WALLA WALLA 2050 STRATEGIC PLAN

TIER 1 STRATEGY IMPLEMENTATION PLAN

Basin Advisory Committee Review DRAFT

OCTOBER 16, 2024

TABLE OF CONTENTS

1. Executive Summary [Will be completed - after BAC feedback]

Introduction

Broad intro; how we got here and purpose of this implementation plan: to chart a path of action for implementation of the 23 Tier 1 Strategies from the Strategic Plan for the next 3-5 years.

Strategies Including in this Plan

Summary table of strategies by category.

Summary of Implementation Actions

Describe three groupings of strategies in this plan: 1) site and project specific strategies with defined next steps; 2) specific guidance for planning, research efforts necessary to facilitate specific projects; and 3) strategies for which additional coordination, identification of a work group and pre-planning/feasibility study are required.

Within each category, summarize the key action/next steps required, by strategy.

The goal of this section is to have a brief (five page?) playbook that can be used to reference implementation next steps.

2. Background

Brief description of WW2050 Strategic Plan process leading to this point.

3. Introduction

The Walla Walla Water 2050 Strategic Plan (Strategic Plan) was completed in June 2021. This Implementation Plan (Plan) is part of Phase 2 of the Walla Walla 2050 Strategic Plan process. The purpose of this Plan is to outline implementation steps for priority strategies that emerged from the Strategic Plan. The Strategic Plan identified sixty total strategies for managing water resources to meet multiple benefits in the Walla Walla watershed. To help organize implementation, these strategies are distributed into five categories: Monitoring and metering, floodplains, habitat and fish passage; streamflows and groundwater; water quality; and policy and regulatory issues. Table 1 describes the five categories.

Table 1: Description of Categories of Tier 1 Strategies

Category	Description	Plan Chapter
Monitoring and Metering	Strategies to develop a robust monitoring and metering program for the basin that includes a diverse set of ecological and hydrological indicators to assist with tracking progress on key indicators, managing water resources and communicating to the public.	Chapter 2, pages X-X
Floodplains, Habitat and Fish Passage	Strategies focused on improving conditions for aquatic species in the basin by reconnecting and restoring floodplains, increasing channel complexity and improving aquatic habitat quality and quantity, improving riparian habitat health and removing existing fish passage barriers.	Chapter 3, pages X-X
Streamflows and Groundwater	Strategies for increasing flow in the basin's streams and water levels in the basin's aquifers to support instream flow levels for important fish species, water availability for agriculture and cities, and to promote water quality, fish passage and other aquatic habitat benefits.	Chapter 4, pages X-X
Water Quality	Strategies for addressing specific point and nonpoint source pollution in the watershed	Chapter 5, pages X-X
Policy and Regulatory Issues	Strategies related to state and local policy and regulatory considerations related to bi-state surface water management, drought response and coordination, floodplain and riparian zone regulation and bi-state groundwater regulation	Chapter 6, pages X-X

To focus on the most important near-term opportunities and needs, the sixty strategies identified in the Strategic Plan were prioritized further, resulting in twenty-three Tier 1 Strategies that are the focus of this Plan. Tier 1 strategies are listed below in Table 2 by category. A series of technical memos that describe these strategies in detail were completed during a previous phase of the Strategic Planning process and are on file with the project team.

Table 2: Implementation Plan Focus - Tier 1 Strategies

Category	No.	Strategy
Monitoring and Metering	1.10	Develop an overarching monitoring strategy and adaptive management plan for fish, habitat, and water to inform actions and evaluate effectiveness
	1.15	Expand and fund streamflow gages throughout the Basin
	1.20	Improve agricultural irrigation water use metering and reporting programs in WA and OR by installing telemetry and improving data use by agencies and water users
Floodplains, Habitat and Fish Passage	1.01	Reconnect floodplain and restore channel complexity Basin wide to reduce flood risk and improve habitat
	1.06	Improve fish passage and habitat conditions in weir and concrete channel sections of flood control project in Mill Creek
	1.07	Restore and protect riparian habitat along tributaries, small streams, and the Walla Walla River Basin wide
	1.09	Protect and improve fish passage at Nursery Bridge and implement levee setback projects upstream and downstream of Milton Freewater
	1.12	Improve flow and timing of fish passage through the Hofer Dam fishway
	1.19	Improve fish passage at Gose Street
	1.23	Improve fish passage at Bennington Diversion Dam
Streamflows and Groundwater	1.02	Support the ongoing analyses of the Bi-State Flow Study and work toward a recommendation on implementation of the preferred alternative
	1.03	Direct additional winter flow down the Little Walla Walla River to support alluvial aquifer recharge and stream function
	1.08	Decrease surface water diversions or substitute for basalt wells during low flow periods
	1.04	Water rights acquisitions (short-term, long-term, and split season) to restore streamflows
	1.05	Improve and expand managed aquifer recharge (MAR)
	1.13	Expand and support Aquifer Storage and Recovery (ASR) to maintain groundwater quality and capacity
Water Quality	1.17	Increase infiltration of stormwater rather than discharge to surface water bodies and improve coordination and management
	1.18	Upgrade Dayton wastewater treatment plant to meet Ecology requirements and watershed community environmental goals
	1.22	Implement conservation tillage and soil erosion BMPs to decrease nonpoint source pollution
Policy and Regulatory Issues	1.11	Address legal implications of Bi-State surface water management and protection of instream flow across the state border and protection of instream flow within States
	1.14	Improve coordination and response to drought management Basin-wide
	1.16	Increase coordination and enforcement of floodplain and riparian regulations and management between Counties and State water management entities
	1.21	Additional Bi-State coordination on groundwater regulation

