

2009 Regional Water Supply Outlook

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Background

- Organized in 1998 to represent the common interests of water utilities in Snohomish, King and Pierce counties.
- At the time the water utility community was not well positioned to provide a voice on important issues related to water supply and water resource management.
- The Forum provides a place to discuss and develop shared input to State and regional water supply strategies and programs.

Key Issues

- Lack of a consolidated regional demand forecast or assessment of water supply shortfalls.
- State wide challenges to existing and future water rights.
- Water regulations were hindering the ability of utilities to share water supplies.

Members

- Everett
- Seattle
- Tacoma
- Seven Water Utility Associations
- Snohomish County
- King County
- Pierce County



Vision

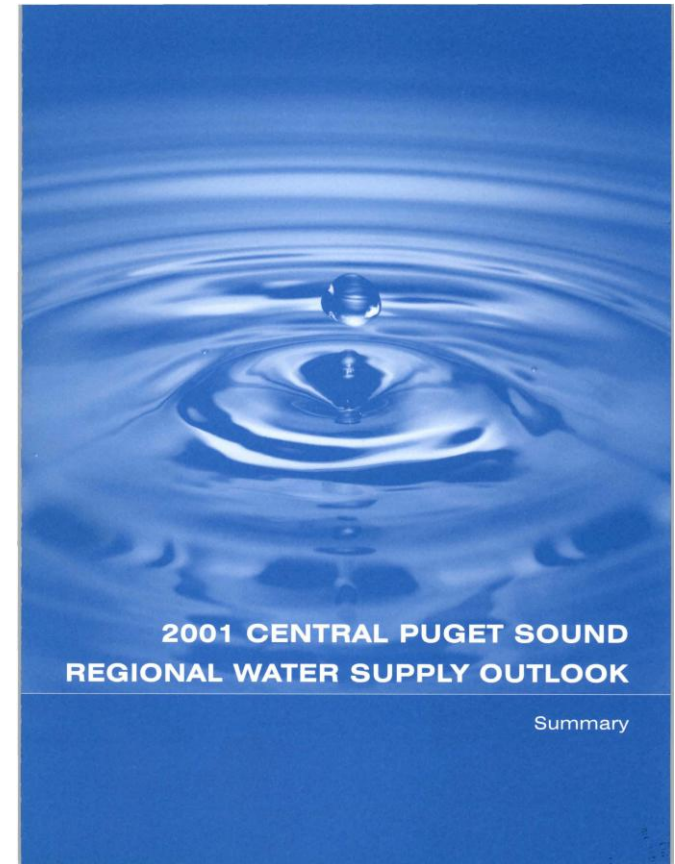
- **The Water Supply Forum provides leadership on current and future regional water supply and related water resource issues in King, Pierce, and Snohomish counties.**

Mission

- **The Water Supply Forum’s mission is to provide a venue for policy discussions on critical issues related to water supply and resource stewardship, while sharing utility perspectives and insights with the public and key leaders throughout the region. The Forum aids members and the public by providing a portal for water supply and related water resource information.**

Purpose

- **The 2001 Regional Water Supply Outlook was developed to provide an assessment of municipal water demand and compare the demand to the available supply using consistent computational approach.**



Challenge

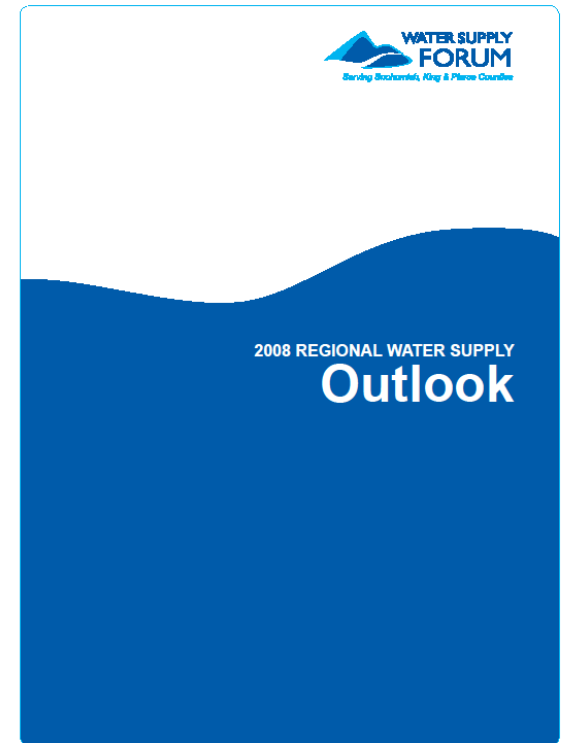
- Individual utilities are responsible for their water supply planning.
 - Source selection
 - Resource management
 - Capital Improvement Program
- How far can a “group” planning effort go without infringing on local decision making?

