# 2024
# AN UPDATED SCOPE FOR THE STEWARDSHIP AND SUPPLY INITIATIVE

HB 2010 (2023) REPORT TO OREGON LEGISLATURE

STATE OF OREGON

OREGON
WATER RESOURCES DEPARTMENT

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# AN UPDATED SCOPE FOR THE STEWARDSHIP AND SUPPLY INITIATIVE

## HB 2010 REPORT TO OREGON LEGISLATURE

*BY OREGON WATER RESOURCES DEPARTMENT*

STATE OF OREGON


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OREGON
WATER RESOURCES
DEPARTMENT

# Executive Summary

In 2023, the Oregon Legislature directed the Oregon Water Resources Department (Department or OWRD) to develop an updated scope of work and budget (HB 2010) for the 1998 Stewardship and Supply Initiative (SSI). The SSI outlined five tasks to complete over two years to better position Oregon to meet its water needs, including resources to create basin assessments and inventories of potential water storage sites. The work was to be done in consultation with Oregon Department of Fish and Wildlife (ODFW) and Oregon Department of Environmental Quality (ODEQ). The package was not funded during the 1999-2001 biennium. Twenty-six years later, water management has increased in importance and complexity as we better understand how limited our water supplies are across the state. Table 1 provides a high-level summary of recommendations for a re-envisioned SSI. Oregon has made significant progress on four actions: the state of the water resources report, aquifer recharge site identification, the surface water storage site inventory, and data accessibility.

Little to no progress has been made on the fifth recommended action, "modernized basin assessments." Not having consistent, basin-level information about water conditions has prevented efficient basin-level alignment of water supply solutions. Producing basin assessments for all 20 administrative basins is a massive undertaking and requires significant new resources (Table 1). However, it would equip the Department and its partners to be able to 1) identify and describe critical issues within basins across the state, as required in future iterations of Oregon's Integrated Water Resources Strategy (IWRS; ORS 536.220(6)(b)); 2) provide information about the current and expected future water conditions to inform place-based integrated water resources planning (ORS 537.873(9)); and 3) support the update to basin program administrative rules and other water management actions (ORS 536.300). Figure 1 provides a visual display of how basin assessments could fill a gap in how agencies share information about a basin's water conditions and how that information could be used to update the IWRS, support place-based planning, and inform agency actions in a basin.

**Figure 1. Potential Role of Basin Assessments**

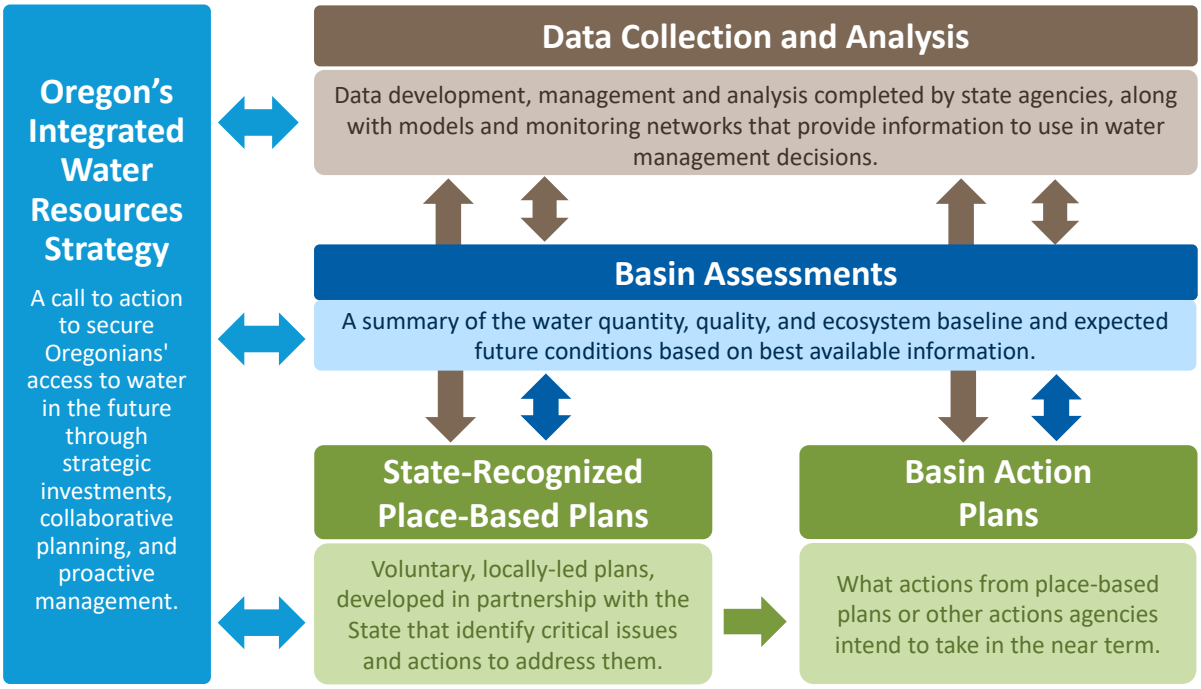


**Table 1. Summary of Rescoped SSI Tasks in this Report**

| 2024 Rescope Recommendations | Additional Resources Required |
|---|---|
| **1. State of the Water Resources Report** | |
| • Continue to invest in the statewide Integrated Water Resources Strategy (IWRS).<br>• Incorporate critical issues and findings from basin assessments into future iterations of the IWRS. | • None specifically identified in this report.<br>• Resources to be identified when IWRS update is completed in 2025. |
| **2. Administrative Basin Assessments** | |
| • Provide resources to complete basin assessments that describe the overall basin conditions and can support future updates to the IWRS, serve as foundational information for place-based integrated water resources planning efforts, and inform Basin Action Plans. State agencies would use currently available data and incorporate new data as it becomes available.<br>• Complete a prototype assessment in 2026 and follow with remaining assessments in 2027-2040. | • $1.75M for contracted future water supply demand forecasts (both instream and out-of-stream)<br>• $5.60M for staff resources<br>  ○ OWRD: 1 Limited Duration Natural Resource Specialist (NRS) 3 project manager; 1 NRS-2 Basin Assessment Specialist; 4 NRS-4 Assessment Coordinators in Groundwater, Surface Water, Water Rights, and Transfers Sections; 2 Water Resources Data Technician 2; 1 NRS-5 Senior Water Advisor; 1 NRS-4 Hydrologic Modeler; 1 Natural Resources Protection & Sustainability Manager 3 Policy & Planning Division Administrator<br>  ○ ODFW: 1 NRS-3 Basin Assessment Analyst<br>  ○ ODEQ: 1 ISS-6 GIS modeler, 1 NRS-4 Senior Water Quality Analyst, and 1 NRS-3 Water Quality Analyst |
| **3. Aquifer Recharge Identification** | |
| • Convene a workgroup to assess opportunities to modernize AR/ASR processes and program expectations.<br>• Provide resources to support planning, permitting, and pilot testing AR/ASR projects. | • $1.03M for staff resources<br>  ○ OWRD: 1 NRS-4 AR/ASR Hydrogeologist; 1 NRS-3 AR/ASR Caseworker; Limited Duration Operations and Policy Analyst (OPA) 3 to staff workgroup<br>  ○ ODEQ: 1 NRS-4 Hydrogeologist |
| **4. Surface Water Storage Site Inventory** | |
| • Maintain existing surface water storage by investing in dam safety and fish passage.<br>• Continue to fund feasibility study grants to investigate new storage.<br>• Evaluate potential updates to current water storage policy (OAR 690-410) and guidance.<br>• Promote sharing investigations and studies in Water Explorer library. | • $210K for 1 Limited Duration OPA-2 Storage Policy Analyst<br>• Investment in rehabilitation of dams for safety and fish passage<br>• Continued investment in Feasibility Study Grants |
| **5. Make Data Accessible Online** | |
| • In the near term, publish basin assessment reports online and upload/update data on the Oregon Water Data Map Viewer.<br>• In the long-term, share analyses and data via the Oregon Water Data Portal. | • $100K per biennium to upload new data and update existing data into the Oregon Water Data Map Viewer.<br>• Resources required for Oregon Water Data Portal to be identified through that effort's scoping. |

# Introduction

In the late 1990s, the Oregon Water Resources Department (Department) proposed to undertake a series of tasks in quick order (2 years) to better position Oregon to meet its water needs. The original scope of the 1998 Stewardship and Supply Initiative (SSI) included in the Governor's Recommended Budget proposed resources to complete basin assessments and inventories of potential ground and surface water storage sites. The Legislature did not fund this effort in 1999-2001. In the years that followed, portions of the original initiative, or variations thereof, were funded and completed. In 2023, the Oregon Legislature passed House Bill 2010, which directed the Department to develop and submit an updated scope of the SSI on or before October 1, 2024, and include an estimated cost, timeline, and a proposed approach to sequencing development of administrative river basin assessment reports. This report is responsive to the Legislature's request and provides an update on the work completed since 1998, recommendations for moving forward, and the resources required to implement those recommendations.

**1998 Stewardship and Supply Initiative**

While the SSI predated Oregon's Integrated Water Resources Strategy, at its core, the SSI proposes actions to achieve goals of the IWRS on the administrative basin scale, specifically: to improve our understanding of Oregon's water resources and to meet our state's instream and out-of-stream water resource needs.

Since 1998, numerous studies and evaluations of Oregon water management have called for an integrated vision for how Oregon will manage its water resources and address its water needs. While progress has been made, several gaps remain, and a rescoped SSI has the potential to address those gaps including updating each of the basin assessments to share current data and information with the public and water management partners and evaluate opportunities to better support above and below ground storage.

# Updated Scope

The sections that follow present an updated scope of the five major tasks identified in the original SSI proposal. The Department used the following principles to guide the development of the updated scope:

- Update the deliverables so that products add value, building upon other work done since 1998;
- Incorporate and build on water investments by the Oregon Legislature;
- Seek to streamline and avoid duplication of work; and
- Identify gaps in the information needed and resources required to implement the scope.

# Task 1 – State of the Water Resources Report

The SSI called for the creation of a new "State of the Water Resources Report" which intended to "help orient the users of individual Basin Assessments and will include information on the statewide aspects of stewardship and water supply in Oregon—highlighting existing laws and policies as well as the tools and programs currently available to the public."

During 2007-2008, the Department undertook the Oregon Water Supply and Conservation Initiative (OWSCI) with the overarching goal of providing a foundation for improved long-term water resources planning, as directed in SB 600 (2007). The OWSCI project included statewide water demand forecasting, an inventory of potential conservation opportunities, inventories of potential above and below ground storage sites, and community water planning grants. OWSCI served as a launching point for development of a statewide water strategy.

Following completion of OWSCI in 2009, the Water Resources Commission appointed a Planning Working Group to ensure the orderly development of Oregon's Integrated Water Resources Strategy (IWRS), providing both the vision and oversight as well as the policy guidance on both the process and resulting product. The Planning Working Group met with agency staff and interested parties to brainstorm the process for developing a long-term, integrated water resources strategy for Oregon.

HB 3369 (2009), directed the Department to develop Oregon's first Integrated Water Resources Strategy in partnership with other agencies. After several years of public and tribal engagement and advisory group recommendations, the Water Resources Commission adopted the IWRS in 2012, creating a framework for better understanding and meeting Oregon's instream and out-of-stream needs, including water quantity, water quality, and ecosystem needs.

