Oregon
Kate Brown, Governor

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MEMORANDUM

TO: Water Resources Commission

FROM: Thomas M. Byler, Director

SUBJECT: Agenda Item F, March 17, 2022
Water Resources Commission Meeting

State Recognition of the Upper Grande Ronde River Watershed Partnership's Place-Based Integrated Water Resources Plan

I. Introduction

The Upper Grande Ronde River Watershed Partnership's (Partnership) is seeking state-recognition of their place-based integrated water resources plan. The Commission will be asked to recognize the Partnership's Plan.

II. Background

Undertaking place-based integrated water resources planning (place-based planning) is recommended action 9.A of Oregon's Integrated Water Resources Strategy (IWRS). This planning is a voluntary, locally initiated and led effort in which a balanced representation of water interests within a basin or watershed work collaboratively and in partnership with the state to complete a five-step planning process to: 1) Build a collaborative and integrated process; 2) Characterize water resources, water quality, and ecological issues; 3) Quantify existing and future needs; 4) Develop integrated solutions for meeting long-term water needs; and 5) Adopt and implement the plan.

In 2015, the Oregon legislature provided authority through Senate Bill 266 for the state to support place-based planning. In 2016 the Department made grants to four planning groups, including the Partnership, to undertake place-based planning using the *2015 Draft Place-Based Planning Guidelines* (Draft Guidelines-Attachment 1). The Partnership's planning effort is convened by Union County Commissioner Donna Beverage and the grantee is Union County.

III. State-Recognition Process

A planning group can choose to seek state recognition for their place-based integrated water resources plan. The Draft Guidelines call for state agencies review to the plan and make a recommendation to the Commission on whether to recognize a plan.

The core IWRS agencies, and others as appropriate, review the plan to evaluate if it is consistent with the Draft Guidelines and IWRS principles. The Department developed the *2019 Planning Step 5 DRAFT Guidance* to aid the planning groups and state agencies through this evaluation process (Attachment 2). The planning group then presents their plan to the Commission with the accompanying state agency recommendation and asks the Commission to recognize the plan on behalf of the State of Oregon. The Commission previously discussed the value of a plan, the value of state recognition, and the process for state recognition in a number of Commission meetings:

- May 2014, Item H - Place-Based Planning
- August 2014, Item L - Place Based Planning
- November 2014, Item C - Place Based Planning
- November 2019, Item L - Overview of the Process for State Recognition of Place-Based Integrated Water Resource Plans
- February 2021, Item D - Update on Place-Based Integrated Water Resource Planning
- June 2021, Item G - State Recognition of Place-Based Integrated Water Resources Plans
- August 2021, Item I - State Recognition of Place-Based Integrated Water Resources Plans

IV. State Agency Review and Recommendation for Partnership Plan

From 2016 to 2021, the Partnership conducted place-based planning following the process outlined in the *2015 Draft Place-Based Planning Guidelines* with financial and technical support from the state and other partners. In April of 2021, the Partnership adopted a Draft Plan and submitted it for formal state agency review. A Plan Review Team consisting of representatives from the Department, Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, Oregon Department of Agriculture, and the Oregon Watershed Enhancement Board determined by consensus that several improvements to the Draft Plan were required to receive an agency recommendation for state recognition. The Partnership then worked to address the required improvements and on January 5, 2022, adopted its final Place-Based Integrated Water Resources Plan by consensus as outlined in the Partnership's governance agreement (Attachment 3). The Plan Review Team verified that the adopted Plan addressed the required improvements and is consistent with the Draft Guidelines and IWRS principles. Therefore, the state agencies recommend the Commission recognize the Plan. Attachment 4 includes draft resolution language for the Commission to consider as it makes its decision.

V. Summary

The Partnership developed a place-based integrated water resources plan in partnership with the state and adopted it by consensus. The review team reviewed the plan and determined that the Partnership's January 2022 Place-Based Integrated Water Resources Plan is consistent with the *Draft Guidelines* and the principles of the IWRS. Therefore, the review team recommends the Commission award state recognition to the Partnership's Plan.

VI. Alternatives

The Commission may consider the following alternatives:

1. Vote to formally recognize the Partnership's Plan included as Attachment 3 by resolution of the Commission.
2. Vote not to recognize the Plan.
3. Direct the Department to work with the Partnership to incorporate specific changes and return with an updated Plan.

VII. Recommendation

The Director recommends Alternative 1, vote to formally recognize the Partnership's Plan included as Attachment 3 by resolution of the Commission.

Attachments:

1. 2015 Draft Place-Based Planning Guidelines
2. 2019 Planning Step 5 DRAFT Guidance
3. Upper Grande Ronde River Watershed Partnership January 2020 Final Plan
4. Draft Commission Resolution

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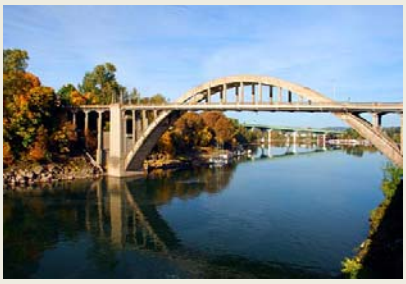
Attachment 1



Draft Guidelines

A Tool for Conducting Place-Based Integrated Water Resources Planning in Oregon

February 2015

About these Draft Guidelines

These guidelines were written to support implementation of Oregon's 2012 Integrated Water Resources Strategy, specifically Recommended Action 9A: "Undertake Place-Based Integrated Water Resources Planning." They were developed by the Oregon Water Resources Department through a series of stakeholder workshops, public input, and assistance from several natural resource agencies. These guidelines are a tool to support voluntary planning efforts aimed at meeting instream and out-of-stream needs, including water quantity, water quality, and ecosystem needs.

The state will provide technical assistance and seek funding to further place-based integrated water resources planning efforts across the state. The Governor's Budget, released in December 2014, proposes grant funds and two additional staff housed at the Water Resources Department.

These guidelines remain in draft form to allow for suggestions and adjustments that may be made during 2015. By releasing these guidelines now, our hope is that a given 'place' will have time to pilot test these guidelines and provide productive feedback.

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Why Take a Place-Based Approach to Integrated Water Resources Planning?

Introduction

Water is one of the world's most precious natural resources. With more than 100,000 miles of rivers and streams, 360 miles of coastline, and more than 1,400 named lakes, Oregon is renowned for its water. Our rivers, streams, lakes, wetlands, estuaries, springs, and aquifers provide a wide range of benefits to all Oregonians.

A clean and reliable source of water is essential for meeting our basic human needs, and for supporting Oregon's economy. Thousands of businesses and industries rely upon water in some form, to irrigate a crop, to manufacture a product, or to provide a service or experience.

Oregon's economy, in turn, is dependent upon a healthy environment where water resources play an essential part. Fish and wildlife need water of sufficient quantity and quality to live, reproduce, and thrive. Fully functioning ecosystems are necessary to support our commercial and recreational needs and a quality of life unique to Oregon and the Pacific Northwest.

In recognition of the importance of water to all Oregonians, and with leadership, support, and direction from the Oregon Legislature and the Water Resources Commission, the Oregon Water Resources Department led the development of the state's first Integrated Water Resources Strategy (IWRS). The Department worked closely with the Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, and the Oregon Department of Agriculture during its development.

Adopted in 2012, the IWRS serves as a blueprint for achieving the state's long-term goals of improving our understanding of the status of Oregon's water resources, including our instream and out-of-stream needs (water quantity, water quality, and ecosystem needs), and implementing recommended actions to meet those needs today and into the future. One action in the IWRS, Recommended Action 9A, calls for helping communities undertake a place-based approach to integrated water resources planning.

Place-Based Planning – A Key Step for Attaining a Community's Vision for the Future

Although Oregon is often thought of as a water-rich place, it is not without challenges. As described in the Integrated Water Resources Strategy, the state faces many water-related challenges. Organized in broad categories called "critical issues," these statewide challenges are summarized below.

- Limited water supplies and systems
- Gaps in data & information
- Understanding various institutions
- Understanding needs/demands
- Population growth
- Economic development
- Climate change
- Energy-water nexus
- Infrastructure challenges
- Changes in land-use
- Education and outreach
- Integrating various planning activities
- Maintaining and developing partnerships
- Water management/development (conservation, storage, reuse, etc.)
- Ecological health (natural storage, instream protections, invasive species, habitat)
- Public health (drinking water, toxics, pollutants, recreation)
- Funding

These issues affect most communities across the state. Water supply shortages for instream and out-of-stream uses already occur in many locations throughout the state, and will likely be intensified by a changing climate and increases in future demand. Similarly, while efforts have been successful in improving water quality, new pollutants are emerging, and about 22,000 stream miles and 30 lakes and reservoirs are water-quality impaired. Even with significant gains in restoring habitats and watersheds functions throughout Oregon, many species are still at a fraction of their historic levels, with several listed as threatened or endangered under the Federal Endangered Species Act.

Although every river basin in Oregon is unique in terms of widely varying ecological issues, community values, and economic dynamics, every community has its own water challenges that if left unaddressed, will likely increase in the future. Failing to address these challenges can impair the quality of life for Oregonians and hinder communities from reaching their economic, social, and environmental potential.

Water is essential for economic growth in both urban and rural areas across the state. In order for a community to achieve its economic and environmental goals for the future – for example, to provide jobs for its citizens and to ensure that a strong vibrant fishery and recreation opportunity exist – we must consider how instream and out-of-stream water quantity, water quality, and ecosystem needs will be met today and in the future.

Water crosses political boundaries and connects the landscape, and as such, water challenges cannot be adequately addressed using a piecemeal, uncoordinated approach. Solutions must be holistic and coordinated so that partners are not working at odds with one another.

Initiating a "place-based" integrated water resources planning approach is a tool for Oregon communities to achieve that level of coordination, by collaboratively developing a shared vision for the future, and anticipating and addressing specific water-related challenges. Such planning gives those who live, work, and play in a community and who care deeply about it a stronger voice in their water future, which in turn will provide a pathway for building the political and public support needed for water resources projects (instream and out-of-stream). This support will be particularly helpful in demonstrating that projects are well-vetted and supported at the local level, and therefore merit technical or financial assistance. Furthermore, communities that undertake a place-based approach can help inform statewide efforts, including providing data and input to future iterations of the IWRS. In essence, place-based integrated water resources planning will allow communities to identify their water resources needs and then partner with the state to develop solutions and a suite of projects that will help meet those needs now and into the future.

Purpose and Use of the Guidelines

These guidelines were written knowing that piloting integrated water resources planning at a watershed level will inform the long-term, place-based planning program in Oregon. During this pilot phase, the state can adjust or adapt the guidelines to provide greater clarity or direction as needed.

The IWRS Project Team welcomes input from local communities employing these guidelines. Send comments to: waterstrategy@wrd.state.or.us.

Five Steps of Place-Based Planning

A place-based plan should adhere to the following five steps:

1. Build a Collaborative & Integrated Process
   Create a structure and process that fosters collaboration, bringing together various sectors and interests to work toward the common purpose of maintaining healthy water resources to meet the needs of the community and the environment. Ensure a balanced representation of interests and a meaningful process for public involvement.

2. Characterize Water Resources, Water Quality, & Ecological Issues
   Describe and assess current water supplies, water quality, and the status of ecosystem health to determine any existing challenges and potential opportunities.

3. Quantify Existing and Future Needs/Demands
   Define how much water is needed to meet current and future water needs – instream and out-of-stream – water quantity, water quality, and ecosystem needs/demands. Plans should address how climate change, population growth, and land use affect water resources and the ability to meet these needs within the community. Meeting water needs should be considered within the context of specific watersheds, accounting for the hydrological, geological, biological, climatic, socio-economic, cultural, legal, and political conditions of a community.

4. Develop Integrated Solutions for Meeting Long-Term Water Needs
   Recommend a suite of actions to address the community's water-related challenges with the goal of meeting both instream and out-of-stream needs.

5. Adopt the Plan
   Planning groups should formally adopt the plan. Agencies will review the plan and the Water Resources Commission will have an opportunity to formally accept the plan, based upon whether it meets the goals and objectives of the statewide Integrated Water Resources Strategy.

To be considered a place-based plan that helps implement the statewide Integrated Water Resources Strategy, planning groups should adhere to these planning guidelines and the following fundamentals:

- Recognize the public interest in water, state authorities, and responsibilities.
- Comply with existing state laws and policies.
- Ensure balanced representation of all interests.
- Have a meaningful process for public involvement (e.g., advertise and hold public meetings).
- Adhere to the 2012 IWRS Guiding Principles. Refer to Appendix A.
- Remember that a place-based plan, on its own, cannot change existing laws or jeopardize existing water rights.

Within a basin or sub-basin, multiple plans governing the use and protection of water resources may already exist. Examples include water management and conservation plans (by a municipal water provider or irrigation district), fish conservation and recovery plans, Biological Opinion Implementation Plans, basin programs that govern future allocations, the laws administering the

Forest Practices Act, Total Maximum Daily Loads (TMDLs) for improving water quality, and many local implementation plans. There are also local land-use plans, watershed restoration action plans, and locally-developed agricultural water quality management plans. Taken together, these plans and their respective strategies engage many agencies and entities at every level.

In envisioning a place-based planning approach, these existing regulations, plans, and programs do not go away, but instead provide a baseline of information, history, and rules that should be considered, coordinated, and built upon. A voluntary integrated water resources plan can help bring together these plans and programs in a more strategic and effective way, providing greater opportunities for coordination and funding while making progress on multiple fronts.

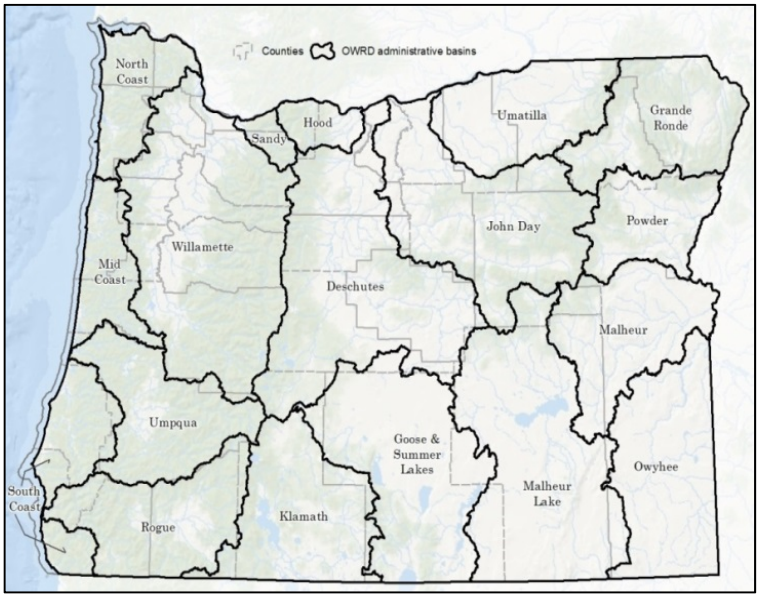
Planning Step 1: Build a Collaborative & Integrated Process

During this initial step, a representative(s) of the planning group should consult with the Water Resources Department for the purposes of: defining the planning scale, convening the process, involving state agencies as partners, inviting and involving diverse interests, and ensuring a public process with consensus decision-making.

Define the Planning Scale

Planning groups have the flexibility of establishing their own geographic planning scale, so long as it meets certain criteria. The Water Resources Department's existing administrative drainage basins are a good starting point for identifying the planning scale (see Figure 1). These administrative boundaries are further divided into smaller geographic areas within the Department's basin programs (refer to OAR Chapter 690, Divisions 500-520). Planning groups can chose to focus on smaller geographic areas, such as a sub-basin, or a group of sub-basins, within these boundaries. For example, planning groups could focus on the upper, middle, or lower section of a basin. To the extent possible, planning groups should utilize watershed-based boundaries, accounting for both groundwater and surface water, and situations where the source of water for certain uses (e.g., drinking water or irrigation) originates in an adjacent basin or sub-basin.

Figure 1: Administrative Basins in Oregon (OWRD)



Convene the Process

Since developing a place-based plan is completely voluntary, local partners will need to initiate the effort and convene the process. These guidelines do not suggest who the convener should be, but rather, describe the role and responsibilities of a convener(s). Oregon's Policy Consensus Initiative (PCI) provides resources to help facilitate collaborative planning and has developed basic principles

to help conveners understand their role in the planning process. Planning groups should refer to PCI's resources, particularly the "Role of a Convener," an excerpt of which is included as Appendix B. Conveners, and any sponsoring entities, should communicate to the Water Resources Department of their intentions to organize a planning group and to develop a place-based plan.

Involve Agencies as Partners

The role of state agencies in development of a place-based plan is to provide data and information, and generally, offer support, advice and direction throughout development of the plan. The Water Resources Department and its sister agencies can help planning groups incorporate the goals and objectives of the Integrated Water Resources Strategy at the local level, and understand the regulatory structures in place today.

If resources allow, the Water Resources Department could serve as a planning member or act as a liaison for other natural resources agencies not able to commit staff resources to participate in planning-related activities, such as face-to-face meetings. At a minimum, planning groups should consult with other agencies, such as the Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, and Oregon Department of Agriculture to determine agency participation. A state agency could serve as a facilitator or play a co-convening role, if requested by local communities and if resources allow.

If federal projects or land management programs exist within the planning area, groups should reach out to federal agencies to determine participation as well.

Invite & Involve Diverse Interests

The planning group will need to decide its own structure for involving diverse interests and should describe this approach within its plan. Most importantly, the structure needs to ensure that the planning body represents a balance of interests from different sectors. Diverse representation is a key tenet of integrated water resources management. Each basin will be unique in terms of the actual distribution of interests and stakeholders. Having diverse interests engaged and invested from the beginning will help ensure a process that meets both instream and out-of-stream water needs. Remember that these needs encompass water quantity, water quality, and ecosystem needs, considering both surface water and groundwater resources.

In determining the composition of a planning group, it is important to ensure that all persons potentially affected by a place-based plan have a voice in the decision-making process. This includes environmental justice communities, particularly members of minority or low-income communities, tribal communities, and those traditionally under-represented in public processes.

The place-based plan should describe how the planning members were determined, including a list of those that were invited to participate. Interest groups will need to decide for themselves what individual(s) best represents their interests for planning group participation. The plan should describe those responsible for its development and implementation. The description should contain enough detail to help stakeholders and the public understand how to communicate with the planning group and participate in plan development. Generally, interests in any given place will include:

- Local governments (cities and counties)
- Tribal governments
- Municipal water and wastewater utilities

- Major industries or employers
- Agriculture
- Forestry
- Self-supplied water users
- Conservation/environmental groups
- Power companies
- Small business
- Private landowners
- Special districts (e.g., irrigation, public utilities, flood control, parks/recreation, drainage, ports, etc.).
- State and federal agencies (natural resources, land management, business development)

Ensure a Public Process & Consensus Decision-Making

Reaching decisions within the planning group must be an inclusive and transparent process. Making decisions by consensus is an effective technique, meaning that one or two in the group may dissent, while the rest of the group supports the decision—or can "live with it." Getting to consensus provides a solid foundation upon which to build a plan and subsequent related actions, because it signals long-term support and commitment from a diverse set of stakeholders and partners.

Any place-based plan needs to employ a strong communication strategy, not only to ensure public participation in plan development, but to also engage the broader community on implementation of the plan. Publicize, in advance, meetings of the planning group, and accept public comment during every meeting.

Ensure a means of online communication as well, by setting up a website and posting materials regularly. Consider using a list-serve, and/or email account that can be used to quickly and widely disseminate information. Use these media, as well as print or other venues, to advertise upcoming meetings and public comment opportunities. Planning groups should comply with the state's Public Meetings Law. Refer to Appendix C for references, including a "quick guide" developed in 2010 for local and state officials, members of Oregon boards and commissions, citizens, and non-profit groups.

Planning Step 2: Characterize Water Resources, Water Quality, & Ecological Issues

The purpose of this step is to help the planning partners collectively identify challenges currently facing the community, and to start mapping potential solutions or opportunities to address any water quantity, water quality, or ecological issues. This planning step represents the data gathering and assessment phase. Oregon's 2012 Integrated Water Resources Strategy provides a statewide framework of critical issues that can be used for reference.

This step of the planning process is also an opportunity to tell the story of what makes the area unique, describing the economic, social, cultural, and landscape characteristics of the community. This includes the physical characteristics of water resources, such as major rivers, tributaries, aquifers, and other resources, noting whether they are rain, snow, or spring-fed systems.

Extensive planning efforts in the 1960s through the early 1990s examined water resources issues for most areas of the state and resulting basin programs describe how water can be allocated in the future. Planning groups should consider existing basin program policies, objectives, and

classifications (OAR Chapter 690, 500-520), and any other existing legal protections, when characterizing water resources issues.

In addition to surface water, describe the availability of groundwater resources to the extent known. Describe, if possible, where additional data is needed. Note any groundwater protected areas and the status of groundwater in these areas. Existing data or basin investigations are available from the Water Resources Department and the U.S. Geological Survey.

The place-based plan should describe water quality –both surface water and groundwater– in the planning area. Items to consider for water quality include: designated beneficial uses, impaired water bodies, groundwater management areas, total maximum daily loads, permitted discharges, non-point sources of pollution, and any monitoring or relevant publications that can be used to characterize surface water or groundwater quality conditions.

The plan should include a general description of the ecological health of the planning area. This section should include a description of key species and habitats. Describe the historical and current presence of aquatic species, including any migratory fish, listed species under the Endangered Species Act with their current status, and species on ODFW's State Sensitive List. Include a discussion of limiting factors that affect aquatic habitats in the watershed. As an example, the 2006 Oregon Conservation Strategy provides a list of limiting factors to consider: water quantity (low flows), water quality, invasive species, water temperature, sedimentation, passage barriers, degraded riparian condition, and loss of habitat complexity.

Refer to Appendix C for technical resources and publications to help complete Planning Step 2.

Planning Step 3: Quantify Existing and Future Needs/Demands

The purpose of Planning Step 3 is to identify how much water is needed to support current and future uses of water, to examine when and where supplies do not meet instream or out-of-stream needs / demands today, and to determine where existing supplies are likely to fall short in the future.

Planning groups should quantify existing and future instream and out-of-stream water needs in the watershed, using a 50-year planning horizon, and accounting for future pressures such as climate change, population growth, and changes to land-use. Keep in mind that such needs encompass water quantity, water quality, and ecosystem needs. Many of these needs may already be quantified in municipal or agricultural water management plans, TMDL plans, habitat restoration plans, forest management plans, or conservation and species recovery plans. Planning groups should identify where conflicts among uses are most likely to arise in the future. This is critical information that will shape how solutions are developed later in the planning process.

Out-of-Stream Needs/Demands

Describe existing water rights in the basin, generally. Are consumptive uses (e.g., municipal, agricultural, industrial, domestic, etc.) being met today? Are uses met by surface water, groundwater, stored water, or non-traditional sources of water, such as recycled water, treated effluent, rainwater catchment, or stormwater? Evaluate the reliability of existing infrastructure (diversion works, storage reservoirs, delivery systems, etc.). The local watermaster may have information regarding the history and frequency of water shortages during dry years in the area.

Oregon's Water Rights Information System and annual water use reports may also be useful for understanding existing water uses.

Instream Needs/Demands

Describe existing instream needs in the planning area to determine if such needs are currently being met. Consider existing protections (e.g., instream water rights, pending instream water right applications, scenic waterway flows, or flows specified in project operations) to support fish, wildlife, recreation, or pollution abatement. Also assess flow needs to support other uses, such as navigation or hydropower. Groundwater often contributes flow to surface water bodies and supports various ecological functions; therefore, groundwater should be considered for assessing instream needs. Determine how often instream flows are met in wet or dry years and the likelihood such flows will be met in the future. Refer to the Integrated Water Resources Strategy for more information on the suite of flows that are needed to support instream uses.

Climate Change & Natural Hazards

As planning groups are conducting assessments under Planning Element #2 (characterizing issues) and Planning Element #3 (defining needs/demands), groups will need to consider the risks posed by climate change. The analysis could identify vulnerabilities of (a) human systems, (b) natural systems, and (c) infrastructure and the built environment. Projected climate change impacts include a longer freeze-free season, increased water demand due to warmer summertime temperatures, and higher spring flows/lower summer flows in snowmelt-dominated basins.

Planning groups should assess whether natural and built systems are vulnerable to certain natural events, such as droughts, wildfires, floods, or possibly seismic events. The frequency, duration, intensity, and impacts of past events and potential future events should be considered. Planning groups may wish to consider developing a multi-year, worst-case planning scenario to aid in development of drought, flood, or other preparedness-type strategies.

Planning Step 4: Develop Integrated Solutions for Meeting Long-Term Water Needs

Developing the solutions toolbox is paramount for meeting instream and out-of-stream water needs in a given place, today and into the future. Considering the diversity of water challenges, planning groups will likely need to consider a suite of tools, examining various options for meeting unmet needs/ demands. This can include maintaining current practices, if they are sufficient to meet future needs / demands. Use of the following tools can help bridge any gaps identified. Note that the following solutions, listed in no particular order, is not all encompassing. Innovative approaches or solutions are strongly encouraged.

(a). Efficiency and Conservation Measures

Consider improving water-use efficiency and employing conservation practices as a means for meeting water needs. At the individual level, irrigators can reduce on-farm water use by implementing a number of new technologies and practices. Several irrigation districts throughout Oregon have made their delivery systems more efficient in recent years, finding ways to save water, reduce costs, and improve the reliability of deliveries to water users. The state's Allocation of Conserved Water program is a water right transfer tool that puts some water back instream while allowing some water to be applied to additional acreage.

Water conservation opportunities exist within municipal water systems as well. Delivery system upgrades and household-level programs that install low-flow toilets, faucet aerators, and high-efficiency shower heads can be effective tools for reducing water use and meeting additional demands. Rebate or outreach programs sponsored by municipal water providers have been effectively used in Oregon in the past and continue to be used to complement system upgrades.

Landscaping can account for a significant use of water; installing efficient irrigation systems or selecting plants that require less water can also be effective tools, along with other landscaping techniques. (Refer to IWRS Action 10A for more information).

(b). Built and Natural Storage

Storage as a water management tool includes natural storage, built storage (above-ground and below-ground), and operational changes to existing storage projects.

The state of Oregon has a policy described in OAR 690-410-0080 that gives high priority to storage that optimizes instream and out-of-stream public benefits and beneficial uses. Multi-purpose storage is preferred over single-purpose storage.

If planning groups are considering new storage as a potential water management tool, the following should be considered:

- Purpose (e.g., type, location and extent of use, benefits);
- Legal Requirements (e.g., state, federal, and local legal requirements);
- Social Considerations (e.g., recreational, public support, cultural, historic);
- Technical Constraints (e.g., siting issues, public safety and structural integrity);
- Financial Realities (e.g., project financing including site costs, cost sharing and repayment, and operating, maintenance and rehabilitation costs);
- Economic Analysis (e.g., project benefit/cost analysis);
- Land Use (e.g., ownership, comprehensive plans, coordination);
- Environmental Effects (e.g., impacts on streamflows, fisheries, wildlife, wetlands, habitat, biological diversity, water quality and opportunities for mitigation);
- Other (e.g., direct and indirect impacts).

For existing storage projects within the watershed, planning groups should evaluate current storage capacities, authorized purposes, and operational practices to determine if management or engineering adjustments could help meet any unmet needs/demands.

Planning groups should also consider the enhancement of watershed storage capacity through natural processes using non-structural means. These non-structural means include maintaining forested and riparian areas, protecting or restoring floodplain functions, preserving wetlands, and restoring upland meadows. (Refer to IWRS Actions 10B and 11A for more information).

(c). Water Right Transfers & Rotation Agreements

Water right transfers allow the water right holder to change the point of diversion, place of use, or type of use. The state provides options for permanent transfers, temporary transfers, and instream leases. Transfers can be used to move water to where it is needed, or to provide mitigation water for new consumptive uses of water. One of the basic tenets of a water right transfer is ensuring that

other instream or out-of-stream uses are not injured as a result of the changes to the use. Whether the change is a transfer or a lease, it will not be authorized if other instream or out-of-stream water right holders are injured as a result of the change.

In addition to transfers, there are a number of other innovative management methods that can provide some flexibility and alternatives. For example, water users with existing water rights can enter into private signed agreements to rotate water and make the most economical use of a limited supply. Other examples of permanent and temporary options include dry year options and forbearance agreements.

(d). Non-Traditional Water Supply Techniques

Planning groups should consider alternative or non-traditional supplies, such as the use of rainwater, stormwater, greywater, or desalinated water as a management strategy.

For example, some Oregon communities have installed purple pipe as a means to use reclaimed water for golf courses or other greenways. Such installations require a parallel system of infrastructure, alongside traditional wastewater and stormwater pipes. The ability to use reclaimed water for non-potable uses means that large amounts of water can by-pass the treatment facility process, usually reserved for potable water supplies. (Refer to IWRS Action 10C for more information).

Desalination is a technique that allows communities to address water scarcity by treating brackish groundwater or saltwater. Both inland and coastal communities may wish to undertake desalination projects to meet their water needs. Such projects would need to seek approval through existing regulatory pathways, and where appropriate, planning groups may need to identify policy gaps that create barriers to desalination projects. The identification of these barriers would allow the state to pursue policy changes, if needed, so that desalination can occur where appropriate, without jeopardizing existing water rights and identified beneficial uses.

(e). Infrastructure

Water infrastructure needs are many and growing. As water and wastewater systems age, maintenance becomes a greater challenge and cost. Many of the diversion, conveyance, storage, and other infrastructure in Oregon are more than 100 years old and in need of repair or replacement. As communities grow and technologies improve, the need for modern infrastructure continues to grow as well. Developing regional partnerships among water providers and wastewater utilities can be a key component to a successful infrastructure program.

Planning groups should consider taking stock of water-related infrastructure in the community to determine whether maintenance or upgrades are necessary and whether plans are in place to save for and invest in maintenance needs. A thorough structural review should be undertaken to assess the integrity of structures to withstand disturbances, such as earthquakes or large flood events. In addition, the planning group may want to evaluate whether reservoir storage capacity has been reduced, by sedimentation for example, or for public safety reasons. Doing so could help expand water supplies or provide greater system reliability during dry years. (Refer to IWRS Action 7A and 7B for more information).

(f). Watershed & Habitat Restoration

Planning groups will need to consider actions to improve and maintain the ecological health of the planning area. Watershed restoration efforts have been occurring throughout Oregon for many years, providing the habitat needed to support fish, wildlife, and a variety of ecosystem services, such as recycling nutrients back into the soil and therefore, improving water quality.

The Integrated Water Resources Strategy contains four recommended actions to improve or maintain the health of Oregon's ecosystems: improve watershed health, resiliency, and capacity for natural storage; develop additional instream protections; prevent and eradicate invasive species; and protect and restore instream habitat and access for fish and wildlife. In particular, removing fish passage barriers and screening diversions are key actions to consider. Planning groups can look to the IWRS for other tools to consider during plan development.

Oregon's network of watershed councils, soil and water conservation districts, and non-profit conservation organizations are at the forefront of on-the-ground restoration projects. Planning groups should consider building upon the expertise and strategic action plans of these local organizations.

(g). Instream Flow Protections

The protection and maintenance of instream flows are necessary to support ecosystem health. Oregon's instream flow policy in OAR 690-410-0030 recognizes that benefits are provided by water remaining where it naturally occurs.

Protecting streamflows that are needed to support public uses is a high priority for the state. The long-term goal of the state's policy is to establish an instream water right on every stream, river and lake that can provide significant public benefits. Where streamflows have been depleted to the point that public uses have been impaired, methods to restore the flows should be developed and implemented. These activities must be consistent with the preservation of existing rights, established duties of water, priority dates, and with the principle that all of the waters within the state belong to the public to be used beneficially without waste.

Many watersheds throughout the state contain protections for instream flows through instream water rights, permit conditions, by-pass conditions, scenic waterway designations, and biological opinions. There are a number of tools available to meet instream flows needs, including streamflow measurement and management, transferring senior water rights instream, leasing water temporary instream, and regulating in favor of senior instream water rights. Streamflow restoration projects should seek cooperation and coordination between instream water interests and out-of-stream water users. The Water Resources Department and the Department of Fish and Wildlife have jointly identified priority areas for streamflow restoration throughout the state.

A place-based plan should identify opportunities for meeting instream flow needs. If instream flow requirements do not exist for a particular stream, river, or lake within the planning area, or if conflicting federal or state targets exist, the planning group may want to consult and seek recommendations from the Oregon Department of Fish and Wildlife on how to proceed in determining the appropriate instream flow. (Refer to IWRS Action 11B for more information on instream protections).

(h). Water Quality Protections

The Integrated Water Resources Strategy contains recommended actions to improve and protect water quality for the benefit of many uses, such as drinking water, ecosystem health, aquatic life, agriculture, and industry.

Some of the state's water quality priorities are set forth in water quality management plans (e.g., Senate Bill 1010 plans, Forest Practices Act, TMDLs and associated implementation plans) and groundwater protection plans. Ultimately, a place-based plan should identify opportunities for protecting and improving water quality in the planning area. This could be through the implementation of existing plans, undertaking actions in basin assessments, or developing new tools and collaborative strategies among community partners. Planning groups should consider potential pollutant sources and their potential solutions, such as using low impact development to mitigate stormwater impacts, using community outreach and grants to fix leaky septic systems, and using take-back programs to avoid toxic and pharmaceutical contamination of water supplies. Below are two examples from the Integrated Water Resources Strategy that demonstrate how to protect and improve water quality and public health:

Drinking Water

Planning groups should identify actions to address drinking water quality needs by considering collaborative source water protection strategies and various treatment technologies. Drinking water protection should focus on both large municipal systems, as well as community or individual drinking water systems.

Toxics and Other Pollutants

The IWRS recommends a number of ways to reduce toxics and other pollutants. The Oregon Department of Environmental Quality and its partners are pursuing many of these recommendations, with implementation being carried out at the local or community level. Planning groups should evaluate what strategies are in place within their community, such as the promotion of pesticide collection events, pharmaceutical take-back programs, the use of integrated pest management techniques, reducing cyanotoxins in fresh and marine waters, or raising public awareness.

(i). Monitoring

Expanding monitoring efforts to better understand water quantity, water quality, ecological issues, and program effectiveness is a key recommendation of the 2012 IWRS. Planning groups may need to install measurement devices or include monitoring as part of plan development, or the group may recommend increasing monitoring efforts as a management tool. Place-based planning efforts could help identify additional data needs, which can include monitoring and evaluating: streamflow (e.g. adding real-time capabilities), groundwater levels, water use, water quality, habitat conditions, and watershed functions. Several types of monitoring needs are described in the 2012 IWRS.

Development of new data or monitoring tools should be compatible with and available to partners, including state agencies. Oregon DEQ has resources available for local entities that are monitoring water quality conditions within their watershed, including directions for quality assurance, sampling, and analysis. The place-based plan should include a description of any current or proposed monitoring activities occurring in the watershed. Refer to Appendix C for monitoring standards and other related resources.

Planning Step 5: Plan Adoption & Implementation

On occasion, the planning group may be asked to present or share information with the Oregon Water Resources Commission, primarily to provide feedback on the use of these guidelines and to give Commission members an opportunity to offer recommendations and general input.

A place-based plan should be completed within a reasonable time frame. For the purposes of piloting these guidelines, plans are expected to be completed within three years of initiating the planning process. The state recognizes, however, that communities are at different stages of planning; some communities have already initiated discussions, collected data, or conducted assessments, whereas others are in the very early stages of organizing themselves. For these reasons, it is important to work with state agencies throughout the planning process to adjust completion timeframes, if needed.

Planning group members should formally approve their plan. Individual planning members should seek an affirmative vote from their respective governing boards or commissions to confirm any funding or political commitments made by the planning group.

The Department, working closely with the IWRS Project Team Agencies—namely the Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, and the Oregon Department of Agriculture—will conduct an inter-agency review of each place-based plan during the final stages of plan development. The Water Resources Commission will ultimately make the final decision about whether to formally accept a place-based plan as a component of the Integrated Water Resources Strategy. More specifically, the Commission will decide whether the plan adheres to these guidelines and the statewide goals and objectives of meeting instream and out-of-stream water needs, including water quantity, water quality, and ecosystem needs.

Implementation of a place-based plan will likely involve various partners and result in a suite of projects and/or long-term programs. Some projects may need additional analyses (e.g., feasibility studies) that are beyond the scope of a place-based plan. It is very likely that permits or some type of state or federal approval will be needed for certain projects, as well as funding, likely from multiple sources. Planning groups may need to develop a more detailed implementation strategy, agreement, or workplan to ensure that all of the hard work of creating the integrated water resources plan is carried out by various public and private partners.

Appendix A: Guiding Principles from Oregon's Statewide Strategy

The fifty-year vision and guiding principles from the 2012 Integrated Water Resources Strategy are reproduced below as a reference for planning groups. The guiding principles were developed to help shape the development and implementation of the Strategy. These principles should serve as a constant reminder to recognize the public interest in water, to include a meaningful process for public involvement, and to maintain a balanced representation of all interests.

Accountable and Enforceable Actions

Ensure that actions comply with existing water laws and policies. Actions should include better measurement and enforcement tools to ensure desired results.

Balance

The [place-based] strategy must balance current and future instream and out-of-stream needs supplied by all water systems (above ground and below ground). Actions should consider and balance tradeoffs between ecosystem benefits and traditional management of water supplies.

Collaboration

Support formation of regional, coordinated, and collaborative partnerships that include representatives of all levels of government, private, and non-profit sectors, tribes, stakeholders, and the public. Collaborate in ways that help agencies cut across silos.

Conflict Resolution

Be cognizant of and work to address long-standing conflicts.

> Everywhere in our State, we see healthy waters, able to sustain a healthy economy, environment, and cultures & communities.
>
> Healthy waters…are abundant and clean. A healthy economy…is a diverse and balanced economy, nurturing and employing the state's natural resources and human capital to meet evolving local and global needs, including a desirable quality of life in urban and rural areas. A healthy environment…includes fully functioning ecosystems, including headwaters, river systems, wetlands, forests, floodplains, estuaries, and aquifers. Healthy cultures and communities…depend on adequate and reliable water supplies to sustain public health, safety, nourishment, recreation, sport, and other quality of life needs.
>
> A Fifty-Year Vision for Oregon's Water Future
> Policy Advisory Group
> 2012 Integrated Water Resources Strategy

Facilitation by the State

The State should provide direction and maintain authority for local planning and implementation. Where appropriate, the State sets the framework, provides tools, and defines the direction.

Incentives

Where appropriate, utilize incentive-based approaches. These could be funding, technical assistance, partnerships / shared resources, regulatory flexibility, or other incentives.

Implementation

Actions should empower Oregonians to implement local solutions; recognize regional differences, while supporting the statewide strategy and resources. Take into account the success of existing plans, tools, data, and programs; do not lose commonsense approach; develop actions that are measurable, attainable, and effective.

Interconnection/Integration

Recognize that many actions (e.g. land-use actions) in some way affect water resources (quality and/or quantity); recognize the relationship between water quantity and water quality; integrate participation of agencies and parties.

Public Process

Employ an open, transparent process that fosters public participation and supports social equity, fairness, and environmental justice. Advocate for all Oregonians.

Reasonable Cost

Weigh the cost of an approach with its benefits to determine whether one approach is better than another, or whether an approach is worth pursuing at all. Actions should focus on reducing the costs of delivering services to the state's residents, without neglecting social and environmental costs.

Science-Based, Flexible Approaches

Base decisions on best available science and local input. Employ an iterative process that includes "lessons learned" from the previous round. Establish a policy framework that is flexible. Build in mechanisms that allow for learning, adaptation, and innovative ideas or approaches.

Streamlining

Streamline processes without circumventing the law or cutting corners. Avoid recommendations that are overly complicated, legalistic, or administrative.

Sustainability

Ensure that actions sustain water resources by balancing the needs of Oregon's environment, economy, and communities.

Appendix B: The Convener's Role & Responsibilities

The following information contains excerpts from the Policy Consensus Initiative's document entitled, "The Role of a Convener." For the full version or to find more information or resources visit: http://www.policyconsensus.org/publicsolutions/ps_6.html.

The Convener

A convener is a person—typically a well-known public leader with credibility and stature—who brings a diverse group of people together to resolve a problem collaboratively. Experience over the past 25 years has demonstrated that conveners are often essential to achieving successful outcomes in collaborative processes, especially when the solutions reached require action by multiple sectors and levels of government.

Conveners get people involved in finding effective solutions together; they do not seek to impose their own solutions. Experience has shown that [public officials] and other respected civic leaders can be very effective as conveners or co-conveners of collaborative processes, so long as they act in impartial ways. By virtue of their office, elected leaders have the power to convene people from a variety of sectors to work on public problems. Other respected leaders, by virtue of the credibility and social capital they have built in their communities, regions, or states, also have the power to convene. When leaders serve as conveners or co-conveners of collaborative processes, the outcomes of these processes are more likely to receive support and to be formally adopted and implemented.

Selecting a Convener

The process for selecting a convener needs to be transparent, so that the parties and the public understand who made the selection. During the assessment, the parties should be asked who would make a good convener. The purpose of the question is not to have the parties choose the convener, but rather to understand their perceptions about the kind of person who is needed to gain the cooperation of all interests in working toward a solution.

The most important criteria for selecting a convener is that the person be highly respected and statesmanlike—someone with a reputation for serving the public interest, with no particular ax to grind or perspective to push on the issue at hand. Sometimes people will come to the table primarily because of the convener's status—because the stature of the convener makes them feel they are doing something important and worthwhile.

Best Practices for a Convener

To be effective, conveners should abide by the following key guidelines:

1. Be inclusive.

Conveners should be sure that a wide variety of people from different perspectives are involved. They should welcome participants from all interests—not just those with obvious interests, but also those with the economic, political, or technical resources that will help make for successful outcomes.

2. Establish a neutral meeting place.

When the issue is complex and divisive, the convener must establish an impartial process and a safe space for people to open up about their beliefs and opinions. It is often helpful to get assistance from an experienced facilitator to plan and conduct the process.

3. Be impartial to the solution.
Participants must believe that the convener is not predisposed to one side or another and is trying to find a solution that all sides can embrace. The convener may need to work in a bipartisan fashion with a co-convener from the other side of the aisle, to ensure the perception of impartiality.

4. Direct, rather than dominate, the discussions.
The convener must enable people to talk with each other, rather than talking only to the convener. It is often useful for someone else to facilitate the discussions so the convener can listen and ask questions. Besides, conveners will rarely have time to run all of the meetings.

5. Frame the meeting and the issue.
The convener must establish a purpose for each meeting and help to ensure that the issue is framed in a way that enables all people to work together productively. Defining and naming the issue jointly can ensure that everyone is willing to contribute to the solution.