Outcome

- The Outlook Confirmed that sufficient water was available regionally to meet future needs (50-years), but that some areas of local shortfalls existed.
- The Outlook identified several institutional obstacles to meeting future needs.
- The Outlook confirmed the Forum's commitment to working collaboratively with other water resource stakeholders on a regional water resource plan.

Objectives for the 2009 Outlook

- Update the Regional Demand Forecast.
- Assess available supplies against demands.
- Identify appropriate evaluation criteria for potential future supplies and demonstrate application of the criteria.
- Provide transparency to the planning process.



Timing

- 2001 Outlook assumed a service life of 5 or 6 years.
- King County proposed a multi-issue planning process that included municipal water supply and demand.
- Changes in water use patterns.
- Implications of climate change.

Approach

- Forum took “ownership” of demand forecast and water supply assessment.
- Forum proposed an “engaged” Advisory Committee process to provide transparency.

Engaged Advisory Committee

- Introduction – Provide water supply primer.
- Scope of Work – Help craft the project scope of work.
- Consultant Selection – participation on the selection committee.
- Project Development – follow each step of the project with ample opportunity to raise issues and shape the work.

Demand Forecast Model

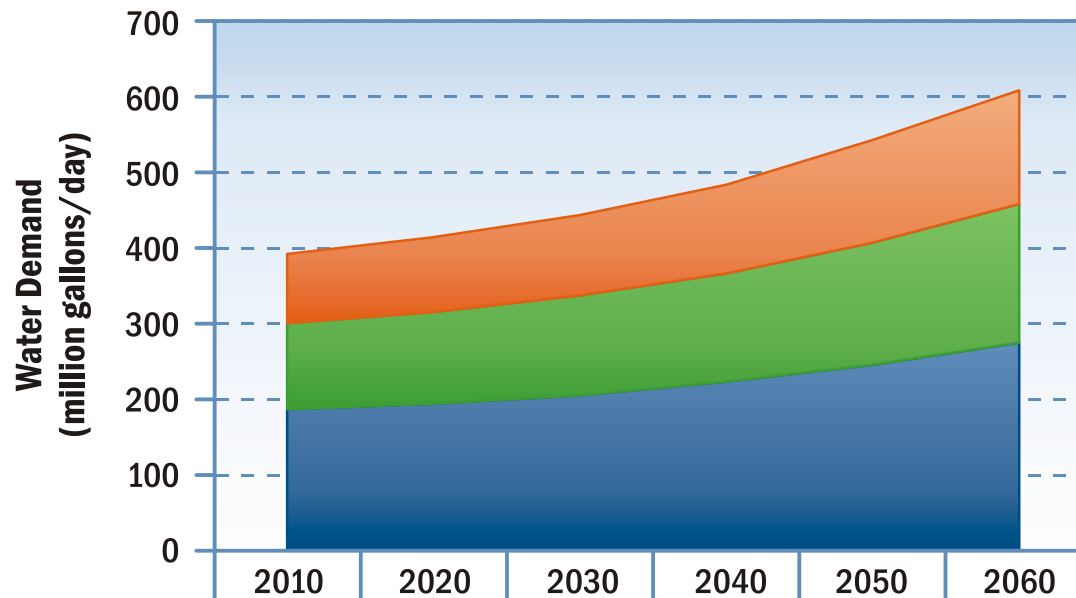
- Regional Model – not utility level model.
- Based on Demographic data – households and employment from regional planning agency.
- Includes temperature and precipitation factors.
- Includes price of water and income factors.

