Appendix D

Framework and Strategy Action Summary Sheets

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Oregon's 2025 Integrated Water Resources Strategy

A framework for improving our understanding of Oregon's water resources and meeting our instream and out-of-stream needs, including water quantity, water quality, and ecosystem needs

Goal 1: Improve Our Understanding of Oregon's Water Resources

(1) Understand Oregon's Water Resources

Further Understand Limited Water Supplies and Systems
(groundwater, surface water, and their interaction)

Improve Water Quality and Quantity Information

Further Understand Our Water Management Institutions

Water Resource / Supply Information

- 1A Improve Water Resource Data Collection and Monitoring
- 1B Conduct Additional Groundwater Basin Investigations
- 1C Enhance Interagency Data Coordination
- 1D Support Basin-Scale Climate Change Research

Objectives / **Critical Issues** / **Actions**

Goal 1 (continued)

(2) Understand Instream and Out-of-Stream Needs

Further Define Instream Needs
(i.e., left-in-place water)

Further Define Out-of-Stream Needs / Demands
(i.e. diverted water)

Instream & Ecosystem Water Needs

- 2A Determine Instream Flow Needs (Quality and Quantity)
- 2B Determine Needs of Groundwater-Dependent Ecosystems
- 2C Develop Instream and Ecosystem Water Need Forecasts

Out of Stream Water Needs

- 3A Improve Water-Use Measurement and Reporting
- 3B Regularly Update Out-of-Stream Water Demand Forecasts
- 3C Determine Unadjudicated Water Right Claims
- 3D Authorize the Update of Water Right Records with Contact Information

Goal 1 (continued)

(3) Understand the Pressures that Affect Our Needs and Supplies

Climate Change | **Economic Development** | **Population Change** | **Water and Energy**

Natural Hazards | **Land Use Planning** | **Water Infrastructure** | **Education and Outreach**

Climate Change
Actions are included throughout the Strategy

Economic Development and Population Change
See Actions 2C and 3B

Water and Energy

- 4A Analyze the Effects on Water from Energy Development Projects and Policies
- 4B Develop Non-Traditional Hydroelectric Power
- 4C Promote Strategies that Increase/Integrate Energy and Water Savings

Natural Hazards

- 5A Plan and Prepare for Drought and Wildfire Resiliency
- 5B Plan and Prepare for Flood Events
- 5C Plan and Prepare for a Cascadia Earthquake and Tsunami Event

Land Use Planning

- 6A Improve Integration of Water Information and Land Use Planning
- 6B Encourage Low Impact Development Practices and Green Infrastructure

Water Infrastructure

- 7A Maintain, Upgrade, Decommission Water and Wastewater Infrastructure
- 7B Encourage Regional (Sub-Basin) Water and Wastewater Systems
- 7C Support Dam and Levee Safety

Education and Outreach

- 8A Support Implementation of K-12 Environmental Literacy Plan
- 8B Provide Career Training for the Next Generation of Water Professionals
- 8C Promote Community Education and Outreach
- 8D Identify Water Research Needs and Partnerships

Objectives / **Critical Issues** / **Actions**

Goal 2: Meet Oregon's Water Resource Needs

(4) Meet Oregon's Instream and Out-of-Stream Needs

Water Planning | **Water Use and Management** | **Public Health**

Healthy Ecosystems | **Clean Water** | **Funding**

Water Planning

- 9A Support Place-Based Integrated Planning and Other Water Planning Efforts
- 9B Coordinate Implementation of Natural Resource Plans
- 9C Partner with Tribes, Federal Agencies, and Neighboring States in Long-Term Water Resources Management
- 9D Improve State Interagency Coordination
- 9E Lead Meaningful Community Engagement

Water Use and Management

- 10A Improve Water-Use Efficiency and Water Conservation
- 10B Encourage Water Reuse Projects
- 10C Improve Access to Storage
- 10D Reach Environmental Outcomes with Non-Regulatory Alternatives
- 10E Provide an Adequate Field Presence
- 10F Strengthen & Improve Water Quantity and Water Quality Permitting Programs

Public Health
See Actions 12A through 12C

Healthy Ecosystems

- 11A Improve Watershed Health, Resiliency, and Capacity for Natural Storage
- 11B Develop Additional Instream Protections
- 11C Prevent and Eradicate Invasive Species
- 11D Protect, Restore, and Provide Access to Instream Habitat for Fish and Wildlife
- 11E Develop Additional Groundwater Protections

Clean Water

- 12A Ensure the Safety of Oregon's Drinking Water
- 12B Reduce the Use of and Exposure to Toxics and Other Pollutants
- 12C Implement Water Quality Pollution Controls

Funding

- 13A Fund Development and Implementation of Oregon's Integrated Water Resources Strategy
- 13B Fund Water Resources Management Activities by State Agencies
- 13C Invest in Planning, Feasibility Studies, and Water Resource Project Implementation

Estrategia integrada de recursos hídricos de Oregón para 2025

Un marco para mejorar nuestra comprensión de los recursos hídricos de Oregón y satisfacer nuestras necesidades dentro y fuera de la corriente, incluidas la cantidad de agua, la calidad del agua y las necesidades del ecosistema

Meta 1: Mejorar nuestra comprensión de los recursos hídricos de Oregón

(1) Comprender los recursos hídricos de Oregón

Conocer Mejor los Sistemas y Suministros Limitados de Agua (aguas subterráneas, aguas superficiales y su interacción)

Mejorar la Información Sobre la Cantidad y la Calidad del Agua

Comprender Mejor Nuestras Instituciones de Gestión del Agua

Información sobre recursos hídricos y suministro

- 1A Mejorar la recopilación y el seguimiento de datos sobre recursos hídricos
- 1B Realizar investigaciones adicionales sobre cuencas de aguas subterráneas
- 1C Mejorar la coordinación de datos entre agencias
- 1D Apoyar la investigación sobre el cambio climático a escala de cuenca

← Objectivos →

← Temas Críticos →

← Accíones →

Meta 1 (continuó)

(2) Comprender las necesidades dentro y fuera de los cursos de agua

Definir Mejor las Necesidades de los Cursos de Agua (es decir, el agua remanente)

Definir Mejor las Necesidades/Demandas Fuera del Cauce (es decir, el agua desviada)

Necesidades hídricas de los cursos de agua y los ecosistemas

- 2A Determinar las necesidades de caudal en los cursos de agua (calidad y cantidad)
- 2B Determinar las necesidades de los ecosistemas que dependen de las aguas subterráneas
- 2C Elaborar previsiones de las necesidades de agua en los cursos de agua y los ecosistemas

Necesidades de agua fuera de los cursos de agua

- 3A Mejorar la medición y la notificación del uso del agua
- 3B Actualizar periódicamente las previsiones de la demanda de agua fuera de los cursos de agua
- 3C Determinar las reclamaciones de derechos de agua no adjudicados
- 3D Autorizar la actualización de los registros de derechos de agua con información de contacto

Meta 1 (continuó)

(3) Comprender las presiones que afectan a nuestras necesidades y suministros

Cambio Climático | **Desarrollo Económico** | **Crecimiento Demográfico** | **Agua y Energía** | **Riesgos Naturales** | **Planificación del Uso del Suelo** | **Infraestructura Hídrica** | **Educación y Divulgación**

Cambio Climático

Las medidas se incluyen a lo largo de toda la estrategia

Desarrollo económico y Crecimiento demográfico

Ver acciones 2C y 3B

Agua y Energía

- 4A Analizar los efectos sobre el agua de los proyectos y políticas de desarrollo energético.
- 4B Desarrollar energía hidroeléctrica no tradicional.
- 4C Promover estrategias que aumenten/integren el ahorro de energía y agua.

Riesgos Naturales

- 5A Planificar y prepararse para la resiliencia ante sequías e incendios forestales
- 5B Planificar y prepararse para inundaciones
- 5C Planificar y prepararse para un terremoto y un tsunami en Cascadia

Planificación del Uso del Suelo

- 6A Mejorar la integración de la información sobre el agua y la planificación del uso del suelo
- 6B Fomentar prácticas de desarrollo de bajo impacto e infraestructura verde

Infraestructura Hídrica

- 7A Mantener, mejorar y desmantelar la infraestructura de agua y aguas residuales
- 7B Fomentar los sistemas regionales (subcuencas) de agua y aguas residuales
- 7C Apoyar la seguridad de presas y diques

Educación y Divulgación

- 8A Apoyar la implementación del Plan de Alfabetización Ambiental K-12
- 8B Proporcionar formación profesional para la próxima generación de profesionales del agua
- 8C Promover la educación y la divulgación en la comunidad
- 8D Identificar las necesidades de investigación sobre el agua y las asociaciones

← Objectivos →

← Temas Críticos →

← Accíones →

Meta 2: Satisfacer las necesidades recursos hídricos de Oregón

(4) Satisfacer las necesidades de Oregón dentro y fuera de los cursos fluviales

Planificación Hídrica | **Uso y Gestión del Agua** | **Salud Pública** | **Ecosistemas Saludables** | **Agua Limpia** | **Financiación**

Planificación Hídrica

- 9A Apoyar la planificación integrada basada en el lugar y otras iniciativas de planificación hídrica
- 9B Coordinar la implementación de planes de recursos naturales
- 9C Colaborar con tribus, agencias federales y estados vecinos en la gestión a largo plazo de los recursos hídricos
- 9D Mejorar la coordinación entre agencias estatales
- 9E Liderar una participación comunitaria significativa

Uso y Gestión del Agua

- 10A Mejorar la eficiencia en el uso del agua y la conservación del agua
- 10B Fomentar proyectos de reutilización del agua
- 10C Mejorar el acceso al almacenamiento
- 10D Alcanzar resultados medioambientales con alternativas no reguladoras
- 10E Proporcionar una presencia adecuada sobre el terreno
- 10F Fortalecer y mejorar los programas de permisos de cantidad y calidad del agua

Salud Pública Ver acciones 12A-12C

Ecosistemas Saludables

- 11A Mejorar la salud, la resiliencia y la capacidad de almacenamiento natural de las cuencas hidrográficas
- 11B Desarrollar protecciones adicionales en los cursos de agua
- 11C Prevenir y erradicar las especies invasoras
- 11D Proteger, restaurar y proporcionar acceso al hábitat de los cursos de agua para los peces y la fauna silvestre
- 11E Desarrollar protecciones adicionales para las aguas subterráneas

Agua Limpia

- 12A Garantizar la seguridad del agua potable de Oregón
- 12B Reducir el uso y la exposición a sustancias tóxicas y otros contaminantes
- 12C Implementar controles de contaminación de la calidad del agua

Financiación

- 13A Financiar el desarrollo y la implementación de la Estrategia Integrada de Recursos Hídricos de Oregón
- 13B Financiar las actividades de gestión de los recursos hídricos por parte de las agencias estatales
- 13C Invertir en planificación, estudios de viabilidad e implementación de proyectos de recursos hídricos

Action Summary Sheets

Chapter 1 – Understand Oregon's Water Resources

Chapter 1 Actions At-A-Glance

Critical Issue - Water Resource/Supply Information

Actions 1A – 1D

Chapter 2 – Understand Instream and Out-of-Stream Needs

Chapter 2 Actions At-a-Glance

Critical Issue - Instream and Ecosystem Water Needs

Actions 2A – 2C

Critical Issue - Out-of-Stream Water Needs

Actions 3A – 3D

Chapter 3 – Understand the Pressures that Affect Our Needs and Supplies

Chapter 3 Actions At-a-Glance

Critical Issue – Climate Change

Actions are distributed throughout other Strategy actions

Critical Issue - Water and Energy

Actions 4A – 4C

Critical Issue - Natural Hazards

Actions 5A – 5C

Critical Issue - Land Use Planning

Actions 6A – 6B

Critical Issue - Water Infrastructure

Actions 7A – 7C

Critical Issue – Education and Outreach

Actions 8A-8D

Chapter 4 – Meet Instream and Out-of-Stream Needs

Chapter 4 Actions At-a-Glance

Critical Issue – Water Planning

Actions 9A – 9E

Critical Issue - Water Use and Management

Actions 10A – 10F

Critical Issue - Healthy Ecosystems

Actions 11A – 11E

Critical Issue - Clean Water

Actions 12A – 12C

Critical Issue – Funding

Actions 13A-13C

Descriptions for Headings on Action Summary Sheets

Lead agency – identifies the primary state or federal agency or agencies where this action falls into their mission, current or recent activities, or an existing program. Identification as a lead agency does not indicate obligation to contribute to the action, acknowledging that participation is voluntary and dependent upon agency resources and funding. **Agencies are listed in alphabetical order.**

Supporting agency – identifies the state or federal agencies that may participate in the action but have less involvement than the lead agencies. This category recognizes agencies that provide support through technical assistance, workgroups, funding, or other contributions. **Agencies are listed in alphabetical order.**

Possible Partners – any non-federal or state agency entity that has participated in this action, or likely would, given the type of action. Tribes are often listed as a partner to promote partnership and/or consultation when appropriate. This list is not intended to be exhaustive or exclusive but highlights the major interested parties.

Example Actions – specific examples provided to help illustrate how the action relates to agency roles, duties, or programs. Inclusion does not indicate priority or mandate action. Implementation of example actions is subject to regulatory authority and adequate resources.

Resources – includes agency programs, workgroups, websites, and documents to support implementation. Documents often include state agency plans or strategies (e.g., Oregon's State Wildlife Action Plan), helping to show how the Strategy complements and supports other state initiatives. Resources may also include agency work products (e.g., reports, studies) resulting from or supporting action implementation.

Other Definitions

"Instream" water use – identifies water that is left-in-place in the environment, either in surface water (e.g., rivers, streams) or groundwater (e.g., aquifers). Water left instream supports ecological needs and human uses including aquatic habitat, groundwater-dependent ecosystems, fish propagation, recreation, water quality improvement, hydroelectric power generation, navigation, and spiritual and cultural practices.

"Out-of-Stream" water use - Water removed from the ground or diverted from a surface-water source for beneficial use. Common uses include irrigation and domestic and municipal water supply.

U.S. Geological Survey Water Resources Glossaries

Agency Acronyms

The action summary pages use acronyms for the lead and supporting state and federal agencies. See "Other Acronyms" for common types of partners listed on the action summary pages.

State Agencies

BIZOR	Business Oregon
DAS	Department of Administrative Services
DOGAMI	Department of Geology and Mineral Industries
DLCD	Department of Land Conservation and Development
DSL	Department of State Lands
HECC	Higher Education Coordinating Commission
OCCRI	Oregon Climate Change Research Institute
ODA	Oregon Department of Agriculture
ODEQ	Oregon Department of Environmental Quality
ODF	Oregon Department of Forestry
ODFW	Oregon Department of Fish and Wildlife
ODHS	Oregon Department of Human Services
ODOE	Oregon Department of Energy
ODOT	Oregon Department of Transportation
OEM	Office of Emergency Management
OHA	Oregon Health Authority
OLCC	Oregon Liquor and Cannabis Commission
OPRD	Oregon Parks and Recreation Department
OSMB	Oregon State Marine Board
OSU	Oregon State University
OWEB	Oregon Watershed Enhancement Board
OWRD	Oregon Water Resources Department

Federal Agencies

BLM	Bureau of Land Management
BPA	Bonneville Power Administration
FEMA	Federal Emergency Management Agency
NFWF	National Fish and Wildlife Fund
NOAA	National Oceanic and Atmospheric Administration
NRCS	U.S. Department of Agriculture, Natural Resources Conservation Service
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Department of Agriculture, U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

Other Acronyms

CBO	Community-based organization
NGO	Non-governmental organization
SWCD	Soil and water conservation district
WC	Watershed council

"Local governments" (ORS 174.116) includes cities, counties, local service districts (e.g., people's utility districts, domestic water supply districts, irrigation districts, soil and water conservation districts)

Chapter 1 Actions at a Glance

Objective 1: Understand Oregon's Water Resources

Critical Issue - Water Resource/Supply Information

1A Improve Water Resource Data Collection and Monitoring
1B Conduct Additional Groundwater Basin Investigations
1C Enhance Interagency Data Coordination
1D Support Basin-Scale Climate Change Research

Action 1A
Improve Water Resource Data Collection and Monitoring

Lead Agencies	Supporting Agencies	Possible Partners
ODEQ, ODFW, OHA, OWEB, OWRD	BLM, NOAA-NWS, NRCS, ODA, USBR, USACE, USEPA, USFS, USGS	Tribes, local governments, SWCDs, WCs

Purpose

Oregon has several water resource data collection and monitoring programs. However, resource constraints limit the geographic scope and frequency of data collection and analysis. On-going statewide groundwater and surface water quantity monitoring supports active management of the resource and establishes long-term data sets to evaluate climatic, seasonal, and water use impacts on rivers and aquifers. Additional resources are needed for surface water monitoring and data analysis to identify impaired waterbodies and measure the effectiveness of actions taken to meet water quality standards. Monitoring data are also pivotal for ensuring that water quality improvement strategies and investments, such as ecological restoration, achieve the desired habitat function or water quality targets and are cost-effective.

