

King County Clean Water Plan

MWPAAC Monthly Briefing

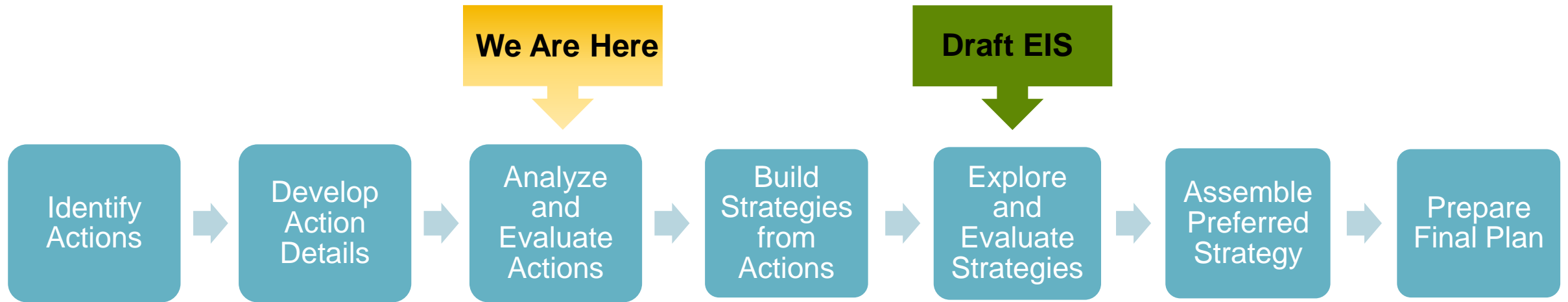


September 23, 2020

Clean Water Plan
Making the right investments at the right time

 **King County**
Department of Natural Resources and Parks
Wastewater Treatment Division

Planning Process



Current Scope of Actions Identified

Decision Area: Wastewater Treatment

Actions for Exploration:

- Status Quo Treatment
- Nutrients – Individual Discharge Permits
- Nutrients – Single Bubble Permit Across Discharges
- Nutrient Trading – Multiple Source Discharge Management
- Advanced Treatment to Reduce Effluent Discharge
- Decentralized Satellite Treatment Plants
- Building Scale Decentralized Treatment
- Decentralized Combined CSO/Wastewater Treatment
- Status Quo Onsite Septic System Program
- Expanded Onsite Septic System Program

Decision Area: Wet Weather Management

Actions for Exploration:

- Status Quo CSO Program
- Modified Approaches to CSO Control
- Expanded Stormwater Treatment at Existing Facilities
- Stormwater Treatment at New Facilities
- Stormwater Retrofit Fund – Regional Collaboration

Decision Area: Pollution Source Control/ Product Stewardship

Actions for Exploration:

- Status Quo Source Control Program
- Expanded Pollution Elimination and Control Focus
- State/Federal Requirements Source Control Approach

Decision Area: Asset Management, Resiliency, and Redundancy

Actions for Exploration:

- High Level Asset Management Investment
- Medium Level Asset Management Investment
- Low Level Asset Management Investment
- Run to Failure Asset Management
- Adaptive Sea Level Rise

Decision Area: Resource Recovery

Actions for Exploration:

- Status Quo Biosolids and Energy Program
- Enhanced Biosolids and Energy Program

Decision Area: Wastewater Conveyance

Actions for Exploration:

- Status quo conveyance (20-year level of service)
- Five-year conveyance level of service (reduced investment)
- Inflow and Infiltration – Point of Sale Inspections
- Inflow and Infiltration – Peak Flow Standards
- Smart Utility – Data Driven, Real Time Control

Decision Area: Legacy Pollution

Actions for Exploration:

- Status Quo Sediment Management
- Far Reaching Legacy Pollution Program
- Accelerated Sediment Management

Develop
Actions
Details

Analyze
and
Evaluate
Actions

Each action is a concept for future water quality investment

Develop the details of the action:

- Program elements (non-project and project activities)
- Duration and timeline
- Drivers and triggers
- Regulatory considerations
- Partnerships, collaboration
- Equity and Social Justice opportunities
- Benefits, drawbacks, implementation challenges, risks

Determine the outcomes of the action analysis and evaluation:

