

# I/I Reduction Plan Update

## MWPAAC Engineering & Planning Subcommittee

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March 5, 2026

# Agenda

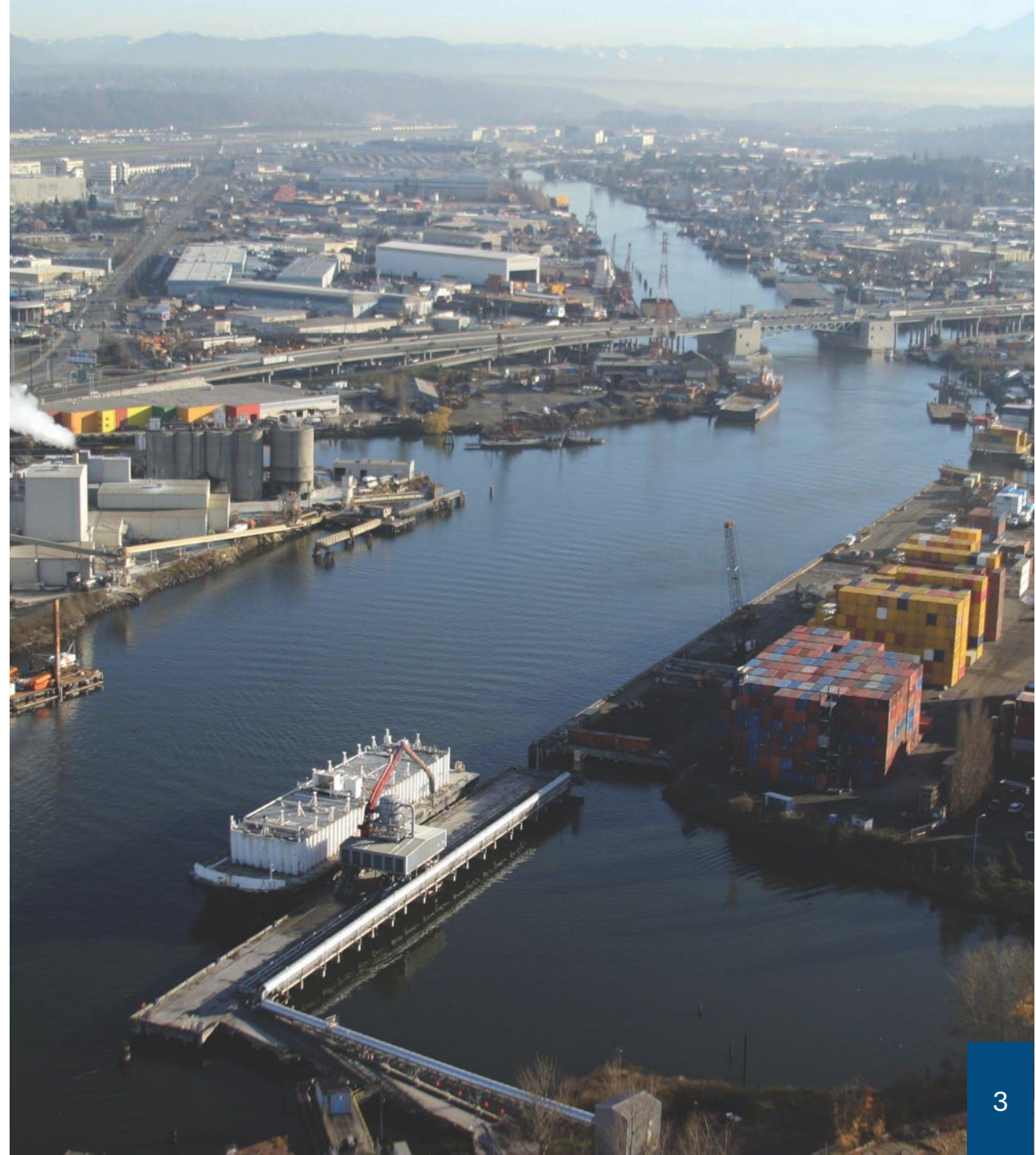
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1. I/I Reduction Plan Update Status
2. Strategy Screening Methodology Review
3. Strategy Screening Results
4. Next Steps



# I/I Reduction Plan Update Status


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# Phase 1 I/I Reduction Plan Activities

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The objective of Phase 1 is to identify a short list of potential I/I reduction strategies for further development and evaluation

Task	Purpose
Engagement Planning	Ensure MWPAAC, RWQC, and component agencies are effectively engaged in the plan update
Existing Information Review	Inform project planning through review of documentation from past I/I reduction efforts
Needs and Goals Assessment	Identify the drivers behind the I/I reduction planning effort and the priority of I/I in the context of overall wastewater planning
Potential Strategies Identification	Explore the ‘world of options’ of I/I reduction strategies
Potential Strategies Screening 	Screen the list of options to a maximum of 10 strategies for further evaluation in Phases 2 and 3

