

Imperative 4. Water Conservation, Efficiency and Reuse

Water conservation is the beneficial reduction in water loss, waste and/or use that results in businesses and people changing behaviors by conserving, recycling and re-using water. Water efficiency minimizes the amount of water used to accomplish a function, task, or result, and relies on water rates that reflect the true value of water. Water conservation incorporates water treatment, recycling, and well-engineering products, and fixtures (Source: Water Footprint Calculator³⁵). Indoor water conservation actions may include turning off running water while brushing teeth and operating washing machines and dishwashers only when loads are full. Outdoor water conservation actions may include watering lawns only when necessary, watering lawns during the cool part of the day, mulching trees, and rainwater catchment for non-potable uses. Examples of water efficient actions include using metering faucets and low-flow showerheads and toilets. Due to limited water availability for new out-of-stream uses across the Mid-Coast region as well as the need to restore and protect instream values, water conservation may be one of the most cost-effective ways to meet future water needs of the region while increasing water security and resiliency for all users. The ultimate goal of Imperative 4 is to provide water users with improved access to information, incentives, funding, audits, and resources to help them appreciate the value of water, make conservation a part of everyday life, and to create an ethic that embraces the value of the conservation of water.

Objectives

- Effectively use limited water supplies, especially during times of water shortage. Reduce water use.

Action Details

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
<p>22 Improve understanding of Oregon’s existing water reuse regulations³⁶, and the opportunities and barriers (e.g., health issues) to using recycled and gray water for all allowed uses.</p> <p>Encourage development of comprehensive water reuse programs at appropriate scales.</p>	Local stakeholders evaluate current water reuse regulatory programs and options; identify local issues and barriers, and develop pilot/model projects or programs to assess and implement realistic, safe local or regional options for the use of recycled water.	<p>Lead: Oregon Department of Environmental Quality, Oregon Water Resources Department, Oregon Health Authority, water providers, Lincoln County</p> <p>Participants: Homeowners and businesses, potentially other state agencies, Oregon Department of Fish and Wildlife</p>	PHASE 2	\$150,000	<ul style="list-style-type: none"> Business Oregon Drinking Water Source Protection Fund. OWRD Water Projects Grants and Loans.
<p>23 Investigate and share information on methods of reusing treated sewage plant water and water at water treatment plants (e.g., backwash) and regional industries for potable, agricultural, and industrial uses.</p>	Potable and industrial water users receive information on successfully implemented innovative strategies to meet water needs through reuse. Lower levels of solids are achieved in pre-treatment programs (e.g., side stream; potential energy sources) to maintain infrastructure longer. Reuse of backwash water is encouraged.	<p>Lead: Mid-Coast Water Conservation Consortium, Water providers</p> <p>Participants: OR DEQ, OHA, OWRD, Clean Water Services (Hillsboro, Oregon - cleanwaterservices.org), Water Reuse (https://watereuse.org)</p>	PHASE 1	\$100,000	<ul style="list-style-type: none"> Georgia-Pacific Environment Grant Program. Business Oregon Drinking Water Source Protection Fund. OWRD Water Projects Grants and Loans.
<p>24 a) Incentivize commercial and industrial facilities to conduct water audits, identifying water loss and implementing conservation, recycling, and re-use strategies and technologies.</p> <p>b) Evaluate and potentially revise water pricing strategies commensurate with actual delivery costs as well as other strategies to stimulate water</p>	<p>24a: Commercial and industrial water users complete water audits resulting in improved efficiency and reduced water use. Where possible, these users implement water reuse approaches.</p> <p>24b: Completion of a comprehensive rate study that considers tiered rate methodology tied to achieving the actual value of investments in water conservation, recycling, and re-use compared to the cost of developing new water sources. Assure a fair allocation of costs between residents and businesses. Results of analysis/study are shared with the public.</p>	<p>Lead: Water providers, commercial and industrial water users</p> <p>Participants: Oregon Water Resources Department, Oregon State University</p>	PHASE 1	\$150,000	<ul style="list-style-type: none"> Georgia-Pacific Environment Grant Program. Business Oregon Drinking Water Source Protection Fund. Special Public Works Fund (SPWF). U.S. Economic Development Administration (EDA). U.S. Department of Housing and Urban Development Sustainable Communities Regional Planning Grant.

