



**WATER SUPPLY MANAGEMENT AND CONSERVATION WORK GROUP AGENDA**  
**Tuesday, May 21, 2024 - 1:00 PM**  
**Council Chambers, 169 SW Coast Hwy, Newport, Oregon 97365**

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All public meetings of the City of Newport will be held in the City Council Chambers of the Newport City Hall, 169 SW Coast Highway, Newport. The meeting location is accessible to persons with disabilities. A request for an interpreter, or for other accommodations, should be made at least 48 hours in advance of the meeting to Erik Glover, City Recorder at 541.574.0613, or [e.glover@newportoregon.gov](mailto:e.glover@newportoregon.gov).

All meetings are live-streamed at <https://newportoregon.gov>, and broadcast on Charter Channel 190. Anyone wishing to provide written public comment should send the comment to [publiccomment@newportoregon.gov](mailto:publiccomment@newportoregon.gov). Public comment must be received four hours prior to a scheduled meeting. For example, if a meeting is to be held at 3:00 P.M., the deadline to submit written comment is 11:00 A.M. If a meeting is scheduled to occur before noon, the written comment must be submitted by 5:00 P.M. the previous day. To provide virtual public comment during a city meeting, a request must be made to the meeting staff at least 24 hours prior to the start of the meeting. This provision applies only to public comment and presenters outside the area and/or unable to physically attend an in person meeting.

The agenda may be amended during the meeting to add or delete items, change the order of agenda items, or discuss any other business deemed necessary at the time of the meeting.

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**1. CALL TO ORDER AND ROLL CALL**

**2. DISCUSSION ITEMS**

**2.a Drinking Water Protection Plan Team Meeting 1-2 PM.**

[Newport Risk Prioritization Table 4-30-2024.pdf](#)

- 2.b **Water Supply Management and Conservation Work Group Meeting will be from 2-3 PM, staffed by Suzanne de Szoeki with GSI Water Solutions**
  
- 2.c **Call to Order/Roll Call with Introductions**
  
- 2.d **Approval of the April 16, 2024 Water Supply Conservation and Management Workgroup Minutes**  
[April 16, 2024 WSMCWG\\_Minutes.pdf](#)
  
- 2.e **Discussion of Alignment of Newport Activities with the Mid-Coast Water Planning Partnership's Water Action Plan**  
[MCWPP Water Action Plan alignment\\_05-15-2024.pdf](#)  
[Imperative Tables from Water Action Plan.pdf](#)
  
- 2.f **Discussion of Potential Monthly Meeting Topic Approaches**  
[Newport\\_WG\\_approach outline\\_05-15-2024.pdf](#)

### **3. PUBLIC COMMENT**

### **4. ADJOURNMENT**

## Newport Drinking Water Protection Plan: Risk Prioritization

### Name and Affiliation:

The vulnerability of a drinking water source to contamination may be related to natural conditions as well as the land uses and activities occurring in the watershed. Identifying and prioritizing potential risks will form the foundation for developing strategies to protect drinking water quality.

Risks can be prioritized based on the likelihood of their occurrence and the severity of their impacts to drinking water sources, water quality, and infrastructure. Using a scale of 1-5, please indicate how you would rate these two aspects for each risk below.

Likelihood		Impact	
1	Rare/very unlikely	1	Insignificant
2	Unlikely	2	Minor
3	Possible	3	Moderate
4	Likely	4	Severe
5	Almost certain	5	Catastrophic

The Oregon Department of Environmental Quality (DEQ) has developed guidance on the level of potential risk to water quality from certain land uses and activities. DEQ's ratings are given on a high-medium-low scale and do not separate likelihood versus impact. Where applicable, these ratings have been included in the tables below for your reference (e.g., DEQ = medium). Local watershed conditions may make these risks more or less serious for Newport's drinking water watersheds than the standard ratings.

For the Siletz River watershed, DEQ's ratings have also been included where applicable. In addition, the ratings developed by the City of Toledo Drinking Water Protection Plan Team have been included for your reference along with their likelihood and impact ratings. The City of Toledo operates an intake on the Siletz River near the City of Newport's intake.

Risks to Big Creek watershed

Risk Category	Risk	Description	Likelihood	Impact
Natural Hazards	Highly Erodible Soils/Landslides (SWA)	Highly erodible soils may contribute sediment at a higher rate to the water source, increasing turbidity (78% of stream miles in Big Creek watershed are in areas with highly erodible soils). However, the City has measured turbidity at less than 2 NTU most of the time. Landslide deposits are mapped near the intake.	DEQ = high	
	Drought and Low Streamflows	Lower flows may result in water shortages or need for conservation measures to ensure that available water supply can meet demands. Low flows may also lead to water quality issues such as increased stream temperatures, decreased dissolved oxygen, and increased concentration of pollutants, and they can promote increased algae and bacterial growth. Projected decreased rainfall in summer due to climate change could decrease streamflow. Projected increases in temperature are likely to increase water demand, exacerbating any water shortages that arise.		
	Earthquakes	An earthquake could damage water infrastructure or could trigger landslides and erosion that could impact infrastructure and waterways. The City's 2021 Risk and Resilience Assessment found that earthquakes present a significant risk to water infrastructure and recommended measures to improve seismic resilience.		
	Tsunamis	A tsunami could cause water to back up Big Creek, which could damage water infrastructure, inundate the intake with		

Risk Category	Risk	Description	Likelihood	Impact
		seawater, and convey pollutants, sediment, and debris to the water source.		
	Severe Storms and Flooding	Severe storms, including ice storms, may damage drinking water infrastructure and cause rapid runoff or flooding that increases erosion, sedimentation, and stream turbidity. This may be a particular concern in combination with other risks, such as areas prone to landslides, recent timber harvest, or burned areas. Projected increased winter rainfall due to climate change could increase runoff and streamflow. The City has an emergency power source (90-100 hours of power) in place in case of loss of electricity during severe storms.		
	Wildfire	A forest fire in the basin could remove vegetation and damage soils, thereby increasing runoff and erosion and decreasing soil water infiltration and retention. Firefighting chemicals and fire retardant could potentially impact water quality. Toxic substances may be released from burning buildings, appliances, vehicles, plastics, and stored hazardous materials. Increases in the number of hot, dry days due to climate change may increase wildfire risk in the watershed. The City is applying for funding for forest management to reduce wildfire risk in the watershed. The City has an emergency power source (90-100 hours of power) in place in case of loss of electricity during wildfires.		
	Algal blooms	Excessive levels of nutrients, such as nitrogen and phosphorus, entering the reservoirs can cause an overgrowth of algae and cyanobacteria. When the algae die, dissolved		

## Big Creek Watershed

Risk Category	Risk	Description	Likelihood	Impact
		oxygen levels in the water drop as it decomposes, killing aquatic life. Cyanobacteria can release toxic chemicals that contaminate drinking water.		
	High total organic carbon (TOC)	Decaying organic matter in the reservoirs can lead to high TOC, which was observed during one summer. Organic loading in the reservoir caused fouling, but the cause was not identified.		
	Aquatic invasive species	Aquatic invasive species, such as zebra mussels, New Zealand mud snails, and quagga mussels, can clog pumps and other infrastructure. Aquatic invasive plant life can clog pumps and intakes, alter nutrient cycling leading to algal blooms, and affect temperature, pH, and dissolved oxygen.		
Forestry	Clearcuts (SWA)	Clearcutting may increase erosion, resulting in increased runoff and creek turbidity.	DEQ = high	
	Non-clearcut logging and thinning	Non-clearcut logging may increase erosion, resulting in increased runoff and creek turbidity, although likely not to the same extent as clearcutting.	DEQ = high	
	Chemical applications	Over-application or improper handling of pesticides and herbicides may contaminate drinking water sources.		
	Access roads (SWA)	Road building, maintenance, and usage may increase erosion and stream turbidity; vehicle usage increases the risk of leaks or spills of petroleum products or other hazardous materials.	DEQ = high	
	Riparian impacts	Impacts to the area around the creeks, such as soil disturbance or damage to vegetation, can increase erosion resulting in increased runoff and creek turbidity.		

## Big Creek Watershed

Risk Category	Risk	Description	Likelihood	Impact
Rural Residential	Rural homesteads (property management and future development) (SWA)	New construction, including vegetation removal and grading, must be managed to prevent erosion and sedimentation of waterways. Overuse or improper disposal of household and landscaping chemicals may allow contaminants to enter stormwater runoff.	DEQ = high	
	Residential septic systems (SWA)	Improper design, installation, or maintenance of septic systems may lead to a septic system failure that impacts drinking water. The cumulative effects of multiple septic systems in the area could impact water quality through potential discharge to shallow sediments adjacent to the creek or reservoirs. Existing rural homes with septic systems are located northwest of the intake.	DEQ = low	
	Domestic wells (SWA)	Improperly constructed or abandoned wells may transfer contaminants to the aquifer where groundwater and surface water interactions can occur. Existing rural homes with domestic wells are located northwest of the intake.	DEQ = medium	
Municipal	Aging infrastructure	Aging infrastructure may impact the ability to divert, store, and distribute water. Leaks may unnecessarily increase the demand for water diversion. The City is planning a dam replacement project due to the risk of dam failure during an earthquake.		
	Vandalism, sabotage, and cybersecurity concerns	Deliberate damage to water infrastructure may impact water quality and the ability to divert, store, and distribute water. The City's 2021 Risk and Resilience Assessment noted that sabotage and accidental or intentional contamination could present significant risk to the water system.		

## Big Creek Watershed

Risk Category	Risk	Description	Likelihood	Impact
Transportation	Roads	New access roads may need to be constructed for the City's planned dam replacement. Road building, maintenance, and usage may increase erosion and stream turbidity; vehicle usage increases the risk of leaks or spills of petroleum products or other hazardous materials.		
Recreation	Recreational use of Big Creek Reservoirs (SWA)	Recreational visits to the reservoirs for fishing, picnics, and other activities present opportunities for contamination through littering, leaks from vehicles, or deliberate vandalism.	DEQ = medium	
Industrial	Sand and gravel mine (closed) (SWA)	Leaks from heavy equipment and improper handling of mining wastes may contaminate drinking water sources. Land disturbance may increase erosion and contribute to sedimentation and high turbidity in streams.	DEQ = high	

(SWA) = Risk identified in the source water assessment

Other potential risks have been identified based on Drinking Water Protection Plans developed by other MidCoast communities.



Risks to Siletz River watershed

Risk Category	Risk	Description	Likelihood	Impact
	Highly Erodible Soils/Landslides (SWA)	Highly erodible soils may contribute sediment at a higher rate to the water source, increasing turbidity (34% of stream miles in the Siletz River watershed are in areas with highly erodible soils). Small landslide deposits are mapped throughout the source area. A debris torrent occurred in the upper watershed on Bureau of Land Management property during the past winter. Winter storms increase turbidity to higher levels in the Siletz River than in Big Creek, so the City stops diverting water from the Siletz River seasonally as needed.	DEQ = high	
Natural Hazards	Drought and Low Streamflows	Lower flows may result in water shortages or need for conservation measures to ensure that available water supply can meet demands. Low flows may also lead to water quality issues such as increased stream temperatures, decreased dissolved oxygen, and increased concentration of pollutants, and they can promote increased algae and bacterial growth. Projected decreased rainfall in summer due to climate change could decrease streamflow. Projected increases in temperature are likely to increase water demand, exacerbating any water shortages that arise.	Toledo = high (5, 5)	
	Earthquakes	An earthquake could damage water infrastructure or could trigger landslides and erosion that could impact infrastructure and waterways. The City's 2021 Risk and Resilience Assessment found that earthquakes present a significant risk to water infrastructure and recommended measures to improve seismic resilience.	Toledo = high (3, 5)	

## Siletz River Watershed

Risk Category	Risk	Description	Likelihood	Impact
	Severe Storms and Flooding	Severe storms, including ice storms, may damage drinking water infrastructure and cause rapid runoff or flooding that increases erosion, sedimentation, and stream turbidity. This may be a particular concern in combination with other risks, such as areas prone to landslides, recent timber harvest, or burned areas. Projected increased winter rainfall due to climate change could increase runoff and streamflow.	Toledo = high (5, 3)	
	Wildfire	A forest fire in the basin could remove vegetation and damage soils, thereby increasing runoff and erosion and decreasing soil water infiltration and retention. Firefighting chemicals could potentially impact water quality. Toxic substances may be released from burning buildings, appliances, vehicles, plastics, and stored hazardous materials. Increases in the number of hot, dry days due to climate change may increase wildfire risk in the watershed.	Toledo = medium (2, 5)	
Forestry	Clearcuts (SWA)	Clearcutting may increase erosion, resulting in increased runoff and creek turbidity.	DEQ = high Toledo = high (5, 3)	
	Non-clearcut logging and thinning	Non-clearcut logging may increase erosion, resulting in increased runoff and creek turbidity, although likely not to the same extent as clearcutting.	DEQ = high Toledo = medium (5, 2)	
	Chemical applications (SWA)	Over-application or improper handling of pesticides and herbicides may contaminate drinking water sources. Environmental conditions can affect the potential impact on water quality of pesticides (e.g., steep slopes, limited vegetation, and weather conditions).	DEQ = high Toledo = low (2, 1)	

## Siletz River Watershed

Risk Category	Risk	Description	Likelihood	Impact
	Access roads (SWA)	Road building, maintenance, and usage may increase erosion and stream turbidity; vehicle usage increases the risk of leaks or spills of petroleum products or other hazardous materials.	DEQ = high Toledo = medium (3, 4)	
	Riparian impacts	Impacts to the area around the creeks, such as soil disturbance or damage to vegetation, can increase erosion resulting in increased runoff and stream turbidity.	Toledo = medium (3, 2)	
	Rural homesteads (property management and future development) (SWA)	Existing rural homesteads are located along Logsdan Road. New construction, including vegetation removal and grading, must be managed to prevent erosion and sedimentation of waterways. Overuse or improper disposal of household and landscaping chemicals may allow contaminants to enter stormwater runoff. Impervious surfaces can increase runoff of contaminants.	DEQ = high Toledo = high (4, 4)	
Rural Residential	Residential septic systems (SWA)	Improper design, installation, or maintenance of septic systems may lead to a septic system failure that impacts drinking water. The cumulative effects of multiple septic systems in the area could impact water quality through potential discharge to shallow sediments adjacent to the river. Existing rural homesteads with septic systems are located along Logsdan Road.	DEQ = low Toledo = low (4, 1)	
	Domestic wells (SWA)	Improperly constructed or abandoned wells may transfer contaminants to the aquifer where groundwater and surface water interactions can occur. Existing rural homesteads with domestic wells are located along Logsdan Road.	DEQ = medium	