# 2025 and Q1 2026 MWPAAC E&P Subcommittee Touchpoints

Task	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Jun 2025	Jul 2025	Aug 2025	Sep 2025	Oct 2025	Nov 2025	Dec 2025	Jan 2026	Feb 2026	Mar 2026	
Existing Information Review		█														
Needs & Goals Assessment				█												
Potential Strategies Identification				█												
Potential Strategies Screening								█								★
<b>MWPAAC E&amp;P Subcommittee Meetings</b>																
Initial Engagement / Plan Update						Jun 5										
Needs, Goals, and Potential Strategies								Aug 7								
Secondary Criteria and I/I Reduction Strategies Screening Process Review												Dec 4				
Screened I/I Reduction Strategies Review																Mar 5

# What do we need from you?

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- What are your thoughts on the criteria weighting?
- What are your thoughts on the screening process results?
- Do you have further questions about how the strategies that passed screening will be further developed in Phase 2 to identify overall packages of reduction strategies?

# Strategy Screening Methodology Review

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# Decision Framework

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*How do the strategy decisions from Phases 1 and 2 fit together?*

## Phase 1

- Strategies are broadly defined
- Details regarding implementation have not yet been confirmed
- Some individual criteria will be difficult to assess for some strategies due to that broad definition
- Short listing focuses on eliminating strategies that don't warrant further consideration in Phase 2

## Phase 2

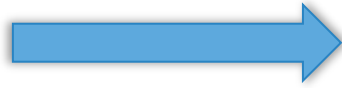
- Strategies are well defined and informed by cost methodologies
- Program components are confirmed
- Strategies are combined into complementary packages that align with regional values
- Decision process focuses on finding the **best** solutions for inclusion in the I/I Program Plan

# Decision Framework

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## Frameworks Evaluated

- Cost-Benefit Analysis
- Multi-Criteria Decision Analysis
- Scenario Planning
- Decision Tree
- SWOT Analysis



## Recommended: Multi-Criteria Decision Analysis



### Pros

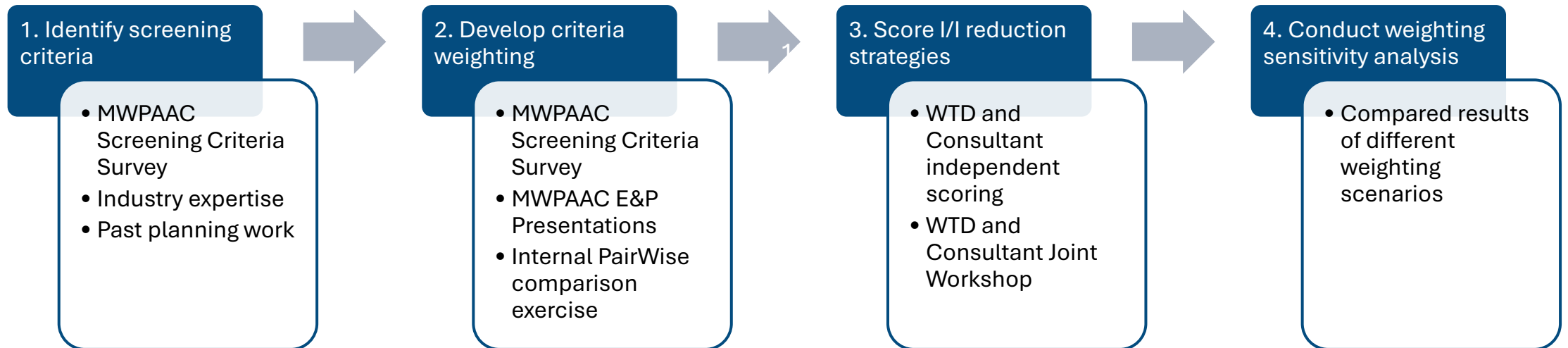
- Flexible; can be used quantitatively, qualitatively, or both
- Structured method with a clear weighting and scoring system
- Easy to incorporate interested party engagement

