

Clean Water Plan

Making the Right Investments at the Right Time

MWPAAC General Meeting

August 25, 2021

Presenters:

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Clean Water Plan

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King County

Department of Natural Resources and Parks
Wastewater Treatment Division

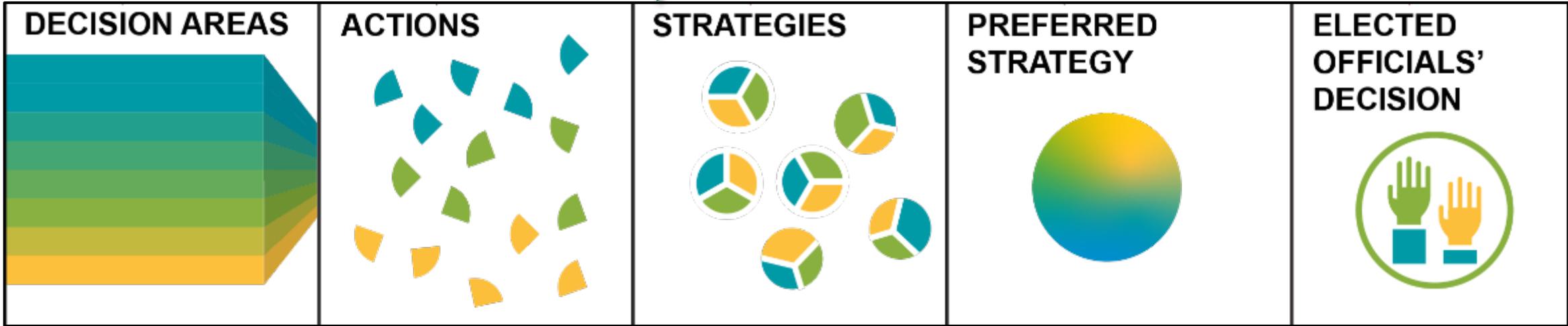
August Briefing Topics

- Planning process check-in
- Work-in-progress Strategies
- Upcoming MWPAAC engagement with SMEs

Core Planning Question

What is the most appropriate path to ensure we direct the right public investments to the right actions at the right time for the best water quality outcomes?

We are here



Clean Water Plan Planning Process Overview

Specific programs or sets of projects that address one of the Decision Areas the Plan needs to consider. **Policy considerations are identified.**

Distinct alternative investment Strategies to see big-picture financial, water quality, and social outcomes **informing policy discussion and choices.**

Executive Preferred Strategy is a complete water quality and wastewater system investment approach for the next 40 years. It may draw primarily from one Strategy, or it may blend elements from multiple Strategies. **Expected to include new, updated, affirmed supporting policies.**

Deliberation of Executive Preferred Strategy and **policies.**

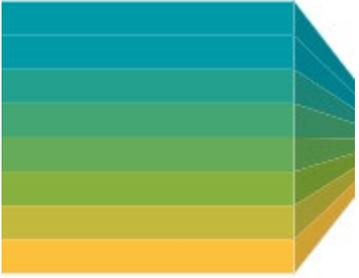
Policy Considerations – Existing Policies

Metropolitan Functions - King County Code 28.86

- **Wastewater Treatment**
 - Treatment plant policies (TPP).
 - Conveyance policies (CP).
 - I/I policies (I/IP).
 - Combined sewer overflow control policies (CSOCP).
 - Biosolids policies (BP).
 - Water reuse policies (WRP).
 - Wastewater services policies (WWSP).
 - Water quality protection policies (WQPP).
 - Wastewater planning policies (WWPP).
 - Environmental mitigation policies (EMP).
 - Public involvement policies (PIP).
 - Financial policies (FP).
 - Reporting policies.



Expecting policy conversations across all aspects of existing Wastewater Treatment policies in King County Code 28.86



Exploring a Range of Actions Within Each Decision Area

Wastewater Treatment

What treatment plant and wet weather facility investments should be made?

Pollution Source Control and Product Stewardship

Are there more efficient or effective methods to address pollutants of concern than wastewater treatment?

Wet Weather Management

What approach should be taken to address stormwater and combined sewer overflows in King County's system?