6. Keep people moving and working together.
The convener should provide feedback to the group on their progress. Where institutional impediments or red tape crop up, the convener should consider using his or her own capabilities to overcome them.

7. Demonstrate ongoing visible commitment.
The convener can help keep participants at the table by demonstrating that they care about the progress the group is making. Even if the convener cannot be present at every meeting, he or she should send signals demonstrating on-going interest.

8. Make sure there is an outcome.
The convener can help a group get to closure by establishing timetables for the process and reminding people of those timetables. The best outcome involves written agreements that spell out an action and implementation plan, including specifying different people's responsibilities.

Appendix C: Technical Resources & Publications

This appendix is a starting point for planning groups looking for pertinent data and information, technical reports, statewide or regional plans and assessments, and agency contacts.

Public Process, Meetings

Oregon's Public Meeting Laws – Reference Guide (2010)
http://www.open-oregon.com/wp-content/uploads/2010/06/publicMEETINGSreader.pdf

Oregon Attorney General's Public Records and Meetings Manual (2011)
http://www.doj.state.or.us/pdf/public_records_and_meetings_manual.pdf

Policy Consensus Initiative's Resources for Leaders and Conveners
http://www.policyconsensus.org/publicsolutions/ps_6.html

Environmental Justice in Oregon, It's the Law (2008)
https://law.lclark.edu/live/files/17291-38-2collin

Water Quantity Data

Near Real-Time Streamflow Data
http://apps.wrd.state.or.us/apps/sw/hydro_near_real_time/

Historical Streamflow and Lake Level Data
http://apps.wrd.state.or.us/apps/sw/hydro_report/

Monthly Water Use Data
http://www.oregon.gov/owrd/pages/wr/water_use_report.aspx

Groundwater Level Data
http://www.oregon.gov/owrd/pages/gw/well_data.aspx

Groundwater Studies and Publications
http://www.oregon.gov/owrd/pages/gw/gw_pubs.aspx

Critical Groundwater Areas (Map)
http://www.oregon.gov/owrd/pages/gw/gw_critical_allocations.aspx

Water Availability Database
OWRD's model for estimating water availability can provide useful information on whether any new water is available during different months of the year to support future uses.
http://apps.wrd.state.or.us/apps/wars/wars_display_wa_tables/MainMenu1.aspx

Water Rights Database
http://www.oregon.gov/owrd/pages/WR/wris.aspx

Water Rights Maps (GIS themes)
http://www.oregon.gov/owrd/Pages/maps/index.aspx

Water Quality Data

Wastewater Permits Database
http://www.deq.state.or.us/wq/sisdata/sisdata.asp

Water Quality Monitoring Data
http://deq12.deq.state.or.us/lasar2/

The Oregon Water Quality Index
http://www.deq.state.or.us/lab/wqm/wqimain.htm

Impaired Water Bodies
http://www.deq.state.or.us/wq/assessment/assessment.htm

Designated Beneficial Uses for Water Quality
http://www.deq.state.or.us/wq/standards/uses.htm

Groundwater Management Areas for Water Quality
http://www.deq.state.or.us/wq/groundwater/gwmas.htm

Ecological Data

Fish Distribution Data
https://nrimp.dfw.state.or.us/nrimp/default.aspx?pn=fishdistdata

State Species Sensitive List
http://www.dfw.state.or.us/wildlife/diversity/species/sensitive_species.asp

Streamflow Restoration Priority Areas (Maps)
https://nrimp.dfw.state.or.us/nrimp/default.aspx?pn=streamflowmaps

Salmon and Steelhead Recovery Tracker
http://www.odfwrecoverytracker.org/

Instream Water Rights in Oregon (Map)
http://filepickup.wrd.state.or.us/files/Publications/Place_Based_IWRS/ISWR_SWW_Map.JPG

ODFW's Compass Tool
Online mapping that displays passage barriers and status
https://nrimp.dfw.state.or.us/compass/

2013 Statewide Fish Passage Priority List
ODFW's statewide inventory of fish passage barriers, prioritized for enforcement, based on the needs of native migratory fish
http://www.dfw.state.or.us/fish/passage/

Fish Screening Information
http://www.dfw.state.or.us/fish/screening/index.asp

DSL's Technical Resources for Wetlands
http://www.oregon.gov/dsl/WETLAND/Pages/technical_resources.aspx

Watershed assessments funded by OWEB
http://www.oregon.gov/OWEB/MONITOR/pages/watershedassessments_linked.aspx

Monitoring-Related Resources (see also water quality / quantity sections, above)

Measurement and Computation of Streamflow, Volumes 1 & 2: USGS Water Supply Paper 2175
http://pubs.usgs.gov/wsp/wsp2175/

Stage Measurement at Gaging Stations (2010)
http://pubs.usgs.gov/tm/tm3-a7/

Discharge Measurements at Gaging Stations (2010)
http://pubs.usgs.gov/tm/tm3-a8/

DEQ's Volunteer Water Quality Monitoring Resources
http://www.deq.state.or.us/lab/wqm/volmonresources.htm

Climate Change Resources

IPCC Fifth Assessment Report (2013)
http://www.ipcc.ch/report/ar5/

Northwest Climate Assessment Report (2013)
http://occri.net/wp-content/uploads/2013/11/ClimateChangeInTheNorthwest.pdf

Oregon's Climate and Health Profile (2014)
https://public.health.oregon.gov/HealthyEnvironments/climatechange/Pages/Climate-and-Health-Profile.aspx

DLCD's Website: Planning for Climate Change
http://www.oregon.gov/LCD/CLIMATECHANGE/Pages/index.aspx

Natural Hazards: Drought, Floods, Earthquakes etc.

AWRA's Proactive Flood and Drought Management Applied Strategies (2013)
http://www.awra.org/news/AWRA_report_proactive_flood_drought_final.pdf

Oregon Resilience Plan (2013)
http://www.oregon.gov/OMD/OEM/osspac/docs/Oregon_Resilience_Plan_Final.pdf

Oregon's Natural Hazard Mitigation Plan (2015)
In addition to the statewide Natural Hazard Mitigation Plan, hazard plans developed by cities and counties may also be useful in understanding past hazard events in a community.
http://www.oregon.gov/LCD/HAZ/pages/NHMP.aspx

Oregon Hazards Explorer
http://oregonexplorer.info/hazards

Infrastructure

OWRD's Dam Inventory
http://apps.wrd.state.or.us/apps/misc/dam_inventory/default.aspx

Oregon Association of Clean Water Agencies
http://www.oracwa.org/c-energy.html

Pacific Northwest Seismic Network
http://pnsn.org/earthquakes/recent

U.S. Army Corps of Engineers National Inventory of Dams
http://geo.usace.army.mil/pgis/f?p=397:12

Statewide or Regional Plans & Assessments

Oregon's Integrated Water Resources Strategy
http://www.oregon.gov/OWRD/pages/law/integrated_water_supply_strategy.aspx

Oregon Conservation Strategy (ODFW)
http://www.dfw.state.or.us/conservationstrategy/read_the_strategy.asp

Oregon Plan for Salmon and Watersheds (OWEB)
http://www.oregon.gov/OPSW/pages/index.aspx

Conservation and Recovery Plans (ODFW)
http://www.dfw.state.or.us/fish/CRP/conservation_recovery_plans.asp

TMDLs in Oregon (DEQ)
This site contains links to Total Maximum Daily Load and Water Quality Management Plan documents prepared for water bodies in Oregon designated as water quality limited on the 303(d) list.
http://www.deq.state.or.us/wq/tmdls/tmdls.htm

Agricultural Water Quality Management Plans (SB 1010)
http://geo.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=e48e9d32e854458a8079b10852c3100b

DEQ Basin Assessments
Basin assessments have been completed for the North Coast, Deschutes, Rogue, and Powder River Basins.
http://www.deq.state.or.us/wq/watershed/watershed.htm

OWRD Basin Programs
Some stream systems are only classified for certain uses during certain times of the year. These classifications are used, in conjunction with other laws or rules, to determine whether the state can allow new uses of water. Basin programs exist for most of the state's major drainage basins, and are described in Oregon Administrative Rules Chapter 690, Division 500 – 520.

North Coast Basin Program	[Available here]
Willamette Basin Program	[Available here]
Sandy Basin Program	[Available here]
Hood Basin Program	[Available here]
Deschutes Basin Program	[Available here]
John Day Basin Program	[Available here]
Umatilla Basin Program	[Available here]
Grande Ronde Basin Program	[Available here]
Powder Basin Program	[Available here]
Malheur Lake Basin Program	[Available here]
Owyhee Basin Program	[Available here]
Malheur Lake Basin (Provision)	[Available here]
Goose & Summer Lakes Basin Program	[Available here]
Rogue Basin Program	[Available here]
Umpqua Basin Program	[Available here]
South Coast Basin Program	[Available here]
Mid-Coast Basin Program	[Available here]
Columbia River Basin Program	[Available here]
Middle Snake River Basin Program	[Available here]

Contacts

Integrated Water Resources State Agency Contacts:

OWRD: Alyssa Mucken, alyssa.m.mucken@state.or.us; 503-986-0911 (Salem)

ODEQ: Wade Peerman, wade.peerman@state.or.us; 503-229-5046 (Portland)
Heather Tugaw, heather.tugaw@state.or.us; 541-776-6091 (Medford)
Smita Mehta, smita.mehta@state.or.us; 541-278-4609 (Pendleton)

ODFW: Danette Faucera, danette.l.faucera@state.or.us; 503-947-6092 (Salem)

ODA: Margaret Matter, mmatter@oda.state.or.us; 503-986-4561 (Salem)

Watershed Councils
http://www.oregon.gov/OWEB/GRANTS/docs/councilcapacity/June_2014_Map_Watershed_Councils.pdf

Soil and Water Conservation Districts
http://geo.maps.arcgis.com/apps/Viewer/index.html?appid=9cee1a8b865140d5b71253975fb7fe6d

DEQ's Basin Coordinators
http://www.deq.state.or.us/wq/tmdls/docs/basincoordinators.pdf

OWRD's Watermasters in Oregon
http://www.oregon.gov/owrd/pages/offices.aspx#Region/Watermaster_Map

Appendix D: Quick Guide for Place-Based Planning

The appendix is a short list of the place-based planning elements. It provides the general topic areas and key points to consider while developing a place-based plan.

Planning Step 1: Building a Collaborative &Integrated Process

Place-Based Planning Under the IWRS
- Adhere to fundamentals
- Follow IWRS Guiding Principles

Define the Planning Scale
- Establish the geographic planning scale
- Correspond with existing basins
- Watershed-based

Convene the Process
- Public official or of similar stature
- Adhere to basic principles (See App. B)
- Notify OWRD of planning initiation

Involve Agency Partners
- Technical contacts
- Guidance; support
- Seek federal participation

Invite and Involve Diverse Interests
- A balance of interests from different sectors
- Define responsible parties
- Include all persons potentially affected

Employ a Public Process
- Must be an inclusive and transparent process
- Seek consensus
- Develop communication strategy/plan
- Follow Public Meetings law

Planning Step 2: Characterize Water Resources, Water Quality, & Ecological Issues

Describe the Place
- Economic, social, cultural characteristics
- Unique features or attributes
- Physical and landscape characteristics:
  - Major rivers & tributaries
  - Aquifer systems and springs
  - Estuaries and bays
  - Reservoirs and lakes
  - Conveyance systems
  - Hydrology (rain, snow or spring fed systems), etc.

Surface & Groundwater Quality/Quantity
- Availability
- Existing protections
- OWRD basin programs
- Beneficial uses (water quality)
- Impaired water bodies
- Groundwater management areas (water quality)
- Total maximum daily loads
- Permitted discharges

Ecological Health of the Watershed
- Key species & habitats
- Historical and current fish species
- ESA STE species; ODFW sensitive species
- Limiting factors

Planning Step 3: Quantify Existing & Future Needs/Demands

Existing and Future Needs/Demands
- Instream and out-of-stream
- Quantity, quality, & ecosystems
- Future pressures (e.g., population, land-use, etc.)

Out-of-Stream Needs
- Agricultural uses (irrigated and non-irrigated)
- Municipal uses
- Industrial uses
- Domestic uses

Instream Needs
- Meeting existing targets (water rights, scenic waterways flows, etc.)
- Fish and wildlife, water quality, recreation, etc.

Climate Change & Natural Hazards
- Human and natural risks
- Infrastructure and built environment risks
- Drought, floods, seismic, other natural hazards
- Multi-year, worst-case scenario

Planning Step 4: Develop Integrated Solutions for Meeting Long-Term Water Needs

Efficiency & Conservation Measures
- Allocation of Conserved Water; on-farm activities
- Infrastructure upgrades
- Household level conservation programs

Built & Natural Storage
- Capacity & operations
- Above & below
- Natural storage (forests, floodplains, wetlands, snowpack)

Transfers & Rotation Agreements
- Permanent transfers
- Temporary transfers
- Instream leases
- Rotation or forbearance agreements

Non-Traditional Techniques
- Recycled or reclaimed water projects
- Graywater, rainwater, stormwater
- Desalination

Infrastructure
- Aging water and wastewater systems
- Energy efficiencies
- Storage capacities
- Safety (e.g., seismic, flood risk)
- Regional partnerships
- Long-term maintenance strategies

Watershed & Habitat Restoration
- Improve/maintain ecological health
- Utilize existing plans/efforts (e.g. Oregon Plan)
- Fish passage barriers/screening

Instream Flow Protections
- New instream water rights
- Streamflow restoration priorities
- Improved measurement/monitoring
- Consult with ODFW

Water Quality Protections
- Pollution reduction strategies
- Nonpoint source projects
- Source water protection
- Toxics (e.g., nutrients reduction)
- Education and outreach

Monitoring
- Measurement (streamflows/water use)
- Program Effectiveness
- Quality assurance
- Shared information

Planning Step 5: Plan Adoption & Implementation

Review Process
- Three-year completion timeframe
- Seek input from WRC
- Inter-agency review

Adoption
- Planning members adopt
- Seek approval from boards/commissions
- Submit to WRC for acceptance process
- Develop workplan/implementation strategy

Attachment 2

Place-Based Integrated Water Resources Planning

DRAFT Guidance for Planning Step 5

Plan Adoption and Implementation

September 13, 2019

OREGON
WATER RESOURCES
DEPARTMENT

Water is a finite resource with growing demands; water scarcity is a reality in Oregon. Water-related decisions should rest on a thorough analysis of supply, the demand/need for water, the potential for increasing efficiencies and conservation, and alternative ways to meet these demands.

Oregon's Integrated Water Resources Strategy Policy Advisory Group (2016)

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Introduction

Planning Step 5, Plan Adoption and Implementation, is about bringing all the planning work accomplished during Planning Steps 1 through 4 together into a concise, *place-based integrated water resources plan* (the "Plan") that is locally-developed and adopted, state-recognized, and actionable. The Plan should tell a compelling story about the critical water issues in the planning area, the vision for the future, recommended actions, and a strategy for implementation.

This guidance is intended to assist in drafting the Plan and to explain the process for state agency review and formal recognition of the Plan by the Oregon Water Resources Commission (the "Commission"). This guidance includes the following sections:

- Purpose and Value of a Plan. This section briefly describes the purpose and value of a completed Plan.

- Developing the Plan. This section describes the need for a clear process and work plan, how the Plan can be developed using existing work products, the required Plan contents, other considerations, and the importance of gaining support for the Plan.

- State Agency Review of DRAFT Final Plan. This section describes the review team composition, review steps and timeline, criteria for Final Draft Plan review by state agency reviewers, outcomes of the state agency review, and Final Plan adoption by the planning group.

- Commission Recognition of Final Plan. This section describes the process and purpose of seeking recognition by the Commission of the locally-adopted Final Plan including the steps for Commission recognition and factors the Commission will consider.

- Appendix A. Example Plan Template. This appendix provides one example of how a planning group could organize their Plan. Groups are not required to use this template.

- Appendix B. State Agency Review Criteria. This appendix describes criteria state agencies will use to review the Final Draft Plan and includes the worksheet agency reviewers will use as well as draft templates for conveying results. The criteria are based on the 2015 Draft Place-Based Planning Guidelines and the statewide Integrated Water Resources Strategy (IWRS) Guiding Principles.

- Appendix C. Links to Relevant Funding Programs. As planning groups consider Plan implementation they may wish to see if any of these funding programs might be a good fit for their recommended actions.

Purpose and Value of a Plan

The purpose of a Plan is to communicate and engage a variety of audiences – water partners, the general public, potential funders, and decision-makers – about the community's water resources situation, critical water issues, its shared vision and goals, recommended actions, and a strategy for implementing the Plan.

The Plan can have significant value in several important ways:

- Competitive Edge for Funding Opportunities. State-recognized Plans built through a locally-led, collaborative process describe recommended actions that may be attractive investment opportunities for funding programs offered by state and federal agencies, philanthropic organizations, partners, local government, the state legislature, and others.

- Relationship Development. Developing the Plan has brought diverse water interests together, provided new opportunities for dialogue about difficult water issues, and built new levels of cooperation, trust, and respect for diverse perspectives about the different values of water. These relationships can have positive effects for many years, especially as the group transitions from planning to implementation of the Plan.

- Shared Vision for Action. Most communities in Oregon have not previously developed such a deep, common understanding of their local water resources and of the water challenges they face, and then developed actions to address those challenges. Being better informed and having a vision and Plan for a better future can lead to improved cooperation and proactive solutions to complex water challenges.

- Communication Tool. A Plan containing consensus-based solutions/strategies that are broadly supported by diverse interests is a powerful tool for communicating to decision-makers and the public what you need to succeed. The Plan will communicate to decision-makers - local, state, and federal - the community's vision and the financial and technical resources, and cooperation, needed to achieve that vision.

- Alignment of Plan with the Statewide Integrated Water Resources Strategy. The Plan should identify which of the planning group's recommended actions are consistent with IWRS recommended actions and will help the state achieve its 50-year vision of "…maintaining healthy water resources to meet the needs of Oregonians and Oregon's environment for generations to come." The Plan will also inform updates to the statewide IWRS and highlight opportunities for achieving statewide IWRS goals at the local level. It can help ensure alignment between local, state and federal actions that affect water management.

Developing the Plan

Utilize existing work products to develop the Plan. Summarize the planning effort into an accessible and readable document using planning step deliverables, reports, or other materials developed during the planning process. The executive summaries or conclusion sections of the planning step deliverables - modified and supplemented with key figures, graphs, maps, and tables - can be used to develop the majority of the Plan.

Establish a Clear Process and a Work Plan

As with previous planning steps, it is important to have a clear work plan for the progress and timing of work to complete Planning Step 5. The work plan should describe the scope and flow of work, responsibilities among participants, the timeline, work products the stakeholders will be asked to review, and key decision points.

If the planning group is interested in having state recognition of their Plan , then the group should include a state agency review in its process and work plan. That state agency review occurs when the Plan is nearly final, but still in draft form (meaning that it can be revised if necessary), a "Final Draft Plan." More information on that review and the time required is included later in this guidance.

Required Plan Contents

This section describes the required contents for the Plan. Plans do not have to follow this exact order and may contain additional or modified sections. These topics mirror the review criteria that will be used during the interagency review process. The topics should look familiar as almost all will have been covered in Planning Steps 1 through 4. Planning groups can use these topics as the primary Plan sections as shown in the example Plan template in Appendix A. Or groups can structure their Plan differently. Regardless of Plan organization, if a planning group seeks to have a *state-recognized place-based integrated water resources plan* then it must include these contents and meet the criteria covered in Appendix B.

- Executive Summary. An executive summary is a short overview of the main points of the longer Plan. It often includes the most important points or take-aways that the author wants to communicate, including key findings, conclusions, recommendations, justifications, and next steps. An executive summary can be a useful communication tool for those readers who are either not likely to read the entire Plan or to pique their interest in reading further.

- Planning Purpose. This should include a description of why the group undertook place-based water planning, the original issues the planning was initiated to address, and early organizers of the effort. The letter of interest, governance agreement and outreach materials may be good sources of this background information.

- Scope of the Plan. This should include a description of the planning area and the scope of the planning effort. The section should describe significant water features, water users or interests, key drivers and significant features, and a map of the planning area showing major streams, roads, cities, political boundaries, watershed boundaries, and any other geographic features you want to highlight. This should also include the planning timeframe that was used. It can also include a description of elements of water planning that were determined to be outside the scope of the planning effort.

- Plan Development Process, Outreach, and Participants. This content area may include information from the governance agreement, organizational structure, decision-making process, the planning group's vision or mission, the governance agreement signatories and other participants in the planning process. Additionally, this portion of the Plan might describe outreach efforts taken to achieve a *balanced representation of interests* and the results of that outreach. It could include a description of how the group worked to ensure an *open and transparent public process that fosters meaningful public participation*. Information on this topic may be found in materials developed during Planning Step 1 and/or in a Communication and Outreach Plan. This section could also include a description of the process that was used for Final Plan adoption.

- Understanding Water Resources Quantity, Quality, and Ecological Issues. This topic was the focus of Planning Step 2. Summarize the key information from Planning Step 2, which may include a summary of the status of water quantity, water quality, and ecological issues and the results and conclusions from the analysis completed. This should be a high level summary of the findings. Additional technical information can be included as an appendix or a reference to a stand alone document such as the Planning Step 2 materials.

- Current and Future Water Needs and Vulnerabilities. This topic covers the planning work and the results from Planning Step 3. Summarize key information about the instream and out-of-stream water needs/demands and vulnerabilities associated with a changing climate. Methods used to develop current and future needs can be included as an appendix or a reference to a stand alone document such as the Planning Step 3 materials.

- Data Gaps Identified. Data gaps should be identified and the planning group may also consider including a description of how data gaps impacted various aspects of the planning. Data gaps may be considered as a type of critical water issue. Data gaps may need proposed solutions or recommended actions to address them. However, in some

cases identifying the data gaps, even without a proposed solution, will be important to inform others, such as state agencies, of the need.

- Critical Water Issues. By the end of Planning Step 3 or early in Step 4, the planning group identified a set of critical water issues. These critical water issues should be described as well as the information and method used to identify them as critical water issues. The Plan should be as specific about the scope and scale of the critical water issues as the supporting information will allow. It may also be beneficial to include goals and metrics that the group can use to determine when they have been successful at addressing a critical water issue.

- Solutions or Recommended Actions. The "solutions" (or "strategies") should be described and related specifically to how they will solve a critical water issue or fill a data gap. The Planning Step 4 guidance provided this definition of **solutions:** *"the strategies, practices, programs, projects, studies, management actions, and other efforts taken to address a critical water issue*." In the 2017 Statewide IWRS, solutions proposed for implementation are termed "recommended actions." It would be beneficial to also describe the decision support system or process used to evaluate, select, or prioritize recommended actions.

- Plan Implementation Strategy. This section should describe the strategy for implementing the Plan. To the extent possible, the implementation strategy should describe which recommended actions will have initial focus, what feasibility studies or funding is needed to implement various aspects of the Plan, and the timeline for Plan implementation. It should also address who will lead various aspects of Plan implementation and what resources are needed to keep the planning group coordinated during implementation. One approach could be an implementation team coordinated by a project manager, and semi-annual stakeholder meetings where interested parties are updated on progress, help draft funding proposals, visit project sites, or review other work products. Keeping the planning group or core team working together, to some extent, and supporting each other over a sustained timeframe will be critical to the success of Plan implementation.

Other Plan Development Considerations

In addition to the required contents above, there are other topics or issues the planning group might consider during Plan development:

- Document Length. There is no prescribed length for a Plan, however a Plan should not be a voluminous collection of documents previously developed during the planning process. *The Plan should be a summary of the key conclusions, findings, and*

recommendations from the planning process. The planning group will need to balance the need to include enough information to make a compelling case for Plan implementation, but not too much information that will lose the reader. If additional supporting information is needed, consider including it as an appendix or referring the reader to another document.

- Audience. A Plan often has many audiences such as water partners, the general public, potential funders, and decision-makers. The planning group might consider who its primary audiences are and structure the Plan organization and content to speak to those audiences. For instance, if a group intends to pursue funding from the Oregon Watershed Enhancement Board (OWEB), it could be worthwhile to include plan components that would make the group eligible for OWEB funds.

- Visuals. Visuals such as maps, figures, graphs, diagrams, and pictures can be powerful ways to communicate information and increase the visual appeal and readability of your Plan.

- Supporting materials. As mentioned previously, these Plans can have a lot of value. But that does not mean they are always the best tool for communicating key information from the Plan or planning process. Other materials such as brochures, videos, one-pagers, or story maps may be more effective at communicating some aspects of the Plan to different audiences. These are not required, but the planning group might consider how supporting materials would add value. These materials could be developed as part of the early stages of Plan implementation.

- Setting Plan up for success. The time, energy, and thought invested in the planning process along with all the items listed above will help set the Plan up for success. Other ways the planning group can set the Plan up for success include: 1) telling a clear and compelling story that can be understood by both the planning group and others who have not been involved in the planning process, 2) clearly identifying immediate next steps to facilitate the transition to plan implementation, and 3) being thoughtful about wrestling with tough or complex issues versus deferring them to a later date (it may be tempting to quickly write up a plan, but it may be worth spending extra time to work through potential barriers to successful implementation).

Partner Review of Draft Plan and Public Support

Though planning groups will take different approaches to involving partners or participants in drafting the Plan, it is important that participants have a meaningful way to contribute so they are well-informed and invested in the Plan's contents and can support the Plan. Some

participants may need time to review the Draft Plan several times through or have other people within their organizations review the Draft Plan. Some audiences will benefit from a presentation of the Draft Plan including time for discussion and/or review of the entire Draft Plan. Allow adequate time for review, but also have clear deadlines so the group can meet it's agreed-upon deadlines. Once the feedback is returned, the planning group can decide what changes are needed to address any concerns and improve the Draft Plan to gain broad support.

It is recommended that the group do a self-assessment using the criteria in Appendix B in the final stages of plan development. The group can use the self-assessment to determine if any modifications are needed before the Final Draft Plan is submitted for the state agency review.

Once the planning participants have reached consensus on the Final Draft Plan as defined by the governance agreement, a broader community outreach effort should be undertaken to inform the public at large, obtain their feedback, and gain their support. This should not be the first time the broader community hears about the planning effort. The group may consider doing a public review process concurrently with the state agency review.

State Agency Review of Final Draft Plan

The 2015 Draft Guidelines state that the Oregon Water Resources Department (OWRD) will conduct a state agency review of each Plan during the final stages of Plan development with the state IWRS Project Team Agencies: Oregon Department of Fish and Wildlife (ODFW), Oregon Department of Agriculture (ODA) and Oregon Department of Environmental Quality (DEQ). The state agency review team will include a combination of policy staff, who are generally based in agency headquarters, and regional field staff who may be more familiar with the planning group submitting the Final Draft Plan.

The primary purpose of the state agency review is to make a recommendation to the Commission as to whether a Plan was developed in a manner consistent with the 2015 Draft Guidelines and statewide IWRS principles and should be recognized by the Commission.

State Agency Review Participants

Different agencies will bring different areas of expertise to the review. Table 1 highlights the expertise and focus of the IWRS Project Team Agencies. In some cases, it may be helpful to consult other agencies with other areas of expertise. Table 2 provides a list of other potential reviewers that OWRD may consult or invite to participate in the review process as needed. If a planning group wants OWRD to invite any particular agency beyond the IWRS Project Team, then they should let their designated Planning Coordinator know so he/she can reach out to the other state agency and invite them to participate.

Table 1. IWRS partner agencies that will participate in the state agency review

Agency	Area of Water Expertise and Review Focus
Oregon Water Resources Department	Water quantity/supply, water availability, water rights, water use
Oregon Department of Environmental Quality	Water quality
Oregon Department of Fish and Wildlife	Ecology, instream water use and demands, water quality
Oregon Department of Agriculture	Agricultural water use and demands

Table 2. Additional reviewers that may be consulted in the state agency review

Agency	Area of Expertise and Review Focus
Oregon Health Authority	Public health and public water supply systems
Oregon Climate Change Research Institute	Climate change, vulnerabilities
Regional Solutions	Regional priorities, economic development
Oregon Watershed Enhancement Board	Watershed restoration
Oregon Department of Energy	Water and energy nexus
Department of Land Conservation and Development	Land use planning
Department of State Lands	Wetlands
Oregon State Marine Board	Boater recreation
Infrastructure Finance Authority	Infrastructure funding

State Agency Review Steps and Timeline

OWRD will coordinate the state agency review process which may require approximately 90 days from submission of a Final Draft Plan to OWRD to the results being communicated and discussed with the Convener(s) as shown in Table 3 below. OWRD will keep the conveners apprised of progress during the review process. If the planning group incorporates changes based on results of the state agency review, it may take OWRD another 30 days to review and verify the changes in consulation with the reviewers. The exact timeline of the state agency review will depend on staff workload and capacity at the time of the request, and the length of the Plan.

If desired, the planning group may want to deliver a presentation to the interagency review team about their planning process and plan. A presentation to the agencies should be considered and in the group's review process and schedule and should be communicated to agencies as early as possible. Requesting a presentation may increase the length of time required for the review, with an in-person meeting in the basin requiring more time to schedule than a conference call/webinar. State agencies will do their best to participate in such a presentation, but may not be able to attend depending on timing and resource availability.

Table 3. State Agency Review Steps and Timeline

State Agency Review Steps	Estimated Timeline
Final Draft Plan submitted to OWRD Planning Coordinator*	Day 1
State agencies complete their review using guidance criteria	Day 60
State agency review team meeting to discuss and develop recommendation	Day 70
Consolidated comments sent to Convener(s)	Day 80
Review team follow-up call or meeting with Convener(s)	Day 90
Opportunity for planning group to revise Final Draft Plan (if needed)	TBD

*Provide advanced notice if possible to assist in scheduling.

State Agency Review Criteria

The criteria developed to assist the state agency review team are included in Appendix B. The state agency review team will review the Plan using the criteria to answer questions divided into three major categories: plan development, plan content, and plan implementation. The questions and criteria were developed primarily to assess whether the Plan includes the required Plan contents and demonstrates it was developed in a manner consistent with the 2015 Draft Guidelines and statewide IWRS principles. These criteria will also help the reviewers check if the Final Draft Plan includes the information needed to have the value described above.

Although there are aspects of the state agency review that require an assessment of the technical work quality, the state agency review will not include a comprehensive review of all technical work performed during the planning process. Planning groups are responsible for assuring the quality and accuracy of technical work conducted during each planning step.

Outcomes of the State Agency Review Process

OWRD will manage the state agency review process and communicate the review results in writing to the convener(s) describing what, if any, changes or improvements the planning group must make to their Final Draft Plan before the state agency team can provide an affirmative recommendation to the Commission. OWRD will be judicious in requesting changes and will only request changes that are essential to ensuring the Final Plan is consistent with the 2015 Draft Guidelines and IWRS Principles. Consolidated review team feedback will be provided in two categories: 1) required changes needed for an affirmative review team recommendation to the Commission, and 2) suggested changes that may help improve the Plan.

The state agency review can add value to the Plan, especially if any actions will necessitate working with state agencies during implementation. State agency reviewers will be reviewing the Plan consistent with the criteria in Appendix B, but will also be looking for opportunities to

strengthen the Plan by proactively identifying potential barriers and challenges and ways they may be able to support implementation.

Agencies may provide other comments for consideration of the planning group as they finalize the Plan and transition to implementation. Agencies may consider writing a letter of support for the Plan, which could form part of the package of information presented to the Commission. Each agency is welcome to determine the intent and content of their support letter. Content can range from general support for the Plan to identification of specific support that the agency may be able to offer. Agencies may consider highlighting any funding or other opportunities they offer that possibly could support Plan implementation.

State agency review and Commission recognition does not:

- Legally bind the State to perform any activity;
- Obligate the State to provide financial assistance for any activity;
- Obligate the State to rely on or utilize any analysis performed in the planning process;
- Indicate all the Plan contents are technically accurate as technical accuracy is the responsibility of the planning groups; and
- Indicate that a proposed action has been approved or is being directly promoted by OWRD or other agencies.

Adoption of Final Plan by Planning Group

The planning group should formally adopt its Final Plan after the state agency review is complete, and the planning group has made any revisions required or recommended by the state agencies. The group should follow the decision-making process outlined in their governance agreement to formally adopt the Final Plan. Following adoption of the Final Plan, the Convener can make arrangements with the OWRD Planning Coordinator to present the Final Plan to the Commission for state-recognition at a regularly-scheduled Commission meeting.

Commission Recognition of Final Plan

This section describes the process of seeking state recognition and the role of the Commission in recognizing the Final Plan. It is not required that a Plan be recognized by the Commission and each planning group can decide whether it desires such state recognition. Commission meetings are held four times a year and it generally takes two months advanced notice to be placed on the agenda.

Steps for Commission Recognition

If a planning group would like the Commission to formally recognize the Final Plan, the process will follow these steps:

1. State agency review results in a recommendation that the Final Draft Plan be recognized;
2. Planning Group adopts a Final Plan;
3. Convener(s) work with Planning Coordinators to request time on a regular Commission agenda;
4. Public notification of the Final Plan on the Commission agenda;
5. Posting of Final Plan, staff report and PowerPoint on OWRD's website;
6. Convener(s) present Final Plan to the Commission;
7. Public comments to the Commission at the meeting; and
8. Commission discussion, motion and decision.

Factors in Commission Recognition

The Commission will make a decision after considering the following factors:

- The Convener(s) presentation of the Final Plan;
- The state agency review team recommendation;
- The Commissioners' review of the Final Plan;
- Letters of support from partners, state agencies and others[1]; and
- Public comments received prior to or during the Commission meeting.

State-recognized Plans will be memorialized by the Commission in a formal resolution signed by the Commissioners. The resolution will recognize that the Plan was developed following the 2015 Draft Guidelines and statewide IWRS principles and will recognize the value of the Plan and its implementation in helping to meet Oregon's instream and out-of-stream water needs.

Plan Updates and Subsequent State Recognition

It is up to the planning group to decide if, when, and/or how frequently it would like to revisit and/or revise their Plan. This could include a specific process or criteria for determining when the plan needs to be revised or updated. The planning groups may choose to periodically update the Commission on progress and accomplishments, needs, and Plan revisions as they implement their Plans. The planning group may consider seeking state recognition again when the Plan is substantially changed.

[1] Letters of support are great ways for planning partners and other to express support for a plan to the Commission. However, they are not required to receive state recognition.

Appendix A. Example Plan Template

Executive Summary

Introduction

- Planning Purpose
- Geographic Scope
- Plan Organization

Chapter 1: The Planning Process (Planning Step 1)

- Planning Participants
- Governance and Organizational Structure
- Public Outreach
- Collaborative, Open and Transparent Public Process

Chapter 2: Water Resources (Planning Step 2)

- Water Resource Supply
- Water Quality
- Ecological Issues
- Data Gaps

Chapter 3: Current Uses and Future Water Demands (Planning Step 3)

- Instream Demands
- Out of Stream Demands
- Data Gaps
- Natural Hazards and Climate Change

Chapter 4: Critical Water Issues and Recommended Actions (Planning Step 4)

- Critical Water Issues (including data gaps)
- Solutions Considered
- Recommended Actions

Chapter 5: Plan Implementation Strategy (Planning Step 5)

- Priority Actions
- Timeline
- Resource Needs
- Implementation Team
- Keeping the Public Engaged

Appendices: References, Acronyms, Acknowledgements, Signatory Page

Appendix B. State Agency Review Criteria

State Agency Review Criteria

The state agency review criteria are organized into three categories: plan development, plan content, and plan implementation. Each criterion includes one or more questions for the reviewers to address as well as examples of what indicators demonstrate that a Plan has met the criteria.

Plan Development

One of the key differences between place-based water planning and other forms of planning is the process by which a plan is developed. A place-based integrated water resources plan ("Plan") is developed through a five-step process that is locally-led and collaborative, voluntary and not regulatory, done in partnership with the state, and conducted through an open and transparent process (among additional planning principles). As such, the first component of the state agency review is to reflect on whether the plan was developed using a process consistent with the Guidelines and IWRS Guiding Principles. A Plan should describe how it was developed. That description should provide insights into whether the plan development criteria are satisfied. The review of Plan development is optional for all agency reviewers with the exception of OWRD. Input from other agencies is welcome, but not required.

Balanced Representation of Interests

Review Question: Did a balanced representation of interests participate in the development of the plan?

The first step of place-based water planning is to develop a collaborative and inclusive process that includes a balanced representation of interests to the best extent possible. This includes instream and out-of-stream interests from various levels of government, tribes, stakeholders, and private and non-profit sectors. Indication of a balanced representation of interests includes:

- Documentation of outreach to and active participation of representatives of all levels of government, private and non-profit sectors, tribes, stakeholders, and the public
- Process for engaging all interests in a fair and balanced manner
- Active participation from instream and out-of-stream interests
- Balanced attention given to instream and out-of-stream needs
- In the event some water sectors did not actively participate, then a description of efforts made to engage that sector should be provided

Indication that a planning process did not include a balanced representation of interests includes:

- Planning group membership is dominated by one sector or interest
- Either instream or out-of-stream needs were not identified by the plan or were significantly out of balance

- Recommended actions or solutions are focused on only one sector

Collaborative and Integrated Process

Review Question: Was a collaborative and integrative process used to develop the plan?

A Plan must be developed through a structure and process that fosters collaboration, bringing together various interests to work toward the common purpose of meeting the instream and out-of-stream water needs of the community, cultures, economy, and environment. Indication of a collaborative and integrated process includes:

- A structured decision-making process for reaching consensus
- A description of any conflict resolution efforts or processes used during plan development (i.e., how did the planning group work through conflicts or disagreements?)

Indication that the Plan was not developed through a collaborative or integrated process includes:

- Products or documentation developed by different sectors or interests that were not integrated together to form a shared understanding
- Decisions to adopt the plan or interim work products were not done in accordance with the planning groups' adopted governance agreement

Public Process

Review Question: Was the plan developed using an open and transparent public process that provided opportunities for meaningful public involvement?

Throughout the planning process, the planning groups should have provided the public with opportunities for meaningful engagement, where the public could affect the outcomes of the planning process. Reviewers should note if a public process was evident and documented within the submitted Plan. Indication of an open and transparent process includes:

- The make-up of the planning group participants – was the public invited to participate in meetings, planning discussions, and/or plan development?
- Public notices of meetings that demonstrate considerable effort to engage the public
- Opportunity for public comment or input into any reports produced by the planning process as well as opportunity for comment and input into the plan itself
- Were meetings accessible in both scheduled times and location

Indication that the Plan was not developed through a public process includes:

- Plan development occurred behind closed doors
- The public was not invited or was excluded from participation
- Minimal public meetings were held
- Public input was not sought at key steps in plan development

- Outreach efforts were not documented in the Plan

Plan Content

This section is largely documentation of work done during planning steps 2, 3 and 4.

Scope of Planning Effort

Review Question: Does the plan identify the scope of the planning effort?

A Plan must define the area or "place" to which it applies. Reviewers will look to see if the plan defines the geographic boundaries of the planning areas as well as the temporal scale. Indication of a defined scope includes:

- A map and description of the planning area including characteristics such as terrain, population centers, major roads, river systems, etc.
- A list of watersheds, sub-watersheds, and aquifers included in the planning area
- Inclusion of a planning timeframe/horizon (i.e., 20 years? 50 years?)

Indication of an undefined geographic scope:

- Lack of a map and any clear description of the planning area's geographic boundaries
- Inconsistent watersheds or aquifers described within the plan
- No consideration of a planning timeframe

Understanding Water Resources Supply, Quality, and Ecological Issues

Central Review Questions:

- *Does the plan document an understanding of the water resource supply, quality, and ecological issues in the planning area?*
- *Does the plan document this understanding for both groundwater and surface water?*

A Plan should include a high-level summary of the efforts made to describe and assess current water supplies, water quality, and the status of ecosystem health to determine any existing challenges and potential opportunities. Reviewers should comment on the completeness of work that resulted from this Step, including whether the group identified existing challenges and potential opportunities.

Indication of an understanding of water resource supply, quality, and ecological issues includes:

- A description of the current and expected future water supply in the planning area, including groundwater and surface water
- A description of the current and future water quality in the planning area, including groundwater and surface water
- A description of the current and future ecological issues in the planning area, including groundwater and surface water
- Identification of relevant gaps in data and information

Indication of a lack of understanding of the water resource supply, quality, and ecological issues includes:

- Exclusion of water supply, water quality, or ecological issues from the plan (note: in some cases the information needed is not available; acknowledging a data gap is an acceptable way to meet this plan requirement)
- Inclusion of raw data or information without any analysis or synthesis to draw conclusions about the status of water in the planning area and what challenges or opportunities the area has as a result of that status

Current and Future Water Needs

Review Question: Does the Plan document the current and future instream and out-of-stream water needs of the planning area?

The Plan should summarize how much water is needed to meet current and future water needs-both instream and out-of-stream. Plans should address how climate change, population growth, and land use affect water resources and the ability to meet these water needs within the community. Meeting water needs should be considered within the context of specific watersheds, accounting for the hydrological, geological, biological, climatic, socio-economic, cultural, legal, and political conditions of a community. Reviewers should comment on the completeness of work that resulted from this Step, including whether comparable effort and treatment was given to defining instream and out-of-stream needs. Indication that a Plan documents current and future water needs includes:

- A list of critical water issues in the planning area
- Identification of water needs relative to the planning timeframe
- Descriptions of current and future consumptive water needs for different out-of-stream uses, including municipal, industrial, and agricultural
- Descriptions of current and future instream needs for different uses, including fish and wildlife, ecological functions, water quality, recreation and scenic uses, and cultural significance
- Descriptions of how climate change, population growth, and land use affect water resources and the ability to meet these needs within the community
- Identification of times and locations where water needs are not met or are likely not to be met in the future
- Identification of data and information gaps and uncertainties

Indication that a plan did not sufficiently document current and future needs includes:

- Failure to document both instream and out-of-stream needs
- Failure to document future needs
- No description of coming pressures (e.g., climate change, population growth, etc.)

Compliance with State Law

Review Task: Identify any plan content that may not be in compliance with state law particular to your agency.

A Plan cannot change existing laws or jeopardize existing water rights. A group can identify that a solution requires that a law be changed; however, the plan does not carry the weight of law. Reviewers should note those proposed activities that may be perceived as changing laws or jeopardizing existing water rights. All solutions and approaches should be legal according to state and federal law and policies, though the review team only includes state agency representatives who may not have sufficient expertise to assess compliance with federal law. Any apparently illegal activities should be identified for the group. Indication that a plan complies with state laws and policies includes:

- Proposed solutions acknowledge authorities of existing agencies and mechanisms for pursuing permits or other regulatory approvals needed
- Identification of legal barriers that might interfere with a proposed solution

Proposing Statute, Rule, and/or Policy Changes in a Plan

It is not illegal to propose pursuing a change in law or policy. Oregon's laws have evolved over time and will continue to evolve. However, that does not mean that changing the law will be easy or successful.