### Cons

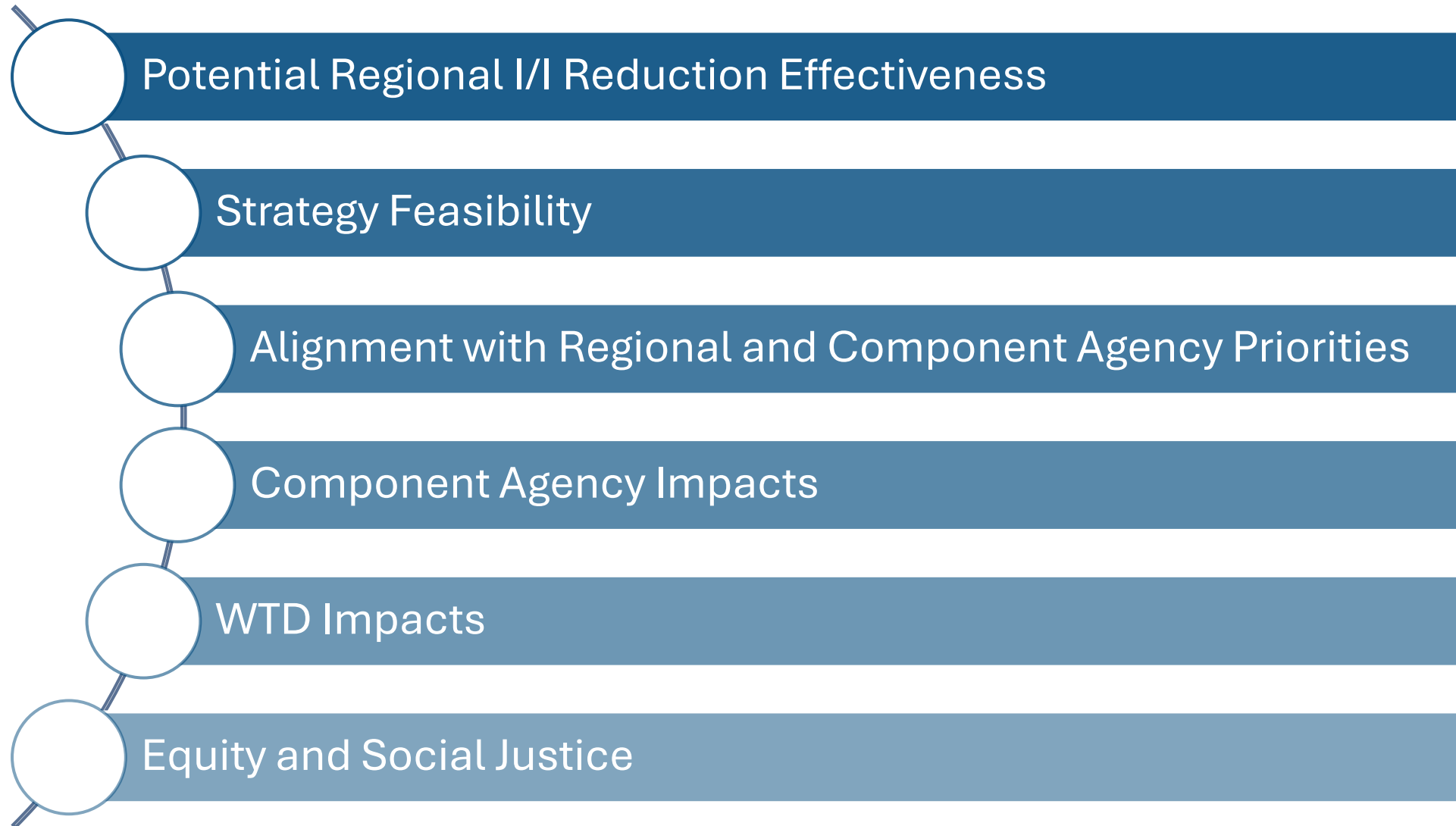
- Weighting and scoring can be subjective
- Can't comprehensively account for interdependencies across various criteria

# Multi-Criteria Decision Analysis

Screen the list of I/I reduction strategies to no more than 10 for further development and evaluation in Phase 2



# Screening Criteria



# Pairwise Comparison Example: County Team Criteria Weights

Criteria Number		1	2	3	4	5	6		
	Category Description	Calculated Weight	Potential Effectiveness	Feasibility	Priority Alignment	Component Agency Impacts	WTD Impacts	Equity and Social Justice	Points
1	Potential Effectiveness	0.29	Equal	Much Less	Somewhat More	Much More	Somewhat More	Somewhat More	15.20
2	Feasibility	0.29		Equal	Somewhat More	Somewhat More	Somewhat More	Somewhat Less	15.33
3	Priority Alignment	0.13			Equal	Equal	Equal	Somewhat More	6.67
4	Component Agency Impacts	0.09				Equal	Equal	Equal	4.53
5	WTD Impacts	0.09					Equal	Equal	4.67
6	Equity and Social Justice	0.13						Equal	6.67
									53.07

