Reclaimed Water – North Seattle Project

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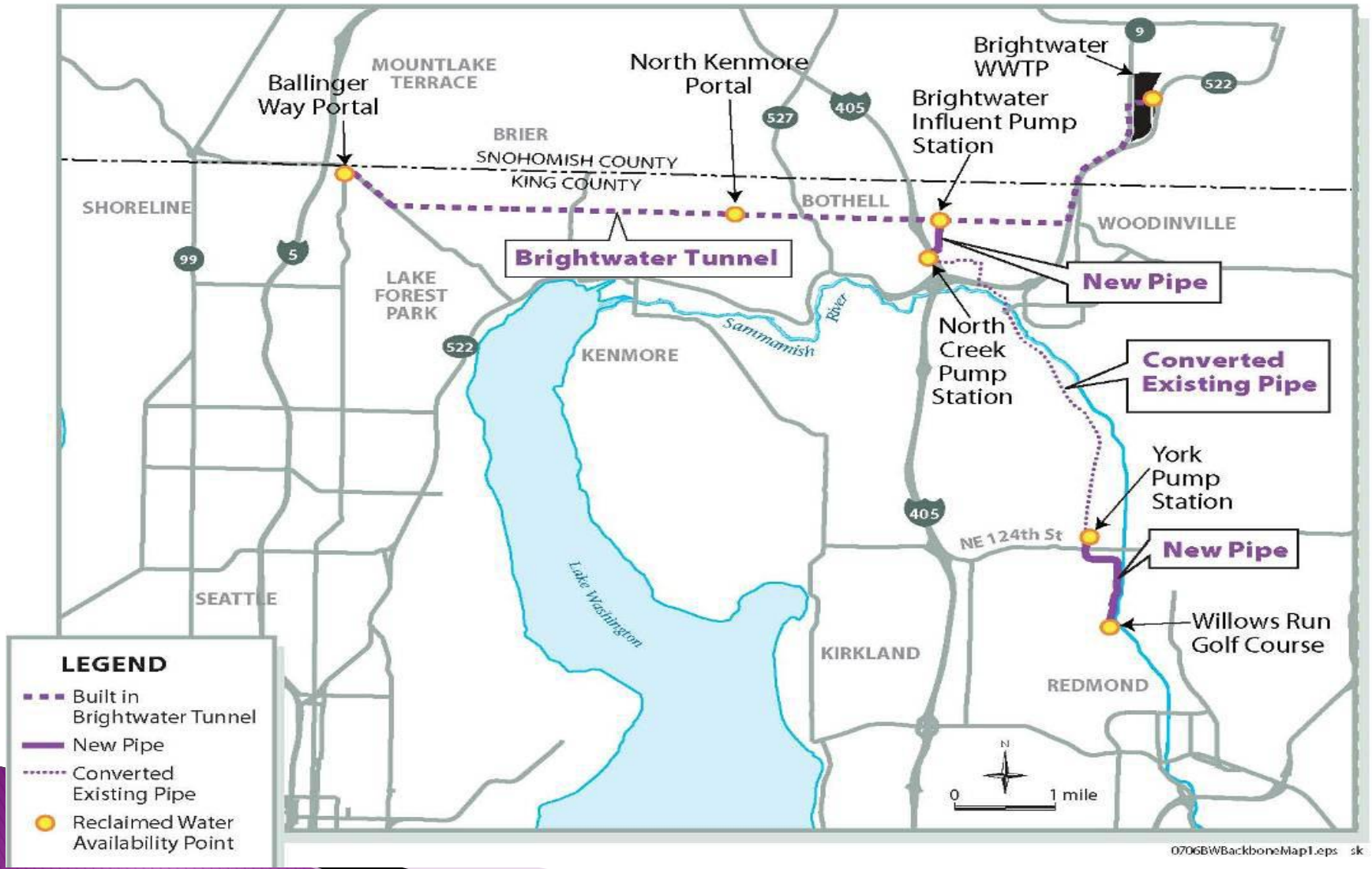
Brightwater Backbone



RESULTS of ANALYSIS

- Proposed North Seattle Reclaimed Water Project would not be a sound investment for the region:
  - high costs
  - low level of benefits
  - availability of much lower cost alternatives for achieving comparable benefits