Example Actions

- Use agencies' monitoring strategies, or similar methods, to design, expand, and maintain real-time monitoring networks for surface water and groundwater quality and quantity
- Prioritize basins for data collection and monitoring by centering the needs of people and ecosystems most affected by water quantity or quality challenges
- Expand gage network associated with monitoring instream water rights
- Improve agency capacity to collect, share, analyze, and report data, bringing records to final form and make them available to the public
- Implement statewide groundwater quality monitoring programs and assure responsiveness to community health
- Update water quality standards and develop additional TMDL's (also see Action 12C)
- Increase the number of stream gages with reportable water temperature data to support water quality programs
- Increase resources to help disadvantaged homeowners and renters access water quality testing in private drinking water wells; update real estate transaction database
- Monitor habitat and watershed conditions and evaluate the effectiveness of restoration efforts (e.g., OWEB restoration inventory)
- Establish methods for measuring ecosystem services (benefits) and incorporate results into planning efforts, when useful
- Increase monitoring and evaluate the effectiveness of pollution control plan implementation
- Identify and address gaps in staffing or process that prevent agencies from sharing in the collection of, or already collected, data (e.g., temperature data)
- Work with USBR and irrigation districts to help fund state agency staffing to improve measurement of water use and water storage
- Work with tribes, state, federal, and local monitoring partners (e.g., USGS) to analyze gage network to identify and address gaps

Resources

Agency Programs

ODEQ Water Quality Programs, ODFW Water Program, OWEB Oregon Watershed Restoration Inventory Program, OWEB Grant Programs, OWRD Technical Services Division

Documents/Websites

OWEB Oregon Watershed Restoration Inventory, OWRD 2016 Monitoring Strategy, OWRD Surface Water Availability Reporting System (WARS), Groundwater Information System (GWIS), Groundwater Administrative Areas/Critical Groundwater Areas, and Realtime Streamflow and Lake Level Data, ODEQ Ambient Water Quality Monitoring System, ODEQ Water Quality Monitoring Strategy, Groundwater Management Areas

Workgroups

Oregon Plan Monitoring Team, Water Quality Pesticide Management Team, Oregon STREAM Team, Oregon Water Data Portal Steering Committee and Oregon Water Data Portal

Action 1B
Conduct Additional Groundwater Basin Investigations

Lead Agencies	Supporting Agencies	Possible Partners
ODEQ, OWRD, USGS	DOGAMI, ODA, ODFW, OHA, USEPA, USFS	Tribes, local governments, OSU Extension Service, SWCDs, public and private research institutions

Purpose

Accurate well location and use information, aquifer water-level data, and water quality data are critical for assessing groundwater resources. Oregon has a need for additional basin -scale investigations to further understand the relationship between groundwater and surface water, and their availability. Conducting basin studies is a priority for the state, which typically evaluates groundwater resources through cooperative, cost-share programs with federal agencies.

OWRD needs adequate data to evaluate and assess whether groundwater administrative areas are meeting the goals of groundwater stabilization, groundwater recovery, and protection of existing water rights. The state needs to dedicate resources to determine whether additional areas require groundwater designations. Additionally, ODEQ needs additional resources to support the Statewide Groundwater Monitoring Program, which has seen funding and staffing reductions since 2017.

Example Actions

- Install and maintain dedicated state observation wells in priority basins
- Partner with USGS to conduct and cost-share additional groundwater basin investigations
- Evaluate existing and potential establishment of new groundwater administrative areas; review time-limited permits more efficiently
- Locate and document water wells, including exempt use wells, permitted wells, and unused wells
- Ensure groundwater level measurements are high-quality; install measuring tubes and make scheduled measurements
- Investigate connections between groundwater and surface water, particularly where groundwater sustains summer low flows and/or discharges cold water
- Support and coordinate with ODEQ's Groundwater Monitoring Program (water quality)
- Incorporate groundwater quality and quantity information into Oregon's Environmental Justice Mapping Tool

Resources

Agency Programs

ODEQ Groundwater Protection Program and Groundwater Monitoring Program, OWRD Groundwater Monitoring Program, Deschutes Groundwater Mitigation Program

Workgroups

ODEQ and OWRD Groundwater Technical Advisory Team

Documents

2021 Oregon Groundwater Resource Concerns Assessment
2021 Review of Deschutes Groundwater Mitigation Program Report
2021 DOGAMI Bulletin 108 - Geology of the North Half of the Lower Crooked River Basin, Crook, Deschutes, Jefferson, and Wheeler Counties, Oregon

Data

OWRD Groundwater Information System (GWIS)

Action 1C
Enhance Interagency Data Coordination

Lead Agencies	Supporting Agencies	Possible Partners
DSL, ODA, ODEQ, ODF, ODFW, OWEB, OWRD	BLM, BPA, DLCD, NRCS, NWS, USACE, USBR, USFS, USGS	Tribes, local governments, SWCDs WCs, OSU

Purpose

Federal, state, and local governments monitor and study Oregon's waterways. This data collection and analysis is critical to the understanding and management of Oregon's surface water and groundwater resources. The lack of stable resources to coordinate and maintain the state's monitoring networks, to collect and share data, to conduct studies, and to develop modeling tools presents a significant, ongoing challenge. Consistent agency coordination can support efficient use of limited resources. Several years' worth of water quantity and quality data still needs to be processed, analyzed, and shared with the public and other partners.

Example Actions

- Improve integration of federal, state, and local government data collection efforts while adhering to quality control standards
- Improve data sharing and availability using on-line platforms and emerging technologies, mobile apps, and open standards
- Invest in information technology and modernization of databases and applications
- Develop or update modeling and other decision-support tools
- Encourage inter-agency work among a variety of partners
- Provide resources for interagency data management, including data infrastructure and stewardship, as well as participation in the Oregon Water Data Portal
- Support the development, implementation, and ongoing maintenance of the Oregon Water Data Portal Project
- Provide interagency training to improve data collection standards, including manuals and technical support
- Improve public access to water data and provide a centralized location to access various types of water data

Resources

Agency Programs

DSL Waterways & Wetlands Program, ODA Agricultural Water Quality Program, ODEQ Water Quality Program, ODF Compliance Monitoring Program, ODFW Water Program, OWEB Effectiveness Monitoring Program, OWRD Surface Water Hydrology Section, OWRD Groundwater Hydrology Section

Workgroups

Conservation Effectiveness Partnership, Oregon Plan Monitoring Team, Water Quality Pesticide Management Team, Oregon STREAM Team, Oregon Water Data Portal Steering Committee and Oregon Water Data Portal

Documents

2017 Monitoring Strategy for Oregon's Waters: An Inter-Agency Approach
Oregon Open Data Portal
ODEQ Water Quality Monitoring Data

Action 1D
Support Basin-Scale Climate Change Research

Lead Agencies	Supporting Agencies	Possible Partners
DLCD, ODA, ODEQ, ODFW, OWRD	DOGAMI, NOAA, NRCS, OWEB, USFWS, USGS	Tribes, local governments, SWCDs, OSU, OCCRI, Oregon Climate Action Commission

Purpose

Many local, state, federal, and tribal governments are conducting, and must continue, climate change research, identifying and assessing risks, and developing actions specific to the Pacific Northwest. Basin-scale research aids water managers and natural resources agencies in developing strategies for addressing climate-related impacts on water quality, water quantity, and ecosystem health.

Example Actions

- Make improvements in surface water and groundwater monitoring, flood and drought frequency projections, and long-range forecasts
- Improve climate change projections at the basin-scale
- Develop reliable projections of basin-scale hydrology and associated impacts on built and natural systems, including aquatic species and habitat
- Analyze how instream and out-of-stream water rights will be met with hydrologic changes
- Investigate potential shifts in the hydrograph, agriculture and irrigation seasons and impacts to fish distribution/life history timing
- Develop climate change forecasting for use in water availability analyses and permitting decisions (also see Action 10F)
- Investigate new crop types suitable to a changing climate
- Investigate increased risks to ecosystems and water supply and wastewater management infrastructure associated with wildfires, particularly in environmental justice communities
- Finalize and implement ODFW's Aquatic Habitat Prioritization assessment which incorporates climate projections for water quantity and temperature when evaluating future habitat suitability for sensitive aquatic species
- Coordinate data collection into the Oregon Water Data Portal Project
- Include an assessment of vulnerable water supply systems and identify those in environmental justice communities
- Consider the increased risk to water infrastructure by wildfire in environmental justice communities
- Look for equity impacts of climate change (i.e., climate justice) and water management (i.e., water justice)
- Advocate for financial resources to help local basins better understand climate impacts, including partnerships with OCCRI

Resources

Agency Programs

DLCD Natural Hazards, ODA Natural Resources, ODEQ Water Quality, ODFW Water Program, OWRD Field Services and Technical Services Divisions

Policies - ODFW's Climate and Ocean Change Policy

Workgroups

OWEB's Climate and Water Committee, Climate Impacts Research Consortium

Documents/Websites

OWRD 2016 Monitoring Strategy

2023 Final Report: Foundational Elements to Advance the Oregon Global Warming Commission's Natural and Working Lands Proposal

2022 State of Water Justice Report

2021 Oregon's Climate Change Adaptation Framework & Equity Blueprint

South Slough National Estuary Research Reserve (research regarding watershed health and resiliency)

Climate Change Vulnerability Assessment

Objective 2: Understand Instream and Out-of-Stream Needs

Critical Issue - Instream and Ecosystem Water Needs

2A Determine Instream Flow Needs (Quality and Quantity)
2B Determine Needs of Groundwater-Dependent Ecosystems
2C Develop Instream and Ecosystem Water Need Forecasts

Critical Issue - Out-of-Stream Water Needs

3A Improve Water-Use Measurement and Reporting
3B Regularly Update Out-of-Stream Water Demand Forecasts
3C Determine Unadjudicated Water Right Claims
3D Authorize the Update of Water Right Records with Contact Information

Action 2A
Determine Instream Flow Needs (Quality and Quantity)

Lead Agencies	Supporting Agencies	Possible Partners
ODEQ, ODFW, OPRD, OWRD	BPA, DSL, NOAA, ODA, ODF, OWEB, USACE, USEPA	Tribes, local governments, SWCDs, WCs, CBOs, NGOs

Purpose

Our rivers and streams, lakes, reservoirs, aquifers, wetlands, and estuaries all contribute greatly to species survival, habitat functionality, and our economy and health. Instream uses and their associated economic and ecological benefits are greatly diminished without adequate water quality and supply. Instream flows are also critical for spiritual and recreational opportunities and supporting Tribes' access to First Foods. To improve instream flow protections (Action 11B), Oregon should prioritize identifying ecological flow criteria (metrics characterizing the full range of flows needed to support ecosystem health). A solid understanding of ecological flow criteria is needed to inform development of environmental flows (metrics that balance human considerations with ecological flow needs) for streams throughout the state.

Example Actions

- Prioritize and install gages in additional locations to monitor the status of instream flows and water rights
- Use existing and new data to develop statewide ecological flow criteria for streams
- Prioritize basins and install monitoring equipment to help characterize the full suite of flows through these basins
- Conduct instream needs studies to support future instream water right applications
- Conduct instream needs studies to assess spiritual and cultural needs
- Pursue a consistent, model-based framework for characterizing long-term instream need in the context of climate change to support the development of a long-term instream forecast (Action 2C)
- Review, synthesize, and update models/studies to quantify the ecological, economic, social, and cultural value of instream uses
- Support state agency instream flow efforts and programs (e.g., ODFW, ODEQ, OPRD)
- Support ODFW and ODEQ efforts and collaboration regarding stream temperature monitoring, modeling, and studies
- Support ODFW and OWRD efforts and collaboration regarding monitoring for instream flows and instream water rights
- Fill data gaps regarding fish passage barriers and screening needs
- Conduct studies to determine if wetland restoration or reconnection to streams could benefit instream flow

Resources

Agency Programs

ODEQ Water Quality Program, ODFW Water Program, OPRD Scenic Waterways, OWRD Water Rights Division, OWRD Technical Services Division

Workgroups

Oregon STREAM Team

Authorities

Oregon's Instream Water Right Act

Documents

Oregon Plan for Salmon and Watersheds
2023 ODFW Guidance for Determining Instream Flow Needs
Tide Gate and Tidal Wetland Monitoring

Action 2B
Determine Needs of Groundwater-Dependent Ecosystems

Lead Agencies	Supporting Agencies	Possible Partners
ODEQ, ODFW, OWRD	DLCD, DOGAMI, ODF, USFS, USFWS, USGS	Tribes, local governments, WCs, CBOs, NGOs

Purpose

Groundwater is vital to both ecosystems and human communities, as groundwater discharges and supplies water to wetlands, rivers, and lakes. Groundwater provides late-summer flow for many rivers and creates cool-water upwellings critical for aquatic species during the warmer summer months. Groundwater-dependent ecosystems contain species and habitats that rely on groundwater for some or all of their life cycle. These ecosystems form the interface between groundwater and surface water, and due to their unique hydrology, often harbor many rare species native only to these locations. Groundwater-dependent ecosystems still need to be fully identified and characterized across the state, including their groundwater quantity and quality requirements.

Example Actions

- Identify and characterize groundwater-dependent ecosystems and prioritize systems for long-term study
- Perform an in-depth analysis of accessible springs
- Monitor springs and seeps across the state to understand their contribution (quality and quantity) to streamflows
- Identify the water quantity and water quality needs of groundwater-dependent species and ecosystems
- Conduct seepage studies on priority streams to quantify groundwater exchange
- Evaluate impacts to groundwater ecosystems from human activities (e.g., groundwater pumping, lining canals, fish passage and transportation maintenance projects)

Resources

Agency Programs

ODEQ Water Quality Program, ODFW Water Program, ODFW Technical Services Division

Documents/Websites

Online mapping tool by The Nature Conservancy, Global Groundwater Dependent Ecosystems

Article in Nature Water, "Establishing ecological thresholds and targets for groundwater management" available at https://doi.org/10.1038/s44221-024-00221-w

Action 2C
Develop Instream and Ecosystem Water Need Forecasts

Lead Agencies	Supporting Agencies	Possible Partners
ODEQ, ODFW, OWRD	DLCD, DOGAMI, ODA, OPRD, USGS	Tribes, local governments, SWCDs, WCs, CBOs, NGOs

Purpose

The state has completed two long-term demand studies (2008 and 2015) that focused on forecasting water demands for agricultural, municipal, domestic, and industrial uses (see Action 3B). A parallel statewide analysis is needed to better understand the quality and quantity of instream (surface water and groundwater) and ecosystem needs now and into the future. Climate change will continue to affect water quality, timing, availability and use, and balanced solutions are not achievable without understanding the full suite of instream and out -of-stream needs. An instream need forecast must be produced at the appropriate scale and periodically updated to inform water planning and management.