- Water quality
- Cost
- Sustainability
- Management and operations
- Community

Develop
Actions
Details

Analyze
and
Evaluate
Actions

Example Action Development Process

Wastewater Treatment Decision Area: Nutrient Removal Actions

Existing
Facility
Information

- Treatment Plant Design Capacity

Recent and
Historical
Studies and
Data

- Treatment Plant Flows and Loadings Study
- Nutrient Removal Study

Clean Water
Plan
Actions

- Individual Treatment Plant Nitrogen Removal
- County Systemwide Nitrogen Permit
- Multiple Utilities - Nutrient Water Quality Trading

Clean Water Plan Actions

Example: Nutrient Removal Actions Under Development

Individual discharge permits (individually permitted nitrogen removal)

- Explores reducing nitrogen discharge from each regional treatment plant to the **same effluent level**.
- **Capacity expansion** to accommodate projected population growth through 2060.

Single bubble permit across discharges (County systemwide permitted nitrogen removal)

- Explores reducing nitrogen discharge by assuming each regional treatment plant reduces nitrogen **to a different effluent level**, to meet an **overall King County WTD systemwide effluent load**.
- **Capacity expansion** to accommodate projected population growth through 2060.

Multiple source discharge management (nutrient water quality trading)

- Explores reducing overall nitrogen discharge to Puget Sound through King County participation in **region-wide water quality trading** to meet Puget Sound nitrogen load allocations.
- Each King County WTD regional treatment plant reduces nitrogen **to a different effluent level**, to meet an overall Puget Sound-wide goal.
- **Capacity expansion** to accommodate projected population growth through 2060.