Demand Forecast Findings

- Baseline Demand will increase from 397 mgd in 2005 to 609 mgd in 2060.
- Under high growth demand would be 742 mgd in 2060.
- Under low growth demand would be 502 mgd in 2060.

Demand Forecast Findings

Regional Demand

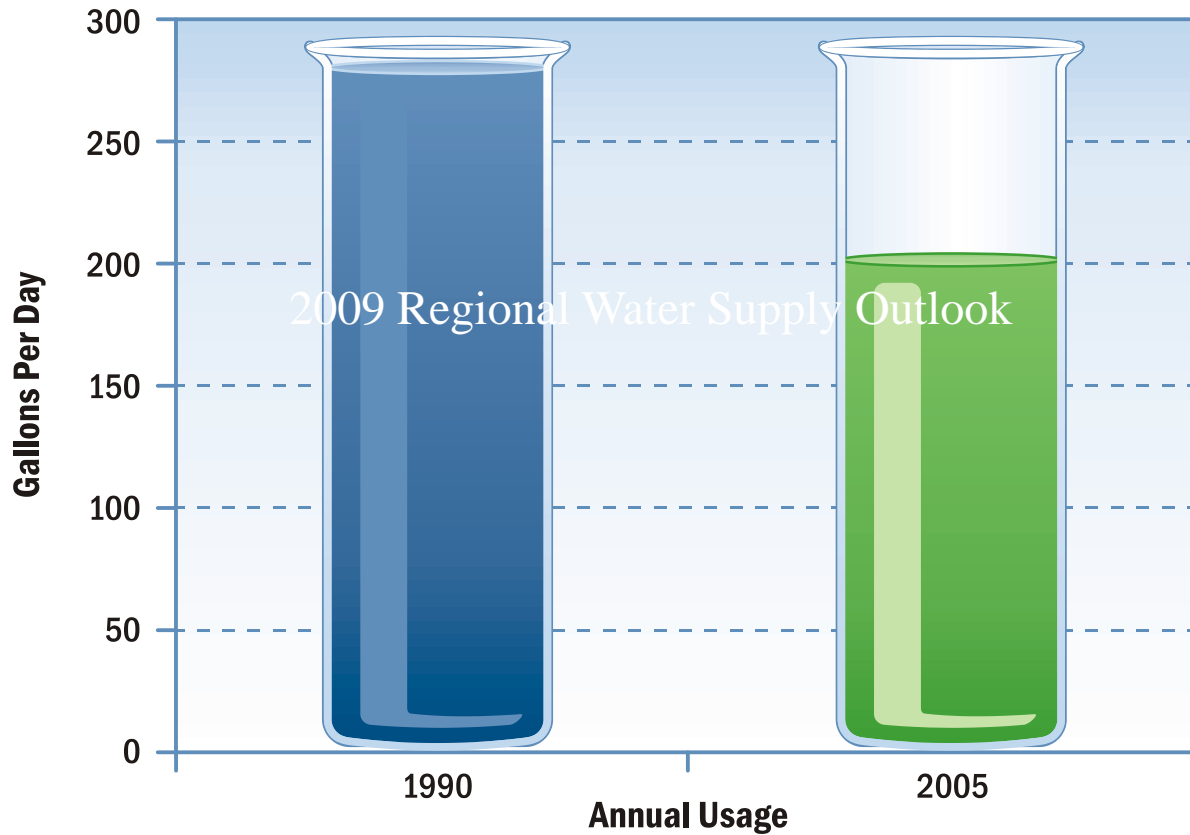


	2010	2020	2030	2040	2050	2060
Snohomish County	92.0	99.5	107.0	118.4	132.8	150.1
Pierce County	113.8	120.6	129.3	144.0	162.7	185.3
King County	186.0	194.5	206.4	223.5	246.3	273.5

Conservation Findings

- Conservation has resulted in less water use in the region in 2005 than was used in 1960 by the region's largest systems (Seattle, Tacoma, and Everett).
- Single family water use has gone from 280 gallons per household per day in 1990 to 200 gallons per household per day in 2005.
- Most efficient utility – Single family water use less than 100 gallons per household per day.