Example Actions

- Develop statewide instream water forecasts
- Periodically update instream forecasts with new climate projections
- Study potential impacts to ecosystems under a changing climate
- Study potential impacts to environmental justice and other frontline communities under a changing climate

Resources

Agency Programs

ODFW's Water Program, OWRD's Planning, Collaboration, and Investment Section, OWRD Technical Services Division

Documents

2015 Statewide Long-Term Water Demand Forecast

Action 3A
Improve Water-Use Measurement and Reporting

Lead Agencies	Supporting Agencies	Possible Partners
OWRD	ODEQ, ODFW, USGS	AgriMet, local governments, water rights holders, OSU Extension Service, SWCDs

Purpose

Objective water management decisions are made possible when they are based on reliable information about water use. Water use data is fundamental to carry out efficient water management, effective water distribution, and to help plan for future water needs. The information is also used to ground-truth demand projections or models. The Water Resources Department has the authority to require new users to measure and report water use and can require existing users who already measure water use to report the resulting data. Water users who keep track of their use are better able to demonstrate the validity of their water rights, to develop water management and conservation plans, and to determine the design and funding needs of their future water systems.

Example Actions

- Continue to work with Information Technology to improve the software and tools used for water-use measurement and reporting
- Update OWRD's water measurement authorities
- Implement new authority that allows OWRD to require reporting of water use, where measurement is required, including aligning the reporting with the Water-Use Reporting program
- Update and implement the Water Resources Commission's Strategic Measurement Plan, measuring significant diversions
- Coordinate the Water-Use Reporting Program and Water Resource Commission's Strategic Measurement Plan
- Improve Water Use Reporting Database functionality and public access, including establishing and maintaining quality assurance procedures to verify the accuracy of water use and other data
- Invest in water use measurement devices in priority watersheds
- Invest in evapotranspiration monitoring and programs
- Develop accurate statewide annual water use summaries for water rights using all available water use data sets
- Produce annual values of consumptive use by water right to allow for analysis of trends in water use over time
- Install and monitor groundwater observation wells
- Provide resources to assist with installation of measurement devices; update cost-share program
- Work with USGS to integrate water use data from OWRD into USGS water use products
- Seek authority to require water use reporting in areas of scientific interest in preparation for Serious Water Management Problem Areas (SWMPAs), basin studies, or planning exercises like updates to basin plan rules
- Increase documentation and data collection of decommissioned wells and well construction history
- Include equity considerations for assistance through measurement cost share programs

Resources

Agency Programs and Workgroups

OWRD Water-Use Reporting Program

Funding

OWRD Water Measurement Cost Share Program

Documents

2022 OWRD Legislative Report on Water Use Measurement and Reporting

2000 Oregon Water Resources Department Strategic Measurement Plan

Action 3B
Regularly Update Out-of-Stream Water Demand Forecasts

Lead Agencies	Supporting Agencies	Possible Partners
OWRD	DLCD, DOGAMI, ODA, ODEQ, ODFW, USGS	Tribes, local governments, SWCDs, municipal water providers

Purpose

There is a need to understand how the out-of-stream demand for water, across many use sectors, is projected to change over time. This can help inform planning and infrastructure decisions to anticipate these demands and respond to climatic impacts that alter water timing and availability.

Oregon must regularly update its forecasts of out-of-stream water needs and coordinate this effort with understanding instream forecasted needs (See Action 2C). These forecast updates should include identifying trends in water use, economic development, urban-rural population growth/shift, per capita demands, and changing crop water requirements due to a changing climate.

Example Actions

- Periodically update demand projections with new population, per capita water demand, industrial demand, crop water use, and climate projections
- Develop models/studies to quantify the economic, social, and cultural value of consumptive uses of water and publish outcomes
- Employ remote sensing and crop water demand modeling to improve crop water use estimates
- Provide data in a method consistent with needs of the public, and involve water users in the development of demand products
- Study potential impacts to environmental justice and other frontline communities in demand forecasts

Resources

Agency Programs & Workgroups

ODFW's Water Program, OWRD's Planning, Collaboration, and Investment Section, OWRD Technical Services Division

Documents

2015 Statewide Long-Term Water Demand Forecast

Action 3C
Determine Unadjudicated Water Right Claims

Lead Agencies	Supporting Agencies	Possible Partners
OWRD	ODEQ, ODFW, USBR	Tribes

Purpose

In many parts of Oregon, landowners began using water long before the Oregon Water Code was enacted. Passage of the Water Code by the Legislature in 1909 established, for the first time in Oregon, a centralized administrative system for acquiring and recording rights to the use of surface water. These water rights are managed within a prior appropriation system of water allocation that gives priority to senior rights in times of shortage. Similar actions were taken for groundwater in the 1955 Groundwater Act. Court cases over the years have further established federal and Tribal "reserved" water rights.

Adjudications may be conducted to determine pre-1909 Water Code surface water rights, and pre-1955 Groundwater Act groundwater rights, as well as federal and tribal reserved water rights. The ability to manage water resources has been greatly facilitated in those areas of the state where adjudications have been concluded. Adjudicating water right claims creates an enforceable system that is protective of senior users in times of shortage. Without the adjudication process, these claims cannot make calls for their water or take advantage of water management tools, such as transfers or leases.

Adjudications have proven to be very long and complex processes. Pursuing a water rights settlement instead of an adjudication could offer a timelier resolution to federal reserved and Tribal claims. The need to resolve Tribal and federal rights in Oregon, either through adjudication or settlement, is real and significant. The OWRD would require additional staff capacity to conduct this work.

Example Actions

- Conduct surface water and groundwater adjudications
- Settle federal reserved claims, including tribal claims

Resources

Agency Programs

OWRD's Water Rights Program

Documents

Water Rights in Oregon

Action 3D
Authorize the Update of Water Right Records with Contact Information

Lead Agencies	Supporting Agencies	Possible Partners
OWRD		Legislature

Purpose
There are currently no statutory provisions allowing the name on a water right certificate to be changed or updated, even if the holder of the certificate has passed away or sold off land with its appurtenant water rights. Almost 90,000 certificates are held by water users. The state needs the ability to respond to holders of water rights who are asking to modify the names on these certificates. State authority will enable the Water Resources Department to update ownership information in its records.

Example Actions
- Authorize the OWRD to update the names on water right certificates
- Update related water right records, including databases, and geographic information system (GIS) layers

Resources
Agency Programs
OWRD's Water Rights Program

Documents
Water Rights in Oregon

Objective 3: Understand the Pressures that Affect Our Needs and Supplies

Critical Issue – Climate Change
Actions to mitigate and adapt to climate change are distributed throughout the Strategy
Refer to the Strategy narrative for additional information

Critical Issue - Water and Energy
4A Analyze the Effects on Water from Energy Development Projects and Policies
4B Develop Non-Traditional Hydroelectric Power
4C Promote Strategies that Increase/Integrate Energy and Water Savings

Critical Issue - Natural Hazards
5A Plan and Prepare for Drought and Wildfire Resiliency
5B Plan and Prepare for Flood Events
5C Plan and Prepare for a Cascadia Earthquake and Tsunami Event

Critical Issue - Land Use Planning
6A Improve Integration of Water Information and Land Use Planning
6B Encourage Low Impact Development Practices and Green Infrastructure

Critical Issue - Water Infrastructure
7A Maintain, Upgrade, and Decommission Water and Wastewater Infrastructure
7B Encourage Regional (Sub-Basin) Approaches to Water and Wastewater Systems
7C Support Dam and Levee Safety

Critical Issue – Education and Outreach
8A Support Implementation of K-12 Environmental Literacy Plan
8B Provide Career Training for the Next Generation of Water Professionals
8C Promote Community Education and Outreach
8D Identify Water Research Needs and Partnerships

Action 4A
Analyze the Effects on Water from Energy Development Projects and Policies

Lead Agencies	Supporting Agencies	Possible Partners
ODOE, ODFW	BPA, DLCD, DOGAMI, NOAA, ODEQ, OWRD, USACE, USFWS	Tribes, Public Utility Commission, Oregon Climate Action Commission, WCs, CBOs, NGOs

Purpose

Hydropower facilities at dams produce affordable energy, however, dam operations can alter streamflow amounts and timing and oppose needs for fish and other aquatic wildlife and other instream needs. Statewide goals to reduce greenhouse gas emissions while meeting future energy demand elevates the need for improving efficiency of existing facilities and developing alternative energy projects. Proposed energy projects should undergo a thorough scientific analysis to understand potential impacts to instream and ecosystem needs. This information can then provide the basis for decision-making for often conflicting objectives to produce affordable, low emission power and protect aquatic ecosystems and other instream needs.

Example Actions

- Analyze and project the water demand and water quality impacts of current and proposed energy development projects (e.g., hydroelectric, solar, wind, geothermal, bioenergy, nuclear, hydrogen, natural gas) in the context of climate change and greenhouse-gas reduction strategies
- Analyze the siting impacts of proposed energy projects on water quantity, quality, and ecosystems
- Evaluate where impacts to water quantity and quality associated with energy projects have been experienced, including environmental justice communities, and look for opportunities to recognize and avoid or mitigate in future energy projects

Resources

Agency Programs

ODOE Energy Planning and Innovation Division, ODEQ Climate Protection Program, ODEQ Water Quality Program, ODEQ Section 401 Hydropower Program, ODFW Land Resources Program, OWRD Hydroelectric Program

Workgroups

Hydroelectric Application Review Team (ODEQ, ODFW, OWRD)

Documents

ODOE's Biennial Energy Report
Oregon's Energy Strategy (coming fall 2025)
2021 Oregon's Climate Change Adaptation Framework
2024 U.S. Department of the Interiors' Historic and Ongoing Impacts of Federal Dams on the Columbia River Basin Tribes

Action 4B
Develop Non-Traditional Hydroelectric Power

Lead Agencies	Supporting Agencies	Possible Partners
ODEQ, ODFW, ODOE, OWRD	BIZOR, BPA, DLCD, DSL, ODA, ODOT, OEM, NRCS, USEPA	Tribes, local governments, SWCD's, WCs, CBOs, NGOs, businesses, individuals

Purpose

Oregon's 2016 Renewable Portfolio Standard (RPS) update requires that 50 percent of the electricity sold by Oregon's large utilities comes from eligible renewable resources by 2040. Oregon's 100 percent clean energy target established by House Bill 2021 (2021) also requires the state's large investor-owned electric utilities to achieve a 100 percent reduction in the greenhouse gas emissions associated with their electricity mixes by 2040. Reducing emissions while meeting Oregon's energy demand will require new approaches to energy generation.

Potential project types include in-conduit (within-a pipe) hydropower systems like those used within irrigation or municipal distribution systems and within aquifer storage and recovery systems like projects in Echo and Pendleton. Pumped storage systems can be used in combination with solar or wind projects to produce power when these renewable sources are not operating (e.g., at night).

Example Actions

- Utilize the state's expedited application process to develop hydroelectric projects at existing infrastructure
- Offer incentives for low-impact hydropower projects that provide local co-benefits, such as in-conduit micro-turbines installed in irrigation or municipal pipes
- Invest in alternative energy projects that protect water resources and the environment

Resources

Agency Programs

ODEQ Section 401 Hydropower Program, ODFW Hydropower Program, OWRD Hydroelectric Program

Workgroups

Hydroelectric Application Review Team (ODEQ, ODFW, OWRD), River Management Joint Operating Committee (BPA, USACE, USBR)

Documents/Websites

ODOE Biennial Energy Report
Pumped Storage Hydropower | Department of Energy
Low Impact Hydro Certification
BPA/USACE/USBR 2018 Hydroclimate Projections and Analyses

Funding

Energy Trust Irrigation Modernization
Farmers Conservation Alliance
NRCS Environmental Quality Incentives Program

Action 4C

Promote Strategies that Increase / Integrate Energy and Water Savings

Lead Agencies	Supporting Agencies	Possible Partners
ODA, ODOE, OWRD	BCBS, BIZOR, BPA, DLCD, USDA, USEPA	Tribes, local governments, SWCDs, WCs, CBOs, NGOs, Oregon Climate Action Commission, Oregon Public Utility Commission, OSU Extension Service

Purpose

Water is critical for energy production, and energy is used to pump, treat, heat, and convey water through pipes for residential, commercial, industrial, and irrigation purposes. Water conservation also conserves energy, and energy conservation reduces the amount of water used in energy production. Across various locations and times of the year, climate change presents the challenge of having reduced availability of both water and energy. To increase water/energy efficiency and conservation, there is a need to increase the sharing of information about efficiency and conservation strategies, along with financial incentives to implement the strategies.

Example Actions

- Move toward energy independence and resiliency for publicly operated treatment works (wastewater treatment)
- Continue to implement and evaluate building codes that encourage water and energy efficiencies
- Encourage individuals, communities, industries, and businesses, including agriculture, to look for and integrate ways to conserve both energy and water
- Encourage cross-sector and cross-agency collaboration to achieve energy and water savings
- Strive to capture and publicly report energy and water savings data
- Promote resources that increase water and energy efficiency and conservation for irrigation
- Promote regenerative agriculture and permaculture practices
- Improve availability of cost savings associated with ENERGY STAR and similar programs to low-income or disadvantaged households and businesses
- Explore new or innovative technologies to accomplish energy and water savings
- Consider developing an energy/water nexus efficiency program that could support industrial water and energy intensive uses (e.g., data centers, paper mills)
- Increase interagency and energy/water sector collaboration, to identify co-benefits and opportunities for water efficiency (See Action 10A)

Resources

Agency Programs

ODOE Community Renewable Energy Grant Program, ODOE Energy Planning and Innovation, ODOE Energy Development Services, ODEQ Climate Protection Program, BCBS Building Codes Division Energy Code

Workgroups

Northwest Power and Conservation Council
Oregon Climate Action Commission (formerly Oregon Global Warming Commission before 2023)
Energy Facility Siting Council
Energy Advisory Work Group

Documents/Websites

ODOE Community Renewable Energy Grant Program
Energy Trust of Oregon, programs for residential, commercial, industrial + agricultural, and municipal
Oregon Global Warming Commission 2023 Oregon Climate Action Roadmap to 2030
Oregon Global Warming Commission 2021 Natural & Working Lands Proposal
USDA No -Till Farming for Climate Resilience

Action 5A
Plan and Prepare for Drought and Wildfire Resiliency

Lead Agencies	Supporting Agencies	Possible Partners
DLCD, ODA, ODEQ, ODF, ODFW, OEM, OWRD	DOGAMI, FEMA, NOAA, NRCS, ODHS, OWEB, USBR, USEPA, USFS	Tribes, local governments, OCCRI/Oregon Climate Service, SWCDs, WCs, CBOs, NGOs, businesses, individuals

Purpose
Although there have been individual years of wet conditions over the past two decades, on average the span between 2000-2022 was drier than any other 22-year period in the past thousand years. Drought conditions impact water supplies, streamflow, agricultural productivity, wildfire danger, and ecosystem health.

The state has developed many resources to respond to drought, the primary source being the Natural Hazards Mitigation Plan (NHMP) and accompanying Drought Vulnerability Assessment. Agencies must continue to work together to plan, prepare, and respond to drought.

