I/I Reduction Concepts
Agency Feedback on Frameworks

June 7, 2018

Nicole Smith and Steve Tolzman of King County WTD
Penny Mabie, Steffran Neff and Bob Jacobsen of
Brown and Caldwell

King County
Department of Natural Resources and Parks
Wastewater Treatment Division

Agenda

I. Overview of current I/I work

II. Hear your initial observations on evaluated frameworks

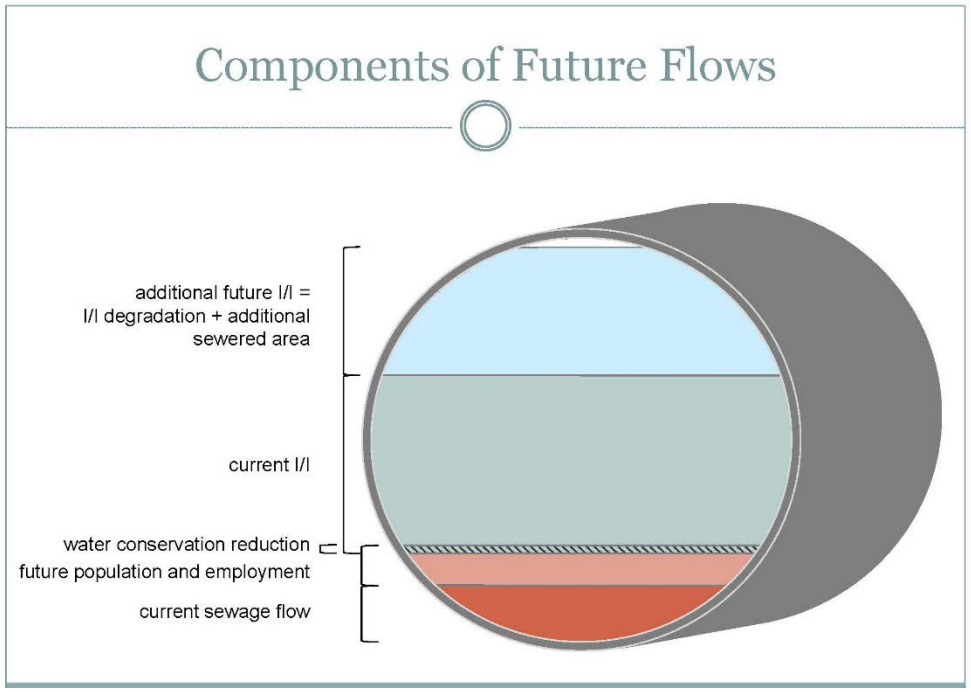
III. Review summary of evaluated frameworks

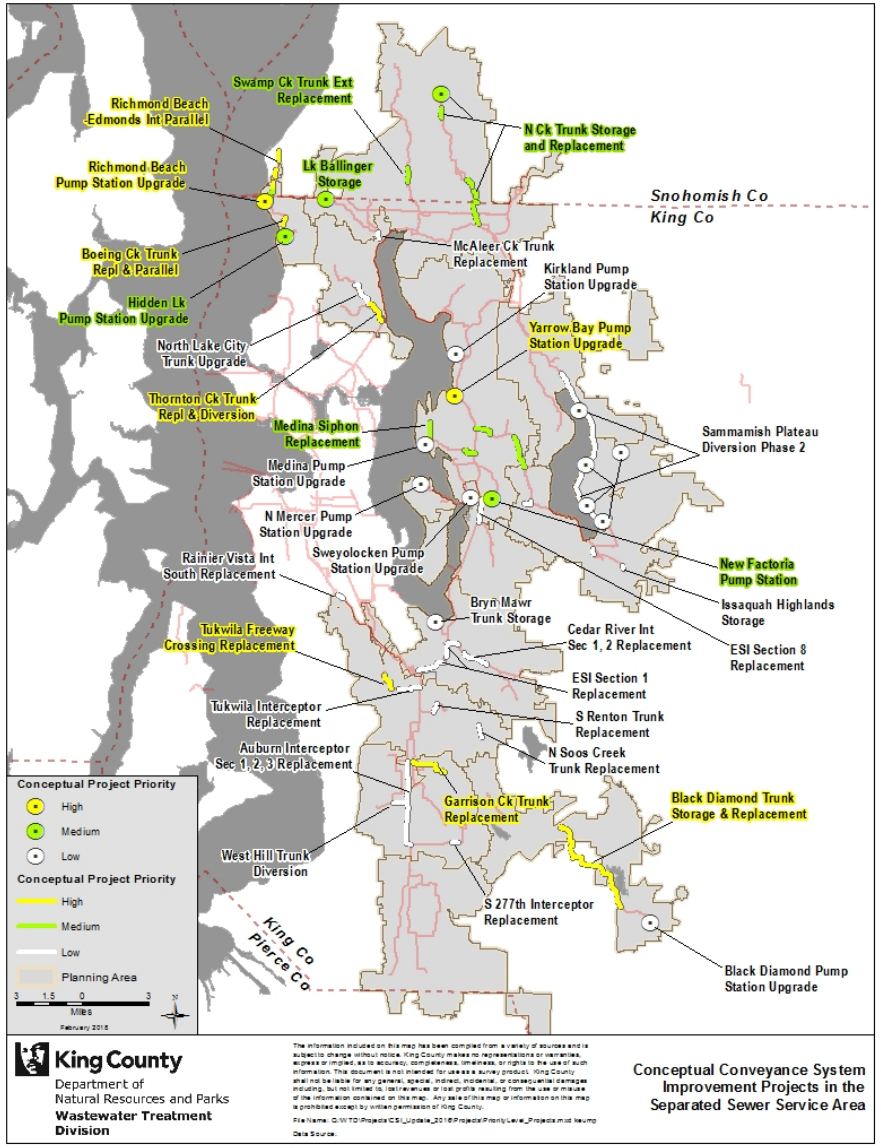
IV. Further discuss your responses on evaluated frameworks and begin to develop recommendations for MWPAAC

