2015 Statewide Long-Term Water Demand Forecast

EXECUTIVE SUMMARY

— DECEMBER 2015 —

OREGON WATER RESOURCES DEPARTMENT

In Partnership with MWH®

BUILDING A BETTER WORLD

OUR MISSION

To serve the public by practicing and promoting responsible water management through two key goals:

To directly address Oregon's water supply needs, and

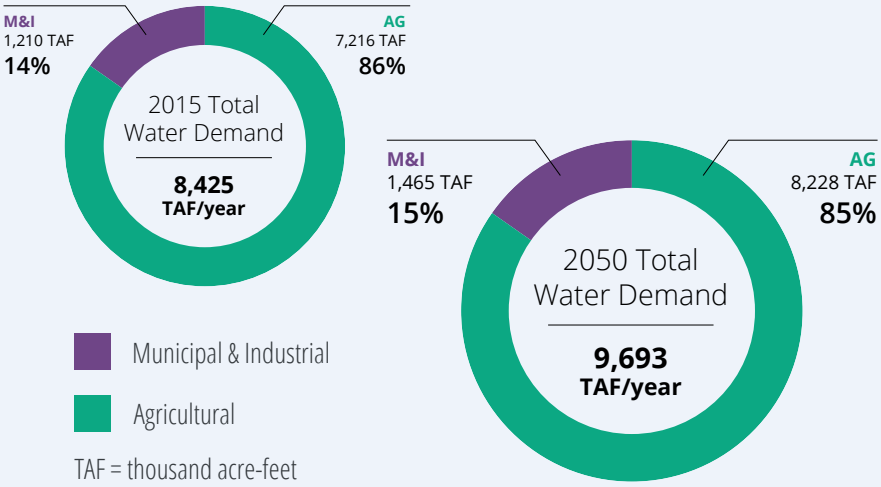
To restore and protect streamflows and watersheds in order to ensure the long-term sustainability of Oregon's ecosystems, economy, and quality of life.

Starting the Discussion

The *2015 Demand Forecast* is a conversation starter, describing potential long-term water needs in an Oregon that may not be able to rely on historic patterns to predict future rainfall and snowpack. Some counties and basins may face important changes by 2050 because of the resulting growth in water demand. The total change in water demand rests on numerous assumptions about the future, assumptions that communities, governments and private partners can address together.

The document builds upon the *2008 Statewide Water Needs Assessment*, which explored future scenarios or pathways to possible conditions, based on certain assumptions. The 2015 studies, scenarios, and assumptions include a projected increase in both population and a longer, warmer growing season, leading to more demand from agricultural, commercial, residential and industrial water users by 2050. Oregon's agricultural sector currently accounts for 85 percent of the state's diverted water, and irrigation needs are projected to increase. If future climate conditions are both hotter and drier, Oregon could be faced with a need for an additional 1.3 million acre feet of water annually, or nearly 424 billion gallons per year.

Possible Trends in Oregon's Water Demands



Municipal & Industrial

Agricultural

TAF = thousand acre-feet
1 TAF/year = 0.89 million gallons per day

BY 2050, OREGON'S STATEWIDE DIVERSION DEMANDS ARE EXPECTED TO GROW BY APPROXIMATELY

1.3 MILLION ACRE-FEET/YEAR

(250 TAF/year from Municipal & Industrial and 1,102 TAF/year from Agricultural)

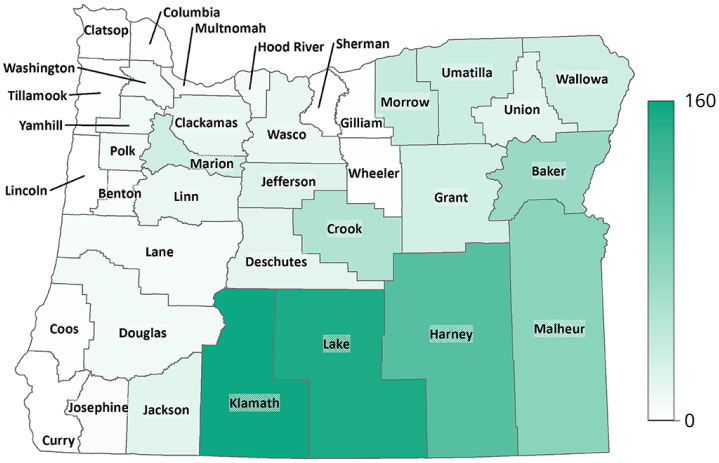
What We Know

Water is key to the health of Oregon's economy, environment, and communities; and to sustaining life itself. To better identify what is ahead in the state's water future, the Department developed the 2015 Statewide Long-Term Water Demand Forecast (*2015 Demand Forecast*), as called for in the *2012 Integrated Water Resources Strategy*. We must plan for our future water needs and this document is an important supporting step.