# Criteria Weighting Results

	Consultant Team Weights	County Team Weights	MWPAAC E&P Weights	Collaborative Scoring Weights (Average)
Potential Regional I/I Reduction Effectiveness	26%	29%	22%	26%
Strategy Feasibility	24%	29%	18%	24%
Alignment with Regional and Component Agency Priorities	11%	13%	18%	14%
Component Agency Impacts	17%	9%	17%	14%
WTD Impacts	12%	9%	13%	11%
Equity and Social Justice	9%	13%	12%	12%

# Screening Criteria Scoring Rubric

Score	Potential Regional I/I Reduction Effectiveness	Strategy Feasibility	Alignment with Regional and Component Agency Priorities	Component Agency Impacts	WTD Impacts	Equity and Social Justice
5	Potential to significantly reduce I/I in the region over time	Strategy is likely to have minimal political, legal, or regulatory barriers	Strategy aligns closely with both WTD principles and the priorities of the majority of component agencies	Most component agencies are well-positioned to implement this strategy with minimal or no notable obstacles	WTD is well-equipped to implement this strategy with minimal or no major obstacles	Strategy poses minimal adverse effects on socially vulnerable communities and may deliver greater benefits to them compared to other groups
3	Potential for some measurable I/I reduction in the region over time	Strategy is likely to face barriers that can be resolved in a timely manner	Strategy supports WTD principles and aligns with the priorities of several, but not all, component agencies	One or more component agencies are likely to encounter moderate challenges that may require additional planning or resources to overcome	WTD may encounter moderate challenges that require additional effort or coordination to address	Strategy may result in limited, short-term adverse impacts for some socially vulnerable communities and maintain equivalent benefits compared to current
1	Potential for little to no I/I reduction in the region over time	Strategy is likely to encounter barriers that could prevent implementation	Strategy conflicts or is inconsistent with WTD principles or is misaligned with priorities of most component agencies	Several component agencies are expected to face substantial challenges that could hinder or delay implementation without significant support or changes	WTD is likely to face substantial barriers that could significantly hinder or delay implementation	Strategy is likely to cause significant or prolonged adverse impacts for certain socially vulnerable communities

# A. Targeted or Comprehensive Rehabilitation or Replacement of Sewer System Components

- Systematic rehabilitation, replacement, or upgrade of public and private sewer system components to reduce I/I
- Based on system condition, I/I rates, and location-specific factors
- Includes both direct infrastructure improvements and supportive efforts

General Benefits	Interested Parties	Assumptions
<ul style="list-style-type: none"><li>• Significant I/I reduction in targeted high-leakage basins</li><li>• Defer or eliminate needed downstream improvements</li><li>• Allows for future growth</li></ul>	<ul style="list-style-type: none"><li>• Component agencies</li><li>• Private property owners</li><li>• WTD</li></ul>	<ul style="list-style-type: none"><li>• Project implementation will be by the individual component agency</li><li>• Focus will be on high-severity I/I basins</li><li>• WTD model and component agency GSPs will be utilized to prioritize basins</li><li>• Scope of project(s) will be based on greatest cost-effectiveness</li></ul>

# A. Targeted or Comprehensive Rehabilitation or Replacement of Sewer System Components

Criterion	Score	Rationale
Potential Regional I/I Reduction Effectiveness	5	High reduction effectiveness assumed in areas experiencing high peak I/I rates
Strategy Feasibility	3	Strategy is most likely to be free from unresolvable political, legal, barriers
Alignment with Regional and Component Agency Priorities	5	Strategy aligns with both WTD and component agency priorities
Component Agency Impacts	1	Additional staffing may be needed for strategy administration and construction inspection
WTD Impacts	3	Additional staffing and resources may be needed to conduct targeted flow monitoring and modeling to further prioritize areas and assess reduction effectiveness
Equity and Social Justice	3	There could be limited, short-term adverse impacts for some socially vulnerable communities (construction- and private property repair funding-related) (which could be reduced with strategy packaging)