Wastewater Conveyance

What are the best investments in collections systems to ensure sufficient capacity and improve system condition?

Asset Management, Resiliency, and Redundancy

What investments should be made to care for an aging regional wastewater system and protect the investments that have been made?

Legacy Pollution

What are the opportunities to address legacy pollution?

Resource Recovery

How should King County recover resources in wastewater?

Finance

How will regional water quality investments be financed?

Overview of Regional Feedback on the Planning Process

Process

- Schedule
- Complexity and magnitude of investments

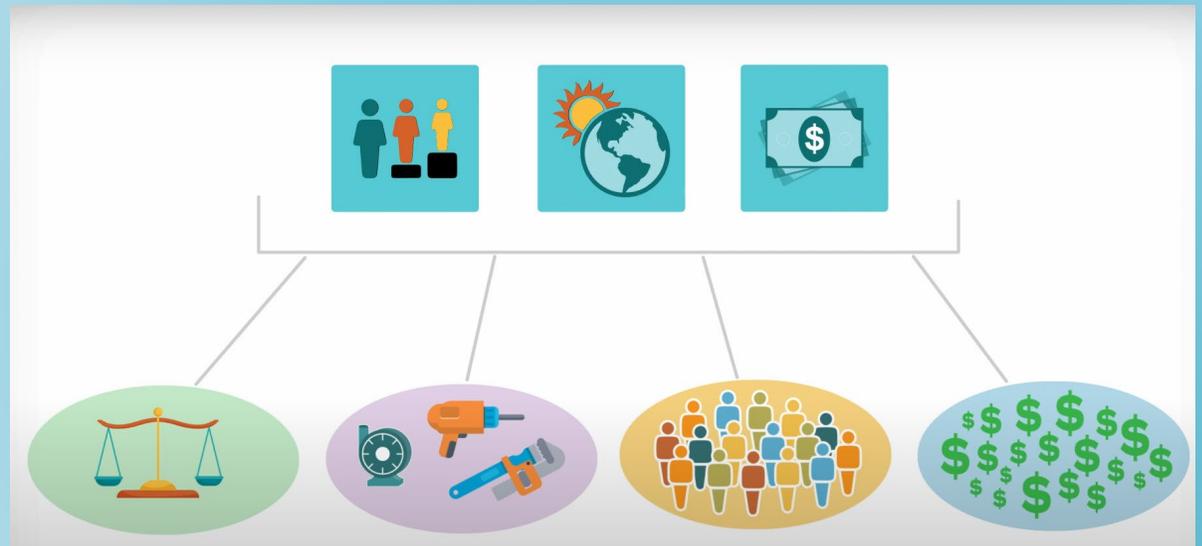
Scope

- Breadth of scope
- Clarity on goals

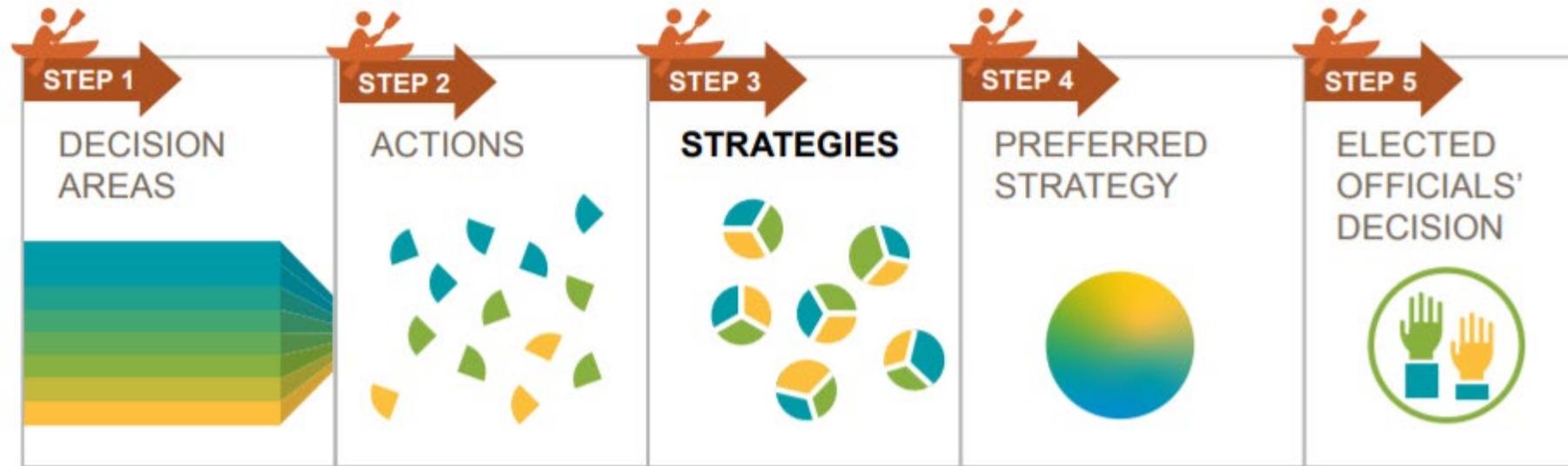
Technical Work

- Conceptual and requires assumptions

The Clean Water Plan is responding to existing and emerging issues to explore new and different approaches along with traditional ones.



Status of Strategies Development



Development of the Work-in-Progress Strategies

Results of the Actions
characterization



Grouping of Actions to highlight distinct choices and opportunities
for regional discussion



Regional engagement
and community input
since 2019



**WORK-IN-PROGRESS
STRATEGIES**



Introduction to Work-in-Progress Strategies

- **All Strategies include wastewater treatment capacity to serve population growth and investing in asset management to maintain the system**
- **Building five work-in-progress Strategies**

Together, the five work-in-progress Strategies incorporate (often conflicting) priorities we've heard

- Two Strategies focus on conventional approaches (Strategies A and B)
- Two Strategies explore new and innovative approaches that have proven successful elsewhere (Strategies C and D)
- One Strategy emphasizes increased resilience and reliability of the existing system (Strategy E)

Developing Strategies to Address Core Planning Question

What is the most appropriate path to ensure we direct the right public investments to the right actions at the right time for the best water quality outcomes?

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	Strategy Development		Strategy Evaluation		
	Investment to the Right Actions	Right Timing			