Example Actions
- Implement Oregon's Natural Hazard Mitigation Plan and recommendations from the Drought Vulnerability Assessment
- Identify, assess, and assist those communities and ecosystems most vulnerable to drought and wildfire (e.g., assess water supply systems for vulnerability)
- Develop the appropriate set of indicators that signal and forecast differing stages of drought
- Document the economic, social, and environmental impacts of drought and wildfire, including the frequency, distribution, intensity and duration
- Prepare for, respond to, and mitigate for the impacts of drought and wildfire
- Improve the drought toolbox through education and outreach, drought contingency plans, more efficient water distribution systems, and additional voluntary measures to improve streamflow
- Increase education and outreach efforts to help landowners minimize risk to their property from wildfires
- Invest in built and green/natural infrastructure, (i.e., nature-based solutions), refer to Actions 6B, 7A, 11A-11E
- Provide technical assistance and funding to local governments to evaluate the need and opportunities for inter-tie projects in Local Natural Hazards Mitigation Plans
- Prioritize resources for planning and preparation to those most vulnerable to drought and wildfire impacts
- Explore ways to protect minimum stream flows during drought declarations
- Educate the public about the importance of having an emergency supply of drinking water

Resources
Agency Programs

DLCD Natural Hazard Mitigation Planning Program, OWRD Technical Services Division, ODHS Office of Resilience and Emergency Management

Workgroups

Multihazard Mitigation Council, Drought Readiness Council, Water Supply Availability Committee, State Interagency Hazard Mitigation Team

Documents/Websites

OWRD Drought webpage, OWRD Summary, State Drought Declaration Process and Emergency Tools

Drought.gov

Oregon's Emergency Operations Annex – Drought, Oregon's Emergency Operations Annex – Wildlands Fire

Oregon Emergency Management's list of local (city/county) and tribal emergency managers

Drought and Public Health

Oregon Department of Emergency Management: Local Water Supply Emergency Planning Guidance

Drought Mitigation Policy Aid (fema.gov)

Federal Disaster Declaration Process

Post-Fire Debris Flow Project

Action 5B
Plan and Prepare for Flood Events

Lead Agencies	Supporting Agencies	Partners
DLCD, DOGAMI, ODOT, OEM, OWRD, USACE	FEMA, NOAA, NRCS, ODA, ODEQ, ODF, ODFW, OHA, USEPA	Tribes, local governments, OCCRI/Oregon Climate Service, SWCDs, WCs, CBOs, NGOs, businesses, individuals

Purpose

Flood events pose a risk to public safety, property, and the environment including threats to drinking water supplies and unintended wastewater discharges to our rivers and streams. Floods are one of twelve hazards addressed in Oregon's Natural Hazards Mitigation Plan (NHMP). The NHMP contains mitigation actions, which are meant to reduce or eliminate the long-term risk to people and property from flooding. The NHMP also includes potential funding sources for hazard mitigation activities. Statewide efforts to prepare and respond to floods are addressed in the Oregon Emergency Operations Flood Annex.

This action focuses on the public safety and emergency nature of flooding. Other parts of the Strategy call for actions that can help reduce the risk of flooding. Stream gaging data improvements are called for in Action 1A. Oregon's land use planning system can be used to reduce risk to people and property, see Action 6A. Action 7A supports increasing the resiliency of our infrastructure such as upgrading or decommissioning unsafe or outdated dams and levees and Action 7C supports Oregon's Dam Safety Program and the development of a Levee Safety Program. Floodplain protection and restoration are discussed under Action 11A.

Example Actions

- Implement Oregon's Natural Hazards Mitigation Plan
- Develop indicators of flood emergency stages, using information about meteorologic, hydrologic, hydraulic, and watershed conditions
- Document the economic, social, and environmental impacts of floods
- Evaluate potential for extreme flooding, under atmospheric rivers and climate change scenarios
- Establish early flood and debris-flow warning systems in areas where recent drought and wildfire have affected forests and vegetation
- Complete update of precipitation frequency estimates for Oregon
- Update methods and procedure for determining extreme precipitation and flooding
- Support DLCD to continue to provide assistance and training to local floodplain managers, property owners, surveyors, real estate agents, and others to support compliance with the National Flood Insurance Program
- Increase education and outreach efforts to help landowners minimize risk to their property from floods
- Invest in built and green/natural infrastructure (i.e., nature-based solutions), refer to Actions 6B, 7A, and 11A-11E
- Prioritize resources for planning and preparation to those most vulnerable to flood impact
- Develop an inventory of levees in Oregon and assess their condition and risk (also see Action 7C)
- Support dam safety (also see Action 7C)
- Educate the public about the importance of having an emergency supply of drinking water

Resources

Agency Programs

DLCD's Natural Hazards Program, DLCD's National Flood Insurance Program, NRCS's Emergency Watershed Protection Program, OWRD's Dam Safety Program

Workgroups

USACE Silver Jackets Flood Risk Program, Flood Core Team, State Interagency Hazard Mitigation Team

Documents/Websites

National Flood Insurance Program

Oregon's Natural Hazards Mitigation Plan (NHMP)

Oregon's Emergency Operations Annex - Flood

Oregon Emergency Management's list of local (city/county) and Tribal Emergency Managers

Action 5C
Plan and Prepare for a Cascadia Earthquake and Tsunami Event

Lead Agencies	Supporting Agencies	Possible Partners
DLCD, DOGAMI, ODEQ, OEM, OHA, OWRD	USEPA, NRCS, ODF, USFS	Tribes, local governments, OCCRI/Oregon Climate Service, WCs, CBOs, NGOs, businesses, individuals

Purpose
A large earthquake such as the Cascadia Earthquake and an associated tsunami could have widespread impacts on water infrastructure and water quality for years to come. Earthquakes and tsunamis are two of twelve hazards addressed in Oregon's Natural Hazards Mitigation Plan (NHMP). The plan contains mitigation actions, which are meant to reduce or eliminate the risk to people and property from earthquakes and tsunamis, in addition to potential funding sources for hazard mitigation activities.

Example Actions
- Implement Oregon's Natural Hazard Mitigation Plan
- Follow the recommendations provided by the Oregon Seismic Safety Policy Advisory Commission, including in its 2013 Oregon Resilience Plan and 2021 Tsunami Resilience on the Oregon Coast Report
- Incorporate earthquake and tsunami resilience regulations in local land use plans (see model policies developed by DLCD)
- Evaluate and retrofit dams and other water infrastructure to meet new seismic standards (see Action 7C)
- See water infrastructure Actions 7A – 7C
- Consult or develop a local Tsunami Evacuation Facilities Improvement Plan
- Prioritize resources for planning and preparation to those most vulnerable to earthquake and tsunami impacts
- Evaluate and mitigate the seismic vulnerability of bulk oils or liquid fuel terminals (SB 1567, 2022) that pose significant pollution risks to critical waterways
- Educate the public about the importance of having an emergency supply of drinking water

Resources
Agency Programs
DLCD Hazard Mitigation Planning Program, DOGAMI Geological Survey and Services Program, OWRD Dam Safety Program

Workgroups
Oregon Seismic Safety Policy Advisory Commission, State Interagency Hazard Mitigation Team

Websites/Documents
DOGAMI clearinghouse of tsunami information
DLCD tsunami land use planning information
Oregon's Natural Hazards Mitigation Plan
Oregon's Emergency Operations Annex – Earthquake
Oregon's Emergency Operations Annex - Tsunami
Oregon Emergency Management's list of local (city/county) and tribal emergency managers
2020 DOGAMI Oregon Coastal Hospital Resilience Project
2013 Oregon Resilience Plan
2021 Tsunami Resilience on the Oregon Coast
2012 DOGAMI Earthquake Risk Study for Oregon's Critical Energy Infrastructure Hub
Earthquake and Tsunami Community Disaster Cache Planning Guide
Fuel Tanks and Seismic Stability Assessments

Action 6A
Improve Integration of Water Information and Land Use Planning

Lead Agencies	Supporting Agencies	Possible Partners
DLCD, ODEQ, ODFW, OWRD	DAS, DOGAMI, DSL, ODA, ODF, OHA	Tribes, local governments, SWCDs, WCs, CBOs, NGOs

Purpose

Local government land use planners do not always have the information they need when making long-term decisions that affect water resources. Oregon can help remedy this issue by improving communication and coordination between state and local governments to improve local comprehensive planning and water resource protections. Local governments need increased access to several types of agency-generated information, including water availability, site suitability for stormwater and wastewater management, and the presence of sensitive natural resources to update and carry out local comprehensive plans. Enhanced coordination and resources also provide opportunities for improved land use protections within the local comprehensive planning process.

Example Actions

- Protect natural water bodies in the course of land use decisions, such as wetlands, estuaries, groundwater aquifers, rivers, and lakes
- Update land use protections for water bodies incorporating best available data
- Integrate OHA regulation of water master plans with local comprehensive land use plans to sustainably support municipalities' development
- Make accurate geographic information on water rights and district boundaries available to local governments and DLCD
- Support local governments to perform periodic review of their comprehensive plans
- Update Goal 5 resource inventories in local comprehensive plans (e.g., riparian areas, wetlands)
- Develop and share information with local governments regarding the location, quantity, and quality of water resources for use in land use decisions; consider mechanisms for increasing access to water data such as through the Oregon Water Data Portal
- Improve coordination, technical guidance, and assistance to local governments for land use decisions that rely on water availability or could have negative impacts to water quality
- Take next steps to implement land use goals related to water resources: establish implementing rules, support local governments to update acknowledged plans, and the application of appropriate safeguards during permitting
- Build partnerships with state agencies and local governments to share land use information
- Increase resources for local governments to update their natural hazard inventories (Goal 7)
- Increase resources for local governments to update their facilities plans (Goal 11)
- Work towards achieving a statewide dataset of tax lots (identified as a priority by DAS)
- Update State Agency Coordination Programs and associated rules (see Action 9D)
- Include environmental and social justice information in land use planning

Resources

Agency Programs

DLCD Community Service Division, Rural Planning, Urban Planning, Housing, and Transportation and Growth Management Programs, ODEQ Underground Injection Control Program, ODFW Land Resources and Water Programs, DSL Waterways and Wetlands Program, OWRD Surface Water, Groundwater, and Planning Programs

Documents/Websites

Oregon's Statewide Planning Goals
State Agency Coordination Plans
ODFW Compass: Mapping Oregon's wildlife habitats
Statewide Wetlands Inventory
Essential Salmonid Habitat Mapping
Integrating Water Efficiency into Land Use Planning in the Interior West: A Guidebook for Local Planners

Action 6B
Encourage Low Impact Development Practices and Green Infrastructure

Lead Agencies	Supporting Agencies	Possible Partners
DLCD, ODEQ	BIZOR, DSL, NRCS, ODF, OHA, OWEB, OWRD, USEPA, USFS	Local governments, OSU Extension Service, SWCDs WCs, CBOs, NGOs, developers, utilities

Purpose
Land development often changes the way water moves across the land, preventing it from soaking into the soil, and creating stormwater runoff that can pollute waterways. Low Impact Development (LID) practices, including environmentally sensitive site design and the use of natural or green infrastructure, helps collect rainfall close to where it falls, reduce pollution, and increase climate resilience. The best LID practices for a project need to be determined early on in project planning. Regulatory benefits include meeting requirements for a Total Maximum Daily Load (TMDL) plan, meeting MS4 permit post-construction requirements, the Safe Drinking Water Act, state land use planning Goals 5 and 6, and reducing impacts on Endangered Species Act listed species.

Also see related Actions 7A, and 11A-11E.

Example Actions
- Continue to compile and provide online information on low impact development best practices
- Support updates to local development codes, improving local capacity to review and permit low impact development and green infrastructure designs
- Encourage communities to consider natural infrastructure in lieu of, or as a complement to, built infrastructure
- Consider how and where co-benefits of natural/green infrastructure will occur, including flood abatement, clean drinking water, lower water/wastewater utility rates, educational opportunities, and climate resilience
- Implement the Community Green Infrastructure Grant Program

Resources
Agency Programs
DLCD and ODOT Transportation and Growth Management Program, ODEQ Total Maximum Daily Load Program, ODEQ Nonpoint Source Pollution Program, ODEQ MS4 Program

Websites
ODEQ LID Resources
ODEQ MS4 Resources
EPA – Nonpoint Source Pollution and Low Impact Development

Documents
Low Impact Development in Western Oregon: A Practical Guide for Watershed Health
LID Overview Fact Sheet http://oeconline.org/wp-content/uploads/2014/11/LID_OVERVIEW_FACT_SHEET.pdf
Oregon Smart Guide for Rainwater Harvesting
2016 ODOT Green Infrastructure Study Green Infrastructure Techniques for Resilience of the Oregon Coast Highway

Funding
DLCD Community Green Infrastructure Grant Program

Action 7A
Maintain, Upgrade, or Decommission Water Infrastructure

Lead Agencies	Supporting Agencies	Possible Partners
ODEQ, OHA, OWRD	BIZOR, DLCD, DOGAMI, ODFW, ODOE, USACE, USEPA, USFWS	Tribes, local governments, SWCDs, WCs, CBOs, NGOs, businesses, individuals

Purpose

Ensuring that Oregon's water-related built and green infrastructure is maintained and properly functioning is important for a variety of environmental, public health, and safety reasons, but also for meeting our state's economic needs. It takes an extensive system of pumps, pipes, treatment, and storage facilities to deliver water to our homes, businesses, and fields every day. A network of built and green infrastructure is necessary for conveying and treating stormwater and wastewater produced by residences, businesses, and industry. Updating aging infrastructure improves resilience, water security, and may also result in water and energy conservation. In some cases, decommissioning or removing deteriorated infrastructure may be a more cost-effective and environmentally beneficial alternative (e.g., wells, dams, or levees). Protection and restoration of green infrastructure (also see Action 11A) is also critical for maintaining infrastructure benefits such as flood control, stormwater management, water quality improvement, and storage. Safety improvements of dams and levees are covered under this action and Action 7C.

Example Actions

- Provide timely inspection of well construction, review of well logs, and educate drillers and pump installers to ensure construction standards are met
- Inventory, inspect, and make safety improvements to levees, accounting for future conditions associated with climate change
- Properly decommission infrastructure, such as a well, culvert, levee, or dam, at the end of its useful life
- Upgrade infrastructure to improve water and energy efficiency and conservation (e.g., pipe irrigation canals, leak detection and repair in municipal water distribution systems)
- Provide funding for planning, design, and construction of point source and nonpoint source water pollution control projects to upgrade infrastructure systems, protect, restore, and improve water quality
- Provide funding for projects based on USEPA "green" project eligibility
- Incorporate equity and community vulnerability assessments into infrastructure planning to inform strategies for repair, replacement, and funding infrastructure improvements
- Assess additional locations where levee accreditation could help lower floodplain insurance costs for low-income households and improve flood protection for vulnerable communities
- Continue to support the OWRD Well Abandonment, Repair, and Replacement Fund to provide financial assistance to low to moderate income individual households or members of federally recognized tribes in Oregon
- Incorporate environmental justice considerations in targeting funding and resources for water infrastructure improvements in underserved communities
- Support water and wastewater infrastructure investments that prioritize (efficient) infill development, provision of affordable housing, and jobs within walkable service areas

Resources

Agency Programs

ODFW Fish Passage Program, OWRD Well Construction Program and Dam Safety Programs

Funding

BIZOR grant and loan programs, including Community Development Block Grants, Safe Drinking Water Revolving Loan Fund, Special Public Works Fund, Sustainable Infrastructure Planning Projects Forgivable Loan Program, Tidegate Fund, Water/Wastewater Fund, ODEQ Clean Water State Revolving Fund Program, OHA Drinking Water State Revolving Fund Program, OWRD Water Well Abandonment, Repair, and Replacement Fund and Water Projects Grants and Loans

Documents/Websites

Ecological Effects of Tide Gate Upgrade or Removal: A Literature Review and Knowledge Synthesis

ODFW Fish Passage Barrier Inventories

Action 7B
Encourage Regional (Sub-basin) Water and Wastewater Systems

Lead Agencies	Supporting Agencies	Possible Partners
BIZOR, ODEQ, OHA, OWRD	DLCD, ODFW, ODOE	Tribes, local governments, CBOs, NGOs

Purpose

Many Oregon communities, particularly less populated ones, struggle to adequately fund water and wastewater related infrastructure. The high capital costs related to infrastructure, the construction, operation, and maintenance cost of facilities, and the salary and training costs of retaining qualified personnel may be prohibitively expensive to communities with a small ratepayer base. In Oregon, these tend to be rural, coastal, and/or small urban communities.

Developing a regional water and/or wastewater system may be more cost-effective and provide co-benefits such as improved water quality and increased resiliency. A regional system could include physical consolidation, system redundancy, or shared contracts, services, purchases, mutual assistance agreements, interties, and back-up supplies. State and federal agencies often provide incentives such as funding and technical assistance to encourage a regional approach to meeting water needs.

