

Regional Wastewater Services Plan and Conveyance System Improvement Program Planning Assumptions



PRESENTED TO:
ENGINEERING AND PLANNING SUBCOMMITTEE OF
THE METROPOLITAN WATER POLLUTION
ABATEMENT ADVISORY COMMITTEE
MAY 2, 2013



King County

Department of Natural Resources and Parks
Wastewater Treatment Division

Today's Presentation



- Overview of process to update key planning assumptions used to determine flow projections and facility sizing
 - Background
 - Purpose and Need
 - E&P Briefing Schedule
 - Update Process

Why Review Planning Assumptions Now?

- New data available
 - PSRC forecast
 - DFM results
 - Sewer model basins update
- Upcoming planning efforts
 - RWSP Comprehensive Review
 - ✦ Due to King County Council in June 2014
 - CSI Program Update
 - ✦ Initial work is under way
 - ✦ Report to be completed in 2015



Discussion Questions



- Are there other planning assumptions to consider?
- What planning assumptions does your agency use?
- Does the process for updating assumptions make sense?
- Do local agencies have additional data that could be useful in updating the planning assumptions?
- Other thoughts?

Planning Assumption Background



- There are seven key planning assumptions.
- They include flow related factors that are used to model future facility needs.
- Necessary to extrapolate from existing to maximum sewer system build-out conditions.

Why are Planning Assumptions Important?



- They are used to identify conveyance capacity and treatment needs.
- They are used to guide decision on timing and sizing of facilities.
- They are used to prevent under or over building of facilities.

Draft Schedule for Briefings with E&P



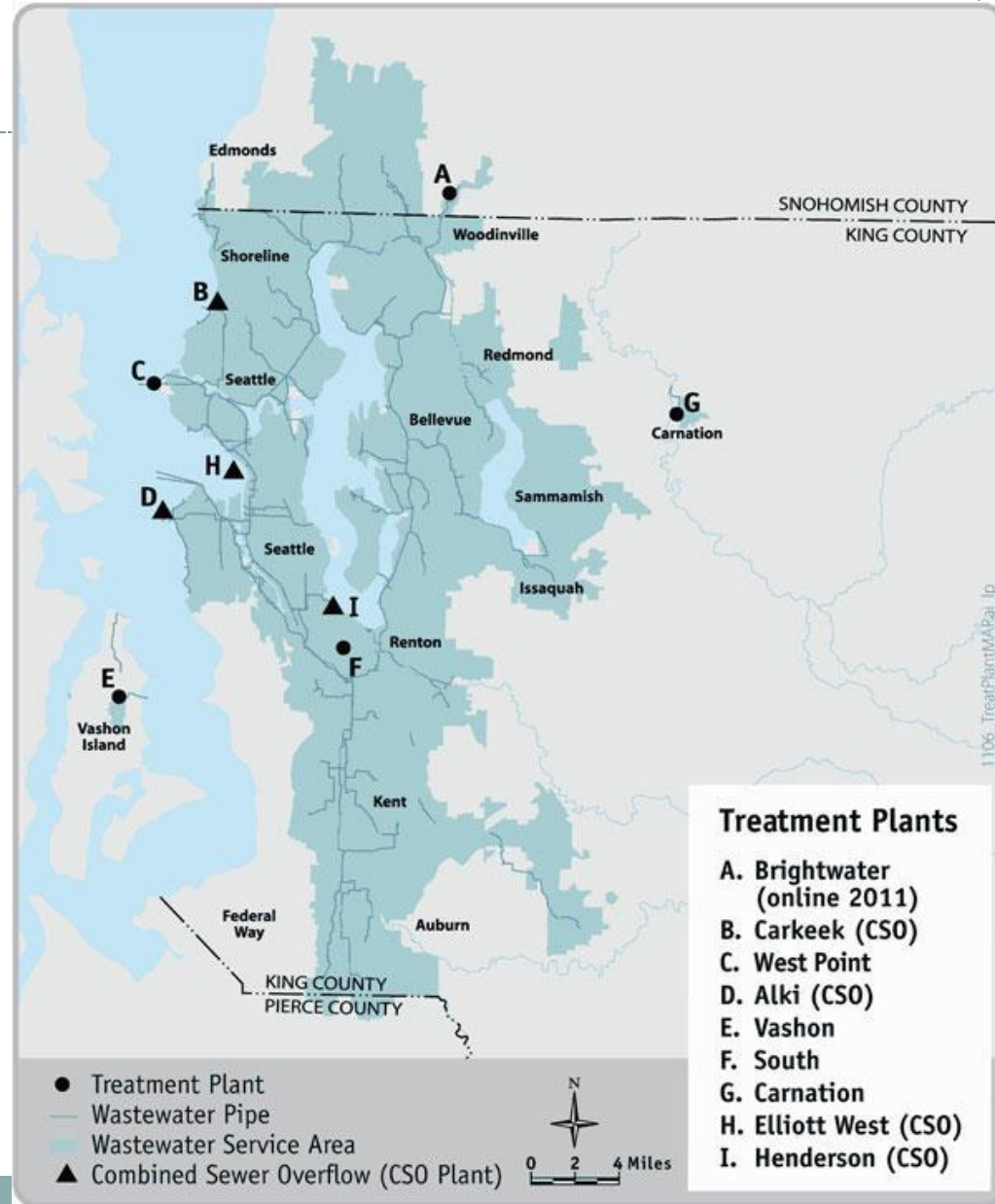
Proposed Date	Proposed Topic
May 2, 2013	Overview of process to update planning assumptions
June 6, 2013	Future population, planning horizon, and water conservation assumptions
August 1, 2013	Sewered area growth rate and average wet-weather I/I degradation rate
September 5, 2013	Follow-up from August 1 discussion
October 3, 2013	Peak I/I and new system I/I degradation rate
November 7, 2013	Follow-up from October 3 and other meetings as needed