Strategy A	<ul style="list-style-type: none"> Focus on conventional approaches 	<ul style="list-style-type: none"> Current timelines 	Water Quality Outcomes	Cost Outcomes	Social Outcomes
Strategy B		<ul style="list-style-type: none"> Extended timelines 			
Strategy C	<ul style="list-style-type: none"> Explore new and innovative approaches 	<ul style="list-style-type: none"> Prioritized schedule over 40-year planning horizon 			
Strategy D					
Strategy E					

Work-in-progress Strategy A – Objectives

To understand potential outcomes:

- From using conventional approaches to addressing water quality and wastewater system needs
- On current and anticipated regulatory timelines

Objective:

- Meet regional wastewater system needs on **current and anticipated regulatory timelines** through continuation of operational, project, and organizational **approaches consistent with historical practices**



Work-in-progress Strategy A – Areas of Emphasis

Emphasizes:

- Conventional gray infrastructure approaches
- Conventional compliance approaches

Some examples of conventional approaches:

- Nitrogen reduction at each regional treatment plant
- Wet weather treatment stations and storage (gray infrastructure) for CSO control
- Continue existing approaches or programs

Table Key:

Green shading = **increased implementation emphasis**. May include new programs, expanded programs, additional projects, and/or faster implementation timeline.

Yellow shading = **decreased implementation emphasis**. May include lower design standard, modified program, and/or extended implementation timeline.

Gray shading = existing program or approach would be maintained

		Strategy A – Traditional approaches on current regulatory timelines
Wastewater Treatment	Regional Plant Treatment	N reduction to same level at each plant; New 4th plant
	Regional Plant Capacity	Increased capacity for population growth
	Decentralized	n/a
	Water Quality Trading	n/a
Wet Weather Management	CSO	Control by 2030
	Stormwater	Existing approach
Wastewater Conveyance	Peak flow standard	5-year peak flow design standard
	Infiltration & Inflow	Private side sewer inspections
Resource Recovery		Existing program
Legacy Pollution		Existing program
Pollution Source Control		Existing program
Asset Management		Proactive asset renewal