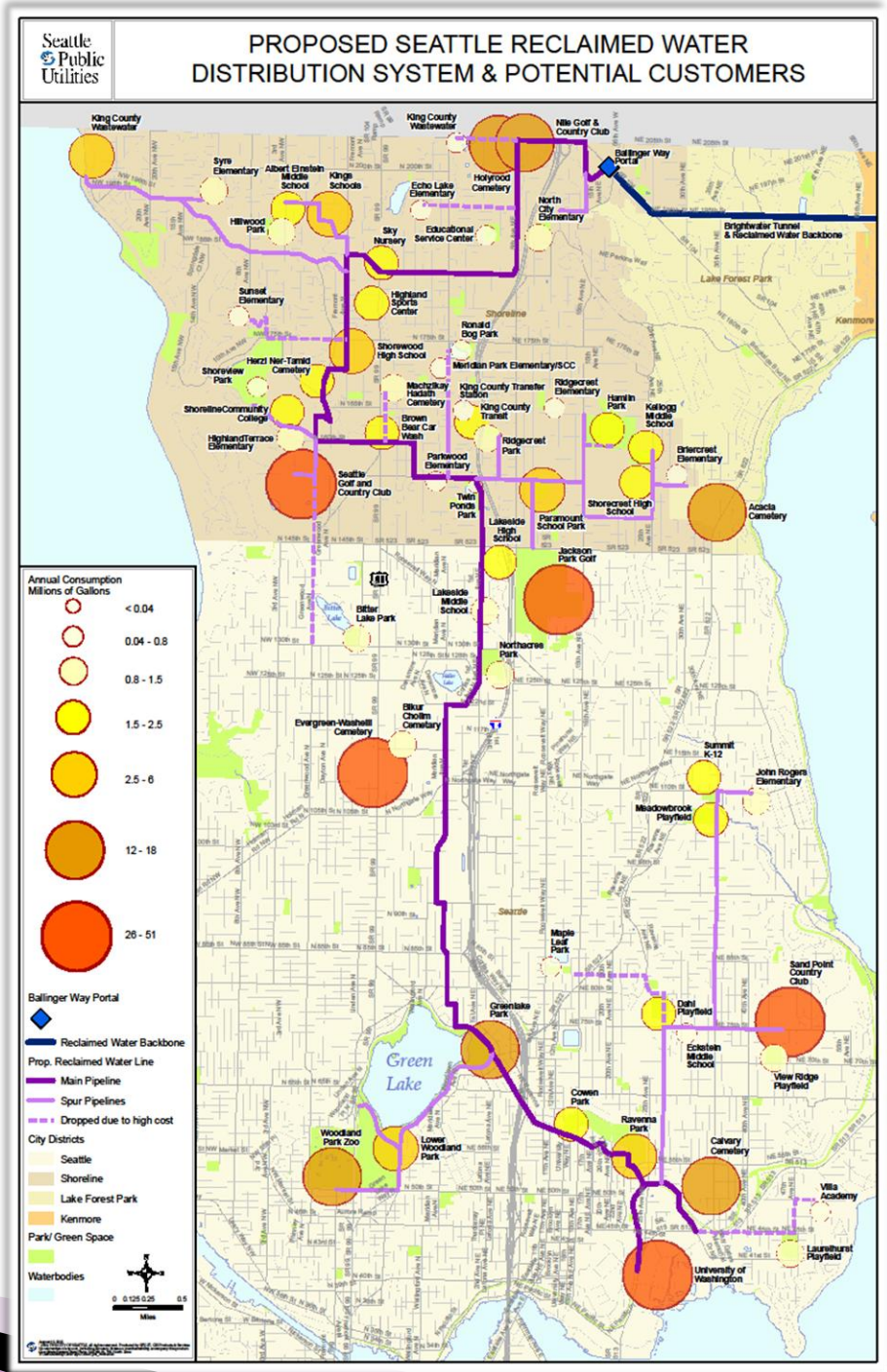
Asset Management Approach

- Analyzed project like any business case
  - Problem statement
  - Triple Bottom Line Analysis
  - Alternatives
  - Sensitivity Analysis
  - Analysis on who benefits and who pays
- Started with the solution and SPU defined the problem
- Attempted to quantify social and environmental benefits, although didn't assign dollar values

Customers- Market Analysis

- Most are irrigators:
  - Golf courses
  - Cemeteries
  - Parks
  - Schools
  - University of Washington
- Non-irrigators:
  - King County wastewater and transit facilities
  - Ice Rink
  - Car Wash

Location of Potential Reclaimed Water Customers



System Configuration

- 50 potential customers with 1.7 mgd of potential use
- 27 miles of pipeline plus pumping facilities