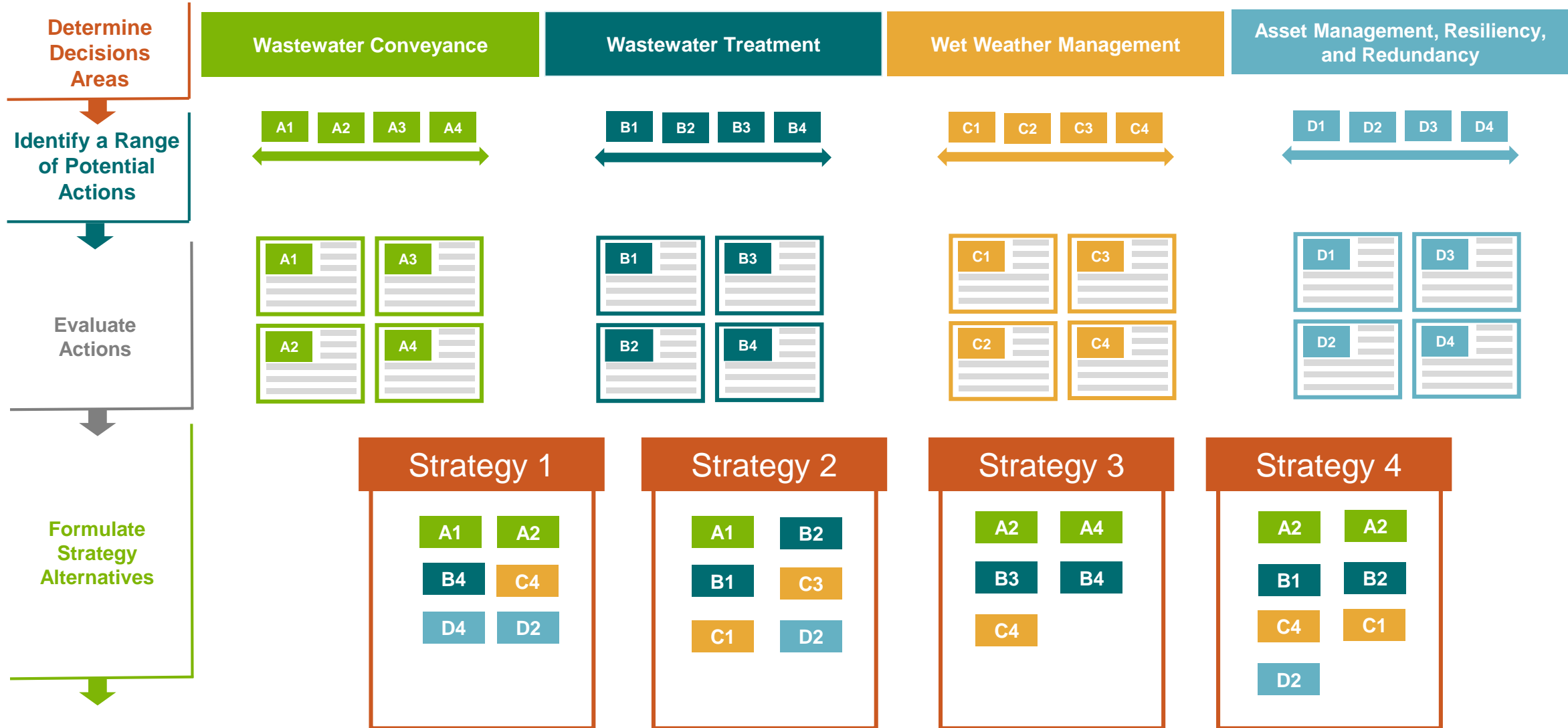
Initial Findings

Wastewater Treatment

Action Development Findings		Individually Permitted Nitrogen Removal	Systemwide ("Bubble") Permitted Nitrogen Removal	Advanced Treatment to Reduce Effluent Discharge
Requires new, 4th regional treatment plant in West Point service area (3x size of Brightwater) Requires West Point by-pass during construction			All treatment plants would be fully built-out with no additional room for expansion	Requires new facility near South Plant for advanced treatment processes
Evaluation Category				
Water Quality	Pollutant Removal*			
	Nitrogen	8-30 million lbs/year	6-24 million lbs/year	6-24 million lbs/year
	Solids (TSS)	1-4 million lbs/year	1-3 million lbs/year	1-4 million lbs/year
	Bacteria (fecal coliform)	no change from current	no change from current	reduction
	Metals, PCBs, toxics	Under development	Under development	Under development
	Waterbody Impacted	Puget Sound	Puget Sound	Puget Sound
Cost	Capital	Under development	Under development	Under development
	Lifecycle	Under development	Under development	Under development
Sustainability	Greenhouse gas emissions*	50% increase	150% increase	Significant increase
	Energy use*	100% increase	250% increase	300% increase

