CSI Program Update: Status Briefing

May 5, 2016

King County
Department of Natural Resources and Parks
Wastewater Treatment Division

Presentation Topics

- Presentation Topics:
  - CSI Program Update status
  - Initial findings from development of conceptual projects to address identified conveyance system needs
  - Conceptual project examples
  - ESI considerations

Steps to Complete CSI Program Update

Update Planning Assumptions

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Complete Regional Conveyance System Needs Assessment

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We Are Here → Develop Conceptual Projects and Planning Level Cost Estimates

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Conceptual Project Prioritization

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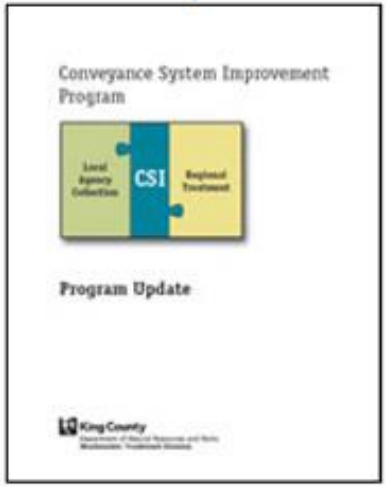


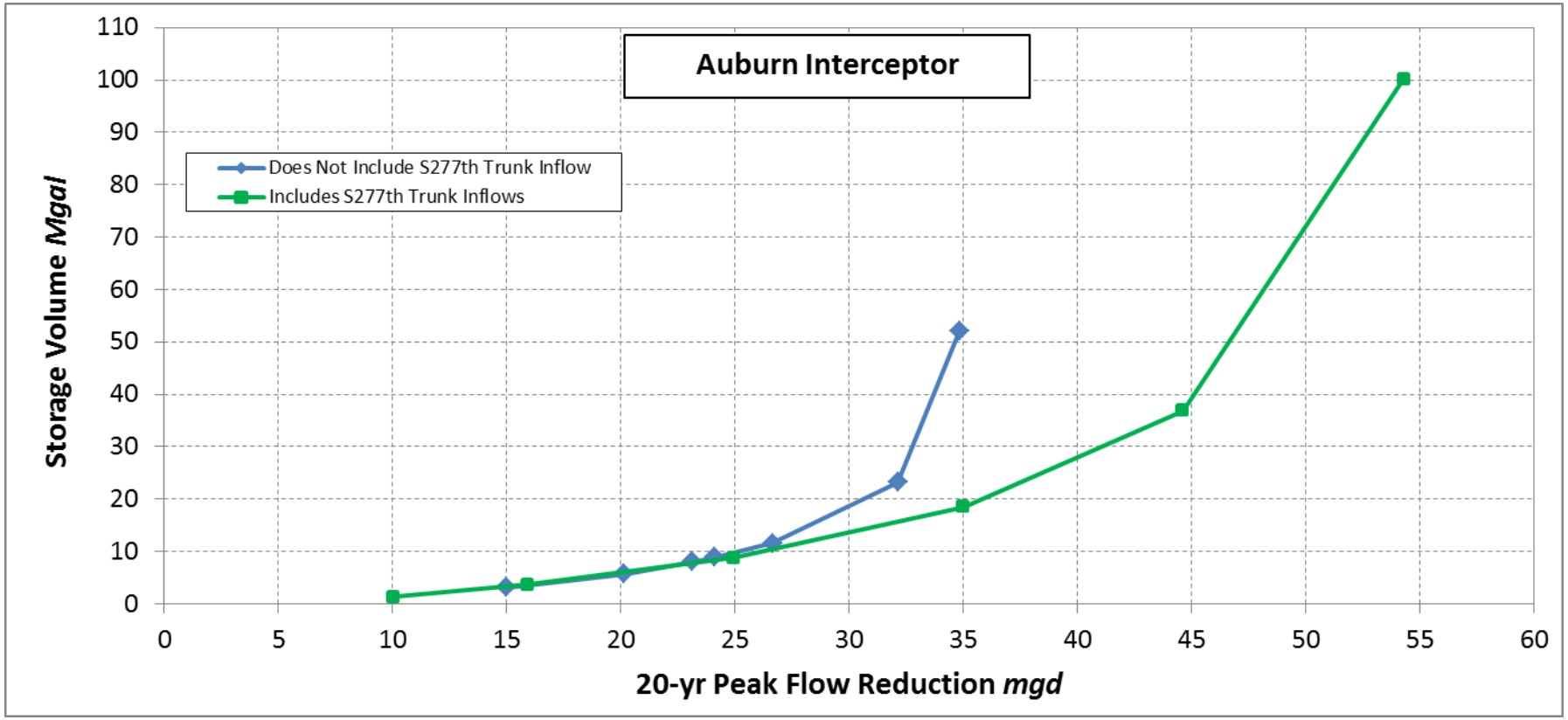
Initial Findings of CSI Conceptual Project Development