## Siletz River Watershed

Risk Category	Risk	Description	Likelihood	Impact
Municipal	Aging infrastructure	Aging infrastructure may impact the ability to divert, store, and distribute water. Leaks may unnecessarily increase the demand for water diversion.		
	Vandalism, sabotage, and cybersecurity concerns	Deliberate damage to water infrastructure may impact water quality and the ability to divert, store, and distribute water. The City's 2021 Risk and Resilience Assessment noted that sabotage and accidental or intentional contamination could present significant risk to the water system.		
	Stormwater (SWA)	Stormwater from developed areas may transport pollutants to source water areas, including pesticides, herbicides, fertilizers, and other landscaping chemicals; grease, oil, antifreeze, and heavy metals from cars; and other contaminants such as trash and pet waste.	DEQ = high Toledo = medium (3, 2)	
	Land application sites (SWA)	Sludge and wastewater must be managed properly to avoid contamination.	DEQ = high Toledo = high (3, 5)	
	Cemeteries (SWA)	A cemetery is located northeast of the intake. Leachate from embalming fluids and decomposition by-products is more common from cemeteries developed prior to 1945.	DEQ = low	
	Sewer lines (SWA)	Sewer lines in close proximity to the intake must be properly maintained to prevent leaks and impacts to drinking water.	DEQ = medium	
	Medical offices (SWA)	Spills, leaks, or improper handling of x-ray, biological, chemical, and radioactive wastes and other materials during transportation, use, storage and disposal may impact the drinking water supply.	DEQ = low	

## Siletz River Watershed

Risk Category	Risk	Description	Likelihood	Impact
Transportation	Roads and highways (SWA)	Road building, maintenance, and usage may increase erosion and stream turbidity depending on siting and construction. Undersized and failing culverts increase the likelihood of sedimentation. Vehicle usage increases the risk of leaks or spills of petroleum products or any potentially hazardous materials being transported. Roadside vegetation management may include the use of herbicides.	DEQ = high Toledo = medium (3, 4)	
	Stream crossings (SWA)	Vehicles may deposit contaminants, such as metals and oils/greases, which may then enter the water via stormwater runoff or deposition. Spills or leaks at stream crossings are more likely to allow contaminants to enter waterways.	DEQ = high Toledo = medium (3, 4)	
	Gasoline stations (SWA)	Spills, leaks, or improper handling of fuels and other petroleum products may reach the drinking water supply.	DEQ = medium	
Recreation	Recreational use of Siletz River (SWA)	Recreational visits to the parks and the Siletz River for hiking, fishing, swimming, and other activities present opportunities for contamination through littering, leaks from vehicles, or improper disposal of human waste. Water quality may be affected by chipping paint or leaks of gasoline and oil from motorized boats.	DEQ = medium Toledo = low (2, 1)	
Agriculture	Grazing animals (SWA)	Livestock may contribute to erosion of streambanks and sedimentation of streams by reducing riparian vegetation. Water contamination could occur from improper storage and management of animal wastes.	DEQ = high Toledo = medium (4, 2)	
	Non-irrigated crops (SWA)	Improper handling or over-application of pesticides and herbicides can contribute to	DEQ = low Toledo = low (2, 1)	

## Siletz River Watershed

Risk Category	Risk	Description	Likelihood	Impact
		contamination of waterways. Fertilizer containing nutrients such as nitrates, phosphates, and potassium can affect the water source if over-applied or improperly handled and stored.		
Industrial	Mining (active and inactive – sand and gravel; basalt) (SWA)	Leaks from heavy equipment and improper handling of mining wastes may contaminate drinking water sources. Land disturbance may increase erosion and contribute to sedimentation and high turbidity in streams.	DEQ = high Toledo = low (2, 1)	
	Known contaminated sites (SWA)	Several sites in the upper watershed are inactive but are recognized by DEQ as needing further action to remediate past industrial uses. These sites include the Boise Cascade Pigeon Creek site, Boise Cascade Valsetz site (former Valsetz Lake), and FAA Radar Facility at Laurel Mountain.	DEQ = high	
	Wood/pulp mill sites (SWA)	Proper handling of chemicals is needed to prevent spills or leaks that could impact water sources.	DEQ = high Toledo = medium (3, 2)	

(SWA) = Risk identified in the source water assessment

Other potential risks have been identified based on Drinking Water Protection Plans developed by other MidCoast communities.

**City of Newport  
Water Supply Management and Conservation Work Group Notes  
April 16, 2024**

<b>LOCATION:</b> CITY COUNCIL CHAMBERS, NEWPORT CITY HALL 169 SW COAST HIGHWAY NEWPORT	<b>Time End:</b> 2:57 P.M.
<b>Time Start:</b> 1:05 P.M.	

**ATTENDANCE LOG/ROLLCALL**

<b>COUNCIL/BOARD MEMBER</b>	<b>STAFF</b>
Jay Fineman	Spencer Nebel, City Manager
Tony Bixler	Jeanne Tejada, Deputy City Recorder
Kevin Shreeve	Steve Stewart, Water Treatment Plant Supervisor
John Moody	
Jason Pond	
Suzanne de Szoeki (GSI Water Solutions), Heath Curtis (Hampton Lundberg a landowner), Leah Cogan (GSI), Matt Thomas (ODF),	Attending Via Zoom: Mike Broili, Baxter Call (State Regulator for Lincoln County), Doug Wiggins (City of Toledo City Manager), Jerry Workman (Area Manager for Wayerhouser Company), Kathy Redwine, Douglas Fitting (Hydrologist with Salem Bureau of Land Management), TiAnne Rios (DW), Alan Fujishin

<b>CALL TO ORDER AND ROLL CALL</b>	Nebel called the meeting to order. Introductions were made.
<b>DISCUSSION ITEMS</b>	
Drinking Water Protection Plan Team Meeting 1-2 PM.	Suzanne de Szoeki, with GSI Water Solutions, conducted this portion of the meeting.
<b>ADJOURN</b>	<b>2:02 PM.</b>
<b>Water Supply Management and Conservation Work Group Meeting will be from 2-3 PM, staffed by Suzanne de Szoeki with GSI Water Solutions Start Time:</b>	<b>2:04 PM.</b>
Call to Order/Roll Call with Introductions	Water Supply Management and Conservation Work Group was called to order by Nebel. Introductions were made.
Staff Report	Tejada read the staff report.
Work Group Objectives Review	The meeting was turned over to de Szoeki with GSI. She introduced Tim, who is online assisting her. De Szoeki shared a power point. She described the responsibilities for those in the work group as being to collect and evaluate information and then provide recommendations.
Discussion of Work Group activities to Date	De Szoeki mentioned that they have not had a lot of time to “dive in” yet.





## Alignment with Mid-Coast Water Action Plan

The Mid-Coast Water Planning Partnership developed a place-based integrated water resources plan that was approved by the Oregon Water Resources Commission in 2022. This Water Action Plan (Plan) sets up a framework for collaboratively addressing current and potential water challenges in the Mid-Coast region in a manner that balances the needs of ecosystems, economies, and coastal communities. The Plan's recommended actions are grouped into categories called Imperatives, and many of the actions are well-aligned with the Newport Water Supply and Conservation Management Work Group's (Work Group) activities and discussion topics. This document outlines specific actions in the Plan that fit into the Work Group's previous discussions or that the Work Group may consider exploring further.

### Imperative 1: Public Awareness and Support

#### Current Work Group Topics

**Action 1b:** *Develop drought declaration and audience-specific (e.g., self-supplied industrial water users) water conservation and curtailment messages.*

The Work Group has discussed voluntary water conservation or curtailment messaging through press releases, particularly during drought conditions. Creating audience-specific messaging could enhance the reach and impact of these activities. Newport is currently a member of the Mid-Coast Water Conservation Consortium (Mid-Coast Water), which develops outreach materials about drought declarations, including social media and press releases.

#### Additional Alignment

**Action 1a:** *Promote water conservation at local events, on the Mid-Coast Water Planning Partnership website and the websites of regional partners and entities, in news articles, in water bills, via social media, and through outreach materials to businesses, particularly in the hospitality industry.*

This action suggests specific methods for water conservation outreach messaging that the Work Group could consider. The Mid-Coast Water Conservation Consortium develops water conservation outreach materials for members to distribute (e.g., newsletter articles, billing inserts, billing messages, social media, press releases), promotes water conservation through its website ([www.midcoastwater.org](http://www.midcoastwater.org)), and is developing approaches to reach out to businesses, particularly the hospitality industry.

**Action 1c:** *Coordinate watershed and water system tours to increase awareness and understanding of regional and local water issues.*

Hosting tours of Newport's drinking water source watersheds and/or water system facilities could help residents and stakeholders develop a common understanding of local water issues and build support for strategies to improve water management and conservation. Newport currently hosts tours occasionally, such as to school groups.

**Action 1f:** *Identify or develop curriculum and materials/information for students and the public (community education) about their water sources, water management, and water conservation.*

Educational materials could be developed to help students and the public understand the sources of their water supply and the importance of conservation. The Mid-Coast Water Conservation Consortium develops water conservation outreach materials for members to distribute and develops student water conservation lessons, including in partnership with organizations providing student education in the region.

**Action 1h:** *Inform self-supplied and public water users and residents and businesses within public water supply areas about water supplies and water protection measures, including proper well construction and maintenance, septic system maintenance, and proper use of landscape and other chemicals.*

**Action 1i:** *Work with partners and agencies (e.g., Oregon State University Extension Service) to deliver information on state pesticide application practices in vegetation management practices that reduce or eliminate pesticide use. Provide outreach on water quality impacts of pesticides and fertilizers associated with lawn management near streams and ponds. Share methods that reduce impacts and identify alternatives.*

**Action 1j:** *Conduct education and source water areas (including to those that may not be customers of the water provider) about drinking water sources, risks, choices, and strategies.*

For these actions, education materials could be developed and other forms of outreach implemented to promote source water protection. Partnerships could be formed to assist with that outreach.

## Imperative 2: Regional Capacity and Collaboration

### Current Work Group Topics

**Action 4:** *Strengthen/support the Mid-Coast Water Conservation Consortium to enhance water conservation, increase resiliency during shortages and emergencies, and pool resources of multiple water providers. Support enhanced coordination with state and federal entities outside of the Mid-Coast.*

The Work Group has discussed water-efficient fixtures and technologies as a way to conserve water. The Mid-Coast Water Conservation Consortium pools the resources of multiple water providers to implement activities, including purchasing water conservation items at a bulk discount to be distributed to customers.

**Action 7:** *Coordinate water curtailment plans among water providers.*

The Work Group has discussed the Mid-Coast Water Conservation Consortium's efforts to analyze and align the curtailment plans of participating water providers.

**Action 12:** *Develop regionally integrated Drinking Water Protection Plans to ensure that strategies and implementation plans are in place to minimize threats to water supply sources throughout the Mid-Coast. Advocate for funding to support the development and plan implementation.*

**Action 13:** *Create a Source Water Protection Plan, or multiple source-specific plans, to reduce, or minimize contaminants from entering source waters. Advocate for funding to support the development and implementation of these plans.*

Actions 12 and 13 support development and implementation of drinking water and source water protection plans and activities. The Work Group has discussed reviewing similar planning efforts, and the City secured funding to develop a Drinking Water Protection Plan and is currently in the process of developing the Drinking Water Protection Plan.

### Additional Alignment

**Action 5:** *Regional Collaboration: Support and advocate for planning and development that minimizes impacts of floodplains and riparian areas, promoting Green Infrastructure (GI) and Low Impact Development (LID) practices.*

These activities could help minimize additional degradation of water quality from future development in the source watersheds.

## Imperative 3: Monitoring and Data Sharing

### Current Work Group Topics

**Action 14:** *Implement more efficient advanced metering infrastructure to enable faster identification of leaks and shortages, and support best practices for water providers to meet industry standards for documenting water loss.*

The Work Group has discussed reducing the system's water loss ratio. Better tracking and documentation of real (e.g., leaks) and apparent (e.g., inaccurate metering) losses would give the City data to inform development of strategies to address water loss in a more targeted and impactful manner.

## Imperative 4: Water Conservation, Efficiency, and Reuse

### Current Work Group Topics

**Action 24a:** *Incentivize commercial and industrial facilities to conduct water audits, identifying water loss and implementing conservation, recycling, and re-use strategies and technologies.*

The Work Group has discussed coordinating tours of industrial facilities to better understand potentially applicable water conservation strategies and technologies. This could be extended to include incentives for commercial and industrial water audits and sharing of expertise and ideas for water conservation, recycling, and re-use at these facilities.

**Action 24b:** *Evaluate and potentially revise water pricing strategies commensurate with actual delivery costs as well as other strategies to stimulate water conservation and re-use while raising revenue for water conservation investments (e.g., improved efficiency at commercial facilities).*

The Work Group has discussed implementing water rate structures aimed at encouraging conservation. By linking high water use with higher financial costs, these policies encourage customers to fix leaks and find ways to save water while also generating revenue for additional investments.

**Action 26:** *Identify and develop voluntary incentives for water conservation.*

This broad action item includes activities like providing free conservation items to customers (e.g., water-efficient showerheads and faucet aerators), rebate programs for purchasing water-efficient appliances and fixtures (e.g., clothes washers and high-efficiency toilets), and conservation-friendly business recognition programs. The Mid-Coast Water Conservation Consortium is applying for a grant to develop and implement a rebate program in the Mid-Coast.

### Additional Alignment

**Action 22:** *Improve understanding of Oregon’s existing water reuse regulations, and the opportunities and barriers (e.g., health issues) to using recycled and gray water for all allowed uses. Encourage development of comprehensive water reuse programs at appropriate scales.*

Water reuse offers promising opportunities for reducing the amount of water that must be diverted and treated to meet demands. Understanding the regulatory framework around reuse and recycled water could help the Work Group identify potential projects and recommendations for the City.

**Action 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.*

Similar to Action 22, this action could promote reductions in water demand by reusing backwash water from the City’s water treatment plant and/or treated wastewater.

**Action 25:** *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 efficiency to minimize evaporation losses.*

This action has the potential to enhance water quality and quantity in the Siletz River watershed.

### Additional Work Group Ideas

#### Rainwater catchment systems

Rainwater catchment systems are not specifically identified under an action but are included in Imperative 4’s general description.

## Imperative 5: Resilient Water Infrastructure

### Current Work Group Topics

**Action 28:** *Support upgrading and maintaining water metering system infrastructure, where possible.*

**Action 29:** *Use the latest technologies (e.g., In system monitoring and controls, pumping efficiency, automating, and controlling potential zone isolations) available when retrofitting, or replacing, water infrastructure.*

The Work Group has discussed improving the water supply system infrastructure condition and capacity to reduce water loss. This could involve upgrading meters to better understand actual water use and using the latest water-efficient technologies during scheduled replacements or retrofits.

**Action 32:** *Support the expansion of the state-supported revolving fund (including developing a new fund for self-suppliers) to accelerate water infrastructure improvements. Improve access to funding by enhancing coordination and collaboration with communities).*

**Action 33:** *Identify funding programs to support infrastructure enhancements that advance sustainable and secure water solutions for the region. Study how other cities and counties have funded their infrastructure improvements through time and manage water infrastructure assets.*

Actions 32 and 33 focus on the funding of resilient, efficient water infrastructure. These actions align with the Work Group's discussions about supporting improvements of the water system's infrastructure condition and capacity.

### Additional Alignment

**Action 30:** *Address distribution system failures by installing earthquake valves and water tanks to retain water even if distribution system fails.*

Action 30 could help conserve water in the event of an earthquake.

## Imperative 6: Source Water Protection

### Current Work Group Topics

**Action 35:** *Identify, fund, and implement high priority regional source water protection activities.*

**Action 36:** *Support the reduction of nutrient, turbidity, and bacteria inputs and emerging contaminants of concern (e.g., PFAS, PFOA, PFOS, pharmaceuticals, etc.) to source water from all sectors using the latest technology.*

Actions 35 and 36 are focused on source water protection and contamination prevention. The Work Group has discussed activities to support healthy source watershed conditions that would strengthen the watersheds' ability to produce ample supplies of high-quality water.