The Department updated the OWSCI demand assessment in preparation for the second iteration of the IWRS. Completed in 2015, the Long Term Water Demand Forecast documented how projected changes in Oregon's climate and population will affect water demands for the agricultural sector, municipalities, and industries. The report acknowledged that there was a gap in forecasting instream needs, but Oregon Department of Fish and Wildlife was not funded to complete this work. Oregon's 2017 IWRS placed a renewed emphasis on data and information and included several new recommended actions related to drought, floods, and earthquakes, dam safety, water allocation and management, and investments in local and regional planning, along with funding for water resources projects.

A new iteration of the IWRS is scheduled for the Commission's adoption in 2025. The next version will build upon recent work products and initiatives, such as The Business Case for Investing in Water in Oregon (2023) and the 100-Year Water Vision (2020).

## Recommendation

The Department does not recommend the development of a new, standalone "State of the Water Resources Report." Rather, the Department believes that the IWRS serves this function and strongly advises that Oregon continue to invest in the implementation and scheduled updates to the IWRS. This legislative report presents a proposal for how basin assessments can provide information on water conditions across the state for inclusion in future iterations of the IWRS.

## Resource Needs

With the IWRS currently undergoing an update, this report does not identify specific resource needs for that work. Resources required for IWRS implementation and future updates will be identified through the next iteration of the IWRS and associated work plans, which is anticipated to be published in 2025.

### 1998 Scope

Create a new "State of the Water Resources Report" which would "help orient the users of individual Basin Assessments and will include information on the statewide aspects of stewardship and water supply in Oregon—highlighting existing laws and policies as well as the tools and programs currently available to the public."

### 2024 Rescope

Continue to invest in Oregon's Integrated Water Resources Strategy, which provides a statewide framework for understanding and meeting Oregon's instream and out-of-stream water needs. If funded, incorporate critical issues and other findings from basin assessments into future iterations of the IWRS.

# Task 2 – Administrative Basin Assessments

The SSI called for a "retool of the state's outdated basin reports" by developing a template for basin assessments. The purpose was to describe the overall basin condition, including key stewardship factors and elements that define a basin's potential such as, "defining consumptive water demands, projecting instream flow demands, identifying the potential for water conservation opportunities as a means of managing demand, and analyzing regional water supply options."

Comprehensive assessments of water resources at an administrative basin scale have not been undertaken by the Department in decades. The division responsible for the work, the Resource Management Division, lost funding and was eliminated during the 1990s. The lack of a state-led planning program left a gap in the foundational information needed to proactively identify and address critical water issues at the large basin scale.

Several administrative basins have not had a comprehensive water resources assessment or report published in more than 50 years with most recent over 30 years old (see Appendix 1 for a list of available basin reports). Since then, only targeted modifications have been made to basin program rules. Over time, any state-led assessment, study, basin program rule update became resource or sometimes single issue-driven, rather than attempting to analyze all aspects of water resources and management in a basin. Recent studies typically cover only a small geographic portion of an administrative basin.

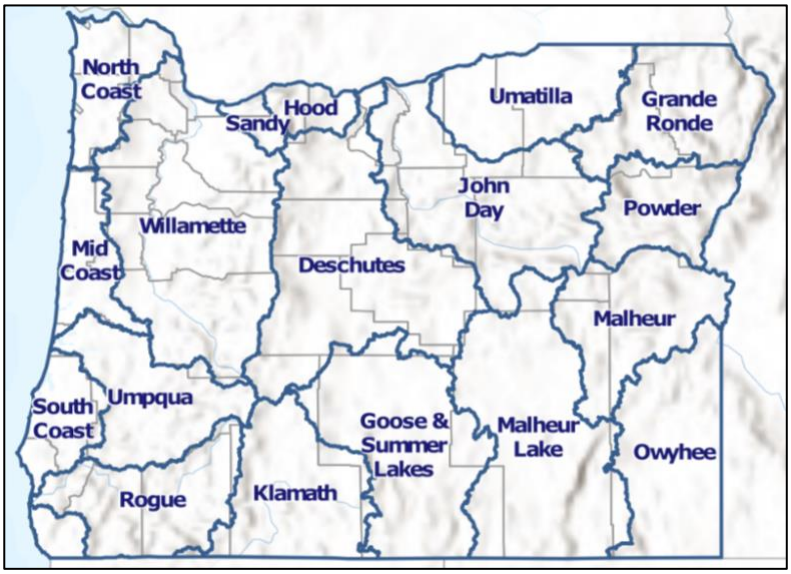
## Oregon's Administrative Basins

A basin is a geographic area defined by the natural boundaries of a watershed, where all surface water drains into a common outlet, such as a river, lake, or ocean. An administrative basin, as defined by the Department, is a management unit established to facilitate water resource planning, allocation, and regulation within the state. These basins may encompass multiple watersheds and are used by the Department to organize water-related activities, ensuring comprehensive management across Oregon's diverse hydrological landscapes.

The Department and the Water Resources Commission are charged with developing plans and programs for the state's major drainage basins. The plans and programs are to be developed in a coordinated and integrated approach to manage the use and control of the state's surface water and groundwater resources.

Twenty administrative basins exist today. In addition to the 18 displayed on the map, the Columbia and Middle Snake are two other designated basins.

**Figure 2. Administrative Basins within Oregon**



## Other Types of Recent Assessments

Although Oregon has not been able to undertake comprehensive administrative basin-level assessments of both surface water and groundwater in recent years, other studies and planning initiatives have taken place. The Department led cooperative groundwater studies, provided grants and technical assistance for development of place-based integrated water resources plans, and served as a partner in federally funded initiatives, such as the U.S. Bureau of Reclamation's WaterSMART program.

### Cooperative Groundwater Basin Study

Cooperative groundwater basin studies are one such example. The Department and the U.S. Geological Survey (USGS), with assistance from other agencies, conduct cooperative groundwater basin studies in various regions of the state. The study area is usually smaller than the Department's administrative basin boundaries.

Compared to a basin assessment, a cooperative groundwater basin study is a rigorous, multi-year scientific investigation of groundwater occurrence and flow in a basin. The focus is to obtain quantitative measures of hydrologic conditions and synthesize the information to formulate an understanding of the overall groundwater system. Data collection and analytical methods are extensive, and installation of new observation wells and stream gages is common. A water demands analysis, detailed water budgets, geologic and hydrogeologic maps, and numerical groundwater modeling are common study outputs.

Generally, cooperative groundwater studies are initiated in response to existing conflicts over groundwater resources, and therefore are not necessarily a proactive approach to water resources management. However, the studies can provide the provide scientific foundation to support regulatory or policy options for managing or curtailing existing or future uses of groundwater.

A cooperative study was completed for the Harney Basin in 2022. Other recent cooperative groundwater studies include the Walla Walla River Basin (ongoing with publication planned in 2025); Upper Klamath Basin (2007, 2012); Willamette Basin (2005, 2014); and the Upper Deschutes Basin (2000, 2003, 2017).

| 1998 Scope | 2024 Rescope |
| --- | --- |
| "Retool the state's outdated basin reports" by developing a template for new basin assessments that describe the overall basin condition including key stewardship factors and elements that define a basin's potential such as, "defining consumptive water demands, projecting instream flow demands, identifying the potential for water conservation opportunities as a means of managing demand, and analyzing regional water supply options." | Provide resources to complete basin assessments that describe the overall basin conditions and can support future updates to the IWRS, serve as foundational information for place-based integrated water resources planning efforts, and inform Basin Action Plans. State agencies would use currently available data and incorporate new data as it becomes available. Complete a prototype assessment in 2026 and follow with remaining assessments in 2027-2040. |

### Place-Based Integrated Water Resources Plans

The Department provided grant funding and technical assistance to communities developing place-based integrated water resources plans. In 2016, four communities were selected to lead a place-based approach to integrated water resources planning, in partnership with state agencies and a wide range of water interests. These efforts covered portions of OWRD administrative basins as defined by the local planning group. The collaborative planning process included a characterization of surface water and groundwater resources, descriptions of both instream and out-of-stream water supply, water quality, and ecosystem needs, and actions to address those needs. A lack of readily accessible data and information for groups to use in their plans was identified as an area in need of improvement by both an Independent Evaluation of Place-Based Water Planning and the 2022 Work Group on State-Supported Regional Water Planning and Management.

### Federal Studies

Some communities have taken advantage of federally funded study programs, such as the U.S. Bureau of Reclamation's WaterSMART Basin Study Program. Partners in the Hood River, Klamath, and Deschutes River Basins have completed WaterSMART basin studies. The Walla Walla recently initiated a WaterSMART study. Studies examined water supplies and demands, various strategies for meeting those demands, while considering climate change scenarios. Although comprehensive, the studies were not intended to support modernization of the state's basin programs.

The Department also co-sponsored an investigative study to explore the future use of stored water held in the Willamette Valley Project reservoirs, a system owned and operated by the U.S. Army Corps of Engineers. The study resulted in a reallocation of stored water to meet a broader set of water needs. Although the study was extensive, like WaterSMART studies, it was not designed to revise the Willamette Basin Program. The study was primarily focused on water supply as the critical issue, with an emphasis on stored water as the key option to consider.

## The Purpose of Modernized Basin Assessments

Understanding baseline conditions and expected future conditions is essential for achieving the goals of Oregon's Integrated Water Resources Strategy (IWRS) at the administrative basin scale. The primary needs for basin assessments today are to:

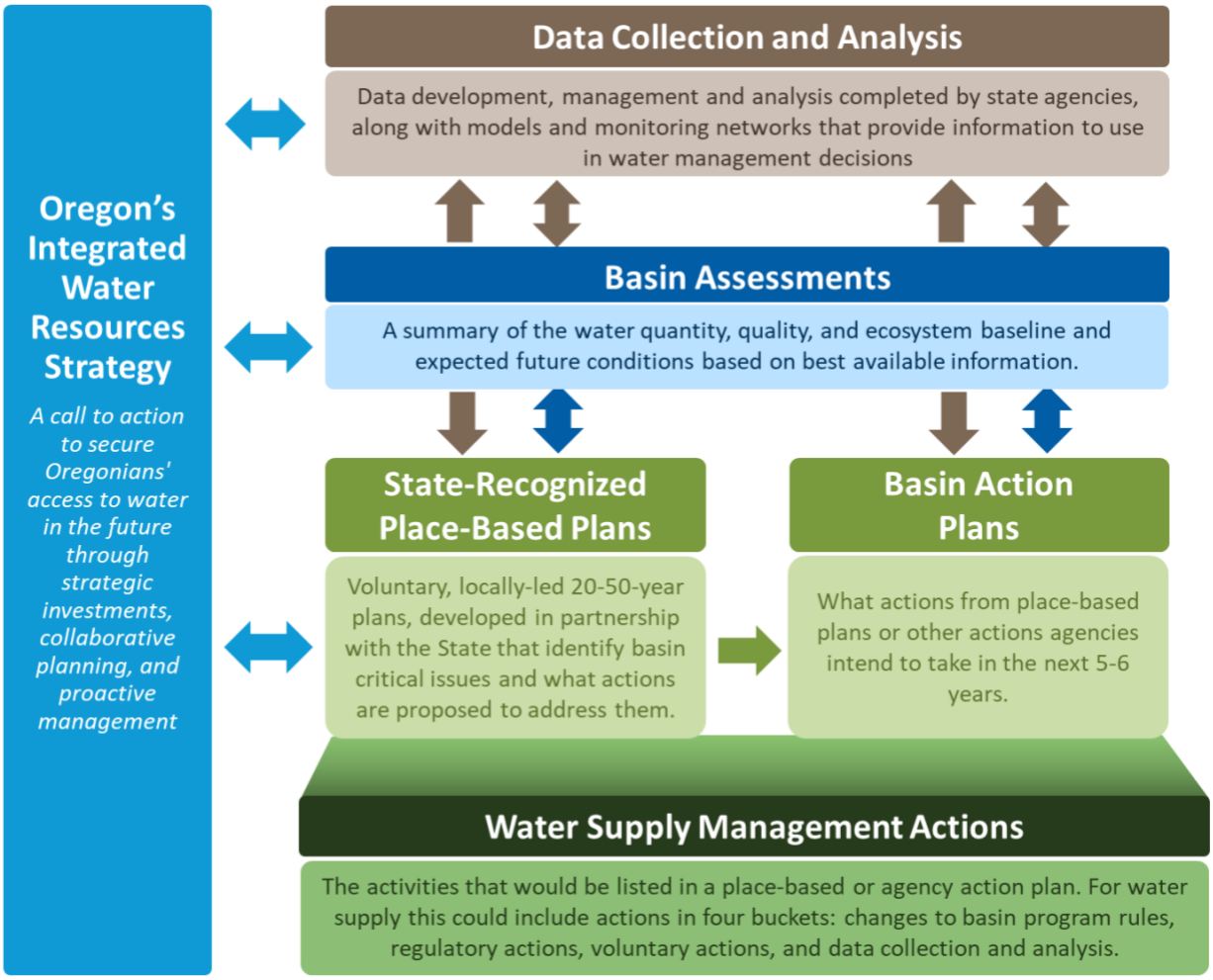
- Identify and describe critical issues within basins across the state, as required in future iterations of the IWRS (ORS 536.220(6)(b)).
- Provide information about the current and expected future water conditions to support place-based integrated water resources planning (ORS 537.873(9)) and align with recommendations from the independent evaluation of the initial planning efforts and a workgroup's recommendations to support regional water planning..
- Inform an agency or inter-agency basin action plan that identifies actions for the Department and/or other agencies in an administrative basin, including potential basin program administrative rules updates and other water management actions (ORS 536.300).