- Overall there are increases in peak flows from model basins between 2000 and 2010 generally due to:
  - Data collection in 2000-01 was short duration (2, 6-week periods) and a **dry** period resulting in model basin calibration based on lower measured flows.
  - Data collection in 2009-11 was long duration (24 months) done during a **wet** period resulting in model basin calibration based on higher measured flows.
- Due to flow increases extrapolated 2060 peak flows (population growth and I/I degradation) vary and in some cases are larger than the predicted 2050 peak flow in 2007.

Initial Findings of CSI Conceptual Project Development

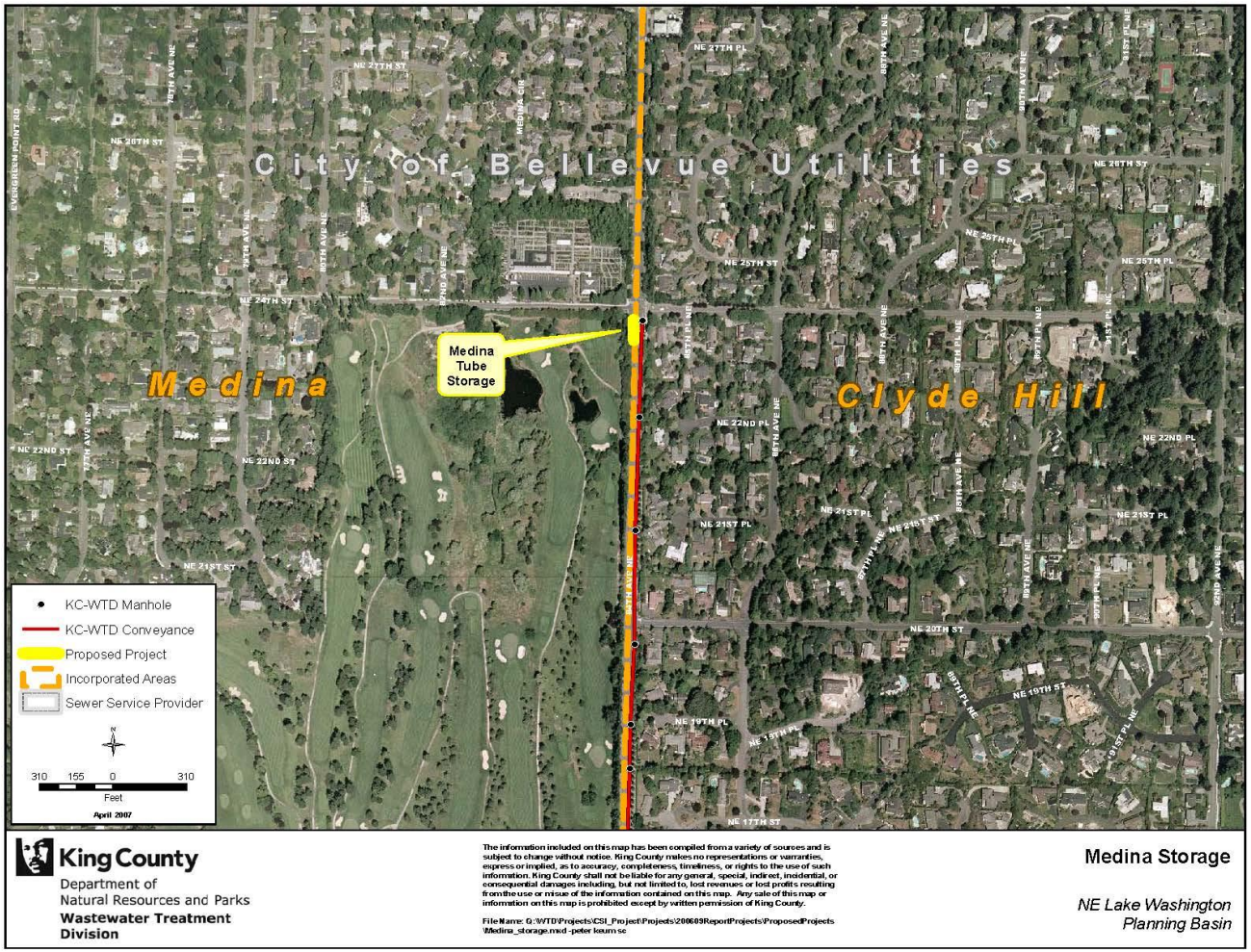
- Implications:
  - Use of storage
    - Size and duration of peak flows make storage a less likely option.
    - Large storage facilities are very expensive and in some cases not feasible to site.
  - Project costs have increased as compared to 2007 CSI Update
    - Due to impacts associated with long linear pipe parallel/replacement projects rather than small storage facilities.
  - A large capital project to increase capacity in Eastside Interceptor maybe needed