**Action 41:** *Protect critical lands within drinking water source areas through acquisition, conservation easements, or other tools that prevent degradation and/or impacts to source water quality.*

The Work Group has discussed watershed acquisition as a potential method for protecting drinking water source areas. Direct acquisition, conservation easements, and memoranda of agreement with landowners/land managers offer varying degrees of control over activities in the watershed that could impact drinking water quality and quantity.

### Additional Alignment

**Action 37:** *Enhance contamination prevention measures for reservoirs, surface water intakes, springs, and/or wellheads.*

In addition to protecting the catchment contributing to the City's drinking water sources, the Work Group could consider specific activities to prevent contamination of the Big Creek Reservoirs and the surface water intakes for Big Creek and the Siletz River.

## Imperative 7: Planning for Water Supply Development Needs

### Current Work Group Topics

**Action 43:** *Using the Water Management Economic Assessment Model, 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. (Note: this action is identical to Action 27 under Imperative 4.)*

The Water Management Economic Assessment Model is a joint project of the Partnership and Oregon State University. The model uses water supply, consumption, and pricing data integrated with climate change projections to simulate the impact of future water shortages and illustrate the impacts of various potential adaptation and demand reduction measures. Due to funding constraints and project delays during the pandemic, the model has not been fully developed as initially envisioned, but it still provides valuable information and could be used as a starting point in considering possible climate adaptation and conservation measures. Information coming out of this Oregon State University effort can be found on the Mid-Coast Water Planning Partnership website ([www.midcoastwaterpartners.com/climate-impacts-on-drinking-water](http://www.midcoastwaterpartners.com/climate-impacts-on-drinking-water)).

## Imperative 8: Ecosystem Protection and Enhancement

### Current Work Group Topics

**Action 58:** *Acquire land, or obtain conservation easements, to protect critical land areas managed for water quality protection.*

The Work Group has discussed watershed acquisition as a potential method for protecting water quality in drinking water source areas. These activities would be similar to Action 41 described above under Imperative 6.

### Additional Alignment

**Action 44:** *Riparian Restoration; Restore Channels; Floodplain Reconnection; Restore Stream Flow: Support restoration projects that involve diverse landowners and land management goals locations that will achieve the greatest ecological return on investment (e.g., cooler streams and improved summertime flows for sensitive species to address water quality impairments).*

**Action 45:** *Riparian Restoration; Restore Channels; Floodplain Reconnection; Restore Stream Flow: Use established methods (e.g., field assessment, remote-sensing, and physical models, such as Heat Source) and local knowledge to prioritize stream reaches for riparian buffer restoration projects. Increase wooded buffer zones on priority streams.*

**Action 46:** *Riparian Restoration; Restore Channels: Advocate for the restoration and conservation of native riparian vegetation to facilitate large natural wood recruitment, maintain water quality, ensure ecological function, and produce habitat for aquatic species, including beaver.*

Actions 44, 45, and 46 could help enhance water quality and quantity in Newport's source water areas.

**Action 47:** *Implement more erosion control practices.*

**Action 48:** *Evaluate anthropogenic sources of fine sediment from all land uses, including mass wasting and unsurfaced roads. Seek funding opportunities to reduce shallow landslide risk and other sediment delivery hazards (e.g., undersized culverts, outdated road maintenance, legacy roads) and perform road upgrades, repair, and decommissioning.*

## Newport Water Supply and Conservation Management Work Group

Actions 47 and 48 are related to reducing erosion that leads to sedimentation of waterways. Better infrastructure maintenance and erosion control practices could help reduce turbidity in the City's source water.

**Action 49:** *Floodplain Reconnection and Wetlands: Protect beaver populations and encourage beaver pond creation, especially in critical areas with low summer flows.*

Action 49 could help enhance water quantity.



## Imperative 1. Public Awareness and Support

Public awareness of water issues in the Mid-Coast region of Oregon is critical to achieving the long-term goals the region has for delivering water sustainably for people and native fish and wildlife.

### Objectives

- Promote tools and information for water conservation.
- Foster a culture of water conservation.
- Build capacity of constituents to advocate for state and federal resources and funding.
- Support training and professional development to ensure the availability of skilled water technicians.

### Action Details

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
<p><b>1. Develop and implement a public awareness and engagement campaign aimed at supporting the imperatives and actions in the Mid-Coast Water Action Plan, including raising awareness and understanding of regional water issues. Includes the following:</b></p>	<p>Mid-Coast Planning Area residents, industries, and visitors are aware of and practicing water conservation measures. Public and private water suppliers are participating in water management and conservation planning and outreach to communities. There is uniform region-wide messaging about water use and conservation.</p>	<p><b>Lead:</b> Education (all levels), interpretive facilities (Oregon Coast Aquarium, Hatfield Marine Science Center), regional water providers (private and public), Oregon Water Resources Department, Oregon State University Extension Service, Mid-Coast Watershed Council, Lincoln County Soil and Water Conservation District</p> <p><b>Participants:</b> Water use industries, tourism industry, water rights holders</p>	<p>PHASES 1-2</p>	<p>\$250,000</p>	<ul style="list-style-type: none"> <li>▪ Oregon Health Authority Drinking Water Source Protection Grants &amp; Loans.<sup>29</sup></li> <li>▪ Oregon Community Foundation's Oregon Natural Resources Education Fund.<sup>30</sup></li> <li>▪ Autzen Foundation.<sup>31</sup></li> <li>▪ OWEB Partnership Stakeholder Outreach Grant. Georgia-Pacific Environment Grant Program.</li> <li>▪ U.S. Economic Development Administration (EDA).</li> <li>▪ EPA's Environmental Education (EE) Grants.</li> <li>▪ Siletz Tribal Charitable Contribution Fund.</li> <li>▪ Spirit Mountain Community Fund.</li> <li>▪ Starker Forests Grant.</li> <li>▪ Three Rivers Foundation.</li> </ul>
<p><b>Conservation:</b></p> <p>a. Promote water conservation at local events, on the Mid-Coast Water Planning Partnership website and the websites of regional partners and entities, in news articles, in water bills, via social media, and through outreach materials to businesses, particularly in the hospitality industry.</p> <p>b. Develop drought declaration and audience-specific (e.g., self-supplied</p>	<p>a. and b. Consistent messaging throughout the Planning Area associated with drought and water curtailment is developed and distributed.</p>	<p><b>Lead:</b> Mid-Coast water providers (e.g., Mid-Coast Water Conservation Consortium), Lincoln County Board of Commissioners</p> <p><b>Participants:</b> OWRD, regional colleges and universities</p>	<p>PHASE 1</p>	<p>a. \$50,000 b. \$40,000</p>	<p>a)</p> <ul style="list-style-type: none"> <li>▪ Georgia-Pacific Environment Grant Program.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ U.S. Economic Development Administration (EDA).</li> <li>▪ EPA's Environmental Education (EE) Grants.</li> <li>▪ Spirit Mountain Community Fund.</li> <li>▪ Starker Forests Grant.</li> <li>▪ Three Rivers Foundation.</li> </ul> <p>b)</p> <ul style="list-style-type: none"> <li>▪ OWEB Partnership Stakeholder Outreach Grant.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ U.S. Economic Development Administration (EDA).</li> </ul>

<sup>29</sup> (Eligible projects include but are not limited to outreach/education, monitoring efforts (outside of what is required by the state), restoration design and implementation, groundwater risk assessments. Publicly and privately-owned community and nonprofit non-community water systems are eligible to apply for DWSPF funding.

<sup>30</sup> Invites proposals from high school organizations providing natural resources education. Funding is available for natural resource related tools, equipment, technology, and other educational resources.

<sup>31</sup> Grants are awarded to smaller non-profit organizations; most often to groups with social service, arts, and culture, educational, environmental and/or youth-centered missions.



Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
<p>industrial water users) water conservation and curtailment messages.</p>					
<p><b>Regional Collaboration:</b> c. Coordinate watershed and water system tours to increase awareness and understanding of regional and local water issues.</p>	<p>c. Increased understanding of regional and local water issues.</p>	<p><b>Lead:</b> Mid-Coast Water Planning Partnership</p>	<p>PHASES 1-3</p>	<p>\$100,000</p>	<ul style="list-style-type: none"> <li>▪ Meyer Memorial Trust Grant.</li> <li>▪ OWEB Partnership Stakeholder Outreach Grant.</li> <li>▪ Georgia-Pacific Environment Grant Program.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ National Communication Association Advancing the Discipline Grants.</li> <li>▪ EPA's Environmental Education (EE) Grants.</li> <li>▪ NFWF Five Star and Urban Waters Restoration Grant Program (Watershed only).</li> <li>▪ U.S. Department of Housing and Urban Development Sustainable Communities Regional Planning Grant.</li> <li>▪ Gray Family Foundation Environmental Education Grant.</li> <li>▪ Siletz Tribal Charitable Contribution Fund.</li> <li>▪ Spirit Mountain Community Fund.</li> <li>▪ Starker Forests Grant.</li> <li>▪ Three Rivers Foundation.</li> <li>▪ Oregon Health Authority Source Water Protection Grants</li> </ul>
<p><b>Infrastructure:</b> d. Develop a regional initiative/training to improve coordination and provide education to water providers on infrastructure financing and funding.</p>	<p>d. Water providers receive information on infrastructure financing and funding.</p>	<p><b>Lead:</b> Water providers, Mid-Coast Water Conservation Consortium, Fund Managers  <b>Participants:</b> Business Oregon, Rural Community Assistance Corporation, Oregon Association of Water Utilities</p>	<p>PHASE 1</p>	<p>\$50,000</p>	<ul style="list-style-type: none"> <li>▪ Meyer Memorial Trust</li> <li>▪ Oregon Community Credit Union (OCCU) Foundation.</li> <li>▪ Georgia-Pacific Environment Grant Program.</li> <li>▪ National Communication Association Advancing the Discipline Grants.</li> <li>▪ U.S. Economic Development Administration (EDA).</li> <li>▪ U.S. Department of Housing and Urban Development Sustainable Communities Regional Planning Grant.</li> <li>▪ Siletz Tribal Charitable Contribution Fund.</li> <li>▪ Spirit Mountain Community Fund.</li> <li>▪ Starker Forests Grant. Three Rivers Foundation.</li> </ul>
<p><b>Education:</b> e. Provide an internship program, hands-on training, and certification training for water technicians, which includes technician training on updating and implementing water management.</p>	<p>e. Each water provider has an updated water management and conservation plan that they are implementing.</p>	<p><b>Lead:</b> Water providers, Oregon Coast Community College (OCCC)  <b>Participants:</b> Samaritan Hospital</p>	<p>PHASE 2</p>	<p>\$250,000</p>	<ul style="list-style-type: none"> <li>▪ Meyer Memorial Trust</li> <li>▪ Oregon Community Credit Union (OCCU) Foundation.</li> <li>▪ Georgia-Pacific Environment Grant Program.</li> <li>▪ National Communication Association Advancing the Discipline Grants.</li> <li>▪ U.S. Economic Development Administration (EDA).</li> <li>▪ U.S. Department of Housing and Urban Development Sustainable Communities Regional Planning Grant.</li> <li>▪ Siletz Tribal Charitable Contribution Fund.</li> <li>▪ Spirit Mountain Community Fund.</li> <li>▪ Starker Forests Grant.</li> <li>▪ Three Rivers Foundation.</li> </ul>

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
f. Identify or develop curriculum and materials/information for students and the public (community education) about their water sources, water management, and water conservation.	f. Students are learning about their water supply and the importance of water conservation, and they share that information with family members.	<p><b>Lead:</b> Mid-Coast Water Conservation Consortium, Lincoln County School District education (all levels), interpretive facilities (Oregon Coast Aquarium, Hatfield Marine Science Center), water providers, Oregon Water Resources Department, Oregon Coast Community College Community Education, Lincoln County Department of Health</p> <p><b>Participants:</b> Educators and students, Lincoln County schools, general public</p>	PHASE 2	\$75,000	<ul style="list-style-type: none"> <li>▪ Georgia-Pacific Environment Grant Program.</li> <li>▪ National Communication Association Advancing the Discipline Grants.</li> <li>▪ EPA's Environmental Education (EE) Grants.</li> <li>▪ Gray Family Foundation Environmental Education Grant.</li> <li>▪ Siletz Tribal Charitable Contribution Fund.</li> <li>▪ Spirit Mountain Community Fund.</li> <li>▪ Starker Forests Grant.</li> <li>▪ Three Rivers Foundation.</li> </ul>
<p><b>Voluntary actions:</b></p> <p>g. Conduct outreach to encourage implementation of voluntary, incentive-based actions throughout the region, consistent with existing plans, such as the Mid-Coast Agricultural Water Quality Management Area Plan.</p>	g. Voluntary, incentive-based actions effectively help to deliver on the goals on regional plans, including the Mid-Coast Agricultural Water Quality Management Area Plan.	<p><b>Lead:</b> Lincoln SWCD, OSU Extension, Mid-Coast Water Conservation Coalition, Oregon Water Resources Department, Self-supplied water users, MidCoast Watersheds Council</p> <p><b>Participants:</b> All water users</p>	PHASES 1-3	\$50,000	<ul style="list-style-type: none"> <li>▪ EPA's Environmental Education (EE) Grants.</li> </ul>
<p><b>Source Water Protection and Development:</b></p> <p>h. Inform self-supplied and public water users and residents and businesses within public water supply areas about water supplies and water protection measures, including proper well construction and maintenance, septic system maintenance, and proper use of landscape and other chemicals.</p>	h. Self-supplied and public water users can access available water quality information concerning source water, implement measures to reduce impacts on source water quality, conduct regular inspection, maintenance, and repairs (as needed) of septic systems, and understand how to access and use available water quality data.	<p><b>Lead:</b> Oregon Health Authority, Oregon State University Extension, County, Oregon Department of Environmental Quality (for public water users and self-supplied users within public water supply areas), water providers</p>	PHASES 1-3	\$50,000	<ul style="list-style-type: none"> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ U.S. Economic Development Administration (EDA).</li> <li>▪ EPA's Environmental Education (EE) Grants.</li> <li>▪ Siletz Tribal Charitable Contribution Fund.</li> <li>▪ Spirit Mountain Community Fund.</li> <li>▪ Starker Forests Grant.</li> <li>▪ Three Rivers Foundation.</li> </ul>
i. Work with partners and agencies (e.g., Oregon State University Extension Service) to deliver information on safe pesticide application practices and vegetation management practices that reduce or eliminate pesticide use. Provide outreach on water quality impacts of pesticides and fertilizers associated with lawn management near streams and ponds. Share methods that reduce impacts and identify alternatives.	i. Pesticides are applied minimally and safely throughout the region. Options are developed that reduce impacts and provide alternatives to pesticides.	<p><b>Lead:</b> Oregon Department of Agriculture, Oregon Health Authority</p> <p><b>Participants:</b> Organizations and individuals dedicated to reducing impacts from pesticides on soil and water resources.</p>	PHASES 1-3	\$50,000	<ul style="list-style-type: none"> <li>▪ OWEB Partnership Technical Assistance Grant.</li> <li>▪ Georgia-Pacific Environment Grant Program.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ U.S. Economic Development Administration (EDA).</li> <li>▪ EPA's Environmental Education (EE) Grants.</li> <li>▪ Siletz Tribal Charitable Contribution Fund.</li> <li>▪ Spirit Mountain Community Fund.</li> <li>▪ Starker Forests Grant.</li> <li>▪ Three Rivers Foundation.</li> <li>▪ OSU Extensive Service and Oregon Integrated Pest Management Center at OSU.</li> </ul>
j. Conduct education in source water areas (including to those that may not be customers of the water provider) about	j. The public is aware of and supports source water protection measures.	<p><b>Lead:</b> Education (all levels), interpretive facilities (Oregon Coast Aquarium, Hatfield Marine Science Center), regional water providers (private and public), Oregon State University</p>	PHASES 1-3	\$50,000	<ul style="list-style-type: none"> <li>▪ Georgia-Pacific Environment Grant Program.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ National Communication Association Advancing the Discipline Grants.</li> </ul>