For those reasons, the IWRS recommends pursuing solutions that have an established legal process whenever possible. However, planning groups can include recommendations to pursue changes in statute, rule, or policy. Please remember that a state agency recommendation to accept a Plan is not an agency endorsement of a proposed law change or proposed solution.

Indication that a Plan does not comply with state laws and policies includes identification of illegal solutions, or solutions where the state lacks the authority to facilitate or assist them without acknowledgment that a statute, rule, or policy change is required.

NOTE: The state agency review does not constitute a full legal review – actions not identified here may not have had enough detail associated in order to determine their legality.

Solutions or Recommended Actions

Review Questions:

- *Does the plan identify solutions or recommended actions that address the critical water issues identified during the planning process?*
- *Does the plan identify integrated solutions to the extent practical?*
- *Do the solutions identified adhere to the IWRS Guiding Principles listed in Appendix C?*
- *Does the plan include recommendations for addressing information/data gaps?*

Plans should include a suite of solutions or recommended actions to address the community's water-related challenges with the goal of meeting both instream and out-of-stream needs. Solutions can include methods for addressing existing data and analysis gaps. Table B.1 lists the sub-criteria for evaluating the plan's proposed solutions and recommended actions against the IWRS Guiding Principles.

Table B.1. IWRS Guiding Principles Relevant to Solutions or Recommended Actions

Principle	Positive Indicators	Indicators of plan deficiency
Integration	• To the extent possible, solutions work to address multiple needs • Solutions recognize the relationship between water quantity, water quality, and ecosystem needs	• There is no evidence of an attempt to integrate solutions, where practical
Balanced	• The suite of solutions listed work to address both instream and out-of-stream needs	• Solutions only address instream or out-of-stream needs (not both) or are disproportionally focused on one or the other
Enhance sustainability	• Solutions seek to improve sustainable management of water resources by balancing the needs of Oregon's environment, economy, and communities	• Solutions only address the needs of one group • Solutions are not forward looking; acknowledging climate change and population growth
Accountable and enforceable actions	• Actions comply with existing state laws and policies • Actions include measures of success	• Solutions are illegal* • If feasible, solutions include a description of how success may be measured
Science-based, flexible approaches	• Solutions are based on or supported by on best available science and local input	• Solutions do not accurately reflect or respond to best available science as documented in background information/best available science reflected in the supporting documentation
Streamlined	• To the extent possible, the plan avoids recommendations that are overly complicated, legalistic, or administrative	• The suite of solutions is mostly comprised of projects which are difficult to understand or seem infeasible
Reasonable cost	• Plans weigh the costs and benefits to determine whether one approach is better than another, or whether an approach is worth pursuing • Solutions may reduce the costs of delivering services to the state's residents, without neglecting social and environmental costs	• Solution prioritization does not consider estimated cost

Addresses In-stream and Out-of-Stream Needs

Review Question: Does the plan consider both instream and out-of-stream needs?

Planning groups should quantify current and future instream and out-of-stream water needs in the planning area, keeping in mind that such needs encompass water quantity, quality and ecosystem needs. While the instream and out-of-stream water needs may not be equal, consideration of water needs and solutions should be balanced. Indication that a Plan does give a balanced consideration of needs includes:

- Information about the water needs for the water sectors: agriculture, municipal, instream and ecology, and industry
- Engagement from multiple interests representing each water sector
- Solutions are considered and/or included for each water sector throughout the planning area

Indication that the Plan does not give balanced consideration includes:

- A plan focused primarily on one primary sector with little or no information about the water needs of other sectors
- Recommended actions or solutions are focused to primarily benefit one water sector

NOTE: It is possible that NO critical water issues were identified for a water sector in the planning area.

Validity of Information

Review Question: Is the Plan based on accurate, appropriate, and adequate information in the characterization of the water resources, identification of critical issues, and selection of solutions?

Decisions should be based on best available science, accurate information, and local input. Having a balanced representation of interests involved in the planning process and including the state as a partner will help ensure information presented in the Plan is reviewed, well-vetted, and verified. Critical water issues in the Plan should be substantiated by data or information in the plan. Recommended actions or solutions should correspond to the identified critical water issues. Indication of the validity of information includes:

- Citation of data sources
- A description of appropriate technical approaches used to analyze the data or information demonstrates the appropriation information, data, and analyses were used
- Inclusion of assumptions and description of appropriate use of technical information
- Inclusion of data gaps and how the gaps affect planning
- Critical issues and solutions identified in the plan are supported by appropriate data and information

Indication that the Plan is not based on accurate, appropriate, and adequate information includes:

- Invalid information may be outdated
- Data inappropriate for the purpose described, of the wrong scale or precision
- Conflicting data and information in the plan
- Critical issues or recommended actions are not supported by the appropriate data or information

Comprehensive assessments of the technical information used in the Plan do not fall under the scope of the state agency review.

Plan Adoption and Implementation

Planning Step 5 of Place-based water planning is to "Adopt and implement a place-based integrated water resources plan." Plan adoption by the planning group is not the end of the process, but signals a shift to a new phase: plan implementation. This review category seeks to discern whether the Plan looks ahead towards implementation and is set up for success. While the success of Plan implementation is dependent on a number of factors, (many outside of the planning group's control) the state agency review will help discern whether the Plan is well-positioned for implementation, to the extent feasible.

Plan Adoption by Planning Group

Review Question: Does the planning group have a sound process for Final Plan adoption?

If plan adoption by the planning group is rushed or does not follow a good process, then the value of the Plan may be reduced in the eyes of partners or funders. This could negatively impact future Plan implementation. The state agency review of the Plan happens shortly before Final Plan adoption. This allows for the planning group to consider and incorporate feedback from the state agency review prior to planning partner adoption of the Final Plan. Reviewers should determine if the group has a sound approach for formally adopting the Plan that is consistent with the collaborative process adopted by the planning group. Indication of a sound approach for Final Plan adoption:

- An explanation of the process the planning group will use to adopt or approve the Final Plan
- A reliance on the consensus-based decision making process identified by the planning group and documented in their governance agreement
- Indication that the approach for plan adoption was clearly communicated to planning group partners

Indication of a poor adoption approach includes:

- No opportunity for planning group partners to express concern or provide critical feedback on the Plan
- Inadequate time for partners to review the Plan

- Disregard for decision-making approaches previously adopted by the planning group (e.g., switching from a consensus or consensus minus 1 approach to simple voting majority)

Plan Implementation Strategy

Review Question: Does the Plan propose a clear strategy for implementation?

The Plan should describe how it will be implemented, who will be responsible for implementation, and how implementation will be coordinated and funded. The Plan should have a high likelihood of leading to the implementation of local solutions.

Indication of a strategy for implementation includes:

- Identification of next steps for some or all of the solutions or recommended actions listed in the Plan, including those that are complex and may require additional feasibility or review
- Identification of roles in plan implementation, including who might pursue different solutions or efforts to fill information gaps
- Identification of barriers to solutions or plan implementation and a path forward for addressing those barriers
- Prioritization of proposed solutions and proposed sequence of implementation
- Timelines for plan implementation
- The plan is formatted in a way that allows for easy use in seeking support and funds
- The plan explains how partners and others may use the plan (or alternatively how it should not be used)
- Identification of a timeline for plan revision or amendment

Indication that a Plan does not include an implementation strategy includes:

- Vague, unclear, or no next steps described
- No explanation of who is responsible for plan implementation (note: a general statement that partners or planning group members will individually implement pieces is acceptable, but some level of coordination and communication about progress and success should be evident)
- No acknowledgement of a change in roles and responsibilities as the Plan moves from planning to implementation

Agency Review Worksheet

Instructions: Read through the submitted Plan and review it considering the questions about plan development, content, and implementation below. Check whether the Plan meets these criteria or does not meet the criteria. Include comments about how the Plan did or did not meet the criteria. Please be thoughtful and constructive in your feedback.

Plan Development (Optional for other than OWRD)

Category	Review Question	Yes	No
Balanced Representation of Interests	Did a balanced representation of interests participate in the development of the plan?		
Collaborative and Integrated Process	Was a collaborative and integrated process used to develop the plan?		
Public Process	Was the plan developed using an open and transparent public process that fostered public participation?		
OWRD Consultation	Was the plan developed in consultation with OWRD?		

Reviewer Comments on Plan Content

Plan Content

Category	Review Question	Yes	No
Scope of Planning Effort	Does the Plan identify the scope of the planning effort, including geographic area?		
Understanding Water Resource Supply, Quality, & Ecological Issues	Does the Plan document an understanding of the water resource supply, quality, and ecological issues in the planning area?		
	Does the Plan document this understanding for both groundwater and surface water?		
Current and Future Water Needs	Does the Plan document the current and future instream and out-of-stream water needs of the planning area?		
Solutions or Recommended Actions	Does the Plan identify solutions or recommended actions that respond to or address the critical water issues identified during the planning process?		
	Does the Plan identify integrated solutions to the extent practical?		
	Do the solutions identified adhere to the IWRS Guiding Principles?		
Addresses In-stream and Out-of-Stream Needs	Does the Plan consider current and future instream and out-of-stream needs in a balanced manner?		

Validity of Information	Is the Plan based on accurate, appropriate, and adequate information in the characterization of the water resources, identification of critical issues, and selection of solutions?		
Information and data gaps	Does the Plan clearly identify information and data gaps?		

Reviewer Comments on Plan Content (including compliance with State law)

Plan Adoption and Implementation Strategy

Category	**Review Question**	**Yes**	**No**
Plan Adoption by Planning Group	Does the planning group have a sound process for final review and adoption of the Final Plan?		
Implementation Strategy	Does the Plan propose a strategy or approach for implementation?		

Reviewer Comments on Plan Content

Template for Communicating Inter-Agency Review Results

Below are two draft templates for letters OWRD may use to communicate the results of the state agency review to the planning group. OWRD and its partner agencies may amend this template and tailor any letter to the specific plan being reviewed. These templates are provided to provide some information as to what a planning group can expect to receive as a result of the state agency review.

Letter Template for Recommended Plan

Dear [Insert Convener(s)] and members of [insert planning group name],

Thank you for your submission of the Final Draft of your Place-Based Integrated Water Resources Plan for the [insert planning area]. The Integrated Water Resources Strategy (IWRS) Agency Project Team (the Oregon Water Resources Department, Oregon Department of Agriculture, Oregon Department of Environmental Quality, and Oregon Department of Fish and Wildlife) reviewed your plan and determined that it adheres to the 2015 Draft Place-based water planning Guidelines and IWRS Guiding Principles. Therefore, the agencies recommend the Oregon Water Resources Commission (Commission) recognize your plan as Place-Based Integrated Water Resources Plan.

In addition to their recommendation that the Commission recognize your plan, the agencies offer the following feedback for your consideration.

Recommended Revisions
[The letter may include recommended changes to the plan that would strengthen or improve the plan, but are not required for recognition by the Commission.]

Strengths of the Plan
[The letter may also include a summary of the plan strengths.]

Other Agency Comments
[The letter may also provide other comments related to plan development, content, or implementation. For example, it may identify shared goals of the plan and an agency.]

We commend your hard work in developing an Integrated Water Resource Plan and we look forward to working with you to coordinate a presentation of your plan to the Commission who will decide whether to formally recognize your plan. Please contact [insert contact person] at [insert contact information] to discuss the Commission schedule and when you might be to present your plan to the Commission.

Sincerely,

[insert name]
Planning Coordinator, Oregon Water Resources Department

Letter Template for Plan That Is Not Recommended

Dear [Insert Convener(s)] and members of [insert planning group name],

Thank you for your submission of the Final Draft of your Place-Based Integrated Water Resources Plan for the [insert planning area]. The Integrated Water Resources Strategy (IWRS) Agency Project Team (the Oregon Water Resources Department, Oregon Department of Agriculture, Oregon Department of Environmental Quality, and Oregon Department of Fish and Wildlife) reviewed your plan and determined that it currently does not adhere to the 2015 Draft Place-based water planning Guidelines (Guidelines) and/or IWRS Guiding Principles. Therefore, the agencies recommend that you continue to work through your planning process to address the items listed below. In addition to those changes that are required, the agencies provided other feedback, including recommended changes as well as strengths of the Plan.

Required Changes to Demonstrate Adherence to Guidelines and IWRS Guiding Principles
[The letter will describe why they found that the plan did not adhere to the Guidelines or IWRS Guiding Principles and offer suggestions for how the planning group might address the issue.]

Recommended Revisions
[The letter may include recommended changes to the plan that would strengthen or improve the plan, but are not required for recognition by the Commission.]

Strengths of the Plan
[The letter may also include a summary of the plan strengths.]

Other Agency Comments
[The letter may also provide other comments related to plan development, content, or implementation. For example, it may identify shared goals of a plan and an agency.]

If you have any questions about this feedback, please contact me at [insert contact information]. Place-based water planning is done in partnership with the State and we would like to work with you to address these items so that a revised plan can be recommended to the Oregon Water Resources Commission (Commission) for recognition as a Place-Based Integrated Water Resources Plan. We commend your hard work to develop an Integrated Water Resources Plan and look forward to working with you to revise your plan so that it adheres to the 2015 Draft Place-based water planning Guidelines and IWRS Guiding Principles.

Sincerely,

[insert name]
Planning Coordinator, Oregon Water Resources Department

Appendix C. Links to Relevant Funding Programs (Forthcoming)

UPPER GRANDE RONDE RIVER WATERSHED PARTNERSHIP

UNION COUNTY, OREGON

PLACE-BASED INTEGRATED WATER RESOURCES PLAN

January 2022

This project is funded through the Oregon Water Resources Department
Place-Based Integrated Water Resources Planning Grant

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FIGURES

EXHIBITS

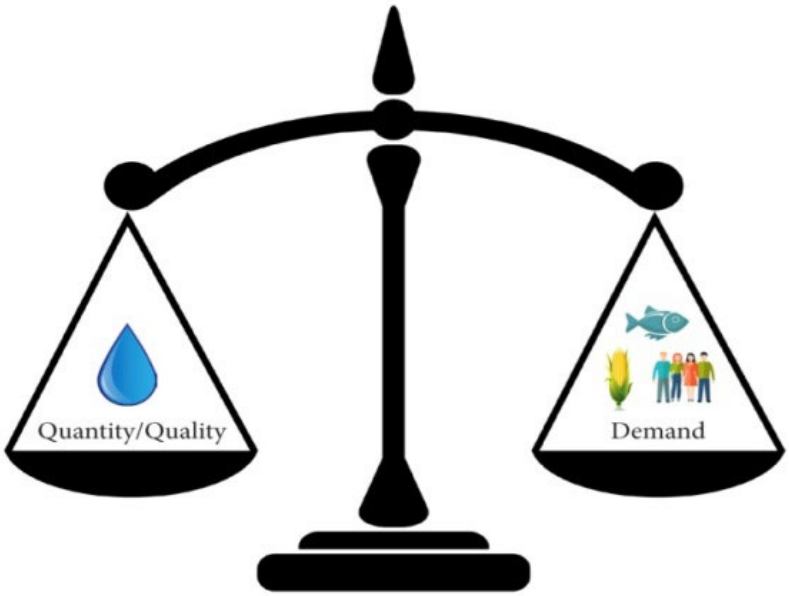
APPENDICES

Suggested Citation: Upper Grande Ronde River Watershed Partnership. 2022. Place-Based Integrated Water Resources Plan. Union County, Oregon, USA.

Partnership Approval Date: The Upper Grande Ronde River Watershed (UGRRW) Partnership supports the conclusions and recommended strategies contained in this Place-Based Integrated Water Resources Plan as determined by a vote of the UGRRW Partnership on April 20, 2021, to support the Draft Plan and January 5, 2022, to support the Final Plan.

Final Approval Process: The UGRRW Partnership approved the Draft Plan on April 20, 2021. It was submitted for agency (Oregon Water Resources Department, Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, Oregon Department of Agriculture) review. Agency comments were addressed and approved by the UGRRW Partnership and agency review team on January 5, 2022. The Final Plan will be submitted to the Oregon Water Resources Commission for formal recognition.

Acknowledgements: The UGRRW Partnership would like to acknowledge the contributions of all members of the Steering Committee, Stakeholder Committee, and Interested Public (names and organizations listed in Section 1 - The Planning Process [Planning Step 1], below) for their contributions to Steps 1 through 5 of this planning process.



Executive Summary

Introduction

The Upper Grande Ronde River Watershed (UGRRW) is located in Union County, Oregon. Within the UGRRW, agriculture thrives because of fertile valley soils, irrigation, and innovation. Endangered Species Act-listed fish species including bull trout, Chinook salmon, and steelhead find refuge to spawn and rear in the headwaters of tributaries to the Grande Ronde River and Catherine Creek. Eight cities provide homes to nearly 25,000 people within the County. Surface water and groundwater are essential to the continued success of the UGRRW. Water within the UGRRW is limited in the late summer and fall, with estimated deficits increasing into the future. To address these concerns, Union County convened a diverse partnership composed of farmers, ranchers, fish and wildlife advocates, tribes, municipal representatives, and federal and state agencies to develop a place-based integrated water resources plan consistent with the State of Oregon's guidelines. This plan helps implement the State of Oregon's Integrated Water Resources Strategy and related policies. See Figures ES-1, ES-2, and ES-3 for County location, UGRRW location, and the project timeline. Under Oregon law, all water belongs to the public and is managed in accordance with many state and federal laws and policies. This planning effort will help understand and meet the water needs of our communities, economy, and environment consistent with existing law and policy and will not jeopardize any existing rights to use water.

Figure ES-1
Location of Union County and Upper Grande Ronde River Watershed

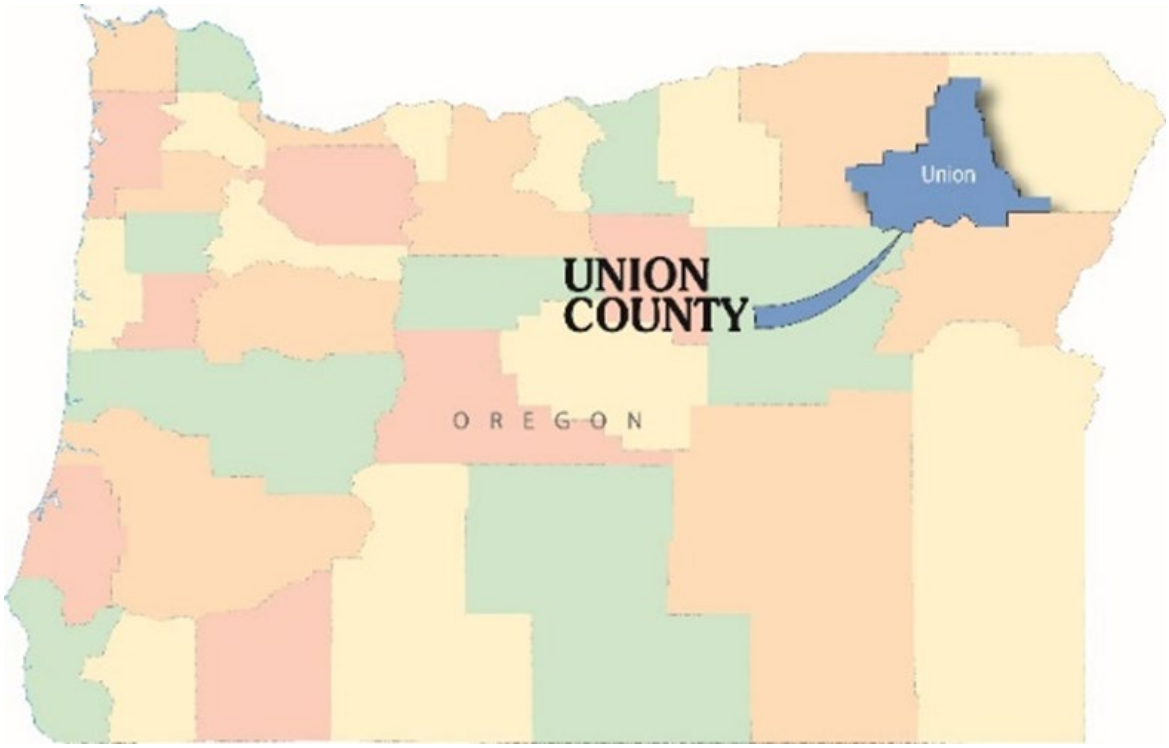


Figure ES-2
Location of Upper Grande Ronde River Watershed

Section 1.0: The Planning Process

Twenty-eight groups and individuals signed a Memorandum of Understanding (MOU) included in the Governance Agreement. The UGRRW Partnership has met approximately monthly (2,500 volunteer hours) over the last six years (2016 to 2021) to make collaborative, consensus-based reports and decisions to characterize the water supply in the UGRRW (Figure ES-3). Important outcomes of this work include estimates of water demand for instream and out-of-stream needs, improved understanding of

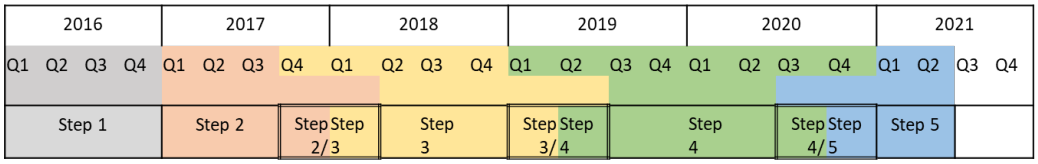
water resources issues and challenges, development of strategies, and completion of this Place-Based Integrated Water Resources Plan in accordance with the Oregon Water Resources Department's (OWRD) Planning Guidelines (OWRD, 2015; UGRRW, 2017). The UGRRW Partnership worked to have a balanced representation of interests while working through this process. Municipal representation included three of the eight cities in the UGRRW, which represented more than 50 percent of the population of Union County. Agricultural representation included the Union County Farm Bureau, Union County Cattleman's Association, and multiple individual farmers and ranchers. Instream representation included the Grande Ronde Model Watershed (GRMW), Confederated Tribes of the Umatilla Indian Reservation (CTUIR), and Oregon Department of Fish and Wildlife (ODFW). Each interest group had a representative on the Steering Committee to ensure all interests were represented. Strategies developed were targeted to meet the needs of all user groups (see Appendix A, Implementation Schedule, for details). All votes were unanimous. Table ES-1 below summarizes UGRRW Partnership participation by MOU signatory type. Appendix B, UGRRW Partnership Participation (2016-2021), lists participants by organization, name, sector, signatory status, number of meetings attended, additional responsibilities, primary interests, reasons for reduced participation, if any, and eligibility to vote on the Step 5 Plan. It is ordered by number of meetings attended.

Table ES-1
Upper Grande Ronde River Watershed Partnership Participation (2016-2021)

Category from Planning Guidelines	MOU Signatories	Instream	Out-of-Stream	Government/ Other	Voted for Plan Adoption
Local governments and elected officials	Union County			X	X
Tribal governments	CTUIR	X		X	
Municipal water and wastewater utilities	City of La Grande, City of Imbler		X		X
Major industries or employers	Agriculture and government (major employers in the County)				
Agriculture (see also private landowners below)	Union County Farm Bureau		X		X
Forestry	U.S. Forest Service (USFS)				Non-voting
Conservation/environmental groups	GRMW	X			X
Power companies	Oregon Trail Electric Cooperative				
Private landowners (many of whom are also self-supplied water users and small business owners)	Eight individual landowners		X		X
Special districts	Union County Soil and Water Conservation District	X	X	X	X
State agencies	ODFW	X		X	X
	OWRD	X	X	X	X

Category from Planning Guidelines	MOU Signatories	Instream	Out-of-Stream	Government/ Other	Voted for Plan Adoption
	Oregon Department of Agriculture		X	X	X
Federal agencies	USFS, Natural Resources Conservation Service			X	Non-voting

Figure ES-3
Upper Grande Ronde River Watershed Partnership Place-Based Planning Timeline



Notes:

Q = Quarter

Step 1 (approved October 2016); Step 2 (approved February 2018); Step 3 (approved April 2019); Step 4 (approved December 2020); Step 5 (approved April 2021) - Begin Implementation

The following reports were generated as a result of this process. Reports were generated by working together as a partnership to draft and revise documents until they could be approved by a consensus vote. All reports voted on and received 100 percent consensus.

- Step 1 - Governance Agreement and Memorandum of Understanding
- Step 2 - State of Water Resources Report
- Step 3 - Needs and Demands Report
- Step 4 - Integrated Strategies Report
- Step 5 - Integrated Water Resources Plan

All reports can be accessed at https://union-county.org/planning/place-based-integrated-water-resources-planning/.

Section 2.0: Water Resources

The UGRRW is a unique ecosystem home to numerous species that serve different roles in maintaining ecological health.

Focal terrestrial species include Rocky Mountain elk (*Cervus elaphus nelsoni*), Rocky Mountain bighorn sheep (*Ovis canadensis*), American beaver (*Castor canadensis*), American marten (*Martes americana*), great blue heron (*Ardea herodias*), bald eagle (*Haliaeetus leucocephalus*), white-headed woodpecker (*Picoides albolarvatus*), olive-sided flycatcher (*Contopus cooperi*), yellow warbler (*Dendroica petechia*),

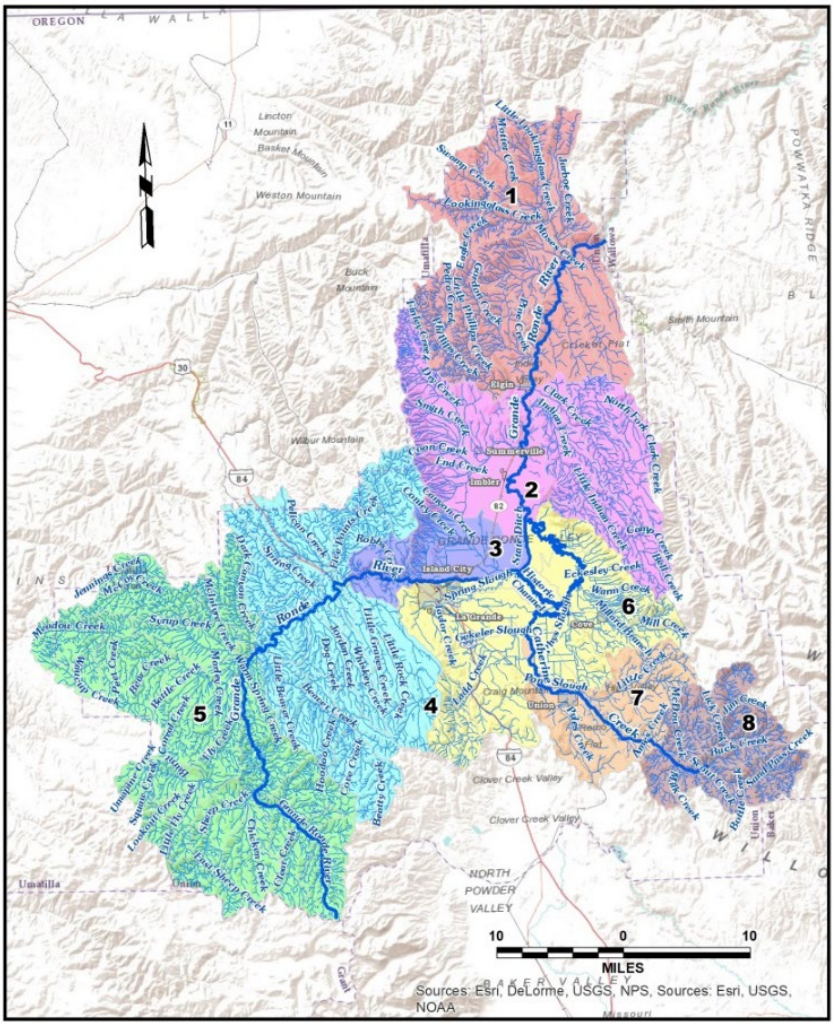
sage sparrow (*Amphispiza belli*), western meadowlark (*Sturnella neglecta*), and Columbia spotted frog (*Rana luteiventris*) (Northwest Power and Conservation Council [NPCC], 2004).

Focal aquatic species include summer steelhead/redband trout (*Oncorhynchus mykiss*), spring Chinook salmon (*Oncorhynchus tshawytscha*), and bull trout (*Salvelinus confluentus*). Prior to the installation of dams in the area, coho salmon (*Oncorhynchus kisutch*) were also common (NPCC, 2004).

Federally endangered species in the UGRRW are monitored through recovery plans, and many restoration projects are ongoing to provide additional resources to these vulnerable species, many of which are aquatic, including steelhead, Chinook, and bull trout. State-listed species are also monitored and have protections in place to support population recovery.

For planning, the UGRRW is divided into eight subwatersheds (through combining Water Availability Basins [WABs] based on geographic characteristics and local knowledge; see the Step 2 report for details), as shown on Figure ES-4.

Figure ES-4
Subwatersheds of the Upper Grande Ronde River Watershed



Surface water quantity was calculated for each subwatershed using estimated natural streamflow from the OWRD Water Availability Reporting System (WARS) model; surface water quality was estimated using the DEQ 303(d) listings and total maximum daily limit data. Groundwater quantity was estimated using groundwater rights from OWRD's Water Rights Information Services database; groundwater quality was estimated using the DEQ Environmental Cleanup Site Information database information and sensitive aquifer information.

Section 3.0: Current and Future Demands

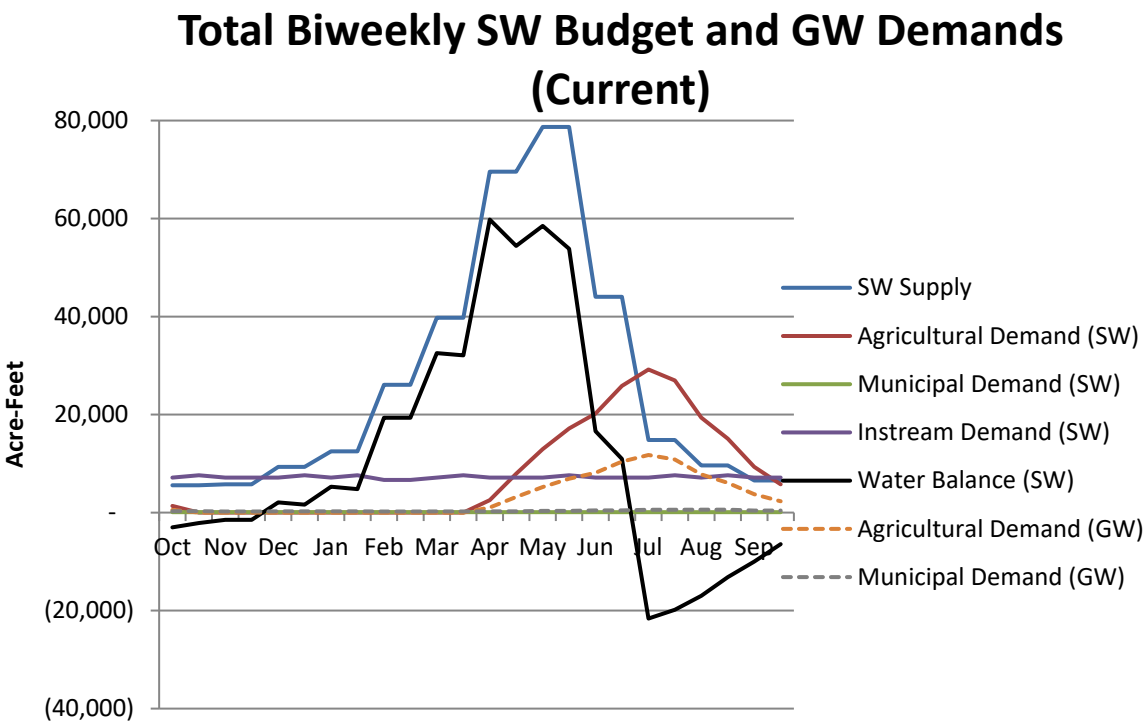
Current and future demands for surface water were calculated for agricultural use, instream use, and municipal use on a bi-weekly basis. Current and future estimates of demand for groundwater were also computed for agricultural and municipal use on a bi-weekly basis; however, without a quantifiable supply and understanding of the groundwater system, the groundwater budget could not be computed. Current agricultural use was calculated using water rights, irrigation data, and evapotranspiration data. Current municipal use was calculated using OWRD water use reports. Current instream use was calculated only using water rights. Instream demands are likely underestimated since instream water rights, the only quantified instream demands in the UGRRW, are an incomplete approximation of demand, cover only a portion of all the streams in the UGRRW, and do not account for the full range of flows across seasons. Future supply was estimated to the year 2068 using the Representative Concentration Pathway 8.5 climate model to estimate the most severe conditions associated with increasing temperatures. These data also informed future irrigation demand. Future municipal demands were estimated using an increase in population. No estimates of future instream demands were computed because these demands were solely based on instream water rights. This does not mean that there is no anticipated change to future instream demand, only that the UGRRW Partnership is currently unable to calculate it.

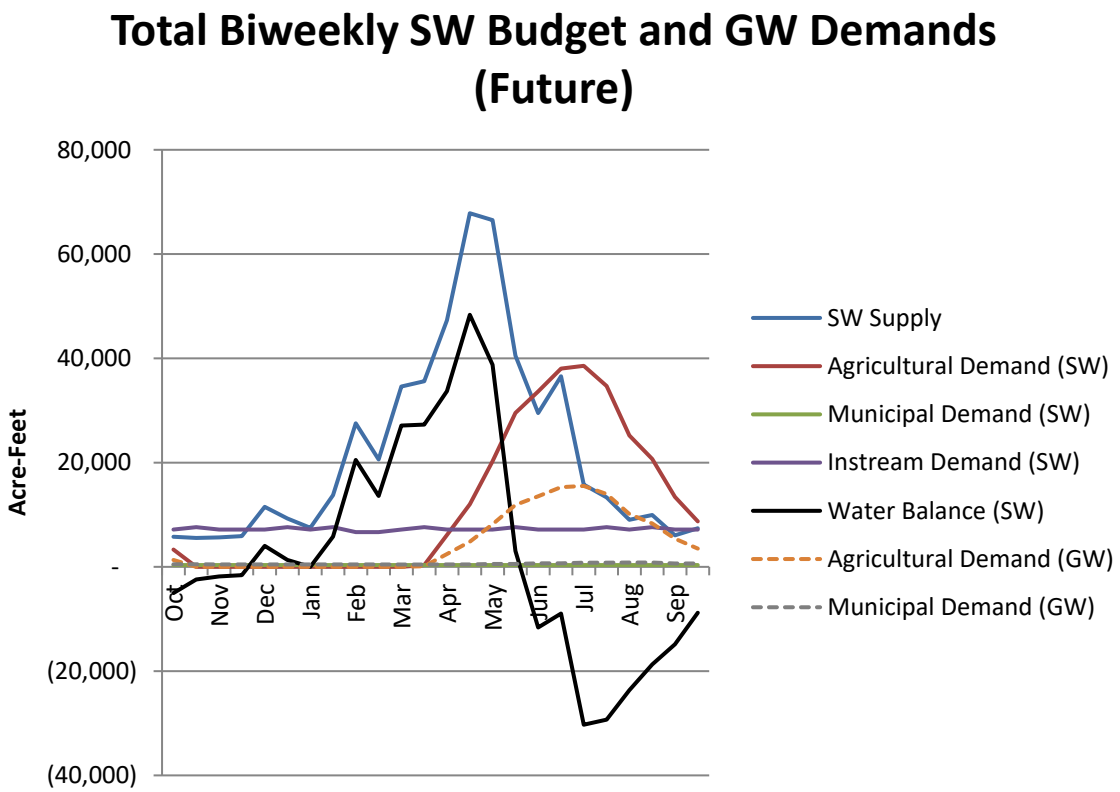
Generally, high agricultural use areas have the greatest potential for surface water demand conflicts with other uses of water because agricultural use is the highest percentage of consumptive water use in the UGRRW. Based on analysis in Step 3, groundwater demand may not have high conflict potential if pumping rates are held constant; however, there is significant uncertainty in groundwater supply data and interactions between groundwater and surface water, which are likely connected. Stream segments with instream water rights have known flow target needs, but since instream water rights are often junior in priority to most other water rights, regulation to satisfy instream rights in dry periods is ineffective at protecting instream needs for fish and wildlife. Additionally, Scenic Waterway (SWW) flows downstream of the planning area prevent the allocation of hydraulically connected groundwater during several months of the year unless mitigation is provided, increasing potential conflict as demands from all sectors increase. Municipal systems appear to have the lowest vulnerabilities of the three demand groups based on water use reporting data showing that needs are met and demands are relatively small.

On an annual basis, there is sufficient surface water quantity to meet current surface water demands as currently characterized. On a bi-weekly basis there are deficits from July through November (the maximum is an approximately 20,000 AF deficit in late July). Groundwater demands are included here, though note that since groundwater supply is not yet well-understood, no water budget calculation was completed for groundwater. See Figure ES-5 below for the total biweekly surface water budget and groundwater demands (current and future).

Water needs for recreational water uses, hydroelectric power, and groundwater-dependent ecosystems (such as springs) were not formally assessed in the current version of this Step 5 Plan. Natural hazards like flooding, fire, and drought impact the UGRRW frequently; these impacts were not quantitatively assessed in this version of the Step 5 Plan.

Figure ES-5
Total Biweekly Surface Water (SW) Budget Summary and Groundwater (GW) Demands





UGRRW water quality concerns include temperature, bacteria, sedimentation, dissolved oxygen (DO), and pH. Temperature impairments are the most widespread. Surface water quality falls below statewide regulatory standards throughout different times of the year in the UGRRW; total maximum daily loads have been established for temperature and bacteria, with the main 303(d) listed concerns being high temperatures and low DO, which are associated with seasonal low flows, as well as sedimentation and pH (UGRRW, 2019).

Table ES-1, Subwatershed Summary, shows that generally, subwatersheds in the northern and central portions of the UGRRW (subwatersheds 1 through 6) have more surface water quality limits than ones in the southern portion of the UGRRW (the Catherine Creek area and subwatersheds 7 and 8). Groundwater use is highest in subwatersheds 2, 3, and 6 reflecting primarily agricultural demand and some municipal demand. Additional details about estimated subwatershed acreage, land use, stream flow, precipitation and evapotranspiration are included for reference. See Figure ES-4 above for subwatershed locations.

Table ES-2
Subwatershed Water Supply Summary

Subwatershed	Total Acres	Land Use	Municipal Water Use	Estimated Surface Water Quantity (Natural Streamflow) (acre-feet per year)	Estimated Mean Annual Precipitation (inches)	Estimated Mean Annual Evapotranspiration (inches)	Surface Water Quality	Groundwater Quantity	Groundwater Quality
1	169,000	Predominantly Forested, Rural Municipal (40 percent public land)	Elgin	644,600	33	19	Impaired for seven beneficial uses	Low to no use	Low risk
2	149,800	Half Forested/Half Agriculture (23 percent public land)	Imbler, Summerville	523,380	29	18	Impaired for seven beneficial uses	Second highest use	Medium risk
3	41,000	Predominantly Agriculture (12 percent public land)	Island City	234,120	19	17	Impaired for six beneficial uses	Third highest use	High risk
4	178,050	Predominantly Forested (56 percent public land)	No cities; limited out-of-stream water use, significant instream use	219,830	27	16	Impaired for five beneficial uses	Low use	Low risk
5	249,740	Predominantly Forested (74 percent public land)	No cities; limited out-of-stream water use, significant instream use	127,840	28	16	Impaired for five beneficial uses	Low to no use	Low risk
6	142,260	Predominantly Agriculture (10 percent public land)	La Grande, Cove	153,740	22	18	Impaired for six beneficial uses	Highest use	High risk
7	55,500	Half Forested/ Half Agriculture (9 percent public land)	Union; limited out-of-stream water use, significant instream use	116,240	27	14	Impaired for six beneficial uses	Fourth highest use	Medium risk
8	61,820	Predominantly Forested (82 percent public land)	No cities; limited out-of-stream water use, significant instream use	71,600	41	16	Impaired for one beneficial use	Low to no use	Low risk

Groundwater quality risk ranked as a comparative risk between the subwatersheds.
Groundwater quantity use based on number of water rights per subwatershed.
Surface water quantity is the sum of the biweekly 50 percent exceedance calculation in acre-feet (AF) per year from the OWRD Water Availability Reporting System (UGRRW Partnership, 2018).
Flows are cumulative (additive).

Section 4.0: Water Issues and Recommended Actions

Overall, there are four primary water issues:

1. Surface water supply is limited in summer through late fall (circa July through November) when the combined demands for water instream and for irrigated agriculture and municipal uses is the highest (Step 3 report).
2. There is significant uncertainty with groundwater supply. The UGRRW Partnership needs to evaluate groundwater supply sustainability to inform strategic groundwater resource planning. At this time, the UGRRW lacks sufficient groundwater monitoring wells, long-term trend data, pumping/use data, and data regarding surface water interactions -- all are needed to inform strategic groundwater resource planning and management (Step 3 report).
3. Surface water quality is below statewide standards in all eight subwatersheds at various times of the year. The water quality issues are predominantly related to high temperatures, low DO, sedimentation, pH, and insufficient flows (DEQ, 2000; Step 2 report).
4. Natural hazards like flooding, fire, and drought impact the UGRRW frequently, and the UGRRW Partnership needs a plan to mitigate and respond to these events. The climate change scenario considered by the UGRRW Partnership suggests the frequency, magnitude, and duration of these events could change within the UGRRW (Step 2 report and Step 3 report).

To improve these four issues the following goals and objectives are proposed:

**Goals 1 and 2 objectives to be pursued simultaneously.*

1. **Issue/Goal 1 - Eliminate surface water deficit for instream and out-of-stream uses**
   - Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040)
   - Objective 1.2 - Fill data gaps (instream flow now; complete by 2040)
2. **Issue/Goal 2 - Improve water quality**
   - Objective 2.1 - Reduce each water quality issue (by 2040)
   - Objective 2.2 - Fill data gaps (by 2040)
3. **Issue/Goal 3 - Reduce groundwater supply uncertainty**
   - Objective 3.1 - Complete a groundwater study (by 2035)
   - Objective 3.2 - Develop and implement plan based on study results
4. **Issue/Goal 4 – Prepare for natural hazards/climate change**
   - Objective 4.1 - Develop natural hazards mitigation plan (by 2030)
   - Objective 4.2 - Implement mitigation measures identified in plan (by 2040)
   - Objective 4.3 - Create an adaptive management protocol to apply new climate change data to goals (by 2030)

The UGRRW Partnership brainstormed more than 100 specific strategies to address these issues, goals, and objectives and combined the strategies into nine categories. The UGRRW Partnership created

strategy summaries and decided to prioritize UGRRW Partnership resources and focus on the top five strategies (see Table ES-2 below) while retaining other strategies for opportunistic implementation (UGRRW, 2020).