Assumption: Extent of Eventual Service Area

Current Assumption: The assumed extent of the planning area is the sewerable areas within Urban Growth Areas of King, Snohomish, and Pierce counties where King County WTD has sewage disposal contracts.

Applied to: Wastewater flow projections

Process to update: Assumption still considered current. Meetings in 2012 with local agencies updated sewer service boundaries within UGA.



Assumption: Future Population



Current Assumption: Based on PSRC 2003 population and employment forecast to 2030.

Applied to: Wastewater flow projections

Process to update: Allocate PSRC 2013 forecast for 2020, 2030, and 2040 to sewer model basins. Apply extrapolation out to 2050+.



Assumption: Water Conservation



Current Assumption: A 10 percent reduction in per day water consumption between 2000 and 2010, with no additional reduction after 2010.

Applied to: Wastewater flow projections

Process to update: Collect and review indoor water consumption data for 2010. Review local agency water system plans.



Assumption: Sewered Area Growth Rate



Current Assumption: The current planning assumption is that 90 percent of the unsewered area (in year 2000) with potential for sewers will be sewered by 2030 and that 100 percent of this area will be sewered by 2050.

Applied to: Wastewater flow projections

Process to update: Update data on total developable parcels, total sewered parcels since 2000, and vacant developable parcels.