Additionally, basin assessments can identify data gaps and inform investments in grants and other funding allocations that require robust water information. For example, grant applicants could use basin assessments to substantiate the need for and value of their proposals.

To accomplish this a basin assessment requires a comprehensive evaluation of the water resources within an administrative basin, including an analysis of current and projected water supplies, demands,

and uses, as well as an identification of critical issues and vulnerabilities related to water supply, quality, and ecosystem needs. Figure 3 illustrates where basin assessments fit in relation to the IWRS, place-based plans, and agency action plans and underscores the goal that existing data and information be synthesized and made available to inform these critical efforts.

**Figure 3. How Basin Assessments Support a Secure and Resilient Water Supply Future**




## A Template for Basin Assessments

To guide the potential development of modernized basin assessments, the Department created a standardized template to ensure consistency and comprehensiveness across assessments. This template is crafted to identify critical vulnerabilities, address significant water issues, and uncover opportunities to meet both current and future water needs. Each section of the assessment is designed to provide essential data and insights, to facilitate informed decision-making, and to promote strategic planning.

Appendix 2 provides a detailed breakdown of template components, including descriptions and the source data. The template was developed based on:

- An inventory of technical assistance requests during the pilot phase of place-based planning;
- An analysis of statutes and rules related to statewide and basin-level water planning; and
- A literature review identifying common elements and best practices found in basin assessments.

State agency partners also provided input on the basin assessment components. The Oregon Department of Fish and Wildlife (ODFW), Oregon Department of Environmental Quality (DEQ), and the Oregon Department of Land Conservation and Development (DLCD) contributed, reviewing the outline, identifying existing data sources, and the analysis needed to conduct a basin assessment.
The Department proposes that the assessments use the most current data or modeled information available at the time of completion, such as information from Oregon's Water Availability Reporting System (WARS). If assessments are completed before updates to WARS are finalized, they will rely on the existing version of the system.

Funded initiatives, like the WARS Update project and the development of water budgets (HB 2018, 2021), are key inputs for modernizing basin assessments, but significant data gaps remain. For example, the Water Rights Information System, an online clearinghouse of information on individual water rights, lacks the capability to answer essential planning questions, such as the total water allocated for withdrawal over specific periods and faces data quality control backlogs. Additionally, outdated agricultural and municipal water demand forecasts further risk inaccurate assessments. Without continued investment to address these critical data and analysis gaps, the Department may produce incomplete or outdated basin assessments, leading to ineffective water management decisions.

### Basin Assessment At-a-Glance

1. **Physical & Socioeconomic Setting**
   population growth • urbanization • climate • land use and ownership • topography • water features (rivers, lakes, wetlands, springs, etc.) • economic drivers • cultural values
2. **Condition of Water Supplies, Water Quality, & Ecosystems**
   water availability • flood and drought events • groundwater levels • impaired water bodies • sources of pollution • habitat and species presence • groundwater dependent ecosystems • instream flows • fish passage barriers
3. **Water Rights & Legal Framework**
   consumptive and non-consumptive water rights • trends • classifications • withdrawals • reservations • statutes • basin program provisions • adjudications • special designations
4. **Current Water Use & Demands**
   reported water use • evapotranspiration • demand analysis • unmet existing demands • supply and demand imbalances • areas at risk for water shortages
5. **Future Water Supply & Demands**
   climate scenarios • updated demand projections • supply forecast • instream and out-of-stream uses
6. **Water Infrastructure**
   dams • levees • conveyance • treatment • wells • wetlands • floodplains • riparian areas
7. **Critical Issues, Vulnerabilities, & Monitoring Needs**
   over-allocation • declining aquifers • pollution • aging infrastructure • environmental degradation • data gaps
8. **Consideration of Existing Policy Declarations**
   ORS 536.220 • ORS 536.310 • OAR 690-400 OAR 690-410 • OAR 690-005
9. **Data Sources**
   reports • maps • databases • models

*See Appendix 2 for a detailed outline*

## Proposed Process and Timeline

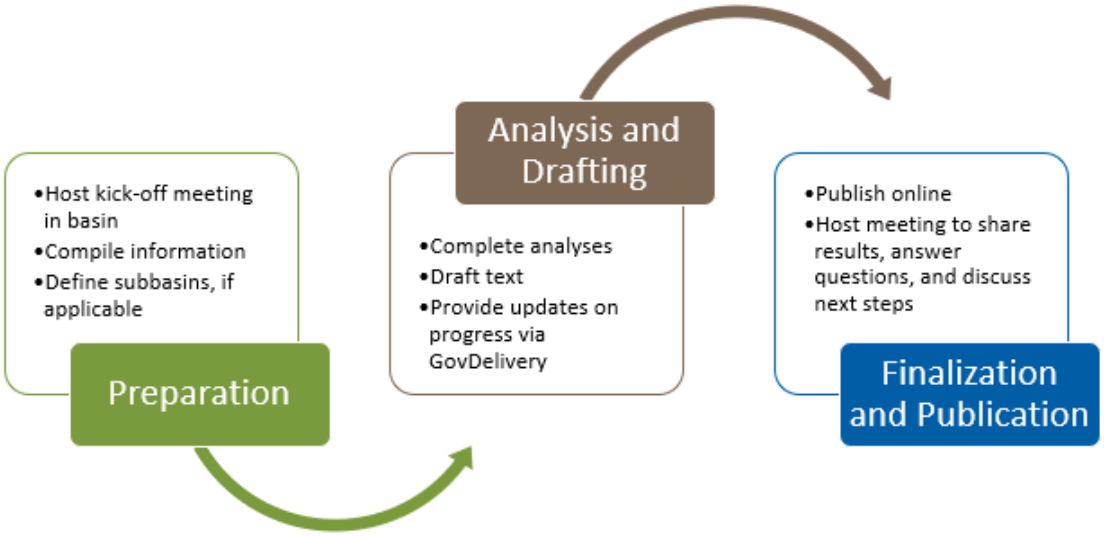
For this scoping exercise, the Department made planning assumptions about how it should complete the basin assessments for all administrative basins in the state if provided the required resources. More specifically, if funded, the Department proposes to:

- **Lead development** of the assessments, taking on the bulk of the technical analysis and writing, except where the issue is outside Department expertise, or it is more cost effective to contract.
- **Collaborate with other agencies** with data, analysis, and expertise on the items identified in the assessment template.
- **Consult with tribes** as sovereign entities with their own knowledge and expertise to reflect in an assessment.
- **Use best-available information.** This means that some assessments may have gaps or rely on high-level or qualitative information that would be filled in future updates to those assessments as new or updated information becomes available.
- **Keep interested parties informed** throughout development.
- Conduct assessments in a manner that **supports future revisions to basin program rules**.

Figure 4 lays out a high-level, three-phase process for completing a basin assessment:

- **Preparation** – Identify the administrative basins to assess, initiate the assessments, host one or more kick-off meetings with the public in each basin to explain the work and its value, and compile and prepare data and information for analysis. This includes reaching out to tribes and others to gather their knowledge to incorporate into assessments to the extent practical given the desire to produce the assessments quickly.
- **Analysis and drafting of the report** – Complete the technical analysis for each section of the report and develop the accompanying technical documentation to provide an overview of the current and expected future water conditions.
- **Finalization and publication of the report** – Publish the assessment and host a meeting in the basin to share findings, answer questions, and talk about potential next steps the state or local interests may wish to undertake to address the identified critical water issues.

**Figure 4. Process for Developing Basin Assessments**



HB 2010 (2023) specifically required the Department to propose a "timeline and a proposed approach to sequencing development of administrative river basin assessment reports." The Department proposes selecting one basin to serve as a prototype to start, and then complete the remaining basin assessments in waves, with all 20 basin assessments completed in time to be considered in the 2041 update to the IWRS. Basin assessments could then be updated every 15 years.

The Department has not undertaken this type of work in several decades and anticipates some adjustments will be needed as a result of lessons learned. Other efforts while completing the prototype, include: 1) cleaning up and preparing agency data for wave one and 2) working with a consultant and interested parties to produce an updated water supply and demand forecast.

In each "wave," the Department proposes completing one to two basin assessments in different regions (Southwest, Northwest, North Central, East, and a combined Central and South Central regions). Each of the three Senior Water Advisors would lead the basin assessments for four to five administrative basins per 15-year assessment cycle. In the years in between publishing basin assessments, those staff would also support any subsequent basin planning and water management actions. Table 2 outlines a high-level timeline for completion of the basin assessments. The Department is somewhat uncertain on how fast this will go, though anticipates initially the assessments will take more time and then move more quickly.

### Why Update Assessments Every 15 Years?

The Department recommends a 15-year cycle for completing and then updating Oregon's 20 basin assessments because:

- The timing creates space for subsequent planning and implementation of plans;
- Basin conditions are unlikely to change dramatically in this timeframe; and
- The IWRS is updated every 8 years, allowing for half the basins to be updated per IWRS update.