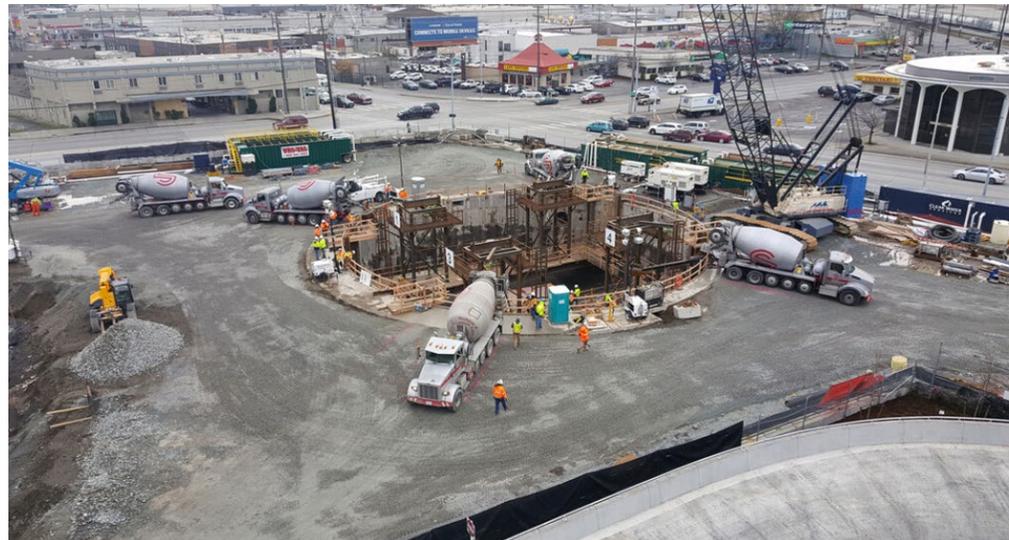
Work-in-progress Strategy B – Objectives

To understand potential outcomes:

- From sequencing and pacing projects and programs over extended timeline
- Using conventional approaches to addressing water quality and wastewater system needs

Objective:

- Meet current and anticipated regional wastewater system needs over an **extended timeline to moderate rate increases**
- Sequence and pace investments over 40-year planning horizon to **avoid cost spikes and short-term revenue pressure**



Work-in-progress Strategy B – Areas of Emphasis

Strategy B – Traditional approaches over time to moderate rate increases

Emphasizes:

- Incremental and predictable rate increases
- Conventional gray infrastructure approaches

Some examples of conventional approaches:

- Nitrogen reduction at each regional treatment plant, with each plant treating to a different level
- Wet weather treatment stations and storage (gray infrastructure) for CSO control
- Continue existing approaches or programs

Wastewater Treatment	Regional Plant Treatment	N reduction to different level at each plant
	Regional Plant Capacity	Increased capacity for population growth
	Decentralized	n/a
	Water Quality Trading	n/a
Wet Weather Management	CSO	Control by 2060
	Stormwater	Existing approach
Wastewater Conveyance	Peak flow standard	5-year peak flow design standard
	Infiltration & Inflow	Private side sewer inspections & peak flow limitations
Resource Recovery		Existing program
Legacy Pollution		Modified to match CSO approach
Pollution Source Control		Existing program
Asset Management		Proactive asset renewal

Work-in-progress Strategy C – Objectives

To understand potential outcomes:

- From alternative approaches that have worked in other settings and/or show potential to meet regional wastewater system and water quality needs
- Using an integrated approach in geographic areas that are more impacted or are likely to see improved water quality

Objective:

- Explore potential to produce greater water quality benefits by **drawing on alternative programs, projects, operational, and regulatory approaches that are proven effective in other settings** and/or **demonstrate potential** to meet regional wastewater system and water quality needs



Work-in-progress Strategy C – Areas of Emphasis

Strategy C – Traditional combined with alternative approaches

Emphasizes:

- combining gray infrastructure with expanded approaches to:
 - stormwater management
 - preventing clean rainwater from entering sewer system
 - addressing historical pollution
 - pollution source control
- geographically focused on areas most impacted and/or likely to experience improved water quality outcomes