Auburn Interceptor Storage Curve



Medina Trunk Example

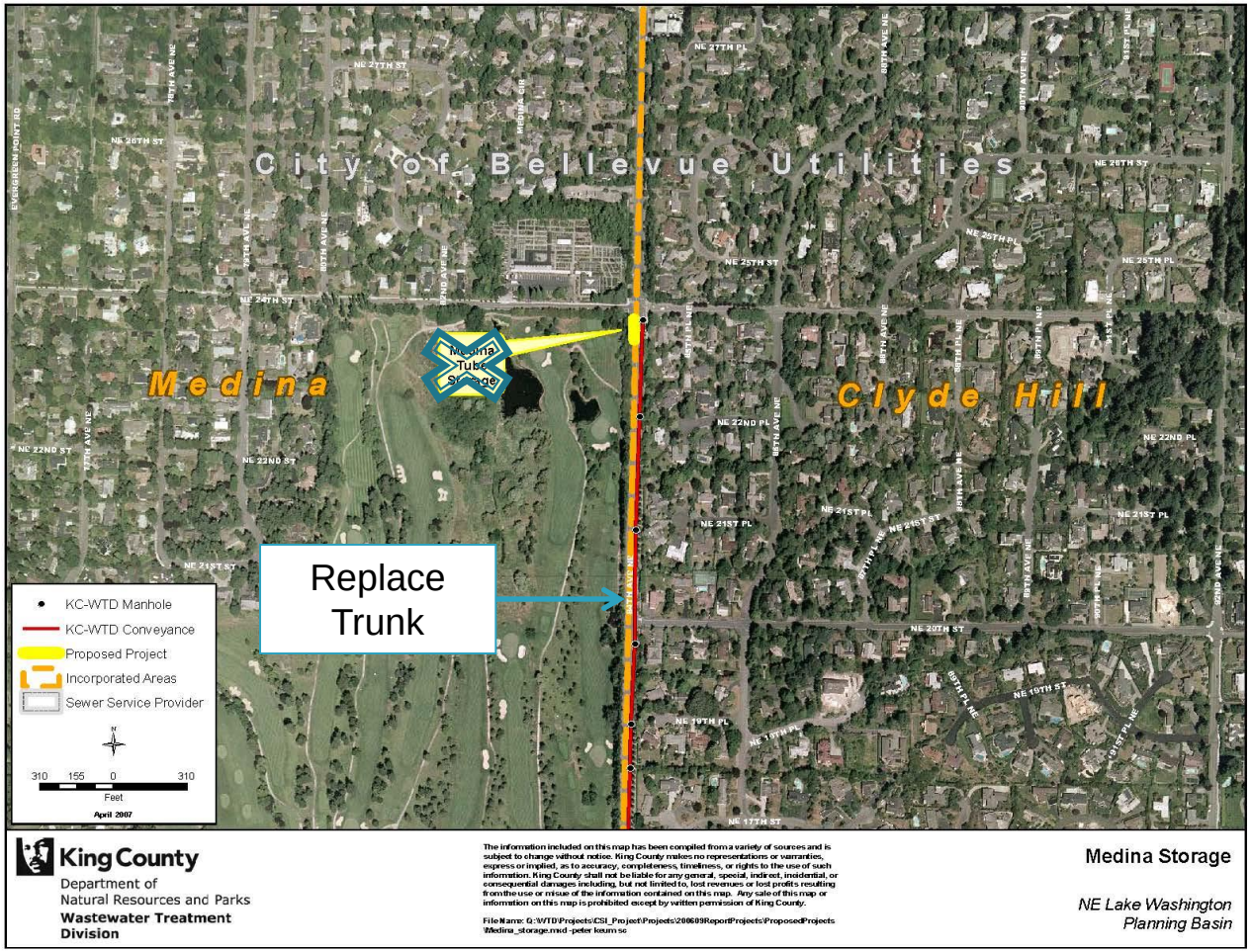
- 2007 CSI Program Update
  - 70,000 gallon storage facility to meet 2050 – 20 year peak flow