Assumption: I/I Degradation

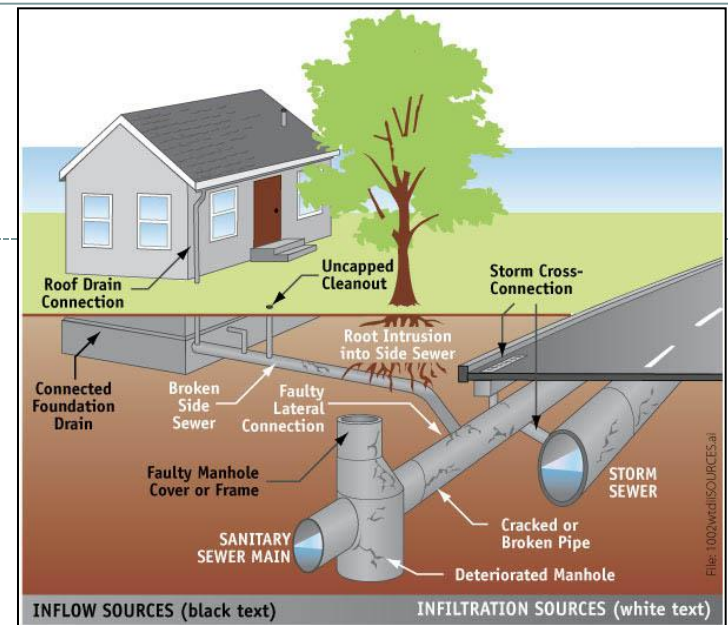


Current Assumption:

WTD assumes that I/I degradation starting in 2000 would be 7 percent per decade, with a limit of 28 percent over a 40-year period.

Applied to: Peak and Average I/I rates

Process to update: Evaluate both Average Wet Weather I/I and Peak I/I. Compare previously documented I/I volumes with new DFM and other data from modeling basins and at treatment plants.



Assumption: New System I/I



Current Assumption: Beginning 20-year peak I/I rate of 1,500 gpad.

Applied to: Wastewater flow projections

Process to update: Evaluate I/I from newly sewered areas using DFM data.



Assumption: Design Flow



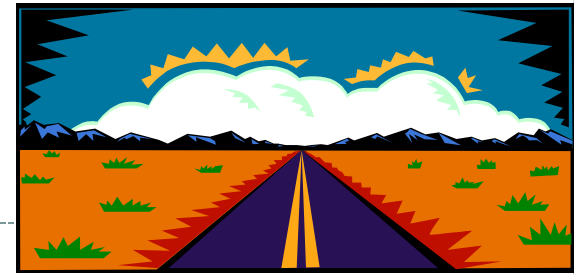
Current Assumption: The 20-year peak flow is used as the design standard to prevent SSOs in separated conveyance system

Applied to: Used to determine need and timing for facility improvements.

Process to update: The current 20-year peak flow standard is the objective measure for design and building conveyance facilities intended to meet NPDES permit requirements and is considered current.



Assumption: Planning Horizon



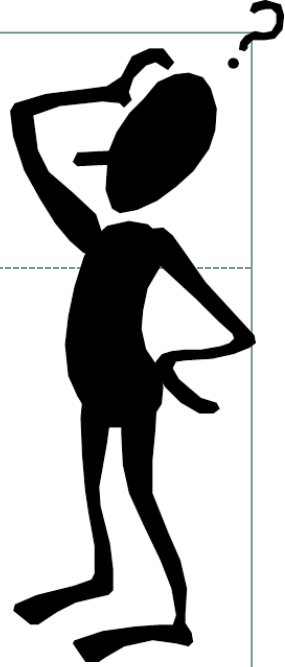
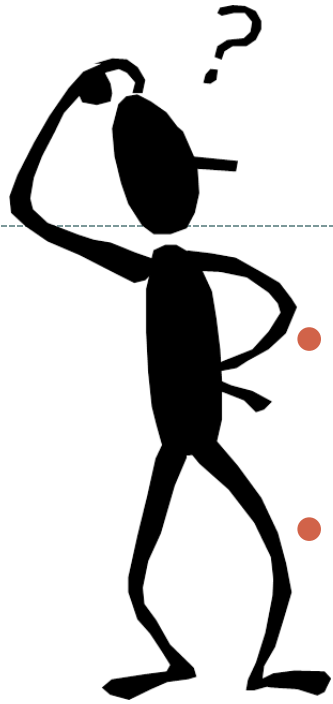
Current Assumption: The year 2050 is used to represent the projected date that the regional wastewater service area will be fully built out and all sewerable portions of the service area will be connected into the wastewater system.

Applied to: Used to develop ultimate capacity needs.

Process to update: Consider extending based on results of population forecast.



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- Other thoughts?

Next Meeting/Contacts



- Discussion of Future Population and Water Conservation on 6/6.
- For questions on RWSP Comprehensive Review contact:
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- For questions on CSI Program Update contact:
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