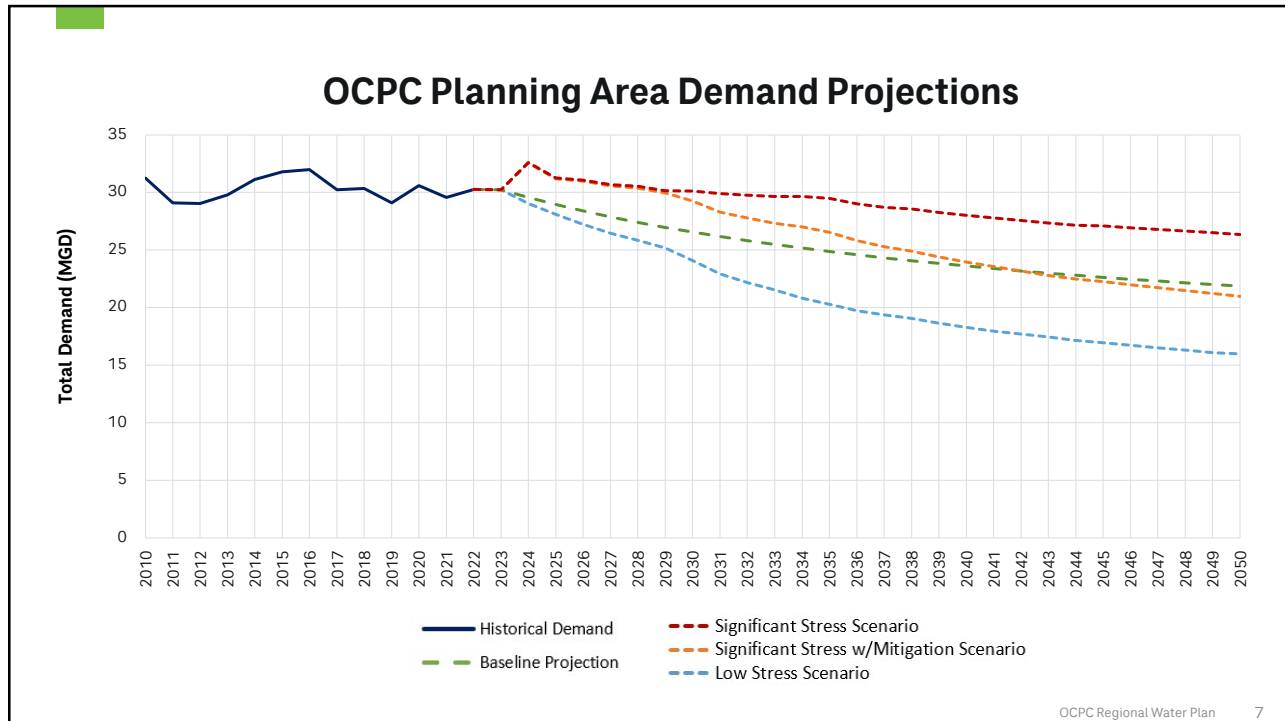
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Future Scenarios for Planning

Planning Scenario	Population Growth	Future Climate Change	Water Use Efficiency	Trend in UAW	Private Wells to Public Supply
1. Baseline	Expected	Historical Average	Average increase in efficiency	Historical Average	None
2. Low Stress	Expected	Cool/Wet	Greater than average increase	Decrease	None
3. Significant Stress	10% greater than expected	Hot/Dry	Less than average increase	Increase	100%*
4. Significant Stress with Mitigation	10% greater than expected	Hot/Dry	Greater than average increase	Decrease	100%*

*100% of private wells from publicly available data. Not a comprehensive list.

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Indoor Water Use Efficiency Index: Passive Conservation

- **Massachusetts Efficiency Standards**
 - Enacted Jan 1, 2023. Applies to faucets, showerheads, and toilets sold in Massachusetts
 - More stringent than existing Federal standards, results in 22.5% reduction for those end uses
- **Department of Energy (DOE) Standards**
 - Applies to residential clothes washers sold in U.S.
 - Latest standard is approx. 45% more efficient for top loaders and 60% more efficient for front loaders compared to estimated efficiency in 2016*
- **Flume Water data**
 - Real world water use data for Boston metro area indicates current indoor use of 34 GPCD**
 - OCPC planning area indoor water use is estimated at approx. 46 GPCD, indicating reduction of 12 GPCD (-26%) is obtainable with available fixtures and appliances

*Based on 2016 Residential End Uses of Water from Water Research Foundation (Project #4309)
 **Available at: <https://flumewater.com/water-index/>

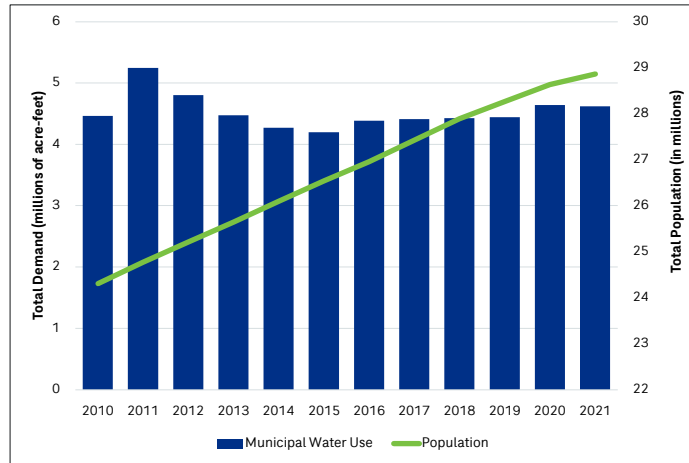
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Impact of Passive Conservation on Total Demand