- Site storage in street right of way
- Estimated construction cost – $0.5M (2006 $)

Medina Trunk Example

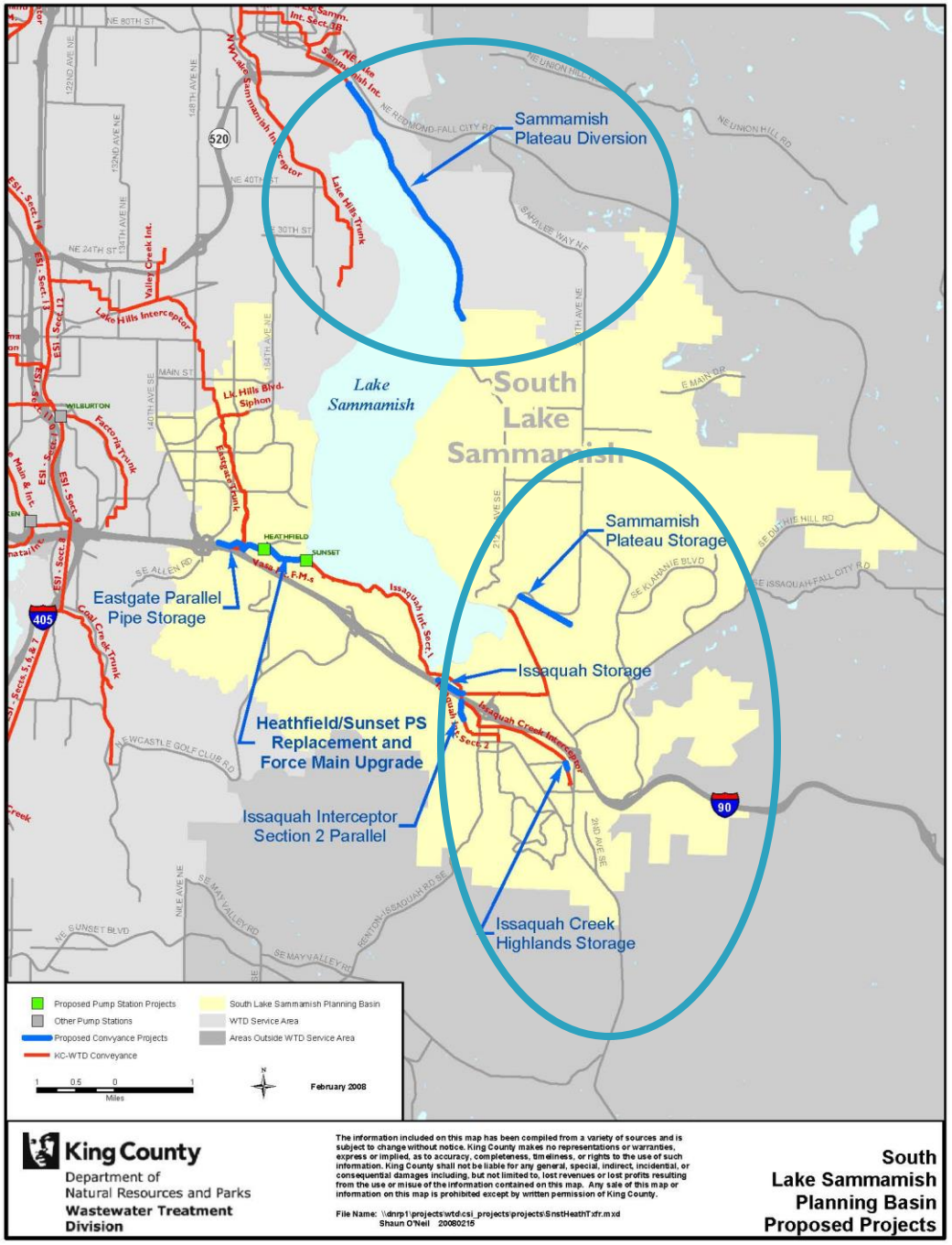
- 2017 CSI Program Update
  - 1.5 MG Storage Facility to meet 2060 – 20 year peak flow