Some examples of alternative approaches:

- Nitrogen reduction in areas of Puget Sound that have potential for greater water quality benefit combined with nitrogen reduction at treatment plants
- Integrated approach using some conventional CSO control + increased stormwater treatment + nonpoint programs (such as pipe cleaning and creosote structure removal) + pollution source control activities in areas connected to CSO receiving waters

Wastewater Treatment	Regional Plant Treatment	N reduction to different level at each plant
	Regional Plant Capacity	Increased capacity for population growth
	Decentralized	n/a
	Water Quality Trading	N WQ trading for point & non-point source
Wet Weather Management	CSO	Extended timeline and/or alt. investments
	Stormwater	Regional stormwater facilities & GSI retrofit with WQ focus
Wastewater Conveyance	Peak flow standard	5-year peak flow design standard
	Infiltration & Inflow	Private side sewer inspections
Resource Recovery		Existing program
Legacy Pollution		Expanded cleanup
Pollution Source Control		Increased control & product stewardship
Asset Management		Proactive asset renewal

Work-in-progress Strategy D – Objectives

To understand potential outcomes:

- From alternative approaches that have worked in other settings and/or show potential to meet regional wastewater system and water quality needs
- Using approaches that focus on opportunities for recovery of resources, community benefits, climate mitigation and adaptation, and enhanced regional collaboration and partnerships



Objective:

- Explore potential to meet wastewater system and water quality needs through **expanded focus on multi-benefit, resource recovery, and enhanced regional collaboration and partnership approaches**



Work-in-progress Strategy D – Areas of Emphasis

Strategy D – Multi-benefit and resource recovery approaches

Emphasizes:

- combining gray infrastructure with multi-benefit approaches that consider:
 - enhanced community benefit
 - decentralized and green stormwater management options
 - climate mitigation and adaptation
 - preventing clean rainwater from entering the sewer system
 - addressing historical pollution

Some examples of alternative approaches:

- Reduce treated wastewater discharge to Puget Sound
- Building decentralized wastewater treatment plants
- Expanded resource recovery of biosolids and energy
- Combining some conventional CSO control + increased stormwater treatment + nonpoint programs in areas connected to CSO receiving waters – while also creating expanded opportunities for potential community benefits (such as open green space, passive recreation, etc.) in addition to improved water quality

Wastewater Treatment	Regional Plant Treatment	Advanced treatment at South Plant to potable recycled water quality
	Regional Plant Capacity	Increased capacity for population growth
	Decentralized	Decentralized for new and re-development
	Water Quality Trading	n/a
Wet Weather Management	CSO	Extended timeline and/or alt. investments
	Stormwater	Regional stormwater facilities & GSI with multi-benefit focus
Wastewater Conveyance	Peak flow standard	5-year peak flow design standard
	Infiltration & Inflow	Private side sewer inspections & peak flow limitations
Resource Recovery		Expanded biosolids & energy programs
Legacy Pollution		Expanded cleanup
Pollution Source Control		Existing program
Asset Management		Proactive asset renewal

Work-in-progress Strategy E – Objectives

To understand potential outcomes:

- From focusing on reliability and resiliency of the regional wastewater system, while maintaining or extending timing of other investments

Objective:

- Enhance regional wastewater system **reliability and resiliency** by **focusing on investments on wastewater system health** while generally **maintaining** or extending timing of existing approach for **other wastewater and water quality investments**



Work-in-progress Strategy E – Areas of Emphasis

Some examples of reliability and resiliency approaches:

- increased asset management emphasis
- earthquake retrofits
- power systems reliability
- expanded energy programs
- addressing climate impacts
- preventing clean rainwater from entering the sewer system

Less emphasis in other areas, for example:

- Existing level of wastewater treatment
- CSO control using conventional approaches, on a longer timeline

		Strategy E – Enhanced wastewater system resiliency
Wastewater Treatment	Regional Plant Treatment	Secondary treatment
	Regional Plant Capacity	Increased capacity for population growth
	Decentralized	n/a
	Water Quality Trading	n/a
Wet Weather Management	CSO	Control by 2060
	Stormwater	Existing approach
Wastewater Conveyance	Peak flow standard	20-year peak flow design standard
	Infiltration & Inflow	Private side sewer inspections
Resource Recovery		Expanded focus on energy reliability
Legacy Pollution		Modified to match CSO approach
Pollution Source Control		Existing program
Asset Management		Enhanced resilience