■ Example from Texas

- Total municipal use has been **relatively steady** between 2012 and 2021 **despite population increase** of 3.65 million (14.5%)
- **Per capita** demand decreased 16% between 2012 and 2021
- State efficiency standard implemented in **2014** more stringent than Federal standard



Sources: Texas Water Development Board and U.S. Census Bureau

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Long Term Local and Regional Alternatives



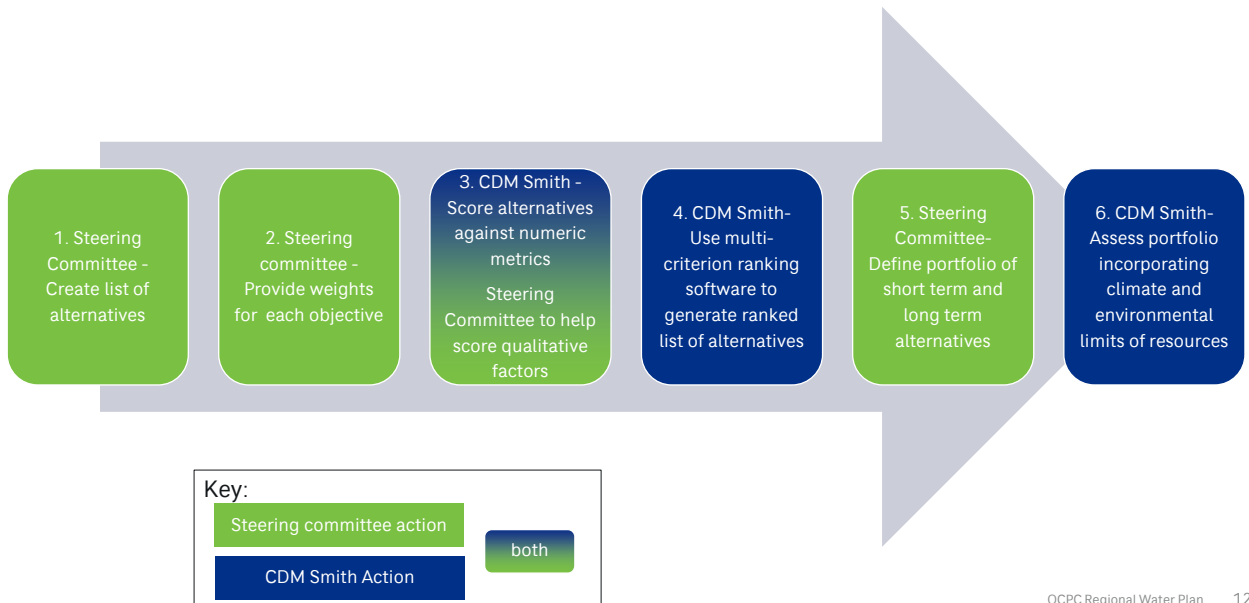
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Alternative definition

The potential **actions** that will be evaluated against **metrics**.

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Upcoming steps for selection of alternatives



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Assessment of Alternatives (Step 3)

Steering Committee Framework



Reliable
Municipal Supply



Ecological
Health



Cost
effectiveness



Innovation



Fairness



Drinking Water
Quality



Efficiency and
Adaptability

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Assessment of Alternatives (Step 3)