**Table 2. Proposed Timing for Basin Assessments**

| Timing | Actions |
|---|---|
| Late 2025 | • Legislature authorizes resources to carry out implementation<br>• Identify basin for prototype<br>• Hire new staff |
| 2026 | • Complete first assessment for prototype basin<br>• Data clean up and preparation for first wave of basin assessments<br>• Document and prepare to apply lessons learned from prototype |
| 2027-2030 | • Four to five basin assessments (Wave 1) |
| 2031-2034 | • Five to six basin assessments (Wave 2)<br>• Anticipated update to the IWRS |
| 2035-2038 | • Five to six basin assessments (Wave 3) |
| 2039-2041 | • Three to four basin assessments (Wave 4)<br>• Anticipated update to the IWRS |

## Sequencing and Format

The Department proposes considering the following factors to determine a sequence order for the basin assessments:

- **Potential impact or benefit** – Sequence basins assessments to provide highest near-term benefit both to the state and the basin. For example, consider prioritizing basins with groups interested in place-based planning (versus those with completed plans), or could benefit another state process, such as Oregon DEQ's TMDL development or groundwater management area work.
- **Data readiness** – Consider the availability of adequate data to produce a meaningful assessment. Consider delaying basins where efforts to produce new or technical information are currently underway until those data are available.
- **Equity** – Consider prioritizing basins that have not had a recent WaterSMART basin study or a cooperative groundwater study. Those basins have more accessible and recent information, whereas other basins are under-studied and only have access to reports that are 50+ years old.
- **Geographic distribution across the state** – Prioritize a balance of eastern and western basins and highly rural and urban basins when sequencing assessments.
- **Complexity** – Some basins are more technically and/or socially complex and will take more time and effort to complete. Attempt to sequence complex basins across different waves.
- **Significant change** – Allow for sequencing to be updated if there is a significant change in a basin that warrants changing the order, for example:
    - Population growth and development – Consider growth and development pressures Oregon will experience in the coming decade and sequence assessments to inform it.
    - Species implications - Prioritize basins based on nexus between water resources management and sensitive, threatened and endangered species.
    - Other major legal or physical change impacting the basin (e.g., large dam removal, new Environmental Impact Statement, large fire, etc.)

The Department proposes to initially publish basin assessments as reports generally following the template laid out in Appendix 2. Given currently available and anticipated information, the report will consist of maps, charts, graphs, statistical summaries, and text to visually display and describe water conditions. The reports will also provide an introductory summary of the purpose, goals, key resource issues and concerns, and public and tribal engagement processes.

The Department and its partners will explore how to make the underlying datasets and analysis available in an online useable format for access by planners and other interested parties. In the near term, this could be done through the Oregon Water Map Viewer. In the long term, the Oregon Water Data Portal could house and provide information for basin assessments if sufficient funding is secured.

## Recommendation

The Department affirms that updated assessments for each administrative basin are still needed to inform future updates to the IWRS, provide information to groups doing place-based planning, and lay the foundation for basin action plans that identify agency actions to address water supply. A modernized basin assessment could follow the content, format, and sequencing proposed in this report. This basin assessment template is crafted to identify critical vulnerabilities, address significant water issues, and uncover opportunities to meet both current and future water needs. Each section of the assessment is

designed to provide essential data and insights, to facilitate informed decision-making, and to promote strategic planning.

## Resource Needs

Significant resources are required to develop and update all 20 basin assessments. Please refer to Table 3 for existing resources and

Table 4 for new resources required to complete the basin assessments with the content, format, and timing described in this report.

**Table 3. Existing Resources Required for Basin Assessments**

| **Oregon Water Resources Department** | |
|---|---|
| **Existing Resource** | **Role/Purpose** |
| Senior Water Advisors (NRS-5 - Central, Northwest, North Central, and East) | Serve as project managers for basin assessments in their regions and draft critical issue section. |
| Engagement Coordinators (NRS 4s, Southwest, North Central, and East) | Organize basin meetings and promote sharing of basin assessments amongst communities. |
| Basin Hydrogeologists (NRS-4 and NRS-3) | Provide place-based expertise to Groundwater Assessment Coordinator completing groundwater analyses; review analyses. |
| Basin Hydrologists (NRS-4 and NRS-3) | Provide place-based expertise to Surface Water Assessment Coordinator completing surface water analyses; review analyses. |
| Senior Technical Analyst (NRS -4) | Complete complex technical analyses and draft report text, including those in the physical characteristics of the basin section, water allocation, and current demands. Review junior staff analysis. |
| Technical Analyst (NRS-3) | Complete technical analyses of moderate difficulty and draft report text. |
| Region Managers and Watermasters | Provide field expertise, including regulation scenarios. |
| Staff and contracting dollars for WARS update, gage network maintenance, statewide water budgets, and groundwater investigation funding | Provide data and modeled analysis for basin assessments. |
| **Oregon Department of Fish and Wildlife** | |
| **Existing Resource** | **Role/Purpose** |
| 2 Hydrologists/Instream Specialists (NRS-3) | Provide guidance on instream demand development methods and datasets. |
| **Oregon Department of Environmental Quality** | |
| **Existing Resource** | **Role/Purpose** |
| Basin coordinators and water quality analysts | Provide field expertise, verify data quality. |

**Table 4. New Resources Required for Basin Assessments**

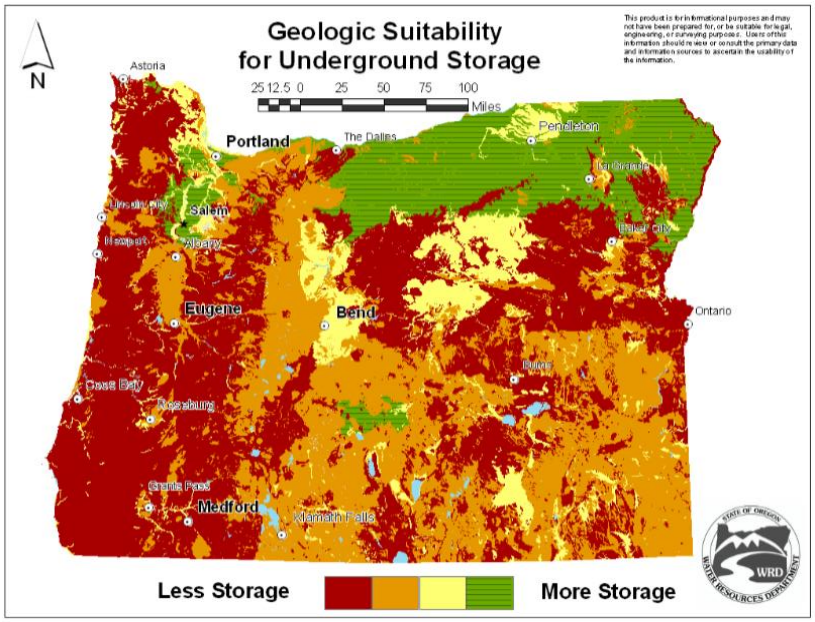
| **Oregon Water Resources Department** | | |
|---|---|---|
| **New Resource** | **Role/Purpose** | **Estimated Cost** |
| $250K contract dollars | Contract out technical work to support a supply forecast. | $250K |
| $750K contract dollars | Contract out technical work for an updated agricultural and municipal/industrial demand forecast. | $750K |
| Limited Duration NRS 3 Demand Forecast Project Manager | Manage demand forecast project, facilitate technical advisory groups to provide input into demand forecast. | $245K |
| 1 NRS 2 Basin Assessment Specialist | Complete less complex technical analyses and draft report (e.g., physical characteristics and water infrastructure). | $222K |
| 1 NRS 4 Groundwater Assessment Coordinator | Direct groundwater analyses and report development; consult with existing hydrogeologists. | $307K |
| 1 NRS 4 Surface Water Assessment Coordinator | Direct surface water analyses and report development; consult with existing basin hydrologists. | $272K |
| 1 NRS 4 Senior Hydrologic Modeler | Conduct advanced water supply modeling, focusing on forecasting, planning, and climate impact analyses. | $272K |
| 1 NRS 4 Water Rights Coordinator | Assist with basin assessments, processing complex transactions, and evaluating proposed permitting solutions. | $272K |
| 1 NRS 4 Water Transfers Coordinator | Assist with basin assessments and processing complex water right transactions and evaluating proposed transfer solutions. | $272K |
| 2 Water Resources Data Technicians | Review and clean-up databases, particularly WRIS water right information. | $345K |
| 1 NRS 5 Senior Water Advisor | Serve as project manager for basin assessments in those regions and draft critical issue section. | $168K |
| 1 Natural Resource Sustainability and Protection Manager 3 Administrator | Oversee a new Policy and Planning Division (other divisions have administrators). Provide executive leadership and direction to assessments. Manage staff. | $290K |
| **Oregon Department of Fish and Wildlife** | | |
| **New Resource** | **Role/Purpose** | |
| $750K contract dollars | Contract out technical work for an instream demand forecast. | $750K |
| 1 NRS 3 Basin Assessment Analyst | Lead desktop basin assessments and compilation of discharge, species distribution, and water quality datasets. | $245K |
| **Oregon Department of Environmental Quality** | | |
| **New Resource** | **Role/Purpose** | |
| 1 NRS 4 Senior Water Quality Analyst | Coordinate DEQ's contributions to and review of the basin assessments. | $327K |
| 1 NRS 3 Water Quality Analyst | Coordinate DEQ's contributions to and review of the basin assessments. | $293K |
| 1 ISS6 GIS Modeling Analyst | GIS/geospatial modeling support | $321K |
| | **TOTAL** | **$5.60M** |

# Task 3 – Aquifer Recharge Identification

The 1998 SSI called for development of a statewide inventory of potential groundwater storage sites. Specific sites that had the highest potential for immediate development were to be investigated in detail and the information provided as technical assistance to potential developers.

Calls for assessments of potential sites for Artificial Recharge (AR) and Aquifer Storage and Recovery (ASR) were reiterated in the 2001 and 2003 reports of the Legislatively mandated Joint Task force on Water Supply and Conservation. In 2009, the Department completed and published a statewide hydrogeologic suitability assessment report for underground storage titled, Inventory of Potential Below Ground Storage Sites. This work was completed as part of the OWSCI project, analyzing the hydrogeology of over 50 Oregon aquifer systems. Study results describe AR and ASR potential for each aquifer system. Figure 5 depicts the geologic suitability for underground storage.

**Figure 5: Map of Geologic Suitability for Underground Storage**




The inventory report was published online, as well as a companion interactive map of site locations linked to an online database of below ground storage assessments for each site, existing ASR and AR project documents, and related hydrogeologic publications. While the Department intended the database to be maintained and updated, no resources were allocated to the project's ongoing maintenance. The website feature was dropped when the Department updated its website in approximately 2018.

## 1998 Scope

Develop a statewide inventory of potential groundwater storage sites. Specific sites that have the highest potential for immediate development would be investigated in detail and the information provided as technical assistance to potential developers.

## 2024 Rescope

- Convene a workgroup to assess opportunities to modernize AR/ASR processes and program expectations.
- Provide resources to support planning, permitting, and pilot testing AR/ASR storage projects.

## Recommendation

AR and ASR remain options for addressing water needs in some parts of the state, and the value of below ground storage increases as temperatures warm and surface water impoundments lose more water to evaporation. To promote potential water supply solutions, the Department proposes convening a workgroup to discuss lessons learned from project development to date and evaluate opportunities to improve permitting processes, program rules, and statutes, if needed. The Department also recommends hiring additional staff to provide increased technical assistance and decrease application processing time.

## Resource Needs

The Department recommends hiring a caseworker to increase AR and ASR application and annual report processing efficiency. Additionally, to support greater responsiveness and assistance for such projects, the Department recommends hiring a hydrogeologist in the Groundwater Section. The technical work of the hydrogeologist would focus on collating available information on aquifer characteristics and excludes site specific investigations originally envisioned in the 1998 SSI. These physical investigations are envisioned to be undertaken by project proponents with access to land and infrastructure for pilot testing. The Department may support these field investigations with technical assistance as requested and as resources allow (e.g., conducting borehole geophysical investigation with the Department's existing tools) or through the Feasibility Study Grant program. The hydrogeologist would update and reinstate the OWSCI website products (with the help of existing IT resources), support collaborative and planning groups, consult with AR and ASR project proponents, and help with the timeliness of AR/ASR application reviews.