# I/I Reduction Strategies

**A.** Targeted or Comprehensive Rehabilitation or Replacement of Sewer System Components

**B.** Private Side Sewer Inspection / Certification Program

**C.** Side Sewer Repair Funding

**D.** Side Sewer Insurance Program

**E.** Inspector Training and Certification Program

**F.** Peak Flow Limitation Program

**G.** Illicit Connections Disconnection Program

**H.** Financial Programs for Component Agency Sewer Rehabilitation and I/I Mitigation

**I.** Updating Sewer Standards, Guidelines and Policies

**J.** Education and Training

**K.** Regional I/I Reduction Requirements

**L.** Stormwater Management

**M.** Regional I/I Task Force

# Detailed Scoring: Collaborative Weighting

Criteria		Collaborative Weighting	Strategy												
			A	B	C	D	E	F	G	H	I	J	K	L	M
1	Potential Effectiveness	26%	5	3	3	1	1	5	3	3	1	1	3	3	1
2	Feasibility	24%	3	1	3	1	3	3	1	3	1	5	3	1	5
3	Priority Alignment	14%	5	3	3	3	5	3	3	5	3	5	3	3	5
4	Component Agency Impacts	14%	1	3	3	3	3	3	1	3	1	3	1	3	3
5	WTD Impacts	11%	3	3	3	3	3	3	3	3	3	4	3	3	5
6	Equity and Social Justice	12%	3	1	5	3	3	1	1	5	3	3	1	3	3
Total Score		100%	3.5	2.3	3.2	2.0	2.8	3.3	2.0	3.5	1.7	3.3	2.5	2.5	3.5
Rank			1	10	6	12	7	5	11	2	13	4	9	8	3

# Detailed Scoring: Sensitivity Analysis

Highest Ranked



Lowest Ranked

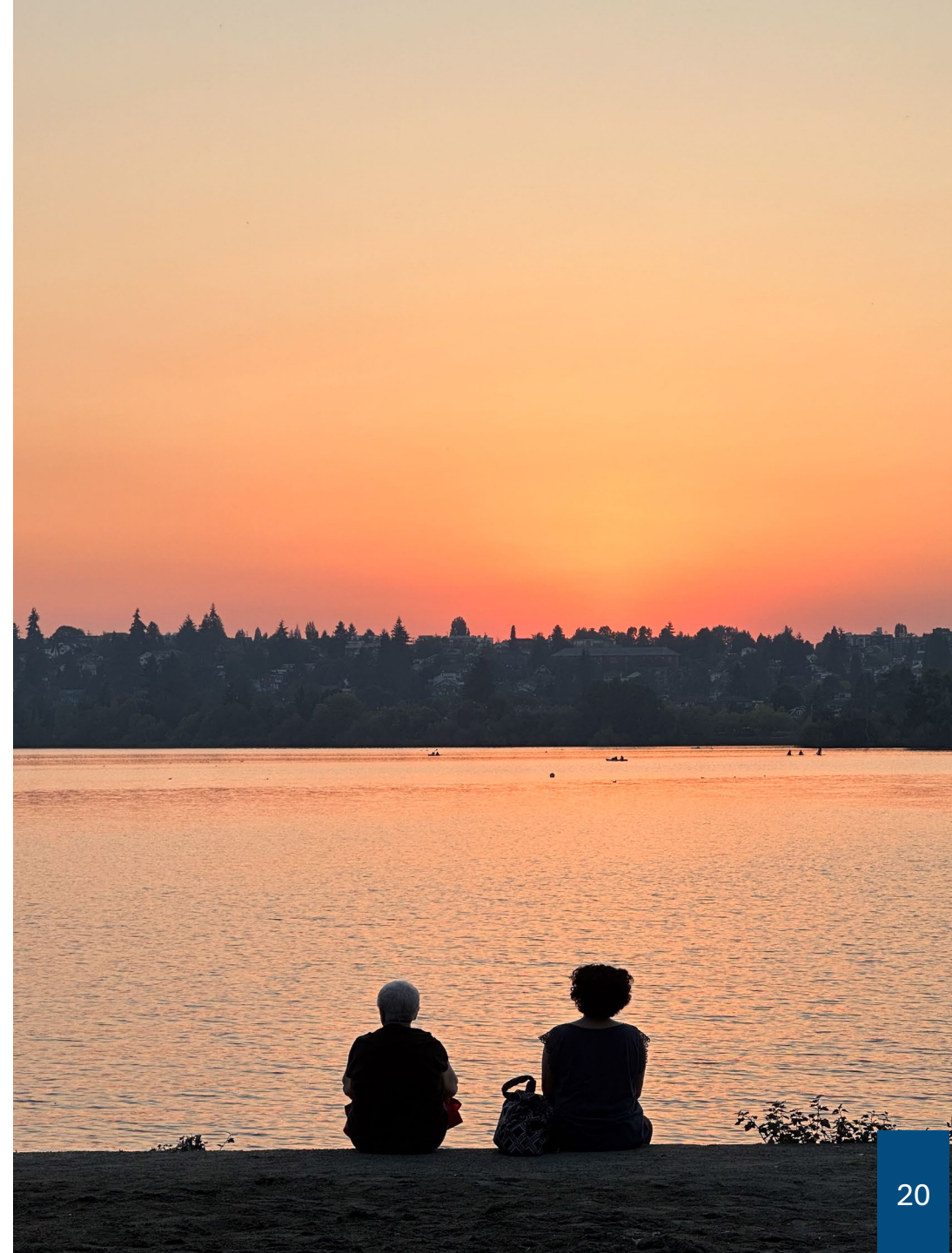
Strategy			
Collaborative Weighting	King County Weighting	Component Agency Weighting	Consultant Team Weighting
A	A	H	M
H	H	M	H
M	M	A	A
J	J	J	F
F	F	C	J
C	C	F	C
E	E	E	E
L	K	L	L
K	L	K	K
B	B	B	B
G	G	D	D
D	D	G	G
I	I	I	I