³⁶ <https://www.oregon.gov/deq/wq/programs/Pages/Water-Reuse.aspx>

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
25	<p>conservation and re-use while raising revenue for water conservation investments (e.g., improved efficiency at commercial facilities).</p> <p>Work with the NRCS to develop a Conservation Implementation Strategy to provide incentives and technical support to agricultural irrigators interested in making improvements, such as increased efficiencies to minimize evaporation losses.</p>	<p>Agricultural irrigators that are able to access incentives and other cost-share opportunities to conserve water, enhance efficiencies, and replace aging systems.</p> <p>Lead: Natural Resources Conservation Service, Lincoln Soil and Water Conservation District, Oregon Department of Agriculture Participants: Agricultural irrigators (engage in development and implementation of strategy), McKenzie River Trust</p>	PHASES 1-2	\$1,500,000	<ul style="list-style-type: none"> USDA NRCS CIG Grant. OWRD Water Projects Grants and Loans. Clean Water State Revolving Fund (CWSRF).³⁷ USDA SEARCH - Special Evaluation Assistance for Rural Communities and Households Program. OHA's Safe Drinking Water Revolving Loan Fund (SDWRLF). Business Oregon Community Development Block Grant (CDBG) Program. USDA Rural Development Water & Waste Disposal Direct Loan & Grant Program. EPA Nonpoint Source Section 319 Grants. USDA Home and Waste Water Loan and Grant Programs (Septic Systems Repair/Replacement). WaterSMART Water and Energy Efficiency Grants.
26	<p>Identify and develop voluntary incentives for water conservation.</p>	<p>Develop and implement incentives (rebates on equipment, tax breaks, monthly water bills, free water-saving items, recognition (awards or labels) for businesses to stimulate voluntary water conservation.</p> <p>Lead: Oregon Health Authority, Water providers Participants: Oregon Water Resources Department, water users, Oregon Department of Environmental Quality, EPA</p>	PHASES 2-3	\$100,000	<ul style="list-style-type: none"> Georgia-Pacific Environment Grant Program.
27	<p>Using the Water Management Economic Assessment Model³⁸, develop a suite of adaptation measures (e.g., storage investments, conservation rebate programs, and new pricing models) to address existing and predicted water shortages in the region.</p>	<p>Updated analysis of supply and demand (use OSU Study) coupled with an alternatives analysis of potential strategies to reduce demand and/or increase supply (conservation, pricing, storage, reuse, etc.). Watershed Management Plans are developed that incorporate water source strategies. Document updated supply and demand projections for individual users and the region as a whole, including an analysis of alternatives and costs/benefits to meet current and future needs.</p> <p>Lead: Oregon State University, Oregon Water Resources Department Participants: Mid-Coast Water Planning Partnership</p>	PHASES 1-2	\$25,000	<ul style="list-style-type: none"> OWRD Feasibility Study Grants. BOR WaterSMART Basin Studies. Business Oregon Drinking Source Protection Fund. Special Public Works Fund (SPWF). Safe Drinking Water Revolving Loan Fund (SDWRLF). EPA Drinking Water State Revolving Fund (DWSRF).
TOTAL				\$2.025M	

Performance Metrics

- Measurable increase in the amount of recycled water derived from domestic and industrial sources for beneficial purposes and gray water used by water consumers in the Mid-Coast region.
- Increase in the availability and use of water conservation incentives among all stakeholders.

³⁷ Will fund irrigation modernization projects for water efficiency if it benefits water quality.

³⁸ (Oregon State University, Oregon Water Resources Department, and MCWPP are developing a Water Management Economic Assessment Model using existing water supply, pricing, and consumption data integrated with climate change projections to simulate the impact of future water shortages and illustrate trade-offs among potential adaptation measures.)

- A culture of water conservation is furthered through developers as well as municipal water providers (planning and public works departments/committees) embracing and incorporating water saving technologies and design strategies.
- By 2023, an RCPP (RCPP – Regional Conservation Partnership Program) is established in the region, incorporating existing global technologies to enhance irrigation efficiencies.

Metric Methodology

- Baseline data is collected via a survey and assessment to determine levels of gray water and recycled water produced and used by consumers, to document existing water conservation incentives, and to assess understanding and implementation of water saving technologies and design strategies by water providers. In 3–5 years, the assessment and survey are repeated to track progress.

Imperative 5. Resilient Water Infrastructure

Sustaining the collection and distribution systems, treatment plants, and other infrastructure that collects, treats, and delivers water requires strategies that address aging infrastructure, support a more resilient infrastructure, and advance training and professional development to ensure the availability of skilled water technicians.

Objectives

- Create more resilient infrastructure.
- Replace and upgrade aging infrastructure with more resilient infrastructure.
- Create redundancy, water system interconnections, and alternative sources of water to ensure access to safe drinking water in case of emergencies.
- Build capacity of partners to advocate for and secure state and federal resources and funding for infrastructure.

Action Details

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources	
28	Support upgrading and maintaining water metering system infrastructure, where possible. Note: Automated read systems (not SMART) can be installed at reduced cost.	Install smart water grid systems in Mid-Coast communities. Achieve water balance in community systems (Stream to Tap).	Lead: Water providers, MCWCC	PHASE 2	\$1,500,000	<ul style="list-style-type: none"> ▪ OWRD Water Projects Grants and Loans. ▪ OHA's Safe Drinking Water Revolving Loan Fund (SDWRLF). ▪ Business Oregon Community Development Block Grant (CDBG) Program. ▪ Business Oregon Special Public Works Fund (SPWF). ▪ Business Oregon Water/Wastewater Funding Program. ▪ Rural Community Assistance Corp. (RCAC) Loan Fund. ▪ USDA Rural Development Water & Waste Disposal Direct Loan & Grant Program. ▪ WaterSMART Water and Energy Efficiency Grants.
29	Use the latest technologies (e.g., In system monitoring and controls, pumping efficiency, automating, and	Isolations are implemented in emergencies.	Lead: Water providers	PHASE 3	\$200,000	<ul style="list-style-type: none"> ▪ OWRD Water Projects Grants and Loans.