Continued Development of the Work-in-Progress Strategies

In the coming months, the Clean Water Plan team will continue to revise and develop the specific details of these Strategies, including:

- ▶ Considering input from the region
- ▶ Further molding and shaping the Actions to account for interrelationships, timing, and sequencing
- ▶ Evaluating the Strategies to understand water quality, financial, and other performance outcomes



Recent meetings and briefings:

- June 30 – External Advisory Group
- July 7 – RWQC

Upcoming dates to note:

- August 30 – MWPAAC Actions SME workshop
- September 1 – RWQC
- September 22 – MWPAAC Monthly Briefing

Thank you!

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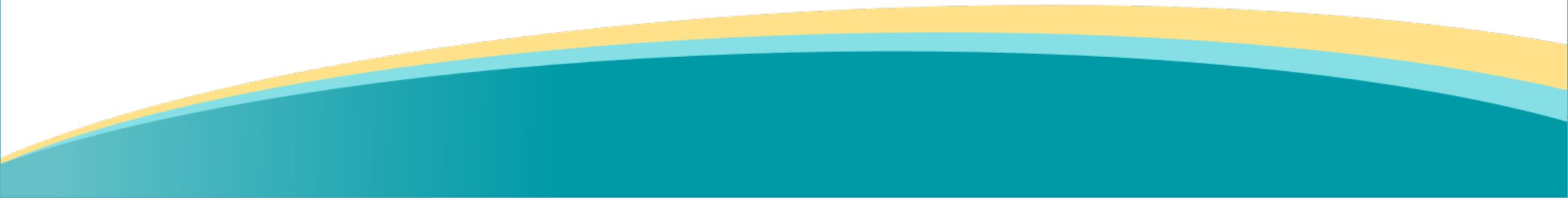
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Reference Slides



		Strategy A – Traditional approaches on current regulatory timelines	Strategy B – Traditional approaches over time to moderate rate increases	Strategy C – Traditional combined with alternative approaches	Strategy D – Multi-benefit and resource recovery approaches	Strategy E – Enhanced wastewater system resiliency
Wastewater Treatment	Regional Plant Treatment	N reduction to same level at each plant; New 4 th plant	N reduction to different level at each plant	N reduction to different level at each plant	Advanced treatment at South Plant to potable recycled water quality	Secondary treatment
	Regional Plant Capacity	Increased capacity for population growth	Increased capacity for population growth	Increased capacity for population growth	Increased capacity for population growth	Increased capacity for population growth
	Decentralized	n/a	n/a	n/a	Decentralized for new and re-development	n/a
	Water Quality Trading	n/a	n/a	N WQ trading for point & non-point source	n/a	n/a
Wet Weather Management	CSO	Control by 2030	Control by 2060	Extended timeline and/or alt. investments	Extended timeline and/or alt. investments	Control by 2060
	Stormwater	Existing approach	Existing approach	Regional stormwater facilities & GSI retrofit with WQ focus	Regional stormwater facilities & GSI with multi-benefit focus	Existing approach
Wastewater Conveyance	Peak flow standard	5-year peak flow design standard	5-year peak flow design standard	5-year peak flow design standard	5-year peak flow design standard	20-year peak flow design standard
	Infiltration & Inflow	Private side sewer inspections	Private side sewer inspections & peak flow limitations	Private side sewer inspections	Private side sewer inspections & peak flow limitations	Private side sewer inspections
Resource Recovery		Existing program	Existing program	Existing program	Expanded biosolids & energy programs	Expanded focus on energy reliability
Legacy Pollution		Existing program	Modified to match CSO approach	Expanded cleanup	Expanded cleanup	Modified to match CSO approach
Pollution Source Control		Existing program	Existing program	Increased control & product stewardship	Existing program	Existing program
Asset Management		Proactive asset renewal	Proactive asset renewal	Proactive asset renewal	Proactive asset renewal	Enhanced resiliency