Section 5.0: Plan Implementation Strategy

Strategy working groups created action plans for the nine strategy categories. Table ES-2 summarizes the nine strategy categories including the strategy name, primary beneficiaries (agriculture, instream, or municipal) and implementation lead, a brief description, purpose, and selected milestones.

Table ES-3
Strategy Summary

No.	Strategy (Implementation Lead) [Primary Beneficiaries]	Description/Purpose	Selected Milestones
1	Built Storage - Aboveground Storage and Underground Storage (Union County) [Agriculture, Instream]	Address specific instream and out-of-stream water supply deficits in each subwatershed through advancing possible built storage projects.	• Conduct aboveground storage and instream flow study (applied for state funds). • Develop next steps for Catherine Creek underground storage (to benefit instream flows).
2	Land Management - Agricultural Land (Natural Resources Conservation Service) [Agriculture, Instream]	Conduct research and provide subsequent educational outreach to support water management actions that maintain water quality and increase water use efficiency.	• Convene a pilot group of landowners for on-farm conservation activities. • Create a shared resources list. • Strategize funding for irrigation water management projects.
3	Data Collection, Monitoring, and Research (GRMW) [Agriculture, Instream]	Coordinate data collection to fill data gaps, support working groups, and inform water management in the UGRRW.	• Prioritize data gaps. • Study Groundwater. • Study water quality. • Update assessment of instream flow needs.
4	Non-structural Water Storage and Habitat Management (Union Soil and Water Conservation District) [Instream]	Raise awareness of work being done and how this work addresses goals of the Partnership; prioritize and pursue nonstructural storage projects in strategic locations.	• Plan field tour. • Prioritize areas and projects (using the Ecological Atlas geomorphic potential information [GRMW, 2021]).
5	Land Management - Public Land (USFS) [Instream]	Information sharing and communication between public land management agencies and stakeholders to identify potential areas of mutual support.	• Update Partnership on USFS projects. • Plan field tours.
6	Infrastructure - Land Modification (Union County) [Municipal, Agriculture, Instream]	Reduce the frequency and severity of damage due to flooding now and in the future.	• Review U.S. Bureau of Reclamation hydraulics study. • Study sedimentation. • Hold ditch-opening meeting. • Draft hazards mitigation plan.
7	Administrative Actions (CTUIR) [Instream]	Increase awareness of how administrative actions can improve water quality and quantity.	• Create outreach material for landowners and legislators. • Survey interest in administrative actions.
8	Land Management - Municipal Land (City of La Grande) [Municipal]	Improve city-to-city coordination to respond to natural hazards, increase water conservation, and support water infrastructure efficiency improvements.	• Develop shared resources agreement. • Update/develop hazard mitigation plans.
9	Outreach and Education (Union County) [Municipal]	Inform the public about water quality issues and UGRRW Partnership activities.	• Distribute water quality and lawn care outreach materials. • Complete digital storytelling project. • Update outreach plan.

This Step 5 Plan represents the conclusion of the OWRD five-step planning process. It also provides the roadmap for the implementation phase. The implementation phase will consist of work group meetings as needed and quarterly UGRRW Partnership meetings to coordinate and assist groups with implementation. Appendix A, Implementation Schedule, will be revised annually to update progress and will be located on the Union County website. The entire UGRRW Partnership will review the plan at least every five years and adaptively manage the strategies based on data collection, monitoring, and research.

Introduction

Planning Purpose

The Upper Grande Ronde River Watershed (UGRRW) located in Union County, Oregon, is a vital ecosystem that supports ranchers, farmers, tribes, and urban residents as well as an array of fish and wildlife species.

Stakeholders in Union County, and other non-local interested parties, are concerned about the sufficiency of water quantity and quality to meet future demands for municipal, agricultural, and ecological purposes. Under Oregon law, all water belongs to the public and is managed in accordance with many state and federal laws and policies. This planning effort will help understand and meet the water needs of our communities, economy, and environment consistent with existing law and policy and will not jeopardize any existing rights to use water.

While there is a significant amount of data on water quantity and quality in the UGRRW, historically there has been a lack of seasonal-level data to evaluate whether the demands are aligned with available water quantity and quality. Groups working in the UGRRW lack coordination to improve water quantity and quality for agricultural, municipal, and instream purposes.

Exhibit I-1 UGRRW Partnership Field Trip to Southern Cross, Oregon

To address these issues, in 2016 Union County applied for and received an Oregon Water Resources Department (OWRD) grant. This Integrated Water Resources Place-Based Planning Grant allowed Union County to convene a collaborative effort to assess demands on water resources within the watershed compared to available water resources and develop integrated strategies in an effort to provide a better water future. Throughout the process, the goals of the UGRRW Partnership have evolved and broadened to include natural hazards after the spring flooding that occurred in 2019. This Place-based Integrated Water Resources Plan was developed consistent with the State of Oregon's guidelines and helps implement the State of Oregon's Integrated Water Resources Strategy and related policies.

The UGRRW Partnership is composed of a diverse representation of 28 individuals and stakeholder groups, including local organizations and individuals, with interest in the area's water resources. Over the past six years (2016 to 2021), the UGRRW Partnership has been working through the five steps of the OWRD integrated water resources place-based planning process, captured in their draft planning guidelines (OWRD, 2015). These steps included 1) convening a diverse partnership, 2) characterizing

water resources, 3) quantifying demand for water quality and quantity,
4) developing strategies to align supply and demand, and 5) creating a plan for implementation.

To develop this Plan, the UGRRW Partnership completed each of the five place-based planning steps, with each step building on information learned in previous planning steps. Each planning step ended with a consensus-supported report involving all eligible voting members of the UGRRW Partnership.

The UGRRW Partnership will use this plan to implement projects to benefit the multitude of water users (including agricultural, municipal, tribal, ecological, recreational, and others) that reside in the UGRRW.

Geographic Scope

UGRRW is located in northeast Oregon and is closely aligned with the boundary of Union County, Oregon; see Figures ES-1 and ES-2.

The UGRRW is part of the Grande Ronde River Subbasin in northeast Oregon. This system includes the numerous tributaries to the Grande Ronde River and Catherine Creek, which join in the valley, and eventually drain to the Snake River. In addition, a limited number of wetlands, ponds, lakes, dams, and reservoirs are located throughout the UGRRW. The UGRRW contains both alluvial aquifers, located near the ground surface, and deep basalt aquifers, located hundreds to several thousand feet below ground surface.

Geologically, the Grande Ronde Valley is surrounded by the Blue Mountains and drained by the Grande Ronde River. Elevations range widely, from the mountainous areas bounding the UGRRW that reach more than 6,000 feet in elevation, to the central portion of the UGRRW, which comprises the valley floor at only 2,700 feet in elevation. Miocene volcanic rocks are exposed at the surface on the edges and outside of the low-lying river valleys where subsided volcanic rocks have not been covered by sedimentary deposits. Within the valley, alluvium, or sedimentary deposits from rivers and lakes, may be greater than 2,500 feet thick. The climate is semi-arid with hot, dry summers and cold, moist winters. The hydrology of the UGRRW is dominated by snowmelt runoff peaking in April/May generally.

Water is used in many ways in the UGRRW. Sixty percent of the UGRRW is forestland, 20 percent is rangeland, and the majority of the remaining acreage is used for field crops and pastureland, with a small percentage in municipal and residential areas. Agricultural water uses dominate much of the valley area, domestic and industrial uses are concentrated in city areas, and recreation/fish/wildlife uses are located throughout the UGRRW. Water supply shortages for instream and out-of-stream uses currently exist and will intensify with a changing climate and projected increases in future demand.

- Agricultural users include 800 farms and ranches that require irrigation from a combination of surface water and groundwater allocations. Agriculture is a primary economic driver in Union County.
- Municipal users include the cities of Union County (Elgin, Imbler, Summerville, Island City, La Grande, Cove, and Union), each of which have distinct water systems to serve their populations ranging from more than 13,000 in La Grande to 136 in Summerville. Summerville does not have a municipal water system. The communities rely primarily on groundwater, robust storage reservoir systems, and distribution systems to meet municipal water needs. There are five primary industrial users in the UGRRW; these users obtain water through municipal systems or self-supplied systems.

- Instream users include native redband trout, and Endangered Species Act-listed fish species summer steelhead, spring Chinook salmon, and bull trout; recreational users; the ecosystem as a whole. Instream uses also fulfill tribal treaty rights to sustain the fishery, support flows to a state-designated Scenic Waterway downstream of the study area, and support recreational opportunities.

Historically, many tribes included the Grande Ronde Valley within their territories and utilized the natural resources. More recently, people have significantly modified waterbodies within the UGRRW, including the Hilgard sawmills, placer mines on the Upper Grande Ronde River in the late 1800s, and the creation of the State Ditch in the 1880s (with additional work in the 1980s) to reroute the Upper Grande Ronde River to a straighter and more-channelized path. Many residents of the Grande Ronde Valley have family histories here that trace back multiple generations, and residents are vested in working toward sustainable water use practices.

The geographic scale selected aligns with watershed boundaries inclusive of water demands and supply throughout the planning area.

Plan Organization

This document is divided into an introduction and six sections. For additional information on Steps 1 through 4, please see the final reports located at https://union-county.org/planning/place-based-integrated-water-resources-planning/.

Introduction - Overview of the purpose and location of planning, and a brief introduction to the document (this section).
1.0 - The Planning Process - Documentation of the governance, structure, participation, guiding principles, and outreach central to the planning process.
2.0 - Water Resources - Summary of work completed under Step 2 to characterize surface water and groundwater, including legal and physical characteristics.
3.0 - Current and Future Water Demands - Summary of work completed under Step 3 to characterize and quantify current and future water demands by user group and subwatershed, and compare to supply.
4.0 - Water Issues and Recommended Actions - Prioritized list and description of the main water issues agreed to by the collaborative, and actions to address each of those issues.
5.0 - Plan Implementation Strategy - Approach for convening, communicating, and pursuing recommended actions.
6.0 - References

1.0 - The Planning Process

Planning Participants

Throughout the planning process, Union County, as the convener, has worked to bring together a balanced representation of interests to participate in this open, transparent, and public process. Three water demand groups (municipal, agricultural, and instream) were identified, and participants were sought from each group for both the Steering Committee and Stakeholder Committee. The following partners participated in this process. All, except for Interested Public, have signed the Memorandum of Understanding (MOU), which is described further in the next section. The Steering Committee members are also members of the Stakeholder Committee, signed the MOU, and can vote.

The Upper Grande Ronde River Watershed (UGRRW) Partnership sought to have a balanced representation of interests while working through this process. Municipal representation included three of the eight cities in the UGRRW, which represented more than 50 percent of Union County's population. Agricultural representation included the Union County Farm Bureau, Union County Cattleman's Association, and multiple individual farmers and ranchers. Instream representation included the Grande Ronde Model Watershed (GRMW), Confederated Tribes of the Umatilla Indian Reservation (CTUIR), and Oregon Department of Fish and Wildlife. Each interest group had a representative on the Steering Committee to ensure all interests were represented. Strategies developed were geared to meet the needs of all user groups.

Steering Committee

- ODFW (Nick Myatt [2016-2017]; Tim Bailey [2017-2020]; Adrienne Averett [2021]; Joseph Lemanski [2021-Present])
- Union County (Mark Davidson [2016-2017]; Donna Beverage [2017-Present])
- City of La Grande (Kyle Carpenter)
- Union County Farm Bureau (Jed Hassinger)
- Oregon Water Resources Department (OWRD) (Steve Parrett)

Stakeholder Committee

*An * indicates a Stakeholder Committee organization or individual who has signed the MOU. The names listed in parentheses are people who contributed to the planning effort. Each organization is allowed only one MOU signature (vote). Organizations and individuals were allowed to sign the MOU as either voting or non-voting members.*

Ann Hulden*; CTUIR* (Anton Chiono, Allen Childs, Chris Marks, David Haire, Ian Wilson); Austin Bingaman*; U.S. Forest Service* (Bill Gamble, Dave Plummer, Sarah Brandy); Brett Rudd*; Cheryl Murchison*; Curt Howell*; Curt Ricker*; Oregon State University Extension (OSU)* (Darrin Walenta, Robin Maille); City of Cove* (Dave Johnson and Del Little); GRMW* (Jeff Oveson, Jesse Steele, Alex Towne, Connar Stone, Jessica Humphreys); Jim McDonald*; Union Soil Water Conservation District* (Jim Webster, Aaron Bliesner, Deric Carsen, Chris Motes, Kate Frenyea); Larry Larson*; City of Union* (Leonard Flint, Rod McKee); Oregon Department of Agriculture* (Margaret Matter, Tom Demianew);

U.S. Fish and Wildlife Service* (Gary Miller, Marisa Meyer, Gretchen Sausen); Oregon Fescue Commission* (Matt Insko); Ford Family Foundation (Maurizio Valerio); City of Island City* (Rob Rea, Delmer Hanson); Union County Cattleman* (Rodger Huffman, Darren Hansen); Union County* (Scott Hartell, Lorcinda Johnson, Darcy Carreiro, JB Brock); Oregon Department of Environmental Quality* (Smita Mehta, Tonya Dombrowski, Randy Jones, Roxy Nayar, Don Butcher, John Dadoly); National Marine Fisheries Service (Sara Fesenmyer, Rebecca Viray); OWRD* (Shad Hatten, Jen Woody, Jason Spriet, Kim Ogren, Nick Teague, Phil Marcy, Rachel LovellFord; Bob Harmon, Jordan Beamer); ODFW* (Winston Morton, Anna Pakenham Stevenson; Colleen Fagan; Danette Faucera); The Freshwater Trust* (Caylin Barter, Aaron Maxwell, Tony Malmberg, Jessica Phelps, Spencer Sawaske); U.S. Bureau of Reclamation (Darrell Dike); Trout Unlimited* (Levi Old); Natural Resources Conservation Service* (Mike Burton; Nick Vora); Tim Wallender*.

Interested Public

Kurt Bowman; Powder Valley Water Control District (Lyle Umpleby); Representative Waldon (Tucker Billman); Senator Wyden (Kathleen Cathey); Senator Merkley (Karen Wagner; Jessica Keys); Boise Cascade (Bart Barlow); Bobby White; Nez Perce Tribe (Bobby Hills); Business Oregon (Brian McDowell; Jeremey McVeety; Melisa Drugge); The La Grande Observer (Cherise Kaechele); Governor's Office (Courtney Crowell); Oregon Cattleman's Association (Curtis Martin); Union County Economic Development Corporation (Dan Stark); Delon Lee; City of Cove (Doug Kruse); GSI (Jason Melady); Oregon Department of Forestry (Joe Hessel); John Frisch; Climate Impacts Research Consortium (Kathie Dello); Kurt Bowman; Water Watch (Kimberley Priestley); Levon Baremore; Eastern Oregon University (Maren Peterson); Mauri DeLint; City of Imbler (Mike McLean); Oregon Trail Electric Co-op (Nina Valerio; Susan Snider); Peter Nilsson; Tom Bowman; Michael Bettis.

Governance and Organizational Structure

Governance and Structure

The Upper Grande Ronde River Watershed (UGRRW) Partnership is led by the Co-Conveners (Union County Commissioner Donna Beverage and Union County Planning Director Scott Hartell). The Co-Conveners lead the group, encourage participation, work through partner disagreements, and perform grant administration. The Co-Conveners rely on a Steering Committee of four partners representing primary water interests in the UGRRW. These include instream interests represented by the ODFW, municipal interests represented by the City of La Grande, agricultural interests represented by the Union County Farm Bureau, and agency interests represented by the OWRD. The Stakeholder Committee includes all organizations involved in the planning process through signature of the MOU. A signatory of the MOU agrees to work collaboratively, that all decisions will be made through consensus (minus 2), and that the signatory may participate in decision-making if they attended two of the last four meetings. Decision-making in the UGRRW Partnership is described in the Governance Agreement.

Through discussions at early meetings, the Stakeholder Committee determined that signatories must live or work in the UGRRW. The interested public is notified of UGRRW Partnership activities and encouraged to participate in the process through notices on the Union County website, notices/articles in the newspaper, radio advertisements/interviews, presentations at community events, and direct outreach by UGRRW Partnership members. *Ad hoc* working groups form and disband as needed throughout the process to work through specific issues - these have included

MOU wording disagreements, caveats and data issues, instream demand, agricultural demand, municipal demand, natural hazards/climate change, and strategy working groups.

Vision

The goal is to use place-based planning as a starting point for a lasting UGRRW-wide partnership where improvements are made to better align various water demands with available water resources. This process will recognize water rights and has no authority to modify current legal uses of water.

Guiding Principles

The guiding principles of the UGRRW Partnership are:

1. Participation. Partners have a duty to contribute information and resources to the cause.
2. Collaboration. Partners will work together to determine priorities in a fair and open manner. Information will be shared freely throughout the UGRRW Partnership.
3. Respect. Partners will respect the research and focus of different members of the UGRRW Partnership.
4. Balanced Analysis. Data, decisions, and resources will be analyzed using the best science and technical expertise.
5. Funding. Partners will work to support each other in applications through matching funds or in-kind support, as they are able.
6. Action. The ultimate goal is to implement incremental projects to create beneficial and lasting change in the UGRRW.
7. Flexibility. The partners realize that modifications to the original scope and views may be required.

The planning group also adhered to the guiding principles for implementation in the Integrated Water Resources Strategy.

Public Outreach

Public outreach has been an ongoing part of the planning process. Methods frequently used include:

- Public meetings (notice in Briefly section of the La Grande Observer, and on the Union County website) (each meeting - more than 47 publications)
- Presentations to various groups in the region (including GRMW annual meeting, Farm Bureau Banquet, Union County Farm Tour, meeting with cities of Union County, etc.)
- Radio advertisements/interviews (approximately one per year)
- Newspaper articles (three articles)
- Personal phone calls and one-on-one outreach

When a member of the public attends a meeting, the person receives background information on the UGRRW Partnership and process. While the UGRRW Partnership strives to be inclusive, it is acknowledged that stakeholders from certain sectors elected not to participate. This included recreational users (no organized groups or interested individuals were willing to participated when one-on-one outreach occurred); industrial users (Boise Cascade initially participated but then did not due to staffing changes). The UGRRW Partnership worked to represent these interests in both demand and strategy decisions.

Collaborative, Open, and Transparent Public Process

All decisions were made through consensus and collaboration with supporting information available on the Union County website. More than 47 UGRRW Partnership meetings, and many additional steering committees and working group meetings have been held. The public has been involved and made aware of the UGRRW Partnership progress. Members of the UGRRW Partnership have presented at numerous public meetings in the region (including GRMW annual meeting, Farm Bureau Banquet, Union County Farm Tour, meeting with cities of Union County, etc.). The UGRRW Partnership was sensitive to different communication preferences and abilities for involvement. Meetings were available via in-person or call-in options (with the exception of when COVID-19 restrictions limited meetings to call-in only). Printing copies of reports for review was always offered, and comments were accepted via email/redline comments, handwritten comments, over the phone, or in person. Meeting times were scheduled to accommodate those who had occupations or responsibilities that could preclude attendance. Meeting times shifted from earlier to later depending on the times of year and as requested by Stakeholders to increase participation. Meetings were canceled or rescheduled during busy times of the year when it was felt a diverse representation of Stakeholders could not be present. Those unable to attend meetings or who felt uncomfortable speaking publicly could comment via email, mail, or individual conversations with the facilitator or convener. The UGRRW Partnership addressed all comments to the greatest extent practicable, and all documents were approved via consensus vote. Funding and in-kind support for this project included:

- OWRD Place-Based Planning Grant
- Ford Family Foundation Learning Partnership Grant
- OSU Extension Office and Union County meeting spaces
- Time and effort from Stakeholders to complete reports and attend meetings

2.0 - Water Resources

During Planning Step 2, "Characterize Water Resources, Water Quality, and Basin Conditions" the Upper Grande Ronde River Watershed (UGRRW) Partnership learned about and characterized the state of water resources in the UGRRW.

Water Resources Supply

Water resources supply includes both the quantity and quality of surface and groundwater. Important factors that influence supply in the UGRRW include:

- Surface water supply is affected by the UGRRW's precipitation patterns of winter precipitation and snowmelt driven hydrology followed by low precipitation and high temperatures in the summer (when water use is highest). This seasonal pattern of precipitation and snowmelt, combined with a lack of storage in the UGRRW contribute to a supply shortage during late summer/fall. Water quality is reduced during this time of year due to the impact of summer heat environment and low stream flows, resulting in high water temperatures. Dissolved oxygen (DO) and pH are also above regulatory standards (see Figure 2-2).
- Groundwater supply is uncertain. Alluvial aquifers are strongly influenced by surface water; however, accurate estimates of groundwater supply are not available. Groundwater quality is not known to be a concern at this time.

A brief description of physical conditions impacting supply is discussed below. The UGRRW is the portion of the Grande Ronde River Watershed above the Grande Ronde River's confluence with the Wallowa River. Elevations range widely, from the mountainous areas bounding the UGRRW that reach more than 6,000 feet in elevation, to the central portion of the UGRRW, comprising the valley floor at only 2,700 feet in elevation (see Figure 2-1).

The climate is semi-arid with hot, dry summers and cold, moist winters (see Figure 2-2). Low precipitation during the hot growing season creates a strong reliance on irrigation. The hottest months are July and August and the driest months are July, August, and September.

Figure 2-1
Relief Map

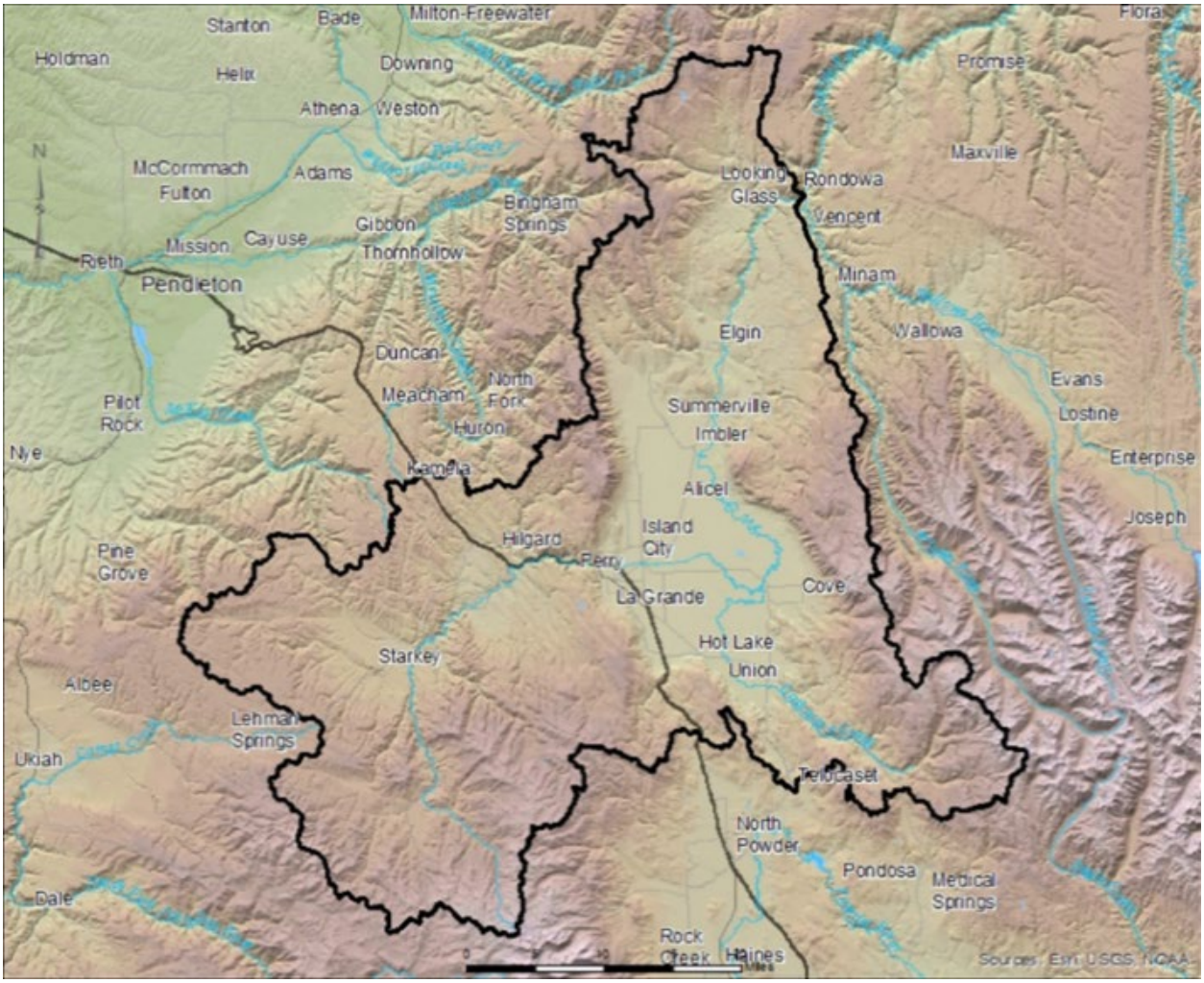
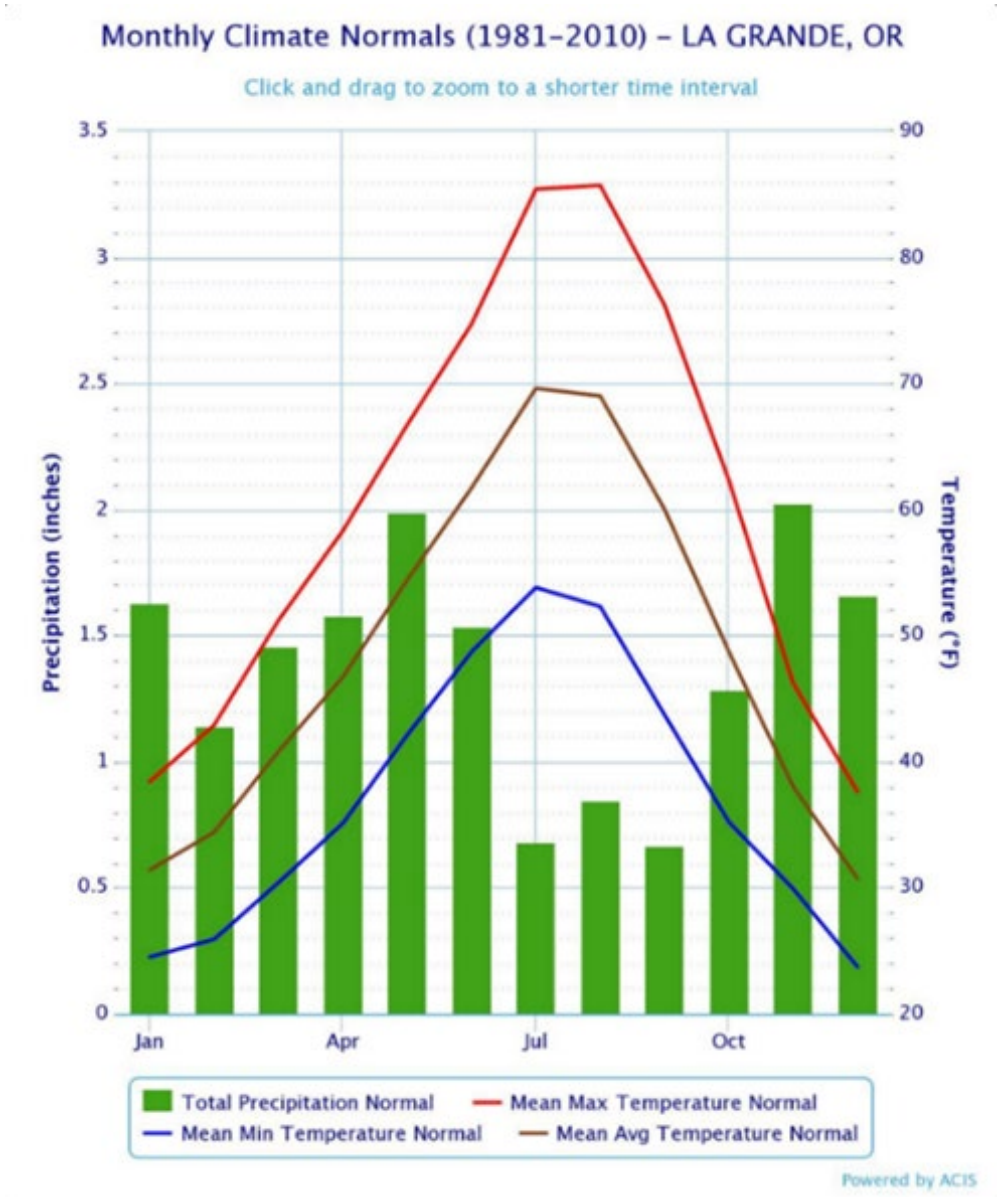


Figure 2-2
Average Precipitation and Temperature



The surface hydrology of the UGRRW is dominated by snowmelt runoff. Groundwater is predominately sourced from snowmelt runoff and direct infiltration in high elevations and descends to both confined aquifers and shallow aquifers (composed of thick-fine grained unconsolidated sediment) in the ancestral lakebed/valley sediments. Sixty percent of the UGRRW is forestland, 20 percent is rangeland, and the majority of the remaining acreage is used for field crops and pastureland, with a small percentage in residential areas. Geologically, the Grande Ronde Valley is surrounded by the Blue Mountains and drained by the Grande Ronde River, meaning there are portions of the UGRRW dominated by Columbia River Basalt and areas in the Grande Ronde Valley with a thick accumulation of the valley-fill sediments. See Figures 2-3 and 2-4.

Figure 2-3
Geologic Overview

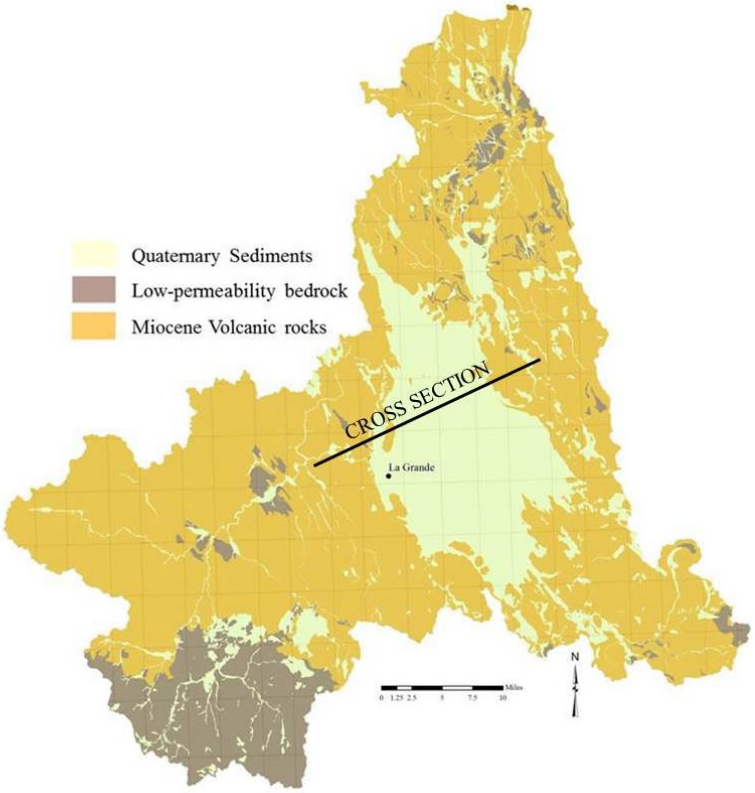
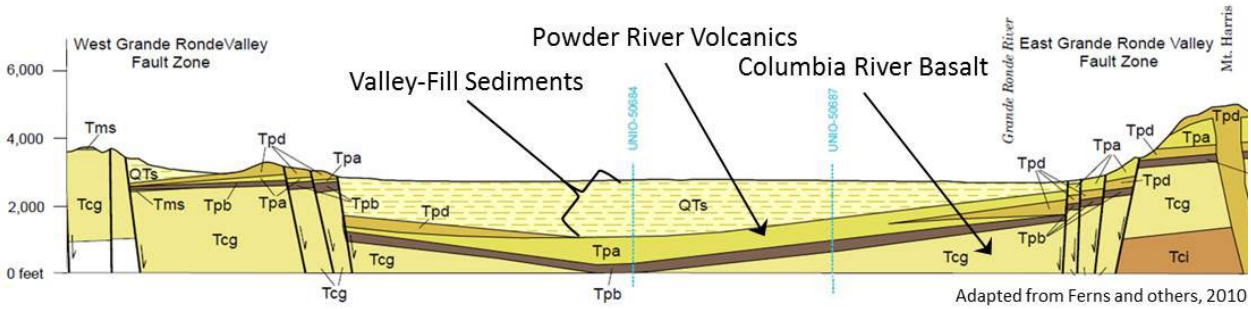


Figure 2-4
Geologic Cross Section



The UGRRW contains both alluvial aquifers, located near the ground surface, and deep basalt aquifers, located from several hundred up to several thousand feet below the ground surface.

Surface Water

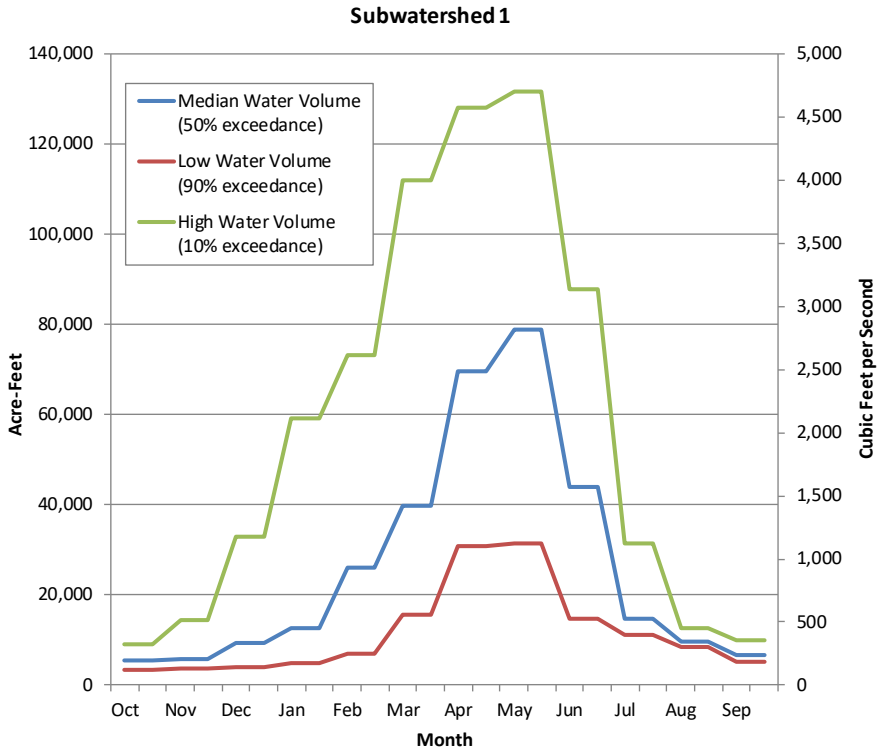
For planning, the UGRRW is divided into eight subwatersheds to analyze surface water quantity and quality. These subwatersheds were based on a combination of the U.S. Geological Survey hydrologic

unit codes and Grande Ronde Model Watershed's (GRMW) Biologically Significant Reaches. Detailed descriptions of the subwatersheds are included in the Step 2 Report (UGRRW, 2018). See Figure ES-3 for a map of the eight subwatersheds.

Surface Water Quantity

Surface water flow is measured at selected locations in the UGRRW by multiple agencies, including the Oregon Water Resources Department's (OWRD) eight active gauging stations in the UGRRW. Flow was analyzed in each subwatershed using a statistical analysis of streamflow data for the period 1958 to 1987 as presented in OWRD's Water Availability Reporting System. Water volume was shown as an exceedance probability (chance that volume will be greater than a certain value) for each two-week period. Exceedance probabilities were calculated for the base period to represent three different flow conditions: high water (10 percent exceedance), low water (90 percent exceedance), and median water (50 percent exceedance). Each subwatershed had the same general patterns of peak flows during springtime. Subwatershed 1 (which includes all flow in the UGRRW) showed a maximum median flow in a two-week period of approximately 2,700 cubic feet per second (80,000 acre-feet [AF] during the base period). See Figure 2-5.

Figure 2-5
Subwatershed 1 High, Low, and Median Flow Volume by Month



Much of the streamflow in the UGRRW occurs during a brief snowmelt period in the spring (April through May, generally). According to OWRD's Water Availability Reporting System, streamflow is generally not available for allocation to out-of-stream uses at 80 percent exceedance. Surface water is only available for new out-of-stream allocations for a few months of the year, primarily

during the winter months when out-of-stream needs and demands are lowest. Given that surface water is generally not available for new live flow allocations, current unmet needs and future needs will likely need to be met through administrative actions (e.g., transfers), water conservation, storage, or other novel water supply solutions. Water is available at 50 percent exceedance for potential storage in different portions of the watershed and is generally available during the winter months. However, it should be noted that the full range of instream needs (e.g., high winter flows) has not been accounted for throughout the planning area. Other laws and rules influence legal availability for new allocations. See Figure 2-6 for locations.

Figure 2-6
Months of Available Streamflow (Calculated at 80 Percent Exceedance)

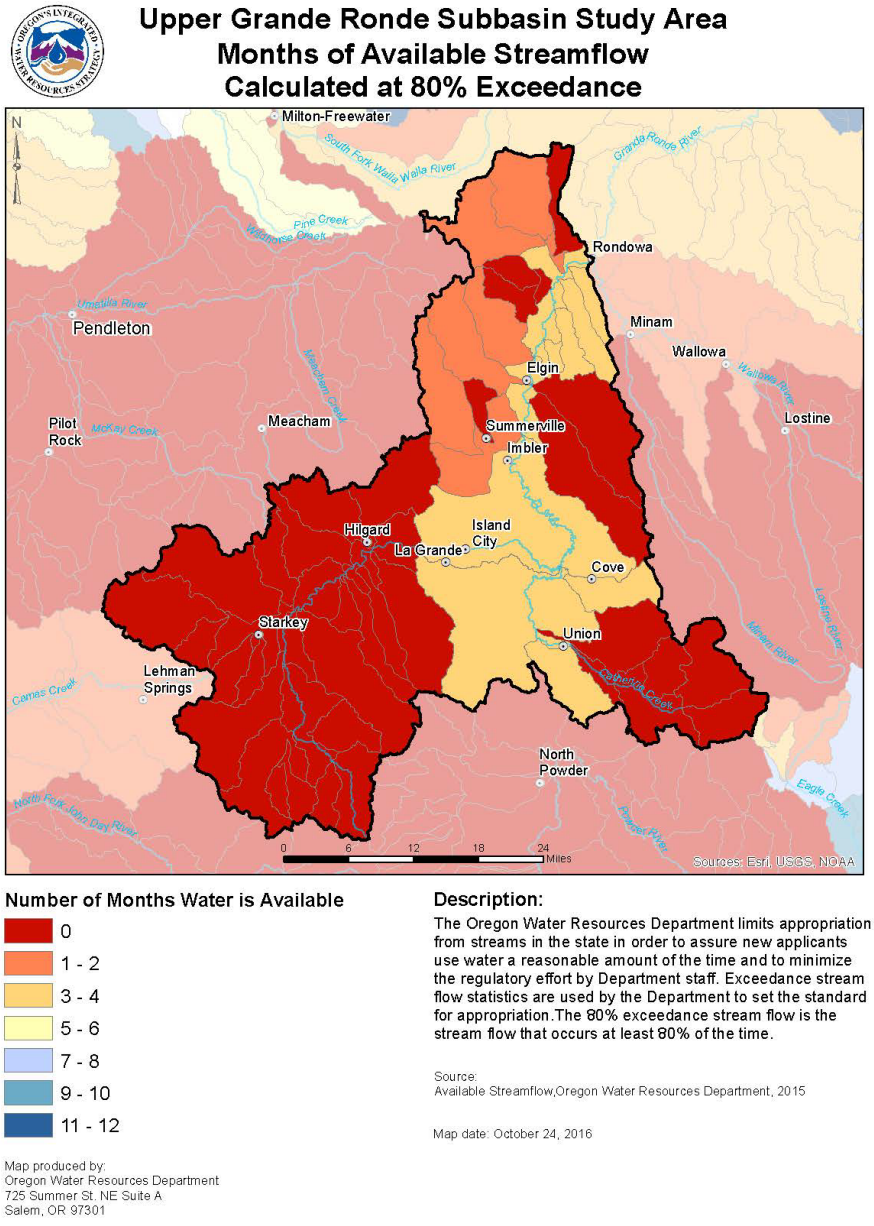
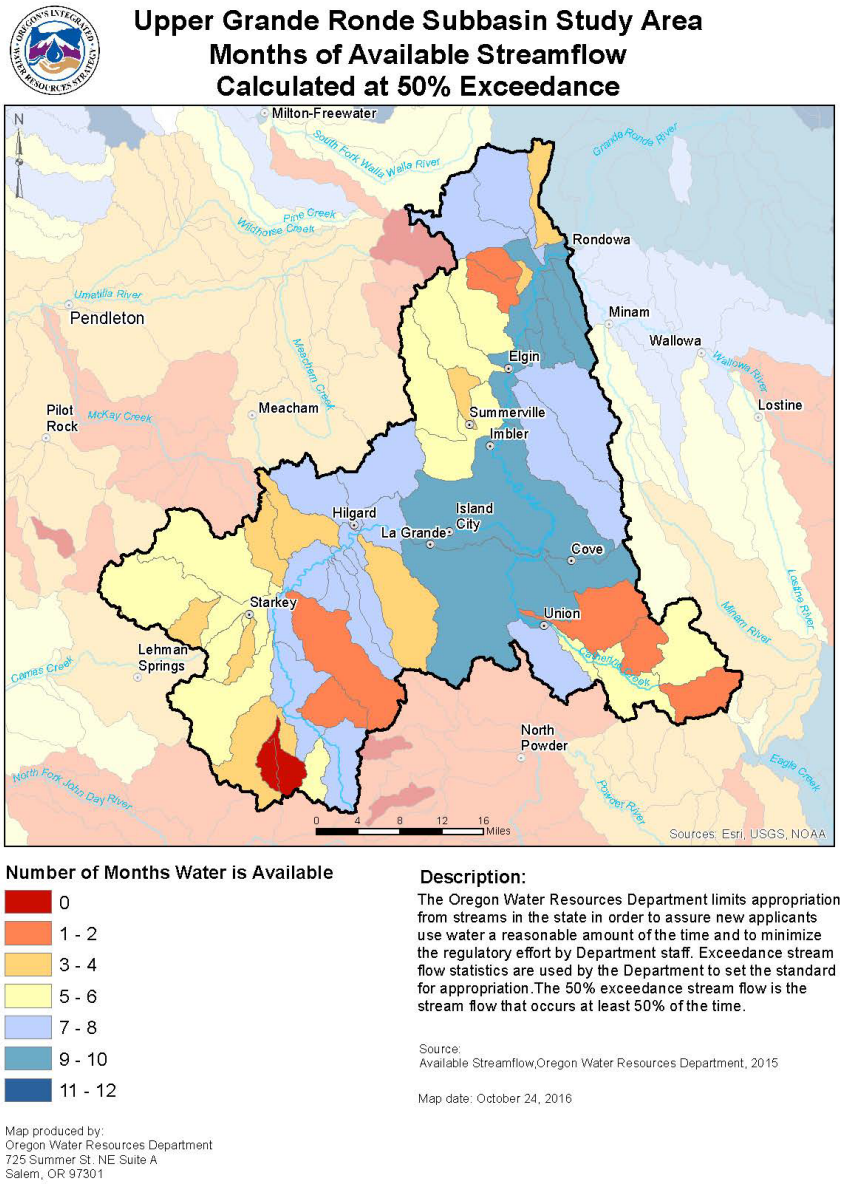
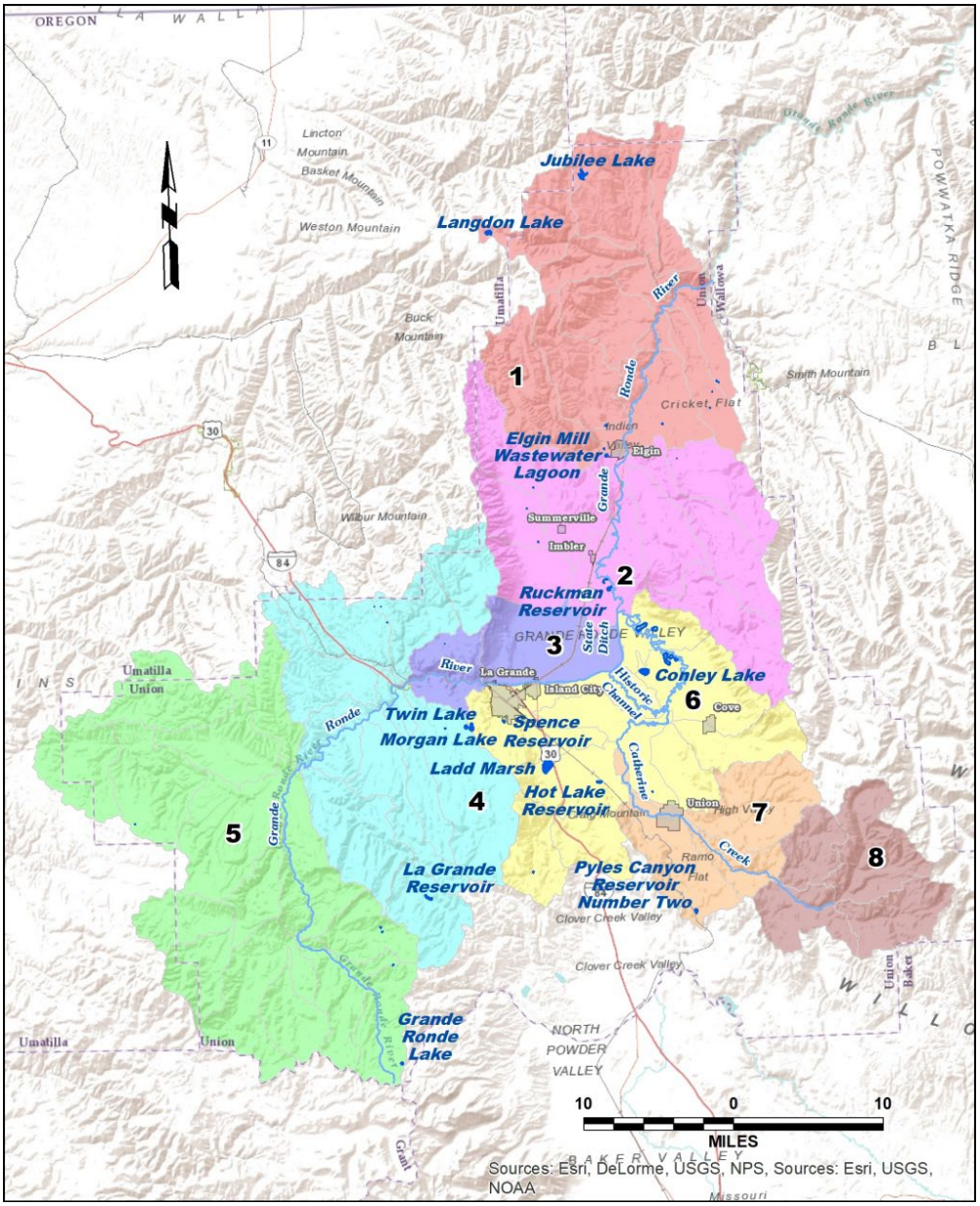


Figure 2-7
Months of Available Streamflow (Calculated at 50 Percent Exceedance)



There is very limited built aboveground storage in the watershed. All permitted reservoirs store a total of 7,230 AF. The majority of water is used for recreational purposes. Several private reservoirs are used for irrigation, but there are no large-scale reservoirs to serve irrigated lands, meaning that irrigators must manage water based on live flow conditions. Below is a map of existing reservoirs that serve private and public interests.