V. Next steps

I/I in the Regional Wastewater System

- As much as 3/4 of pipe capacity used by I/I
- 50-70% of I/I is from private side sewers
- Will have to spend $1.7B on new pipes through 2060 for growth and I/I



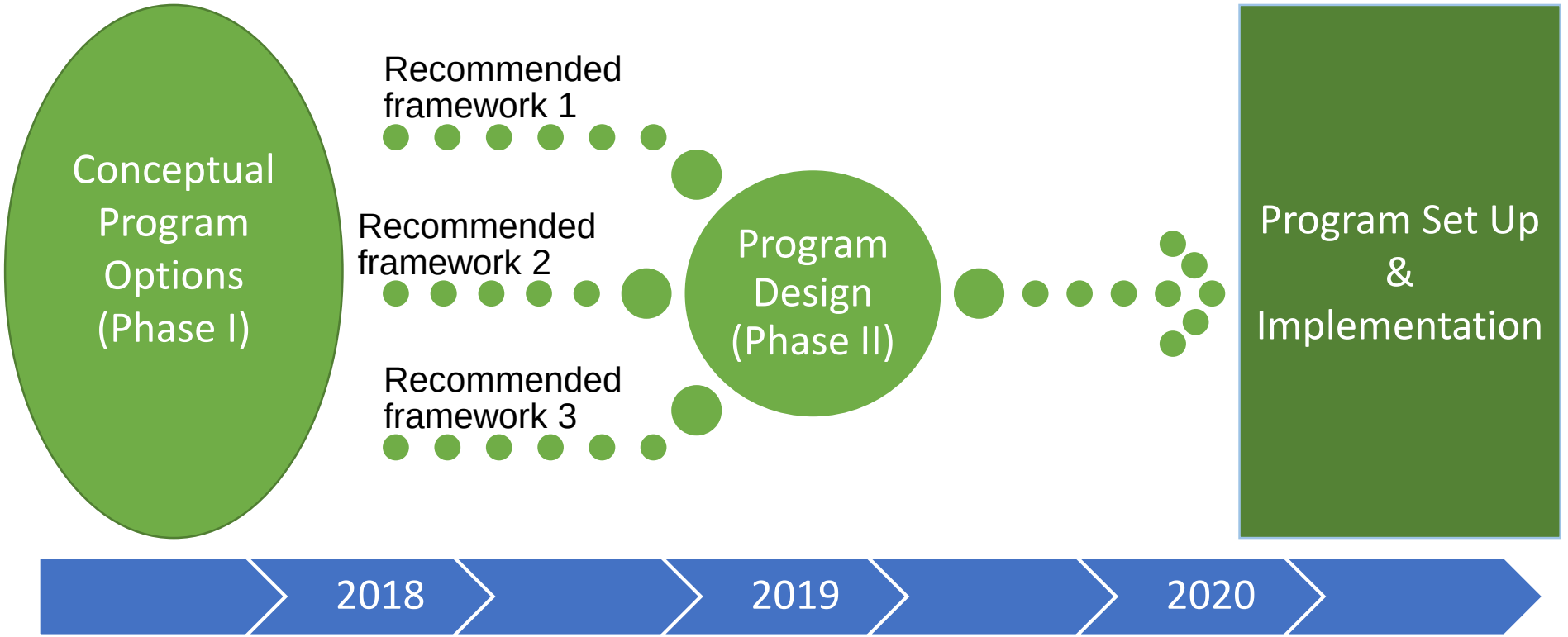


Regional I/I Control Program History

1999	Created Program as part of RWSP.
2001-2002	Defined current levels of I/I for each local agency.
2003-2004	Implemented 10 pilot projects in 12 local agency jurisdictions to demonstrate the effectiveness of collection system rehabilitation projects, test technologies, and gain cost information.
2004	Developed final draft model standards, procedures, policies, and guidelines for use by local agencies to reduce I/I in their systems.
2005	Completed thorough benefit-cost analysis to determine the cost effectiveness of I/I reduction.
2007-2009	Selected of initial I/I project areas.
2011-2013	Constructed initial I/I reduction project in Skyway Water and Sewer District.
2015	MWPAAC I/I Task Force recommended exploring potential non-project components of regional I/I program.
2016-Present	Evaluating of programmatic I/I reduction concepts.

Current I/I Program Work

Explore and evaluate I/I Program concepts with the goal of **adopting a strategy that will reduce I/I over time** and reduce the need for capital projects in the separated sewer portion of the regional wastewater system



I&I Recommendations Process

Month	Activity	Outcomes
April ✓	Select frameworks for evaluation	10 frameworks
May ✓	Receive evaluated frameworks	Questions for individual agency consideration
June	Discuss evaluated frameworks	Develop recommendations for MWPAAC
August	Select frameworks for additional study and further development	Final recommendations for MWPAAC
September - December	Present and discuss recommendation with full MWPAAC	MWPAAC recommends next steps for I&I Study

Responses From Members

We asked you:

- **Initial observations?**
- **Surprises?**
- Criterion importance / weighting needed?
- Weighting suggestions?
- Options to move forward?
- Combinations?

Program Evaluation Criteria

Six criterion used to rate and compare programs:

- Effectiveness
- Legal and political implications
- Property owner impacts
- Local agency impacts
- WTD impacts
- Equity and social justice

Initial Observations on Effectiveness Criterion

- For options 1, 2, 3, 4, 5, 9 and 10
  - As standalone options, **do not** expect measurable flow reductions
  - These options do have benefits or provide enhancements to other options