Conservation Findings



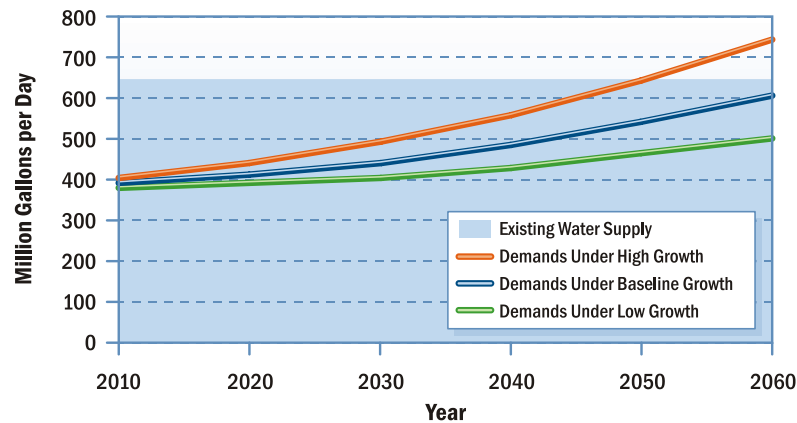
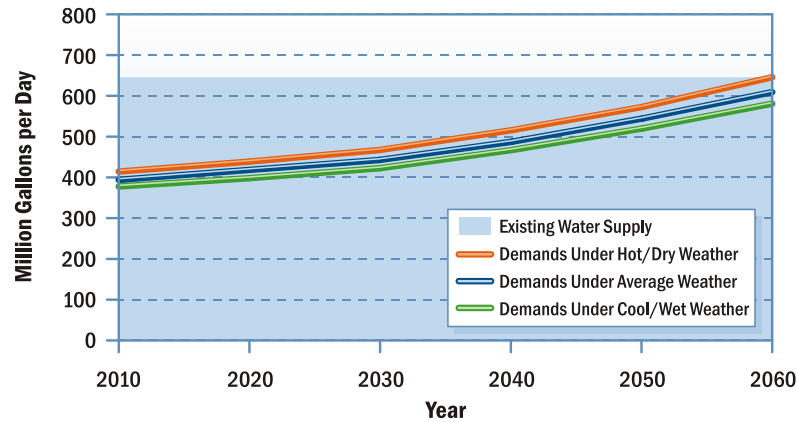
Climate Change Findings

- Climate Change will impact both water demand and surface water supply.
- Demand under the warmest climate change alternative would be 681 mgd in 2060.
- Although the impact of climate change on snow pack will be significant, impact on supply may be in the range of from 4 to 25 percent.

Key Supply Findings

- There is currently sufficient supply to meet the region's needs through 2060 under Baseline Demand conditions.
- There currently is sufficient supply to meet the regions needs through 2050 under the high growth demand forecast.
- There currently is sufficient supply to meet the regions needs through 2060 even under hot/dry weather conditions.

Key Supply Findings



Future Supply Inventory

- 27 Potential future water supplies were identified – over 400 mgd.
- 12 are traditional supplies – surface water supplies, groundwater supplies, or desalination.
- 6 are reclaimed water projects.
- 9 are conservation related “green” projects – low water use landscaping, dual plumbing, sub-metering, etc.

Future Supply Inventory

Supply Category	Number of Options	Range of Yield (mgd)	Range of Unit Cost (\$/mg)
Surface: enhancements to existing reservoirs, or new reservoirs with applicable treatment and conveyance	8	8 to 65	\$50 to \$3,350
Groundwater: new wells or conjunctive use management of surface and groundwater	3	4 to 33	\$1,300 to \$1,500
Desalination: removal of salts and other materials from seawater using advanced treatment	2	10 to 50	\$6,000
Reclaimed Water: Reuse of treated wastewater for landscape irrigation or industrial use	6	0.5 to 1.0	\$2,900 to \$20,300
Green Options: Future conservation or projects that have minimal impacts on the environment	9	0.2 to 12	\$4,000 to \$43,000