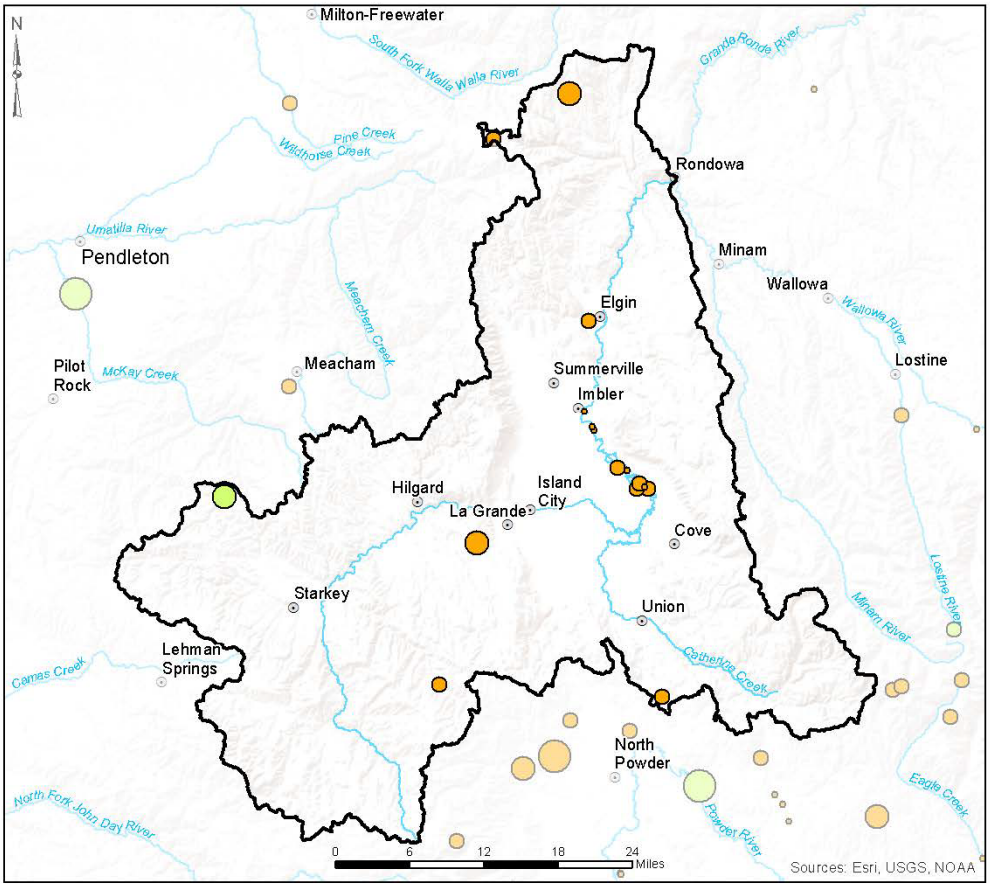
Figure 2-8
Major Wetlands, Lakes, and Reservoirs



Of note, Ladd Marsh contains a large constructed wetland, and Morgan Lake, Jubilee Lake, and Langdon Lake are used for recreation. Other small ponds exist and are more prevalent in the central Grande Ronde Valley part of the UGRRW.

Figure 2-9
Dams by Storage Capacity

Upper Grande Ronde Subbasin Study Area
Dams by Storage Capacity



State Dams
Storage in acre feet
- < 100
- 100-1,000
- 1,000 - 10,000
- > 10,000

Non-State Dams
Storage in acre feet
- < 100
- 100-1,000
- 1,000 - 10,000
- > 10,000

Description:

The Oregon Water Resources Department maintains an inventory of Oregon dams. Information available includes dam height, storage capacity, dam name, location, permit number and hazard classification.
Large dams are defined by a dam height >= 10 feet and a storage capacity of >= 9.2 acre feet. These larger dams are within the juristiction of Oregon Water Resource Department.

Source:
Dams, Oregon Water Resources Department, 2016

Map produced by:
Oregon Water Resources Department
725 Summer St. NE Suite A
Salem, OR 97301

Map date: October 24, 2016

Table 2-1
Dam and Storage Uses

App/ Permit/ Cert	Dam Name	Water Source	Stored Water Use	Owner	Size in Acre-Feet
C 36683	Arnoldus Loop	Grande Ronde	Irrigation	Private	28.8
C 61437	Beaver Creek	Beaver Creek	Municipal	City of La Grande	510
C 58876	Elgin Mill Treatment Lagoon No. 1	Wastewater	Industrial	Boise Cascade	131
C 41585	Elmer Reservoir 1	Grande Ronde	Irrigation	Private	123
C 41586	Elmer Reservoir 2	Grande Ronde	Irrigation	Private	91
File E 32	Elmer Reservoir 3	Grande Ronde	Irrigation	Private	58
C 46521	Elmer Stoplog Dam	Grande Ronde	Irrigation	Private	298
C 64890	Fleet Reservoir 2	Grande Ronde	Irrigation	Private	78
C 40472	Fleets Loop	Grande Ronde	Irrigation	Private	246
C 58083	Howell	Grande Ronde	Irrigation	Private	56
	Indian Lake Dam	Jennings Creek	Exempt	CTUIR	1,214
C 40153	Jubilee Lake Dam	Mottet Creek	Recreation	ODFW	1,579
C 40151	Langdon Lake Dam	Lookingglass	Recreation	Langdon Lake Association	253
C 64461	Morgan Lake Dam	Sheep Creek	Recreation	City of La Grande	2,076
C 64478	Pyles Canyon 2	Pyles Creek	Irrigation	Private	221
C 40820	RuckmanReservoir	Grande Ronde	Irrigation	Private	76
Permit R-14464	Conley Farms	Catherine Creek	Multiple Purpose	Private	192
TOTAL					**7,230.8**

CTUIR = Confederated Tribes of the Umatilla Indian Reservation
ODFW = Oregon Department of Fish and Wildlife

Surface Water Quality

Numerous waterbodies in the UGRRW do not meet statewide water quality standards identified by the Oregon Department of Environmental Quality (DEQ). Section 303(d) of the federal Clean Water Act requires each state to develop a list of waterbodies that do not meet water quality standards and submit this list (called the 303(d) list) to the U.S. Environmental Protection Agency (EPA). This designation is based on one or multiple water quality parameters over a short or long portion of the year. The DEQ monitors the following parameters: alkalinity, ammonia, aquatic weeds and/or algae, biological criteria, DO, *E. coli*, iron, manganese, pH, phosphorus and phosphate, sedimentation, and temperature.

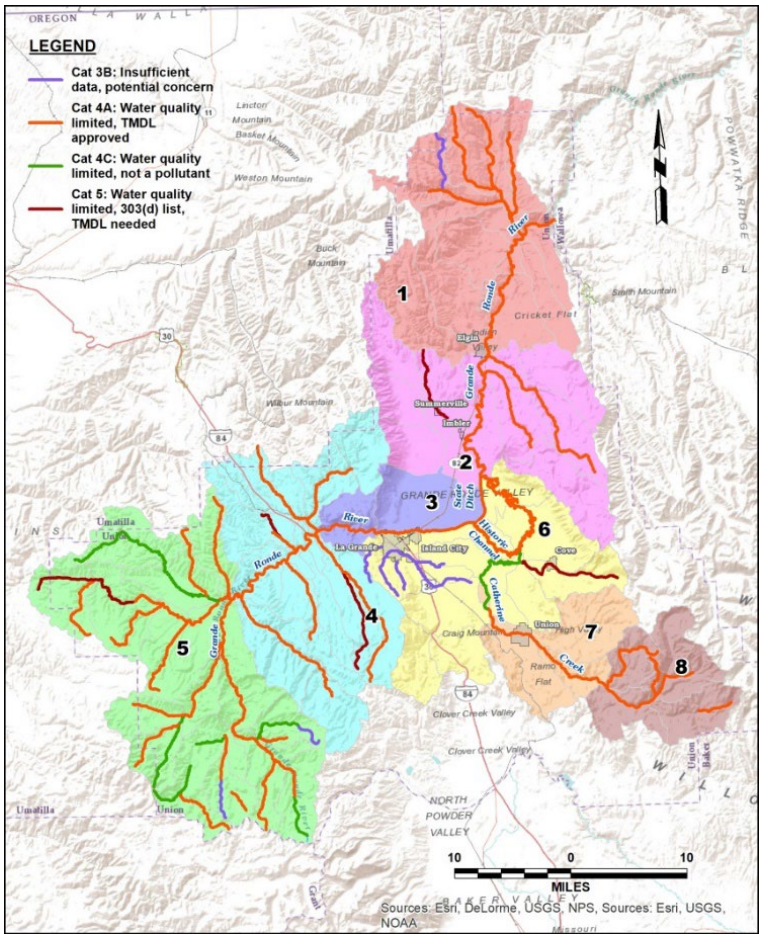
The primary water quality parameters of concern on the 303(d) list for the UGRRW are temperature, pH, DO, bacteria, sedimentation, habitat modification and flow modification, and ammonia toxicity.

The three parameters commonly listed throughout the UGRRW (habitat modification, sediment, and temperature) can all be improved through management decisions that would lead to improving vegetation condition. Riparian habitat degradation is a problem in the basin and improving these riparian areas will improve temperature, stability, sediment, other water quality factors, and habitat (DEQ Upper Grande Ronde River Subbasin Water Quality Management Plan, 2000).

Temperature, with heat as the pollutant, is a limiting factor for aquatic life for many of the summer months. Temperature is a concern in the lower and central parts of the UGRRW. Water temperature can be affected by a variety of activities and events, including reduction in riparian vegetation, reduction of summertime stream flows, and widening of stream channels.

In most subwatersheds, temperature and pH are concerns for the summer months. Generally, lower elevation and downstream watersheds (subwatersheds 1 through 6) have more designations, while higher elevation subwatersheds upstream (subwatersheds 7 and 8) have fewer. See Figure 2-10 below for the extent of surface water impairment.

Figure 2-10
Department of Environmental Quality 303(d) Listed Reaches Impaired for Water Quality



The DEQ established a set of total maximum daily limits (TMDLs) and associated goals for the Upper Grande Ronde River. There are five point sources in the UGRRW with National Pollutant Discharge Elimination System Permits. Human and natural non-point sources also impact water quality. Human activities include timber harvesting, livestock grazing, agriculture, road construction and maintenance, rural residential development, and urban runoff. In addition, farming, urban development, and transportation corridors have channelized streams and removed vegetation, exacerbating the temperature and sedimentation impairments in particular. Natural sources include abiotic and biotic landscape attributes, wildfire, drought, and severe flood events.

TMDL Overview

The UGRRW TMDL was developed by the DEQ to establish water quality targets to fulfill Oregon's obligation to comply with state and federal water quality laws. The EPA approved the temperature and bacteria TMDLs in 2000, which can be accessed online at http://www.oregon.gov/deq/wq/tmdls/Pages/TMDLs-Basin-Grande-Ronde.aspx (Oregon Department of Agriculture, 2012).

A Water Quality Standard (WQS) is the desired condition. A TMDL is the method to accomplish the WQS. TMDLs are developed to show how much of each pollutant a stream can accept while still providing the water quality needed for all of the designated beneficial uses.

The Upper Grande Ronde River Subbasin Agricultural Water Quality Management Area Plan was then developed to work toward meeting these goals.

Beneficial Use Overview

Beneficial uses are defined in Oregon Administrative Rules (OAR) 340-041-0002(17) as "Designated Beneficial Use," which means "the purpose or benefit to be derived from a water body as designated by the Water Resources Department or the Water Resources Commission."

DEQ designated beneficial uses for all waterbodies, including irrigation, industrial water, municipal water, swimming, fishing, and aquatic life. Human health, salmon and trout (salmonids), and other cold water species that inhabit most streams in the Upper Grande Ronde Subbasins (part of the Grande Ronde Basin as identified in OAR 340-041) are considered the beneficial uses most sensitive to stream temperature. The OWRD and DEQ have similar uses of the term "beneficial uses." OWRD beneficial uses refer to the "reasonably efficient use of water without waste for a purpose consistent with the laws, rules, and the best interests of the people of the state" including, but not limited to, irrigation, municipal, or instream.

Upper Grande Ronde Basin Designated Beneficial Uses from OAR 340-041-0151, Table 151A (DEQ, 2017a):

- Public Domestic Water Supply*
- Private Domestic Water Supply*

- Industrial Water Supply
- Irrigation
- Livestock Watering
- Fish and Aquatic Life
- Bull Trout (12°C, 53.6°F)
- Core Cold Water (16°C, 60.8°F)
- Salmon and Trout (rearing and migration, 18°C, 64.4°F)
- Salmon and Steelhead (migration corridors, 20°C, 68°F)
- Wildlife and Hunting
- Fishing
- Boating
- Water Contact Recreation
- Aesthetic Quality
- Hydropower

** With adequate pretreatment (filtration and disinfection) and natural quality to meet drinking water standards.*

Tables for each subwatershed were developed to show the times of year and impairments for the most sensitive beneficial uses. A waterbody is considered impaired when a beneficial use standard is exceeded any time within the period of record, which includes any measurement ever recorded by the DEQ. Table 2-1 for subwatershed 1 is shown below because it is the most downstream subwatershed in the UGRRW and encompasses impacts from upstream impairments. Tables for each subwatershed are in the Step 2 Report (UGRRW, 2018).

Table 2-2
Water Quality Impairments by Date and Beneficial Use
Subwatershed 1

Surface Water Supply Limits to Beneficial Use										
Month	Days	Anadromous Fish Passage	Salmonid Fish Spawning	Salmonid Fish Rearing	Resident Fish and Aquatic Life	Aquatic Life	Human Health	Water Contact Recreation	Fishing	Aesthetic Quality
Oct	1st to 15th									
	16th to 31st									
Nov	1st to 15th									
	16th to 30th									
Dec	1st to 15th									
	16th to 31st									
Jan	1st to 15th		Flow, Sedimentation	Flow, Sedimentation						
	16th to 31st									
Feb	1st to 15th									
	16th to 28th									
Mar	1st to 15th									
	16th to 31st									
Apr	1st to 15th				Flow, Sedimentation					
	16th to 30th									
May	1st to 15th		DO			Ammonia, Phosphate Phosphorus, Iron, Biological criteria				
	16th to 31st									
Jun	1st to 15th									
	16th to 30th	Temperature, pH		Temperature, pH	pH		Manganese, Iron	Algae, pH	Algae	Phosphorus, Algae
Jul	1st to 15th									
	16th to 31st									
Aug	1st to 15th									
	16th to 31st									
Sep	1st to 15th									
	16th to 30th									

Beneficial use is not supported.
Insufficient data to determine if beneficial use is supported; some data indicate a potential concern.
Insufficient data to determine if beneficial use is supported.
Flow data from OWRD; Beneficial Use data from DEQ
Temperature and pH impairment measured
pH impairment measured
Temperature impairment measured
Dissolved oxygen (DO) impairment measured

Depending on the location in the UGRRW, some subwatersheds face more limiting factors than others. Limiting factors are defined as those conditions or circumstances that limit the successful growth, reproduction, and/or survival of select species of concern (for both tribes and Endangered Species Act listings). Generally, subwatersheds in the northern and central portions of the UGRRW (subwatersheds 1 through 6) have more limits than ones in the southern portion of the UGRRW (Catherine Creek area and subwatersheds 7 and 8).

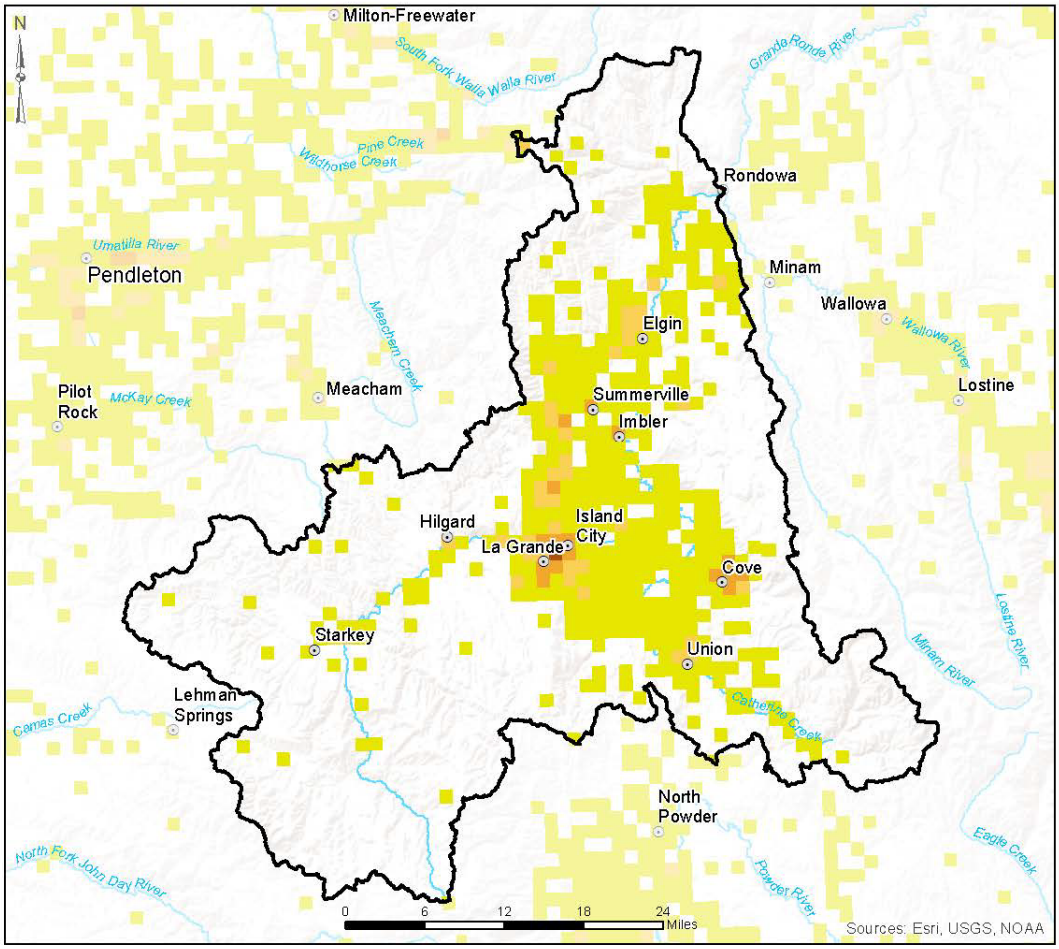
Groundwater

This section includes a discussion of groundwater quantity and quality relative to the eight surface subwatersheds. Multiple scales of analysis were used because there are few long-term observation wells in the area.

Groundwater Quantity

OWRD produced estimates of groundwater use based on maximum legal use of water rights and exempt domestic well permits. Subwatershed 6 has the highest possible permitted groundwater use, followed by subwatersheds 2 and 3. There is little to no permitted groundwater use in subwatersheds 1, 4, 5, 7, and 8. Overall, groundwater wells are more densely concentrated in the central and northern parts of the UGRRW (OWRD, 2019).

Figure 2-11
Well Density



Well Density

Number of Wells by PLS Section

- 1 - 10
- 11 - 40
- 41 - 100
- 101 - 200
- > 200

Map produced by:
Oregon Water Resources Department
725 Summer St. NE Suite A
Salem, OR 97301

Map date: October 24, 2016

Description:

A well log is a report provided by a well constuctor that describes the physical construction of the well, geologic materials and the water encountered.The Oregon Water Resources Department is the custodian of well logs filed by well drillers when they drill, deepen, or abandon a well. Location information provided by most well logs is defined by a Public Land Survey description. The number of wells per PLS section are combined to provide this well density map.

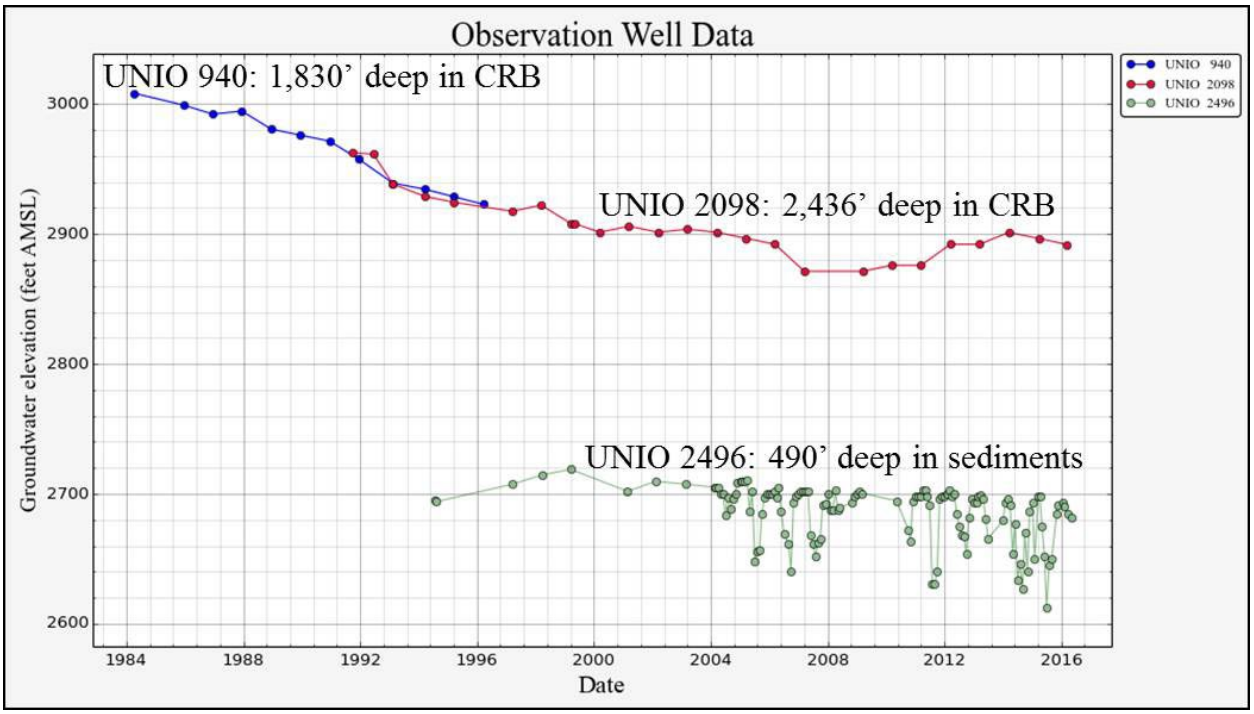
Source:
Well Logs,Oregon Water Resources Department, September 22, 2015

Throughout the UGRRW, primary irrigation accounts for approximately 81,365 AF per year of legally allowed groundwater withdrawals, supplemental irrigation accounts for 41,070 AF per year, and municipal uses account for 36,242 AF per year. Groundwater pumping, especially from the alluvial system, captures some natural groundwater discharge and has the potential to reduce flows in hydraulically connected streams/rivers. Currently, new groundwater allocations from alluvial aquifer wells in the UGRRW require mitigation for potential impacts to the Grande Ronde River state Scenic Waterway. According to the OWRD, this is because available data and analyses indicate that groundwater discharge supports baseflow in valley streams and the cumulative impact of groundwater rights issued since the state Scenic Waterway was designated have exceeded the thresholds established in law (see ORS 390.835(9) and (12)). To gain a better understanding of the connection between surface water and groundwater as well as the connection between the alluvial and volcanic groundwater systems, the UGRRW Partnership wants to explore existing data gaps in the future.

Groundwater levels vary across the basin and are influenced by local geology, recharge, available storage, and patterns of groundwater development and use, among other factors. The OWRD noted in a 2019 memo that groundwater declines have been observed in some alluvial wells (six out of 12 wells analyzed) and volcanic wells (six out of seven wells analyzed) where there was sufficient long-term groundwater level data monitored by the OWRD. Among the wells analyzed, there are also examples of groundwater levels that are stable and have risen. When declines are observed, they are generally steeper in the volcanic groundwater system likely due to the fact that recharge is more limited. Groundwater levels are comparatively stable in the alluvial system, especially in the shallow alluvial system and where, presumably, there is a more direct hydraulic connection to recharge areas. Observed declines in a subset of wells does not mean that groundwater levels are declining everywhere across the basin, but declines can be important indicators for areas where supply may be insufficient to meet current or future demand or where there is the potential for conflict between different water users or uses. It is important to note that only limited data are available and, without a more comprehensive network of monitoring wells and consistent measurements made over time, it is difficult to determine the spatial extent and long-term trends of any declines. More information is needed to determine overall groundwater trends across the UGRRW.

Figure 2-12 provides an example of groundwater level trends over time for select wells, two completed in the volcanic system and one completed in the alluvial system. The decline shown in the City of La Grande well (UNIO 940) has stabilized in a nearby well managed by the City (UNIO 2098) that produces groundwater from the same aquifer. The reason why groundwater levels in this area have stabilized is not known but may be associated with a reduction in pumping at UNIO 940. The City of Imbler well (UNIO 2496) shows seasonal fluctuations as well as a general declining trend. Groundwater level declines in the City of Imbler municipal alluvial well are an ongoing concern identified by the City (OWRD, 2019). More information is needed to determine overall groundwater trends.

Figure 2-12
Hydrograph of Columbia River Basalt Group and Alluvial Wells



Groundwater Quality Data

Groundwater quality data in the UGRRW are very limited; groundwater quality is not known to be a concern at this time. Potential threats to groundwater quality were investigated using the DEQ Environmental Cleanup Site Information database and the Oregon Health Authority's real estate transaction database nitrate measurement data. Based on the location of sensitive aquifers in the UGRRW, several cleanup sites associated with the City of La Grande have the potential to have impacted aquifers in the central portion of the UGRRW (subwatershed 6). Nitrate database records show localized (five wells) nitrate concentrations of more than 8 milligrams per liter near the City of La Grande/City of Island City (subwatersheds 3 and 6). These levels were considered likely to be localized concerns and not indicative of UGRRW-wide conditions. The DEQ implements toxic monitoring in groundwater and surface water, annually rotating from basin to basin as funding allows. The DEQ has not carried out toxic monitoring in groundwater in the Grande Ronde Basin. Overall, groundwater quality is not known to be a concern.

Ecology and Watershed Health

The reports generated for Steps 2 and 3 include descriptions of the basin ecology and watershed health. Ecosystems and watershed health are affected by both the quality and quantity of surface water and groundwater. Furthermore, restoring watershed health can improve water quantity and quality and help buffer the impacts of extreme events like drought and floods. Healthy watersheds are essential for fish and wildlife, our communities, our quality of life, and

the local economy. Additional information about watershed health can be found on the GRMW Website at https://www.grmw.org/data/assessments/. The key takeaways are as follows:

- The UGRRW is a unique ecosystem that is home to numerous species that serve different roles in maintaining ecological health.
- Focal species were identified in the Grande Ronde Subbasin Plan as representing species that will be most sensitive to threats and changes in the environment. Focal species are thought to encompass characteristics that represent the needs of other unlisted species. If a focal species is protected, these protections will benefit other species as well. Focal terrestrial species include Rocky Mountain elk (*Cervus elaphus nelsoni*), Rocky Mountain bighorn sheep (*Ovis canadensis*), American beaver (*Castor canadensis*), American marten (*Martes americana*), great blue heron (*Ardea herodias*), bald eagle (*Haliaeetus leucocephalus*), white-headed woodpecker (*Picoides albolarvatus*), olive-sided flycatcher (*Contopus cooperi*), yellow warbler (*Dendroica petechia*), sage sparrow (*Amphispiza belli*), western meadowlark (*Sturnella neglecta*), and Columbia spotted frog (*Rana luteiventris*) (Northwest Power and Conservation Council [NPCC], 2004).
- Focal aquatic species include summer steelhead/redband trout (*Oncorhynchus mykiss*), spring Chinook salmon (*Oncorhynchus tshawytscha*), and bull trout (*Salvelinus confluentus*). Prior to the installation of dams in the region, coho salmon (*Oncorhynchus kisutch*) were also common (NPCC, 2004).
- Federally endangered species in the UGRRW are monitored through recovery plans, and many restoration projects are ongoing to provide additional resources to these vulnerable species, many of which are aquatic, including steelhead, Chinook, and bull trout. State-listed species are also monitored and have protections in place to support population recovery.

Annual Water Balance

To understand the relative magnitude of the macro-components of the water cycle within the UGRRW, OWRD has estimated the annual precipitation entering the basin, annual volumes of stream flow leaving the basin, and losses from land surface evapotranspiration (UGRRW Partnership, 2018). This analysis (summarized on Table 2-2 below) estimates that the UGRRW receives approximately 2,468,000 AF of precipitation in an average year, 696,000 AF leaves the watershed as stream flow 28 percent of total precipitation), and 1,498,000 AF of water leaves the UGRRW annually as evapotranspiration (61 percent of total precipitation). This leaves 274,000 AF annually unaccounted for. It appears that the highest evapotranspiration occurs in mountainous areas, and lower on the Grande Ronde Valley floor. The highest precipitation occurs in Subwatershed 5 and other mountainous areas.

Table 2-3*
Estimates of the Annual Water Balance Fluxes in the Upper Grande Ronde River Watershed (Assuming Groundwater Inflow and Outflow are Negligible)

Water Cycle Component	Volume (AF)	Rate (feet per year)	Percent of Precipitation
Mean Annual Precipitation Volume, AF (1961 to 1990)	2,468,000	2.36	-
Mean Annual Natural Streamflow Volume, AF (1961 to 1990)	696,000	0.67	28
Mean Annual Evapotranspiration, AF (2000 to 2013)	1,498,000	1.43	61
Estimated Residual (unaccounted for precipitation)	274,000	0.26	11

**All information on this table is from the Step 2 report (UGRRW Partnership, 2018).*

Subwatershed Summaries: Water Resource Contributions and Vulnerabilities

Information described above was used to assess the water resources of each area by summarizing the vulnerabilities of the resource as well as the resources available for meeting water needs of the UGRRW. See Table ES-2, which summarizes the findings by subwatershed.

Data Gaps

Numerous data gaps were identified in this step. The primary ones are listed below:

- Consistent methodologies for hydrologic and water resources analyses are needed that incorporate new advances in understanding of hydrology and climate and can replace frequency analysis that assumes stationarity. Stationary assumptions do not take into account changing conditions over time.
- The modeled surface water datasets included in this report are based on a period of record from 1958 to 1987, which do not represent current conditions or changing conditions and assume stationarity.
- The use of OWRD's Water Availability Reporting System to quantify water supply and demand runs the risk of inaccurately quantifying surface water supply because it does not consider current conditions.
- The UGRRW Partnership did not independently validate data discussed in this report. Validation requires comparisons between modeled and measured data to estimate the deviation between predicted and actual values. There was not a field validation/data verification component to this report and, as such, the information is only as reliable as the sources and studies from which it was obtained. The UGRRW Partnership has identified significant data gaps and is committed to performing monitoring and conducting studies to increase confidence in data used for decision-making.
- Surface water supply information is limited to eight gauging station locations within the entire watershed with varied accuracy and duration of data collection. The continued operation of these gauges is threatened by lack of funding, particularly the Grande Ronde at Troy. Estimates of groundwater supply are based on legally allowed rate and volume of groundwater withdrawals and exempt domestic well permits and do not reflect the volume of water available, the depth at which it is being extracted, or the rate or source of recharge. These estimates also do not reflect the actual amount used. Groundwater supply was

estimated using permitted volumes, not actual pumping measurements. Return flow to surface water and groundwater after an initial use is unknown and requires a more detailed understanding of the amount of water pumped, applied, recharged to the aquifer, and consumed by crops as well as surface water-groundwater interactions.

3.0 - Current and Future Water Demands

During Step 3, the Upper Grande Ronde River Watershed (UGRRW) Partnership estimated demands on current and future water resources and identified vulnerabilities to water systems. Demand for water was quantified using best available data to assess vulnerabilities to ecological, agricultural, and municipal interests associated with these demands.

Municipal Needs/Demands

Seven of the eight cities in Union County are located within the UGRRW. Each city has unique water supply and infrastructure challenges, but all share a similar demand profile with increased water use in the summer months. The cities exclusively use groundwater for their municipal potable water supply needs. The City of La Grande owns and maintains the Beaver Creek reservoir that was historically used for municipal supply, which has potential as a future/backup water source if repairs to infrastructure (pipeline, treatment system) are completed. Two other groups of users are analyzed with municipal users: unincorporated users (those outside city limits) and self-supplied industrial users (SSIU) (industrial users located outside city limits that have their own water rights and supply).

Current water use for these cities was obtained by reviewing actual water use records for those entities that reported water use (with outlier data removed) as reported on the OWRD water use reporting site (OWRD, 2018). The result from the actual use calculation is that cities, unincorporated users, and SSIU use approximately 2,060 acre-feet (AF) per year of surface water and 8,190 AF per year of groundwater. Bi-weekly estimates were calculated using actual water use reporting records (which are reported monthly and were divided in half for bi-weekly use estimates).

Future water use was calculated by taking all current estimates for cities and unincorporated users and forecasting a six percent increase in population (as estimated by the Portland State University population Forecast). SSIU usage was increased based on assumptions of some industrial growth (increased work shifts from one to two per day). This results in a projected total of 8,240 AF per year of surface water needed and 13,550 AF per year of groundwater needed in 2068 for municipal, industrial, and unincorporated domestic use.

The UGRRW cities appear to have adequate water rights and supplies based on OWRD Water Use Reports as well as plans to upgrade infrastructure as needed and so are rated as having **low** vulnerability; Imbler is the exception, as decreasing groundwater levels have been documented and the City indicated their concern. Some vulnerabilities appear to exist relative to the lack of redundancy of supply for individual cities. Water quality issues were not identified as a limiting factor for municipal needs. Cities were surveyed during Step 3 to determine needs and vulnerabilities, of which few actionable items for the UGRRW Partnership to work on were identified. The primary issues included greater need for coordination between cities and also with the County on resource sharing and updating natural hazards mitigation plans to meet Federal Emergency Management Agency standards. City issues were explored by the UGRRW Parnertship with field trips to two City managed water facilities.

Agricultural Needs/Demands

Agricultural demand was calculated in two ways: 1) water rights assessment and 2) crop consumptive demand using calculations of evapotranspiration (ET) of crops raised in the UGRRW. Scenarios for increased irrigation efficiency and future climate were evaluated based on the ET method.

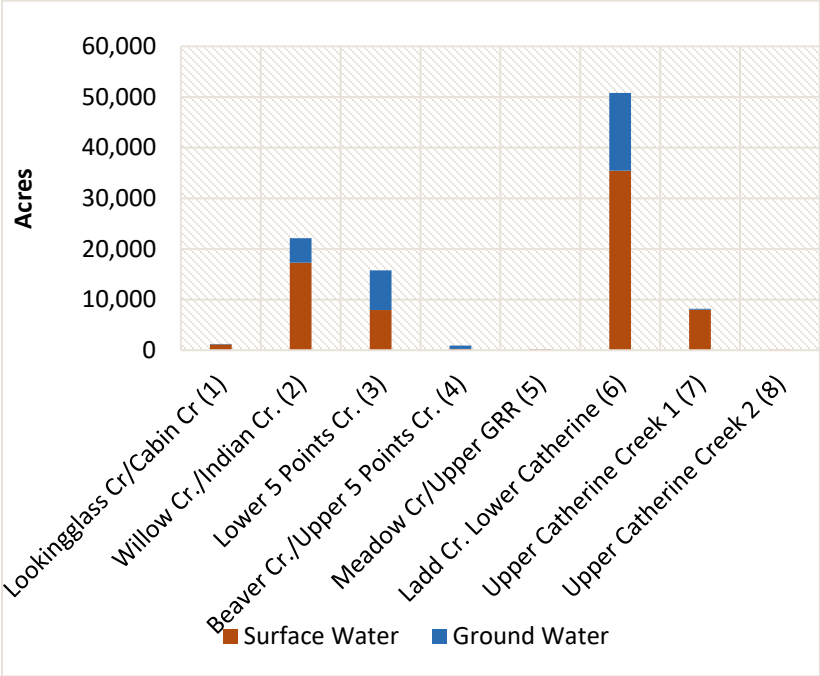
To estimate the current demand for irrigation water use based on water rights in the UGRRW (for surface and groundwater), first the number of irrigated acres was estimated and multiplied by the annual permitted volume per acre. This total volume was then distributed over time according to the modeled crop water use for the makeup of crops grown in the basin. The water rights method of estimating current agricultural demand can be thought of as the upper limit, since it represents the maximum legally allowable use. However, it can also be considered an incomplete estimate of demand, since it does not account for cropland that currently does not have a water right but would benefit from irrigation if water was available.

The second method was to calculate agricultural water demand based on ET. First, the distribution of crops in Union County was estimated using Farm Service Agency/Oregon Agriculture Information Network acreage data. Then, ET was calculated for this crop distribution using a Kimberly-Penman ET model. Weather parameters used in the modeling were taken from the Agrimet station at Imbler (IMBO).

Future demand was calculated using estimated future ET based on precipitation and temperatures projected by the Representative Concentration Pathways (RCP) 8.5 climate scenario. Future demand was calculated for two scenarios: the first only accounted for changes based on future weather parameters, while the second also assumed a specified suite of reasonably attainable irrigation efficiency improvements. The Natural Resources Conservation Service water savings estimator for irrigation system planning was used to estimate water savings.