**Table 5: Resources Required for Advancing AR & ASR in Oregon**

| **Oregon Water Resources Department** | | |
|---|---|---|
| **New Resource** | **Role/Purpose** | **Estimated Cost** |
| 1 AR/ASR Caseworker (NRS-3) | Review and process AR and ASR applications and evaluate annual reports. | $210K |
| 1 Water Policy Analyst (OPA-3, limited duration) | Staff a workgroup to evaluate opportunities to improve permitting processes, rules, and statutes. | $227K |
| 1 AR/ASR hydrogeologist (NRS-4) | Collate available information on aquifer characteristics and provide technical assistance. | $257K |
| Oregon Department of Environmental Quality | | |
| **New Resource** | **Role/Purpose** | |
| 1 AR/ASR hydrogeologist (NRS-4) | Review and analyze the water quality aspects of projects. | $338K |
| | **TOTAL** | **$1.03M** |

# Task 4 – Surface Water Storage Site Inventory

The 1998 SSI called for development of three elements for focused storage sites:

1) Develop a master inventory of potential surface water storage sites, including any existing environmental assessments.
2) Develop additional preliminary environmental assessments by contacting other agency personnel who could contribute information.
3) Rank the sites according to the potential for development from an environmental and cost/benefit perspective.

Surface water storage provides critical water supplies during the low-supply/high-demand times of the water year. In 1999, the Oregon Legislature enacted Senate Bill 93, creating an eleven-member Joint Task Force on Water Supply and Conservation. The statutory mandate for the Task Force was to, in consultation with the Department, "develop recommendations relating to the process of siting and funding future water supply projects." The Task Force released reports in 2001 and 2003 with a series of recommendations. The final report in 2003 included 25 recommendations which notably reiterated the call to fund the 1998 SSI and complete a comprehensive inventory of potential surface water sites.

A storage site inventory was completed as part of the OWSCI project as authorized by SB 600 (2007). The inventory was intended to speed up the process for water users seeking to develop additional water; however, the online tool was only accessed a handful of times, and was eventually removed from the Department's website between 2016 and 2018. More importantly, the storage sites were not ranked from the perspective of environmental and cost/benefit perspectives as resources were not provided to complete that work.

The storage inventory created was inadequate and outdated and has not been an effective means for identifying surface water storage opportunities. This work was under-utilized as new reservoirs that built since then are not in the locations identified in the inventory. Additionally, there is no documentation that identifies how storage sites were selected and there are proposed sites on the list that are not be feasible today due to construction costs, fish passage requirements, and environmental concerns. Finally, the inventory did not consider the needs of those who may need storage in identifying sites as part of the inventory. If a statewide storage inventory is needed, the effort will need to start over so that the work can be properly documented, be consistent with current regulatory standards, target the needs of water users, and minimize environmental impacts.

### 1998 Scope

1) Develop a master inventory of potential surface water storage sites, including any existing environmental assessments.
2) Develop additional preliminary environmental assessments by contacting other agency personnel who could contribute information.
3) Rank the sites according to the potential for development from an environmental and cost/benefit perspective.

### 2024 Rescope

1) Maintain existing surface storage by investing in dam safety and fish passage.
2) Continue to fund feasibility study grants to investigate new storage.
3) Evaluate potential updates to current water storage policy and guidance on regulatory processes.
4) Promote sharing of investigations and studies in Water Explorer library.

## Dam Safety in Oregon

The Department's Dam Safety Program regulates the safety of dams that are 10 feet or more in height and store 9.2 acre-feet or more of water. Of the dams that are regulated by the Department, more than 1 in 3 dams are at least one-hundred years old and most dams are more than fifty years old.

Dam safety standards have changed significantly in the last fifty years as well. As a result, many of Oregon's dams need to be rehabilitated to meet current safety standards. Rehabilitating dams to current safety standards often costs hundreds of thousands to millions of dollars. In addition, rehabilitating existing dams can trigger fish passage requirements that can be just as expensive as the rehabilitation work. Many dam owners, both public and private, lack sufficient resources to cover these costs. To maintain existing surface water storage capacity in Oregon, funding that supports dam owners to complete design and construction work for rehabilitating dams, as well as funding to meet current fish passage requirements, is needed.

## Storage Policy & Guidance

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. The Water Resources Commission also adopted a water storage policy, identifying water storage as an integral part of Oregon's strategy to enhance public and private benefits from use of the state's water resources. The policy acknowledges that both structural and nonstructural methods should be used in Oregon to store water, with preferences for storage that optimizes instream and out-of-stream public benefits and beneficial uses. A review and update of this policy, along with additional guidance is beneficial if the state wants to promote new above-ground storage.

## Storage Feasibility Studies

In many parts of the state, surface water is available for storage during the winter months, but there are other considerations, including basin program rules. Common considerations for site specific evaluation of the feasibility of storage projects are noted on the right.

### Storage Project Considerations

- Is water available at the proposed site?
- What is the potential storage capacity of the site?
- What geologic factors may negatively affect safe storage? (e.g., seismic, faults, potential for landslides, dispersive soils, is there sufficient borrow material, soil infiltration rate)
- How will the proposed storage location effect the downstream floodplain?
- What is the high-level cost estimate to build the dam at the proposed site?
- What is the high-level cost estimate per acre-foot of stored water?
- What would the hazard rating of the dam be at the proposed site?
- Any environmental issues or permitting for the proposed site? (e.g., fish passage, water quality, removal/fill permit, in-water work period, NEPA process, etc.)
- Any land use issues associated with the site? (e.g., eminent domain, restrictions on use, etc.)
- Public acceptance for a storage project at the proposed site?

Many state, federal, and local laws, as well as interagency and tribal consultation required by rule, can impact the fill season, feasibility, and viability of storage projects.

The Department has supported the investigation of new storage by providing competitive grants to conduct feasibility studies. These studies require applicants to address preliminary environmental and cost/benefit questions, including whether conservation or reuse might be a cost-effective option.

Department funds are not required to explore potential new or expanded storage. The Department coordinates with third party engineers hired by landowners and/or water users seeking to build additional storage. One way to promote sharing of previous research into storage sites is to post past studies online for others to access. The Institute for Natural Resources Water Explorer library is a great location to share this information.

## Recommendation

Surface water storage has been critical to meeting water supply needs in Oregon and has also come with environmental impacts. When it comes to the future of surface water storage, the Department recommends:

- Focusing on maintaining existing surface water storage capacity in Oregon by investing in dam safety and fish passage.
- Evaluating potential updates to the water storage policy and developing guidance on the permitting and regulatory requirements associated with storage projects.
- Continuing to invest in Feasibility Study Grants to investigate new storage and completed investigations and studies in Water Explorer library.

## Resource Needs

The Department needs a Limited Duration Operations and Policy Analyst 2 to review the water storage policy. To maintain access to existing storage and maintain dam safety, Oregon needs to invest in rehabilitation of dams to current safety and fish passage standards. Continued investment in Feasibility Study Grants is also needed to help cover the costs of site-specific storage investigations.

**Table 6: Resources Required for Advancing Surface Water Storage in Oregon**

| **Oregon Water Resources Department** | | |
|---|---|---|
| **New Resource** | **Role/Purpose** | **Estimated Cost** |
| 1 Water Policy Specialist (OPA-2, limited duration) | Evaluate potential updates to the water storage policy and developing guidance on the permitting and regulatory requirements associated with storage projects. | $210K |
| | **TOTAL** | **$210K** |

# Task 5 – Making Data Accessible Online

The SSI proposal called for making data readily accessible to the full range of users, by having as much as possible of the current basin report information available online. Several web applications exist today, providing data and information about water rights, streamflow and water availability, groundwater, well construction, and dam safety. All of these databases are available for text query, and most are also available through interactive maps (water rights, groundwater, and wells) that allow users to view an area of interest and select relevant layers and features. The Department has also created online mapping products to support basin-specific planning and rulemaking efforts, such as the Harney Basin Critical Groundwater Area Process Interactive Map.

The Department partnered with Oregon State University's Institute for Natural Resources to create an integrated Oregon Water Map Viewer that displays a range of relevant data and is capable of generating basic reports on water quantity and quality.

Much of the Department's data are offered a free, public service to other distributors of data, including the U.S. Geological Survey's National Groundwater Monitoring Network, the Western States Water Council's WestDAAT water rights portal, and the U.S. Geological Survey's National Water Information System.

Sharing data publicly relies on decades of detailed work in planning, creating, populating, and reviewing databases for the relevant data. The Department's databases were carefully designed to represent the complexity of water rights, well construction, distribution systems, hydrogeology, and hydrology in Oregon. These substantial investments now support much of the Department's daily work. As the Department continually generates data, much of it requires quality control review to identify problems and provide information relevant to decision-making. Additionally, as time passes, the Department's databases and technology will need to be modernized and updated to current standards.

## Integrating Water Data

Decision-makers often need to synthesize distinct types of data that are currently inconvenient to access and analyze from multiple websites. The Oregon Water Map Viewer made an excellent first step toward achieving the vision of integrating water data from a variety of sources to support decision-making, and its limitations primarily reflect the sparse data that exist to support comprehensive water planning (Figure 6). Development of basin assessments noted earlier in the report could address these limitations.

### 1998 Scope

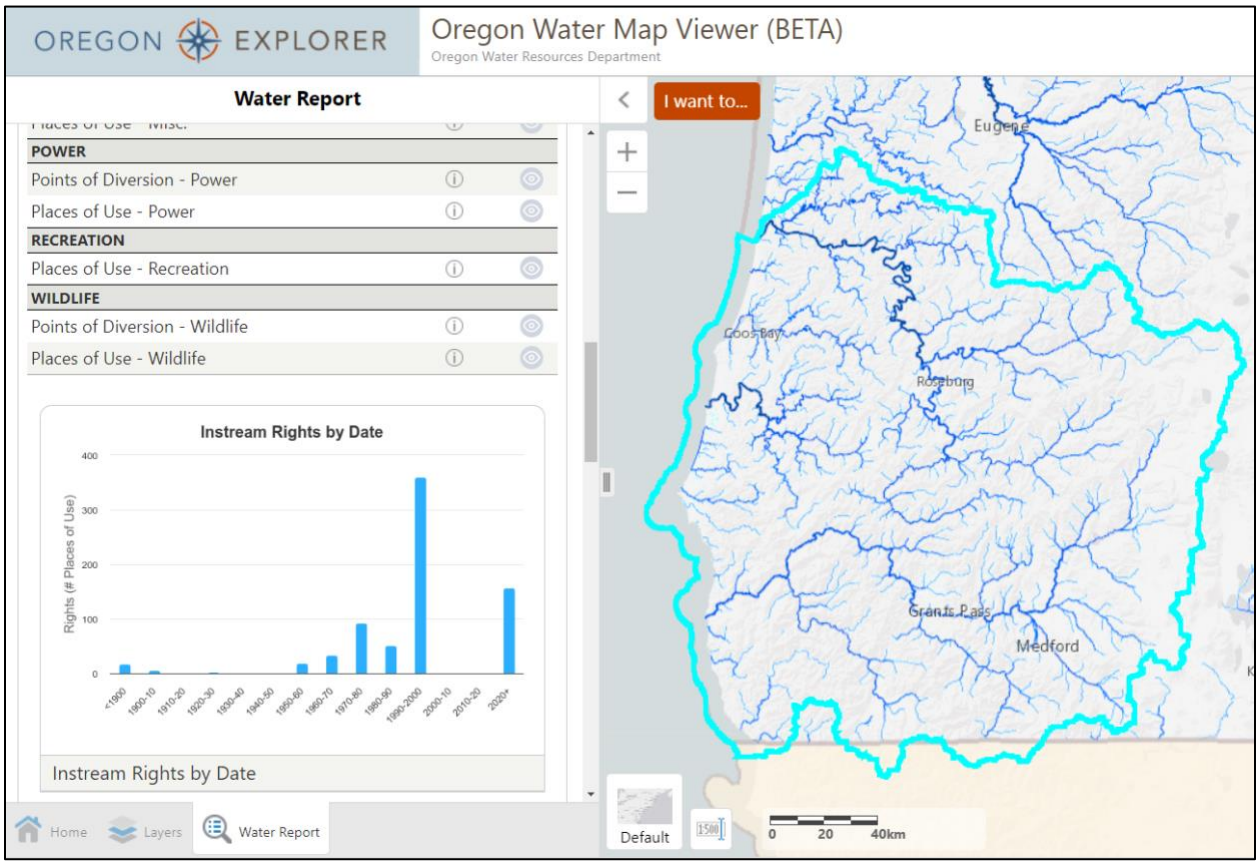
Make data readily accessible to the full range of users, by having as much as possible of the current basin report information available online.