mgd = million gallons per day

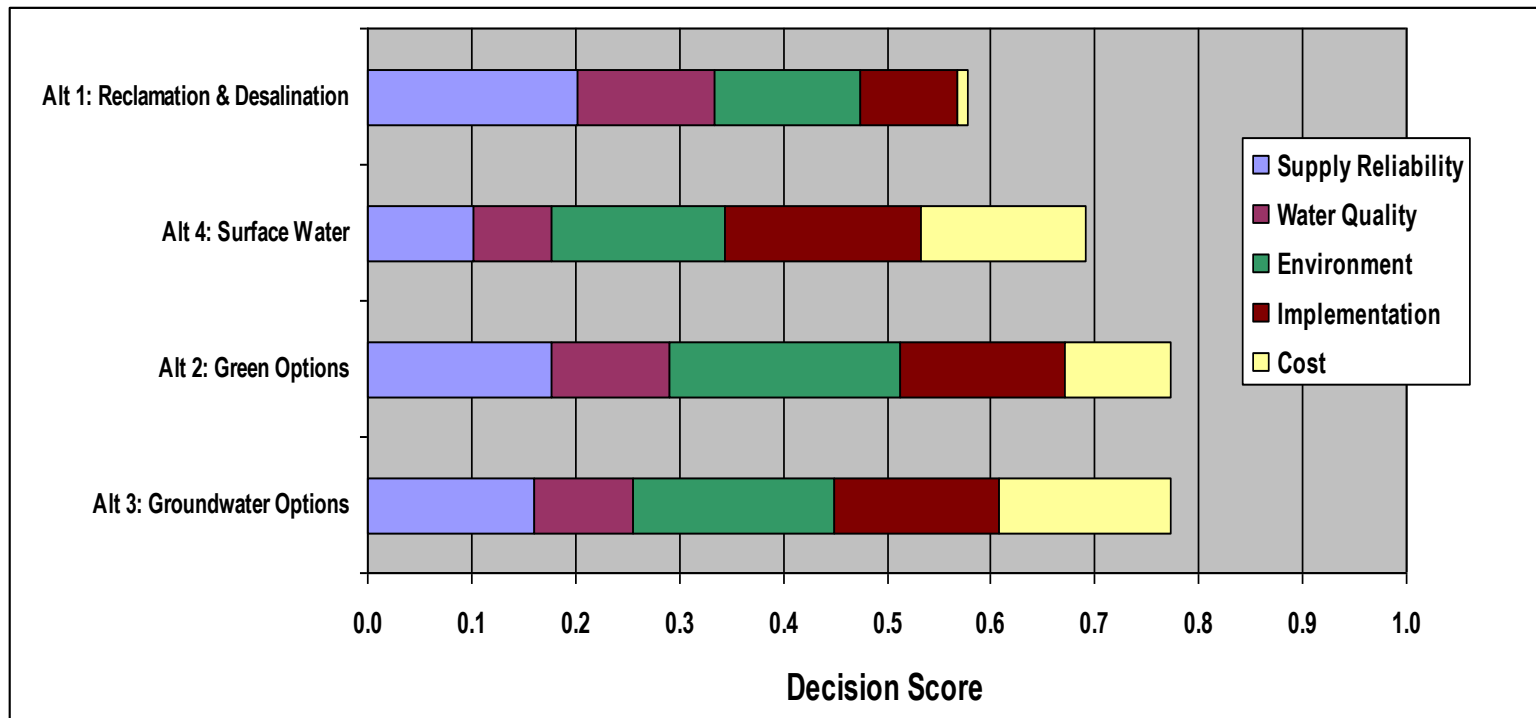
mg = million gallons

Evaluation Criteria

- Supply Reliability
- Water Quality
- Environmental Impacts
- Implementation
- Cost

Criteria Application

- Evaluation Software – Criterium Decision Plus



Key Findings

- **Adequate Existing Water Supply** – through 2050 under all conditions considered
- **Shortages Possible Beyond 2050** - under some conditions
- **Many New Supplies Identified** – more than 400 MGD
- **Adequate Time Available to Make Decisions** – new supplies only needed beyond 2050

Thank You for Your Interest

Questions?