

Oregon Water Resources Department



2008-09 Issue Brief: Oregon Water Supply and Conservation Initiative

The Oregon Water Resources Commission and Water Resources Department have long recognized the need for data to help better understand, manage, and plan for Oregon's water resources. The Oregon Water Supply and Conservation Initiative provides a foundation for in the Department's data gathering process and has four components that were approved by the 2007 Oregon Legislature. All four components are nearing completion. For updates, visit: www.wrd.state.or.us/OWRD/LAW/owsci.shtml.

In addition to data, two important products that will result from this Initiative include the methodology used to collect and process information, and also the database structures into which the Department will place future data.

Component #1: Water Demand Forecast

The 2008 water demand forecasting team included Department staff, and a private sector consortium comprised of HDR Engineering and Cogan Owens and Cogan. The team took a two-tiered approach to demand forecasting, starting with already-existing reports and data (e.g., state population projections and irrigated acreage projections) to broadly characterize what Oregon's future water demands might look like. The project team then "ground-truthed" this data at a more local level using surveys and interviews of large water users (e.g., cities, drinking water districts, irrigation districts, etc.).

Base Scenario. The project team calculated today's total statewide water demand as approximately 9.1 million acre feet, and estimated that in 2050, the total would increase to about 10.3 million acre-feet, based on projected growth in the municipal, domestic, industrial, and agricultural sectors. The greatest increase in the agricultural sector will likely come from Baker, Gilliam, Grant, Harney, Morrow, Sherman, and Umatilla Counties. The greatest increase in the municipal sector will likely come from Clackamas, Deschutes, Josephine, Lincoln, Polk, Washington, and Yamhill Counties. Given the many uncertainties, the results actually show a range of demands, between 9.5 and 11 million acre feet, in what we call the 'base case' scenario.

Additional Scenarios. The project team also ran two additional scenarios, to account for the potential influence from two other significant variables: climate change and water conservation. Under the climate change scenario, the project team divided the state in three "climate zones," and estimated how demand for water might increase in each. Under such a scenario, the total demand statewide increases, ranging between 9.8 and 11.3 million acre-feet per year. Under the conservation scenario (independent of the climate change scenario) the project team assumed a very aggressive overall conservation rate of 25 percent and found total demands reduced to approximately 7.4 to 8.3 million acre-feet. Clearly, such savings would require significant investment, as well as substantial changes in how the public uses water.

On-Line Access. The Water Resources Department is developing a method for users to access the model interactively, by entering their own assumptions and creating new demand forecasts. Users will have the option to experiment with numbers statewide, county-by-county, or basin-by-basin to see what effect differing assumptions could have on the water demand forecast.

Instream Assessments. The project team also conducted an assessment of instream needs for ecological purposes, on an annual volume basis. The team identified approximately 11 million acre-feet of need in the Willamette Basin, between 3 and 4 million acre-feet in the Coastal Basins, and 1 to 4 million acre-feet in the Deschutes, Rogues, Umpqua, Klamath, and Grande Ronde Basins.

Component #2: Inventory of Potential Conservation Projects

The same private contractor and project team also surveyed water users to determine what potential conservation opportunities have been identified in Oregon but not yet pursued because of institutional, regulatory, or other barriers. The purpose of this question was to identify what types of public policies or resources might increase the amount of water conservation in Oregon. More than 96 respondents participated, from the agricultural community (18 respondents), municipalities (79), and other categories (4). Among them, they identified 135 projects—36 agricultural and 96 municipal. Each description included the type of conservation project and its current status, the location of the project, the potential public benefits, potential water savings, potential barriers to implementation, and estimated costs. Again, the project team will compile these results and the Department will display them on an interactive map by county.

A peer review group, comprised of three colleagues from the U.S. Geological Survey, Oregon State University, and Portland Water Bureau, as well as a series of stakeholder meetings and workshops helped the project team develop and revise its methodology for Components #1 and #2.

Component #3: Inventory of Potential Water Storage Sites

Department staff members are constructing an inventory of potential water storage opportunities in Oregon, including both above and below-ground sites in the project. In this first phase, the project team wants to collect as much existing information as possible so that the Department can serve as a clearinghouse for storage information. Whether development of the site was determined to be feasible or not, the Department plans to post this information so that communities can avoid “reinventing the wheel,” in terms of site investigation. This information will also help the state identify and prioritize possible future projects. Again, the project team intends to show results in a map format on the Department’s website.

Below-Ground Storage	Above-Ground Storage
<ul style="list-style-type: none">• 54 aquifers evaluated• Areas with Columbia River Basalt aquifers score highest for their potential to store water.• Other aquifer types with storage potential include volcanoclastic (pumice deposits in the Fort Rock Basin), as well as glacial and fluvial layers (west of Pendleton and throughout southeastern Oregon).• Aquifers with little storage potential include Coast Range marine sediments, Western Cascades volcanics, and Klamath Mountain metamorphics, although there may be local exceptions.	<p>The Department is mapping the location of 1,228 potential above-ground storage sites, based on information from staff, other state, local, and federal agencies, and the general public. Quite a number of existing, published studies identified storage locations. The Department is collecting information on the site characteristics and feasibility of specific projects and then adding more detail such as area/capacity curves, inundation area, and site maps, and also scanning in any supporting documents.</p>

Component #4: Community Planning Grants

The Department awarded grants to 11 communities in April 2008 for use in their water supply planning efforts. These awards currently total \$155,000 and are meant to help communities that are taking a regional approach to meeting their current and future water needs. More than 30 applicants responded, requesting more than \$600,000 in total. The communities receiving grants represent diverse locations in Oregon, as well as a mix of counties, cities, and districts. They represent a wide variety of water supply projects, ranging from water conservation, banking, storage, and transmission, to policy road-maps, instream (environmental) issues, and out-of-stream (municipal and agricultural) demand forecasts. Projects are scheduled for completion in November 2008.