The same three strategies were screened out in all four weighting options

# Strategy Screening Results

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# I/I Reduction Strategies Pre-Screening

**A.** Targeted or Comprehensive Rehabilitation or Replacement of Sewer System Components

**B.** Private Side Sewer Inspection / Certification Program

**C.** Side Sewer Repair Funding

**D.** Side Sewer Insurance Program

**E.** Inspector Training and Certification Program

**F.** Peak Flow Limitation Program

**G.** Illicit Connections Disconnection Program

**H.** Financial Programs for Component Agency Sewer Rehabilitation and I/I Mitigation

**I.** Updating Sewer Standards, Guidelines and Policies

**J.** Education and Training

**K.** Regional I/I Reduction Requirements

**L.** Stormwater Management

**M.** Regional I/I Task Force

# I/I Reduction Strategies Post-Screening

**A.** Targeted or Comprehensive Rehabilitation or Replacement of Sewer System Components

**B.** Private Side Sewer Inspection / Certification Program

**C.** Side Sewer Repair Funding

~~**D.** Side Sewer Insurance Program~~

**E.** Inspector Training and Certification Program

**F.** Peak Flow Limitation Program

~~**G.** Illicit Connections Disconnection Program~~

**H.** Financial Programs for Component Agency Sewer Rehabilitation and I/I Mitigation

~~**I.** Updating Sewer Standards, Guidelines and Policies~~

**J.** Education and Training

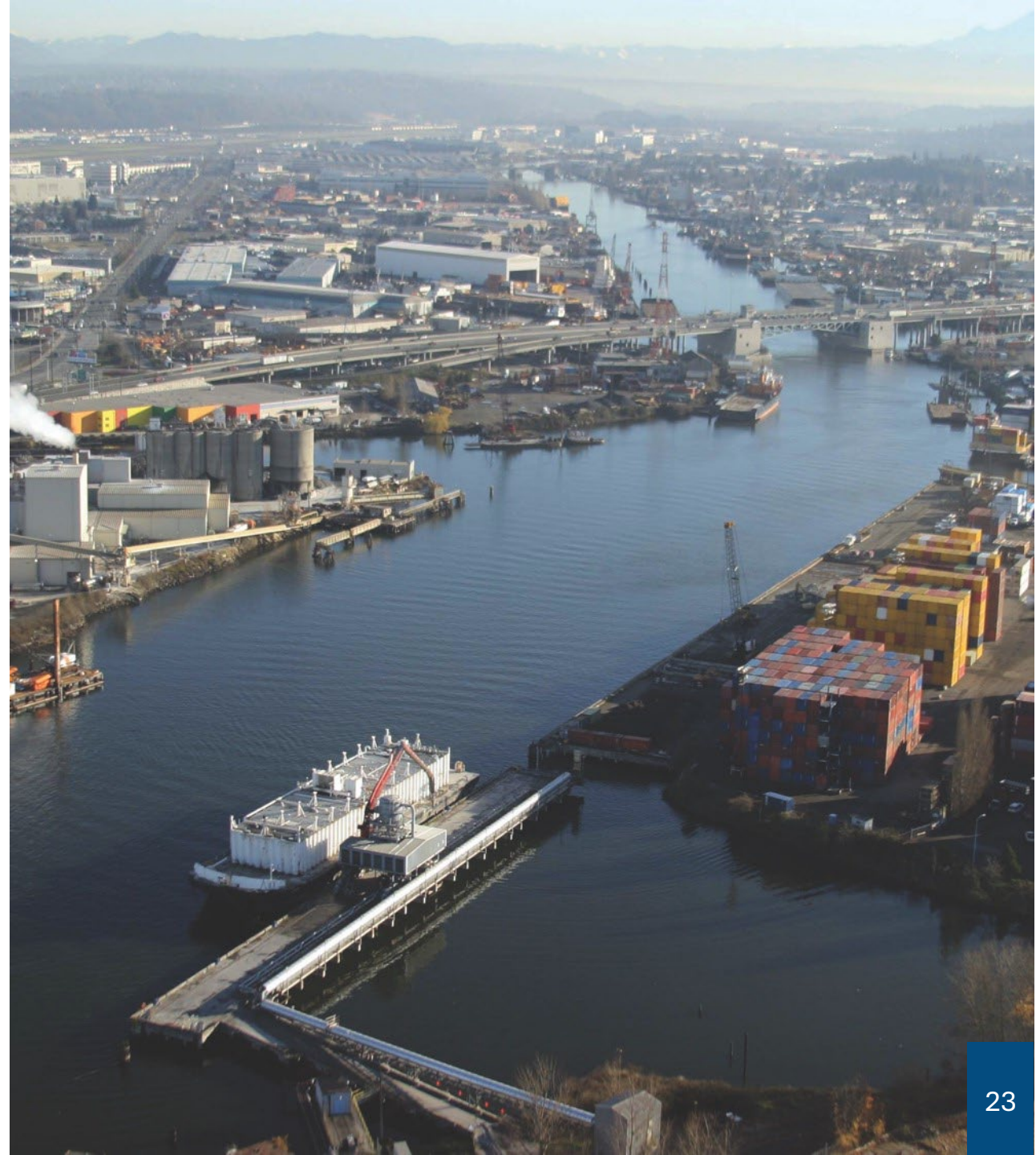
**K.** Regional I/I Reduction Requirements