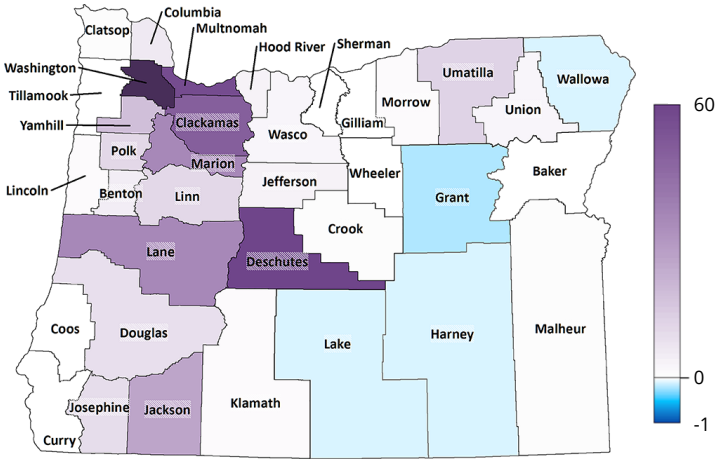
Climate simulations for Oregon project an increase from 1970-1999 to 2041-2070 of average annual temperatures of between 2.0 to 8.5 degrees Fahrenheit. Annual precipitation within the same period is projected to change by -5% to +14%. Summer rainfall is projected by many models to decrease by as much as 34% (*2013 National Climate Assessment*).

Scan this QR code to link to a copy of the *2015 Water Demand Forecast*.

CHANGES TO COME *by 2050*



Change in volume by 2050
(thousand acre-feet)



Change in volume by 2050
(thousand acre-feet)

INCREASES IN AGRICULTURAL DEMANDS

UP TO 9%	UP TO 8.5°F	UP TO 14%
Increase in the total consumption of water by Oregon's crops	Increase in temperature by mid-century	Increase in statewide average irrigation demands

Changes in agricultural water demand are expected from a range of possible changes in the climate that result in: prolonged agricultural growing seasons, increased day-to-day crop water consumption, and a larger annual water demand for sustaining Oregon's current agricultural lands.

CHANGES IN MUNICIPAL & INDUSTRIAL DEMAND

20%	40%	+1.5 GALLONS PER DAY
Projected increase in M&I demands	Projected increase in population statewide (~1.5 million people)	The statewide average M&I water use is expected to increase slightly, from 150.5 to 152 gallons per day, per person.

Shifts in municipal and industrial water demands are expected to echo increases and decreases in each county's population. The areas with the largest predicted increases in population include existing major population centers of the state.

Answering the Challenge of Increased Demand

The Oregon *2012 Integrated Water Resources Strategy* demonstrates the commitment by the Oregon Water Resources Department to public involvement, innovation, planning, and investment. Each of these core values are foundational to Oregon's efforts to assist local and regional communities in prioritizing and developing long-term water supplies.

Understanding Oregon's Water Resources

Collecting and providing crucial monitoring data about groundwater, streamflow, and water needs are complemented by studies and assessments of the resource. Addressing changing conditions such as population and climate are key to helping communities across Oregon prepare to meet future water needs.

Managing Oregon's Water Resources

With five regional offices and 21 watermasters, the Oregon Water Resources Department provides on-the-ground services to commercial, residential and industrial water users. This includes ensuring dam safety, ensuring water rights are enforced for both instream and out-of-stream users, and providing technical assistance to Oregon's communities.

Preparing for the Future

To assist with local discussions and water supply planning, the Oregon Water Resources Department has launched the Water Resources Development Program, providing funding and technical assistance for Place-Based Planning, Feasibility Studies and the implementation of Water Supply Development projects.

For more information about these programs, please see the Department's website or scan the QR code to the right.

Place-Based Planning

Place-based planning is a voluntary, locally initiated and led effort in which a balanced representation of water interests within a basin, watershed or groundwater area work in partnership with the state to: characterize current water resources and issues; understand current and future instream and out-of-stream water needs; identify and prioritize strategic solutions to address those needs; and, develop a placebased integrated water resources plan that informs the state strategy.

Feasibility Studies

Once potential projects are identified, communities often find it difficult to secure funding to assess their viability. This program component addresses that need by providing grant funding to cover 50% of the cost of conducting feasibility studies for potential water conservation, storage and reuse projects. A feasibility study is an assessment of the practicality of a proposed project or plan and can be used to determine if and how a project should proceed to the implementation phase.

Implementation

The Water Supply Development Grants & Loans account provides grants and loans to evaluate, plan and implement instream and out-of-stream water projects that have economic, environmental and social/ cultural benefits. Eligible projects include, but are not limited to projects that: increase water use efficiency; protect or restore stream flows; develop new or expanded storage; allocate federally stored water; and, promote water reuse or conservation.

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