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
drinking water sources, risks, choices, and strategies.		Extension Service, Oregon Department of Environmental Quality, Oregon Health Authority Drinking Water Programs  <b>Participants:</b> 4-H programs, Samaritan Health Education			<ul style="list-style-type: none"> <li>▪ U.S. Economic Development Administration (EDA).</li> <li>▪ EPA's Environmental Education (EE) Grants.</li> <li>▪ NFWF Five Star and Urban Waters Restoration Grant Program.</li> <li>▪ Siletz Tribal Charitable Contribution Fund.</li> <li>▪ Spirit Mountain Community Fund.</li> <li>▪ Starker Forests Grant.</li> <li>▪ Three Rivers Foundation.</li> </ul>
k. Connect private landowners with resources and information about best management practices to improve water quality and quantity.	k. Landowners are connected with resources and information about BMPs to improve water quality and quantity.	<b>Lead:</b> Local stewardship foresters, local Soil and Water Conservation District staff, and USDA Natural Resources Conservation Service, Oregon State University Extension Service, Oregon Department of Forestry  <b>Participants:</b> All interested landowners	PHASE 1	\$50,000	<ul style="list-style-type: none"> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ National Communication Association Advancing the Discipline Grants.</li> <li>▪ EPA's Environmental Education (EE) Grants.</li> <li>▪ Siletz Tribal Charitable Contribution Fund.</li> <li>▪ Spirit Mountain Community Fund.</li> <li>▪ Starker Forests Grant.</li> <li>▪ Three Rivers Foundation.</li> </ul>
<b>TOTAL</b>				<b>\$1.65M</b>	

**Performance Metrics**

- Annual increase in engagement with residents, visitors, water providers, and industry about water resources.
- Residents, visitors, and industries are aware of and are practicing a culture of water conservation and efficient use.
- Public and private water suppliers are participating in water resources outreach to communities.
- There is uniform region-wide messaging about water use and conservation and efficient use.

**Metric Methodology**

- Determine baseline data by assessing 1) existing outreach and engagement with the public on water-related issues 2) the effort of water suppliers to engage in outreach with the public, and 3) the uniformity of messaging about water use and conservation. A follow-up assessment is conducted 3-5 years later to determine increase in public engagement efforts and uniformity of messaging.
- Baseline data is determined by conducting a social survey with members of the public to assess their awareness and practices relative to water conservation.

## Imperative 2. Regional Capacity and Collaboration

Regional collaboration enhances the resilience and capacity of the water delivery system and helps ensure reliable source water quality and quantity. Strategies to enhance regional collaboration may include pooling regional resources, providing technical information to landowners, and improving access to resources and funding.

### Objectives

- Cultivate active coordination and collaboration among all regional water providers to improve access to resources and funding that enhance system resilience and reliable source water quantity and quality.
- Expand water conservation planning programs and initiatives.

### Action Details

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources	
2	<b>Regional Collaboration: Support the creation of a feasible 50-year county-wide water supply plan. Incorporate regionally integrated plans that improve water system resiliency and adequately plan for future water supply development in the face of natural and human-caused disasters.</b>	Conduct an updated analysis of supply and demand (use OSU Study), evaluating both instream and out-of-stream needs, coupled with an alternatives analysis of potential strategies to reduce demand and/or increase supply (conservation, pricing, storage, reuse, new sources, etc.). Water providers collaborate to develop risk and resilience assessments and emergency response plans that are inter-connected where feasible.	<b>Lead:</b> Lincoln County, Regional Solutions, Lincoln County Water Systems Alliance (LCWSA), OHA regional engineers, water providers <b>Participants:</b> All Lincoln County water suppliers, regional stakeholders, OWRD and other state agencies), EPA, Rural Community Assistance Corporation	PHASES 1-3	\$200,000	<ul style="list-style-type: none"> <li>▪ Business Oregon/Infrastructure Finance</li> </ul>
3	<b>Regional Collaboration: Support the development of organizational procedures for the Mid-Coast Water Conservation Consortium (MCWCC) and the Lincoln County Water Systems Alliance (LCWSA) that will facilitate the prioritization and funding of projects throughout the region.</b>	Explore organizational options for Mid-Coast Water Conservation Consortium that would enable entity to prioritize and fund projects throughout the region on behalf of members.	<b>Lead:</b> Mid-Coast Water Conservation Consortium, Lincoln County Water Systems Alliance <b>Participants:</b> Independent, governmental, and industrial water suppliers and users	PHASE 2	\$50,000	<ul style="list-style-type: none"> <li>▪ Meyer Memorial Trust Capacity Building Grant.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ Special Public Works Fund (SPWF).</li> <li>▪ U.S. Economic Development Administration (EDA).</li> </ul>
4	<b>Regional Collaboration: Strengthen/support the Mid-Coast Water Conservation Consortium to enhance water conservation, increase resiliency during shortages and emergencies, and pool resources of multiple water providers. Support enhanced coordination with state and federal entities outside of the Mid-Coast.</b>	Water suppliers have a strengthened ability to address water conservation issues, increase resiliency, and pool resources.	<b>Lead:</b> Mid-Coast Water Conservation Consortium, Lincoln County Water Systems Alliance <b>Participants:</b> Water providers	PHASE 1	\$50,000	<ul style="list-style-type: none"> <li>▪ Georgia-Pacific Environment Grant Program.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ U.S. Economic Development Administration (EDA).</li> </ul>
5	<b>Regional Collaboration: Support and advocate for planning and development that minimizes impacts to floodplains and riparian areas, promoting Green Infrastructure (GI) methods and Low Impact Development (LID) practices.</b>	Natural storage (e.g., beaver protection) is supported, and open zoning regulations that promote marshland migration are encouraged. Planning and development minimize impacts to floodplains and riparian areas through the implementation of GIM and LID practices.	<b>Lead:</b> County planners, Department of Land and Conservation Development, municipal planning departments <b>Participants:</b> US Forest Service, Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, Oregon Department of Forestry	PHASES 1-2	\$50,000	<ul style="list-style-type: none"> <li>▪ Bureau of Reclamation Cooperative Watershed Management Grant (Phase I).</li> <li>▪ OWEB Stakeholder Outreach and/or Technical Assistance Grant.</li> </ul>
6	<b>Conservation: Develop and update water management and conservation plans for the Mid-Coast regional municipal and self-supplied direct water systems.</b>	Each water provider on the Mid-Coast has a recently updated water management and conservation plan appropriate in scale for the size of their customer accounts and demand.	<b>Lead:</b> Water providers and water users, all municipalities	PHASE 2	\$100,000	<ul style="list-style-type: none"> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> </ul>
7	<b>Conservation: Coordinate water curtailment plans among water providers.</b>	Water providers coordinate water curtailment plans and messaging to the extent practicable, particularly those sharing water systems and sources.	<b>Lead:</b> Entities with shared water systems/sources, Mid-Coast Water Conservation Consortium <b>Participants:</b> Oregon Water Resources Department	PHASES 1-2	\$15,000	<ul style="list-style-type: none"> <li>▪ U.S. Economic Development Administration (EDA).</li> </ul>
8	<b>Ecosystem Protection and Enhancement: Encourage municipalities to update/complete required stormwater management control plans to incorporate GI/LID</b>	Municipal stormwater management control plans are updated and completed.	<b>Lead:</b> Municipalities	PHASE 3	\$100,000	<ul style="list-style-type: none"> <li>▪ U.S. Economic Development Administration (EDA).</li> </ul>

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources	
	practices, using statewide LID technical design guide, and update codes and ordinances that are barriers to implementing these practices. Assist smaller communities, that are not currently required, in voluntarily developing similar stormwater management plans and technical design guides.				<ul style="list-style-type: none"> <li>U.S. Department of Housing and Urban Development Sustainable Communities Regional Planning Grant.</li> <li>OWRD Water Projects Grants and Loans.</li> <li>ODEQ grants and technical assistance.</li> </ul>	
9	<b>Natural Hazards: Advocate for Emergency Response Plans (required for public water systems) address water system needs and specific vulnerabilities, and are interconnected to create a regional network during emergency situations.</b>	Public water system suppliers develop comprehensive plans that address the full suite of emergency measures needed locally and regionally.	<b>Lead:</b> Oregon Health Authority, Lincoln County, Oregon Department of Environmental Quality, water providers	PHASE 2	\$50,000	<ul style="list-style-type: none"> <li>ODEQ Supplemental Environmental Projects (SEP) Program.</li> <li>USDA Rural Development Emergency Community Water Assistance Grant.</li> <li>NOAA Coastal Resilience Grants Program.</li> </ul>
10	<b>Natural Hazards: Collaborate with emergency operations planners to identify highest priority water needs and develop alternative systems and plans. Identify opportunities and access for shared water available for addressing emergency interconnections.</b>	Water vulnerabilities are clearly articulated in updates to the Natural Hazard Mitigation Plan.	<b>Lead:</b> Water providers, Mid-Coast Water Conservation Consortium	PHASE 1	\$125,000	<ul style="list-style-type: none"> <li>ODEQ Supplemental Environmental Projects (SEP) Program.</li> <li>Business Oregon Drinking Water Source Protection Fund.</li> <li>Special Public Works Fund (SPWF).</li> <li>USDA Rural Development Emergency Community Water Assistance Grant.</li> </ul>
11	<b>Natural Hazards: Support the development tiered communication trees to address: a) typical support needs b) response to localized emergencies affecting one or multiple Public Water Systems; and c) Cascadia Subduction Zone quake, volcanic eruption, regional wildfire. Provide communication alternatives for inoperable phone/internet (HAM resources; meeting locations and days/times).</b>	Ensure a mutual aid network exists on the coast to communicate and respond effectively during emergencies.	<b>Lead:</b> Lincoln County, water providers, MCWCC	PHASE 2	\$50,000	<ul style="list-style-type: none"> <li>ODEQ Supplemental Environmental Projects (SEP) Program.</li> <li>Georgia-Pacific Environment Grant Program.</li> <li>USDA Rural Development Emergency Community Water Assistance Grant.</li> <li>NOAA Coastal Resilience Grants Program.</li> </ul>
12	<b>Source Water Protection and Development: Develop regionally integrated Drinking Water Protection Plans to ensure that strategies and implementation plans are in place to minimize threats to water supply sources throughout the Mid-Coast. Advocate for funding to support the development and plan implementation.</b>	Drinking Water Protection Plans are developed to minimize contaminants from entering source waters.	<b>Lead:</b> Water providers, Lincoln County, water districts, municipalities, Oregon Department of Environmental Quality, Oregon Health Authority	PHASES 1-3	\$100,000	<ul style="list-style-type: none"> <li>ODEQ clean water drinking/source water protection program.</li> <li>Georgia-Pacific Environment Grant Program.</li> <li>Business Oregon Drinking Water Source Protection Fund.</li> <li>OHA Safe Drinking Water Act Loans/Grant Funds.</li> </ul>
13	<b>Source Water Protection and Development: Create a Source Water Protection Plan, or multiple source-specific plans, to reduce, or minimize contaminants from entering source waters. Advocate for funding to support the development and implementation of these plans.</b>	A source water protection plan, or multiple plans, include actions that minimize contaminants entering source waters.	<b>Lead:</b> Lincoln County, water districts, city, Oregon Department of Environmental Quality, Oregon Health Authority	PHASE 2	\$2,000,000	<ul style="list-style-type: none"> <li>ODEQ clean water drinking/source water protection program.</li> <li>Georgia-Pacific Environment Grant Program.</li> <li>Business Oregon Drinking Water Source Protection Fund.</li> <li>OHA Safe Drinking Water Act Loans and Grant Funds.</li> </ul>
<b>TOTAL</b>					<b>\$2.89M</b>	

**Performance Metrics**

- Water conservation projects are implemented and have measurable outcomes that aim to achieve the greatest return on investments.
- Updates to the Natural Hazard Mitigation plan clearly articulate water vulnerabilities.
- A mutual aid network is created along the coast, and water providers sign up for [ORWARN](#).
- A 50-year county-wide water supply plan is created.

- Mid-Coast public water providers have up-to-date drinking water protection plans that are regionally integrated.

### **Metric Methodology**

- A social survey is conducted to assess the extent to which Mid-Coast land managers understand and are applying Ecosystem Best Management Principles and Practices. A social survey is conducted 3-5 years later to assess increases in awareness, understanding, and implementation.
- Spatial analyses are conducted, and locations on the landscape are identified to implement conservation projects that achieve the greatest return on investment
- A mutual aid network is created and tested, confirming its capacity to respond effectively during emergencies.



### Imperative 3. Monitoring and Data Sharing

#### Objectives

- Improve our baseline understanding of water conditions in the region. Improve the coordination and effectiveness of water quality, quantity, and habitat monitoring programs throughout the region.
- Assess the levels and presence/absence of contaminants in Mid-Coast waters and describe negative effects to human health or aquatic life.
- Sample throughout the Mid-Coast to accurately identify the quantity and type of toxics entering source waters to assess potential risks to both drinking water quality and aquatic life.
- Provide self-supplied water users with adequate and timely data to determine regional, local, or site-specific water quality contamination issues that may pose a health risk.