Risk Assessment



Provides supply
redundancy



Reduces climate
risk



Reduces PFAS risk



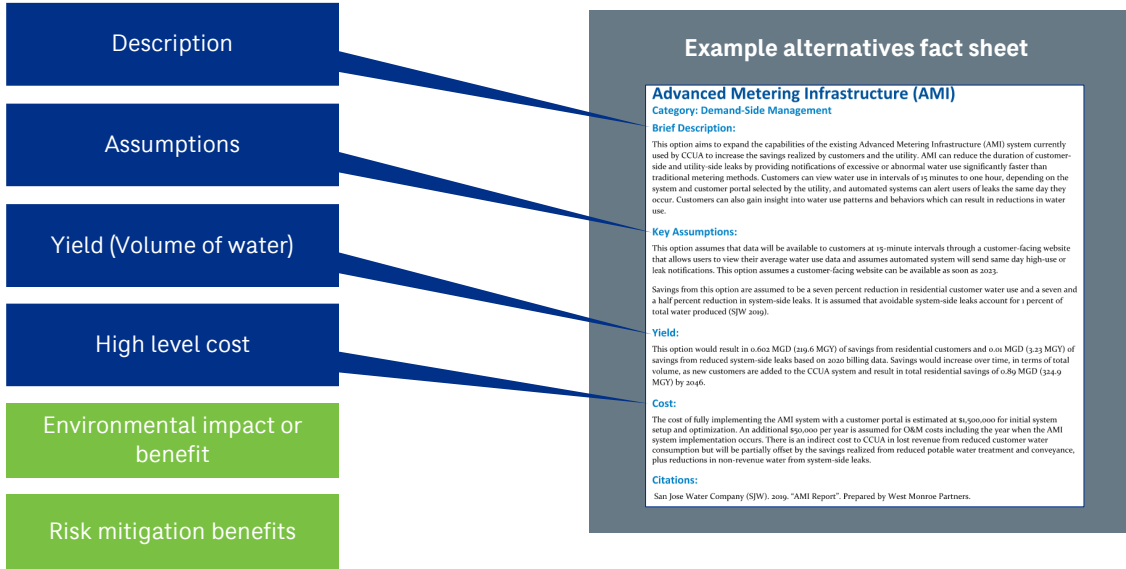
Improves ecological
health



Provides resilience
to uncertain growth

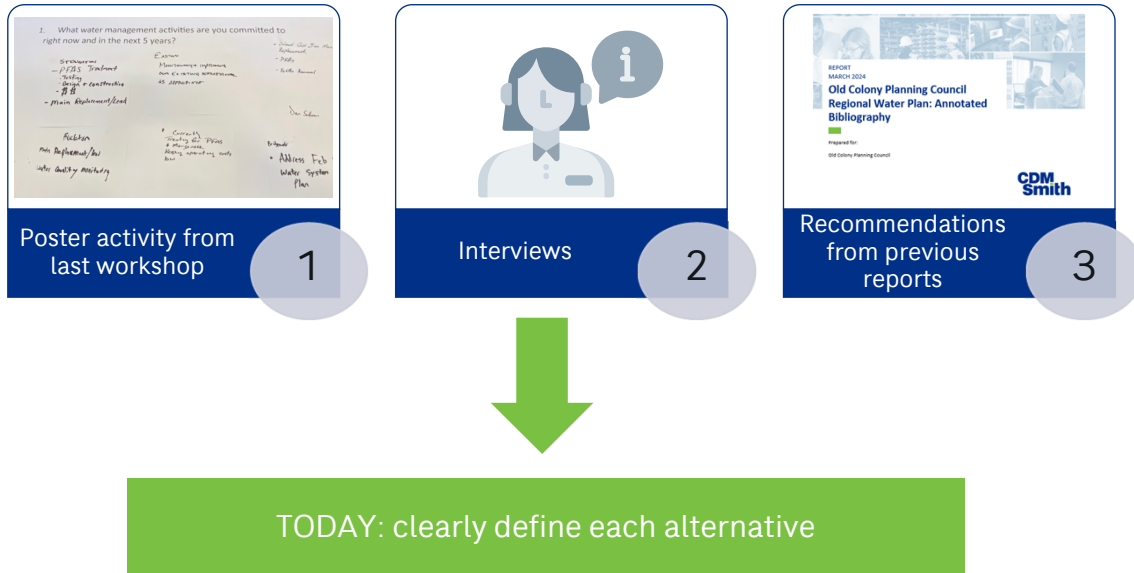
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Future Further Development of Alternatives



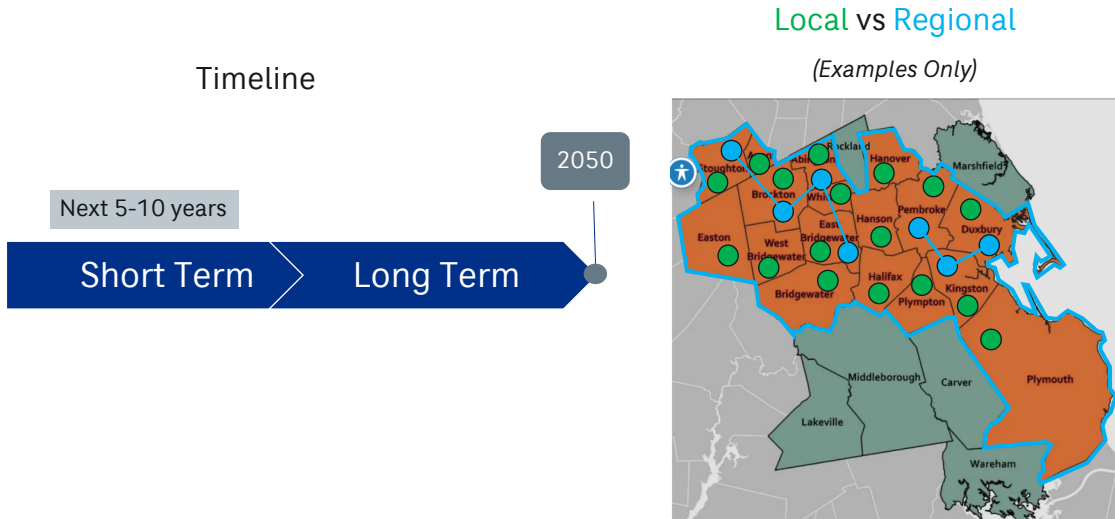
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Formulation of alternatives



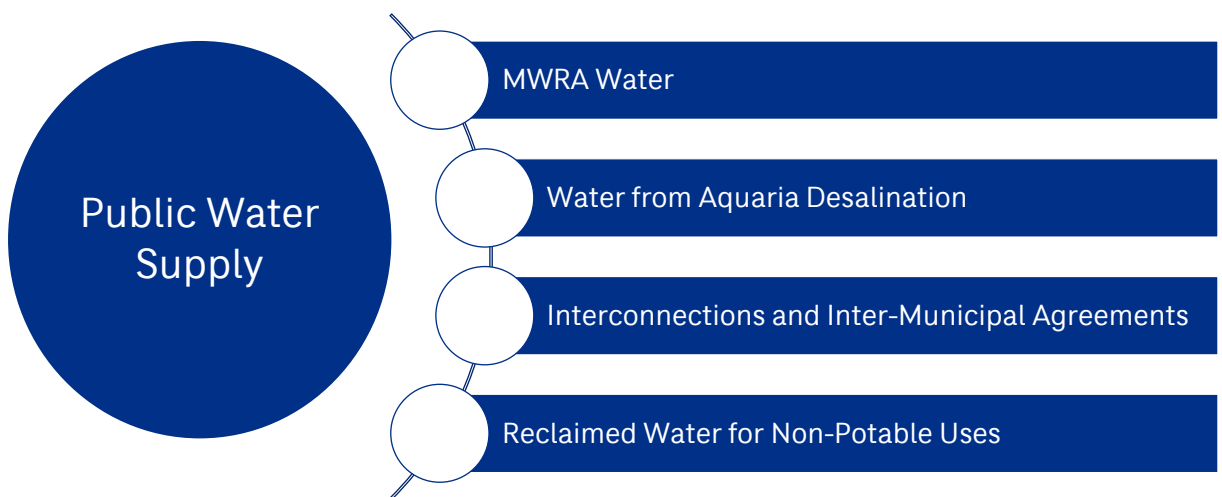
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Categorization of alternatives