Total annual agricultural water use per year was estimated to be 211,130 AF (surface water) and 86,830 AF (groundwater) using water rights, while the ET method resulted in somewhat lower estimates of 193,730 AF (surface water) and 77,970 AF (groundwater). Future demand with irrigation efficiency improvements implemented and with projected increases in future temperature was estimated to be 284,530 AF per year (surface water) and 114,520 AF per year (groundwater) based on the ET model. Estimates assume that no additional water rights are issued and that no expansion of irrigated acres occur, and in this regard might be considered an incomplete estimate. Figure 3-1 shows irrigated acres by subwatershed in the UGRRW.

Figure 3-1
Upper Grande Ronde River Watershed Irrigated Acres by Subwatershed



Given the limitations imposed by climate modeling, current and future water quantity vulnerability for agriculture systems appears to be **high** on a bi-weekly basis. During certain months, water quality impairments (temperature, bacteria) are not identified as having a negative impact on water used for agricultural activities.

Instream Needs/Demands

Instream demand is complex; numerous processes contribute to the amount of water needed for instream use. Instream demand for aquatic life is driven by several factors: species, water needs, stream variables, and future changes. Instream flow demand recognizes the value and importance of suitable flows and water elevations throughout a basin's drainage network to sustain and enhance fish and wildlife populations and their habitats, support ecological functions, maintain and improve water quality, meet recreational needs, and contribute to the socioeconomics of local communities. Sufficient instream flow to ensure functioning ecosystems and stable fisheries is critical to tribal culture and maintaining the treaty rights reserved for local tribes. Municipal, agricultural, and recreational users all benefit from instream functions.

For instream demand, the UGRRW Partnership quantified species and water needs and described instream demands using calculations based on existing instream water rights (ISWRs) and qualitative analysis. The accuracy of this approach is limited due to the incomplete coverage of instream water rights and the fact that some ISWRs are insufficient to protect the range of public uses served by ISWRs. ISWRs exist only in limited stream segments, and many reaches bearing Endangered Species Act (ESA)-listed species do not have instream water rights. See Figure 3-2 below for the distribution of ESA-listed species and Figure 3-3 for the location of instream water rights. These two images together show the limited spatial coverage of existing instream rights relative to the presence of ESA-listed species. Also, instream water rights currently do not account for elevated winter and spring flows, even though they

are an important component of maintaining a natural flow regime by creating and maintaining habitat, maintaining floodplain connectivity, and providing important environmental cues to multiple species.

The analysis of instream water rights was supplemented through exceedance flow analysis as described below. Scenic Waterway flows are used for recreation downstream of the project area. The Grande Ronde River from its confluence with the Wallowa River downstream to the Oregon-Washington border is designated as a state Scenic Waterway, which makes new allocations in the planning area contingent on the maintenance of Scenic Waterway flows.

Figure 3-2
Location of Endangered Species Act-Listed Fish Species

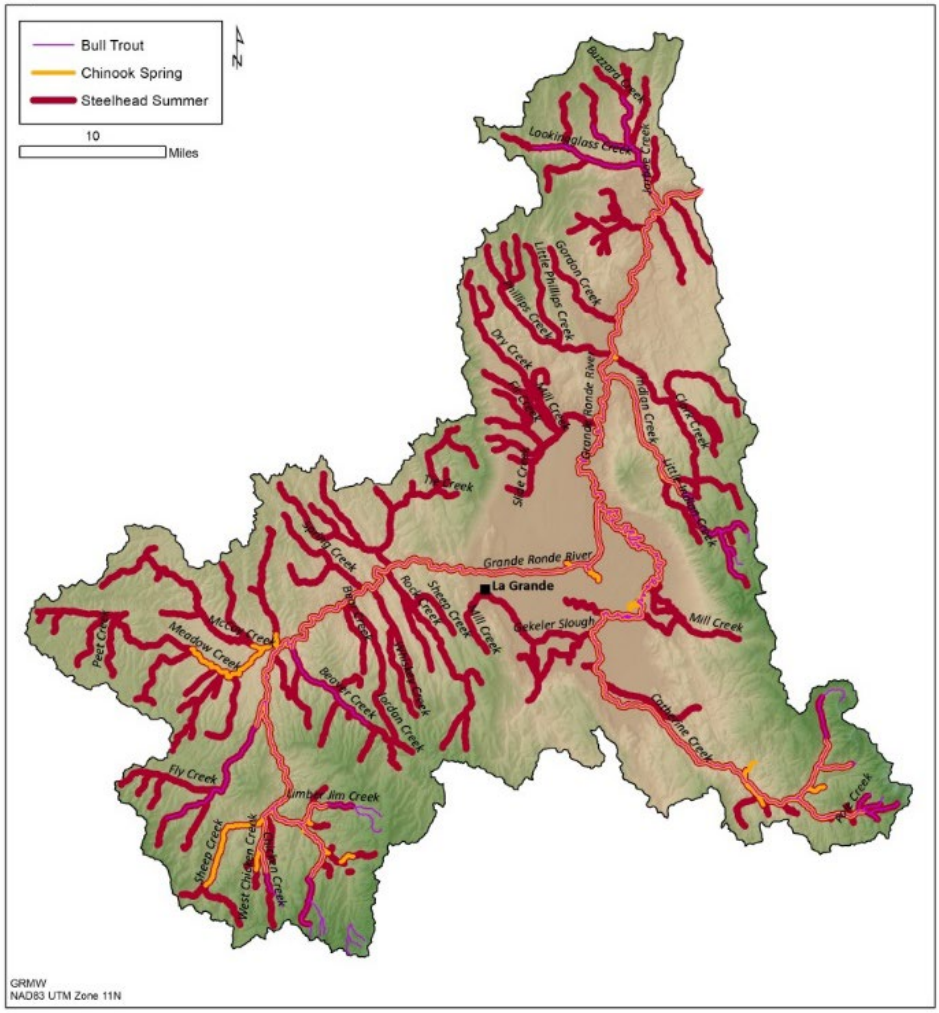
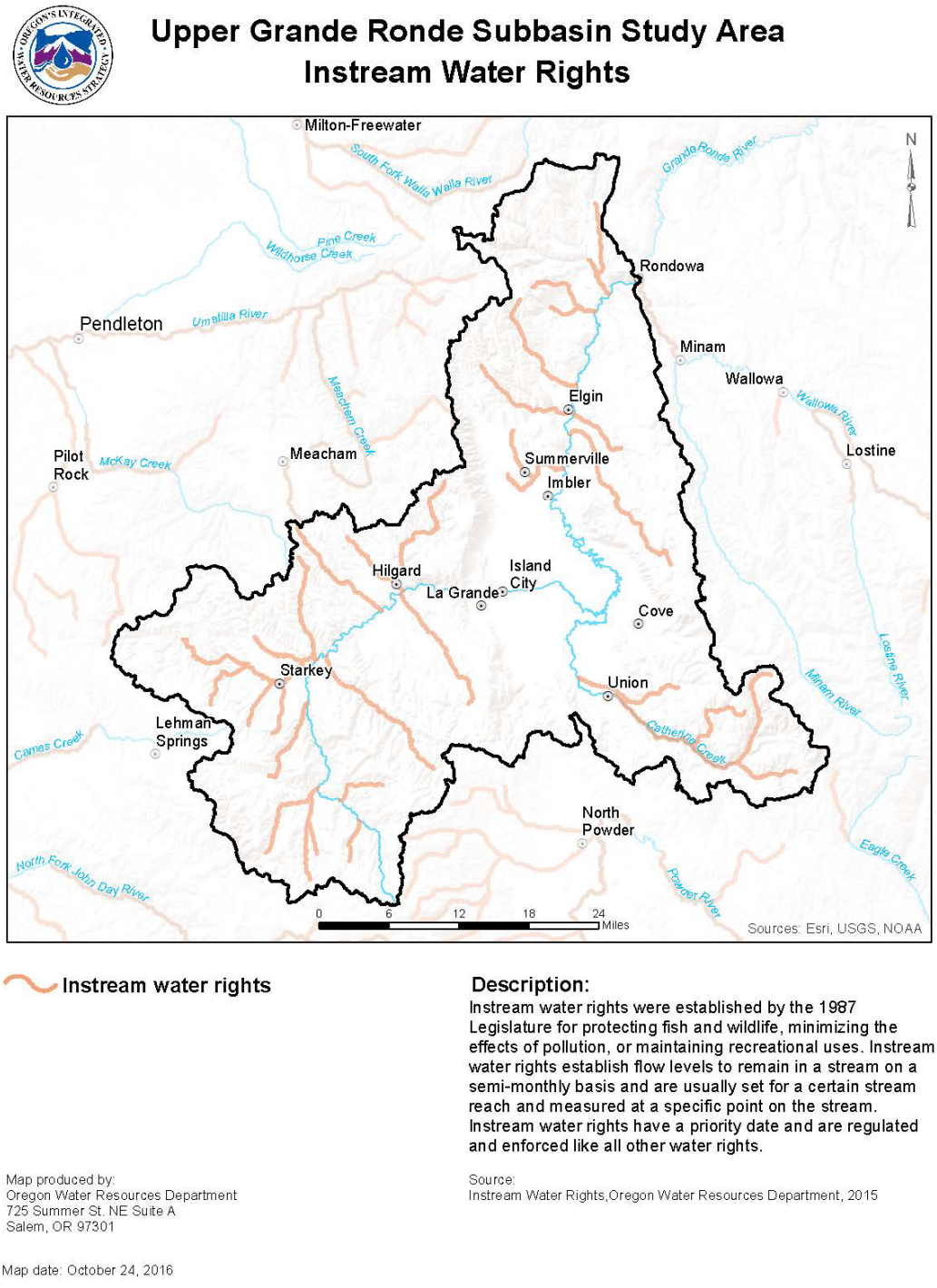


Figure 3-3
Location of Instream Water Rights

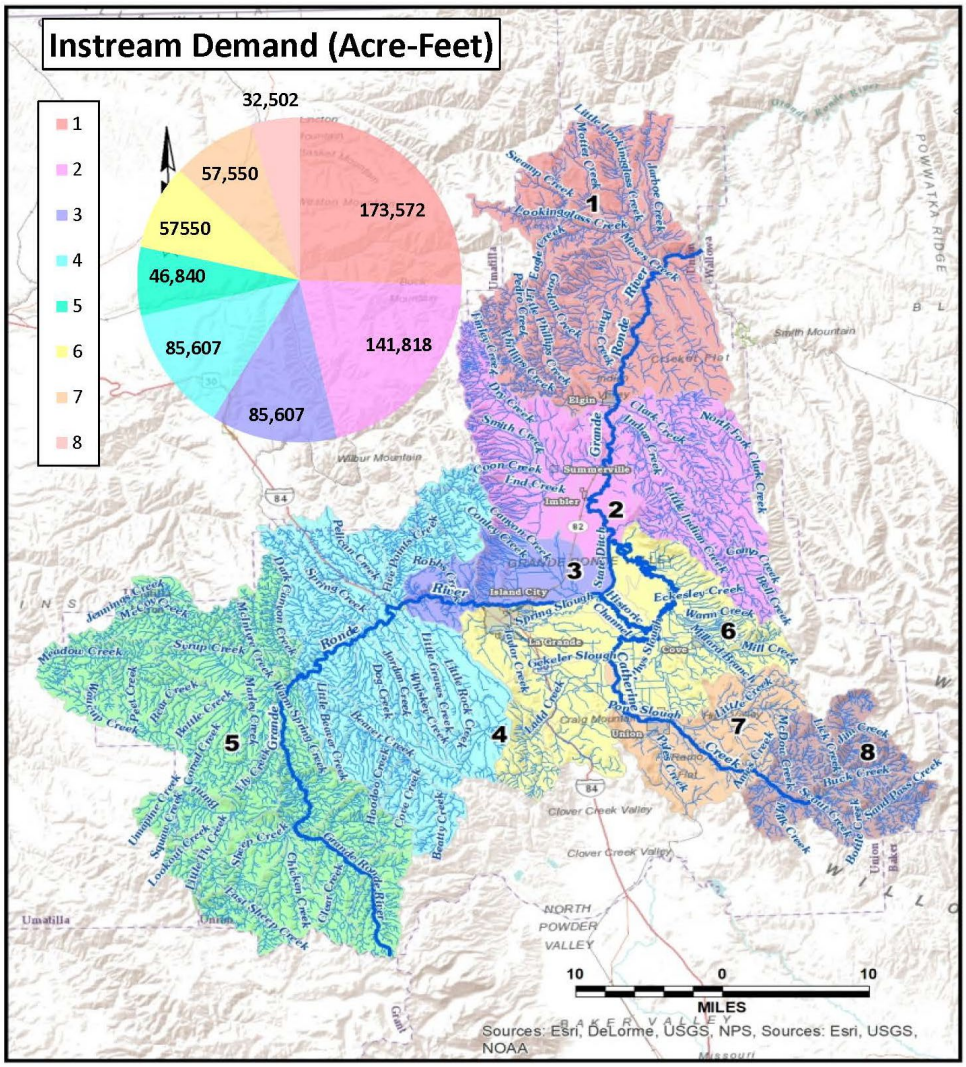


When considering water needs for aquatic species, multiple variables were considered. Aquatic species, such as the salmonid species of elevated concern in the UGRRW, are highly reliant on water flow, temperature, volume, velocity, depth, water quality, and timing/seasonality. Flow needs for salmonid spawning, incubation, passage, and rearing in the Grande Ronde Basin were studied in the late 1960s and

early 1970s, and the recommended flow values in the resulting Basin Investigation Report (BIR) (Smith, 1975) were used to inform amounts requested on subsequent instream water right applications. Figure 3-3 shows the total amount of instream water rights within each subwatershed; however, it is important to remember that certificated water rights may have been reduced below amounts requested in the application and, therefore, do not fully represent actual instream needs..

Based on the historical data, the greatest demand has come from northern Union County (subwatershed 1, north of Elgin), central Union County (subwatershed 3, near Island City), southeastern Union County (near Medical Springs), and southeastern Union County (subwatershed 7, near Union). There were no instream rights for the south-central area (subwatershed 6) that includes La Grande or Cove (Oregon Department of Fish and Wildlife [ODFW], 2018). This approach is limited, as it does not account for peak and channel forming flows. There are many places in the UGRRW where instream flow demands exist but are not represented through ISWRs because flow studies have not been completed and applications for instream rights have not been made.

Figure 3-3
Aquatic Species Instream Demand (as calculated by UGRRW Partnership)



To determine how often existing needs (as described by ISWRs only) are met, data from the OWRD Water Availability Reporting System were used to evaluate how much water was left for instream uses when consumptive uses (municipal and agricultural) were removed. For this planning process, the Technical Committee utilized ISWRs and past flow studies (ODFW, 1975) to calculate the instream flow demand to meet the specific biological needs of sensitive fish species. Consumptive uses were subtracted from both the 80 percent and 50 percent natural streamflow exceedance values at each subwatershed with an ISWR. It should be noted that the Water Availability Reporting System includes a summary of estimated monthly flows based on a 30-year period of record (1958 through 1987) and does not include variation in actual supply conditions or use from year to year or month to month. This means that this statistical summary provides, at best, an indicator of the likelihood of instream flows being available for instream needs and does not reflect actual measured streamflow conditions or the seniority of instream water rights relative to other users.

The lower flow value (80 percent exceedance, or water expected in the stream at least 80 percent of the time) is often fully allocated to consumptive uses. That means that when flows are at this level, it is unlikely that there will be water available to meet instream needs. At the higher flow level (50 percent exceedance, or water expected in the stream at least 50 percent of the time), consumptive uses likely leave enough water instream to meet some needs except in the late fall. This analysis indicates that the majority of the time (80 percent of the time), instream flows are not likely met across the UGRRW. In practice, this means that fish migration can be threatened in the fall in reaches where there are inadequate flows.

The analysis provides an understanding of how current instream flows, if met, would meet the biological needs of sensitive fish species. No analysis was performed to determine the actual frequency that instream water rights are met using measured flows at gauging stations in the UGRRW or how protective these flows might be given their relative priority date to more senior out-of-stream water uses. Also, no analysis was performed to quantify other flows such as flushing or channel-forming flows as well as the relationship between flows and temperature. As a result, the plan likely underestimates instream flow needs.

A quantitative assessment of future instream demand is not included. Qualitatively, RCP 8.5 modeling outputs were considered for future planning efforts. Modeling assumptions suggest that for every 1°F increase in temperature, it was estimated that there would be a 5 percent decrease in stream flow (National Research Council [NRC], 2011). This will reduce the ability to meet instream demand in future forecasted scenarios.

Given the limitations imposed by climate modeling assumptions and quantitative and qualitative analyses, current and future instream supply flow vulnerabilities appear to be **high.** Water quality issues were identified as a limiting factor for instream needs.

Climate Change and Natural Hazards

The planning group evaluated the estimated impacts of climate change and natural hazards on demand estimates. RCP 8.5 estimated temperature and precipitation data were used to model future climate change for the 2068 (50 years in the future) scenario and estimate values discussed in each demand section. Overall, modeled estimates of climate change suggest an increase in the frequency and magnitude of some natural hazards. Floods, droughts, and wildfires are occurring with increasing frequency and intensity in the UGRRW. These events impact instream and out-of-stream water users.

Declining snowpack and rising temperatures impact water quantity, quality, and both instream and out-of-stream needs.

Natural hazards are evaluated in a qualitative manner and with information derived from the County-wide hazards vulnerability analysis, Emergency Operations Plan, Natural Hazards Mitigation Plan, and Community Wildfire Protection Plan.

Subwatershed Demand Summaries

Based on the estimated demands above, a coarse classification of vulnerabilities for each subwatershed -- the level of risk for each demand group (how likely that demands are not met) -- were examined and resulted in the rankings shown on Table 3-1:

Table 3-1
Water Demand Vulnerabilities by Subwatershed

Name	Agricultural+	Municipal+	Instream*	Water Quality*
1 Lookingglass Creek/Cabin Creek	Low	Low	High	High
2 Willow Creek/Indian Creek	High	Low	High	High
3 Lower Five Points Creek	High	Low	High	High
4 Beaver Creek, Upper Five Points Creek	Low	Low	High	Moderate
5 Meadow Creek Upper Grande Ronde River	Low	Low	High	Low
6 Ladd Creek Lower Catherine	High	Moderate	High	High
7 Upper Catherine Creek 1	High	Low	High	Moderate
8 Upper Catherine Creek 2	Low	Low	High	Low

+ Quantitative attribute assessments have measured attributes at their foundation but may include estimates to fill data gaps and/or some reliance on professional opinion.
**Qualitative attribute assessments are based on limited measured data and rely heavily on condition estimates, professional opinion, published studies, and agency policy.*

Surface water and groundwater demand vary by subwatershed, demand category, and time of year. For example, municipal demand is primarily reliant on groundwater sources, while instream demand is exclusively reliant on surface water sources (although these sources are fed through groundwater contributions). Limited data are available to help the UGRRW Partnership understand surface water/groundwater interactions and interdependencies. Agricultural demand encompasses both surface water and groundwater. Tables 3-2 and 3-3 below summarize the annual water balance based on estimated supply and estimated demand (current, and in 2068). Table 3-4 shows bi-weekly surface water deficits in each subwatershed. Overall, surface water is available on an annual basis; however, bi-weekly surface water deficits are present generally July through November in most subwatersheds. This analysis was completed using information available to the UGRRW Partnership at the time of writing; it should be noted that the instream flow section states that the full range of flows throughout the year have not been taken into account in the formation of the annual basis, and instream water rights (which were used as a proxy for instream demands) are not present on all streams in the planning area.

Table 3-2
Annual Water Balance (Current Demand)

Subwatershed	Name	Surface Water Quantity (Natural Stream Flow) AF per Year (50th Percentile)[a]	Groundwater Used (AF per Year)[b]	Agricultural Demand Surface Water (AF per year) (Water Rights Only)[b]	Agricultural Demand Groundwater (AF per Year) (Water Rights Only)[b]	Agricultural Demand Surface Water (AF per Year) (ET Estimate)[b]	Agricultural Demand Groundwater (AF per Year) (ET Estimate)[b]	Municipal Demand Surface Water (AF per Year)[b]	Municipal Demand Groundwater (AF per Year) 2013 Totals[b]	Instream Demand (AF per Year) (Water Rights Only)[b, c]	Surface Water Balance (ag ET)[b]	Groundwater Balance (ag ET)[b]
1	Lookingglass Creek/Cabin Creek	644,600	-	3,470	230	3,410	220	383	810	173,750	467,440	(1,030)
2	Willow Creek/Indian Creek	523,380	29,400	51,890	14,440	46,630	12,980	-	810	141,820	334,930	15,620
3	Lower Five Points Creek	234,120	25,720	23,780	23,490	20,770	20,520	1,393	500	85,610	127,740	4,700
4	Beaver Creek, Upper Five Points Creek	219,830	1,960	750	2,040	710	1,932	170	160	85,610	133,510	(120)
5	Meadow Creek Upper Grande Ronde River	127,840	190	520	-	510	-	-	50	46,840	80,490	140
6	Ladd Creek Lower Catherine	153,740	71,720	106,330	46,100	96,350	41,774	110	5,500	57,550	(160)	24,450
7	Upper Catherine Creek 1	116,240	9,280	24,030	530	24,870	550	-	370	57,550	33,820	8,360
8	Upper Catherine Creek 2	71,600	-	360	-	470	-	-	10	32,500	38,620	(10)
	Total	644,600*	138,270	211,130	86,830	193,730	77,973	2,060	8,190	173,750*	277,130	52,110

[a] *Data developed and documented in the Step 2 report.*

[b] *Data developed and documented in the Step 3 report.*

[c] *Total natural stream flow and instream demand are expressed as the total from Subwatershed 1 (the most downstream section of the watershed) to prevent "double counting."*

Table 3-3
Annual Water Balance (Future Demand)

Subwatershed	Name	2068 Temperature Change from Current (°F from Annual Mean[a])	Surface Water Quantity (Natural Stream Flow) (AF per Year)[b]	Groundwater Used (AF per Year)[c]	Agricultural Demand Surface Water (AF per Year) (Water Rights Only)[c]	Agricultural Demand Groundwater (AF per Year) (Water Rights Only)[c]	Agricultural Demand Surface Water (AF per Year) (ET Estimate)[c]	Agricultural Demand Groundwater (AF per Year) (ET Estimate)[c]	Municipal Demand Surface Water (AF per Year)[c]	Municipal Demand Groundwater (AF per Year)[c]	Instream Demand AF per Year (Water Rights Only)[c]	Surface Water Balance (ag ET)[c]	Groundwater Balance (ag ET)[c]
1	Lookingglass Creek/Cabin Creek	1.6	593,040	-	3,470	230	5,010	330	60	30	173,750	414,210	(2,090)
2	Willow Creek/Indian Creek	1.6	481,510	29,400	51,890	14,440	68,490	19,060	-	860	141,820	271,210	9,490
3	Lower Five Points Creek	1.6	215,390	25,720	23,780	23,490	30,510	30,140	5,570	1,240	85,610	93,700	(5,660)
4	Beaver Creek, Upper Five Points Creek	1.6	202,250	1,960	750	2,040	1,050	2,840	690	360	85,610	114,910	(1,230)
5	Meadow Creek Upper Grande Ronde River	1.6	117,610	71,720	520	-	750	0	-	50	46,840	70,020	140
6	Ladd Creek Lower Catherine	1.6	141,440	9,280	106,330	46,100	141,510	61,360	460	8,870	57,550	(58,070)	1,490
7	Upper Catherine Creek 1	1.6	106,940	-	24,030	530	36,530	810	-	390	57,550	12,870	8,080
8	Upper Catherine Creek 2	1.6	65,870	190	360	-	690	0	-	10	32,500	32,680	(10)
	Total	1.6	593,040*	138,270	211,130	86,830	284,530	114,520	6,780	11,810	173,570*	126,510	10,200

[a] *All future estimates have a high degree of uncertainty associated with them because of the inherent difficulty in making estimates and predictions 50 years into the future.*

[b] *Data developed and documented in the Step 2 report.*

[c] *Data developed and documented in the Step 3 report.*

Table 3-4
Shaded Bi-weekly Water Balance

Biweekly surface water balance by subwatershed

	Oct		Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep	
Subwater	1st to 15th	16th to 31st	1st to 15th	16th to 30th	1st to 15th	16th to 31st	1st to 15th	16th to 31st	1st to 15th	16th to 28th	1st to 15th	16th to 31st	1st to 15th	16th to 30th	1st to 15th	16th to 31st	1st to 15th	16th to 30th	1st to 15th	16th to 31st	1st to 15th	16th to 31st	1st to 15th	16th to 30th
1	-1607	-2059	-1393	-1393	2160	1684	5350	4874	19409	19409	32618	32142	62371	62276	71312	70762	36536	36436	7133	6697	2116	1716	-775	-712
2	-1007	-1029	-528	-528	2357	2010	4948	4601	16323	16323	27087	26740	46949	45651	51850	50243	25695	24336	-215	-19	-2064	-1377	-2134	-1282
3	345	431	-33	-33	1062	923	2504	2365	6960	6960	14425	14226	21029	20451	21306	20260	816	3185	-3345	-3302	-1715	-1314	-772	-392
4	449	395	-111	-111	918	779	2271	2132	6464	6464	13411	13212	19496	19476	20766	20156	2229	5183	-443	-633	262	218	172	185
5	842	-1534	-1110	-1110	658	579	1260	1181	3496	3219	7866	7767	13431	13417	15529	15370	4914	4900	-660	-803	-1547	-2478	-2353	-2343
6	-241	372	478	478	1325	1265	2086	2026	5384	5384	6506	6308	9370	6689	6365	3876	-5499	-6075	-13376	-12413	-8240	-6162	-3969	-2208
7	352	466	662	662	855	796	997	938	1320	1320	616	417	1725	1033	8971	8034	5495	7002	-2206	-2076	-1584	-1091	-670	-216
8	-8	-63	-54	-54	184	125	271	212	493	493	1319	308	3138	3125	8103	7954	6516	6502	262	129	-66	-130	-72	-63

2068 biweekly surface water balance by subwatershed

	Oct		Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep	
Subwater	1st to 15th	16th to 31st	1st to 15th	16th to 30th	1st to 15th	16th to 31st	1st to 15th	16th to 31st	1st to 15th	16th to 28th	1st to 15th	16th to 31st	1st to 15th	16th to 30th	1st to 15th	16th to 31st	1st to 15th	16th to 30th	1st to 15th	16th to 31st	1st to 15th	16th to 31st	1st to 15th	16th to 30th
1	-1495	-2135	-1557	-1297	4301	1589	299	6076	20796	13882	27399	27911	39997	60417	58938	32329	21715	28686	7883	5032	1389	1906	-1386	39
2	-1322	-1051	-621	-411	4135	1972	886	5617	17489	11875	22889	23264	28016	43262	40190	16280	10655	15326	-1687	-3084	-3937	-2458	-3520	-1298
3	11	250	-249	-154	1641	733	472	2656	7279	4904	11981	12181	10782	19084	15439	3397	-4750	-328	-4340	-4588	-2594	-2046	-1474	-728
4	468	367	-172	-83	1604	743	505	2547	6905	4675	11258	11468	10361	18729	16107	5662	-1550	3207	-327	-948	145	219	53	297
5	867	-1538	-1133	-1082	1092	569	280	1426	3750	2251	6650	6784	8407	13014	12752	6707	2503	3644	-578	-988	-1607	-2467	-2412	-2267
6	-1187	351	436	498	1833	1240	878	2310	5712	4063	5259	5121	2276	4241	-187	-11382	-15670	-13929	-17816	-16628	-11293	-8895	-6141	-3481
7	149	459	631	701	1266	787	241	1127	1438	868	149	-5	-1293	312	5464	-1595	-865	3052	-3153	-3461	-2440	-1751	-1303	-409
8	18	-68	-73	-30	438	120	-194	328	566	214	1032	75	1552	2991	6501	2968	3630	5003	396	-132	-146	-105	-147	43

AF<-10000
-10000<AF<-5000
-5000<AF<-2000
-2000<AF<-1000
-1000<AF<-500
-500<AF<0
0<AF<500
500<AF<1000
1000<AF<2000
2000<AF<10000
10000<AF<20000
20000<AF<50000
AF>50000

Data Gaps and Uncertainty

In summary, the following major data gaps and uncertainty elements are present within this report:

- Surface water volume involved use of data from a 1958 to 1987 period of record. Updated analysis should be performed to better understand current surface water supplies.
- Groundwater volume. Lack of information on whether groundwater pumping rates are sustainable. Groundwater balance graphs are not included in analysis because of lack of certainty about supply.
- Uncertainty in the models used to estimate future temperatures, precipitation, and other climate variabilities. For precipitation, seasonal and average annual projections are more certain than daily or monthly.
- Uncertainty in estimated population growth.
- Uncertainty in quality of future water supply, which may limit the volume of water usable by municipal, agricultural, and instream uses.
- Uncertainty in the UGRRW's response to changes in precipitation and temperature and how those changes will impact available water supply (timing, amount, intensity, and frequency).
- Instream demand calculations were incomplete, and winter ecological (channel-forming) flows were not considered. Physical Habitat Simulation System (PHABSIM) studies are needed on the Grande Ronde River and Catherine Creek.

4.0 - Water Issues and Recommended Actions

The purpose of Planning Step 4 was to utilize information reviewed in the previous two steps to identify water issues facing the Upper Grande Ronde River Watershed (UGRRW), identify goals and objectives associated with each water issue, explore a wide range of strategies, and determine which strategies (and corresponding recommended actions) the UGRRW Partnership should implement.

Water Issues, Goals, Objectives, and Strategies

Water issues are identified as water-related problems or challenges that, if not resolved, will inhibit the ability to meet water demands. At the start of planning Step 4, information from planning steps 2 and 3 was used to determine the primary water issues to be addressed.

Overall, there are four primary water issues:

1. Surface water supply is limited in summer through late fall (circa July through November) when the combined demands for water instream and for irrigated agriculture and municipal uses are the highest (Table 3-4 above).
2. There is significant uncertainty with groundwater supply. The UGRRW needs to evaluate groundwater supply sustainability and inform strategic groundwater resource management as well as better understand the impact of the Scenic Waterway flows on new allocations. At this time, the UGRRW lacks sufficient groundwater monitoring wells, long-term trend data, pumping/use data, and data regarding surface water interactions.
3. Water quality is below statewide standards in all eight subwatersheds. The water quality issues are predominantly related to high temperatures, low dissolved oxygen (DO), and insufficient flows (Department of Environmental Quality (DEQ), 2000; UGRRW 2018, Step 2 report, Table 3-4).
4. Natural hazards like flooding, fire, and drought impact the UGRRW, and the UGRRW Partnership needs an integrated plan to mitigate and respond to these events to protect water supply sources and enhance water source resiliency. The climate change scenario considered by the UGRRW Partnership suggests that frequency, magnitude, and duration of these events could change within the UGRRW (UGRRW, 2018 Step 2 report, Section 3.0, page 3-45, and UGRRW, 2019, Step 3 report, Section 6.0).

The specific issues, goals, and objectives are described below. It is important to note that while certain objectives have a longer timeline attached to them, it is the intent of the UGRRW Partnership to try to move forward in an accelerated way and complete work as quickly and efficiently as possible. Goals 1 and 2 objectives are to be pursued simultaneously. The UGRRW Partnership is committed to advancing projects and activities to understand and meet instream and out-of-stream water needs in a balanced way and will seek to develop integrated, multi-benefit projects whenever possible.

Issue/Goal 1 Eliminate Surface Water Deficit

The largest issue facing the UGRRW is limited surface water availability in summer through late fall months when demand is highest for instream and agricultural needs. However, surface water is

available on an annual basis. The aspirational goal is to eliminate 100 percent of the seasonal surface water deficits in each subwatershed through the UGRRW Partnership's work or support of other organizations.

Objective 1.1

By 2040, reduce current (2018) surface water deficit (Table 3-2 above) as much as possible. Strategic and integrated actions will be implemented to verify and reduce this deficit according to data presented in the Step 2 and Step 3 reports, preferred alternatives identified in the feasibility studies, actions from strategies such as administrative actions and non-structural storage and habitat management, and the best available research and monitoring data. Feasibility studies and next steps for implementing each strategy may determine how much of the deficit is actually feasible to reduce. Initiate feasibility studies immediately to identify potential storage projects (including above- and below-ground, on-channel, off-channel, large, small, built, and natural storage) across the UGRRW. The total quantity achieved will be based on the outcome of the feasibility studies and will include consideration of laws determining water availability, including Scenic Waterways. Projected water deficit may increase in magnitude, frequency, and duration by 2068 (see Table 3-3 above). The list below was generated in the Step 3 report. It is noted that these deficits are partially derived from water rights, are additive and carry over from upstream to downstream watersheds.

- Subwatershed 1: September through November - 7,940 acre-feet (AF) deficit
- Subwatershed 2: July through November - 10,182 AF deficit
- Subwatershed 3: July through November - 10,129 AF deficit
- Subwatershed 4: July through November - 1,297 AF deficit
- Subwatershed 5: July through November - 13,098 AF deficit
- Subwatershed 6: June through October - 58,183 AF deficit
- Subwatershed 7: July through September - 7,843 AF deficit
- Subwatershed 8: July through November - 510 AF deficit

Agricultural shortages occur in the valley bottoms of subwatersheds 2, 3, 6, and 7 during the late summer and early fall. Instream deficits occur both above and in the dominant agriculture elevation zone in subwatersheds 1 through 8 during the months of July through November. Municipal deficits are insignificant, highest water use occurs in summer months in subwatershed 6 (Island City and La Grande). Given that none of the watersheds contain impoundments specifically intended to manage seasonal flow, this objective will require an active flow management strategy to retain water during periods of excess flows with controlled release to mitigate periods of deficit.

Objective 1.2

By 2040, fill data gaps identified in the Steps 2 and 3 reports. Data gaps have been identified for municipal demand, agricultural demand, instream demand, and supply (surface water and groundwater). Begin work immediately to fill data gaps, particularly with respect to instream flow demands (ODFW, 2018). These studies are anticipated to investigate instream flows

needed year-round and the effectiveness of mitigation strategies to deliver the amount and timing of required flows.

Issue/Goal 2 Improve Water Quality

Water quality values that do not meet statewide standards are present in all subwatersheds. The water quality parameters of concern are predominantly high temperatures, bacteria, low DO, pH, and insufficient flow. As mentioned previously herein, sedimentation, nutrients, *E. coli,* and iron were also found to be impairments in the UGRRW, though the iron may be relatively localized (not enough data spatially to evaluate). The goal is to improve water quality with the tools available to the UGRRW Partnership, through our own work, support of other organizations (such as efforts of the Grande Ronde Model Watershed [GRMW], Union Soil and Water Conservation District, and others), or a combination of the two.

Objective 2.1

By 2040, reduce each water quality issue as much as possible per the outcomes of feasibility studies and prioritization efforts addressing the parameters of concern as described below. Support the work of others in addressing additional water quality parameters beyond those identified by the DEQ. For instance, toxic chemicals, pharmaceuticals, heavy metals, etc., may also need to be addressed (UGRRW, 2018, Step 2 Report, Section 7.0, Table 7-8).

- Subwatershed 1: Temperature, pH, DO, algae
- Subwatershed 2: Temperature, pH, DO, algae, *E. coli*
- Subwatershed 3: Temperature, pH, algae
- Subwatershed 4: Temperature, pH
- Subwatershed 5: Temperature, pH
- Subwatershed 6: Temperature, pH, algae, *E. coli*
- Subwatershed 7: Temperature, pH, DO, algae
- Subwatershed 8: Temperature

The DEQ has identified numerous waterbodies that do not meet water quality standards in the UGRRW. The primary parameters of concern in the UGRRW are temperature, pH, DO, and *E. coli*. Temperature is a limiting factor for aquatic life; peak temperatures typically occur July through August, especially in the lower and central parts of the UGRRW. The approved temperature total maximum daily load (TMDL) has identified the following activities as nonpoints sources of warming in streams: excessive inputs of solar radiation because of streamside vegetation removal or reduction, channel disturbance, and flow modifications.

Generally, subwatersheds in the northern and central portion of the UGRRW (subwatersheds 1 through 6) have more limiting factors than ones in the southern UGRRW (subwatersheds 7 and 8). Review of water quality standards and the effectiveness of mitigating techniques may be evaluated on a project level, as needed.

The DEQ Water Quality Management Plan (page 21) advises that practices that reduce the amount of solar energy striking the water, reduce the width-to-depth ratio, and increase flow will result in cooler stream temperature.

Objective 2.2

Existing water quality standards are referenced in this Step 5 Plan. The UGRRW Partnership has questions about how achievable these standards may be and has discussed in meetings whether, for example, temperature standards have ever or could ever be met for every day of the year. As a result of these discussions and a general desire to better understand water quality conditions and whether standards are achievable, the UGRRW Partnership will work to fill data gaps identified in the Steps 2 and 3 reports by 2040 with respect to water quality, including temperature and other parameters important for beneficial uses. This information would be used to better characterize current conditions, prioritize restoration actions, and communicate progress toward, and likelihood of, meeting established water quality standards.

Issue/Goal 3 Reduce Groundwater Supply Uncertainty

The UGRRW lacks sufficient groundwater monitoring wells, long-term trend data, data related to understanding groundwater-surface water interaction, and pumping data to evaluate groundwater supply sustainability and support strategic groundwater resource planning. Several specific issues that need to be addressed include time required for recharge, connectivity and storage properties of discrete aquifer systems, and groundwater/surface water interaction, including information related to mitigation for Scenic Waterway flows. The goal is to improve understanding of groundwater supply and to develop and implement a plan to ensure groundwater aquifers are sustainable.

Objective 3.1

Complete a groundwater study by 2035. Through data collection and analysis, understand the characteristics of the UGRRW aquifers and determine the rate of change or trends in aquifer levels. The UGRRW Partnership will likely not request a groundwater study from the Oregon Water Resources Department (OWRD) due to time constraints but would take steps with OWRD to prepare for a future study and increase general understanding of the system.

Objective 3.2

Once the groundwater system is understood, convene a group of stakeholders to develop and implement a plan to ensure sustainable use of groundwater. This plan (in the form of an update to this document or a future Oregon Watershed Enhancement Board [OWEB] Strategic Action Plan) will consider rates of aquifer recharge, withdrawals of groundwater and surface water, and the connection between groundwater and surface water. Short-term goals will be compiled to achieve sustainable groundwater levels in the meantime (also in the form of an update to the Step 5 Plan).

Issue/Goal 4 Prepare for Natural Hazards/Climate Change

Natural hazards like flooding, fire, and drought impact water supply in the UGRRW frequently, and an integrated plan is needed to mitigate, respond, and adapt to the impact these hazardous events have on water supply. The goal is to develop an integrated plan to reduce or mitigate the impact of

these events. This plan will be prepared as a portion of a future OWEB Strategic Action Plan, or as an update to this document, depending on timing and content. Also, climate change models have projected temperature increases and stream flow changes by 2068. The goal is to create an adaptive management protocol that allows for all water uses (municipal, ecological, and agricultural water rights) without reducing water currently available to satisfy water rights.

Objective 4.1

By 2030, develop a Natural Hazards Mitigation Plan (set of projects and actions to be included in a future OWEB Strategic Action Plan or as an update to this document) to reduce or mitigate the impact of flooding, fire, and drought.

Objective 4.2

By 2040, implement mitigation measures identified in the Natural Hazards Mitigation Plan developed above.

Objective 4.3

By 2030, create an adaptive management protocol to apply new climate change data to goals. The protocol (in the form of an update to the Step 5 Plan) will document a method to modify goals based on new climate change data at regular intervals. This adaptive management protocol will evaluate the UGRRW Partnership's progress toward accomplishing the objectives and goals listed in this report. It will also provide a means for feedback to determine whether the approach needs to be revised.

Strategies Considered

After water issues were determined, the Stakeholders identified and described potential strategies to meet specific goals and objectives. This section provides an overview of the evaluation and outcomes of the strategy development and review.

The following methods were used to evaluate and develop potential strategies: group brainstorming sessions, presentations, grouping ideas into major strategy categories, spreadsheet strategy development, individual preliminary rankings, development of strategy summaries, and a group prioritization.

Each utilized method was applied in the following way:

1. **Group Brainstorming Sessions** - After identification of the four water issues (natural hazards/climate change, surface water deficit, groundwater uncertainty, and water quality), four meetings were held with the entire UGRRW Partnership stakeholder group to brainstorm strategies. Each meeting focused on one of the UGRRW Partnership-identified water issues. After being asked to individually review the Steps 1 through 3 reports, Stakeholders shared strategies to address these water issues. Strategies were written on a white board and then captured in a Word document. The Word document was sent to the group after each meeting to ensure that all ideas were included.

2. **Grouping Ideas into Major Strategy Categories** - After the four brainstorming meetings were complete, more than 100 potential strategies had been generated. These individual strategies were combined into draft major strategy categories. These categories included subsets of similar individual strategies. The group reviewed these draft major strategy categories and, after some revision, 12 major strategy categories were identified. See number 8 below in this section for a description of each strategy. The strategies included:

    - Built Storage - Aboveground Off-channel
    - Built Storage - Aboveground On-channel
    - Land Management - Agricultural Land
    - Data Collection and Monitoring
    - Non-structural Water Storage and Habitat Management
    - Land Management - Public Land
    - Infrastructure/Land Modification
    - Administrative Actions
    - Land Management - Municipal Land
    - Outreach and Education
    - Underground Storage
    - Research - Review of Existing Information

3. **Spreadsheet Strategy Development** - Each major strategy category was listed in a spreadsheet with all associated individual strategies. Elements of each strategy were drafted, and Stakeholders reviewed and contributed to the spreadsheet. A draft of this spreadsheet can be found on Union County's Place-Based Planning website with meeting minutes from the December 11, 2019, meeting (http://union-county.org/planning/place-based-integrated-water-resources-planning/). This draft was never completed, finalized, or approved by the Stakeholders and the method was terminated because it was determined the spreadsheet was better for ranking projects than strategies. Elements described included:

    - Strategy Type
    - Description
    - Issues Targeted (and Metrics)
    - Potential Benefits
    - Potential Barriers/Negatives
    - Potential Magnitude (Low, Moderate, High)
    - Potential Costs (Low, Moderate, High)
    - Potential Environmental Impacts (Low, Moderate, High)
    - Potential Human Impacts (Low, Moderate, High)

- Potential Feasibility (Recommended, Considered, Not Recommended)
  - Recommended (to be evaluated through feasibility study by the group)
  - Considered (missing information, or not enough impact to be recommended; if opportunities arise, the group would support working on this)
  - Not Recommended (strategy is not supported by the group and would not be evaluated further)
- Sites to Consider (for sub-strategies)
- Notes
- New Idea or Already Being Implemented
- Action Agency or Potential Action Agency
- What is Needed/Next Steps

4. **Individual Preliminary Rankings** - As identified in the spreadsheet, Stakeholders were asked (via email) to identify their preliminary rankings for each major strategy category whether it was:

   - Recommended (to be evaluated through feasibility study by the group)
   - Considered (missing information, or not enough impact to be recommended; if opportunities arise, the group would support working on this)
   - Not Recommended (strategy is not supported by the group and would not be evaluated further)

   The goal of this preliminary review was to identify the Stakeholders' preferences and concerns with various strategies. After discussion of the preliminary rankings, it was determined by the Stakeholders that all strategies should be retained and that strategy summaries should be developed to further explain what each major strategy category entailed.