#### Action Details

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Invested	Potential Funding Sources
14 <b>Implement more efficient advanced metering infrastructure to enable faster identification of leaks and shortages, and support best practices for water providers to meet industry standards for documenting water loss.</b>	Real-time information on water use and water loss is documented to better manage water and engage everyone in water conservation.	<b>Lead:</b> Water providers, Mid-Coast Water Conservation Consortium <b>Participants:</b> Oregon Water Resources Department	PHASES 1-3	\$3,000,000	<ul style="list-style-type: none"> <li>▪ USDA Rural Development Water and Waste Disposal Loan and Grant Program.</li> </ul>
15 <b>Recommend installation and use of flow meters to gain a more accurate estimate of water use in the region.</b>	Installation of flow meters on withdrawals is prioritized using an established set of criteria.	<b>Lead:</b> Local Soil and Water Conservation District (with resources), Oregon Water Resources Department		\$100,000	<ul style="list-style-type: none"> <li>▪ OWEB Monitoring Grant.<sup>32</sup></li> <li>▪ OWRD Water Measurement Cost Share Program</li> </ul>
16 <b>Fully fund, install, and monitor real-time stream gauging stations throughout region in priority locations and times of year when they are needed most to accurately assess source water and enable innovative demand-reduction actions during periods of critical ecological need.</b>	Identify sites for highest priority gages. Funding and staff secured to maintain monitoring network. An updated basin study that addresses water uncertainties in the Mid-Coast region (improved granularity of measurements). Exploration of newer AI technologies is supported by the partnership. Real-time river monitoring/gauging is conducted in priority locations.	<b>Lead:</b> US Geological Survey, Oregon Water Resources Department, private landowners, Oregon Watershed Enhancement Board, watershed councils, organizations, water providers, municipalities, Lincoln County <b>Participants:</b> Oregon Department of Fish and Wildlife	PHASE 1	\$200,000	<ul style="list-style-type: none"> <li>▪ OWEB Monitoring Grant.<sup>33</sup></li> <li>▪ USGS National Streamflow Information Program (NSIP).</li> <li>▪ OWRD (General Funds: Water Measurement Cost Share Program)</li> </ul>
17 <b>Develop and implement a coordinated long-term water quality monitoring program throughout the region (e.g., source water, streams, estuaries) to improve understanding of current conditions and event-caused conditions (i.e., storm, low-flow) for nutrients, bacteria, temperature, dissolved oxygen, pH, turbidity and other specific contaminants identified by DEQ, including those that contribute to harmful algal blooms (HAB)s. Collect water samples to identify pollutant sources (location, source, practices influencing input, transport and fate of pollutants). Advocate for additional sampling in headwaters (where herbicides and pesticides are applied) and at municipality intakes.</b>	<p>A coordinated long-term water quality monitoring program is developed for the region that meets the objectives described.</p> <p>Real time data sharing occurs among municipalities, and there is frequent testing of source waters. Samples are taken in headwaters and public drinking water intakes at the frequency needed to track source water quality status. Outreach and incentive programs reach landowners who then modify practices and implement best management practices.</p>	<b>Lead:</b> Oregon Department of Environmental Quality, Oregon Health Authority, US Forest Service, Oregon Water Resources Department, Counties, cities, Mid-Coast Water Conservation Consortium, Lincoln County Water Systems Alliance, state and private forestry sector (Oregon Department of Forestry), Agricultural sector (Oregon Department of Agriculture lead), Oregon Department of Fish and Wildlife, Mid-Coast Watershed Council	PHASES 1-2	\$1,000,000	<ul style="list-style-type: none"> <li>▪ Oregon Health Authority Drinking Water Source Protection Grants &amp; Loans.<sup>34</sup></li> <li>▪ ODEQ Supplemental Environmental Projects (SEP) Program.</li> <li>▪ ODA water quality funds provided to SWCD.</li> <li>▪ OWEB Monitoring Grant. U.S. Economic Development Administration (EDA).</li> <li>▪ Oregon Watershed Enhancement Board</li> </ul>

<sup>32</sup> Must be tied to existing or potential future project.

<sup>33</sup> Must be tied to existing or potential future project.

<sup>34</sup> Eligible projects include but are not limited to outreach/education, monitoring efforts (outside of what is required by the state), restoration design and implementation, groundwater risk assessments. Publicly and privately-owned community and nonprofit non-community water systems are eligible to apply for DWSPF funding.

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Invested	Potential Funding Sources
18	<b>Conduct comprehensive and ongoing water testing, and use results to guide best management practice implementation, restoration, etc. to address water quality impairments.</b>	Ongoing and comprehensive water testing is conducted, and the results are used to guide land and resource management activities. Education and outreach and testing are conducted on private wells on a regular basis.	<b>Lead:</b> Oregon Department of Environmental Quality, Oregon Health Authority, US Forest Service, Lincoln Soil and Water Conservation District, Lincoln County	PHASES 1-3	\$100,000	<ul style="list-style-type: none"> <li>ODA water quality funds provided to SWCD.</li> <li>ODEQ Supplemental Environmental Projects (SEP) Program.</li> <li>U.S. Economic Development Administration (EDA).</li> </ul>
19	<b>Develop a coordinated network of people conducting stream flow monitoring and water quality monitoring to share resources and data. Explore cost-effective ways to incorporate volunteers in data collection to complement gauging network.</b>	A robust coordinated network of volunteers is conducting stream flow and water quality monitoring and sharing that information via a Mid-Coast network.	<b>Lead:</b> Lincoln County <b>Participants:</b> Mid-Coast Water Conservation Consortium, Soil and Water Conservation District, Oregon Water Resources Department, Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, Oregon Watershed Enhancement Board, Salmon-Drift Creek Watershed Council, US Forest Service	PHASE 2	\$100,000	<ul style="list-style-type: none"> <li>ODA funding to SWCD.</li> <li>OWEB Monitoring Grant.</li> <li>U.S. Economic Development Administration (EDA).</li> </ul>
20	<b>Support the aggregation and update of current self-supplied water system databases, including system description, system status, and system needs. Determine what exists from current databases. Track wells going dry via self-reporting. NOTE: Oregon Explorer database group will be discussing.</b>	There is comprehensive regional knowledge of self-supplied water system information in the Mid-Coast Region.	<b>Lead:</b> Lincoln County <b>Participants:</b> Private well drillers, private septic companies, Oregon Water Resources Department well log database	PHASE 1	\$125,000	<ul style="list-style-type: none"> <li>Oregon Health Authority Domestic Well Safety Program (DWSP)</li> </ul>
21	<b>Develop a water monitoring database for data entry and access by multiple entities.</b>	A water monitoring tool that consolidates water data for the public and water managers to access and use. The Mid-Coast serves as a pilot to demonstrate water quality and quantity database sharing.	<b>Lead:</b> Inter-agency Stream Team <b>Participants:</b> Local, State, and Federal agencies, and private citizens	PHASE 1	\$100,000	<ul style="list-style-type: none"> <li>OWEB Monitoring Grant.</li> <li>U.S. Economic Development Administration (EDA).</li> </ul>
<b>TOTAL</b>					<b>\$4.725M</b>	

**Performance Metrics**

- 75% of municipal connections in the Mid-Coast region have meters/associated infrastructure (apps, online platform) within 5 years.
- Water providers are reporting unaccountable water loss on an annual basis as well as progress made.
- By 2030, all water providers in the Mid-Coast region demonstrate systems have 10% or less unaccountable water loss.

**Metric Methodology**

- Percent of connections in the region that have meters. Five years later, the percent of connections is reassessed.
- Baseline data is collected to ensure water providers are documenting unaccountable water loss. Ten years later, an assessment is conducted to ensure all water providers in the region has 10% or less unaccountable water loss.
- Baseline data is created by conducting a social survey to assess awareness and understanding of water information by the public. A follow-up survey is conducted 3-5 years later to monitor changes in awareness and understanding.



## 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 Calculator<sup>35</sup>). 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><b>22</b> Improve understanding of Oregon’s existing water reuse regulations<sup>36</sup>, 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><b>Lead:</b> Oregon Department of Environmental Quality, Oregon Water Resources Department, Oregon Health Authority, water providers, Lincoln County</p> <p><b>Participants:</b> Homeowners and businesses, potentially other state agencies, Oregon Department of Fish and Wildlife</p>	PHASE 2	\$150,000	<ul style="list-style-type: none"> <li>Business Oregon Drinking Water Source Protection Fund.</li> <li>OWRD Water Projects Grants and Loans.</li> </ul>
<p><b>23</b> 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><b>Lead:</b> Mid-Coast Water Conservation Consortium, Water providers</p> <p><b>Participants:</b> OR DEQ, OHA, OWRD, Clean Water Services (Hillsboro, Oregon - <a href="http://cleanwaterservices.org">cleanwaterservices.org</a>), Water Reuse (<a href="https://watereuse.org">https://watereuse.org</a>)</p>	PHASE 1	\$100,000	<ul style="list-style-type: none"> <li>Georgia-Pacific Environment Grant Program.</li> <li>Business Oregon Drinking Water Source Protection Fund.</li> <li>OWRD Water Projects Grants and Loans.</li> </ul>
<p><b>24</b> 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><b>Lead:</b> Water providers, commercial and industrial water users</p> <p><b>Participants:</b> Oregon Water Resources Department, Oregon State University</p>	PHASE 1	\$150,000	<ul style="list-style-type: none"> <li>Georgia-Pacific Environment Grant Program.</li> <li>Business Oregon Drinking Water Source Protection Fund.</li> <li>Special Public Works Fund (SPWF).</li> <li>U.S. Economic Development Administration (EDA).</li> <li>U.S. Department of Housing and Urban Development Sustainable Communities Regional Planning Grant.</li> </ul>

<sup>36</sup> <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	<b>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.</b>	Agricultural irrigators that are able to access incentives and other cost-share opportunities to conserve water, enhance efficiencies, and replace aging systems.	<b>Lead:</b> Natural Resources Conservation Service, Lincoln Soil and Water Conservation District, Oregon Department of Agriculture <b>Participants:</b> Agricultural irrigators (engage in development and implementation of strategy), McKenzie River Trust	PHASES 1-2	\$1,500,000	<ul style="list-style-type: none"> <li>USDA NRCS CIG Grant.</li> <li>OWRD Water Projects Grants and Loans.</li> <li>Clean Water State Revolving Fund (CWSRF).<sup>37</sup></li> <li>USDA SEARCH - Special Evaluation Assistance for Rural Communities and Households Program.</li> <li>OHA's Safe Drinking Water Revolving Loan Fund (SDWRLF).</li> <li>Business Oregon Community Development Block Grant (CDBG) Program.</li> <li>USDA Rural Development Water &amp; Waste Disposal Direct Loan &amp; Grant Program.</li> <li>EPA Nonpoint Source Section 319 Grants.</li> <li>USDA Home and Waste Water Loan and Grant Programs (Septic Systems Repair/Replacement).</li> <li>WaterSMART Water and Energy Efficiency Grants.</li> </ul>
26	<b>Identify and develop voluntary incentives for water conservation.</b>	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.	<b>Lead:</b> Oregon Health Authority, Water providers <b>Participants:</b> Oregon Water Resources Department, water users, Oregon Department of Environmental Quality, EPA	PHASES 2-3	\$100,000	<ul style="list-style-type: none"> <li>Georgia-Pacific Environment Grant Program.</li> </ul>
27	<b>Using the Water Management Economic Assessment Model<sup>38</sup>, 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.</b>	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.	<b>Lead:</b> Oregon State University, Oregon Water Resources Department <b>Participants:</b> Mid-Coast Water Planning Partnership	PHASES 1-2	\$25,000	<ul style="list-style-type: none"> <li>OWRD Feasibility Study Grants.</li> <li>BOR WaterSMART Basin Studies.</li> <li>Business Oregon Drinking Source Protection Fund.</li> <li>Special Public Works Fund (SPWF).</li> <li>Safe Drinking Water Revolving Loan Fund (SDWRLF).</li> <li>EPA Drinking Water State Revolving Fund (DWSRF).</li> </ul>
<b>TOTAL</b>					<b>\$2.025M</b>	

**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.

<sup>37</sup> Will fund irrigation modernization projects for water efficiency if it benefits water quality.

<sup>38</sup> (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	<b>Support upgrading and maintaining water metering system infrastructure, where possible. Note: Automated read systems (not SMART) can be installed at reduced cost.</b>	Install smart water grid systems in Mid-Coast communities. Achieve water balance in community systems (Stream to Tap).	<b>Lead:</b> Water providers, MCWCC	PHASE 2	\$1,500,000	<ul style="list-style-type: none"> <li>▪ OWRD Water Projects Grants and Loans.</li> <li>▪ OHA's Safe Drinking Water Revolving Loan Fund (SDWRLF).</li> <li>▪ Business Oregon Community Development Block Grant (CDBG) Program.</li> <li>▪ Business Oregon Special Public Works Fund (SPWF).</li> <li>▪ Business Oregon Water/Wastewater Funding Program.</li> <li>▪ Rural Community Assistance Corp. (RCAC) Loan Fund.</li> <li>▪ USDA Rural Development Water &amp; Waste Disposal Direct Loan &amp; Grant Program.</li> <li>▪ WaterSMART Water and Energy Efficiency Grants.</li> </ul>
29	<b>Use the latest technologies (e.g., in system monitoring and controls, pumping efficiency, automating, and</b>	Isolations are implemented in emergencies.	<b>Lead:</b> Water providers	PHASE 3	\$200,000	<ul style="list-style-type: none"> <li>▪ OWRD Water Projects Grants and Loans.</li> </ul>

	controlling potential zone isolations) available when retrofitting, or replacing, water infrastructure.					<ul style="list-style-type: none"> <li>Business Oregon's Community Development Block Grant (CDBG) Program.</li> <li>Business Oregon Special Public Works Fund.</li> <li>Business Oregon Water/Wastewater Funding Program.</li> <li>USDA Rural Development Water &amp; Waste Disposal Direct Loan &amp; Grant Program.</li> <li>USDA Rural Development Water and Waste Disposal Loan and Grant Program.</li> <li>WaterSMART Water and Energy Efficiency Grants.</li> </ul>
30	Address distribution system failures by installing earthquake valves in water tanks to retain water even if distribution system fails.	Expanded water system monitoring and controls are in place.	Lead: Water providers	PHASE 2	\$1,000,000	<ul style="list-style-type: none"> <li>OWRD Water Projects Grants and Loans.</li> <li>Business Oregon's Community Development Block Grant (CDBG) Program.</li> <li>Business Oregon Special Public Works Fund.</li> <li>Business Oregon Water/Wastewater Funding Program. Special Public Works Fund (SPWF).</li> <li>Rural Community Assistance Corp. (RCAC) Loan Fund.</li> <li>USDA Rural Development Water &amp; Waste Disposal Direct Loan &amp; Grant Program.</li> <li>WaterSMART Water and Energy Efficiency Grants.</li> </ul>
31	<p>Evaluate alternatives for both natural and built (human-made) water storage with the planning area.</p> <p>For built systems, identify and perform feasibility studies needed to assess whether projects are viable using established and agreed-upon criteria (economic, environmental, regulatory, etc.).</p> <p>For natural storage "systems", identify feasibility studies needed to assess project viability using established and agreed-upon criteria. For those that appear viable, developed estimates of seasonal water storage and release.</p>	<p>Feasibility studies are conducted to identify viable natural and built storage projects in the planning area.</p> <p>For Projects that meet agreed-upon criteria (economic, environmental, regulatory, etc.), funding proposals are developed and submitted for design, engineering, and implementation.</p> <p>A combination of feasible natural and built storage systems increase in the region.</p>	<p>Lead: Mid-Coast Watersheds Council</p> <p>Participants: US Geological Survey, state and federal agencies</p>	PHASE 1	\$150,000	<ul style="list-style-type: none"> <li>Business Oregon Drinking Water Source Protection Fund.</li> <li>Safe Drinking Water Revolving Loan Fund (SDWRLF).</li> <li>EPA Drinking Water State Revolving Fund (DWSRF).</li> <li>EPA Drinking Water State Revolving Fund (DWSRF).</li> <li>OWRD Water Projects Grants and Loans</li> <li>BOR WaterSMART Basin Studies.</li> <li>OWRD Water Projects Grants and Loans.</li> <li>OWEB Technical Assistance.</li> </ul>
32	Support the expansion of the state-supported revolving fund (including developing a new fund for self-suppliers) to accelerate water infrastructure improvements. Improve access to funding by enhancing coordination and collaboration with communities).	Funding options for individual providers and the region are well understood, and a strategy exists to upgrade and maintain critical infrastructure. Mid-Coast water providers have capital improvement plans.	<p>Lead: Business Oregon (1-stop program) (Infrastructure Finance Authority)</p> <p>Participants: Mid-Coast Water Conservation Consortium (educational role for municipalities), Oregon Water Resources Department, and other funding agencies</p>	PHASE 3	\$4,000,000	<ul style="list-style-type: none"> <li>OWRD Water Projects Grants and Loans.</li> <li>USDA Rural Development Circuit Rider Program.</li> <li>OWRD has a \$14-20M biennial revolving fund.</li> </ul>