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Long Term Regional Alternatives



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Public Water Supply Long Term Regional Alternatives

MWRA Water

- 1 Entire OCPC Region with Public Water Supply- all but Plympton
- 2 Communities Who Indicated Openness to MWRA- Abington, Avon, Bridgewater, Easton, Pembroke, Plympton, West Bridgewater
- 3 Communities Actively Exploring MWRA Connection- Abington, Avon, Hanover
- 4 Communities neighboring existing MWRA connection (Avon, Easton)

These are our ideas for MWRA configurations based off of what we have heard, are these the ones that you want to see analyzed?

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Public Water Supply Long Term Regional Alternatives

Water from Aquaria Desalination

- 1 Brockton purchases plant and provides water to interested communities: Abington, Avon, Bridgewater, Brockton, Easton, West Bridgewater
- 2 Brockton purchases plant and provides water to communities with existing connections: Abington, Avon, East Bridgewater, Halifax, Pembroke, Stoughton, Whitman
- 3 Brockton continues contract with Aquaria and develops cost model with other communities to share water and avoid other capital costs.
- 4 Joint purchase of plant

These are our ideas for desalination configurations, are these the ones that you want to see analyzed?

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Public Water Supply Long Term Regional Alternatives

- Interconnections and Inter-Municipal Agreements
 - For Abington, Bridgewater, Easton, East Bridgewater, Plympton, Stoughton, West Bridgewater, Avon

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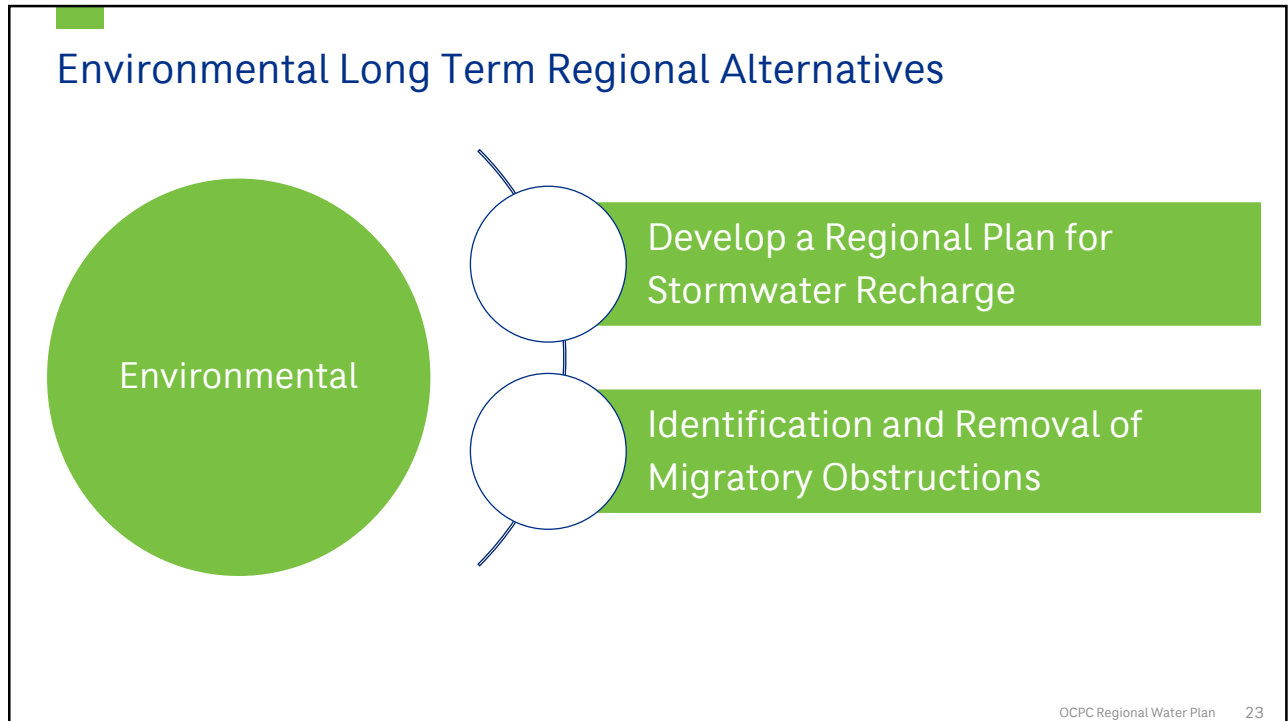
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Public Water Supply Long Term Regional Alternatives