5. **Development of Strategy Summaries** - These summaries were reviewed and refined by the group. Some components were similar to the original spreadsheet, but the goal was to simplify the plan to a one- to two-page summary of the anticipated action. The strategy summaries were originally called "draft action plans" but later changed to "strategy summaries" in recognition that the descriptions provided summarized work done to date rather than a plan of action for implementation. Items included in each strategy summary are:

   - Recommended Action - Description of the initial action or set of potential actions to be taken to accomplish an objective during the initial phase of implementation (i.e., feasibility study or data collection).
   - Water Issues to be Addressed - Narrative describing which of the four water issues the strategy will attempt to address (multiple issues are addressed by some strategies).
   - Benefits - Potential positive effects of the ultimate result of a recommended action (i.e., benefits of potentially implementing a project).
   - Concerns - Potential negative effects of the ultimate result of a recommended action (i.e., risks and problems associated with the implementation of a potential project).

- Methods to Address Concerns - A preliminary set of ideas on measures to take to reduce concerns and address potential problems associated with strategy implementation.
- Specific Subwatersheds - Which of the eight subwatersheds the recommended action would affect or focus on improving.
- Action Agency(ies) - Organizations to be involved with implementing the recommended action. This list includes potential funders, leaders, implementers, and technical resources in the Stakeholder group.
- Resources Needed - Description of assistance needed to begin work on the strategy (i.e., funding, information, staff).
- Research Needs/Data Needs - Description of known data and research gaps that need to be addressed before a strategy is implemented.
- Next Steps - Listing potential ordered tasks to be accomplished when beginning to implement the recommended action (i.e., obtain funding, conduct literature review, etc.).

6. **Group Prioritization** - The prioritization method used to review the strategies was an in-person vote where Stakeholders who were eligible to vote by Memorandum of Understanding requirements were asked to prioritize their top five major strategy categories. Each vote was assigned a point value of five points for a 1 rank, four points for a 2 rank, three points for a 3 rank, two points for a 4 rank, and one point for a 5 rank. The major strategy categories were prioritized from this ranking; however, some uncertainty remained about strategy types. It is noted that this voting did not embrace the consensus process; however, this method was used to achieve a draft order of strategies. Consensus was achieved on accepting the document with a strategy order presented in item 8 below.

7. **Presentations** - Four presentations were made, one on aboveground on-channel storage permitting and ESA consultation requirements, one on the logistics and types of underground storage, one on unappropriated water in the UGRRW, and one on water markets and water right transactions, which are administrative actions (National Marine Fisheries Service, 2020; Confederated Tribes of the Umatilla Indian Reservation [CTUIR], 2020; Oregon Department of Agriculture, 2020; and The Freshwater Trust, Oregon Water Resources Department, and CTUIR, 2019). These presentations provided a better understanding of these strategy types. As a result, the UGRRW Partnership determined that it would be beneficial to modify the original 12 major strategy categories (see item 2 above) so aboveground on-channel storage, aboveground off-channel storage, and underground storage could be combined into a single strategy. Given the challenges of siting on-channel storage facilities in a basin with ESA-listed species, sensitive cultural sites, and river recreation, the UGRRW Partnership further condensed the built storage category to “aboveground storage and underground storage.” The UGRRW Partnership felt that this acknowledged these unavoidable siting challenges but still enabled an evaluation of potential aboveground storage sites in the future on a case-by-case basis. The UGRRW Partnership also determined that data collection, monitoring, and research should be combined into one strategy.

8. **Development and Approval of Issues/Goals/Strategies Document** - As described in item 2 above, an issues/goals/strategies document was created to summarize the four major water issues identified, clarify goals associated with those issues, and pair measurable objectives to those goals. The major strategy categories were linked with each objective and also listed in the following final prioritization:

    1) Built Storage - Aboveground Storage and Underground Storage - This strategy seeks to study the feasibility of developing off-channel, on-channel, or underground multi-purpose storage projects with a favorable cost-to-benefit ratio to benefit all water uses, both instream and out-of-stream.
    2) Land Management - Agricultural Land - This strategy seeks to improve the management of agricultural land with the purpose of maintaining water quality and improving water supply availability.
    3) Data Collection, Monitoring, and Research - This strategy seeks to fill data gaps identified in the Step 2 and Step 3 reports through monitoring (i.e., groundwater and stream gauges), data collection (i.e., instream flow study), and research (i.e., historical flooding interviews).
    4) Non-structural Water Storage and Habitat Management - This strategy seeks to educate Stakeholders about the efficacy of non-structural water storage and habitat management and prioritize areas for implementation on non-structural water storage projects based on the GRMW's Ecological Atlas geomorphic potential rankings (GRMW, 2021).
    5) Land Management - Public Land - This strategy seeks to educate Stakeholders about work being conducted on public lands and find opportunities to work on projects/ policies together that support mutual interests (including non-structural water storage).
    6) Infrastructure/Land Modification - This strategy seeks to identify flow characteristics of the UGRRW (initially through a sediment study and a U.S. Bureau of Reclamation hydraulic modeling project) to identify potential actions to reduce negative flooding impacts in the Grande Ronde Valley.
    7) Administrative Actions - This strategy seeks to educate Stakeholders about how administrative actions can improve water quality and quantity. Administrative actions are defined as publicly available actions to utilize existing laws to use water for different purposes in different times of the year (water market/management framework). Administrative actions would be voluntary and non-regulatory.
    8) Land Management - Municipal Land - This strategy seeks to increase coordination among Union County and the seven cities in the planning area initially through improved resources sharing and emergency management (via Natural Hazard Response Plan coordination).
    9) Outreach and Education - This strategy seeks to keep the Partnership's outreach plan up to date, support actions to improve water quality, and conduct outreach for other strategies as needed.

These strategies are listed in priority order, with the first one listed as the highest priority strategy. It was determined that the top five strategies in the list would be the primary focus of the Step 5 Plan and

the remaining strategies would be retained. This was approved by a consensus vote of the UGRRW Partnership in April 2020. The UGRRW Partnership acknowledges the integrated nature of the critical issues and strategies. The UGRRW Partnership will simultaneously advance both instream and out-of-stream strategies.

This process took more than a year and a half for the group to complete. There were numerous meetings that included tense moments related to strong feelings for or against particular strategies. The vote on this was unanimous; all signatories of the Memorandum of Understanding who voted in this process had at least one of their top priorities in the top five strategies.

Recommended Actions

Nine major strategy categories were identified (listed in item 8 above). These are listed in the next section. The top five strategies are the focus of the Step 5 Plan. All strategies are retained, and lower priority strategies will be opportunistically addressed. Where possible, multi-benefit strategies that serve multiple users will be pursued and projects that address quantifiable deficits/water quality issues will be prioritized. Projects designed to improve flows must identify measurement methods to estimate what the project will accomplish. Table 4-1 below shows which issue/goal and objective each strategy seeks to address.

TABLE 4-1
CROSSWALK OF OBJECTIVES AND POTENTIAL STRATEGIES

Issue, Goal, and Objective	Built Storage - Aboveground Storage and Underground Storage	Land Management - Agricultural Land	Data Collection, Monitoring, and Research	Non-structural Water Storage and Habitat Management	Land Management - Public Land	Infrastructure/Land Modification	Administrative Actions	Land Management - Municipal Land	Outreach and Education
Issue/Goal 1 - Eliminate Surface Water Deficit									
Objective 1.1 - Reduce Current Deficit	X	X	X	X	X	X	X	X	X
Objective 1.2 - Fill Data Gaps			X						
Issue/Goal 2 - Improve Water Quality									
Objective 2.1 - Reduce Each Water Quality Issue	X	X	X	X	X				X
Objective 2.2 - Fill Data Gaps			X						
Issue/Goal 3 - Reduce Groundwater Supply Uncertainty									
Objective 3.1 - Complete a Groundwater Study			X						
Objective 3.2 - Implement Plan Based on Study Results	X	X		X	X	X	X	X	X

Issue, Goal, and Objective	Built Storage - Aboveground Storage and Underground Storage	Land Management - Agricultural Land	Data Collection, Monitoring, and Research	Non-structural Water Storage and Habitat Management	Land Management - Public Land	Infrastructure/Land Modification	Administrative Actions	Land Management - Municipal Land	Outreach and Education
Issue/Goal 4 - Prepare for Natural Hazards/Climate Change									
Objective 4.1 - Develop Natural Hazards Mitigation Plan					X		X		
Objective 4.2 - Implement Mitigation Measures Identified in Plan	X	X	X	X	X	X	X	X	
Objective 4.3 - Create an Adaptive Management Protocol to Apply New Climate Change Data to Goals			X	X	X	X	X		

5.0 - Plan Implementation Strategy

Priority Actions

Of the nine strategies, the top five are considered priority (shown in bold).

1) **Built Storage - Aboveground Storage and Underground Storage**
2) **Land Management - Agricultural Land**
3) **Data Collection, Monitoring, and Research**
4) **Non-structural Water Storage and Habitat Management**
5) **Land Management - Public Land**
6) Infrastructure/Land Modification
7) Administrative Actions
8) Land Management - Municipal Land
9) Outreach and Education

Strategy descriptions are found below, and summaries of these strategies can be found in the Upper Grande Ronde River Watershed (UGRRW) 2020, Step 4 report. The majority of the UGRRW Partnership's effort will be on the top five strategies; other strategies are currently being pursued opportunistically. Each strategy has a work group that has started meeting to advance the strategies.

Timeline

An action plan table is included in Appendix A, Implementation Schedule. Timelines are quarterly for the first five years, then yearly after that out to 2031 (10 years from this draft). They will be modified and extended, as this is a working document. Appendix A, Implementation Schedule, will be revised annually to update progress and will be located on the Union County website. This entire Plan may be updated every five years, if needed.

The final plan adoption will take place as follows:

- The Partnership will approve this plan through a normal consensus-based decision-making process (after revision is complete).
- Agencies will review and comment, and changes will be incorporated.
- The Partnership will review, modify, and approve the Agency-revised plan (two-week period).
- The Partnership will present the revised plan to the Water Resources Commission for approval.

Once the plan is approved by the Water Resources Commission, the Partnership will begin the implementation phase, which will consist of quarterly meetings and work designed to meet the

milestones below. The UGRRW Partnership intends to make progress on all strategies and is committed to advancing instream and out-of-stream needs.

The **overall implementation** milestones are as follows:

Years 1 through 2

- Receive state approval for this plan by December 31, 2021.
- Complete Oregon Watershed Enhancement Board (OWEB) Strategic Action Plan by December 2023.
- Begin studies, outreach, and funding applications as described in Appendix A.
- Begin quarterly implementation meetings, update schedule with notes and progress quarterly.
- Each implementation team will report to the group on progress.
- Individual organizations can report on lead action items.
- Each implementation team will update the Appendix A spreadsheet and provide group documentation to Anderson Perry & Associates, Inc., to retain on project server.
- The fourth quarter implementation meeting of each year will include updates on progress toward achieving objectives.

Years 2 through 5

- Initial project construction and design (as determined by study results)

By 2040

Complete approved objectives:

- Issue/Goal 1 - Eliminate surface water deficit
  - Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040)
  - Objective 1.2 - Fill data gaps (instream flow now; complete by 2040)
- Issue/Goal 2 - Improve water quality
  - Objective 2.1 - Reduce each water quality issue (by 2040)
  - Objective 2.2 - Fill data gaps (by 2040)
- Issue/Goal 3 - Reduce groundwater declines and supply uncertainty
  - Objective 3.1 - Complete a groundwater study (by 2035)
  - Objective 3.2 - Implement plan based on study results
- Issue/Goal 4 - Natural hazards/climate change
  - Objective 4.1 - Develop natural hazards mitigation plan (by 2030)
  - Objective 4.2 - Implement mitigation measures identified in plan (by 2040)
  - Objective 4.3 - Create an adaptive management protocol to apply new climate change data to goals (by 2030)

The **individual strategy milestones** were developed by work groups to implement Step 4 Recommended Actions and approved by the UGRRW Partnership as follows. These will be updated annually in this Step 5 Plan, and quarterly as needed in Appendix A - Implementation Schedule.

1) **Built Storage - Aboveground Storage and Underground Storage** - This strategy seeks to study the feasibility of developing off-channel, on-channel, or underground multi-purpose storage projects with a favorable cost-to-benefit ratio.

   Purpose: Address specific water supply deficits in each subwatershed through advancing possible built storage projects

   Step 4 Recommended Action: Study the feasibility of developing off-channel, on-channel, or underground multi-purpose storage projects with a favorable cost-to-benefit ratio.

   Narrative: This strategy was the highest ranked strategy by the Partnership. Organizations in the UGRRW are not actively pursuing a high-level evaluation of storage options. This strategy has had more work started than other strategies and is anticipated to be generally led by the Partnership (as opposed to other entities). This strategy will include a literature review on previously conducted feasibility studies and will also examine natural storage opportunity areas.

   Progress Summary:

   - Meetings January 21, 2021, and February 17, 2021
   - Oregon Water Resources Department (OWRD) Feasibility Study Grant recommended for funding

   Milestone Summary:

   - Years 1 through 2
     - Apply for Oregon Watershed Enhancement Board (OWEB) Technical Assistance (TA) grant for Aboveground Feasibility Study (with instream flow study focus).
     - Apply for OWEB TA grant for Aquifer Capacity Study (Bonneville Power Administration).
     - Begin feasibility study to look into aboveground storage (both built and non-structural) and conduct Physical Habitat Simulation System instream flow studies to both support storage efforts and assist with filling data gaps for instream demands. The Study will evaluate new storage locations as well as evaluating increasing capacity of existing reservoirs (such as Beaver Creek).
     - Initiate Catherine Creek underground storage consultation with agencies (via Kaizen process) to determine the permitting pathway for storage of 10 cubic feet per second of water in Catherine Creek area to benefit instream flow.
   - Years 2 through 5
     - Depending on results of aboveground feasibility study: design and construction.
     - Depending on results of underground storage meetings: design and construction.

- By 2040
    - Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040).
    - Develop storage for each subwatershed to reduce each deficit.

2) Land Management - Agricultural Land - This strategy seeks to improve the management of agricultural land with the purpose of maintaining water quality and improving water supply availability.

Purpose: Conduct research when needed and provide subsequent educational outreach to support water management actions that maintain water quality and expand capacity.

Step 4 Recommended Action: Determine methods of improving management of agricultural land to improve water quality and quantity. Much of this work is already being done, so it is anticipated the role of the UGRRW Partnership would be to see where potential bottlenecks are occurring and if the UGRRW Partnership can assist in progress.

Narrative: This strategy was the second ranked strategy by the Partnership. Organizations in the UGRRW are actively working to improve agricultural land management, particularly the Natural Resources Conservation Service (NRCS) and the Oregon State University Extension office. The Oregon Department of Agriculture (ODA) is the designated management agency responsible for regulating agricultural activities that affect water quality through the Agricultural Water Quality Management Act (Senate Bill 1010) and Senate Bill 502. In the temperature TMDL, ODA is the agency responsible for implementation of this TMDL on agricultural lands.

NRCS has significant resources and access to grants to support growers transitioning to beneficial systems. The UGRRW Partnership identified a concern that many NRCS-promoted techniques have not been tested or proved in the UGRRW and information about them is not available. This strategy will be led by the NRCS that will apply for funding to convene a pilot group of growers to provide case studies for techniques to reduce water consumption and improve soil health, such as cover crops, to increase adaptation of these practices in the UGRRW. This strategy will also seek to support and fund new on-farm Integrated Water Management (IWM) projects as well as share resources of existing programs to increase their adoption in the UGRRW.

Progress Summary:

- Meetings January 20, 2021, January 26, 2021, and February 17, 2021

Milestone Summary:

- Years 1 through 2
    - Provide input as needed to built storage group from agricultural perspective (water management and project funding).
    - Identify grant (NRCS) to provide case studies for on-farm conservation/efficiency projects.
    - Develop list of programs and share.

- Funding strategy for IWM projects.
- ODA funding, technical assistance, and enforcement of state water quality laws

- Years 2 through 5
  - Implement pilot project grant.
- By 2040
  - Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040).
  - Attain Step 3 assumed efficiency improvements:
    - 90 percent of flood irrigation can be converted to a sprinkler of some kind.
    - 33 percent of wheel lines can be converted to pivots.
    - 75 percent of unconverted wheel lines will be upgraded to new nozzles, drains, etc.
    - 75 percent of pivots that are not new (90 percent of total) can be upgraded with new sprinkler packages.
    - Intensive IWM is used on all converted/upgraded systems.

3) **Data Collection, Monitoring, and Research** - This strategy seeks to fill data gaps identified in the Step 2 and Step 3 reports through monitoring (i.e., groundwater and stream gauges), data collection (i.e., updated instream flow analyses and studies), and research (i.e., historical flooding interviews).

   Purpose: Coordinate data collection to fill data gaps, support working groups, and inform water management in the UGRRW.

   Step 4 Recommended Action 1: Develop and fund a plan (or set of plans) for monitoring and collecting data to fill data gaps identified in the Steps 2 and 3 reports, as well as through Step 4 strategy development. Collect additional data to expand existing data sets, inform solution actions and designs, evaluate effectiveness of strategies, and improve long-term forecasting.

   Step 4 Recommended Action 2: Complete research (identified as non-data collection activities) on identified data gaps from Steps 2 and 3 reports, as well as outstanding questions identified during Step 4 strategy development. When possible, research topics will be linked to other strategies to improve results/support feasibility analysis.

   Narrative: This strategy encompasses many data gaps identified by the Partnership that need to be filled through data collection, monitoring, or research. This work will be prioritized based on the needs of other working groups. Initially, stream gauges (supporting retention of existing gauges), groundwater (initiate steps for a groundwater study), surface water quality (support ongoing Grande Ronde Model Watershed [GRMW] water quality study), and instream flow needs in the basin) will be the focus of this working group.

Progress Summary:

- Meetings January 20, 2021, and February 17, 2021
- OWRD Feasibility Study Grant (instream flow study) recommended for funding.

Milestone Summary:

- Years 1 through 2
    - Prioritize data gaps.
    - Update instream flow assessment using guidance provided by the Oregon Department of Fish and Wildlife (ODFW). The proposed approach will use existing data (Basin Investigation Report [BIR]-based recommendations for reaches with existing instream water rights and modeled flow data for important tributaries that currently lack flow targets). Results of the updated analyses will provide a starting point for better understanding basin-wide needs and will guide the development of a more focused suite of tools to refine instream flow needs at high-priority locations. The UGRRW Partnership is committed to continuing to work with ODFW to update instream demand estimates utilizing an agreed-upon method (to be finalized during implementation of this Step 5 Plan).
    - Support maintenance of the operation of the current stream gauges (write letters to support gauges in basin).
    - Meet with OWRD hydrogeologist to determine next steps to prepare for future groundwater study.
    - GRMW water quality study begins; report outcomes.
    - Develop progress tracking and adaptive management system.
- Years 2 through 5
    - Support groundwater study.
    - Support instream flow study.
- By 2040
    - Objective 1.2 - Fill surface water data gaps (instream flow now; complete by 2040).
    - Objective 2.2 - Fill water quality data gaps (by 2040).
    - Objective 3.1 - Complete a groundwater study (by 2035).
    - Objective 3.2 - Implement plan based on study results.

4) Non-structural Water Storage and Habitat Management - This strategy seeks to educate stakeholders about the efficacy of non-structural water storage and habitat management and prioritize areas for implementation on non-structural water storage projects based on the GRMW's Ecological Atlas geomorphic potential rankings (GRMW, 2021).

Purpose: Raise awareness of work being done and how this work addresses goals of the UGRRW Partnership; prioritize and pursue non-structural storage projects in strategic locations.

Step 4 Recommended Action: Determine the best way to assist partners with increasing water storage capacity through natural processes using non-structural means.

Narrative: This strategy builds upon work being done by other organizations and seeks to utilize GRMW's Ecological Atlas to identify areas of high geomorphic potential and pursue non-structural storage projects. This strategy will also utilize existing projects to educate Stakeholders about the efficacy of non-structural storage.

Progress Summary:

- Meetings January 19, 2021, January 26, 2021, and February 17, 2021
- OWRD Feasibility Study Grant (storage and instream flow study) recommended for funding.

Milestone Summary:

- Years 1 through 2
    - Update Stakeholders on ongoing work (present findings/data from floodplain projects and field tours).
    - Develop list of projects that have high geomorphic potential (GRMW's Ecological Atlas) and those that are high priority (water deficit/storage need) for Partnership (current projects and future opportunities).
    - Project development strategy.
- Years 2 through 5
    - Continue project development strategy (adaptive management).
- By 2040
    - Implement projects with the potential to improve water quality and quantity. Understand the baseline is moving. Adaptive management needed.
    - Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040).
    - Objective 2.1 - Reduce each water quality issue (by 2040).

5) Land Management - Public Land - This strategy seeks to educate stakeholders about work being conducted on public lands and find opportunities to work on projects/policies together that support mutual interests (including non-structural water storage).

Purpose: Information sharing and communication between public land management agencies and Stakeholders to identify potential areas of mutual support.

Step 4 Recommended Action: Determine best methods to assist in public lands management to improve water quality and quantity.

Narrative: This strategy was determined to be important to the Partnership because of the large amount of land area in the UGRRW that is publicly owned (mostly by the U.S. Forest Service [USFS]). This strategy relies on working directly with the USFS to support and advocate for actions on USFS land that would benefit Partnership objectives and USFS objectives (particularly

those related to non-structural storage of water and water quality). This work will be led by the USFS, with the Partnership in a supporting role. Educating Stakeholders about work done on public lands is an integral part of this strategy.

Progress Summary:

- Meeting January 20, 2021

Milestone Summary:

- Years 1 through 2
    - Update Stakeholders.
    - Field trip for interested group members (show hydrologic benefits of restoration projects).
- Years 2 through 5
    - Depending on group needs, develop projects for implementation.
- By 2040
    - Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040).
    - Objective 2.1 - Reduce each water quality issue (by 2040).

6) Infrastructure/Land Modification - This strategy seeks to identify flow characteristics of the UGRRW (initially through a sediment study and a Bureau of Reclamation [Reclamation] hydraulic modeling project) to identify potential actions to reduce negative flooding impacts in the Grande Ronde Valley.

Purpose: Reduce the frequency and severity of damage due to flooding now and in the future.

Step 4 Recommended Action: Study potential actions to reduce negative impacts of flooding in the Grande Ronde Valley while increasing retention and recharge potential in a way that will benefit water quantity, quality, habitat, agricultural, and municipal lands.

Narrative: This strategy is focused on understanding and mitigating negative effects of flooding in the UGRRW. First, the Union Soil and Water Conservation District (SWCD) will prepare a scope of work (and the Partnership will develop a funding mechanism, if required) to expand an existing Reclamation hydraulic model to cover areas of flooding concerns (generally in the Rhinehart Gap area). The work group will also seek to expand a sedimentation study being conducted by the GRMW to determine effects of sedimentation in areas of high flooding risk. These two analyses will enable identification of pinch points and other areas to focus project work to alleviate flooding. These recommended projects are anticipated to be identified in a natural hazards mitigation plan. This group will also convene a meeting with OWRD and irrigation ditch users to investigate the potential to use ditches to alleviate flooding (this practice is currently not allowed within existing laws and could require advocating for a change in water law). The feasibility study conducted to assess built storage as a strategy for meeting instream and out-of-stream needs might also consider the beneficial aspects of storage on flood control and management.

Progress Summary:

- Meetings January 20, 2021, February 17, 2021, and March 18, 2021

Milestone Summary:

- Years 1 through 2
    - Reclamation Hydraulic Study - develop scope/fund work/complete work (Union SWCD to develop scope).
    - Sediment Study - develop scope/fund work/complete work.
    - Irrigation ditch opening meeting.
- Years 2 through 5
    - Natural Hazards Mitigation Plan Development/project list.
- By 2040
    - Objective 4.1 - Develop natural hazards mitigation plan (by 2030).
    - Objective 4.2 - Implement mitigation measures identified in plan (by 2040).
    - Objective 4.3 - Create an adaptive management protocol to apply new climate change data to goals (by 2030).

7) Administrative Actions - This strategy seeks to educate stakeholders about how administrative actions can improve water quality and quantity. Administrative actions are defined as publicly available actions to utilize existing laws to use water for different purposes in different times of the year (water market/management framework). Administrative actions would be voluntary and non-regulatory.

Purpose: Increase awareness of how administrative actions can improve water quality and quantity. Administrative actions are defined publicly available actions to utilize existing laws to use water for different purposes in different times of the year (water market/management framework). Administrative actions would be voluntary and non-regulatory.

Step 4 Recommended Action: Study the feasibility of developing a coordinated suite of publicly available actions to utilize existing laws to use water for different purposes in different times of the year (water market/management framework).

Narrative: This strategy includes numerous ideas generated by the Partnership for using existing water laws to allocate water for different purposes and address deficits. Because of the complexity of these regulations, and lack of awareness of them, this work group intends to focus on educating both Stakeholders and legislators on these methods, with the ultimate goal of increasing adoption of voluntary practices that would benefit instream and out-of-stream needs.

Progress Summary:

- Meetings January 21, 2021, and February 17, 2021

Milestone Summary:

- Years 1 through 2
    - Prepare outreach material (and outreach strategy) for landowners (gather existing resources).
    - Prepare outreach material for legislators (split season leases, bills/advocacy, etc.) and Partnership name and approval.
    - Determine how best to support Trout Unlimited in new environmental water transaction role in the basin.
- Years 2 through 5
    - Survey of interest and potentially adoption of programs.
    - Fund and implement improvements or projects.
- By 2040
    - Understand the baseline is moving; Partnership will focus on "secured water" put into stream (quantify as a result of transactions). Adaptive management needed.
    - Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040).

8) Land Management - Municipal Land - This strategy seeks to increase coordination among Union County and the seven cities in the planning area initially through improved resources sharing and emergency management (via Natural Hazards Mitigation Plan Update coordination).

Purpose: Improve city-to-city coordination to respond to natural hazards, increase water conservation, and support water infrastructure efficiency improvements.

Step 4 Recommended Action: Coordinate with municipalities to determine how the UGRRW Partnership could best assist with providing support to multiple municipal systems and land to improve water quality and quantity. The UGRRW Partnership would first determine if such a plan would be supported by municipalities. The plan could evaluate the potential to implement the following practices in municipalities. Ideally, actions will be taken in the seven cities, by self-supplied industrial users, and unincorporated users, to increase efficiency of water use and distribution.

Narrative: This strategy focuses on increasing coordination among Union County and cities for water system improvements, conservation, and emergency response. Initially, it will focus on assisting cities with a strategy for sharing water conservation resources and helping cities participate in the Union County Natural Hazards Mitigation Plan Update.

Progress Summary:

- Meetings January 20, 2021, and February 18, 2021
- Information presented at mayors meeting January 20, 2021
- Union County Natural Hazards Mitigation Plan Update meeting (with cities) held March 23, 2021

Milestone Summary:

- Years 1 through 2
    - Determine if mayors of cities want to work on a plan for shared resources for water conservation.
    - Update Partnership on cities' water/stormwater/flood activities.
- Years 2 through 5
    - Federal Emergency Management Agency-approved Union County Natural Hazards Mitigation Plan Update to cover all cities.
- By 2040
    - Objective 4.1 - Develop place-based planning specific Natural Hazards Mitigation Plan (by 2030).
    - Objective 4.2 - Implement mitigation measures identified in plan (by 2040).
    - Objective 4.3 - Create an adaptive management protocol to apply new climate change data to goals (by 2030).

9) Outreach and Education - This strategy seeks to keep the Partnership's outreach plan up to date, support actions to improve water quality, and conduct outreach for other strategies as needed.

Purpose: Inform the public about water quality issues and UGRRW Partnership activities.

Step 4 Recommended Action: Update the UGRRW Partnership's outreach plan to include support or action on water quality issues.

Narrative: This strategy group will be responsible for updating the Partnership's outreach plan and assisting with outreach needed by the other strategy groups. Initially, water quality issues will be highlighted through outreach, and a digital story project will be produced.

Progress Summary:

- Meetings January 22, 2021, and February 18, 2021
- Contacted the Oregon Department of Environmental Quality (DEQ) for input on January 22, 2021.

Milestone Summary:

- Years 1 through 2
    - Prepare and distribute outreach material on lawncare issue to cities/county.
    - Digital water quality outreach to county residents (reassess after first year).
    - Digital storytelling project to be completed.

- Years 2 through 5
    - Update outreach document.
    - Field tour/workshop.
- By 2040
    - Objective 2.1 - Reduce each water quality issue (by 2040).

Resource Needs

At this phase, resource needs are described in individual strategy implementation plans. Generally, funding is a need for each task.

Implementation Team

Each strategy has a separate implementation team, as identified in Appendix A - Implementation Schedule. The Implementation Team Lead is listed below in parentheses:

1) **Built Storage - Aboveground Storage and Underground Storage (Union County)**
2) **Land Management - Agricultural Land (NRCS)**
3) **Data Collection, Monitoring, and Research (GRMW)**
4) **Non-structural Water Storage and Habitat Management (Union SWCD)**
5) **Land Management - Public Land (USFS)**
6) Infrastructure/Land Modification (Union County)
7) Administrative Actions (Confederated Tribes of the Umatilla Indian Reservation)
8) Land Management - Municipal Land (City of La Grande)
9) Outreach and Education (DEQ)

Team leads are responsible for coordinating strategy team meetings and providing updates at quarterly Stakeholder Meetings. Union County will continue to coordinate these quarterly update meetings.

Teams will be responsible to work together an ensure strategy integration occurs. Quarterly meetings of the Partnership will allow for information sharing and also allow for the different strategy teams to offer support to or request support from other strategy teams. Examples of strategy integration that are anticipated to occur, or are already occurring, include:

- Land Management - Agricultural Land team is providing input to the built storage team.
- The Built Storage team is starting a feasibility study that will require support for instream flow studies from the Data Collection, Monitoring, and Research team, as well as assistance with evaluating non-structural storage opportunities from the Non-structural Water Storage and Habitat Management Group.
- The Data Collection, Monitoring, and Research team is anticipated to support all other strategy teams.

- The Infrastructure/Land Modification team is scoping a Reclamation study of UGRRW hydrology that will be shared with the Data Collection, Monitoring, and Research team.
- The Outreach and Education team will support other teams in distributing relevant information (such as water quality reports) and ensuring the outreach plan is updated.

Keeping the Public Engaged

The outreach and communication plan will continue to be used and updated. Generally, it is assumed that the quarterly Stakeholder Meetings will be the place for new people to get involved in the implementation work or for interested members of the public to hear updates. A new digital storytelling project is in progress. Newspaper articles, radio ads, presentations, social media, and the Union County website will continue to be methods to keep the public engaged.

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Appendices Table of Contents

APPENDIX A
Implementation Schedule

Built Storage

Lead: (Union County); Team: Rodger H, Curt H, Jed (just Underground) Brett, Scott (just Underground), Anton, Cheryl

Purpose: Address specific water supply deficits in each subwatershed through advancing possible built storage projects

last updated: 4/21/2021

Numb	Task	Status/Deadline	Notes	Active/Inactive	Lead	Connected Objective	Scale and Scope
1	**Above Ground Storage**			**Active**		Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040)	whole watershed.
1a	Aboveground Storage Feasibility Study (OWRD application)	Grant Submitted 10/14/2020; Wait to hear if selected April 2021					
1b	Aboveground Storage Feasibility Study (BOR application)	Submit application Jan 19, 2021	Decided not to apply. Not eligible	Inactive			
1c	Aboveground Storage Feasibility Storage (OWEB application)	Submit application April 2021	Not sure of application date yet				
1d	Agency assistance - reach out to BOR and USACE to see if they can assist or lead the study		Brett to contact SWCD to contact BOR; Brett to contact USACE		Brett		
1e	Feasibility Study	--	hire someone to produce the study (AP or advertise and select) Union County would put out an RFP	Inactive	Union County		
1f	funding for design and permitting for selected alternative(s)	--		Inactive			
1g	design and permitting for selected alternatives	--		Inactive			
1h	funding for construction	--		Inactive			
2	**Underground Storage - Catherine Creek Site**			Active			
2a	Catherine Creek Underground Storage - meet with agencies	Organize meeting early 2021 (fish agency concern is with water quality - NMFS/USFWS/ODFW - concerned with changing the chemistry of the water) - what questions need to be answered? What can this aquifer (hall ranch or city of union wells) actually hold? - need to ask geologist	Dana to set up meeting (presentation?)		Dana		
2b	Catherine Creek Aquifer Capacity Analysis funding application	Apply for technical assistance grant from OWEB April 2021; look at possible funding sources (including BPA - who paid for first study)	revisit - whether we want to target hall ranch, or go lower to tribal property revisit - would water go in stream or could it go directly to users	Inactive			
2c	Catherine Creek Aquifer Capacity Analysis	--		Inactive			
2d	Catherine Creek funding for design and permitting	--		Inactive			
2e	Catherine Creek design and permitting	--		Inactive			
2f	Catherine Creek funding for construction	--		Inactive			
2g	Catherine Creek construction			Inactive			
3	**Project Management**						
3a	Prepare Quarterly update to UGRRW Partnership		First update to start June 2021 (After OWRD grant expires)				

Progress Summary:

Meeting January 21, 2021 and February 17, 2021
October 2020 - Oregon Water Resources Department grant application submitted and recommended for funding.

Milestone Summary:

Years 1 through 2
Apply for Oregon Watershed Enhancement Board (OWEB) Technical Assistance (TA) grant for Aboveground Feasibility Study.
Apply for OWEB TA grant for Aquifer Capacity Study (Bonneville Power Administration).
Begin Feasibility Study to look into Aboveground Storage (both built and non-structural) and conduct PHABSIM instream flow studies to both support storage efforts and assist with filling data gaps for instream demands. Study to evaluate new storage locations as well as evaluating deepening existing reservoirs (such as Beaver Creek).
Initiate Catherine Creek Underground Storage consultation with agencies (via Kaizen process) to determine the permitting pathway for storage of 10 CFS of water in Catherine Creek area to benefit instream flow.

Years 2 through 5
Depending on results of aboveground Feasibility Study - design and construction.
Depending on results of underground storage meetings - design and construction.

By 2040
Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040).
Develop storage for each subwatershed to reduce each deficit.

Agricultural Land Management

Lead: (NRCS); Team: Mike B, Curt R, Matt, Jed, Darrin Walenta, Tim W, Jim W (contact Rodger for range representatives)

Purpose: Conduct research when needed and provide subsequent educational outreach to support water management actions that maintain water quality and expand capacity for water use efficiency.

last updated: 2/17/2021

Num	Task	Status/Deadline	Notes	Active/Inactive	Lead	Connected Objective	Scale and Scope
1	**Address high flows in spring and deficiencies in late season by contributing to the Built Storage Group**		Determine AF of water in a reservoir; offer farmers ability to buy in (fund project) and utilize water; could form a special management district (or Union SWCD). Would be good for tourism too. Agricultural group could fund the project and could provide information to Built Storage. How will the stored water be managed and allocated? Talk to stakeholders now. Special districts for water management Ensure hydroelectric power is included in feasibility analysis				
2	**Conservation Innovation Grant or CESU cooperative ecosystem studies unit**		Identify grant (CESU/CIG) to provide case studies for on-farm conservation/efficiency projects Pilot Project of about 6 farms	**Inactive**	Mike (NRCS)		Pilot (6 farms)
1a	Relevant stakeholder meeting	Meeting in Q1 2021	Meeting (Jed, Curt, Livestock producers - need a core of people to go) *Darrin to help (similar to biodiversity workshops - focus through exsiting group); someone from Walla Walla need to educate people toward these programs (how to do them, explain benefits/motivate for change) promote events and make people familiar. People have to see it working somewhere else (and need incentives to minimize risk) **Periodic workshops to keep it fresh in people's minds (target might not be grass farmer but dry land farmer) NRCS lead an "invitation" meeting (Melvilles - a panel to talk about what works and what doesnt with rotations and cover crops; could also include irrigation efficiency) 10-12 people that have tried it "conservation innovation grant" (CIG grant - just organic matter and carbon sequestration; 6 people try it in our area "early adopters are examples") or CSP (conservation stewardship program - multiple practices with a 5 year contract) CSP is highest level of conservation SWCD - outreach to landowners (purpose and expected outcomes) try diverse range of practices. OSU extension could provide outreach (regional group) OSU extention - PNW 30 case studies developed for dry land seeding (printed and public presentation forum) - Darrin to send CESU - cooperative ecosystem studies unit (provides funding to fill knowledge gaps through research. Establishes a pathway to get projects on the ground. non competitive process through NRCS.				
1b	Apply for Grant		Determine what should be included in CIG (Mike Writes CIG grant)				
1c	Begin Program						
3	**General Incentive Program Outreach and Education**			**Active**	Curt		
2a	Develop list of programs avaliable for conservation and funding sources	Q2 2021					
2b	how to rank whether strategy meets objective of water deficit reduction		resources for individuals to rank and also for ranking for our group to support (IWM is one we know works)				
3	**Increase irrigation efficiency (IWM)**			**Active**	Dana		
3a	Develop list of funds for this work	Q2 2021	*catherine creek and little creek important to NRCS *could be a stand alone component. - only missing thing is funding *look for funding (this strategy is already proven)				
3b	Apply for grant	Q3 2021 depends on deadline					
4	**Precision agriculture needs preliminary assessent**			Inactive			
4a	review existing programs, determine needs						
4b	funding/staffing for new work						
5	**CREP or CRP program feasibility preliminary evaluation**		*could create new program/funding for improve - funds from lottery (always open) - to be in program, qualify and then in	Inactive		Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040)	
5a	quick survey to determine interest						
5b	funding/staffing for new work						
6	**Incentive-based programs review and prioritization**		1) support existing NRCS programs 2) new programs 3) funding (only have abour $400,000 per year) *purpose to help people try new techniques and then when they find something that works they will stick with it (even without the incentive)	Inactive		Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040)	
			look into state wide efforts for "designing working lands for oregon agriculture" - climate change/water (ODA) CARBON Programs. Need to try and identify some levels of successful tactics and practices. We would like to learn more about the actual cover crop species that work in our system (some research on screening crops could be benificial) Drought tolerant cover crops				
6a	organic matter content in soil		*Identify a program to integrate cattle to working land (look into temp electric fences); or cover crops (but if you aren't careful you can use more water with cover crops than without)				
6b	mitigate against nitrogen and phosphorus loading		example: buffer strip around water bodies; timing of application Darrin is looking into nitrogen efficiency in cropping systems (currently applying for federal grant)				
6c	increase irrigation efficiency (IWM)		*catherine creek and little creek important to NRCS *could be a stand alone component. - only missing thing is funding *look for funding (this strategy is already proven)	Active - moved to 3 above			
6d	alternative crops		Incentives to switch to crops that use less water				
6e	high residue farming						
6f	farming practice improvement						
6g	floodway easement compensation						
6h	contamination prevention when flooding occurs						
	cover crops/bio-fumagant crops		yellow mustard, arugla (act as a fumagant) - effort to reduce pesticide load in system. Organic benefit. BT work in cerals and blue grass. *new research for high residue farming and study soil to see what water holding capacity is at beginning and end of trial (also discuss cost) - variety trials for crops done in the region by extension agents. opportunity to introduce new farming practices				
	carbon sequestration		many work to reduce water demand - may not reduce deficit, maybe help the natural hazards one				
7	**Project Management**				Jed		
7a	Prepare Quarterly update to UGRRW Partnership		First update to start June 2021 (After OWRD grant expires)				

Progress Summary:

Meeting January 20, 2021, January 26, 2021, and February 17, 2021

Milestone Summary:

Years 1 through 2

Provide input as needed to built storage group from agricultural perspective (water management and project funding).

Identify grant (National Resources Conservation Service) to provide case studies for on-farm conservation/efficiency projects.

Develop list of programs - share.

Funding strategy for Integrated Water Management (IWM) projects.

Years 2 through 5

Implement Pilot Project Grant.

By 2040

Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040).

Attain Step 3 assumed efficiency improvements:

• 90 percent of flood irrigation can be converted to a sprinkler of some kind.

• 33 percent of wheel lines can be converted to pivots.

• 75 percent of unconverted wheel lines will be upgraded to new nozzles, drains, etc.

• 75 percent of pivots that are not new (90 percent of total) can be upgraded with new sprinkler packages.

• Intensive IWM is used on all converted/upgraded systems.

Build before and after comparison of changes for next 20 years.