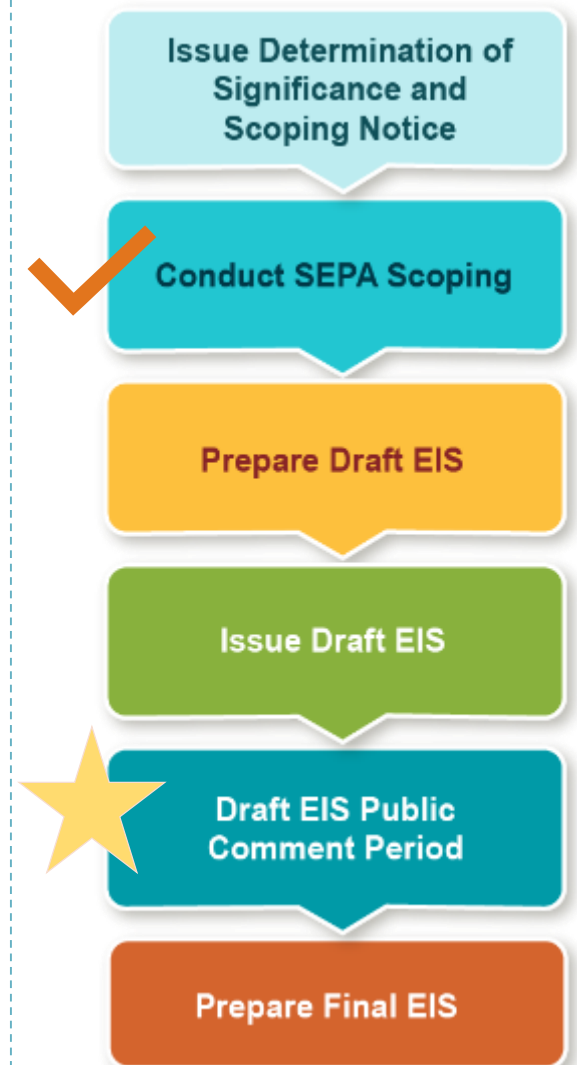
*compared to currently

Formulation of Strategies: Overview of Conceptual Flow

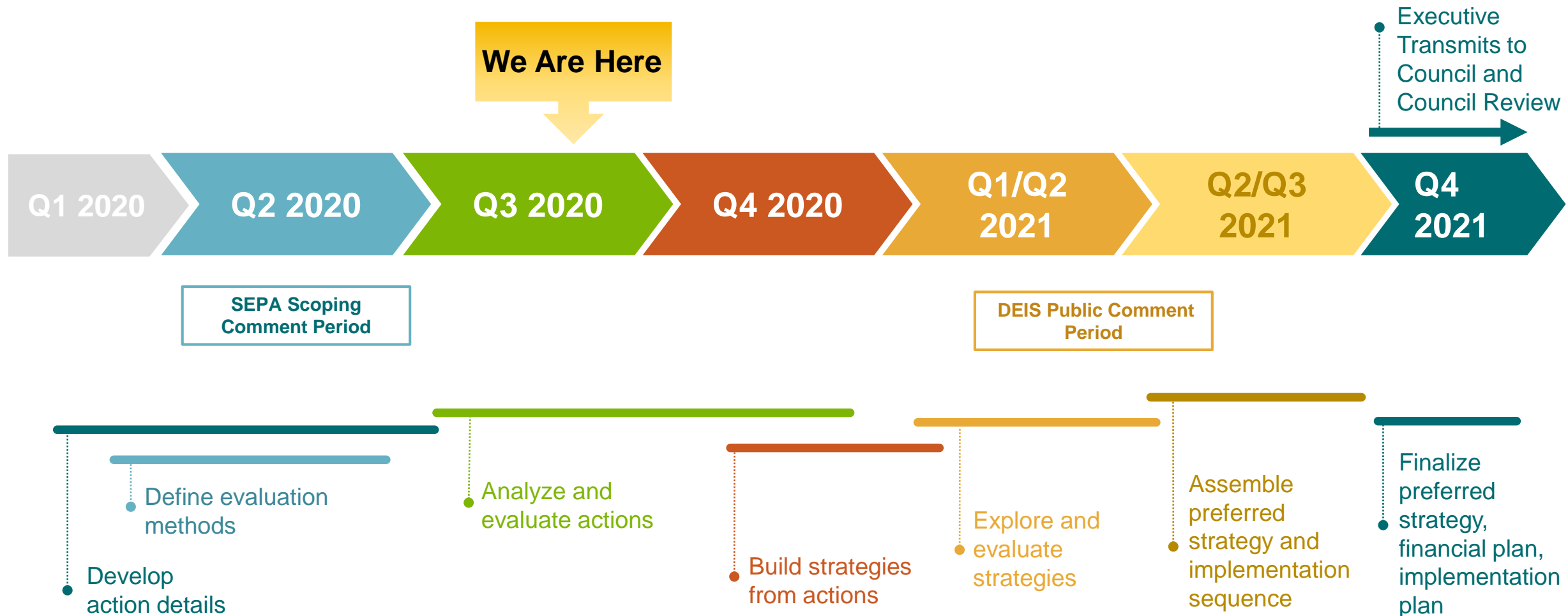


Regional Engagement Activities for Fall 2020

	Topic Area	Tool/Audience	Timeframe
1	Report back on SEPA Scoping process and summary	Focused Engagement <ul style="list-style-type: none"> • E-newsletter • Web update • Social media 	August
2	Ask people how they want to engage	General public <ul style="list-style-type: none"> • Short questionnaire Key community groups and youth & student organizations <ul style="list-style-type: none"> • Interviews 	August – November
3	Discuss and refine equity in the planning process	Community Based Organizations & Priority Populations <ul style="list-style-type: none"> • Listening Sessions • Focused Groups • Learning Circles 	September
4	Communicate our decision-making process, evaluation framework, and categories and how we've incorporated community priorities	Focused Engagement <ul style="list-style-type: none"> • Graphical topic sheet handouts • E-newsletter • Web update • Social media • WTD Blog • Explanatory videos 	September-October
5	Build understanding of the financial and affordability challenges		
6	Communicate and build awareness of what's coming next – DEIS primer	All Audiences	November-December



Clean Water Plan Planning Activities



Questions/Discussion

Thank you!



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