  - No identified way to calculate cost effectiveness
- For options 6, 7 and 8
  - As standalone options, **do** expect measurable flow reductions
  - How to calculate cost effectiveness for Options 6, 7, 8?

Exploring Cost Effectiveness for Options 6-8

Side Sewer Program Inputs	Assumptions
Number of total side sewers in WTD	≈520,000
Total I/I rates	70%
Number of inspections per year	?
Number of side sewers needing work	?
Cost per repair	?
Inspection cost per side sewer	?
Permit fee per side sewer	?
Additional FTE's required	?
Development and management software costs	?
Volume removal per average year per repair completed	?

Review of Framework Evaluations

Key Considerations/Criteria	Rating									
Criterion 1: Regional Effectiveness	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8	Option 9	Option 10
Potential effectiveness										
Criterion 2: Legal and Political Implications										
Legal implications										
Political implications										
Criterion 3: Property Owner Impacts										
General impact										
Affordability										
Criterion 4: Local Agency Impacts										
Program development										
Program implementation										
Criterion 5: WTD Impacts										
Program development										
Program implementation										
Criterion 6: Equity and Social Justice										
Burden on communities										
Economic benefit to communities										

Positive
Medium
Negative

Responses From Members

We asked you:

- Initial observations? ✓
- Surprises? ✓
- Criterion importance / weighting needed?
- Weighting suggestions?
- Options to move forward?
- Combinations?

Responses From Members

1. Criteria - weighting needed?

If yes, go to 2.

2. Criteria – Rank by importance

- ☐ Effectiveness
- ☐ Legal and political implications
- ☐ Property owner impacts
- ☐ Local agency impacts
- ☐ WTD impacts
- ☐ Equity and social justice

Responses From Members

Any proposed to drop from consideration?

Any rise to the top?

Any that can't stand alone?

	Framework Options
1	Focused regional BMP standardization
2	Scalable BMP program
3	Voluntary regional inspection training program
4	Regional inspection training program with certification
5	Regional I/I support by WTD
6	Local-agency-mandated inspection program (general)
7	Local-agency-driven inspection program triggered by property transfer (POS)
8	WTD-driven inspection program triggered by property transfer (POS)
9	Grant/loan program with inspection
10	Grant/loan program without inspection

Responses From Members

Any proposed combinations?