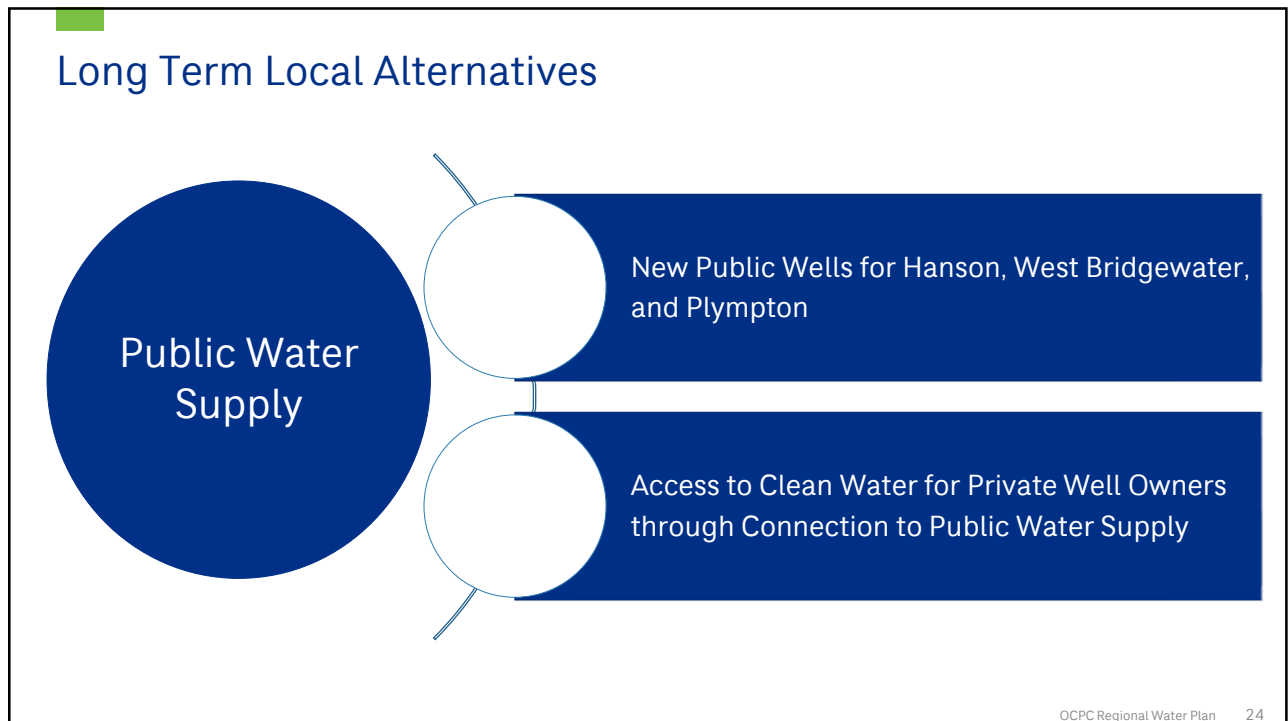
- Reclaimed Water for Non-Potable Uses
 - Bridgewater, Easton, Kingston, West Bridgewater, Agriculture Uses