~~**L.** Stormwater Management~~

**M.** Regional I/I Task Force

# Strategies Screened Out

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# G. Illicit Connections Disconnection Program

- Target the identification and removal of illicit connections that allow stormwater (or other non-wastewater flows) to enter the sanitary sewer system
- Examples: sump pumps, downspouts, and area drains
- Strategy elements may include education, targeted smoke and dye testing to locate connections, etc.

General Benefits	Interested Parties	Assumptions
<ul style="list-style-type: none"><li>• Cost-effective reduction of inflow</li><li>• Increases public understanding of I/I</li><li>• May be coordinated with inspections</li></ul>	<ul style="list-style-type: none"><li>• Component agencies</li><li>• Private property owners</li><li>• WTD</li></ul>	<ul style="list-style-type: none"><li>• Focus will be on high severity inflow areas</li><li>• Stormwater / drainage facilities exist to handle increased inflow</li><li>• Program will be implemented by each individual component agency</li><li>• Funding source TBD but WTD likely involved</li></ul>

# G. Illicit Connections Disconnection Program

Criterion	Score	Rationale
Potential Regional I/I Reduction Effectiveness	3	High I/I reduction effectiveness assumed in areas experiencing high peak I/I rates; however, I/I reduction in the regional system may be localized
Strategy Feasibility	1	Assuming privately funded, implementation can be extremely challenging
Alignment with Regional and Component Agency Priorities	3	Strategy supports WTD principles but may not align with priorities of all component agencies
Component Agency Impacts	1	Needs for additional staffing and resources to administer this program could hinder or delay implementation without significant WTD support
WTD Impacts	3	Additional staffing may be needed to oversee this program; private property issues must be dealt with by local agencies
Equity and Social Justice	1	Compliance with this strategy is likely to cause significant adverse impacts to socially vulnerable communities. Funding support may be available for certain income thresholds which would change the score

# D. Side Sewer Insurance Program

- Creation of an insurance program, administered by the County or local agencies, to cover the costs of private side sewer repair or replacement in the event of failure or documented I/I contribution
- Repairing side sewer defects has a high and often unexpected cost
- A voluntary insurance program provides financial protection and increase awareness of maintenance responsibilities

<b>General Benefits</b>	<b>Interested Parties</b>	<b>Assumptions</b>
<ul style="list-style-type: none"><li>• Spreads financial risk across participants, reducing individual burden</li><li>• Reduces delays in repairing known I/I sources</li></ul>	<ul style="list-style-type: none"><li>• Component agencies</li><li>• Private property owners</li><li>• WTD</li><li>• Communities</li></ul>	<ul style="list-style-type: none"><li>• Program ideally will be implemented by the County</li><li>• Program is voluntary and optional for private property owners</li></ul>

# D. Side Sewer Insurance Program

Criterion	Score	Rationale
Potential Regional I/I Reduction Effectiveness	1	Unless side sewer repair/replacement work is done consistently in sewer basins experiencing high peak I/I, an overall reduction in the region due to this strategy is unlikely to be measured
Strategy Feasibility	1	Other private side sewer insurance programs are available and marketed in the area; barriers may be encountered that could prevent implementation
Alignment with Regional and Component Agency Priorities	3	Strategy supports WTD principles but may not align with priorities of all component agencies
Component Agency Impacts	3	Component agencies may not have resources to coordinate with underwriters and administer this program; WTD implements
WTD Impacts	3	Additional funding and staffing may be needed for strategy administration
Equity and Social Justice	3	The cost of an insurance policy may be prohibitive to socially vulnerable communities