- Updated estimated construction cost – $12 M (2016$)
- Recommended new concept replacement of trunk estimated construction cost – $4 M

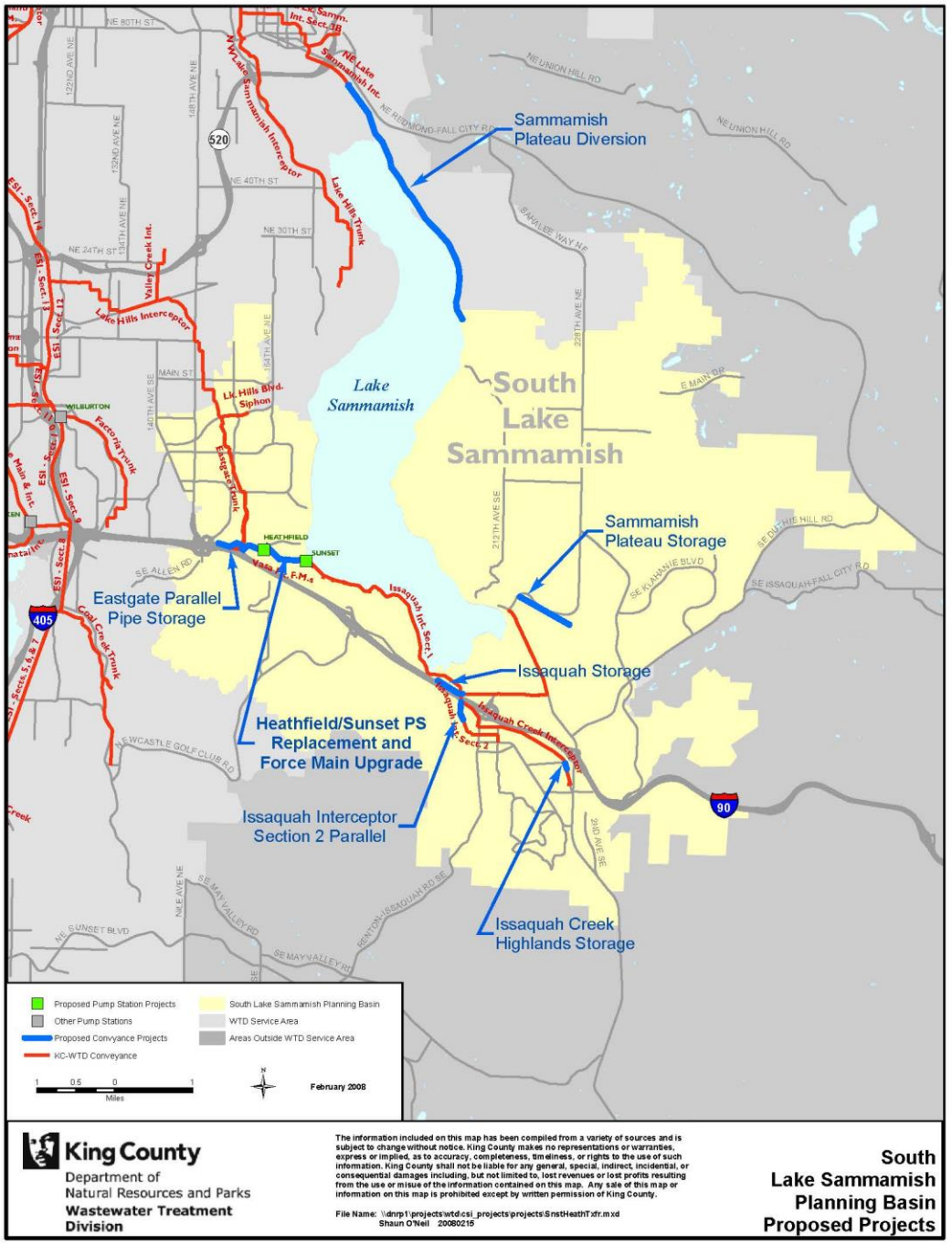
South Lake Sammamish Planning Area Example