						<ul style="list-style-type: none"> <li>Business Oregon Community Development Block Grant (CDBG) Program.</li> <li>Business Oregon Water/Wastewater Funding Program.</li> <li>USDA Rural Development Water and Waste Disposal Loan and Grant Program.</li> <li>WaterSMART Water and Energy Efficiency Grants. Safe Drinking Water Revolving Loan Fund (SDWRLF). Special Public Works Fund (SPWF).</li> </ul>
33	<b>Identify funding programs to support infrastructure enhancements that advance sustainable and secure water solutions for the region. Study how other cities and counties have funded their infrastructure improvements through time and manage water infrastructure assets.</b>	Lincoln SWCD has a stable funding source to work with agricultural and other landowners.	<b>Lead:</b> Water providers	PHASE 2	\$200,000	<ul style="list-style-type: none"> <li>OWRD Water Projects Grants and Loans.</li> <li>OHA's Safe Drinking Water Revolving Loan Fund (SDWRLF).</li> <li>Business Oregon Water/Wastewater Funding Program.</li> <li>USDA NRCS CIG Grant.</li> <li>Special Public Works Fund (SPWF).</li> <li>Rural Community Assistance Corp. (RCAC) Loan Fund.</li> <li>USDA Rural Development Water &amp; Waste Disposal Direct Loan &amp; Grant Program.</li> <li>USDA Rural Development Water and Waste Disposal Loan and Grant Program.</li> <li>WaterSMART Water and Energy Efficiency Grants.</li> </ul>
34	<b>Establish a community revolving loan program for infrastructure improvements for septic systems.</b>	Low interest loans are available to individual property owners on a consistent basis.	<b>Lead:</b> Lincoln County, Craft3, OSU Extension Well Stewardship Program <b>Participants:</b> Oregon Department of Environmental Quality, Natural Resources Conservation Service, special districts and other small water providers, Lincoln Soil and Water Conservation District, Devil's Lake Water Improvement District, Oregon Water Resources Department	PHASE 2	\$200,000	<ul style="list-style-type: none"> <li>Craft3 Loan Program;</li> <li>DEQ CWSRF community loans</li> </ul>
<b>TOTAL</b>					<b>\$7.25M</b>	

**Performance Metrics**

- Annual increases in the percent of aging and inefficient water infrastructure that is replaced and enhanced.

**Metric Methodology**

- Baseline data is collected by conducting an assessment and surveying municipalities and water providers to compile and document aging infrastructure that needs to be replaced, to assess the scope and cost of installing smart water grid systems throughout the region, to ensure water providers can isolate during emergencies, to document how other cities and counties fund their infrastructure projects, to assess the existence and extent of funding available to support infrastructure enhancements. In 3-5 years, conduct assessment/survey to evaluate progress made in creating a resilient water infrastructure.

## Imperative 6. Source Water Protection

The 1972 Clean Water Act specifies three categories for protection of all water sources: The physical connectivity, the biological health, and chemicals introduced from point, or non-point sources. Source water includes the rivers, streams, lakes, reservoirs, springs, and groundwater that deliver water to public drinking water supplies and private wells. Protecting source water reduces treatment costs, protects water quality for wildlife and human uses, and helps ensure the availability of water. Strategies to protect source water depend on the source, and include protection of riparian habitats, stream bank stabilization, land protection/easements, best management practices for agricultural and forestry activities, local ordinances to limit activities in source water or wellhead protection areas, emergency response plans, and outreach and education. Source: Environmental Protection Agency<sup>39</sup>.

### Objectives

- Assess the levels and presence/absence of contaminants in Mid-Coast waters and describe negative effects to human health.
- Sample throughout the Mid-Coast to accurately identify the quantity and type of toxics entering source waters to assess potential risks to both drinking water quality and aquatic life.
- Provide self-supplied water users with adequate and timely data to determine regional, local, or site-specific water quality contamination issues that may pose a health risk.
- Assess the levels and presence/absence of contaminants in Mid-Coast waters and describe negative effects to human health.
- Consistently attain water quality standards that protect drinking water and other beneficial uses.
- Anticipate and prepare for the effects of climate change stressors, which are predicted to influence precipitation, temperature, coastal inundation, ecosystem function, and water quality.
- Prioritize restoration work and support land management practices that reduce contaminants of concern to drinking water.

### Action Details

Actions	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
<b>35 Identify, fund, and implement high priority regional source water protection activities.</b>	Explore and implement mechanisms for regional source water protection (e.g., carbon credits, carbon exchange, tax credits, and acquisition opportunities) are explored and implemented.	<b>Lead:</b> Water providers <b>Participants:</b> Mid-Coast Water Planning Partnership, Oregon Department of Environmental Quality	PHASES 1-2		<ul style="list-style-type: none"> <li>▪ BOR WaterSMART Basin Studies.</li> <li>▪ Georgia-Pacific Environment Grant Program.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ EPA Drinking Water State Revolving Fund (DWSRF).</li> <li>▪ Starker Forests Grant.</li> </ul>
<b>36 Support the reduction of nutrient, turbidity, and bacteria inputs and emerging contaminants of concern (e.g., PFAS, PFOA, PFOS, pharmaceuticals, etc.) to source water from all sectors using the latest technology.</b>	Link property owners and residents to existing programs (e.g., Craft3 for septic system replacement/repair loans, OSU Extension Service, land management workshops, etc.). Homeowners improve practices, reduced nutrient contributions from all Sectors/land uses.	<b>Lead:</b> Oregon Department of Environmental Quality, Oregon Health Authority (Step a).  Oregon Health Authority, Oregon State University Extension Services, Lincoln County Soil and Water Conservation District, Oregon Department of Agriculture (Step b).	PHASES 1-3	\$1,000,000	<ul style="list-style-type: none"> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ EPA Clean Water State Revolving Fund.</li> </ul>
<b>37 Enhance contamination prevention measures for reservoirs, surface water intakes, springs, and/or wellheads.</b>	Water reservoirs in the Mid-Coast region are secure.	<b>Lead:</b> Water providers, Mid-Coast Water Conservation Consortium	PHASE 1	\$250,000	<ul style="list-style-type: none"> <li>▪ OWRD Feasibility Study Grants.</li> <li>▪ OHA's Safe Drinking Water Revolving Loan Fund (SDWRLF).</li> <li>▪ BOR WaterSMART Basin Studies.</li> <li>▪ Business Oregon Community Development Block Grant (CDBG) Program.</li> </ul>

<sup>39</sup> <https://www.epa.gov/sourcewaterprotection/basic-information-about-source-water-protection>



Actions	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
					<ul style="list-style-type: none"> <li>▪ Business Oregon Water/Wastewater Funding Program.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ OWRD Water Projects Grants and Loans.</li> </ul>
<p><b>38 Assess and evaluate harmful algal bloom events that affect source water to identify potential contributing sources, and educate and support the reduction of nutrient inputs to source water from all sectors to prevent algal blooms (e.g., promote agricultural nutrient management plans, grants to reduce inputs, well water nitrate screening, well water and septic system education, low-input gardening).</b></p>	<p>The causes of harmful algal blooms affecting source water are investigated, and projects to education and/or reduce contributing sources are implemented.</p>	<p><b>Lead:</b> Water providers <b>Participants:</b> Land managers</p>	<p>PHASES 1-3</p>	<p>\$100,000</p>	<ul style="list-style-type: none"> <li>▪ ODEQ Supplemental Environmental Projects (SEP) Program.</li> <li>▪ Clean Water State Revolving Fund.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ EPA Environmental Justice Small Grants Program.</li> <li>▪ For agriculture land, ODA funds to SWCD.</li> </ul>
<p><b>39 Advocate for integrated pest management (e.g., minimize aerial spraying in watersheds adjacent to source water; promote hand clearing in riparian zones (versus hand spraying); support notification of all water treatment facilities when and where spraying will occur), as well as notification of downstream water users who are not on municipal water systems and rely on source water for domestic use.</b></p>	<p>Agencies and OSU deliver education on safe pesticide application practices; possible formation of a Pesticide Stewardship Partnership; reduction and/or elimination of pesticide use.</p>	<p><b>Lead:</b> Pesticide Stewardship Partnership <b>Participants:</b> Oregon Department of Agriculture, Oregon Department of Forestry, Oregon State University Extension Service, Oregon Department of Environmental Quality, Oregon Health Authority, Oregon Water Resources Department US Forest Service, Lincoln County, water providers</p>	<p>PHASES 1-3</p>	<p>\$100,000</p>	<ul style="list-style-type: none"> <li>▪ OWEB Stakeholder Engagement Grant.</li> <li>▪ Georgia-Pacific Environment Grant Program.</li> <li>▪ Meyer Memorial Trust Healthy Environment Program.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ ODFW Access and Habitat Program.</li> <li>▪ Oregon Integrated Pest Management Center at OSU.</li> </ul>
<p><b>40 Furthering a working lands concept, advocate for incentives, and other strategies, that promote silvicultural practices that support restoration of watershed ecological function and protect drinking water source areas.</b></p>	<p>Incentives and other strategies are developed that support watershed ecological function and protection of source drinking water.</p>	<p><b>Lead:</b> Mid-Coast Water Planning Partnership, Oregon Department of Forestry, US Forest Service, Bureau of Land Management, and any other federal land management agencies</p>	<p>PHASES 1-3</p>	<p>\$100,000</p>	<ul style="list-style-type: none"> <li>▪ Oregon Watershed Enhancement Board Conservation Reserve Enhancement (CREP) TA Program.</li> <li>▪ OWEB Small Grant Program.</li> <li>▪ OWEB Operating Capacity Grant.</li> <li>▪ OWEB Stakeholder Engagement Grant.</li> <li>▪ OWEB Restoration Grant.</li> <li>▪ Georgia-Pacific Environment Grant Program.</li> <li>▪ Meyer Memorial Trust Healthy Environment Program.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ Clean Water State Revolving Fund.</li> <li>▪ USDA NRCS Emergency Watershed Protection Program.</li> <li>▪ USFWS Landowner Incentive Program.</li> <li>▪ NFWF Five Star and Urban Waters Restoration Grant Program.</li> <li>▪ ODFW Access and Habitat Program.</li> <li>▪ ODFW Wildlife Habitat Conservation and Management Program.</li> <li>▪ ODFW Riparian Lands Tax Incentive Program.</li> </ul>
<p><b>41 Protect critical lands within drinking water source areas through acquisition, conservation easements, or</b></p>	<p>Critical lands within drinking water source areas are adequately managed for water quality protection.</p>	<p><b>Lead:</b> McKenzie River Trust, Wetlands, Conservancy, The Nature Conservancy</p>		<p>\$10,000,000</p>	<ul style="list-style-type: none"> <li>▪ Bureau of Reclamation WaterSMART Cooperative Watershed Management</li> </ul>

Actions	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
	<p><b>other tools that prevent degradation and/or impacts to source water quality.</b></p>	<p><b>Participants:</b> Mid-Coast Watersheds Council, municipalities, Mid-Coast Water Planning Partnership</p>			<p>Program (Phase I or Phase II Implementation).</p> <ul style="list-style-type: none"> <li>▪ Meyer Memorial Trust Healthy Environment Program.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ USDA NRCS Emergency Watershed Protection Program.</li> <li>▪ Safe Drinking Water Revolving Loan Fund (SDWRLF).</li> <li>▪ USDA Rural Development Water and Waste Disposal Loan and Grant Program.</li> <li>▪ ODFW Access and Habitat Program.</li> </ul>
<b>TOTAL</b>				<b>\$15.5M</b>	

**Performance Metrics**

- Source (raw) water contains decreasing levels of nutrients, fine sediment/turbidity and bacteria, toxics (e.g., pesticides and emerging contaminants of concern) are not detected.
- Measures are taken to enhance reservoir security to protect from contamination.
- Incentives are created and promoted to restore watershed ecological function and promote protection of source drinking water areas.
- An increasing percentage of acreage in drinking water source areas is protected from land-use activities that could negatively impact water quality and natural hydrology.

**Metric Methodology**

- Baseline information is summarized on existing water available for summer withdrawals (accounting for instream demand/needs), current range of levels (concentration and load) of nutrients, turbidity, bacteria, and other contaminants in raw source water. Comparisons are made within 3-5 years later to assess changes in these levels.
- Municipal water providers document enhancements to reservoir security.
- Baseline information and changes are tracked through time to assess protection from contamination for reservoirs, intakes, springs, and wellheads.
- Baseline data is collected on existing incentives. Comparisons are made 3-5 years later via an assessment to document progress in creating incentives.



### Imperative 7. Planning for Water Supply Development Needs (including assessment)

Streams in the Mid-Coast Planning area have high streamflow during the winter months (January-March) and low streamflow during the summer/fall months (August-October) as a result of seasonal precipitation patterns. Generally, Mid-Coast groundwater is not very productive because of low permeability and low storage capacity of the regional rock formations. Developing additional sources of water supply and storage, both human-made and natural, will create a sustainable water supply that meets the needs of people and native fish and wildlife.

#### Objective

- Develop a sustainable water supply for consumptive uses that also protects the environment, supports healthy watersheds, and is resilient to climate change stressors and natural hazards.

#### Action Details

Actions	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
42 Seek additional and alternative sources of water for development in the region. <sup>40</sup>	Additional sources of water that are available for development are identified in the region.	<b>Lead:</b> Lincoln County, Department of Land and Conservation Development, Lincoln County Water Systems Alliance <b>Participants:</b> Mid-Coast Water Conservation Consortium, Oregon Water Resources Department	PHASE 1	\$100,000	<ul style="list-style-type: none"> <li>OWRD Feasibility Study Grants.</li> <li>BOR WaterSMART Basin Studies.</li> <li>Business Oregon Drinking Source Protection Fund.</li> <li>Special Public Works Fund (SPWF).</li> <li>Safe Drinking Water Revolving Loan Fund (SDWRLF).</li> <li>EPA Drinking Water State Revolving Fund (DWSRF).</li> </ul>
43 Using the Water Management Economic Assessment Model <sup>41</sup> , 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.	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.	<b>Lead:</b> Oregon State University <b>Participants:</b> Mid-Coast Water Planning Partnership, Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife (OAR 690 Division 33 rules), Oregon Water Resources Department, water providers	PHASES 1-2	\$100,000	<ul style="list-style-type: none"> <li>OWRD Feasibility Study Grants.</li> <li>BOR WaterSMART Basin Studies.</li> <li>Business Oregon Drinking Source Protection Fund.</li> <li>Special Public Works Fund (SPWF).</li> <li>Safe Drinking Water Revolving Loan Fund (SDWRLF).</li> <li>EPA Drinking Water State Revolving Fund (DWSRF).</li> </ul>
<b>TOTAL</b>				<b>\$200,000</b>	

#### Performance Metrics

- A suite of adaptation measures is developed and implemented to address water shortages.
- Measurable increase in the amount of water stored during high flow periods (natural and built storage) for summer use.
- Reduce municipal water shortages in late summer-early fall and during declared drought periods.
- Reduce intensity and duration of streamflow shortages in late summer-early fall and during declared drought periods.