Data Collection, Monitoring, Research

Lead: (GRMW - Jesse); Team: Steve, Bill, Anton, Winston (ODFW?), Larry, Shad

Purpose: Coordinate data collection to fill data gaps, support working groups, and inform water management in UGRRW.

last updated: 2/17/2021

Numb	Task	Status/Deadline	Notes	Active/Inactive	Lead	Connected Objective	Scale and Scope
1	**Priortize data gaps from step 2 and 3 reports**			Active		Objective 1.2 - Fill data gaps (instream flow now; complete by 2040)	
1a	List of data gaps from step 2/3	complete - located in Step 4 report					
1b	Prioritize data gaps, categorize/associate them with strategies to ensure they are addressed	Complete prioritization of gaps first					
2	**Develop and fund plan/set of plans for monitoring and data collection to fill Step 2/3 gaps**					Objective 1.2 - Fill data gaps (instream flow now; complete by 2040)	
	Surface water data collection and Monitoring	Obtain a technical assistance grant from OWEB (consider a partnership with GRMW)				Objective 2.1 - Reduce each water quality issue (by 2040)	
	Draft letter of support to keep existing gages	Letter to Salem; Letter for GRMW	GRMW has been helping on funding for 12 gages in area (BPA tried to eliminate)				
	Meet with Shad to discuss gage needs (exisiting and new)		Identify locations of all stream gages and determine additional beneficial locations; *biggest goal is to shore up funding to maintain existing long term gages would be beneficial to line new gages up with non structural water storage and habitat group				
	Install and operate additional stream flow gaging stations in strategic locations		*stretch goal - unlikely, want to keep what we have	Inactive			
	Coordinate interagency data sharing (specifically of stream flow gage data)	Review Alex's map - share with others?					
	Instream Flow Study	CTUIR and ODFW to lead					
	obtain funding for Catherine Creek and Grande Ronde	application submitted (hear back April 2021)		Active			
	conduct studies						
	Groundwater Data Collection and Monitoring	Task for a grad student? OSU (same a Walla Walla?) (or univ of montana - winston)	need to come up with creative ways to get enough data to support getting more funding (set up ourselves up for bigger study).			Objective 3.1 - Complete a groundwater study (by 2035)	
2b.1	Based on available funding and resources determine the size and scope of the study	Ask Phil for small steps to lay groundwork for study				Objective 3.2 - Implement plan based on study results	
2b.2	Improve our understanding of the data already collected through coordination with Oregon Health Authority and OWRD	Review Harney Basin Water Study for ideas (did they use existing data before data collection) - state geologist give overview of study (to whole group?)					
2b.3	Develop a network of observation wells to develop an understanding of groundwater movement and variability throughout the basin by determining the geometry of the water table over time		installing wells very expensive, need to be strategic				
2b.4	Characterize the hydrogeologic framework of the basin, and how varying landforms and lithologies relate to groundwater movement and storage						
2b.5	Improve groundwater quality monitoring - (nitrates, arsenic, coliform). This could include increasing the quantity of wells sampled, increasing the frequency of wells sampled, increasing the number of sampled analytes or some combination of these methods						
2b.6	Characterize and understand the groundwater resource, including an estimation of the annual groundwater budget, total storage and aquifer extent, seasonal variability in response to drought and usage draw, rate of change in groundwater elevation and flow direction						
	Develop an Instrumented Watershed/pilot project for data collection	USFS to lead					
2d.1	Initiate discussion with PNW scientists to better understand the possibilities for this kind of research at Starkey			Active	Bill reach out to PNW scientists		
2d.2	Study paired forest plots (30 percent canopy reduction to allow for water storage - Starkey) in coordination with the USFS			Inactive			
	Improve Water Use Monitoring						
2e.1	Improve on-farm efficiency monitoring		Ultimate goal toapture total out of stream use of monitoring and modeling for analysis (maybe could we get to this with modeling?)	Inactive			
2e.1	Locate pilot project site or landowners where there is interest in efficiency monitoring		Important to quantify gains in efficiency	Inactive			
2e.3	Improve monitoring of water use (surface and ground water)		Improve quantification of consumptive water use in UGR basin				
	Synthesis of total use (groundwater and surface water)						

3	**Research to address Step 2/3 data gaps**						
	Historical research						
3a.1	Reservoir research - begin by reviewing prior reservoir feasibility studies provided by Stakeholders	BOR and ODFW have phillips reservoir fish information					
3a.2	Flooding and fire histories (recorded and oral)						
3a.3	Collect anecdotal information from users to see what parts of the UGRRW have issues with flooding and drought						
	Water Quality Research						
3b.1	Identify areas for improvement in data collection and analysis related to water temperature, dissolved oxygen, flow limitations, nutrients, and bacteria concerns	GRMW is currently engaging in a 2 year Water Quality study in the basin - support that project and utilize information		Active			
3b.2	Determine if mercury levels in water are a concern in the UGRRW						
3b.3	Determine if nitrate contamination is a concern in the UGRRW						
3b.4	Investigate potential sources of pollutants and solutions to reduce input						
3b.5	Re-examine 303(d) standards to determine if the UGRRW Partnership should advocate for them to be changed						
	Water Quantity Research						
3c	Review existing studies of area geology						
	Nonstationarity Research	ODA/CIRC to lead (reevaluate now that M. Matter left ODA)		Inactive		Objective 4.1 - Develop natural hazards mitigation plan (by 2030)	
3d.1	Expand investigation into long-term data records for temperature, precipitation, and snow water equivalent to better understand basin hydrology and changes, including trends, that may be observed			Inactive		Objective 4.2 - Implement mitigation measures identified in plan (by 2040)	
3d.2	Compare to results of model simulations of historical records			Inactive		Objective 4.3 - Create an adaptive management protocol to apply new climate change data to goals (by 2030)	
3d.3	Review projections, including literature reviews			Inactive			
3d.4	Organize periodic non-stationarity workshops (with specific and focused topics); cover approximately two to three related topics at each workshop every 1 to 2 years			Inactive			
3d.5	Collaborate with researchers to conduct investigations into and develop new methods for conducting hydrologic analyses that incorporate non-stationarity of hydrology and climate.			Inactive			
4	**Project Management**						
4a	Prepare Quarterly update to UGRRW Partnership		First update to start June 2021 (After OWRD grant expires)				

Progress Summary:

Meeting January 20, 2021 and February 17, 2021

OWRD Feasibility Study Grant (instream flow study) recommended for funding.

Milestone Summary:

Years 1 through 2

Prioritize data gaps.
Support maintenance of the operation of the current stream gauges (write letters to support gauges in basin).
Meet with OWRD (Phil) to determine next steps for groundwater study.
Grande Ronde Model Watershed water quality study begins - report outcomes.

Years 2 through 5

Support groundwater study.
Support instream flow study.

By 2040

Objective 1.2 - Fill surface water data gaps (instream flow now; complete by 2040).
Objective 2.2 - Fill water quality data gaps (by 2040).
Objective 3.1 - Complete a groundwater study (by 2035).
Objective 3.2 - Implement plan based on study results.

Non-Structural Water Storage and Habitat Management

Lead: (Union SWCD); Team: Jim W, Curt R, Rodger H, Adrienne/Winston (ODFW), Jesse, Bill, Mike Burton (NRCS), Tony Malmberg, CTUIR (Allen Childs or Anton)

Purpose: Raise awareness of work being done and how this work addresses goals of the Partnership; prioritize and pursue non structural storage projects in strategic locations

last updated: 2/17/2021

Numb	Task	Status/Deadline	Notes	Active/Inactive	Lead	Connected Objective	Scale and Scope
1	**Outreach and Education about what habitat actions are**	SWCD/GRMW/ODFW anticipated to lead. First meeting on 1/19/21.		Active			
1a	Plan for field tours/presentation for awareness		*Scope and scale of all work going on in UGRRW *one project doesn't seem like it does much, but large affect over all (how hydrologic response response to issues we identified) - tangable results (restore meadow - what does that mean with AF-water) (ex: Bear Creek increased water flow as result of construction) *This group could secure funding for monitoring and measurements *alluvial storage model to put a number to potential for water storage (Jesse to send) (baseflow recharge potential of floodplains - researchers give talk on paper from Jim/Allen?) Good example (Birdtrack springs; longley meadows; Meacham; older and more recent floodplain reconnection projects;) *education around ATLAS process (not just fish habitat; other applications; high level mapping of confined and unconfined reaches - could use that for modeling for non-structural storage)				
2	**Prioritize Areas for Non Structural Storage**			Active		Objective 2.1 - Reduce each water quality issue (by 2040)	
2a	Use the ATLAS geomorphic scores in combination with Place-based Planning outputs to identify high priority areas for meeting water deficit and quality needs.	develop list of locations					
2b	Develop list of projects that have high geomorphic potential and those that are high priority (water deficit) for Partnership (current projects and future opportunities)	develop list of potential projects					
	Evaluate water storage projects (feasibility studies, funding, priority)	select most feasible project (timing, landowners, funding, effectiveness) - one more goal to add to scoping/prospectus (does it meet PBP and fish goals)					
2a	upland management		Public Lands group and Agriculture group have a direct influence and can address upland improvements.				
2b	floodplain management						
2c	riparian habitat management						
2d	instream habitat management						
2e	wetland management		Wetland Reserve Program (WRP) - share information on how much water is stored in that				
3	**Identify Project areas to implement/support**		BOR Water Smart Grant (Due Jan 19, 2022) potential for funding 100k of a habitat restoration plan if needed. After areas identified, we can help with funding or other areas.	Inactive			
3a	identify potential funding sources		DEQ 319 grants (riparian restoration, ag land fencing, temp bacteria) newport- turbidity monitoring – DEQ website. Harney watershed council 319 grant to compile water quality for the basin	Inactive			
3b							
4	**Project Management**						
4a	Prepare Quarterly update to UGRRW Partnership		First update to start June 2021 (After OWRD grant expires)				

Progress Summary:
Meeting January 19, 2021, January 26, 2021, and February 17, 2021 OWRD Feasibility Study Grant (storage and instream flow study) recommended for funding.
Milestone Summary:
Years 1 through 2 Update Stakeholders on ongoing work (present findings/data from floodplain projects and field tours). Develop list of projects that have high geomorphic potential (atlas) and those that are high priority (water deficit/storage need) for Partnership (current projects and future opportunities). Project development strategy. **Years 2 through 5** Continue project development strategy (adaptive management). **By 2040** Implement projects with the potential to improve water quality and quantity. Understand the baseline is moving. Adaptive management needed. Objective 2.1 - Reduce each water quality issue (by 2040). Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040).

Public Land Management

Lead: (USFS); Team: Bill G, Union County (Donna)

Purpose: Information sharing and communication between public land management agencies and Stakeholders to identify potential areas of mutual support

last updated: 1/20/2021

Numb	Task	Status/Deadline	Notes	Active/Inactive	Lead	Connected Objective	Scale and Scope
1	**Support Collaborative Forest Partnership Projects - outreach**	USFS to lead		Active			
1a	Identify the best methods to support the Forest Collaborative and federal, state, and local forest managers	NBFC meetings scheduled monthly and open to public. SOPA published on FS website and updated regularly.	Attend monthly Northern Blues Forest Collaborative (NBFC) meetings to stay abreast of FS collaborative projects and offer input and support. Engage with forest projects through monitoring of schedule of proposed actions (SOPA) and providing input/support through public involvment and scoping processes				NBFC addresses collaboratively developed projects across the Umatilla and Wallowa-Whitman NF's. Each forest maintains a Schedule of proposed actions (SOPA) that summarizes all proposed planning projects across each forest.
1b	Outreach for stakeholders on USFS projects		Field Trip for interested group members (show hydrologic benefits of restoration projects)	Active			
2	**Support Restoration Projects of interest to the Partnership (that will improve water quality and quantity)**					Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040)	
2a	Increase soil organic content		Retention of coarse woody debris and effective ground cover are standard soil productivity mitigation measures applied to FS forest management activities aimed at maintain organic matter content/long term soil productivity			Objective 2.1 - Reduce each water quality issue (by 2040)	Soil productivity/organic matter retention measures are applied to all projects on FS lands.
2b	Identify and protect existing high-quality habitats that are important for water quality or quantity.		USFS project planning and design includes protection of water quality through application of riparian habitat conservation areas as outlined in PACFISH/INFISH and forest plan. Additional high quality habitats are also often identified and protected as part of project planning and design.				Applied across all projects on FS lands
2c	Restore floodplain-riparian-instream connectivity and complexity		Current and future aquatic restoration projects on FS lands include objectives to restore floodplain-riparian-instream connectivity				Much of the aquatic restoration work is focused in the Upper Grande Ronde basin including mainsteam Grande Ronde and tributaries on both federal public and private lands. With GRMW
2d	Upland spring, wetland and meadow protection		Current and future aquatic and upland restoration projects on FS lands often include objectives to restore springs, wetlands and meadows.				Applied across all projects as applicable on FS lands
3	**Support Vegetation Management Projects (to improve water quality and quantity available)**						
3a	Grazing management on federal lands (range management of wild and domestic ungulates)		Grazing management on federal lands is regularly assessed and adapted through allotment management plans and annual operating instructions that include addressing resource and administrative issues/opportunities including water quality				Applied to all active allotments across the national forest
3b	Timber management on federal lands (management of forest canopy)		Forest management activities on federal lands often considers effects of changes in foreset cover/canopy on water quantity and quality. Opportunities may exist for increased focus on water related objectives in future forest mangement project activities.				Applied to most forest management projects across the WW and UMA.
3c	Upland land management		Forest management activities on federal lands address a suite of upland conditions including forested and non-forested upland settings with overriding goals of restoring ecosystem function and resilience.				Applied to most forest management projects across the WW and UMA.
3d	Vegetation management - opportunity and costs for each type of project		??				
3f	Fire management		Integration of use of fire in forest management activities is an integral aspect of most current forest management projects and a key objective tied to the recent selection of the Northern Blues Collaborative Forest Restoration Proposal.				Applied to most forest management projects across the WW and UMA.
4	**Sediment and Erosion Management**						
4a	Road management for allowing runoff to recharge groundwater locations, sizing culverts appropriately, and decreasing sediment yield		Assessment of road related impacts on sedimentation and watershed connectivity and actions to address are often included as part of forest management projects and aim to reduce road related sediment and hydrologic impacts.				Applied to most forest management projects across the WW and UMA.
4b	Monitor uplands for erosion (sediment)		??				
4c	Buffer zones (review City and County riparian buffer zone requirements/standards and see how well they are being implemented)		Forest management activities include incorporation of riparian habitat conservation areas following PACFISH and INFISH guidelines including incorporation of riparain buffers.				Applied to most forest management projects across the WW and UMA.
5	**Project Management**						
5a	Prepare Quarterly update to UGRRW Partnership		First update to start June 2021 (After OWRD grant expires)				

Progress Summary:
Meeting January 20, 2021
Milestone Summary:
Years 1 through 2 Update to Stakeholders. Field Trip for interested group members (show hydrologic benefits of restoration projects).
Years 2 through 5 Depending on group needs - develop projects for implementation.
By 2040 Objective 2.1 - Reduce each water quality issue (by 2040). Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040).

Infrastructure/Land Modification

Lead: (Union County); Team: Curt Howell, Jed H, Jim W, Cheryl, Brett, County Road Deparment (JB Brock), Mike Burton (NRCS), Anton

Purpose: Reduce the frequency and severity of damage due to flooding now and in the future

last updated: 2/17/2021

Numb	Task	Status/Deadline	Notes	Active/Inactive	Lead	Connected Objective	Scale and Scope
1	**Study potential actions to increase flow through the Grande Ronde Valley and reduce flooding while protecting water quality and summer through late fall baseflows.**			Active		Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040) Objective 4.1 - Develop natural hazards mitigation plan (by 2030)	
1a	Conduct basinwide hydraulic study to determine causes and locations of flooding and backwater areas) - add and update exisiting model. Add local/historical knowledge from landowners related to flooding.	Talk to BOR - Jim and Jed (2/25) Local information from flood - Cheryl (ask Curt H too)	*BOR hydrologic model (2010) - no funding to implement; potentially BPA funding/NRCS. Can they extend to our area? (how much water to expect through our system) *BOR - original run was 1D model. limited cross sections in the valley. Hope to see 2D model with scenarios. existing condition model (include hydraulic grade line) *Bill K from FEMA stated there is potential funding here through state programs (PDM provides funds for hazard mitigation planning and projects on an annual basis. https://www.oregon.gov/oem/emresources/grants/pages/hma.aspx) (FEMA funding could assist with sediment and hydrology) - wait to contact FEMA until BOR study results are known *Ask Scott if UC is a planning partner with FEMA (additional funding avaliable) *aerial maps, and fema map, draw flood extent on it, and correlate to gages		Jim/Jed		
1a1	Investigate and identify flow constriction points that create backwater and specific areas of flooding where floodplain modification may reduce impacts			Inactive			
1a2	Evaluate options for development of a levee system for flood control (coordinate with the USACE)			Inactive			
1a3	Evaluate the potential for constructing a parallel flood channel to alleviate flooding issues			Inactive			
1b	Create a flow model to determine the benefit of maintenance (sediment removal) from upstream of Rhinehart Gap and other flow pathways through the valley	Talk to Kayla - on existing study and openess to new work	*Kayla at GRMW has been working on sediment deposition study in upper basin (BPA) does not go below Hilgard. Green Lidar data from GRMW - to dl		Jim		
1c	Floodway conservation program - survey landowners for interest	More information from Mike to be ready for next flood	*This is part of the emergency watershed protection program, eligability is only triggered after a natural disaster (flood event). There is an easement part that landowners can particpate in - market value of land and restore to natural conditions	Active - but limited eligability	Jed		
1b	Apply for funding for a flow study			Inactive			
2	**Irrigation ditches to reduce flooding**	Dana to set up second Q 2021 (OWRD anticipated to lead)	*Moved from ag land management to infrastructure (1/20/2021)		Dana	Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040)	
2a	assess legal reqirements and meet with watermaster		see if legally (risk of letting water out and hurting other people) or physically feasible				
2b	determine if this is a feasible approach to manage flood water						

2c	create flood control district						
3	**Flood mitigation measure study**		moved to infrastructure group				
3a	Obtain funding to conduct research on legal flood reduction measures for cities and landowners (i.e., County planning grant, Federal Emergency Management Agency [FEMA])						
4	**Project Management**						
4a	Prepare Quarterly update to UGRRW Partnership		First update to start June 2021 (After OWRD grant expires)				

Progress Summary:

Meetings January 20, 2021, February 17, 2021, and March 18, 2021

Milestone Summary:

Years 1 through 2

Bureau of Reclamation Hydraulic Study - develop scope/fund work/complete work (Union SWCD to develop scope)
Sediment Study - develop scope/fund work/complete work.
Irrigation ditch opening meeting.

Years 2 through 5

Natural Hazards Mitigation Plan Development/project list.

By 2040

Objective 4.1 - Develop natural hazards mitigation plan (by 2030).
Objective 4.2 - Implement mitigation measures identified in plan (by 2040).
Objective 4.3 - Create an adaptive management protocol to apply new climate change data to goals (by 2030).

3.18.2021 meeting

Jim: Jim talked to Kayla about sediment model - possibility of running the model down to the gap. Initially it looks costly.

Jed notes:

I thought I would give a brief summary of our GRMW valley subgroup meeting today with Brandon Barrow and Christopher Cuhaciyen, of BOR, regarding their hydraulic modeling work:

Our allotted meeting time went by very quickly! Almost the entire meeting time was used to describe some recent modeling runs they've done on lower Catherine creek, with not much time for discussion afterward. They built upon the modeling done around 2011 with updated (HEC-RAS 2?) software, but have not yet incorporated the newly available green lidar data. The current runs were done to model existing conditions of the Feb. 2020 flood event. The main purpose was to assist ODFW with improving conditions for outmigrating smolts during spring high flow events. During these events, the area around the confluence of the State Ditch and Catherine Creek floods, backing up water to the point that water flows up Catherine Creek, which is presumed to have a negative impact on the downstream migration of smolts in that part of Catherine Creek. Much of the focus of this investigation was on streamflow velocities in Catherine Creek and ways they could be increased. The spatial extent of the modeling was lower Catherine Creek, from the confluence with the State Ditch up to around the historic confluence with the Grande Ronde.

I got a chance to ask about modeling for our project at the end of the meeting. It sounds like there might be some overlap between what we're looking to do and work they had planned to do anyway, specifically to extend the model downstream to the constriction points around Rhinehart gap. I asked if the Catherine Creek velocities could be increased by opening up downstream constriction points. They didn't know, but sounded interested in extending the model downstream to find out.

Questions

What have you modeled? What area (and extents), and what modeling has been completed? Has this been compared to base flood elevations (BFEs) or extent? A: 2d model just CC area. Brandon to reach out to TSE in Denver to find out what was modeled in 2012

***no sediment sampling (we would like to extend it down to the gap) look at different flood elevations**
action: Jim coordinate scope and map and goals with Brandon - jim put together a scope of work for bor
How much have the levees changed over time? And how has that affected flood events? Anedotally, changes in levees seem to affect flow localy
Work was done in lower Catherine Creek - Could BOR extend the model to the gap/have you already done this with 2d model
Model 100 year flood in area of exising model and compare with regulatory floodplain (original map done with only 1970 aerial photography)
original model of channel profile - could we compare it to data the BOR has collected (we have more recent bathymetry data)
how far downstream does green lidar extend? Gap to up catherine creek and grande ronde. Compare this to 100 year flood data
have extents of flooding changed over time?
what can be done do improve situation? At this point we would take a look at downstream effects in elgin
Can we look at pinch points in the 2d model? Want to see where channel capacity is reduced
can look at water surface elevations, can look at grades
la grande through island city stretch is a growing problem.
Are we seeing more flooding (exceedences of the 100 year flood event) than we have historically? Is 100 year flood event still the 100 year event?
Why are we seeing increased flooding? (hydrology/increased flows, geometry/sedimentation?)
How did they define flows for 100 flood event (sometimes driven by CC runoff or GR runoff - or both)? Examine reoccurance event based on troy gage
if 100 year flow is 10cfs, run through 2d model (however the different inputs from CC and GR are not represented - flooding happens differently based on different stages from CC and GR)
What solutions can address increased flooding (address pinch points etc)?

how could that be funded/implemented:
potentally NRCS - CREP levee setbacks and easement payments)
Land trusts, or easements, or working lands program (allows some use)
if we could demonstrate a fish benefit from a levee setback and riparian easements - we could potentially get BPA funding for fish benefits

Administrative Actions

Lead: (CTUIR); Team: Tony M, Steve P, Anton, Levi Old, Jim Webster, Shad, Winston, Adrienne

Purpose: Increase awareness of how administrative actions can improve water quality and quantity. Administrative actions are defined publicly available actions to utilize existing laws to use water for different purposes in different times of the year (water market/management framework). Administrative actions would be voluntary and non-regulatory.

last updated: 2/17/2021

Numb	Task	Status/Deadline	Notes	Active/Inactive	Lead	Connected Objective	Scale and Scope
1	**Outreach and Education**						
1a	Prepare outreach material (and outreach strategy) for landowners (gather existing resources)		Education provides more tools in the toolbox. Landowners and implementors/funders need education too. Need to get OWRD (Shad) to attend meetings/share information to landowners about other uses for water Secured water instream is not a zero-sum game (all users can benefit through these actions)	Active			
1b	Prepare outreach material for legislators (split season leases, bills/advocasy etc) (Partnership name and approval)		Would we be interested in supporting Idaho dam breach plan?	Active			
1c	Determine how best to support Trout Unlimited in new QLE role in basin		Anton contact Levi (possibly a national WR coordinator or Aaron Penvost, Boise	Active	Anton		
2	**Evaluate a water market/management framework**					Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040)	
2a	Because many of these actions require the voluntary participation of water rights holders, they will be surveyed first to see if there is interest in some of these actions before allocating additional resources to developing water market frameworks		*educational awareness around these topics before survey (outreach materials - Use OWRD information and obtain real life examples) - from QLE (qualified local entity - BPA) or columbia basin transfer program *education for landowners and legislature (allocation of conserved water - presentation recorded by Terri at OWRD) - in person forums valuable (Revisit - Steve/Anton's presentation) *need to build relationships and trust and word of mouth recommendations *support TU				
2b	Determine the best funding source for whatever work is needed as a result of the water rights holder survey						
2c	Conduct a feasibility study/develop draft water market framework and study the following:						
2c.1	Outline methods to utilize water reservations (for storage strategies)						
2c.2	Cross basin transfers (currently prohibited in the Basin Program Rules)						
2c.3	Voluntary water right leases and transfers, including split-season instream leases		1-2 page documents about this; this sunsets in 2 years				
1c.4	Method of allocation of conserved water						
1c.5	Method to obtain new instream water rights and instream flow protections						
1c.6	Minimum flow agreements						
1c.7	Source water exchanges		Explore feasibility of replacing surface water deficits with groundwater				
1c.8	Wetland mitigation bank (or potentially a stream mitigation bank to incentivize wetland creation and restoration)		non profit?				
1c.9	Water bank						
1c.10	Apply for new instream water rights						
1d	obtain funding for implementation if positive outcomes are yielded from the study						
3	**Project Management**						
3a	Prepare Quarterly update to UGRRW Partnership		First update to start June 2021 (After OWRD grant expires)				

Progress Summary:
Meeting January 21, 2021 and February 17, 2021
Milestone Summary:
Years 1 through 2 Prepare outreach material (and outreach strategy) for landowners (gather existing resources). Prepare outreach material for legislators (split season leases, bills/advocacy, etc.) and partnership name and approval. Determine how best to support Trout Unlimited in new Qualified Local Entity role in basin.
Years 2 through 5 Survey of interest and potentially adoption of programs. Fund and implement improvements or projects.
By 2040 Understand the baseline is moving; partnership will focus on "secured water" put into stream (quantify as a result of transactions). Adaptive management needed. Objective 1.1 - Reduce current deficit (begin studies immediately; complete by 2040).

Municipal Land Management

Lead: (City of La Grande); Team: Kyle, Leonard, Dave J.; JB Brock

Purpose: Improve City-to-City coordination to respond to natural hazards, increase water conservation, and support water infrastructure efficiency improvements

last updated: 2/18/2021

Numb	Task	Status/Deadline	Notes	Active/Inactive	Lead	Connected Objective	Scale and Scope
1	**Coordinate with municipalities to determine how the UGRRW Partnership could best assist in providing support to multiple municipal systems and land to improve water quality and quantity.**		Maybe this formalizes our agreement to help (ODOT also has emergency agreement - one like this) - grants/cooperative agreements (equipment sharing list - reduce duplication of resources) - contact list (when certifications lapse, need someone to sign off - would be nice to have cities help each other sign off when needed) *FEMA emergency response plan - only 3 cities are in the County's plan, could other cities get amended into that (plan is expired; plan is not anticipated to be FEMA approved).				
1a	The UGRRW Partnership would first determine if such a plan would be supported by municipalities.		*Mayors meeting - ask if Mayors want to support group effort *Need FEMA approved Natural Hazard Mitigation Plan		Leonard Flint		
1b.1	If supported, obtain funding to study and implement the following:						
1b.2	Require bioswales (vegetation infiltration of stormwater) for new construction; add new bioswales to increase infiltration.						
1b.3	Find additional locations that would benefit from filter strips.						
1b.4	Review point source control technology and look for efficiencies.						
1b.5	Improve municipal water efficiency and redundancy including needed infrastructure improvements.						
1b.6	Improve existing stormwater facilities (pipes and ditches) to help channel and control water flow; look into the potential for stormwater collection for reuse.						
1b.7	Nonpoint source control - Reduce impervious surfaces and direct runoff.		*to look into: Depave.org is a non-regulatory option that may be accessed.				
1b.8	Review potential to develop or update Water System Master Plans, Water Management and Conservation Plans, or Water Curtailment Plans for each city and a coordinated approach to conservation, system testing, and maintenance, which could help smaller cities by producing conservation and long-term infrastructure planning to reduce the impact of potential demand increases.		*WMCP - only needed over 10k *stormwater master plans needed *cove: revise analysis, upsize culverts etc				
1b.9	Look for opportunities for water reuse.						
1b.10	Evaluate feasibility of non-traditional water supply techniques including rainwater, stormwater, greywater, and/or other novel and innovative technologies.						
1b.11	Ensure all communities are covered in Union County Emergency Response Plan	Contact Donna related to plan lapse (completed 1/20/2021 - wait for response)	Need FEMA approved emergency response plan - Union County wide plan to include all cities				
2	**Project Management**						
2b	Prepare Quarterly update to UGRRW Partnership		First update to start June 2021 (After OWRD grant expires)				

Progress Summary:

Meeting January 20, 2021 and February 18, 2021
Information presented at Mayor's meeting January 20, 2021.
County Emergency Manager contacted January 20, 2021 related to Emergency Response Plan update.

Milestone Summary:

Years 1 through 2
Determine if mayors of cities want to work on a plan for shared resources for water conservation.
Update Partnership on cities water/stormwater/flood activities.

Years 2 through 5
Updated Federal Emergency Management Agency Natural Hazard Mitigation Plan to cover all cities.

By 2040
Objective 4.1 - Develop natural hazards mitigation plan (by 2030).
Objective 4.2 - Implement mitigation measures identified in plan (by 2040).

Objective 4.3 - Create an adaptive management protocol to apply new climate change data to goals (by 2030).

Education and Outreach

Lead: (Union County); Team: Kyle, Roxy, Donna, Darrin

Purpose: Inform the public about water quality issues and Partnership activities

last updated: 2/18/2021

Numb	Task	Status/Deadline	Notes	Active/Inactive	Lead	Connected Objective	Scale and Scope
1	**Update the UGRRW Partnership's outreach plan to include support or action on the following items:**		Water Quality topic of the month on County or City website		Ask Roxy for material from other groups		
1a	Provide education and outreach support to other working groups as needed		ex: Ag land and built storage				
1b	Promote awareness of local DEQ Environmental Cleanup Site Information Database-listed sites (potentially through posting a link on the County's website).		County website link		County		
1c	Meet with the DEQ to discuss their pilot data sharing project (cleanup program information)		Wait to discuss with Roxy	Inactive	DEQ	Objective 2.1 - Reduce each water quality issue (by 2040)	
1d	Promote the recycled chemical program (for pesticides from agricultural and municipal sources). This could potentially be done through fliers, supporting agencies working on this, or posting a link on the County's website.		Darrin Larvik Waste Pro - call and ask if any extra help promoting events from Union County. Example: Pesticide/Ag Chemical Collection-by the Clackamas Soil and Water Conservation District, Clackamas Water Providers, and Pesticide Stewardship Partnership Contact: Lisa Kilders. Lisa said that she has lots of outreach materials to share if you're interested. Email: lkilders@conservationdistrict.org				
1e	Inform the public about best practices for lawn care (i.e., inform the public about the risks of over-application of lawn care products and fertilizers flow to the creeks). This could potentially be done through new homebuyer packets, fliers, and links on County's website.		Could talk to cities to include in annual water quality report Lawn care education materials- Clackamas SWCD - https://conservationdistrict.org/resources/yard https://wmswcd.org/projects/soil-school/		Union (Donna) - Dana blurb (ask mayors what is helpful)		
1f	When relevant, conduct public outreach related to local toxic algae blooms (potentially through newspaper articles, radio ads, or public postings).		Ask Winston - for clarification, what would be helpful				
1g	Distribute relevant information from city water reports and additional information such as how and where people can get well water tested to unincorporated users in the County (determine the best way to do this with the City of La Grande). Potentially contact the Portland Water Bureau for outreach material ideas.		Work with Elkhorn media group to get link out there to all county residents - need to determine interest				
1h	Support educational events promoting conservation farming practices (discuss the best method of support with OSU Agricultural Extension Office of Union County).		Talk to Darrin about event promotion (4h) Master Gardener program (https://extension.oregonstate.edu/program/all/mg/events) https://wmswcd.org/types/farm/ Darrin will obtain water quality related materials for master garderner program https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em9125.pdf https://catalog.extension.oregonstate.edu/		Could add to La Grande's website		
1i	Develop outreach materials related to improving municipal water conservation and use efficiencies. Potentially contact the Portland Water Bureau for outreach material ideas.		Future stewards day for 3rd grade. Look into what PWB has on website		Dana to research		
1j	Determine interest in supporting landowner tours and hands-on workshops.		maybe make water the main focus of the farm tour Eastern Oregon Rodeo is working with OHA to have it		Donna to check in		
1k	Update the text of the Outreach document						
1l	Digital storytelling about partnership	in progress - to be completed end of 2021	Story Gorge training	Active	Donna (Union County) and Alex (GRMW)		
2	**Project Management**						
2a	Prepare Quarterly update to UGRRW Partnership						

Progress Summary:
Meeting January 22, 2021 and February 18, 2021 Outreach to Department of Environmental Quality for assistance on January 22, 2021.
Milestone Summary:
Years 1 through 2 Prepare and distribute outreach material on lawn care issue to cities/county. Digital water quality outreach to county residents (reassess after first year). Digital Storytelling project to be completed.
Years 2 through 5 Update outreach document. Field tour/workshop.
By 2040 Objective 2.1 - Reduce each water quality issue (by 2040).

Project Management

Lead: (Union County)

last updated: 9/28/2021

Number	Task	Status/Deadline	Notes	Active/Inactive	Lead	Connected Objective	Scale and Scope
1	OWRD Feasibility Study Grant	Awarded	Working on contract 9/28/2021	Active	Union County - Dana		Entire UGRRW
2	OWRD PBP Grant	Waiting for additional $50,000 contract					
3	OWEB TA Feasibility Study Grant	Ranked 2/6 by tech committee 9.28					
4	BOR Grant	Deadline - January 19	Did not Apply; consider for 2022	Inactive			
5	OWEB Grant	Expires March 30, 2023	Need to complete Strategic Action Plan				

Progress Summary:

Submitted OWEB Progress Report 12/30/2020

Milestone Summary:

Year 1-2

Submit OWEB Progress Reports 12/30/2021; 12/30/2022

Year 2-5

By 2040

APPENDIX B
UGRRW Partnership Participation (2016-2021)

Organization	Name	Sector	MOU Signatory (Yes/No; if Yes, non-voting noted)	Number of Meetings Attended	Additional Responsibilities	Primary interests (Instream, Agricultural, Municipal)	If reduction in participation, why?	Eligible to Vote on Step 5 Report
Anderson Perry & Associates, Inc.	Dana Kurtz; Brett Moore	Consultant	No	98	Assist on all committees	N/A	N/A	No
Oregon Department of Fish and Wildlife	Tim Bailey; Nick Myatt; Adrienne Averett; Danette Winters; Ana Packman Stevens; Coleen Fagan; Winston Morton; Jeff Yankee; Joe Lemanski	Government	Yes	91	Steering Committee; Instream Demand Group; Technical Committee	Instream	N/A	Yes
OWRD	Shad Hattan, Harmon Burright; Jason Spriet; Jen Woody; Kim Ogren; Nick Teague; Rachel Lovelford; Robert Harmond; Steve Parrett;	Government	Yes	90	Steering Committee; Municipal Demand Group	Instream	N/A	Yes
Union County	Donna Beverage; Scott Hartell; Lorcinda Johnson; Darcy Carreiro; JB Brock; Mark Davidson;	Government	Yes	89	Steering Committee	Municipal	N/A	Yes
Union County Farm Bureau	Jed Hassinger	Agricultural	Yes	78	Steering Committee; Agricultural Demand Group; Technical Committee	Agricultural	N/A	Yes
Grande Ronde Model Watershed		Non-Profit	Yes	68	Technical Committee; Data Strategy Group	Instream	N/A	Yes
City of La Grande	Kyle Carpenter	City	Yes	63	Steering Committee; Municipal Demand Group; Municipal Strategy Group; Outreach Strategy Group	Municipal	N/A	Yes
Confederated Tribes of the Umatilla Indian Reservation	Anton Chiono; David Haire; Allen Childs; Chris Marks; Ian Wilson	Tribal	Yes	55	Technical Committee; Instream Demand Group; Storage Strategy Group; Learning Partnership Representative; Bend water planning Conference representative	Instream	N/A	Yes
Oregon Department of Agriculture	Margaret Matter; Tom Demianew	Government	Yes-Non Voting	53	Agricultural Demand Working Group; Natural Hazards Group; Bend Water Planning Conference Representative	Agricultural	Lack of Capacity	No
US Fish and Wildlife	Gary Miller; Gretchen Sausen; Marisa Meyer	Government	No	39	N/A	Instream	N/A	No
The Freshwater Trust	Tony Malmberg; Jessica Humphreys; Caylin Barter; Aaron Maxwell	Non-Profit	Yes	38	N/A	Instream	Lack of Capacity	No
Department of Environmental Quality	Smita Mehta; Tonya Dombrowski; John Dadoly; Randy Jones; Roxy Naler	Government	Yes	34	Technical Committee	Instream	Lack of Capacity	No
Oregon State University Extension	Darrin Walenta; Leticia Henderson; Robin Maile; Kacie Melville; Maria Zamoraire; Abigail Tomasek	Education	Yes	34	Agricultural Demand Work Group	Agricultural	N/A	No
Farmer	Curt Ricker	Agricultural	Yes	33	Union County Farm Bureau Representative; Union Soil Water Conservation District Representative; Agricultural Demand Working Group	Agricultural	N/A	Yes
Private Citizen	Larry Larson	Agricultural	Yes	32	N/A	Agricultural	N/A	Yes
Union County Cattleman	Rodger Huffman	Agricultural	Yes	32	N/A	Agricultural	N/A	Yes
US Forest Service	Bill Gamble	Government	Yes - Non Voting	28	Natural Hazards Group	Instream	N/A	Yes
Union County Soil Water Conservation District	Jim Webster; Katheryn Frenyea; Aaron Bliesner, Deric Carson	Non-Profit	Yes	27	Habitat Strategy Group	Instream and Agricultural	N/A	Yes
NRCS	Mike Burton; Nick Vora	Agricultural	Yes-Non Voting	25	Agricultural Demand Working Group	Agricultural	N/A	No
Farmer	Tim Wallender	Agricultural	Yes	21	N/A	Agricultural	N/A	Yes
Fescue Comission	Matt Insko	Agricultural	Yes	20	N/A	Agricultural	N/A	Yes

Organization	Name	Sector	MOU Signatory (Yes/No; if Yes, non-voting noted)	Number of Meetings Attended	Additional Responsibilities	Primary interests (Instream, Agricultural, Municipal)	If reduction in participation, why?	Eligible to Vote on Step 5 Report
Farmer	Cheryl Murchison	Agricultural	Yes	17	Storage Strategy Group	Agricultural	N/A	Yes
City of Cove	Dave Johnson; Del Little; Doug Kruse	City	Yes	15	Municipal Strategy Group	Municipal	N/A	Yes
City of Union	Lenord Flint; Rod McKee	City	Yes	14	Municipal Strategy Group	Municipal	N/A	Yes
Farmer	Curt Howell	Agricultural	Yes	12	Storage Strategy Group	Agricultural	N/A	Yes
US Senator Ron Wyden	Kathleen Cathey	Political	No	12	N/A	N/A	N/A	No
Bureau of Reclamation	Darrell Dyke	Government	No	11	Agricultural Demand Working Group	Instream; Agricultural	Retirement	No
Farmer	Ann Hulden	Agricultural	Yes	9	N/A	Agricultural	N/A	Yes
Union County Seed Growers	Brett Rudd	Agricultural	Yes	9	N/A	Agricultural	Lack of Capacity	No
Business Oregon	Melissa Drugge; Jeremey McVeety; Brian McDowell	Business	No	7	N/A	N/A	N/A	No
Merkley	Karen Wagner; Jessica Keys	Political	No	6	N/A	N/A	N/A	No
OTEC	Susan Snider; Nina Valerio	Electricity	No	6	N/A	N/A	N/A	No
Eastern Oregon University	Maren Peterson	Education	No	5	Technical Committee	N/A	Lack of Capacity	No
Trout Unlimited	Levi Old	Non-Profit	Yes	4	N/A	Instream	Lack of Capacity	No
City of Island City	Delmer Hanson; Rob Ray	City	No	3	N/A	Municipal	Lack of Capacity	No
Farmer	Jim McDonald	Agricultural	No	3	N/A	Agricultural	Unknown	No
Ford Family Foundation	Maurizo Valerio	Non-Profit	No	3	N/A	N/A	N/A	No
National Marine Fisheries Service	Sara Fleshmyer; Rebecca Viray	Government	No	3	N/A	Instream	Lack of Capacity	No
Walden	Tucker Billman	Political	No	3	N/A	N/A	Unknown	No
City of Imbler	Mike McLean	City	Yes	2	N/A	Municipal	Lack of Capacity	No
Governor's Office	Courtney Cromwell	Political	No	2	N/A	N/A	N/A	No
GSI	Jason Meledy	Consultant	No	2	N/A	N/A	N/A	No
Nez Perce Tribe	Bobby Hills	Tribal	No	2	N/A	Instream	Felt CTUIR had it covered	No
Private Citizen	Michael Bettis	Agricultural	No	2	N/A	Agricultural	Unknown	No
Baum Smith	Delon Lee	Legal	No	1	N/A	N/A	Unknown	No
Boise Cascade	Bart Barlow	Industrial	No	1	N/A	Municipal	Retirement	No
CIRC	Cathey Delo	Education	No	1	N/A	Instream	N/A	No
Farmer	Austin Bingaman	Agricultural	Yes	1		Agricultural	Unknown	No
Farmer	Kurt Bowman	Agricultural	No	1	N/A	Agricultural	Unknown	No
Farmer	Dennis Murchison	Agricultural	No	1	N/A	Agricultural	Unknown	No
Imbler FFA	JD Cant	Education	No	1	N/A	Agricultural	N/A	No
Observer	Cherise Kachelie	Media	No	1	N/A	N/A	Unknown	No
Powder Valley Control District	Lyle Umpleby	Agricultural	No	1	N/A	Agricultural	Out of area	No
Private Citizen	Levon Baremore	Agricultural	No	1	N/A	Agricultural	Unknown	No
Private Citizen	Mauri DeLint	Agricultural	No	1	N/A	Agricultural	Unknown	No
Private Citizen	Peter Nilsson	Agricultural	No	1	N/A	Agricultural	Unknown	No
Private Citizen	Bill White	Agricultural	No	1	N/A	Agricultural	Unknown	No
Water Watch	Kimberly Priestly	Non-Profit	No	1	N/A	Instream	Out of area/lack of capaticy	No

Draft Resolution of the Oregon Water Resources Commission
Recognizing a Place-Based Integrated Water Resources Plan

Whereas the Oregon Water Resources Commission adopted Oregon's first Integrated Water Resources Strategy (IWRS) in 2012, and an updated version in 2017, carrying out its vision of bringing various water sectors and interests together to work toward the common purpose of maintaining healthy water resources to the meet the needs of Oregonians and the environment for generations to come;

Whereas, an important recommended action of the IWRS was to create and test a framework for developing place-based integrated water resources plans, which resulted in development and publication of a draft set of Planning Guidelines in 2015;

Whereas, the legislature in 2015 invested in the pilot-phase of place-based water planning and granted authority through Senate Bill 266, which resulted in financial and technical support for four communities to begin planning in accordance with the Guidelines;

Whereas, the [*insert partnership name*], in partnership with the State and in consultation with the Department, worked diligently to develop a Place-Based Integrated Water Resources Plan (Plan);

Whereas, the Commission recognizes the immense value and expresses gratitude for all those who contributed to the Plan;

Whereas, the Plan was developed in collaboration with a balanced representation of diverse water interests, representing both instream and out-of-stream values;

Whereas, the actions in the Plan are consistent with existing state laws concerning the water resources of this state and state water resources policy;

Whereas, the Plan contains the vision of the Partnership, improves our understanding of water conditions and needs, both instream and out-of-stream;

Whereas the Plan identifies critical water issues to be addressed, and recommends sound strategies for addressing the issues, implementation of the Plan will have significant value to the Partnership, the broader local community, and the people of Oregon;

Whereas, the Plan will facilitate implementation of local solutions that will balance instream and out-of-stream water needs now and in the future;

Whereas, [*insert partnership name*] has been and remains committed to utilizing an open and transparent process that fosters public participation;

Whereas, the Plan has been locally adopted by the Partnership and the State's inter-agency review team has determined that the plan follows the Guidelines and is consistent with principles of the IWRS;

Whereas, information contained in the Plan will inform future updates to the IWRS;

Whereas, implementation of the Plan will help meet the state's instream and out-of-stream water needs and support Oregon's economy, its renowned wildlife and nature, bountiful agricultural products, and healthy and livable communities as described in the IWRS; Now, therefore,

Be It Resolved, we the undersigned members of Oregon's Water Resources Commission do hereby recognize the importance of the Partnership's Plan on this X day of X month, 2022.

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Meg Reeves, Chair
Westside at Large

Others