Example Actions

- Make use of shared contracts, services, and purchases
- Develop mutual assistance agreements between neighboring communities and water/wastewater systems
- Establish inter-ties and back-up supplies for water supplies
- Provide incentives to encourage regional approaches to water distribution, efficiency, and wastewater treatment
- Incorporate DLCD equity and community vulnerability assessments into asset management planning to inform strategies for repair, replacement, and funding infrastructure improvements
- Identify transition strategy for providing water and wastewater to urbanizable areas (within an urban growth boundary) consistent with comprehensive land use planning

Resources

Agency Programs

BIZOR grant and loan programs, including Community Development Block Grant, Safe Drinking Water Fund, Special Public Works Fund, Water/Wastewater Fund

Funding

ODEQ Clean Water State Revolving Fund and Overflow Sewer and Stormwater Municipal Grant Program, USEPA grant funds administered by ODEQ
OWRD's Water Projects Grants and Loans, OWRD's Place-Based Planning Fund
OHA's Drinking Water State Revolving Fund

Documents/Websites

LPRO Approaches and Funding for Low-Income Water Ratepayer Assistance and Household Infrastructure in Oregon

Action 7C
Support Dam and Levee Safety

Lead Agencies	Supporting Agencies	Possible Partners
ODA, OEM, OWRD	BPA, ODEQ, ODFW, USACE	Tribes, local governments, WCs, CBOs, NGOs, businesses, individuals

Purpose

Approximately 1,200 dams in Oregon are at least 10 feet high and store at least 3 million gallons of water (9.2 acre-feet of water), making them subject to Oregon's Dam Safety Program. The largest dams, such as the Bonneville Dam on the Columbia River, are regulated by federal agencies like the Bonneville Power Administration and the United States Army Corps of Engineers. The Water Resources Department is the lead public authority responsible for 950 non-federal dams.

The original focus of Oregon's Dam Safety Program was the review and approval of designs for new dams. Many of Oregon's dams were constructed decades ago, some more than 100 years old. As a result, the Dam Safety Program now focuses on evaluating the condition of existing dams through regular inspection feedback to owners regarding needed safety improvements. Oregon also needs to establish a Levee Safety Program

Safety improvements and decommissioning of dams and levees are also covered under Action 7A.

Example Actions

- Authorize resources to determine if dams have safety deficiencies; evaluate and retrofit dams to meet new seismic and hydrologic standards
- Implement actions to improve the safety of dams
- Properly decommission dams and levees at the end of their useful life
- Coordinate interagency emergency response regarding dam inspection, communication, and evacuation
- Define the legal responsibilities of dam owners
- Dedicate grant and loan resources for rehabilitation of deficient dams
- Improve clarity of statute and rule regarding enforcement mechanisms to ensure dam owners follow through with Emergency Action Plan exercises and updates
- Map potential impacts to critical infrastructure (e.g. schools, hospitals, water treatment facilities) and demographics of who will be impacted by dam failures

Resources

Agency Programs

OWRD's Dam Safety Program, ODA's CAFO Program (inspects dams on permitted facilities that meet the qualifications)

Workgroups

Association of State Dam Safety Officials

Funding

FEMA High Hazard Potential Dam Grant, FEMA National Dam Safety Program Grant

Action 8A
Support Implementation of K-12 Environmental Literacy Plan

Lead Agencies	Supporting Agencies	Possible Partners
Oregon Department of Education, OSU	BLM, ODEQ, ODFW, OPRD, OWRD, USGS	Local governments, SWCDs, CBOs, NGOs

Purpose

Oregon's Environmental Literacy Plan is aimed at helping students become lifelong stewards of their environment and community. Administered by Oregon State University Extension, the current Environmental Literacy Program website provides resources for teachers and community members. The goals of the plan are to: prepare students to understand and to address the major environmental challenges; contribute to students establishing a healthy lifestyle through outdoor experiences in the school curriculum; and give teachers opportunities for enhanced professional development. Support for implementation of the Plan will encourage environmental literacy among Oregon's young people and prepare them for the management and stewardship challenges ahead.

Example Actions

- Support funding for implementation (e.g., Outdoor School, Children's Clean Water Festival)
- Natural resource agencies, community organizations, and others should engage in education for environmental literacy activities
- Incorporate environmental justice, and culturally specific water stewardship values in environmental literacy programs
- Engage and support culturally specific community-based organizations in the design and implementation of environmental literacy programs

Resources

Agency Programs

Oregon's Environmental Literacy Program, Oregon's Outdoor School Program, Outdoor School Education Fund
ODFW's Salmon and Trout Enhancement Program (Fish Eggs to Fry)

Events

Children's Clean Water Festival, https://www.cleanwaterfestival.org/

Documents

2013 Environmental Literacy Plan
Environmental Literacy Resource Directory

Action 8B
Provide Career Training for the Next Generation of Water Professionals

Lead Agencies	Supporting Agencies	Possible Partners
HECC, ODA, ODEQ, ODFW, OHA, OWRD	NRCS, NOAA, USEPA	Tribes, utilities, CBOs, NGOs, SWCDs, universities and community colleges

Purpose

In the next ten years, approximately one-third of water and wastewater operators in the U.S. will be eligible for retirement. The water utility workforce has important implications for environmental and public health protections. Challenges posed by climate change, degraded ecosystems, aging infrastructure, and population increases have increased the demand for a wide variety of water professionals. Agencies, utilities, non-governmental organizations, and educational institutions must provide career training opportunities to increase the water workforce.

Example Actions

- Determine whether career training programs are available and equipped to meet the demand for water professionals
- Offer job shadow programs to expose students to careers in water
- Continue funding support for water-related trade and science programs at Oregon community colleges
- Increase coordination between state agencies and universities to develop programs that foster interest in water-related fields and career progression for graduating students
- Offer paid apprenticeship or internship programs to expose BIPOC and underrepresented students and new professionals to careers in water
- Partner with Hispanic Serving Institutions (HSI) to increase support for water-related trade and science programs at Oregon community colleges and universities
- Partner with water/wastewater utilities to promote careers and provide on-the-job training

Resources

Agency Programs

HECC Office of Community Colleges and Workforce Development, HECC Future Ready Oregon, OWRD Certified Water Right Examiner Annual Training, OWRD Well Constructor Continuing Education, OHA Drinking Water Systems Operator Certification

Websites

Oregon Association of Water Utilities
Oregon STEM Hubs
Pacific Northwest Section – American Water Works Association
USEPA's Water Sector Workforce Initiative
Workforwater.org – website promoting career choices in the water sector
Office of Community Colleges and Workforce Development – provides a listing of colleges that offer water-related courses, degrees, and programs throughout Oregon
OSU Traditional Ecological Knowledge Lab, https://tek.forestry.oregonstate.edu/

Funding

NOAA's National Sea Grant College Program, https://seagrant.noaa.gov/
USEPA's Innovative Water Infrastructure Workforce Development Grant Program

Action 8C
Promote Community Education and Outreach

Lead Agencies	Supporting Agencies	Possible Partners
DSL, ODA, ODEQ, ODF, ODFW, ODOE, OHA, OPRD, OSMB, OWEB, OWRD	USDA, USEPA, USFWS, USGS	Tribes, OSU Extension Service, local governments, SWCDs, WCs, CBOs NGOs,

Purpose

Public engagement for the 2024 Strategy revealed a need for more access to information about water. Oregonians want to learn more about water, how it is governed, how they can conserve and protect water resources, and other stewardship practices. State and federal agencies and partners need to increase capacity to provide this education, and partner with utilities, community-based and non-governmental organizations to reach more people. Communications efforts need to be responsive to community language and format needs. Regional partnerships are an important approach to sharing media, marketing, and translation services. See Action 8B for additional educational resources.

Example Actions

- Look for opportunities to keep Oregonians informed about the importance of water resources to people and the environment
- Look for opportunities to provide outreach, including informational materials about water-related programs (e.g., streamflow restoration, water conservation, transfers)
- Promote technical training for public and private partners
- Promote access to water-related recreational opportunities using state programs
- Develop a centralized location and outreach materials for people to access information about water conservation
- Develop and distribute informational materials related to the suite of tools available to protect instream flow
- Partner with community-based organizations to deliver water education to the public
- Provide resources for interested local organizations to conduct education and outreach to the communities they serve
- Increase outreach and education resources to produce communications in multiple languages and accessible to a variety of learning styles

Resources

Agency Programs

OPRD's Recreation Trails and Scenic Waterways Programs, OSMB's Water Wits and Interactive Boat Oregon Map, Soil and Water Conservation Districts, Watershed Councils, OHA Drinking Water and Domestic Well Safety Programs, ODFW Angler Education Program, OWRD Well Safety Program, Field Services Division, Technical Services Division, and Water Rights Services Division, Interagency Pesticide Stewardship Partnership

Documents/Websites

OHA Drinking Water – links to several videos
OHA Domestic Well Safety Program – visit healthoregon.org/wells
2024 Water Rights in Oregon: An Introduction to Oregon's Water Laws
2015 OWRD Fact Sheets for Strategies to Save Water
Well Owner's Handbook and Well Owner's Handbook (Espanol)
Human Health and Well Water
Water Quality and Pesticides
Agricultural Water Quality Resources
Water Wits
Free online paddling education and promotion of Oregon Water Trails
Aquatic Invasive Species Prevention Program
Clean Marinas and Clean Boaters Programs
Angler Education Program
Water Justice Leadership Institute

Action 8D
Identify Water Research Needs and Partnerships

Lead Agencies	Supporting Agencies	Possible Partners
DLCD, ODA, ODEQ, ODF, ODFW, ODOE, OWRD	DOGAMI, NOAA, NWS, OWEB, USGS	Tribes, local governments, OSU Extension Service, public and private research institutions, Oregon Climate Change Research Institute, SWCDs

Purpose

Partnerships between higher education and both the public and private sectors can result in innovative solutions for addressing water quantity and quality challenges. The water resources sector will need to continue identifying ongoing research needs that could use assistance from undergraduate and graduate students, public and private universities, research institutions, and other partners. Research collaboration between agencies and higher education may be mutually beneficial, as research institutions can bring innovative tools, technology, and other resources to the effort, while agencies can bring expertise in agency data, evidentiary and scientific standards, and management knowledge.

Example Actions

- Continue to identify ongoing research needs at the local and state level
- Support partnerships with state and federal agencies, tribes, public and private institutions to address research needs
- Fund and/or participate in research initiatives
- Consider research initiatives that would address frontline communities' environmental and climate justice challenges

Resources

Agency Programs

ODA Natural Resources Programs, ODEQ Water Quality Program, ODFW Water Program, OWRD Technical Services Division and Field Services Division

Workgroups

Climate Impacts Research Consortium
Oregon Climate Change Research Institute
Oregon Water Futures

Documents

2022 State of Water Justice in Oregon
2022 Water Justice Framework
2021 Oregon Climate Change Adaptation Framework
Oregon Climate Equity Blueprint

Objective 4: Meet Oregon's Instream and Out-of-Stream Needs

Critical Issue – Water Planning

9A Support Place-Based Integrated Planning and Other Water Planning Efforts
9B Coordinate Implementation of Natural Resource Plans
9C Partner with Tribes, Federal Agencies, and Neighboring States in Long-Term Water Resources Management
9D Improve State Interagency Coordination
9E Lead Meaningful Community Engagement

Critical Issue - Water Use and Management

10A Improve Water-Use Efficiency and Water Conservation
10B Encourage Water Reuse Projects
10C Improve Access to Storage
10D Reach Environmental Outcomes with Non-Regulatory Alternatives
10E Provide an Adequate Field Presence
10F Strengthen and Improve Oregon's Water Quantity and Water Quality Permitting Programs

Critical Issue - Healthy Ecosystems

11A Improve Watershed Health, Resiliency, and Capacity for Natural Storage
11B Develop Additional Instream Protections
11C Prevent and Eradicate Invasive Species
11D Protect, Restore, and Provide Access to Instream Habitat for Fish and Wildlife
11E Develop Additional Groundwater Protections

Critical Issue - Clean Water

12A Ensure the Safety of Oregon's Drinking Water
12B Reduce the Use of and Exposure to Toxics and Other Pollutants
12C Implement Water Quality Pollution Controls

Critical Issue - Funding

13A Fund Development and Implementation of Oregon's Integrated Water Resources Strategy
13B Fund Water Resources Management Activities by State Agencies
13C Invest in Planning, Feasibility Studies, and Water Resources Project Implementation

Action 9A
Support Integrated Place-Based Planning and Other Water Planning Efforts

Lead Agencies	Supporting Agencies	Possible Partners
OWRD	DLCD, DOGAMI, ODA, ODEQ, ODFW, OHA, OWEB, USGS	Tribes, local governments, SWCDs, WCs, CBOs, NGOs, individuals

Purpose
Place-based integrated planning provides an opportunity to forge partnerships between individuals and organizations representing instream interests (such as fish and wildlife needs and recreation), out-of-stream interests (such as agriculture, municipalities, domestic, and industry), and representatives from local, state, federal, and tribal governments. Place-Based integrated planning groups work to develop an integrated plan, have it recognized by the Water Resources Commission, and secure funding and implement the plans. In 2023 the Oregon Legislature made the Place-Based Integrated Water Resources Planning Program permanent and allocated $2 million to assist communities with engagement and plan development.

Other types of water planning happening in Oregon include administrative basin planning, bi-state planning (e.g., Walla Walla Water 2050 Plan), and water management and conservation planning by irrigation districts and public water suppliers.

Example Actions
- Promote success by continuing to support the places currently following the draft planning guidelines and as they develop integrated implementation plans
- Continue to provide financial and technical assistance to support collaborative water planning
- Develop or recapitalize funding pathways for plan implementation to achieve instream and out-of-stream objectives
- Promote peer-to-peer learning between communities pursuing collaborative water planning
- Refine planning guidelines, and implement process improvements
- Include public outreach and engagement activities to encourage participation by under-represented populations
- Consider OWEB Focused Investment Partnership model to support plan implementation
- Offer place-based planning training for interested people and community groups
- Support a range of local or regional planning efforts (e.g., OWRD administrative basin plan and rule updates, water management and conservation plans)

Resources
Agency Programs
OWRD's Planning, Collaboration, and Investment Section, OWRD's Place-Based Planning Fund

Workgroups
Harney Community-Based Water Planning Collaborative
Lower John Day Basin Work Group
Mid-Coast Water Planning Partnership
Upper Grande Ronde River Watershed Partnership
Deschutes Basin Water Collaborative
Walla Walla 2050
Partnership for Lake Abert and the Chewaucan

Documents
2015 Draft Planning Guidelines
2022 Report of the Work Group on State-Supported Regional Water Planning & Management
2022 Oregon's Place-Based Integrated Water Resources Planning Program: A Participatory Evaluation

Action 9B
Coordinate Implementation of Natural Resource Plans

Lead Agencies	Supporting Agencies	Possible Partners
DLCD, ODA, ODEQ, ODFW, OWRD	USEPA, USFWS, NOAA, OWEB	Tribes, local governments, SWCDs, WCs, CBOs, NGOs, individuals

Purpose
Existing natural resource plans can provide baseline information, history, and rules to consider and build upon during a place-based or other water planning effort. Multiple planning documents that involve water management, directly or indirectly, may exist within a given planning area. These plans may be complementary, or contradictory and require collaboration to reconcile. Coordinated implementation of these plans can lead to improved benefits for natural resources.