# I. Updating Sewer Standards, Guidelines, And Policies

- Update sewer construction standards, design guidelines, and policies with a focus on reducing I/I
- Adopting updated best management practices (BMPs), County-wide specifications, and auditing compliance at the local level

General Benefits	Interested Parties	Assumptions
<ul style="list-style-type: none"><li>• Helps to prevent future I/I with new standards</li><li>• Supports long-term asset resilience</li></ul>	<ul style="list-style-type: none"><li>• Component agencies</li><li>• WTD</li><li>• Homeowners</li><li>• Developers</li></ul>	<ul style="list-style-type: none"><li>• Development of County-wide construction details and standards for rehabilitation, replacement, or new construction</li><li>• Component agencies and cities that aren't responsible for sewer systems will need to adopt and issue new standards</li><li>• Focus will be on I/I reduction and prevention on public assets</li><li>• May include stormwater as well as sanitary</li></ul>

# I. Updating Sewer Standards, Guidelines, And Policies

Criterion	Score	Rationale
Potential Regional I/I Reduction Effectiveness	1	Not likely to result in regional I/I reduction on its own; may result in preventing I/I from entering the regional system over time
Strategy Feasibility	1	Will require a lot of coordination and agreement to get code revisions; some agencies may be limited in authority to make revisions
Alignment with Regional and Component Agency Priorities	3	Supports WTD principles but may not align with priorities (or abilities) of all component agencies
Component Agency Impacts	1	Additional staffing may be needed during implementation of this program (e.g., coordination, consensus building, etc.)
WTD Impacts	3	Additional staffing may be needed during implementation of this program (e.g., coordination, consensus building, etc.)
Equity and Social Justice	3	Not likely to adversely impact or provide greater benefits to socially vulnerable communities

# L. Enhanced Coordination With Stormwater Agencies To Prevent and Manage Inflow

- Promote collaboration between wastewater agencies and stormwater management entities—at both the County and local agency level
- Floodplain, shoreline, and coastal management strategies to reduce sewer inflow
- Integration of I/I priorities into stormwater planning

General Benefits	Interested Parties	Assumptions
<ul style="list-style-type: none"><li>• Encourages integrated, multi-benefit projects (e.g., flood control + I/I reduction)</li><li>• Reduces system stress during extreme weather events</li></ul>	<ul style="list-style-type: none"><li>• Component agencies</li><li>• WTD</li><li>• Communities</li></ul>	<ul style="list-style-type: none"><li>• County-led effort but will require support from individual component agencies and agencies/cities responsible for stormwater</li><li>• May include coordination of GSPs and Stormwater Master Plans</li></ul>

# L. Enhanced Coordination With Stormwater Agencies To Prevent and Manage Inflow

Criterion	Score	Rationale
Potential Regional I/I Reduction Effectiveness	3	May provide ability for effective I/I reduction throughout the regional system by providing stormwater conveyance system improvement and flood mitigation planning and actions
Strategy Feasibility	1	Significant barriers to implementing this strategy may be faced
Alignment with Regional and Component Agency Priorities	3	Supports WTD principles but may not align with priorities of all component agencies
Component Agency Impacts	3	Additional staffing may be needed during implementation of this program (e.g., coordination, consensus building, etc.)
WTD Impacts	3	Additional staffing may be needed during implementation of this program (e.g., coordination, consensus building, etc.)
Equity and Social Justice	3	Socially vulnerable communities experiencing stormwater challenges could realize benefits

# I/I Reduction Strategies Carried into Phase 2

**Highest  
Ranked**



- A.** Targeted or Comprehensive Rehabilitation or Replacement of Sewer System Components
- H.** Financial Programs for Component Agency Sewer Rehabilitation and I/I Mitigation
- M.** Regional I/I Task Force
- J.** Education and Training
- F.** Peak Flow Limitation Program
- C.** Side Sewer Repair Funding
- E.** Inspector Training and Certification Program
- K.** Regional I/I Reduction Requirements
- B.** Private Side Sewer Inspection / Certification Program

**Lowest  
Ranked**

# Next Steps

- Incorporate comments and feedback from MWPAAC members into the results of the I/I reduction strategy screening process
- Complete Phase 1 of the I/I Reduction Plan Update
- Initiate Phase 2 of the I/I Reduction Plan Update

# Contact Information

For further questions, please reach out to Johnson Nguyen, I/I Reduction Plan Update Project Manager, King County WTD ([jnguyen@kingcounty.gov](mailto:jnguyen@kingcounty.gov))



**King County**

Wastewater  
Treatment