### 2024 Rescope

- In the near term, publish basin assessments reports online and upload / update data on the Oregon Water Map Viewer.
- In the long-term, share analyses and data via the Oregon Water Data Portal.

As an ongoing process, the Department should continue to improve and synthesize its characterization of Oregon's water resources in collaboration with interested partners and sovereign co-managers. In the near term, the Department recommends publishing basin assessments through the Oregon Water Map Viewer as an accessible tool that is already functional as well as updated the data currently in the tool.

**Figure 6: Screenshot from the Oregon Explorer Oregon Water Map Viewer website**
*Below is a summary of Instream Water Rights by date (graph bottom left) within the spatial boundary of Oregon's South Coast basin (light blue outline on the right-side map).*




In the long term, the Department recommends sharing basin assessments and other data relevant to water planning and infrastructure through the Oregon Water Data Portal (OWDP), if that effort is funded by the Oregon Legislature moving forward. The OWDP is intended to serve as a single website providing unified access to a range of water-related data and information to support decision-making. Development of this website is a collaborative effort involving nearly a dozen Oregon state agencies with funding provided in 2021 and 2023. The pilot OWDP will serve existing datasets from several agencies, and over the coming years it will continue to connect with and redistribute additional data.

As the OWDP becomes fully functional, it will eventually replace the Oregon Water Map Viewer. A key strength of the OWDP will be its ability to offer the right data and information for the right purpose. Leveraging the digital infrastructure of the Oregon Open Data Portal and expertise from the Internet of Water, the OWDP will include additional features to make it more user-friendly and useful. Users will have the opportunity to indicate a specific background, and based on the user selection, the OWDP will

display the data and information with an appropriate level of synthesis. For example, an academic researcher may want raw data with quantitative estimates of uncertainty, while a water manager is more likely to want synthesized graphs and categorical indications of data quality. Further refinement can offer data relevant to making particular decisions.

## Recommendation

Despite the significant progress that the Department has achieved in sharing data since 1998, more work remains to make data more accessible for water planning and decision making. The specificity of databases and access websites for separate topics like water rights, surface water availability, and groundwater data helps to represent and navigate the complexity of each of these topics and get the right data efficiently. For making more data accessible, the Department recommends:

- In the near term, publish basin assessments reports online and upload / update data on the Oregon Water Map Viewer.
- In the long-term, share analyses and data via the Oregon Water Data Portal.

## Resource Needs

In the near term, $100K is needed for the Department to contract with the Institute for Natural Resources to add to and update content on the Oregon Water Map Viewer associated with the basin assessments. The resources required for ODWP will be identified through that scoping effort.

**Table 7: Resources Required for Updating Oregon Water Map Viewer**

| **Oregon State University - Institute for Natural Resources** | | |
|---|---|---|
| **New Resource** | **Role/Purpose** | **Estimated Cost** |
| $100K in contract dollars | Add basin assessment content to Oregon Water Map Viewer | $100K |
| | **TOTAL** | **$100K** |

# Conclusion

Since the Stewardship and Supply Initiative was first proposed in 1998, water management has increased in significance and complexity as demands for water exceed supply across the state. Oregon has made significant progress on four of the five SSI tasks: the state of the water resources report, aquifer recharge identification, the surface water storage inventory, and making data publicly accessible. As noted throughout this report, the Department has identified additional recommendations to build on and further improve Oregon's work in those areas.

While water management in some communities has benefited from federally-funded WaterSMART basin studies, cooperative groundwater studies, or local (placed-based) integrated water resources plans, the Department does not have a comprehensive basin assessment and planning process for other areas of the state. As such, little to no progress has been made on the fifth task, modernized administrative basin assessments.

The lack of comprehensive basin assessments has resulted in slower identification of pressing issues and added unplanned workload to solution-oriented processes. Conducting the work is a significant undertaking and requires new resources, but would equip the Department and its partners to 1) identify and describe critical issues within basins across the state as required in future iterations of the IWRS (ORS 536.220(6)(b)); 2) provide information about the current and expected future water conditions to those doing place-based integrated water resources planning (ORS 537.873(9)); and support the update to basin program rules and other water management actions (ORS 536.300).

While the path to modernized water management and supply stabilization has its complexities, the Department and our sister agencies are confident that we have the skills and knowledge to make meaningful improvements in managing Oregon's water resources. By focusing on modernization, science- and data-driven decision-making, and collaboration, we can support Oregon and Oregonians, and protect the water resources that are essential to Oregon's people and prosperity. The Department proposes these rescoped tasks as ways to synthesize and make accessible data for science and data driven decision making at the local and state level through modernized basin assessments, continued implementation and updates to the IWRS, investments in AR/ASR and above ground storage, and more accessible information online. The Department welcomes conversation about any of the rescoped tasks in this report, including what might be feasible to complete with fewer resources and the associated tradeoffs.

# Appendix 1 – Existing Administrative Basin Reports

Below is a list of basin reports that are currently available online, completed from the late 1950s through the early 1990s, shown in chronological order. Many of the reports were written by the State Water Resources Board. Reports developed in the 1980's and 1990's – the Rogue, John Day, Goose & Summer Lakes, Sandy, and Willamette Basin – were completed by the Department and presented to the Water Policy Review Board, or its successor, the Water Resources Commission, as information for revising and adopting new basin programs.

| Basin Report | Year Published | Lead Author & Adopting Body |
|---|---|---|
| Umpqua Basin Report | 1958 | State Water Resources Board |
| Grand Ronde Report | 1960 | State Water Resources Board |
| North Coast Report | 1961 | State Water Resources Board |
| Deschutes Basin Report | 1961 | State Water Resources Board |
| Umatilla Basin Report | 1963 | State Water Resources Board |
| South Coast Basin Report | 1963 | State Water Resources Board |
| Hood Basin Report | 1965 | State Water Resources Board |
| Mid-Coast Basin Report | 1965 | State Water Resources Board |
| Powder Basin Report | 1967 | State Water Resources Board |
| Malheur Lake Basin Report | 1967 | State Water Resources Board |
| Malheur Basin Report | 1969 | State Water Resources Board |
| Owyhee Basin Report | 1969 | State Water Resources Board |
| Klamath Basin Report | 1971 | State Water Resources Board |
| Rogue Basin Report | 1985 | Water Resources Department to Water Policy Review Board |
| John Day Basin Report | 1986 | Water Resources Department to Water Resources Commission |
| Goose & Summer Lakes Basin Report | 1989 | Water Resources Department to Water Resources Commission |
| Sandy Basin Report | 1991 | Water Resources Department to Water Resources Commission |
| Willamette Basin Report | 1992 | Water Resources Department to Water Resources Commission |

Special Note: Reports are not available online for the Columbia or Middle Snake Basins, although administrative rules (basin programs) were adopted for portions of both rivers. A report was completed for the Klamath River Basin in 1971; however, the Water Resources Commission has not adopted a comprehensive basin program for the Klamath Basin. Instead, allocation and use of the waters of the basin are subject to administrative rules with statewide applicability and to the provisions of the Klamath River Basin Compact.

# Appendix 2 – Modernized Basin Assessment Template

This template outlines the essential components needed for a consistent and comprehensive approach to basin assessments. The primary goals of the modernized template are to:

1. Support the **identification and description of critical issues** within basins across the state, as mandated by future iterations of the Integrated Water Resources Strategy (IWRS) under ORS 536.220(6)(b). This ensures that each basin's unique challenges and opportunities are identified and understood to the extent data are available.

2. Provide information about **current and projected future water conditions to guide place-based integrated water resources planning efforts**, as specified in ORS 537.873(9). This information is crucial for local planning groups to make informed decisions that align with broader state water management goals.

3. Inform **an agency or inter-agency basin action plan** that identifies what actions the Department and/or other agencies will take in an administrative basin, which could include an update of basin program administrative rules and other water management actions (ORS 536.300). By providing a standardized framework for basin assessments, this template ensures that management efforts are based on accurate and up-to-date information.

## Assessment Information Sources

As noted in the body of the report, the basin assessments will be based on existing information (see Section 9.0 Data Sources for a summary table). New information will be incorporated as it becomes available. Where information is not available, it will be identified as a gap in the assessment.

## Assessment Level of Complexity

The task of conducting comprehensive basin assessments is inherently complex, given the diverse range of factors that must be considered across different regions of the state. The overall complexity is Very High, due to several key challenges:

- **Integrating data across multiple spatial and temporal scales**. For example, data collected at the plot scale or point of diversion must be scaled up to provide meaningful insights at the watershed or basin level. This may require sophisticated modeling and a deep understanding of the interactions between localized conditions and broader hydrological processes.

- The **need for effective coordination among various state agencies, local governments, and other interests**. Each agency may have different data sources, priorities, and regulatory frameworks, which must be harmonized to produce a coherent and actionable assessment.

- **Accounting for future uncertainties, particularly those related to climate change.** Predicting future water availability and demands under various climate scenarios is a highly complex task that requires the integration of climate models, socioeconomic forecasts, and local knowledge.

This complexity underscores the importance of a well-coordinated, data-driven, and adaptive approach to basin assessments.

# 1.0 Physical and Socioeconomic Setting

Provide a comprehensive overview of each basin's physical and socioeconomic characteristics, focusing on factors that directly influence water quantity and quality, such as population growth and land use change.

## Section Components

**1.1 Physical Setting:** The basin's physiography, geology, hydrography, and climate patterns, all of which are crucial for understanding the basin's water resources.

- **Physiography and Geology:** Descriptions of the basin's topography, geological formations, and the spatial distribution of these features. This includes the analyses of geological maps and data, ensuring that localized geological details are integrated into broader-scale assessments.

- **Hydrography:** The basin's surface water and groundwater features, including rivers, lakes, springs, and wetlands. Includes using both local-scale data (e.g., streamflow measurements) and regional-scale models, as available.

- **Climate Patterns:** Describe the basin's climate, including precipitation, temperature patterns, and their variability across different scales.

**1.2 Socioeconomic Setting:** The human dimensions of the basin, including land use, ownership, population dynamics, and economic activities.

- **Land Use and Ownership:** Analyze current land use patterns and ownership structures, focusing on how these factors influence water use and availability. Gather data on land use patterns and integrate it into the basin-wide assessment.

- **Population Changes and Urbanization:** Consider population growth and urbanization trends, using data from census reports and Portland State University Population Research Center to capture expected future changes.

- **Economic Needs and Cultural Values:** Identify the economic drivers of water use, including agricultural, industrial, and municipal needs. Consider the cultural values associated with water, such as recreational and ecological benefits.