Framework Options	
1	Focused regional BMP standardization
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6/9	Local-agency-mandated inspection program (general)
7/9	Local-agency-driven inspection program triggered by property transfer (POS)
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Summing Up What We Heard

We asked….

- Initial observations?
- Surprises?
- Criterion importance / weighting needed?
- Weighting suggestions?
- Options to move forward?
- Combinations?

We heard….

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Next Steps

MONTH	TASK
July	WTD/Consultant integrates agency feedback
August	E&P selects preferred framework(s) and prepares recommendation to MWPAAC
September - December	E&P presents recommendation to full MWPAAC

Technical Memos

https://www.kingcounty.gov/services/environment/wastewater/ii/resources.aspx

Wastewater services

Infiltration and inflow control

- What is I/I?
- Why is I/I a problem?
- Finding I/I
- Fixing I/I
- Program history
- Library and resources

Home » Services » Environment » Wastewater services » Infiltration and inflow control » Library and resources

I/I library and resources

Below are a number of reports, studies, maps, and other resources related to the Regional Infiltration and Inflow Control program.

Files are in Portable Document Format (PDF). Files are also available on CD upon request.

For more information, please contact:

Steve Tolzman
steve.tolzman@kingcounty.gov
206-477-5459

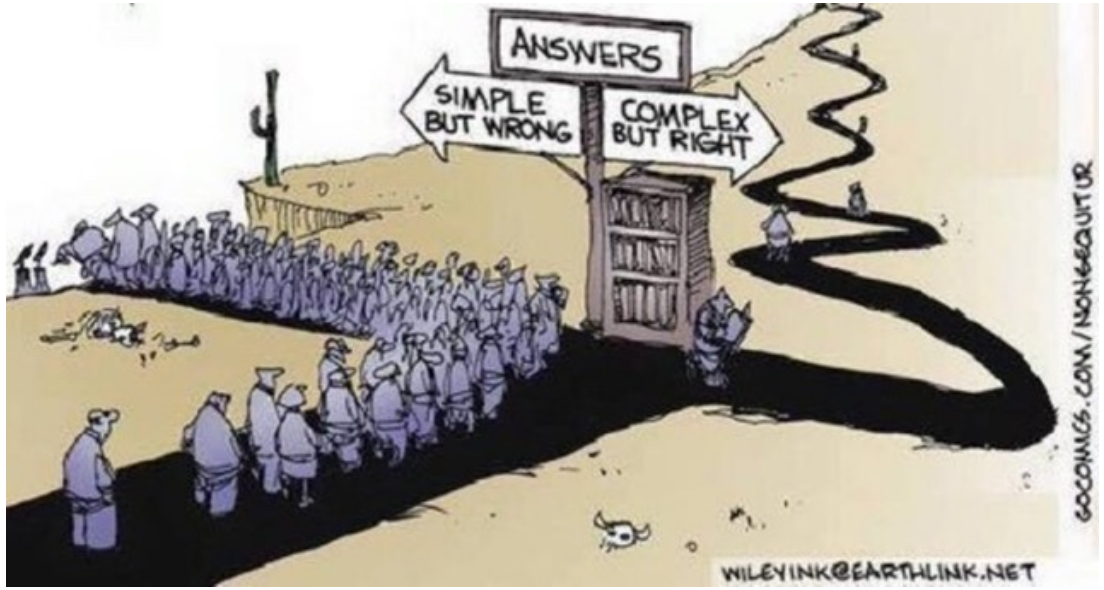
Reports

Evaluation of I/I Reduction Concepts to Improve the Regional I/I Program (2017 – 2018)

These technical memos explore concepts to reduce I/I programmatically and with a focus on private side sewers. Concepts include region-wide side sewer standards and inspection training, interagency coordination to identify and manage I/I, side sewer inspection and repair programs, and side sewer grant/loan programs. This planning effort is in progress, and additional and final technical memos will be added to this page as they become available.

- Final Verify 2004 King County Final Draft Regional I/I Control Standards, Procedures and Policies, October 2017
- Final Assessment of Existing Local Agency Sewer and Side Sewer Standards, October 2017
- Draft Approach to Achieve Common Sewer and Side Sewer/Lateral Standards, October 2017
- Final Evaluation of Current Inspection Programs at Cities and Sewer Districts, October 2017
- Draft Outline for a Standardized Regional Inspection Training Program, October 2017

Questions?



Contacts:
Nicole Smith, Water Quality Planner
Nicole.Smith@kingcounty.gov

Steve Tolzman, I/I Program Manager
Steve.tolzman@kingcounty.gov
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