- 2007 CSI Program Update
  - 6.7 MG of storage in 3 projects
  - 3.5 mile new pipe for diversion
  - Estimated construction cost $42 M (2006$)



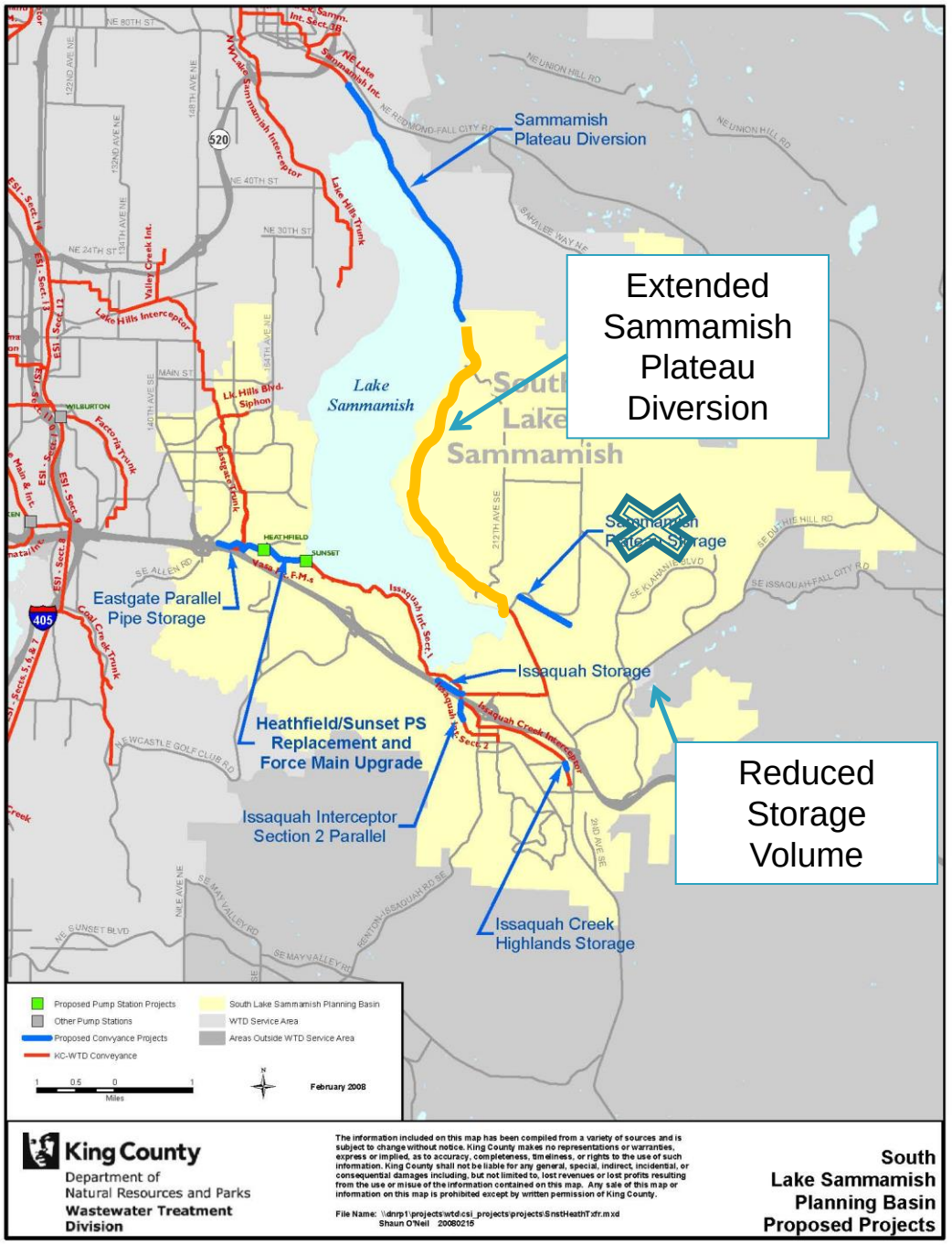
South Lake Sammamish Planning Area Example

- 2017 CSI Program Update – Storage Concept
  - Would now need 28 MG of storage in 2 projects plus 3.5 mile new pipe for diversion
  - Updated estimated construction cost $156M