Example Actions
- Dedicate resources to coordinate and reconcile existing planning documents
- Support local governments to update their local comprehensive land use plans with current natural resource information (e.g., Goal 5 natural resources)
- Support water management and conservation plan development in conjunction with local land use planning to achieve sustainable water use
- Dedicate resources for state and local implementation of existing plans
- Support the application of equity and social justice principles in plan reconciliation and updates

Resources
Documents

DLCD – Estuary Management Plans
ODA - Agricultural Water Quality Plans
OWRD - Water Management and Conservation Plans (developed by municipal or irrigation water suppliers)
OWRD Administrative Basin rules and studies
ODFW - Fish Conservation and Recovery Plans
ODEQ - Total Maximum Daily Loads and associated Water Quality Management Plans
Local land use plans
Place-Based Integrated Water Resources Plans
Watershed restoration action plans
Oregon Statewide Strategic Plan for Invasive Species (2017-2027)
Oregon Plan for Salmon and Watersheds
State Wildlife Action Plan
Oregon Resilience Plan
Oregon Climate Change Adaptation Framework
Oregon Diversity, Equity, and Inclusion Action Plan
Local, Tribal and State Natural Hazards Mitigation Plans

Action 9C
Partner with Tribes, Federal Agencies, and Neighboring States in Long-Term Water Resources Management

Lead Agencies	Supporting Agencies	Possible Partners
ODA, ODEQ, ODF, ODFW, ODOE, OWRD	BPA, BLM, FSA, NOAA, USACE, USBR, USEPA, USFWS, USGS, USDA, BIA, US Dept of Interior	Tribes, State of California, State of Idaho, State of Washington, Canada, SWCDs

Purpose

Partnerships with Tribes, federal agencies, and neighboring states have and will continue to play an important and necessary role in Oregon's management of water resources. A large percentage of Oregon's landscape is managed by federal agencies, and Oregon shares groundwater and surface water, including three major waterways, with California, Washington, and Idaho. The Columbia Basin drainage basin includes a portion of Canada, large portions of Oregon, Washington, and Idaho, and small portions of Montana, Nevada, Utah, and Wyoming.

Oregon is home to nine federally recognized Tribes, all of which have cultural ties to and an interest in water, as well as responsibilities for protecting and managing water resources. The Strategy presents an opportunity to strengthen these government-to-government relationships.

Example Actions

- Protect Tribal and state interests in shared bi-state surface water and groundwater basins
- Negotiate agreements such that water protected instream is shepherded across state lines to the mouth of the river
- Partner with neighboring states and Tribes to continue or improve managing shared resources
- Carry out actions identified in the 2023 Tribal Water Task Force Report
- Coordinate with Tribes on instream flow protection
- Conduct collaborative planning to develop water management approaches to protect species and avoid or minimize impacts to endangered or threatened species
- Identify who may benefit, or be impacted by, long-term water management approaches

Resources

Workgroups

Tribal Consultation Task Force
Tribal Water Task Force
Natural Resources Working Group
Cultural Resources Cluster Group
Legislative Commission on Indian Services
Interstate Workgroups (Walla Walla, Idaho Power)
Klamath River Compact Commission
Klamath River Renewal Corporation
Kaizen pre-application teams

Treaties, Inter-state Agreements

Columbia Basin Fish Accords
Klamath River Compact
U.S. Department of State website: Columbia River Treaty
Summary of Active and Inactive Klamath Basin Agreements

Documents

Walla Walla Groundwater Study
Deschutes Basin Habitat Conservation Plan
USFWS Federal Endangered Species Act species recovery plans
NOAA Federal Endangered Species Act species recovery plans

Action 9D
Improve State Interagency Coordination

Lead Agencies	Supporting Agencies	Possible Partners
BIZOR, DLCD, DOGAMI, DSL, ODA, ODEQ, ODF, ODFW, ODOE, ODOT, OHA, OPRD, OSMB, OWEB, OWRD, and others	DAS, OEM	Governor's Natural Resources Office

Purpose

Given the distribution of water-related responsibilities across multiple agencies, it is critical that agencies coordinate to support one another's work and implement the Strategy. Agencies should seek to improve coordination to exercise efficient use of state resources and alignment of state law. Currently, coordination occurs through various interagency workgroups and forums. Agencies will need to collaborate on the development and implementation of Strategy biennial interagency workplans.

Example Actions

- Update State Agency Coordination Programs in partnership with the DLCD
- Establish efficient procedures for cross-agency coordination and approval of relevant state agency permits
- Coordinate Strategy implementation, develop interagency biennial workplan for implementing Strategy actions
- Develop formal memorandum of agreement/understanding (MOA/MOU) between agencies to establish clear and transparent expectations for interagency cooperation where agencies share affiliated authorities/responsibilities
- Support new and existing interagency review teams or interagency work groups
- Create tools to help tribes, the public, local governments, and community-based organizations navigate state agencies to address complex water issues
- Support the development and use of Oregon's Environmental Justice Mapping Tool
- Support interagency communication around community engagement (also see HB 3293 (2021))
- Support interagency coordination to implement water-related plans (e.g., Oregon's Natural Hazard Mitigation Plan, Oregon Plan for Salmon and Watersheds, etc.)

Resources

Workgroups

Conservation Effectiveness Partnership, Environmental Justice Council, Interagency Review Team, Oregon STREAM Team, Oregon Technical Advisory Committee, Regional Solutions Team, Water Core Team, Water Supply Availability Committee, Climate Change Adaptation Framework Implementation Team, Drought Readiness Council, Technical Review Teams for agency grant programs, Oregon Water Data Portal Steering Committee, Pesticide Stewardship Partnerships, Water Quality Pesticide Management Team, Willamette Action Team for Ecosystem Restoration, Natural Resource Enforcement Team

Documents

State Agency Coordination Plans

ODA-ODEQ Nonpoint Source Pollution Memorandum of Agreement

Action 9E
Lead Meaningful Community Engagement

Lead Agencies	Supporting Agencies	Possible Partners
DLCD, ODA, ODEQ, ODF, ODFW, OWEB, OWRD	BIZOR, OHA, OPRD, USEPA	Tribes, local governments, community leaders, CBOs, NGO's, SWCDs, WCs, OSU Extension Service, individuals

Purpose
Meeting instream and out-of-stream needs requires engagement with impacted communities. Tribal communities, communities of color, low-income, and many rural communities have faced years of inequitable governmental policies and exclusionary decision-making practices created and maintained by government institutions. Agencies need to be able to allocate resources for engagement, including to organizations that represent underserved/under-represented populations, as well as providing services necessary to facilitate engagement of members of those populations. Funding and resources to support participation in state-led planning, engagement, policy development, and management activities will help ensure plans and projects meet the needs of those they are intended to serve.

Example Actions
- Provide resources for capacity-building for community-based organizations
- Use accessible and inclusive engagement strategies
- Create opportunities for communities to identify and engage decision-makers
- Conduct outreach to invite underserved/under-represented populations to participate in planning activities
- Provide funding for agencies and organizations to sustain engagement over the life of a project
- Provide resources for facilitation and coordination, and staff experts in outreach and engagement best practices
- Use best practices for engagement as identified in the State of Oregon Diversity, Equity, and Inclusion Action Plan and other documents, including cultural and language-specific needs
- Use Oregon's environmental justice mapping tool to evaluate potential impacted communities for state-led planning, engagement, policy development, and management activities

Resources
Authorities

ORS 182.535 – 182.557 Oregon's Environmental Justice Council
House Bill 3293 (2021)
OAR 690-601 Best Practices in Community Engagement for Funded Water Projects

Workgroups

Environmental Justice Council

Documents

Climate Change Adaptation Vulnerability Assessment Report
State of Oregon Climate Equity Blueprint
State of Oregon Diversity, Equity and Inclusion Action Plan
State of Oregon Environmental Justice Task Force: Environmental Justice: Best Practices for Natural Resources Agencies
10 Best Practices for Community Engagement around Water Projects

Funding

EPA's Community Change Grants

Action 10A
Improve Water-Use Efficiency and Water Conservation

Lead Agencies	Supporting Agencies	Possible Partners
ODA, OWEB, OWRD	BPA, NRCS, ODEQ, ODFW, ODOE, USBR	Tribes, local governments, SWCDs, WCs, CBOs, NGOs, businesses and individuals, OSU Extension

Purpose
Water conservation is one of the more widely recognized approaches to managing water demand and stretching limited water supplies. Water conservation, as defined in state law, is a means of eliminating waste or otherwise improving the efficiency of water use by modifying the technology or method of diverting, transporting, applying, or recovering water. Water conservation can also be accomplished through reuse, addressed in Action 10B. Water conserved through the Allocation of Conserved Water Program can benefit water instream, Action 11B. Additional incentives are needed to expand water conservation in Oregon.

Example Actions
- Establish a comprehensive water-use efficiency and conservation program that provides incentives and technical assistance to water users in all sectors
- Conduct a statewide water conservation potential assessment, considering high priority water management needs
- Prioritize and provide funding for agricultural water-use efficiency and conservation projects (often saving energy and supporting Action 4C)
- Support water conservation projects that use the Allocation of Conserved Water Program
- Develop or continue municipal incentives (e.g., xeriscaping rebates, metering, tiered rate structures)
- Develop an outreach strategy to expand participation in already-existing water-use efficiency and conservation programs
- Develop outreach materials, a user-friendly website, and online clearinghouse that highlights best practices, funding, and technical resources
- Ensure disadvantaged communities are not overburdened by mandatory or voluntary water conservation measures
- Borrow best practices and experience from energy efficiency programs in implementing water efficiency programs
- Partner with broadly supported well-developed energy efficiency programs that also save water (See Action4C)
- Assess the value of establishing statewide efficiency standards
- Update the state definition of "waste" for enforcement purposes

Resources
Agency Programs
OWRD's Water Management and Conservation Planning Program, OWRD's Allocation of Conserved Water Program

Funding
OWRD's Grants and Loans Program, Statewide Irrigation Modernization Program, OWEB Grant Programs, USBR's Water and Energy Efficiency Grants, Energy Trust of Oregon incentive programs

Resources
Water Conservation Fact Sheets (for residential, farm/ranch, and municipal users)
Allocation of Conserved Water Program
Instream Lease
Instream Transfer
Water Projects Grants and Loans and Irrigation Modernization Funding
Guidebooks Water Management and Conservation Plan: Municipal and Agricultural
Alliance for Water Efficiency
Water Research Foundation

Action 10B
Encourage Water Reuse Projects

Lead Agencies	Supporting Agencies	Possible Partners
ODA, ODEQ, OWRD	DCBS, ODFW, OHA	Tribes, local governments, SWCDs, WCs, CBOs, NGOs, businesses, individuals

Purpose

Water reuse is the practice of treating "used" water (or effluent) and making it available for another beneficial use. Examples include treating municipal wastewater effluent for golf course irrigation or treating and reusing water within a closed loop (e.g., industrial data center cooling). When considering water reuse, it is most cost effective to match the correct level of treatment to the planned secondary use of the water.

Reusing water can provide many benefits to both water quantity and quality. It can provide a benefit to water quantity by reducing the demand on municipal drinking water. In general, recycled water places fewer demands on freshwater, leaving more water instream or in the ground. Laws allowing reuse projects take into consideration potential environmental and public health impacts.

Example Actions

- Conduct a statewide assessment of the potential for additional water reuse, considering impacts, costs, and benefits to water quantity and quality, and management of water and wastewater systems
- Ensure that state agencies coordinate and communicate various policies, procedures, and regulations to facilitate reuse projects
- Provide incentives to increase and track water reuse
- Complete evaluation and updates of ODEQ and OWRD water reuse programs (see House Bill 2169, 2025)
- Develop technical assistance capacity to promote and inform water reuse practices and projects
- Develop and maintain adequate staffing to support increased utilization of state reuse programs
- Develop water reuse rules to ensure implementation of an effective and protective reuse program
- Connect reuse actions to the Water Management and Conservation Plan Program
- Explore opportunities for the state, tribes, and other interested parties to partner on water reuse projects
- Evaluate who benefits, or is negatively impacted by, reuse projects
- Evaluate successful environmentally protective approaches used by other states' water reuse programs that could be implemented in Oregon
- Establish goals and performance metrics on water reuse development in Oregon

Resources

Agency Programs and Workgroups

ODEQ's Water Reuse Program, OWRD's Reclaimed Water Program, DCBS Building Codes Division

Funding

ODEQ Clean Water State Revolving Fund, OWRD Water Projects Grants and Loans

Websites

EPA's Water Reuse Action Plan
Oregon Association of Clean Water Agencies
WateReuse.org
Recode, frequently asked questions about reuse alternatives

Action 10C
Improve Access to Storage

Lead Agencies	Supporting Agencies	Possible Partners
ODEQ, OWRD	ODA, ODFW, USFWS, USBR, USACE	Tribes, local governments, WCs, CBOs, NGOs

Purpose

Storage has the potential to extend access to water for both instream and out-of-stream uses during dry summer months and provide resilience in the face of climate change. The Oregon Water Resources Department can authorize storage in reservoirs or ponds through the water right permitting process. Oregon's storage policy acknowledges that both structural and nonstructural methods must be encouraged to enhance watershed storage capacity, with preferences for storage that optimize instream and out-of-stream public benefits and beneficial uses. In 1993, the Oregon Legislature codified the state's policy regarding water storage facilities, declaring it a high priority to develop environmentally acceptable and financially feasible multipurpose storage projects, and to enhance watershed storage capacity through natural processes using non-structural means (e.g., floodplain restoration). Restoration activities, which accomplish many benefits including natural storage, are outlined in Action 11A.

Example Actions

- Encourage increased use of environmentally acceptable below-ground storage sites and practices
- Assess and make improvements to the Aquifer Storage and Recovery and Artificial Recharge Programs to promote and increase the use of this tool in a manner that protects public health, water quality, and ecosystems
- Carry out implementation of the Willamette Basin reallocation study recommendations as directed by Congress in the Water Resources Development Act of 2020
- Investigate potential off-channel sites for environmentally acceptable above-ground storage projects
- Evaluate the status of storage infrastructure, including the maintenance and rehabilitation needs of reservoirs, and potential for expanding existing storage capacity
- Investigate the use of existing reservations of water during planning efforts
- Consider equity, environmental justice, and water insecurity in the prioritization of storage sites

Resources

Agency Programs

BIZOR's Aquifer Recharge Due Diligence Grant and Forgivable Loan Program, OWRD Groundwater Hydrology Section and Water Projects Grants and Loans Program

Documents/Websites

2009 OWRD Inventory of Potential Below Ground Storage Sites
OWRD Artificial Groundwater Recharge (AR)
OWRD Aquifer Storage and Recovery (ASR)

Action 10D
Reach Environmental Outcomes with Non-Regulatory Alternatives

Lead Agencies	Supporting Agencies	Possible Partners
ODA, ODEQ, ODF, ODFW, OWEB, OWRD, USDA	DSL, USEPA	Tribes, local governments, SWCDs, WCs, CBOs, NGOs

Purpose
Water conservation, reuse, and storage are a set of traditional tools for meeting water needs (Actions 10A-10C). These traditional water supply tools are used in conjunction with state and federal regulatory tools that protect water resources for future generations. Today, however, we also need to consider forward-looking approaches to meeting our collective and often competing demands for water and consider holistic strategies to meet water quality, water quantity, and ecosystem needs. These alternatives require strong partnerships with senior water users. Potential solutions include voluntary actions by water users that often include technical assistance from agencies. This action overlaps with programs described in Actions 10A, 10C, 11A-11E, and 12A-12B.

Example Actions
- Research and develop voluntary, non-regulatory tools to meet environmental outcomes
- Continue to develop water quality trading programs
- Develop voluntary water markets to restore streamflow in priority stream reaches
- Develop protocols for translating streamflow restoration into credits and accounting strategies
- Investigate and establish incentives for voluntary efforts to achieve positive environmental outcomes
- Make improvements to transfer processes and develop potential adaptive transfer tools, including instream leases and transfers
- Develop an outreach strategy for informing the public about non-regulatory alternatives
- Support agencies to provide technical assistance regarding voluntary efforts
- Develop a voluntary agreement framework (O.R.S. § 537.745) for groundwater right holders
- Partner with federal agencies with Conservation Reserve Enhancement Programs to permanently retire groundwater rights where groundwater resources are overallocated
- Identify community benefits from improved environmental outcomes

Resources
Agency Programs

ODA Strategic Implementation Areas, ODF and ODA Stewardship Agreement Program, ODEQ Water Quality Trading Rules, ODFW Grant and Tax Incentive Programs, OWEB Grant Programs, OWRD Transfer and Conservation Section, OWRD Water Projects Grants and Loans, Pesticide Stewardship Partnership, USDA Farm Services Agency Conservation Reserve Enhancement Program

Documents

Measuring Cost-Effectiveness of Environmental Water Transactions

Action 10E
Provide an Adequate Field Presence

Lead Agencies	Supporting Agencies	Possible Partners
ODA, ODEQ, ODF, ODFW, OLCC, OSMB, OWRD	DSL, OHA, OPRD	Tribes, local governments, SWCDs, WCs, CBOs, NGOs, local and state law enforcement

Purpose

Oregon's natural resources agencies have personnel in the field that are responsible for data collection, site inspections, education, permit compliance, conducting enforcement activities, and responding to inquiries, complaints, or emergencies. Communities have strong compliance with rules and laws in areas where field presence is robust and public education is strong and consistent. Areas of the state with a long history of regulation and partnership with the state have higher rates of compliance, resulting in more timely and efficient water management.