## Data Sources

The data used will be drawn from geological maps, hydrological datasets, climate models, land use records, and socioeconomic data. Key sources include the National Hydrography Dataset (NHD), geological surveys, climate data from PRISM and other models, and census data.

## Level of Complexity: MODERATE

Complexity lies in synthesizing diverse datasets across different scales and understanding how physical and socioeconomic factors interact within the basin. Challenges include scaling up detailed, fine-grain data (e.g., land use and water diversion records) to provide meaningful insights at the watershed scale and reconciling discrepancies between historical and current data.

# 2.0 Condition of Water Supplies, Water Quality, and Ecosystems

Characterize the current conditions of water supplies, water quality, and ecosystems.

**2.1 Water Supplies:** Summarize the availability and variability of water supplies in the basin, covering surface water, groundwater, and storage.

- **Water Availability and Variability:** Describe the basin's flow regime, including seasonal and annual changes, groundwater levels and trends, and critical events such as peak flows, floods, low flows, and droughts. Summarize the interaction between surface and groundwater supplies using data from streamflow measurements, snow surveys, and water availability models.

**2.2 Water Quality:** Review the water quality of rivers, streams, lakes, and groundwater, identifying pollution and contamination concerns.

- **Water Quality Status:** Describe water quality issues, focusing on impaired water bodies, Total Maximum Daily Loads (TMDLs), permitted discharges, and non-point pollution sources. Include Groundwater Management Areas (GMAs) and statewide groundwater monitoring information.

- **Pollution Sources:** Summarize pollution sources, including septic systems, underground injection controls, and agricultural runoff. Utilize data from programs like harmful algal bloom monitoring and pesticide stewardship partnerships.

**2.3 Ecosystems:** Explore the health and distribution of key ecosystems within the basin, focusing on sensitive, threatened, and endangered species.

- **Species and Habitats:** Describe the distribution and status of fish and wildlife species, emphasizing sensitive, threatened, or endangered species. Use data from fish distribution maps, Essential Salmonid Habitat maps, and conservation and recovery plans.

- **Instream Flow and Habitat Needs:** Characterize instream flow requirements for aquatic habitats, restoration priorities, and groundwater-dependent ecosystems. Data sources include instream water rights, fish passage barrier maps, and habitat prioritization studies.

## Data Sources

Data will come from streamflow measurements, monitoring wells, snow surveys, geological maps, water quality monitoring, and ecosystem reports. Key sources include the National Hydrography Dataset (NHD), NOAA National Water Model, USGS National Geologic Map Database, and forthcoming groundwater basin studies, along with fish distribution maps, conservation reports, and the Oregon Conservation Strategy.

## Level of Complexity: HIGH

Complexity arises from synthesizing diverse datasets and reports, integrating climate projections, and coordinating with multiple agencies. Challenges include understanding climate change impacts on water supplies and resolving data discrepancies.

# 3.0 Water Rights & Legal Framework

Provide an overview of existing water rights and the legal framework for water allocation and water management in the basin. Summarize the adjudication status for rivers and streams in the basin. The integration of this information is crucial for understanding the legal framework within which water supply management decisions are made.

**3.1 Overview of Existing Water Rights:** Describe the current water rights within the basin, both consumptive use and instream water rights.

- **Water Rights Analysis:** Identify and display existing water rights, providing an overview of allocation and describing trends in water rights, using data from the Water Rights Information System (WRIS) database.

**3.2 Legal Framework on Water Use:** Discuss the legal context that can affect water allocation decisions or water use within the basin, including classifications, withdrawals, and special designations (e.g., groundwater management areas, scenic waterways, reservations of water, etc.).

- **Legal Analysis:** Examine the legal frameworks that govern water use, focusing on the statutes and administrative rules that affect water allocation or existing water rights. This includes summarizing basin program classifications and statutory provisions, such as ORS 538 that governs legislatively withdrawn streams.

**3.3 Adjudication Status:** Describe the adjudication status for rivers and streams in the basin.

- **Adjudication Analysis:** Review and summarize the status of water right adjudications within the basin.

## Data Sources

The data will be drawn primarily from the WRIS database, the Well Log database, the Water Availability Reporting System (WARS), and legal frameworks, for example, basin programs and withdrawn streams in statute. Additional sources include maps, decrees, and other adjudication documents. These sources will be integrated to provide a comprehensive overview of the legal context for water use within the basin.

## Level of Complexity: HIGH

Complexity is attributed to synthesizing data from the WRIS database, which is challenging due to the difficulty of running advanced queries. The need for advanced coordination across teams and the integration of complex legal constraints into the broader water management framework adds to the complexity.

# 4.0 Current Water Use and Demands

Compile data on water use (actual withdrawals and consumptive/instream uses) and provide a summary of water demands (total water required to meet current needs). Conduct an analysis of imbalances between water supplies and demands for both instream and out-of-stream uses, including demands from forested and non-irrigated lands.

**4.1 Water Use Information:** Compile data on actual water use within the basin, focusing on consumptive and instream uses.

- **Water Use Analysis**: Analyze data from sources such as the Water Use Reporting Program and USGS estimates of consumptive use. Remotely sensed Evapotranspiration data will also be used to estimate water use by vegetation. The analysis will focus on reconciling discrepancies in reported use and ensuring accurate representation of actual water withdrawals and consumptive uses.

**4.2 Water Demands:** Summarize current water demands across the basin, including both instream and out-of-stream demands, reflecting the total amount of water needed to satisfy human, agricultural, and ecological needs.

- **Demand Analysis**: Compare water demands to available supplies, identifying potential imbalances. Consider demands from forested and non-irrigated lands. An anticipated challenge will be estimating evaporative demands in complex landscapes such as mountainous regions.

**4.3 Supply and Demand Imbalances:** Explore the potential imbalance between water supplies and demands, highlighting areas at risk of water shortages.

- **Imbalance Analysis**: Identify areas where water demands exceed supply, with a focus on both seasonal and long-term trends. Evaluate the impacts of these imbalances on water supply reliability. Analyze data from sources such as watermaster regulation records.

## Data Sources

Data will be sourced from watermaster records, water use reporting program, OpenET, and other government entities to provide a comprehensive overview of both water use and demands within the basin.

## Level of Complexity: HIGH

This analysis is complex due to the need to scale fine-grained data (e.g., plot-level water use) to basin-level impacts. Estimating evaporative demands from forested areas, particularly in mountainous regions, adds complexity due to vegetation structure. Reconciling water use data and analyzing both consumptive and instream demands across various spatial scales further increases the difficulty.

# 5.0 Future Water Supply and Demands

Analyze the variability of water resources under future climate conditions and how these changes will impact future water demands for both instream and out-of-stream needs. The work will build upon the 2015 Statewide Long-Term Water Demand Forecast for municipal, industrial, and irrigated agriculture, while recognizing the need for an updated forecast to support ongoing basin-scale assessment work.

**5.1 Future Water Availability:** Explore how future climate conditions are expected to influence water availability in the basin.

- **Climate Impact Analysis:** Analyze future climate projections and their potential impacts on surface water and groundwater availability using data from climate models and other predictive tools. The analyses will consider multiple scenarios to address the inherent uncertainties in climate projections.

**5.2 Future Water Demands:** Provide an analysis of how future water demands are likely to evolve under different scenarios.

- **Demand Forecasting:** Build upon the 2015 Water Supply Demand Forecast, while acknowledging the need for updated projections to reflect current and future conditions. Evaluate demands across different sectors, such as municipal, industrial, agricultural, and instream uses. If funding for a demand forecast is secured, incorporate multiple scenarios to ensure the results are robust enough to guide future water management decisions.

**5.3 Scenario Planning and Risk Management:** Explore the use of scenario planning to address the uncertainties associated with future water supply and demands.

- **Scenario Development:** Develop multiple scenarios to explore how different combinations of climate impacts and demand changes could affect water availability in the basin. The complexity of this task lies in balancing the need for scientific robustness with effective engagement, as each scenario may lead to differing opinions about management decisions. OWRD will create these scenarios, ensuring the work is grounded in data and reflective of input. OWRD will also facilitate partnerships with external organizations to support scenario development.

## Data Sources

The data will be drawn from the 2015 Statewide Long-Term Water Demand Forecast, climate models, and additional sources related to future water availability and demand. This will include available data from the Oregon Climate Change Research Institute (OCCRI) and other relevant studies. Depending upon availability in various basins, these sources will be integrated to provide a comprehensive and scenario-based analysis of future water supply and demands within the basin. Investments in new instream and out-of-stream demand forecasts are needed for updated information.

## Level of Complexity: VERY HIGH

The complexity arises from integrating future climate projections with water demand forecasts across multiple sectors. The uncertainty of climate change impacts necessitates the development of various scenarios, which can be scientifically robust but may lead to challenging discussions. Estimating future demands amid shifting climate and socioeconomic conditions further adds to the complexity.

# 6.0 Water Infrastructure

Describe the condition of both natural and built water infrastructure within each basin. Natural infrastructure focuses on features such as wetlands and floodplains, which play critical roles in water storage, flood control, and ecosystem health. Built infrastructure examines the existence and status of dams, levees, conveyance systems, water treatment plants, and wells.

**6.1 Natural Infrastructure:** Assess the condition and role of natural infrastructure, such as wetlands, floodplains, and riparian areas within the basin.

- **Natural Infrastructure Analysis:** Evaluate the capacity of natural infrastructure to store water, control floods, and support ecosystems. Use data from environmental studies, hydrological models, and GIS mapping tools. Consider how changes in natural infrastructure, such as wetland loss or floodplain degradation, affect overall water availability and quality.

**6.2 Built Infrastructure:** Examine the existence, condition, and capacity of built infrastructure, including dams, levees, conveyance systems, water treatment plants, and wells.

- **Built Infrastructure Assessment:** Conduct a comprehensive review of built infrastructure, focusing on its capacity to meet current and future water demands. Evaluate the condition of dams and levees, the efficiency of conveyance systems, and the operational status of water treatment plants. Wells will also be assessed, particularly in terms of vulnerability due to declining groundwater levels.

**6.3 Interdependence Between Natural and Built Systems:** Explore the interdependence between natural and built infrastructure, highlighting how these systems interact to influence water availability, quality, and management.

- **Interdependence Analysis:** Examine how natural and built infrastructure work together to manage water resources. For example, the role of wetlands in buffering floodwaters or how aging dams may affect downstream ecosystems. Utilize data from environmental impact studies, hydrological models, and infrastructure assessments and will consider both the benefits and limitations of existing infrastructure.

## Data Sources

The data will be drawn from environmental impact studies, hydrological models, GIS mapping tools, infrastructure assessment reports, and well log databases. These sources will be integrated into an interoperable framework to support large-scale analyses and provide a comprehensive overview of the condition and role of water infrastructure within the basin.

## Level of Complexity: HIGH

Complexity lies in the integration of data from both natural and built infrastructure, requiring a multidisciplinary approach to assess the condition and interdependence of these systems. The challenge is further compounded by the need to integrate data from diverse sources into an interoperable framework, allowing for large-scale analyses that inform sustainable water management strategies.

# 7.0 Critical Issues, Vulnerabilities, and Monitoring Needs

Provide a comprehensive overview of the critical issues and vulnerabilities specific to the basin, focusing on factors that could impact water availability, quality, and ecosystem health. Identify gaps in scientific understanding and monitoring, emphasizing the need for additional data collection and research to address these gaps. Gather information to support the Integrated Water Resources Strategy (IWRS) under ORS 536.220(6)(b) by highlighting basin-specific challenges and proposing strategies for addressing them.

**7.1 Identification of Critical Issues**: Identify the key issues that pose risks to the basin's water resources, such as climate variability, aging infrastructure, limited water supplies, and water quality degradation.