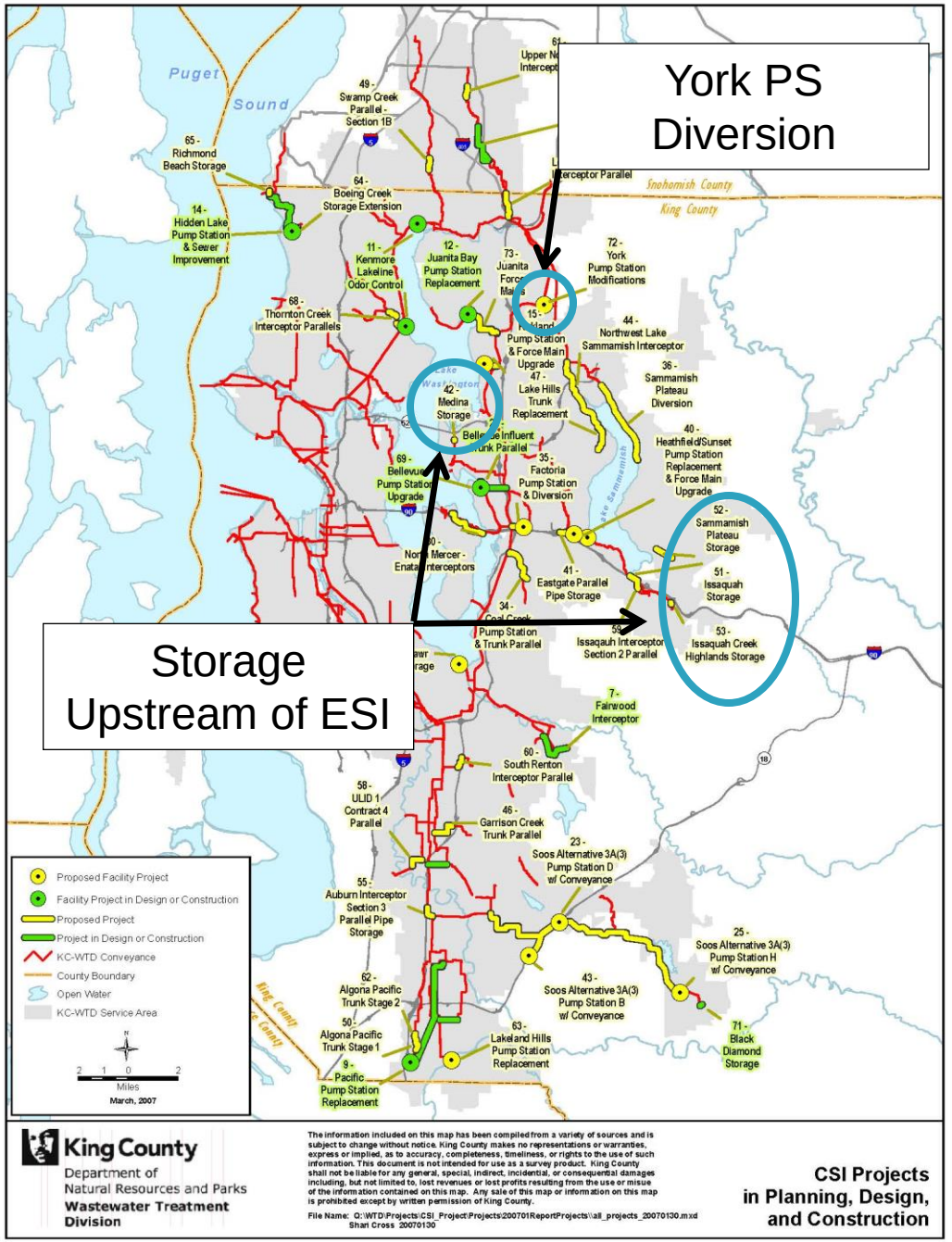
South Lake Sammamish Planning Area Example

- 2017 CSI Program Update – Large Diversion and Storage
  - Recommend diversion with 7 miles of new pipe and new pump station estimated construction cost $130M
  - Small storage in Issaquah TBD