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Coffee Break



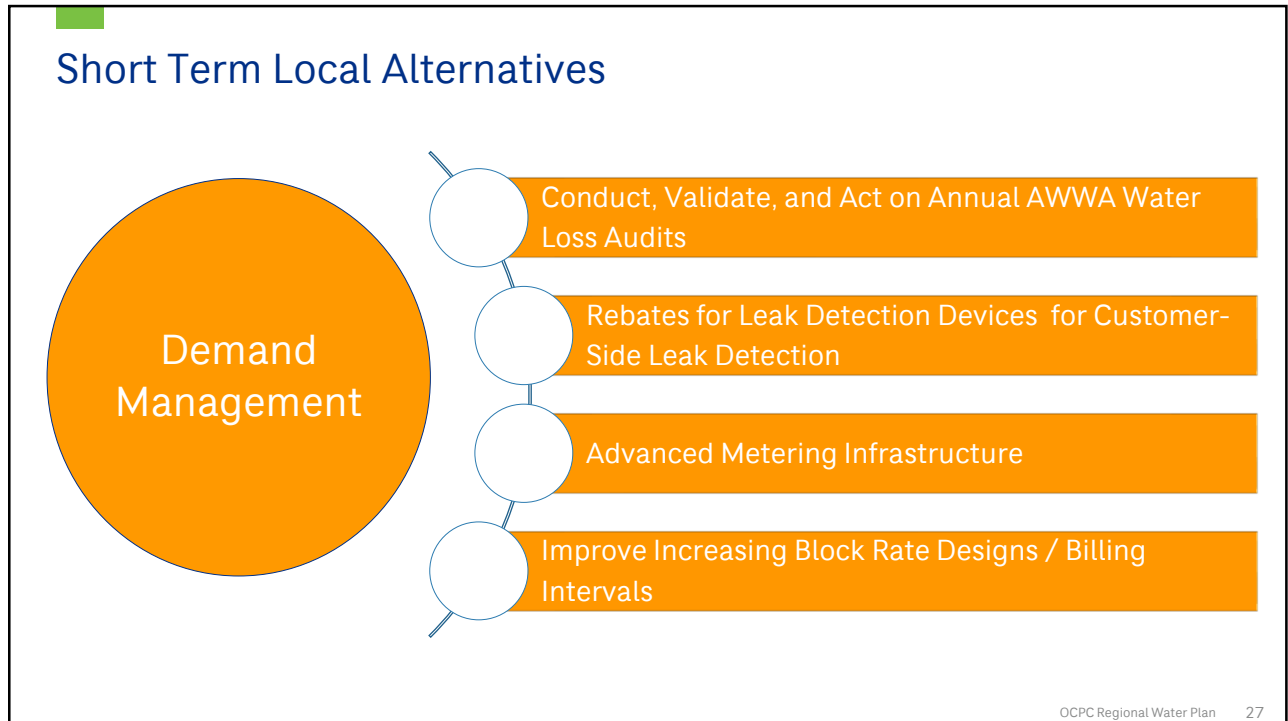
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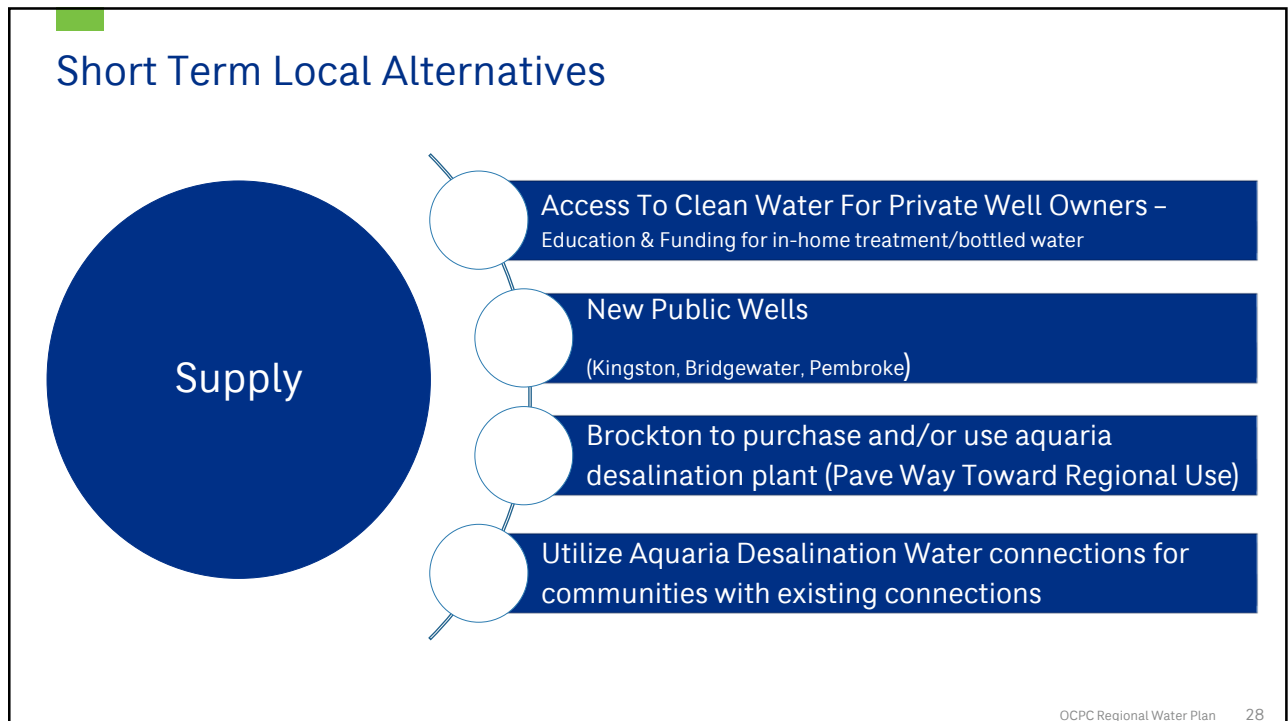
Short Term Local and Regional Alternatives