<sup>40</sup> Consider existing studies for additional water sources, such as the 2001 CH2MHill Report on the Rocky Creek Regional Water Supply Project and Preliminary Water Management Plan, and conduct an updated analysis of supply and demand (considering the Multi-jurisdictional Natural Hazard Mitigation Plan and other risks, e.g., cyber security).

<sup>41</sup> (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 suite of adaptation measures is developed to address water shortages.

**Metric Methodology**

- The amount of water stored (natural and built storage) and available for all beneficial uses (instream and out-of-stream) on an average annual basis increases in the Mid-Coast planning area.

## Imperative 8. Ecosystem Protection and Enhancement

Ensuring the health of watershed ecosystems through protection and enhancement actions helps the sustainable delivery of ecosystem services, including adequate water quality and quantity, reduced drinking water treatment and infrastructure costs, reduced flood mitigation costs, increased resilience to climate change stressors and natural hazards, opportunities to recover listed species and provide habitat for native fish and wildlife, and reduced risk for invasive species introductions and establishment.

### Objectives

- Restore watershed ecological function (ridgetop to ocean approach), including restoring riparian areas and instream flow and habitat functions, values, and benefits; re-establishing hydrologic and sediment transport regimes to a more natural state; restoring natural channel morphology; protecting, maintaining, and improving water quality in the region for all beneficial uses; and implementing watershed restoration projects that (a) cool streams and improve summertime flows for sensitive species and water quality impairments, and (b) identify, meet, protect, and restore peak and ecological flows.
- Balance instream and out-of-stream water uses.
- Ensure year-round summer stream flows are sufficient to meet the instream water needs of fish and wildlife.
- Waterbodies consistently attain water quality standards that protect drinking water and other beneficial uses.
- Anticipate and prepare for the effects of climate change stressors, which are predicted to influence precipitation, temperature, coastal inundation, ecosystem function, and water quality.
- Prioritize restoration work and support land practices that reduce drinking water contaminants.
- Identify, meet, protect, and restore peak and ecological flows.
- Promote natural water storage using beavers, wetlands, and green infrastructure.

### Action Details

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
<b>44 Riparian Restoration; Restore Channels; Floodplain Reconnection; Restore Stream Flow: Support restoration projects that involve diverse landowners and land management goals in locations that will achieve the greatest ecological returns on investment (e.g., cooler streams and improved summertime flows for sensitive species and to address water quality impairments).</b>	A diversity of landowners participates in the implementation of restoration projects that enhance ecological function in the region.	<b>Lead:</b> Mid-Coast Watersheds Council, Salmon-Drift Creek Watershed Council, US Forest Service, Bureau of Land Management <b>Participants:</b> Private landowners, Soil and Water Conservation Districts, Salmon Safe, Mid-Coast Watersheds Council, Oregon Department of Fish and Wildlife, Oregon Department of Forestry, Oregon Department of Environmental Quality, volunteers, Lincoln County Department of Community Development, NOAA Fisheries, US Geological Survey, Tribal nations, Oregon Watershed Enhancement Board	PHASES 1-3	The estimated cost to implement the full suite of restoration and improvement projects to address actions in this section and support ecological functions: \$70M to \$1.1.27M <sup>42</sup>	<ul style="list-style-type: none"> <li>▪ National Fish and Wildlife Foundation Resilient Communities<sup>43</sup>.</li> <li>▪ Bureau of Reclamation WaterSMART Cooperative Watershed Management Program (Phase I or Phase II Implementation).</li> <li>▪ OWEB Partnership Technical Assistance Grant. OWEB Small Grant Program.</li> <li>▪ OWEB Operating Capacity Grants.</li> <li>▪ OWEB Stakeholder Engagement Grant.</li> <li>▪ OWEB Restoration Grant.</li> <li>▪ Jubitz Family Foundation Environmental Grant.</li> <li>▪ Meyer Memorial Trust Healthy Environment Program.</li> <li>▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program.</li> <li>▪ USFWS Coastal Program.</li> <li>▪ USFWS Landowner Incentive Program.</li> </ul>

<sup>42</sup> Source: Oregon Forest Resources Institute: [https://oregonforests.org/sites/default/files/2019-01/OFRI\\_2019-20\\_ForestFacts\\_WEB.pdf](https://oregonforests.org/sites/default/files/2019-01/OFRI_2019-20_ForestFacts_WEB.pdf)

<sup>43</sup> Community demonstration & capacity-building projects that help communities understand environmental risks and opportunities and organize and take actions to improve local resiliency by enhancing natural buffers and system functions.

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
					<ul style="list-style-type: none"> <li>▪ NFWF Five Star and Urban Waters Restoration Grant Program.</li> <li>▪ Starker Forests Grant.</li> <li>▪ ODFW Access and Habitat Program.</li> <li>▪ ODFW Wildlife Habitat Conservation and Management Program.</li> </ul>
<p><b>45 Riparian Restoration; Restore Channels; Floodplain Reconnection; Restore Stream Flow: Use established methods (e.g., field assessment, remote sensing, and physical models, such as Heat Source) and local knowledge to prioritize stream reaches for riparian buffer restoration projects. Increase wooded buffer zones on priority streams.</b></p>	<p>Healthy riparian areas in priority stream reaches.</p> <p>Achieve a clear understanding of locations/stream reaches where preservation of existing functional buffers would result in greatest protection against degradation of existing water quality.</p>	<p><b>Lead:</b> US Forest Service, private landowners, Oregon Department of Forestry, Oregon Department of Environmental Quality, Oregon Department of Agriculture, Mid-Coast Watersheds Council, Salmon-Drift Creek Watershed Council</p> <p><b>Participants:</b> Tribal nations, private landowners, Oregon Department of Fish and Wildlife</p>	<p>PHASE 2</p>	<p>\$250,000</p>	<ul style="list-style-type: none"> <li>▪ National Fish and Wildlife Foundation Resilient Communities.</li> <li>▪ OWEB Operating Capacity Grant.</li> <li>▪ OWEB Restoration Grant.</li> <li>▪ Meyer Memorial Trust Healthy Environment Program.</li> <li>▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program.</li> <li>▪ NFWF Five Star and Urban Waters Restoration Grant Program.</li> </ul>
<p><b>46 Riparian Restoration; Restore Channels: Advocate for the restoration and conservation of native riparian vegetation to facilitate large natural wood recruitment, maintain water quality, ensure ecological function, and produce habitat for aquatic species, including beavers.</b></p>	<p>Native riparian vegetation is restored and conserved to support and enhance ecological function in the region. Riparian zones, including intermittent flow stream zones, are expanded and/or restored, to levels that provide adequate ecological functions.</p>	<p><b>Lead:</b> Oregon Department of Environmental Quality, Mid-Coast Watersheds Council, Oregon Department of Agriculture, Oregon Department of Forestry</p> <p><b>Participants:</b> Oregon Department of Fish and Wildlife, watershed councils, US Forest Service, Lincoln County Soil and Water Conservation District, Tribal nations, private landowners</p>	<p>PHASE 1</p>	<p>Riparian Restoration to provide ecological functions<sup>44</sup> on 357 miles of impaired streams:</p> <p>Low estimate (Min CREP buffer on 1518 acres) = \$7,131,746 \$7M</p> <p>Median (partially functioning buffer on 2818 acres) = \$13,244,671 \$13M</p> <p>High Estimate (fully functioning buffer on 4,335 acres) = \$20,376,418 \$20M</p>	<ul style="list-style-type: none"> <li>▪ National Fish and Wildlife Foundation Resilient Communities.</li> <li>▪ OWEB Small Grant Program.</li> <li>▪ OWEB Operating Capacity Grant.</li> <li>▪ OWEB Stakeholder Engagement Grant.</li> <li>▪ OWEB Restoration Grant.</li> <li>▪ Jubitz Family Foundation Environmental Grant.</li> <li>▪ OWEB Forest Collaboratives Grants (federal lands).</li> <li>▪ Meyer Memorial Trust Healthy Environment Program.</li> <li>▪ USDA NRCS Emergency Watershed Protection Program.</li> <li>▪ USDA NRCS Healthy Forests Reserve Program.</li> <li>▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program.</li> <li>▪ USFWS Coastal Program.</li> <li>▪ USFWS Landowner Incentive Program.</li> <li>▪ NFWF Five Star and Urban Waters Restoration Grant Program.</li> <li>▪ ODFW Access and Habitat Program.</li> <li>▪ ODFW Wildlife Habitat Conservation and Management Program.</li> <li>▪ ODFW Riparian Lands Tax Incentive Program.</li> </ul>

<sup>44</sup> Methods based on *Cost Estimate to Restore Riparian Forest Buffers and Improve Stream Habitat in the Willamette Basin, Oregon* (DEQ, 2010): [ftp://deqftp2.deq.state.or.us/dwartz/MCWPP/WillametteRipCost030310\\_V2.pdf](ftp://deqftp2.deq.state.or.us/dwartz/MCWPP/WillametteRipCost030310_V2.pdf)

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
<p><b>47 Watershed Function and Ecosystem Services: Implement more erosion control practices.</b></p>	<p>Reduced sediment delivery to regional streams. Lands are managed for multiple benefits, including ecological function and values (i.e., mimic natural watershed hydrology, sediment and nutrient processes and carbon storage). Larger proportion of road network is hydrologically disconnected from streams. Private landowners widely implement Oregon Plan voluntary measures and report project data to the Oregon Watershed Restoration Inventory (OWRI)<sup>45</sup> or other databases, to track improvements.</p>	<p><b>Lead and Participants:</b> Public and private landowners, Lincoln County, Oregon Department of Transportation, Oregon Department of Agriculture, Oregon Department of Forestry, watershed councils, Lincoln Soil and Water Conservation District, Oregon Department of Fish and Wildlife</p>	<p>PHASE 2</p>		<ul style="list-style-type: none"> <li>▪ OWEB Operating Capacity Grant.</li> <li>▪ OWEB Stakeholder Engagement Grant.</li> <li>▪ OWEB Forest Collaboratives Grants (federal lands).</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ Clean Water State Revolving Fund.</li> <li>▪ USDA NRCS Healthy Forests Reserve Program.</li> <li>▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program.</li> <li>▪ USFWS Landowner Incentive Program.</li> <li>▪ NFWF Five Star and Urban Waters Restoration Grant Program.</li> <li>▪ ODFW Access and Habitat Program.</li> <li>▪ ODFW Wildlife Habitat Conservation and Management Program.</li> <li>▪ ODFW Riparian Lands Tax Incentive Program.</li> </ul>
<p><b>48 Sediment Processes: Evaluate anthropogenic sources of fine sediment from all land uses, including mass wasting and unsurfaced roads.</b></p> <p><b>Prevention, Upgrades, and Repair: Seek funding opportunities to reduce shallow landslide risk and other sediment delivery hazards (e.g., undersized culverts, outdated road maintenance, legacy roads) and perform road upgrades, repair, and decommissioning.</b></p>	<p>Mass wasting (shallow landslides and debris flows), surface and hillslope erosion and road sediment are reduced <u>from all land uses</u>. Natural sediment processes are restored to extent possible.</p> <p>A reduction in anthropogenic causes of mass wasting, culvert failures, and road sediment delivery to Mid-Coast region streams</p> <p>Private forest operations widely implement Oregon Plan voluntary measures and report project data to OWRI or other database to track improvements.</p>	<p><b>Lead:</b> US Forest Service, Bureau of Land Management, Oregon Department of Forestry, private industrial forestry, private small woodland landowners</p> <p><b>Participants:</b> Watershed councils, Lincoln SWCD, Oregon Department of Environmental Quality, Oregon Water Resources Department, Oregon Department of Fish and Wildlife, Lincoln County, private landowners</p>	<p>PHASES 1-3</p>	<p>\$150,000</p>	<ul style="list-style-type: none"> <li>▪ Bureau of Reclamation WaterSMART Cooperative Watershed Management Program (Phase II Implementation).</li> <li>▪ OWEB Restoration Grants.</li> <li>▪ Meyer Memorial Trust Healthy Environment Program.</li> <li>▪ USDA NRCS Emergency Watershed Protection Program.</li> <li>▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program.</li> </ul>
<p><b>49 Floodplain Reconnection and Wetlands: Protect beaver populations and encourage beaver pond creation, especially in critical areas with low summer flows.</b></p>	<p>A measurable increase in wetland habitat and the amount of naturally stored water in critical areas where summer flows are low.</p>	<p><b>Lead:</b> US Forest Service, Bureau of Land Management, Oregon Department of Fish and Wildlife, Mid-Coast Watersheds Council</p> <p><b>Participants:</b> Oregon Department of Forestry, Oregon Department of Agriculture, Lincoln County, private landowners</p>	<p>PHASE 1</p>	<p>\$150,000</p>	<ul style="list-style-type: none"> <li>▪ Bureau of Reclamation Cooperative Watershed Management Grant (Phase I).</li> <li>▪ OWEB Operating Capacity Grant.</li> <li>▪ Jubitz Family Foundation Environmental Grant.</li> </ul>
<p><b>50 Riparian Restoration; Restore Channels; Restore Stream Flow: Design and implement restoration projects with partners to directly address impairments and improve conditions (e.g., erosion prevention and control, riparian and wetland buffers, urban tree protection).</b></p>	<p>Restoration projects are collaboratively implemented to address limiting factors and improve ecological function.</p>	<p><b>Lead:</b> Watershed councils, US Forest Service, Bureau of Land Management, Lincoln Soil and Water Conservation District</p> <p><b>Participants:</b> Oregon Department of Agriculture, Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, OSU Extension Service, Oregon Department of Forestry</p>	<p>PHASE 3</p>	<p>\$250,000</p>	<ul style="list-style-type: none"> <li>▪ National Fish and Wildlife Foundation Resilient Communities.</li> <li>▪ Bureau of Reclamation WaterSMART Cooperative Watershed Management Program (Phase II Implementation).</li> <li>▪ OWEB Partnership Technical Assistance Grant. OWEB Small Grant Program.</li> </ul>

<sup>45</sup> Oregon Watershed Restoration Inventory (OWRI)