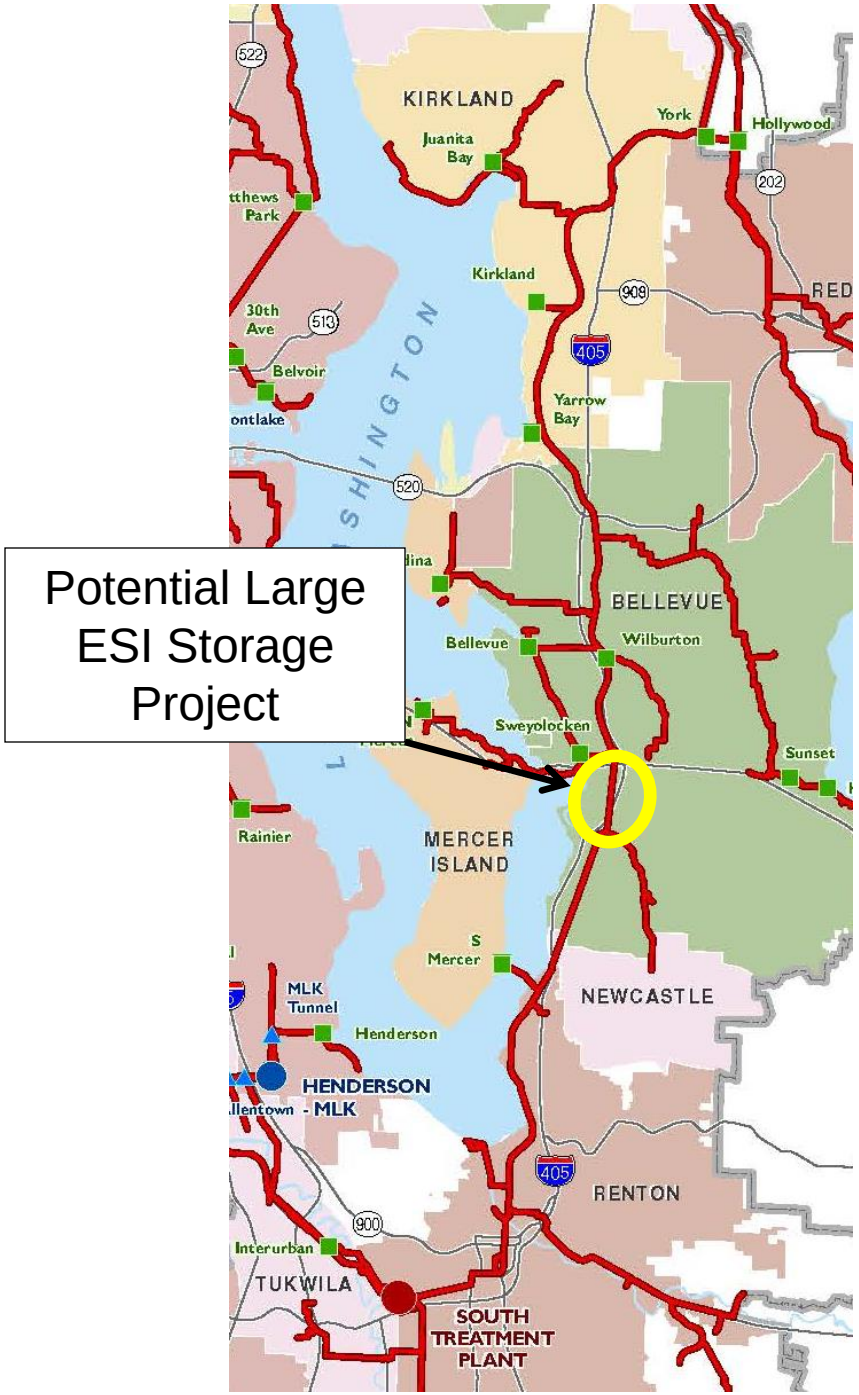
Eastside Interceptor

- 2007 CSI Update
  - Generally lower peak flows
  - Numerous storage projects upstream of ESI to attenuate flows.
  - Diversion at York Pump Station



Potential New ESI Capacity Project

- Higher flows and replacing upstream storage projects with replacements/parallels may result in the need for a large ESI storage project.



Ongoing Conceptual Projects Work

- March-May: Develop conceptual projects to address all identified CSI capacity needs.
- May-July: Refine conceptual projects based on input from WTD workgroups (e.g. operations, asset management, etc.) and MWPAAC E&P.
- August-September: Finalize conceptual projects.
- October- December: Prioritize conceptual projects to address CSI needs and finalize CSI Program Update.

For additional information or questions, please contact:

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