Strengthening Oregon's field-based work will require financial investments in staff capacity, communications equipment, information platforms, and outreach materials. It also means a look at more efficient ways to coordinate and partner with other agencies and local governments to carry out our shared responsibilities and modernize and streamline regulatory, compliance, and enforcement processes. Field staff can also benefit from actions to streamline data reporting outlined in Strategy Actions 1C.

Example Actions

- Review and assess agency staff workloads; establish priorities and seek efficiencies
- Improve regulatory tools, including updating laws, modernizing technology and enforcement tools, and providing (cross) training
- Improve the ability for field staff to conduct education and outreach within their districts; develop outreach materials to have on hand when interacting with the public
- Enhance all natural resources agencies capacity to conduct field studies and work directly with water users and conservation interests
- Support cross-agency communication to expedite regulatory enforcement
- Employ staff in rural and remote areas to respond to and assist more communities across the state
- Increase field staff capacity for compliance, restoration consultation, and engagement to build and maintain relationships with communities, community-based organizations, and farmworker advocates
- OWRD to provide guidance to field personnel on administering instream water rights
- Provide access to training that addresses equity, environmental justice, and community engagement
- Develop culturally appropriate education materials

Resources

Agency Programs

ODA Natural Resources Program, ODEQ Water Quality Program, ODF Compliance Monitoring Program, ODFW Water Program, ODFW and OSMB Aquatic and Invasive Species Prevention Program, OWRD Dam Safety Program, OWRD Regulation Program, OWRD Enforcement Section, OWRD Well Construction and Compliance Section

Policies

2022 Water Hauling and Cannabis Laws

Websites

Locate your local Watermaster

Action 10F
Strengthen and Improve Water Quantity and Water Quality Permitting Programs

Lead Agencies	Supporting Agencies	Possible Partners
DSL, DOGAMI, ODA, ODEQ, OWRD	ODFW, USACE, USEPA	Tribes, local governments, Certified Water Rights Examiners, WCs

Purpose
Several natural resources agencies in Oregon are engaged in water-related permitting. Permit reviewers frequently answer calls or questions from water users, permit holders, and realtors, conduct records research, and process case files. It is imperative that agencies have enough well-trained permitting staff to process requests in a timely and accurate manner.

Water rights permits and certificates, water rights transfers, and well construction special standards are examples of permitting programs through the Water Resources Department. There are many types of water quality permits administered by the Department of Environmental Quality through the National Pollution Discharge Elimination System (NPDES) and Clean Water Act 401 Water Quality Certifications. Other agencies also administer permitting systems, often associated with water quality; for example, the Department of State Lands issue removal/fill permits, while the Oregon Department of Agriculture administers Confined Animal Feeding Operations Permits. DOGAMI issues surface mining, exploration, and drilling permits. Non-regulatory state agencies also provide permit review for other agencies and provide recommendations to regulators.

Example Actions
- Expand staff training opportunities, including interagency trainings; provide adequate staffing
- Update technologies, processing manuals, and expand guidance documents for transparency
- Develop outreach materials and follow-up procedures to help water users understand the application process and permit, transfer, or extension requirements
- Develop a statewide mitigation strategy in coordination with relevant agencies (DEQ, ODFW, OPRD, OWRD)
- Create stronger linkages among partner agencies
- Develop and implement a workplan to improve the quality and timeliness of individual National Pollutant Discharge Elimination System permits
- Regularly update Oregon's water-related permitting guide (formerly 2017 Strategy Action 2E)
- Improve the timeliness of water right transactions and reduce backlogs
- Modernize and create more efficient and user-friendly permitting processes while maintaining protections for public process and the environment
- Incorporate climate change forecasting into water availability analyses and permitting decisions (also see Action 1D)
- Develop programs and resources to support BIPOC farmers and business owners, as well as farmers and business owners for whom English is not a primary language, in obtaining and managing permits and other authorizations
- Improve resources for NPDES monitoring and permitting to help attain water quality that aligns with fish consumption standards for Oregon Tribes
- Support continued development of the Oregon Water Data Portal to provide interagency access to accurate, high quality water data for permits

Resources
Agency Programs

DSL Removal-Fill Permits, ODA Water Quality Program, ODEQ Water Quality Program, ODEQ 401 Hydropower Program, ODFW Aquatic Invasive Species Prevention Program, ODFW Water Program, OWRD Water Rights Program, OWRD Well Construction and Compliance Program

Documents/Websites

2012 State Water-Related Permits User Guide

OWRD Certified Water Rights Examiner (CWRE) training materials

Action 11A
Improve Watershed Health, Resiliency, and Capacity for Natural Storage

Lead Agencies	Supporting Agencies	Possible Partners
DSL, ODA, ODEQ, ODF, ODFW, OWEB	BLM, BPA, DLCD, NOAA, NRCS, OPRD, OWRD, USBR, USFS, USFWS	Tribes, local governments, private landowners, SWCDs, WCs, CBOs, NGOs, forest collaboratives

Purpose
Protecting and restoring ecological function to Oregon's watersheds supports adaptation to disturbance and climate change, provides habitat for fish and wildlife, protects water quantity and quality for humans and the environment, and supports Tribal access to First Foods. Many riparian areas, floodplains, wetlands, estuaries, and uplands have been significantly modified by human activities over the last 150-200 years. Restoration of Oregon's green infrastructure provides many human and environmental co-benefits and can be a more cost-effective solution to constructing built infrastructure to accomplish things like water storage, flood control, and temperature regulation.

Example Actions
- Protect and restore instream habitats and watersheds to build climate change resiliency
- Improve and protect riparian conditions to create a healthy buffer between aquatic ecosystems and adjacent land use and development to provide fish and wildlife habitat and protect water quality
- Restore meadows, wetlands, and hydraulic connectivity to side channels and floodplains to maintain critical functions like processing nutrients, providing habitat, and natural storage
- Protect and restore estuarine conditions to maintain the natural mixing of freshwater and marine systems and allow for safe tidal inundation to build resiliency for sea level change and flooding
- Protect and restore beavers, beaver habitat, and beaver-modified habitat
- Protect and restore floodplains and native riparian-floodplain vegetative communities
- Identify and implement actions to protect and maintain drinking water source areas quality and quantity in upland and forested areas
- Collaborate and/or consult with Tribes as needed to prioritize locations targeted for protection and restoration and restore access to First Foods
- Invest in restoration projects led by Tribes, low-income communities, and communities of color to discover new approaches and best management practices that meet community goals for clean water
- Strengthen protections under Oregon Statewide Land Use Planning Goal 4 which limits development on non-federal forestlands
- Implement climate-smart agricultural practices to improve soil and watershed health

Resources
Agency Programs

BPA's Fish and Wildlife Program, Private Forest Accord Grant Program, OWEB Grant Programs, Oregon Conservation and Recreation Fund, ODFW Private Forest Accord Mitigation Program, OWRD Water Projects Grants and Loans, ODF's Forest Resources and Urban and Community Forest Programs, USFWS Partners for Fish and Wildlife Program and National Fish Passage Program

Documents/Websites

Oregon Plan for Salmon and Watersheds
Oregon's Conservation Strategy
Oregon Forest Practices Act (January 2024)
Oregon's Agriculture Water Quality Management Plans (38 total)
Oregon Removal/Fill Guide
The Beaver Restoration Guidebook
ODFW's 3-Year Action Plan for Beaver-Modified Landscapes August 2022 – 2025
South Slough National Estuary Research Reserve (research regarding watershed health and resiliency)

Action 11B
Develop Additional Instream Protections

Lead Agencies	Supporting Agencies	Possible Partners
ODEQ, ODFW, OPRD, OWRD	BPA, DSL, NFWF, NOAA, OWEB, USGS	Tribes, local governments, SWCDs, WCs, CBOs, NGO's, individuals

Purpose

Oregon's original Water Code formalized a system of water allocation that did not consider water for instream uses, causing Oregon's freshwater habitats to quickly become degraded. The Instream Water Right Act was not enacted until 1987, causing most instream water rights to be junior compared to existing out-of-stream water rights, some of which date back to the 1800s.

In many areas of Oregon, streamflows are very low or even non-existent during late summer months, largely due to human causes like diversions for irrigation or other beneficial water uses. Low streamflow conditions are made worse by periods of intensive water use or drought. Low streamflows often mean higher water temperatures and increased nutrient concentrations, contributing to poorer water quality for fish, wildlife and humans. During the winter, high flows are necessary to maintain aquatic habitat and trigger migration. Oregon needs to conserve and protect streams by developing additional instream flow protections and seek opportunities for enhancing and restoring streamflow.

Example Actions

- Designate Scenic Waterways where needed to protect recreation, fish, and wildlife uses
- Designate Outstanding Resource Waters where needed to protect extraordinary water quality or ecological values
- Establish additional instream water rights where needed to protect the full suite of flows for fish and wildlife, water quality, recreation, and scenic attraction
- Promote utilization of voluntary OWRD programs including Allocation of Conserved Water and instream transfers and leases to restore flow instream
- Expand education, funding opportunities, and use of voluntary programs to protect and restore streamflow, lake levels, and cold water refugia
- Increase resources and capacity to expand the geographic range and increase effectiveness of flow restoration efforts by identifying flow restoration priorities and focusing resources to priority areas
- Update ODFW Rules (OAR 635-400; last modified in 1989) to incorporate a broader range of techniques to determine flow amounts to protect ecosystem needs, including consideration of temperature-based flows
- Increase compliance with water rights laws (Also See Actions 10E and 10F)
- Improve process for resolving instream water rights protests

Resources

Agency Programs

ODEQ's Outstanding Resource Waters, ODFW Water Program, OPRD Scenic Waterways, OWRD's Water Rights Services Division

Authorities/Policies

Allocation of Conserved Water Act, Instream Water Rights Act, Scenic Waterway Act, ODEQ's Antidegradation Policy, Outstanding Resource Waters Policy

Funding

OWEB Grant Programs, OWRD Water Projects Grants and Loans, BPA and NFWF Columbia Basin Water Transaction Program

Documents/Websites

OWRD Allocation of Conserved Water Program
OWRD Instream Transfer Program
OWRD Instream Leasing Program
Oregon Plan for Salmon and Watersheds

Action 11C
Prevent and Eradicate Invasive Species

Lead Agencies	Supporting Agencies	Possible Partners
ODA, ODEQ, ODF, ODFW, OSMB	OWEB, USDA, USFS	Tribes, local governments, OSU Extension Service, SWCDs, WCs, CBOs, NGOs, individuals

Purpose
The Oregon Invasive Species Council defines an invasive species as a non-native species that can cause economic or environmental harm or cause harm to human health. It can be a plant, animal, or any other microorganism that enters an ecosystem beyond its native range. Invasive species disrupt the natural function of an ecosystem by competing and replacing native species and disrupting the natural habitat. Preventing and removing invasive species helps support watershed health and resiliency.

Example Actions
- Support and continue funding for the Aquatic Invasive Species Prevention Program
- Support and continue funding for the Oregon Invasive Species Council
- Identify and implement projects to support the State Wildlife Action Plan to prevent new introductions, and decrease the scale and spread of infestations
- Continue to implement and enforce ballast water management regulations
- Provide technical assistance and landowner education for invasive species detection and potential control and management actions on agricultural and forestlands
- Couple invasive species eradication with native species restoration efforts (see 11A)
- Support protection of culturally significant plants, animals, and ecosystems from invasive species
- Promote the propagation, growth, and sale of native plants

Resources
Agency Programs
ODA's Insect Pest Prevention and Management Program, ODFW and OSMB's Aquatic Invasive Species (AIS) Prevention Program, ODF Forest Health Unit, OWEB Grant Programs

Workgroups
Oregon Invasive Species Council

Laws/Policies
Oregon Invasive Species Council ORS 570.755(1)
Aquatic Invasive Species Program ORS 830.560(a)

Documents/Websites
Oregon Statewide Strategic Plan for Invasive Species (2017-2027)
State Wildlife Action Plan
ODA Noxious Weed Profiles
ODA Insect Pest Alerts
USDA National Invasive Species Information Center
ODF Forest Health Unit

Action 11D

Protect, Restore, and Provide Access to Instream Habitat for Fish and Wildlife

Lead Agencies	Supporting Agencies	Possible Partners
DSL, ODEQ, ODF, ODFW, ODOT, OWEB, OWRD	BPA, BLM, NFWF, NRCS, NOAA, USBR, USEPA, USFS, USFWS	Tribes, local governments, private landowners, SWCDs, WCs, CBOs, NGOs

Purpose

Instream habitat quality has been degraded by modifications to rivers and streams including construction of fish passage barriers, floodplain development, channelization, large woody debris and riparian vegetation removal, and bank instability worsened by livestock access. Changes in hydrology and flow patterns, older culverts, and many dams or other impassible barriers have greatly reduced historically accessible habitat for many aquatic species. Appropriate fish screening and fish passage barrier removal should be coupled with stream channel restoration efforts when possible, to improve habitat conditions.

Example Actions

- Implement Oregon's fish screening and passage laws
- Continue to update the inventory of fish passage barriers and priority unscreened diversions
- Address and/or remove barriers, particularly at high-priority sites identified on the Department of Fish and Wildlife's Statewide Fish Passage Barrier Priority List
- Support fish screening efforts
- Build upon existing ecological planning and restoration efforts by incorporating fish screening and passage needs and enhancing instream habitat conditions (e.g., water quality, channel complexity)
- Update streamflow restoration priority areas using new species distribution, climate change projections, hydrologic data, and water quality impairments related to streamflow
- Couple stream restoration projects with voluntary flow restoration projects (see Action 11B)
- Restrict livestock access to riparian areas and streambeds through regulatory compliance where applicable and support cooperative fencing programs/efforts
- Provide financial and technical assistance, when applicable, to landowners and other interested parties to implement projects that improve fish habitat and mitigate risks to natural resources (e.g., road construction with fish-friendly culverts, large wood placement)
- Ensure fish screening and fish passage laws are addressed in FERC hydroelectric project relicensing or when adding hydroelectric generation to an unpowered dam

Resources

Agency Programs

DSL's Waterways and Wetlands, ODFW Fish Screening and Passage Program, ODFW Hydro Program, ODFW Water Program, ODFW Western Oregon Stream Restoration Program, OWRD Dam Safety Program, ODOT Environmental Program

Funding

ODFW's Oregon's Fish Screening and Passage Cost Sharing Program, OWEB's Grant Programs, ODF Small Forestland Investment in Stream Habitat (SFISH) Program, USFWS National Fish Passage Program
Many Federal Sources: BPA, BLM, USDA-NRCS, NFWF, USEPA, USFS, USFWS, NOAA

Documents

Oregon Plan for Salmon and Watersheds
State Wildlife Action Plan
NOAA Fisheries West Coast Fish Passage Guidelines
Pacific Lamprey Conservation Initiative, Lamprey Technical Workgroup Publications
Northwest Power and Conservation Council's Strategy for Salmon
2020 ODOT's Routine Road Maintenance: Water Quality and Habitat Guide Best Management Practices
Ecological Effects of Tide Gate Upgrade or Removal: A Literature Review and Knowledge Synthesis

Actions 11E
Develop Additional Groundwater Protections

Lead Agencies	Supporting Agencies	Possible Partners
ODEQ, OWRD	DLCD, DOGAMI, ODFW	Tribes, local governments, SWCDs, WCs, CBOs, NGOs, well owners

Purpose

Groundwater discharge contributes to springs, wetlands, and streamflow throughout the state. Contributions from groundwater support ecosystems and human systems alike. Protecting groundwater from over-use or contamination benefits groundwater-dependent ecosystems as well as existing water users. This action acknowledges the need for additional voluntary, incentive-based, and regulatory approaches to achieve sustainable groundwater management.