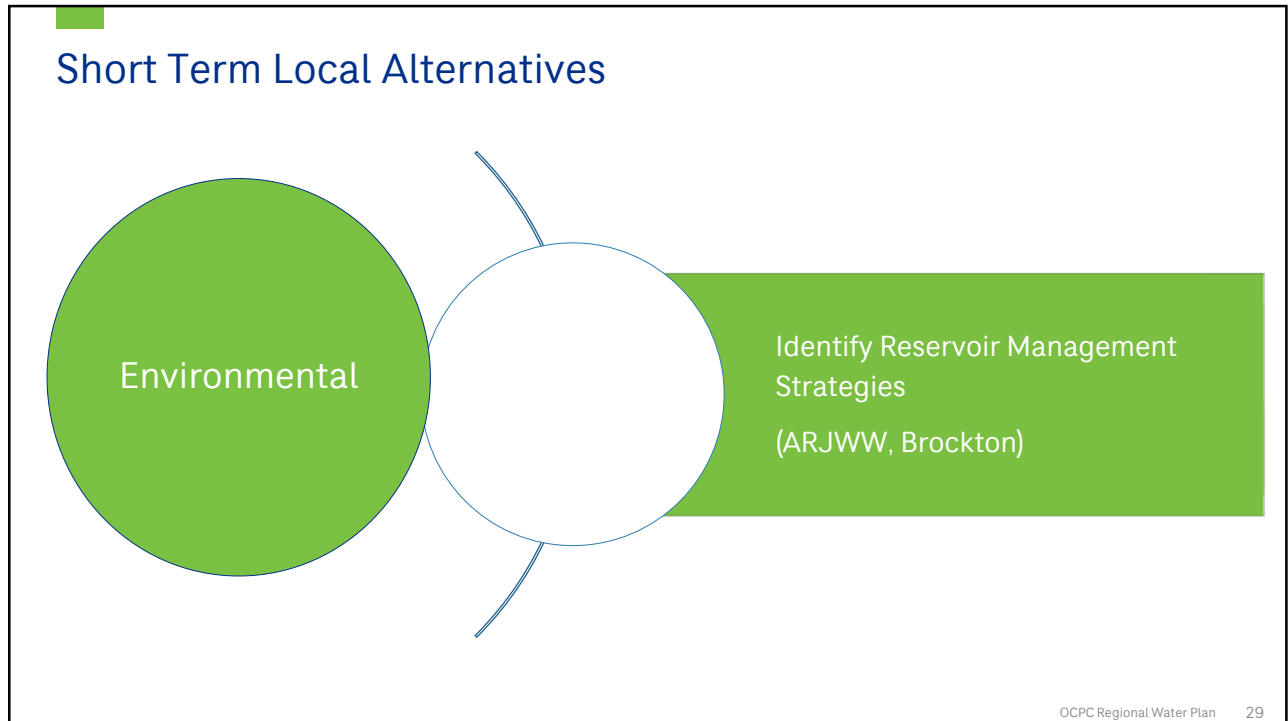
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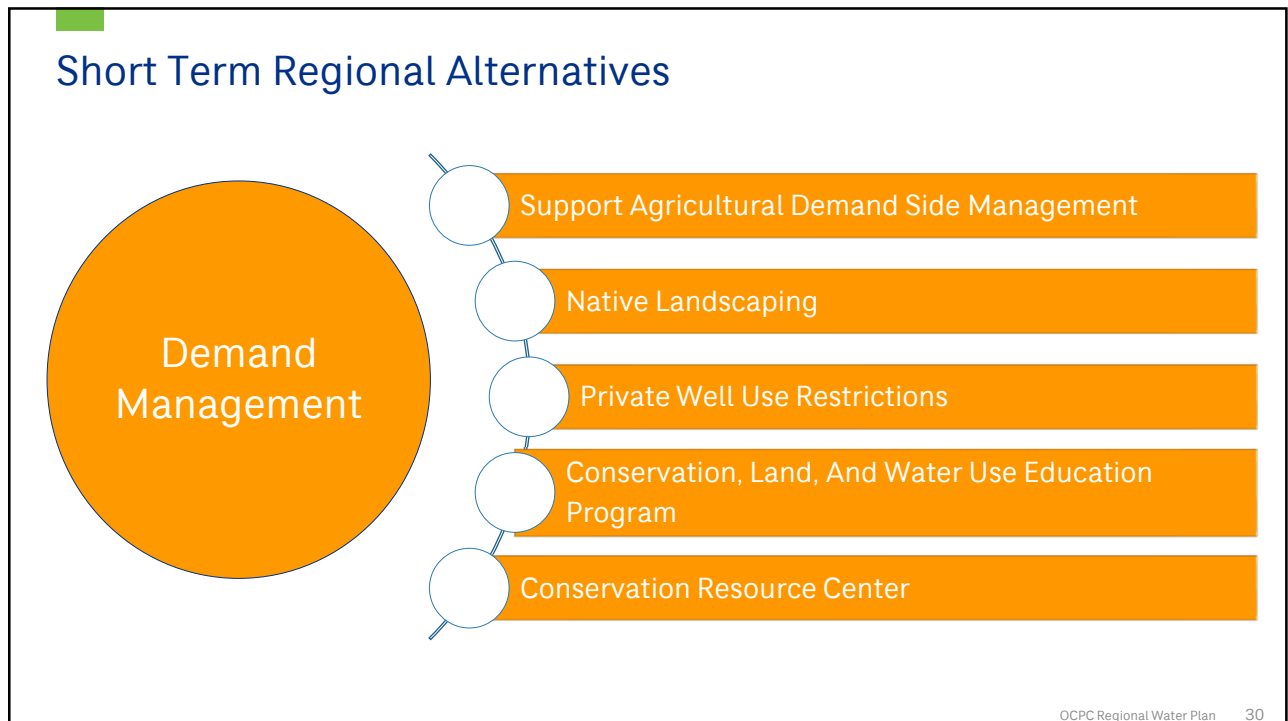
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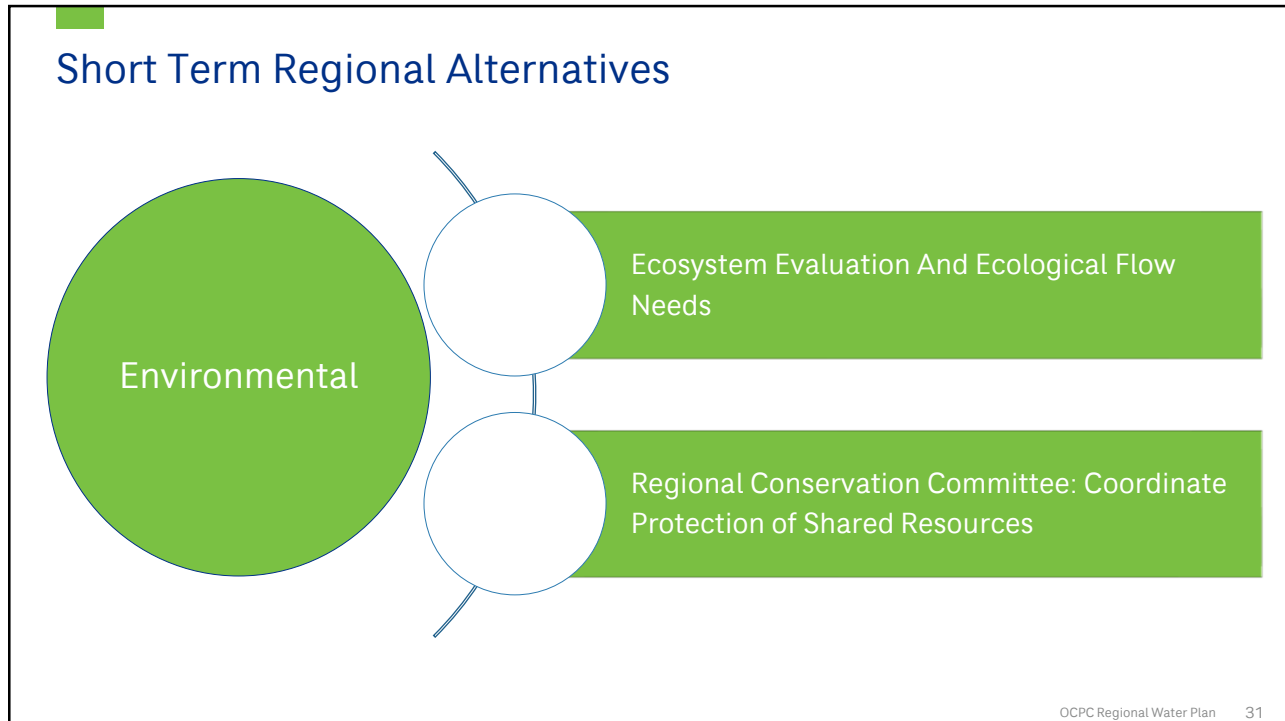
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- ### Other Recommendations
- Cybersecurity improvements
 - Requirement for diversity/ redundancy of water sources in WMA permits
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Public Outreach Update