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
		Oregon Watershed Enhancement Board, water providers			<ul style="list-style-type: none"> <li>▪ OWEB Operating Capacity Grant.</li> <li>▪ OWEB Stakeholder Engagement Grant.</li> <li>▪ OWEB Restoration Grant.</li> <li>▪ ODEQ Supplemental Environmental Projects (SEP) Program.</li> <li>▪ Georgia-Pacific Environment Grant Program.</li> <li>▪ Meyer Memorial Trust Healthy Environment Program.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ EPA Clean Water State Revolving Fund.</li> <li>▪ USDA NRCS Emergency Watershed Protection Program.</li> <li>▪ USDA NRCS Healthy Forests Reserve Program.</li> <li>▪ EPA Nonpoint Source Section 319 Grants.</li> <li>▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program.</li> <li>▪ USFWS Coastal Program.</li> <li>▪ USFWS Landowner Incentive Program.</li> <li>▪ NFWF Five Star and Urban Waters Restoration Grant Program.</li> <li>▪ ODFW Access and Habitat Program.</li> <li>▪ ODFW Riparian Lands Tax Incentive Program.</li> </ul>
<b>51 Restore Stream Flow: Evaluate the mechanisms and conditions for restoring hyporheic flows (the transport of surface water through sediments in flow paths that return to surface water) in the Mid-Coast using a suite of strategies (articulated in the Oregon Plan and other plans).</b>	Channel conditions (morphology) and watershed mechanisms exist for restoring hyporheic flows. Mechanisms, conditions, and locations for restoring hyporheic flows are identified. Projects to restore hyporheic flows are developed and implemented.	<b>Lead:</b> Mid-Coast Watersheds Council, Salmon-Drift Creek Watershed Council, US Forest Service, Bureau of Land Management <b>Participants:</b> Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, US Geological Survey, Tribal nations		\$150,000	<ul style="list-style-type: none"> <li>▪ OWEB Technical Assistance Grant.</li> <li>▪ OWEB Restoration Grant.</li> <li>▪ Meyer Memorial Trust Healthy Environment Program.</li> <li>▪ OWRD Water Projects Grants and Loans.</li> <li>▪ NFWF Five Star and Urban Waters Restoration Grant Program.</li> </ul>
<b>52 Protect Stream Flow: Recommend limits on further appropriation of water on high priority streams where water available for meeting aquatic life needs (OAR Chapter 690, Division 500).</b>	Further appropriation of water on high priority streams is limited to protect native fish and wildlife. The criteria for high priority streams is identified (e.g., streams which lack adequate summertime flow).	<b>Lead:</b> Oregon Department of Fish and Wildlife, Oregon Water Resources Department, Oregon Department of Environmental Quality (OAR 690-Div 33 review) <sup>46</sup> <b>Participants:</b> Mid-Coast Watersheds Council, Salmon-Drift Creek WC, Confederated Tribes of Siletz Indians of Oregon, water providers and municipalities, Wild Salmon Center	PHASE 2	\$150,000	<ul style="list-style-type: none"> <li>▪ Charlotte Martin Foundation Wildlife and Habitat Grant.</li> <li>▪ OWEB Water Acquisition Grant. Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ OWRD Water Projects Grants and Loans.</li> <li>▪ USDA Rural Development Water and Waste Disposal Loan and Grant Program.</li> </ul>
<b>53 Restore Stream Flow: Support projects that result in increased water retention capacity in channels, floodplains, and adjacent uplands and wetlands using a variety of strategies.</b>	Review proposed restoration and enhancement projects with this objective as one outcome.	<b>Lead:</b> US Forest Service, Bureau of Land Management, MidCoast Watersheds Council, Salmon-Drift Creek Watershed Council, local planners <b>Participants:</b> Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, Oregon	PHASES 1-3	Cost estimates included in actions 44 and 46	<ul style="list-style-type: none"> <li>▪ OWEB Focused Investment Partnership (FIPs).</li> <li>▪ Bureau of Reclamation Cooperative Watershed Management Grant (Phase I or Phase II Implementation).</li> </ul>

<sup>46</sup> <https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=3153>



Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
	Strategies and projects are implemented that increase water retention capacity in Mid-Coast channels, floodplains, uplands, and wetlands.	Department of Forestry, Oregon Department of Agriculture, Oregon Department of State Lands, Oregon Water Resources Department, US Geological survey, Tribal nations			<ul style="list-style-type: none"> <li>▪ OWEB Small Grant Program.</li> <li>▪ OWEB Restoration Grant.</li> <li>▪ USDA NRCS Agricultural Conservation Easement Program.</li> <li>▪ OWRD Water Projects Grants and Loans.</li> <li>▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program.</li> <li>▪ USFWS National Coastal Wetlands Conservation Grant Program.</li> <li>▪ NFWF Five Star and Urban Waters Restoration Grant Program.</li> </ul>
54	<b>Restore Stream Flow: Determine ecological flows (seasonally varying flow targets and temperature-based flow targets), and identify basin-wide in-stream demands. Support development of additional instream water rights. Implement flow restoration efforts in high priority areas as determined by Instream Water Right Monitoring and other means (e.g., ODFW's Aquatic Habitat Prioritization) (OAR Chapter 690, Division 77).</b>	<p>Ecological flows are identified for the highest priority waterways. Projects are identified to protect and restore instream flow.</p> <p><b>Lead:</b> Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, Oregon Water Resources Department, Oregon Parks and Recreation Department</p> <p><b>Participants:</b> Mid-Coast Watersheds Council, Salmon-Drift Creek Watershed Council, water users, Oregon Department of State Lands, local planners</p>	PHASE 1	\$250,000	<ul style="list-style-type: none"> <li>▪ OWEB Partnership Technical Assistance Grant.</li> <li>▪ OWRD Water Projects Grants and Loans.</li> <li>▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program.</li> <li>▪ NFWF Five Star and Urban Waters Restoration Grant Program.</li> </ul>
55	<b>Restore Stream Flow: Use established voluntary programs, or other tools, to convert existing water rights (e.g., irrigation, commercial use, other out-of-stream uses) to instream uses that protect critical flows needed to support fish and wildlife, water quality, recreation, and scenic attraction.</b>	<p>An analysis is conducted in Mid-Coast watershed basins to prioritize locations in need of instream water rights. In-stream water rights are established that protect the full suite of flows for a diversity of uses.</p> <p><b>Lead:</b> Oregon Department of Environmental Quality, Oregon Water Resources Department, Oregon Parks and Recreation Department (state agencies for new rights), Oregon Department of State Lands, water providers and municipalities</p> <p><b>Participants:</b> Oregon Department of Fish and Wildlife, Mid-Coast Watersheds Council, Oregon Water Resources Department, Oregon Watershed Enhancement Board (nonprofits for existing rights), water rights holders</p>	PHASE 1 for analysis PHASE 2 to obtain or transfer rights	\$250,000	<ul style="list-style-type: none"> <li>▪ OWEB Water Acquisition Grant.</li> <li>▪ USDA Rural Development Water and Waste Disposal Loan and Grant Program.</li> </ul>
56	<b>Control Invasive Weeds: Identify priority invasive species in each watershed, and seek funding to support control and management of invasives in streams and along stream corridors while encouraging establishment of native vegetation.</b>	<p>Priority invasive species are identified, controlled, and managed. Prevent new invasive species introductions and decrease the scale and spread of current infestations.</p> <p><b>Lead:</b> Mid-Coast Watersheds Council, Oregon Department of Agriculture, Soil and Water Conservation Districts</p> <p><b>Participants:</b> Oregon Invasive Species Council, local watershed groups, Oregon Department of Forestry, Oregon Department of Fish and Wildlife</p>	PHASES 1-3	\$250,000	<ul style="list-style-type: none"> <li>▪ Oregon Invasive Species Council (OISC) Invasive Species Education and Outreach Grant.</li> <li>▪ OWEB Operating Capacity Grant.</li> <li>▪ OWEB Restoration Grant.</li> <li>▪ Georgia-Pacific Environment Grant Program.</li> <li>▪ ODA Noxious Weed Grant Program.</li> <li>▪ ODFW's Wildlife Integrity Program.</li> <li>▪ USFWS Coastal Program.</li> </ul>
57	<b>Protect Existing Complex Forest; Strategic Thinning; Prescribed Fire; Promote Native Understory Vegetation: Advocate for implementation of the Lincoln County Multi-Jurisdictional Natural Hazard Mitigation Plan, especially as it relates to wildfire mitigation in the Mid-Coast.</b>	<p>Implementation of the Lincoln County Multi-Jurisdictional Natural Hazard Mitigation Plan, especially as it relates to wildfires, is supported throughout the Mid-Coast Region.</p> <p><b>Lead:</b> Lincoln County, US Forest Service, Oregon Department of Forestry</p>	PHASE 1	\$150,000	
58	<b>Easements and acquisitions: Acquire land, or obtain conservation easements, to protect critical land areas managed for water quality protection.</b>	<p>Critical lands are in drinking water source areas/watersheds are protected. Key areas are publicly owned and managed, or managed for conservation. An increasing proportion of acreage in drinking water source areas is protected.</p> <p><b>Lead:</b> Counties, water providers and municipalities, US Forest Service, Bureau of Land Management, watershed councils, non-governmental organizations, Natural Resources Conservation Service, corporations, McKenzie River Trust</p>	PHASES 1-2	\$10,000,000	<ul style="list-style-type: none"> <li>▪ Bureau of Reclamation WaterSMART Cooperative Watershed Management Program (Phase I or Phase II Implementation).</li> </ul>

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Initial Estimated Investment	Potential Funding Sources
		<b>Participants:</b> private landowners, Oregon Watershed Enhancement Board			<ul style="list-style-type: none"> <li>▪ Meyer Memorial Trust Healthy Environment Program.</li> <li>▪ Business Oregon Drinking Water Source Protection Fund.</li> <li>▪ USDA NRCS Emergency Watershed Protection Program. Safe Drinking Water Revolving Loan Fund (SDWRLF).</li> <li>▪ USDA Rural Development Water and Waste Disposal Loan and Grant Program.</li> <li>▪ ODFW Access and Habitat Program.</li> <li>▪ OWEB land acquisition funds.</li> </ul>
<b>59 Support and advocate for the compilation of a hierarchy of necessary spatial analyses and modeling to determine which conservation strategies, and locations on the landscape, will result in the greatest environmental returns on investment (ROI) (e.g., ecological function) and achieve the highest priorities in existing species recovery plans (e.g., improving winter and summer rearing habitats). Advocate for implementation of strategies in federal Coho recovery plan and Oregon coast Coho Conservation Plan (OWEB FIP Framework).</b>	Spatial analyses are conducted/compiled to identify strategies, and locations on the landscape, to achieve the greatest environmental returns on investment (ROI) (e.g., ecological function) and actions support existing recovery plans.	<b>Lead:</b> Mid-Coast Watershed Council, Oregon Watershed Enhancement Board, Oregon Department of Environmental Quality, US Forest Service, Lincoln County Soil and Water Conservation District, Oregon Water Resources Department, Lincoln County <b>Participants:</b> Environmental Protection Agency (Bob McKane/ <a href="#">Visualizing Ecosystem Land Management Assessments (VELMA) modeling</a> ), US Geological Survey, Tribal nations, non-governmental organizations, Oregon Watershed Enhancement Board, Oregon Department of Fish and Wildlife	PHASE 2	\$250,000	<ul style="list-style-type: none"> <li>▪ OWEB technical assistance grants.</li> </ul>
<b>TOTAL</b>				<b>\$99.5M–\$1,169M</b>	

**Performance Metrics**

- Ecological function (i.e., natural watershed hydrology, sediment, nutrient and carbon processes) is enhanced throughout Mid-Coast watersheds.
- Stream habitat projects are implemented to address key limiting factors.
- Native trees and shrubs are planted in riparian areas and on floodplains.
- Invasive species are eradicated, or controlled, to desired levels.
- Lateral side-channels and floodplains are reconnected to stream channels.
- Measurable improvement in aquatic habitat condition and trends for all primary land uses in the Mid-Coast strata based on ODFW aquatic habitat inventory and Oregon Plan Habitat Monitoring methodology.<sup>47</sup>
- Water rights transactions keep more water in streams and incorporate conservation and water efficiency strategies.
- No net loss in working lands acreage in the Mid-Coast region of Oregon.
- Net increase in land acquisition and easements that protect water quality.
- Natural storage (e.g., beavers, wetlands) projects are implemented.
- Land is preserved in priority areas.

<sup>47</sup> Oregon Plan Habitat Monitoring: [https://odfw.forestry.oregonstate.edu/freshwater/inventory/op\\_reports.htm](https://odfw.forestry.oregonstate.edu/freshwater/inventory/op_reports.htm).



## City of Newport Water Supply and Conservation Management Work Group

### Potential Approaches for Monthly Meetings from June through November (6 meetings)

#### Approach 1

Organize meetings around the themes that the Work Group stated it would address in its recommendations. The four main themes are listed below, along with actions from the Water Action Plan that could be relevant under that theme and discussed (Actions shown were identified in the Work Group document titled “Alignment with Mid-Coast Water Action Plan”).

- Meeting 1: Water management and conservation strategies and technologies
  - Action 1B: Drought declaration, conservation, and curtailment messaging
  - Action 1A: Promote water conservation—events/website/media/materials
  - Action 1C: Watershed and water system tours
  - Action 1F: Student in public education
  - Action 4: supporting the Mid-Coast Water Conservation Consortium
  - Action 14: advanced metering infrastructure
  - Action 24a: Incentivize commercial and industrial water conservation
  - Action 26: water conservation incentives
- Meeting 2: Watershed condition and production
  - Actions 12 and 13: Develop a Drinking Water Protection Plan and funding
  - Actions 35: Identify, fund, and implement source water protection activities
  - Action 36: Use latest technology to reduce water quality concerns
  - Actions 41 and 58: Protect critical lands in drinking water source areas
  - Action 37: Contamination prevention for reservoirs and surface water intakes
  - Action 44: Support restoration projects
  - Action 45: Prioritize riparian buffer restoration and increase buffers
  - Action 47: Erosion control practices
  - Action 48: Evaluating and addressing sediment delivery hazards
  - Action 49: Protect and encourage beaver populations
  - Action 1h: Outreach about water supply and water protection measures to people in the water service area
  - Action 1i: Outreach about pesticide and fertilizer use practices
  - Action 1j: Outreach about source water protection in the source water areas
  - Action 5: Advocate for planning/development that minimize impacts to floodplains and riparian areas
  - Action 25: Collaborate to provide incentives/support to irrigators
- Meeting 3: Potential conservation policies and practices
  - Action 7: curtailment plan

- Action 24b: Water pricing strategies
- Action 22: Water reuse/recycled water/graywater opportunities
- Action 23: Reusing water at the water treatment plant and/or wastewater treatment plant
- Action 43: Climate change impact analyses and planning
- Meeting 4: Water supply infrastructure condition and capacity
  - Action 28: Upgrading/maintaining water metering infrastructure
  - Action 29: Use latest technologies in water infrastructure
  - Action 32: Support expansion of water infrastructure funding
  - Action 33: Identify water infrastructure funding
  - Action 30: Install earthquake valves in water tanks
- Meeting 5: Address any remaining activities/items and discuss initial recommendation list
- Meeting 6: Refine and seek agreement on the Work Group recommendations

### Approach 2

Organize meetings around Imperatives, such as:

- Meeting 1: Imperatives 1, 2, 3
- Meeting 2: Imperative 4
- Meeting 3: Imperatives 5 and 7
- Meeting 4: Imperatives 6 and 8
- Meeting 5: Address any remaining activities/items and discuss initial recommendation list
- Meeting 6: Refine and seek agreement on the Work Group recommendations

### Approach 3

Organize meetings around activities of high priority, such as:

- Meeting 1: Compile list of straightforward recommendations and identify which actions should have more detailed recommendations that should be developed during subsequent meetings
- Meeting 2: High priority action X
- Meeting 3: High priority action Y
- Meeting 4: High priority action Z

- Meeting 5: Address any remaining activities/items and discuss initial recommendation list
- Meeting 6: Refine and seek agreement on the Work Group recommendations