Related Actions 7A, and 12A-12C address specific ways to prevent sources of groundwater contamination.

Example Actions

- Implement actions for sustainable groundwater management through voluntary, incentive-based, and regulatory means
- Develop clear objectives and metrics for defining sustainable groundwater management
- Designate groundwater limited areas
- Protect groundwater through proper well construction (also see Actions 7A, 12A)
- Identify and protect and/or restore springs, cold water discharge to surface water, and wetlands (also see Action 11A)
- Prioritize resources where frontline communities are experiencing unsafe drinking water, with potentially serious health consequences (also see Action 12A)
- Implement improvements to groundwater quality management (Senate Bill 1154, 2025)
- Explore methods to protect groundwater in situ

Resources

Agency Programs

ODEQ Water Quality Program, OWRD Technical Services Division, OWRD Policy Section

Authorities

The Groundwater Act of 1955, The Groundwater Quality Protection Act of 1989

Documents/Websites

2019 ODEQ Groundwater Quality Protection in Oregon

Online mapping tool by The Nature Conservancy, Global Groundwater Dependent Ecosystems

Action 12A
Ensure the Safety of Oregon's Drinking Water

Lead Agencies	Supporting Agencies	Possible Partners
ODEQ, OHA, OWRD	ODA, ODF, USEPA, USFS, OWEB	Tribes, local governments, SWCDs, WCs, CBOs, NGOs, domestic well owners, individuals

Purpose
Whether people obtain their drinking water from a private well, a small community system, or a large municipal system, the original source of that water is from groundwater, surface water, or a combination of the two. Oregon manages those sources and the safety of drinking water through land use planning, land use management, ecological restoration, land acquisition, proper well construction, wellhead protection, and implementation of a drinking water protection plan.

Climate change may contribute to variabilities in supply, increases in contaminant concentrations and harmful algal blooms (HABs), and decreases in access and affordability of drinking water. Municipalities, utilities, and small/very small water systems that deliver drinking water need adequate resources to address the increasing challenges associated with climate change and changing regulatory environment. Upgrading and maintaining infrastructure (Action 7A) also contributes to protecting Oregon's drinking water.

Example Actions
- Assist drinking water systems of all sizes; increase technical, administrative, and funding resources for small and very small water systems (less than 15 connections)
- Protect drinking water sources (e.g., proper well construction, onsite septic system maintenance, responsible land management, nutrient reduction, riparian/upland/forest restoration, watershed land acquisition and conservation)
- Increase understanding of occurrence and health implications of contaminants of emerging concern (e.g. pharmaceuticals, personal care products, microplastics, nanoplastics, perfluoroalkyl and polyfluoroalkyl substances (PFAS))
- Encourage water providers to join the Oregon Water/Wastewater Agency Response Network
- Increase domestic well testing and provide updated support materials and education (including translations, when needed) (Also see Action 1A)
- Amend Domestic Well Testing Act to require laboratories to electronically report domestic well testing results associated with real estate transactions to the state
- Increase resources for education, outreach, monitoring, and treatment for disadvantaged/underserved domestic well users
- Support resiliency efforts for maintaining operation of drinking water systems during emergencies (e.g., solar/renewable energy, battery storage)
- Seek alternative to EPA's definition of "disadvantaged communities" to increase eligibility for funding drinking water improvements in underserved communities in urban areas

Resources
Agency Programs
ODA's Agriculture Water Quality Program, ODF Water Quality Program, OHA/ODEQ Drinking Water Protection Program, ODEQ's Underground Injection Control Program, OHA's Drinking Water State Revolving Fund, OWEB Drinking Water Source Protection Grant Program

Workgroups
Drinking Water Advisory Committee

Documents
LPRO Approaches and Funding for Low-Income Water Ratepayer Assistance and Household Infrastructure in Oregon

Action 12B
Reduce the Use of and Exposure to Toxins and Other Pollutants

Lead Agencies	Supporting Agencies	Possible Partners
DSL, ODA, ODEQ, ODF, OHA	DAS, ODFW, ODOT, OWEB, USEPA	Tribes, OSU, PSU, local governments, SWCDs, WCs, CBOs, NGOs, farmers and farmworkers

Purpose
Protecting public health and the environment from the impacts of toxic pollutants in the air, water, and land is a top priority for ODEQ and OHA. Thousands of toxic chemicals are in products that individuals and businesses use daily. Old chemicals that may not be sold today but are stored in homes, schools, farms, and businesses also pose risks, including herbicides, pesticides, and fertilizers. Whether used in their raw form or in products, these chemicals can be released into Oregon's air, water, and land. Once in the environment, toxic pollutants can adversely affect the health of people and other living organisms. The accumulation of toxins in fish is a major concern for high fish consuming populations including many tribal members. Actions are needed to both reduce the use of toxics and adequately notify the public when health risks are present.

Example Actions
- Update and implement the ODEQ's 2018 Toxics Reduction Strategy
- Implement green chemistry executive order, including revising purchasing practices related to toxic chemicals
- Update and implement Water Quality Pesticide Management Plan
- Support Pesticide Stewardship Partnerships and enhance program to focus on environmental justice communities
- Continue "take back programs" and develop partnerships with community-based organizations and tribes to facilitate culturally relevant "take back programs"
- Continue to identify and address hazardous or contaminated sites (e.g., Lower Umatilla Basin nitrate contamination, brownfields, abandoned/derelict vessels)
- Prevent blue-green algae (including Harmful Algal Blooms or HABs) from forming beyond natural background levels and support advisory/notification efforts
- Support implementation of the 2023 ODEQ Freshwater Cyanobacteria Harmful Algal Bloom Strategy
- Monitor recreational waters and inform the public when contaminants are present, including communications to reach non-English speaking, low-income, tribal, and rural residents and businesses
- Update Oregon's water quality criteria for toxic pollutants to protect aquatic life and human health based on the latest science
- Support programs and organizations to help communities and utilities prevent, prepare for, and respond to chemical spills
- Support no-till, organic, and regenerative agricultural practices that reduce herbicide, pesticide, and fertilizer use
- Engage historically or currently impacted communities in design of toxics source reduction and clean-up efforts so that they can experience the benefits of the effort, such as utilizing Community Benefits Agreements

Resources
Agency Programs

ODA Agricultural Water Quality Management Program, Pesticide Stewardship Partnership, ODEQ Air, Land, and Water Programs, ODOT's Spill Prevention, Control and Countermeasure Program, DSL's Abandoned and Derelict Vessels Program, OHA's Safe Drinking Water Program and fish consumption/HABs advisory programs, DEQ's drinking water source water protection program, OWEB Grant Programs

Laws/Policies

Executive Order No. 12-05 ("Environmentally Friendly Purchasing and Product Design"), Forest Practices Act

Workgroups

Abandoned and Derelict Vessels Workgroup, ODEQ Team Toxics, Water Quality Pesticide Management Team, Legislative Policy and Research Office Harmful Algal Bloom Workgroup, Coordinated Streamside Management

Documents

2018 ODEQ Toxics Reduction Strategy, 2023 ODEQ Freshwater Cyanobacteria Harmful Algal Blooms Strategy, 2011 Oregon's Water Quality Pesticide Management Plan for Water Quality Protection

Action 12C
Implement Water Quality Pollution Controls

Lead Agencies	Supporting Agencies	Possible Partners
ODA, ODEQ, ODF	BLM, DSL, ODFW, ODOT, NRCS, USACE, USEPA, USFS	Tribes, local governments, SWCDs, WCs, CBOs, NGOs, businesses, private landowners

Purpose

Land management activities and their associated point and nonpoint sources of pollutants must be managed to protect water quality for humans and the environment. The Clean Water Act, administered by the ODEQ, provides the regulatory structure for addressing point and nonpoint sources of pollution in the state. The ODA and ODF play important supporting roles. The USEPA has delegated ODEQ to administer the Underground Injection Control Act under the Safe Drinking Water Act for underground injection activities such as Aquifer Storage and Recovery (ASR) and Artificial Recharge (AR).

Oregon must continue developing and implementing Total Maximum Daily Loads (TMDLs), or pollutant reduction plans, for waterbodies that do not meet Oregon water quality standards and use its enforcement authorities to compel related permit condition compliance. This includes developing TMDLs for the remaining waterbodies and pollutants on Oregon's 303(d) impaired waters list and for those added in the future. It also includes reviewing and updating existing TMDLs and providing oversight to ensure that implementation measures by permit holders and designated management agencies are effective.

Example Actions

- Continue to develop and implement TMDLs for water bodies that do not meet water quality standards
- Continue to address nonpoint sources of pollution across all land uses
- Ensure effective management and oversight of stormwater in urbanized areas
- Assist communities with septic system challenges, including technical and funding resources for underserved communities
- Continue to update and revise TMDLs to conform with current temperature standards
- Continue to work with Designated Management Agencies, as defined in each TMDL, to achieve water quality standards
- Develop more programmatic implementation plans for common TMDL issues
- Continue to meaningfully engage with communities within the hydrologic boundaries of new and updated TMDL's
- Review TMDL prioritization process to ensure geographic equity among places with a completed and approved TMDL
- Recognize role of water management and water withdrawals in meeting TMDL objectives

Resources

Agency Programs

ODA Natural Resources Program, ODEQ Total Maximum Daily Load, Nonpoint Source Pollution, Water Quality Permitting, and Onsite Wastewater Management Programs

Funding

Clean Water State Revolving Fund

Laws/Policies

Clean Water Act, Forest Practices Act

Documents

Agricultural Water Quality Area Plans (38 total)

Water Quality Management Plans (and implementation plans for an approved TMDL)

2020 ODOT's Routine Road Maintenance: Water Quality and Habitat Guide Best Management Practices

Action 13A
Fund Development and Implementation of Oregon's Integrated Water Resources Strategy

Lead Agencies	Supporting Agencies	Possible Partners
ODA, ODEQ, ODFW, OWEB, OWRD	BIZOR, DLCD, DOGAMI, DSL, ODF, ODOE, OHA, OPRD, OSMB, Many federal agencies	Tribes, Legislature, local governments, individuals, SWCDs, WCs, NGOs

Purpose
State agencies need adequate, stable funding to guide Strategy development, updates, and implementation to address our current and future instream and out-of-stream water needs. The goals, objectives, and 48 actions spelled out in the Strategy will be meaningless without long-term funding. Coordination among state, federal, and private partners will also be critical for making progress.

Updates and implementation of the Strategy, including specific state agency participation, is called out in Oregon Revised Statute ORS 536.220. Two-year Strategy Workplans are required, providing an opportunity to identify biennial budgetary needs associated with Strategy implementation. Communicating progress on workplan implementation helps increase accountability and transparency.

Example Actions
- Fund implementation of the Integrated Water Resources Strategy
- Fund the development and implementation of biennial Strategy workplans
- Fund the required Integrated Water Resources Strategy updates, including support from partner agencies
- Fund communication resources regarding the Strategy including web-based information and translations
- Fund the development of biennial progress reports to communicate progress on Strategy implementation

Resources
Agency Programs
Refer to state agency programs listed on Strategy Action Summaries for Actions 1A through 13C

Workgroups
Interagency IWRS Project Team, OWRD IWRS Team, Federal Liaison Team, Water Core Team, Tribal Water Task Force

Laws
Oregon Revised Statute, ORS 536.220

Action 13B
Fund Water Resources Management Activities by State Agencies

Lead	Supporting Agencies	Possible Partners
Legislature	BIZOR, DLCD, DOGAMI, DSL, ODA, ODEQ, ODF, ODFW, ODOE, OHA, OPRD, OSMB, OWEB, OWRD, Many federal agencies	Tribes, local governments, SWCDs, WCs, CBOs, NGOs, individuals

Purpose
The state's core responsibilities related to water, including those described throughout the Integrated Water Resources Strategy, must continue to receive funding to adequately protect and manage the public's water resources. State agencies lead the budget development process, working with interested parties, local governments, Tribes, and others to understand resource needs for the next biennium. Agencies must communicate the importance of investing in water to the Oregon Legislature.

The 2025-27 Legislatively Adopted Budget allocated just 2.8% of the total budget to Natural Resources agencies. Approximately 1.6% of the General Fund was directed to these agencies. Increased investments are needed for agencies to carry out their responsibilities, which may require new funding sources.

Example Actions
- Fund those water management activities for which the state has responsibility
- Ensure increased and adequate funding from the General Fund
- Seek additional funding sources (e.g., federal funding, bonding)
- Provide funding for agency operations and equipment (e.g., administration, information technologies, interagency coordination, data acquisition, and management)
- Allow agencies to adjust fees to ensure that their programs protecting water resources are sustainably funded
- Evaluate and implement opportunities to improve equitable delivery of services by state agencies
- Support agency capacity to carry out the Strategy
- Provide ongoing support for the Oregon Water Data Portal to provide a platform for state agencies and partners to share data and information with the public to support water-related decision making
- Provide equitable access to technical assistance (e.g., state agencies, SWCDs) for communities

Resources
State agency biennial budgets
Publications from the Oregon State Legislature Legislative Fiscal Office

Action 13C
Invest in Planning, Feasibility Studies, and Water Resource Project Implementation

Lead Agencies	Supporting Agencies	Possible Partners
BIZOR, DLCD, ODA, ODEQ, ODF, ODFW, OPRD, OWEB, OWRD	DOGAMI, DSL, ODOE, OHA, OSMB	Legislature, Tribes, local governments, SWCDs, WCs, CBOs, NGOs, individuals

Purpose
Investing in planning, feasibility studies and water resources-related project implementation is critical to ensuring communities and the environment can adequately meet our future instream and out-of-stream water needs. Planning is done successfully by ensuring that resources exist to help organize people, apply for and administer funds, and facilitate the conversation. It also takes resources to gather water resources information and to develop new data that fills key knowledge gaps. Feasibility studies help determine the environmental, engineering, economic, and social implications of proposed projects, such as conservation, reuse, or storage projects prior to significant investment. Finally, reliable and sufficient funds are needed to implement a wide range of water resource projects aimed at meeting Oregon's instream and out-of-stream needs.

Example Actions
- Continue to authorize and fund public and private investments in efforts such as Place-Based Integrated Water Resources Planning, including plan implementation
- Provide funding to assist small water systems to develop and implement water management and conservation plans
- Provide funding to support hazard mitigation planning (e.g. droughts, floods) at the local level
- Support OWRD administrative Basin Program updates (basin planning, assessments, and program rules)
- Authorize bonds to finance investments in instream and out-of-stream projects
- Ensure that basic water infrastructure maintenance needs continue to be eligible for grant and loan funding
- Advocate for continued state and federal funding for water and wastewater-related infrastructure
- Develop funding and technical support for low-income, small communities, and districts to maintain, upgrade, and operate water and wastewater-related infrastructure
- Continue funding and support for watershed restoration and OWEB Focused Investment Partnerships
- Continue to fund OWRD Feasibility Study Grants, Water Project Grants and Loans, and Water Well Abandonment, Repair, and Replacement funding opportunities
- Continue to provide BIZOR and OWEB administered grants that cover feasibility studies
- Support water project community engagement, including participation by representatives of disproportionately impacted communities (See HB 3293 (2021) that applies to BIZOR, ODEQ, ODFW, OHA, OWEB, and OWRD)
- Target investments so that project benefits are distributed to frontline communities equitably
- Look for ways to support the federal Justice40 Initiative, a goal that 40 percent of benefits of specific federal investments are directed toward those marginalized, underserved, and overburdened by pollution
- Develop a centralized funding platform to help link people with project-appropriate funding programs

Resources
Agency Funding Programs

BIZOR grant, loan, and tax incentive programs, DLCD Housing Technical Assistance Grants (for public facilities feasibilities studies in support of housing production), OWEB Grant Programs, OWRD Place-based Water Planning Fund, Feasibility Study Grants, Water Projects Grants and Loans, ODEQ Clean Water State Revolving Fund

Many additional agency funding programs exist for project implementation