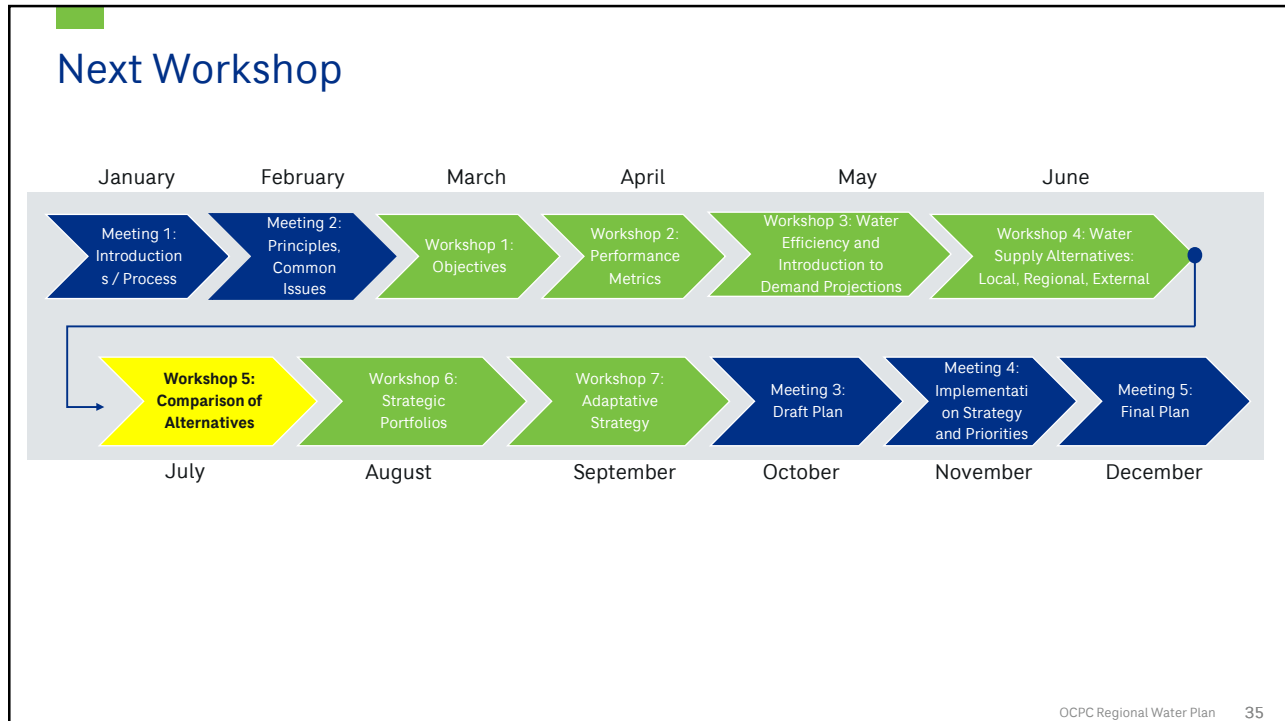
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Next Workshop



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Upcoming Schedule

WHEN	DETAILS
Tuesday, August 27 th 9:00 am - 12:00 pm	Workshop 6
Tuesday, September 24 th 9:00 am - 12:00 pm	Workshop 7
Tuesday, October 29 th 9:00 am - 12:00 pm	Meeting 3
Monday, November 18 th 8:00 am - 12:00 pm	Meeting 4
Tuesday, December 10 th 8:00 am - 12:00 pm	Meeting 5

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Steering Committee Homework

- Scoring objectives and updated metrics
 - Feedback due by 8/7 rozyckikm@cdmsmith.com
- Demand Projections and Capacity Memo (by municipality)
 - Will be sent via email by end of this week
 - Feedback due by 8/14 rozyckikm@cdmsmith.com
- Interviews
 - Email Kyle Olsen at RVA (kolsen@reginavilla.com) if you have not yet scheduled your interview.

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