- **Critical Issues Analysis:** Identify and prioritize the most pressing issues facing the basin, considering both current and future challenges. These may include the impacts of climate change on water availability, the vulnerability of aging infrastructure, and the degradation of water quality due to pollution and land use changes, the overallocation of water supplies, declining aquifers, and habitat/ecological degradation, among others.

**7.2 Vulnerability Assessment**: Assess the basin's vulnerabilities, focusing on the factors that could exacerbate the critical issues identified above.

- **Vulnerability Analysis:** Evaluate the basin's vulnerability to various risks, such as drought, flooding, fires, contamination, water deficits (due to overallocation or overextraction). This will include an analysis of how social, economic, and environmental factors contribute to these vulnerabilities. Use data from existing hydrological models, socioeconomic studies, and environmental assessments.

**7.3 Monitoring Needs and Gaps:** Identify the gaps in current monitoring efforts and proposes additional sites and parameters for streamflow, groundwater, and ecosystem health monitoring.

- **Monitoring Needs Analysis:** Identify gaps in current monitoring programs and propose new sites for streamflow and groundwater monitoring. This will include recommendations for enhancing the monitoring of critical parameters, such as water quality, temperature, and ecological health.

## Data Sources

The data for will be drawn from hydrological models, environmental impact studies, socioeconomic assessments, and existing monitoring programs. These sources will be integrated to provide a comprehensive overview of the critical issues, vulnerabilities, and monitoring needs within the basin.

## Level of Complexity: MODERATE to HIGH

The complexity of task lies in synthesizing a wide range of data to identify critical issues, assess vulnerabilities, and propose targeted monitoring efforts. The challenge is compounded by the need to integrate data from various sources and scales, ensuring that the analysis is both comprehensive and actionable.

# 8.0 Consideration of Existing Policy Declarations

Consider the various purposes and declarations of policy enumerated in ORS 536.220 and ORS 536.310, the Department's statewide policies and principles (OAR 690-400 & 690-410) and land use planning (OAR 690-005). The goal is to ensure the basin assessment efforts aid the Water Resources Commission in progressively formulating an integrated, coordinated program "for the use and control of all the water resources of this state" and done in such a way that the assessment can inform strategic water management decisions at both the basin and state levels

**8.1 Alignment with Legal and Policy Frameworks:** Detail how the basin assessment process aligns with the legal declarations and policies outlined in ORS 536.310 and ORS 536.220, ensuring compatibility with the relevant administrative rules.

- **Legal and Policy Analysis:** Evaluate how the basin assessment aligns with the declarations of policy in ORS 536.310, which cover a wide range of water management objectives, including the conservation of water resources, the prevention of waste, and the equitable distribution of water. Consider the mandates of ORS 536.220, which focuses on integrated water resources management.

**8.2 Compatibility with Administrative Rules:** Assess the compatibility of basin assessments with relevant administrative rules, particularly Div. 400 & 410 and Div. 05.

- **Administrative Rules Analysis:** Review the compatibility of basin assessments with the administrative rules governing water resources management. This includes ensuring that the assessments meet the standards set forth in OAR 690-400 and OAR 690-410, which pertain to statewide water resources policy and management, and OAR 690-005, which addresses land-use compatibility.

**8.3 Adequacy of Basin Assessments for Decision-Making:** Evaluate whether the basin assessments, which are based on existing information, are sufficient to support various decision-making processes, including basin planning and place-based planning (PBP).

- **Decision-Making Adequacy:** Determine the adequacy of assessments in supporting strategic planning efforts, such as basin planning and place-based planning efforts. This involves assessing whether the data, analyses, and recommendations provided in the assessments are robust enough to inform these processes and contribute to effective water management outcomes.

## Data Sources

The data and information will be drawn from Oregon Revised Statutes (ORS), particularly ORS 536.310 and ORS 536.220, as well as relevant administrative rules (Div. 400 & 410, Div. 05). These sources will be integrated to provide a comprehensive legal and policy framework for the basin assessments.

## Level of Complexity: MODERATE to HIGH

The complexity stems from integrating legal, policy, and administrative considerations into the basin assessment process. Ensuring compliance with various statutes and rules, while making the assessments effective for strategic decision-making, requires a thorough and collaborative approach.

# 9.0 Data Sources

| Category | Dataset | Description |
|---|---|---|
| Precipitation and Temperature | PRISM | PRISM provides high-quality spatial climate data sets, including precipitation, temperature, and other climatic variables across the United States. |
| | DayMET | DayMET offers daily weather data on a 1 km grid, including temperature and precipitation, primarily used for ecological, hydrological, and agricultural studies. |
| | Gridmet | Gridmet provides daily surface meteorological data on a 4 km grid, designed for use in regional-scale ecological and agricultural applications. |
| | Individual weather stations | Data collected from local weather stations provides point-specific temperature and precipitation records for detailed climate analysis in specific locations. |
| Elevation | Shuttle Radar Topography Mission (SRTM) | SRTM provides high-resolution digital elevation models globally, used for terrain analysis, watershed modeling, and landscape studies. |
| | ASTER Global Digital Elevation Model (GDEM) | ASTER GDEM offers high-resolution elevation data derived from satellite imagery, supporting topographic analysis and earth surface studies. |
| Land Use | National Land Cover Database (NLCD) | NLCD provides comprehensive land cover data across the United States, useful for land use planning, environmental analysis, and ecosystem monitoring. |
| Population Statistics | PSU Population Research Center | This center provides population estimates and demographic data for Oregon, supporting urban planning, resource allocation, and policy development. |
| Geology and Hydrogeology | USGS National Geologic Map Database | A database offering access to a wide range of digital geologic maps and related data, supporting geological research and resource management. |
| | Well Log Database | A database containing well log records, which provide critical information on groundwater resources, well construction, and hydrogeological conditions. |
| | Oregon Department of Geology and Mineral Industries (DOGAMI) | DOGAMI provides geological maps and publications, supporting mineral exploration, natural hazard assessment, and land use planning. |
| Hydrography | National Hydrography Dataset (NHD) | NHD offers detailed information on the nation's water bodies, including rivers, streams, lakes, and coastal features, aiding in water resource management. |
| | NOAA National Water Model | A model providing retrospective simulations of stream flows for millions of reaches, supporting flood prediction and water management. |
| | Streamflow measurements | Data from stream gages, providing real-time and historical streamflow information for water resource management and research. |
| | Mapped springs | A dataset identifying the locations of natural springs, which are essential for understanding groundwater discharge and local hydrology. |

| Category | Dataset | Description |
|---|---|---|
| | Mapped soil and groundwater permeability | Data providing insights into soil characteristics and groundwater movement, crucial for land use planning and agricultural management. |
| Snow and Water Supply Forecasting | Snow Survey and Water Supply Forecasting (NRCS) | A program providing snowpack data and water supply forecasts, critical for managing water resources and predicting runoff. |
| | SNODAS | SNODAS offers near real-time snow cover data, including snow depth and snow water equivalent, aiding in hydrologic modeling and water resource management. |
| Surface Water and Streamflow | Surface Water Availability Reporting System | A tool that provides data on the availability of surface water for allocation, assisting in water rights management and resource planning. |
| | Peak Streamflow Discharge Tool | A USGS tool that estimates peak streamflow discharges at various frequencies for unregulated streams, useful for flood risk assessment and water resource management. |
| | StreamStats (USGS) | StreamStats is a web-based tool that helps delineate drainage areas and estimate streamflow statistics, supporting water resources planning and design. |
| | USGS Streamflow Drought Metrics | Provides metrics to assess drought conditions based on streamflow data, essential for drought planning and management. |
| Groundwater and Aquifers | Groundwater Information System (GWIS) | A database offering comprehensive data on groundwater wells, levels, and quality, essential for groundwater management and protection. |
| | USGS Groundwater estimates | Estimates providing insights into groundwater availability and recharge rates, supporting sustainable groundwater management. |
| | Oregon Precipitation-Runoff Modeling System (PRMS) | A hydrologic model that simulates the effects of precipitation and runoff on infiltration and streamflow, aiding in water resource planning and management. Data expected in late 2028. |
| Reservoir Capacity | US Army Corps of Engineers | Provides data on the capacity and management of reservoirs, essential for flood control, water supply, and resource management. |
| | US Bureau of Reclamation | Offers information on reservoir operations, capacities, and water allocation, supporting water resource management and planning. |
| Water Rights and Permitting | Water Rights Information Systems (WRIS) | A system tracking water rights allocations, permits, and usage, essential for managing and regulating water resources. |
| | Well Log Database | Provides well log data that are crucial for understanding groundwater resources and managing water rights. |
| | WARS Database | The WARS estimates water availability to determine water rights allocation decisions. |
| | Maps and decrees (Adjudications) | Maps and decrees providing information on water rights adjudications, critical for legal and resource management. |
| Water Use | Open ET data | Evapotranspiration data from Open ET, used for water management and agricultural planning. |
| | Water use reports | Reports providing information on monthly water use from governmental entities. |
| Water Quality | Integrated Report | A report on surface water quality and impaired waters, used for water quality assessments and regulatory compliance. |

| Category | Dataset | Description |
|---|---|---|
| | Drinking Water Source Monitoring | A program monitoring water quality at the source for public water systems, ensuring safe drinking water supply. |
| | Groundwater Management Areas Monitoring | Monitoring program focused on protecting groundwater quality by identifying contamination sources and trends. |
| | Harmful Algal Bloom Monitoring | Monitoring efforts to detect and assess harmful algal blooms, which pose risks to water quality and public health. |
| | Volunteer Monitoring Program | A program that supports community-based water quality monitoring efforts, providing technical assistance and resources. |
| | Pesticide Stewardship Partnership Monitoring | A program monitoring pesticide levels in surface water during application periods, helping to protect water quality. |
| | Statewide Toxics Monitoring | A program collecting data on toxic pollutants across various media, aiding in environmental health assessments. |
| | Ambient Water Quality Monitoring | Regular monitoring of water quality in major rivers, providing long-term data for water quality management and planning. |
| | Total Maximum Daily Load Monitoring | Monitoring to support the development of TMDLs, which set limits on pollutants in water bodies to protect water quality. |
| | Water Quality Response Monitoring | Investigations of water quality issues, typically triggered by pollution events or regulatory requirements. |
| | Beach Monitoring | Monitoring of recreational water quality along beaches, with advisories issued for public safety. |
| | NPDES Surface Water Data | Data collected under the National Pollutant Discharge Elimination System (NPDES) permits, used to regulate pollutant discharges into surface waters. |
| | Underground Injection Control | A database tracking underground injection wells, used for managing groundwater protection and regulating waste disposal. |
| Ecosystems | Basin Investigation Reports | Reports on specific water basins, providing detailed assessments of water resources, quality, and management issues. |
| | Fish Habitat Distribution database | A database providing detailed information on fish habitat distribution, used for conservation and restoration planning. |
| | Recovery plans for salmon and steelhead | Plans outlining strategies for the recovery of endangered salmon and steelhead populations, guiding conservation efforts. |
| | ODFW Sensitive Species List | A list of species considered sensitive by the Oregon Department of Fish and Wildlife, used to prioritize conservation actions. |
| | Oregon Conservation Strategy | A statewide strategy outlining priority actions for conserving Oregon's fish, wildlife, and habitats. |
| | Coldwater Refugia Database | A database identifying coldwater refuges critical for protecting aquatic species, especially during periods of elevated water temperatures. |
| | Fish Passage Barriers | Includes past inventories, priorities for restoration projects, and a database of barriers using GIS, compiled from multiple sources. |