Distribution System Costs

- $87 million initial capital improvements
- $109 million total life-cycle costs

Environmental Benefits

- Water supply/reliability/source watershed
- Local creeks
- Puget Sound

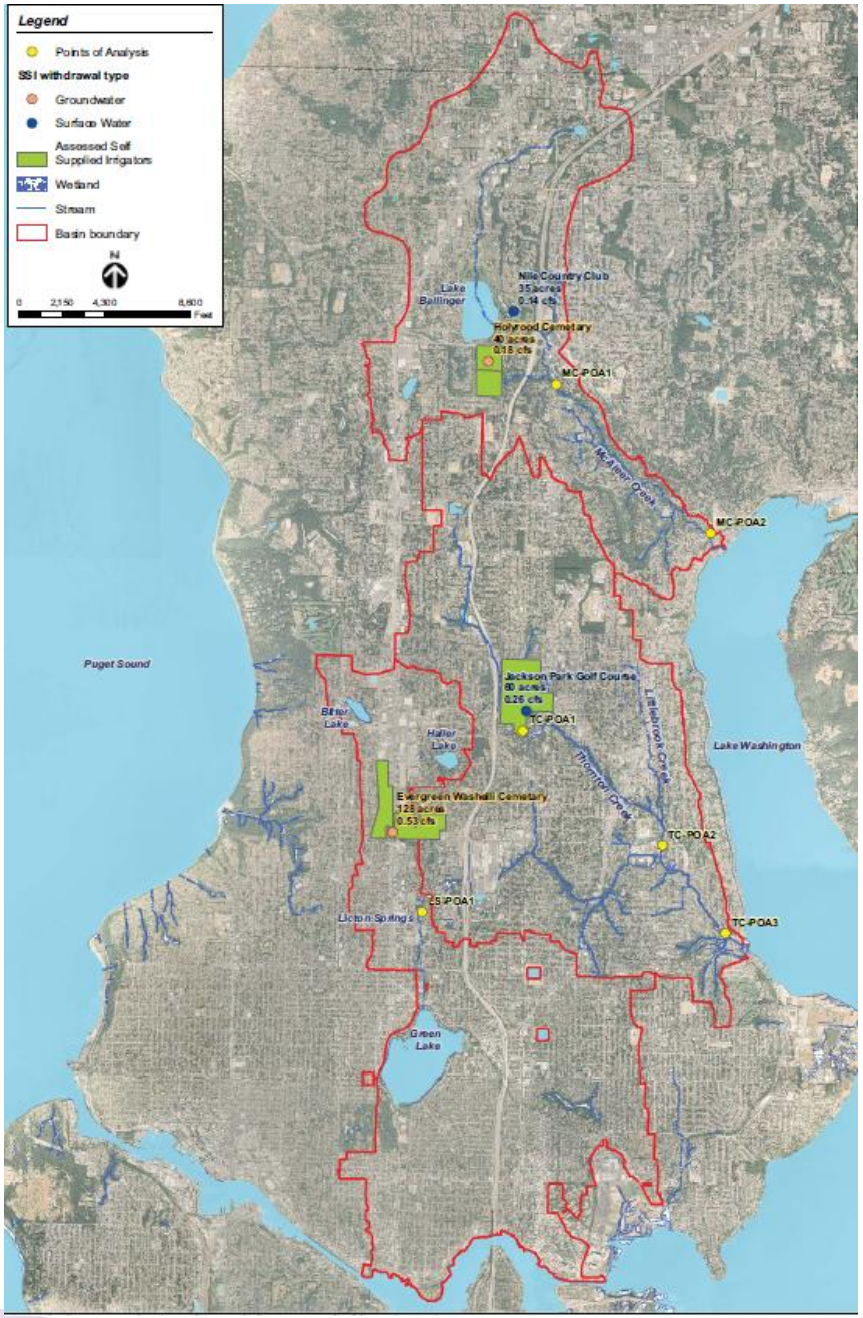
Environmental Benefits- Water Supply/Reliability/ Source Watersheds

- .7 mgd benefit would not add to supply, improve reliability, or increase stream flows in a detectable way.
- Current supply sufficient until 2060
- Most of the potential use is from self-supplied users

Environmental Benefit– Local Creeks

- 7 potential self-supplied customers with about 1mgd estimated use
- Increase summer flows in nearby streams possible, but small effect

Points of Analysis of Self-Supplied Users



Environmental Benefits– Puget Sound

- Generates greatest benefit of project, but still small.
- Keeps over 3 tons of nitrogen out of the Sound each year.
- Equivalent to .04% of the total amount of nitrogen currently discharged from King County's existing treatment plants

Project Alternative

- 3 components generate same benefits:
  - Switch self-supplied irrigators to water from SPU
  - Ramp up SPU's conservation program to offset new demand
  - Install 1 mgd MBR plant at Renton
- Total cost would be $27M

Project Alternative– MBR Plant at Renton

	Reduction of Nitrogen– Metric tons/year	Size of Reduction Relative to N. Seattle Project
N. Seattle Project	3.1	
1 MGD MBR Treatment at South Plant	43	14
15 MGD MBR Treatment at South Plant	651	210

Perspective Analysis

- Examined who benefits and who should pay
- Greatest benefit is to the region, not local or to the user
- SPU ratepayers would likely end up paying larger proportion of project costs than their share of benefits

Conclusions

- Critical to have a refined estimate of potential demand for reclaimed water
- Reclaimed water is made costly by the distribution costs
- Additional treatment at Renton would produce much greater benefit for Puget Sound at significantly less cost