Implementation Plan Development

This Implementation Plan was informed by several workgroups who met to discuss various elements of implementing the Tier 1 strategies throughout 2024. The Implementation Work

group is a workgroup of the Walla Walla Basin Advisory Committee. The Basin Advisory Committee (BAC) advises and makes recommendations to the Tri-Sovereigns (the states (Washington and Oregon and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR)). Given the broad nature of the strategies covered in the plan, the Implementation Workgroup was broken into sub workgroups in 2024 to discuss implementing each of the Tier 1 strategies. Much of the information in this plan derives from these discussions as well as input received from the Tri-Sovereigns and others involved in the basin's Strategic Planning process.

Another important element of the Strategic Plan relevant to implementation plan development is a set of Desired Future Conditions (DFCs). As part of the Strategic Planning Process, the Strategic Plan Advisory Committee (SPAC) (predecessor to the BAC) developed 16 DFCs for water resource management. These DFCs are summarized below in Table 3. Where possible, in this plan goals and metrics related to DFCs are defined quantitatively to track progress. Where quantification is not possible, performance metrics are stated in the simplest terms; for example, as an increase in a beneficial project type or a decrease in detrimental impacts.

Table 3: Desired Future Conditions

Floodplains, Critical Species, Habitat, & Water Quality
- Achieve healthy, natural floodplain function - Increase access to quality habitat - Increase riparian cover - Increase river channel complexity and naturalize channelized streams - Restore a natural sediment transport regime - Meet TMDL targets - Increase critical fish species population and abundance levels necessary to meet delisting criteria, support sustainable natural production, and provide a fishery for Tribes and the community
Water Supply, Streamflows, & Groundwater
- Build resiliency and redundancy in the agricultural water supply to meet current and future water demand - Stabilize aquifer levels to support water resources and water for people and farms - Enhance instream flows to meet instream flow targets for critical species - Increased natural infiltration, acreage, and duration of inundation
Land Use & Flood Control
- Reduce flood risk for people and cities - Meet TMDL targets - Create climate resilience for basin water resources
Quality of Life
- Sustain and improve quality of life in the Walla Walla Valley by supporting community health with clean and reliable domestic water supply as well as opportunities for outdoor recreation and sustainable tourism
Monitoring & Metering
- Increase streamflow, habitat, and water use monitoring to support better water resource management and adaptive management

Implementation Plan Structure

This plan outlines critical next steps for each of the twenty-three Tier 1 strategies. Tier 1 Strategies vary in their scope and scale and so too does the guidance in this plan. Some Tier 1 strategies focus on individual projects and site-specific actions, while others focus on basin-scale actions and planning. For project and site-specific actions, detailed next steps, along with explicit timelines, are outlined while next steps for basin-scale actions vary in scope and level of detail depending on the strategy and input from BAC and workgroup members.

This Implementation Plan is organized into six main chapters, one for each of the five categories of Tier 1 strategies highlighted above (Table 2) and a final chapter containing a funding strategy for implementation. Each chapter begins by introducing all the specific strategies within the relevant category. Following this introduction, each strategy is described in detail beginning with

metrics that will be used for tracking progress (where available) followed by a description of an implementation pathway. Each implementation pathway includes:

- Specific actions/next steps;
- Responsible parties and others involved;
- Required coordination between other actions and actors, if any;
- Timeline; and
- Other details as relevant.

4. Implementing Tier 1 Monitoring and Metering Strategies

Robust monitoring and metering of a diverse set of indicators is foundational to managing resources and implementing restoration in the Walla Walla Basin. The goal of improving monitoring and metering across all indicator and data types, is to promote continuous improvement not only in the things being monitored, but in the basin's ability to prioritize effort where it is most needed and analyze and report on progress toward goals. The Walla Walla 2050 Strategic Plan identified three specific Tier 1 priority strategies related to monitoring and metering (Table 4).

Table 4: Tier 1 Strategies in the Monitoring and Metering Category

Category	Strategy Number and Description	
Monitoring and Metering	**1.10**	Develop an overarching monitoring strategy and adaptive management plan for fish, habitat, and water to inform actions and evaluate effectiveness
	1.15	Expand and fund streamflow gages throughout the Basin
	1.20	Improve agricultural irrigation water use metering and reporting programs in WA and OR by installing telemetry and improving data use by agencies and water users

Strategy 1.10: Develop an overarching monitoring strategy and adaptive management plan for fish, habitat, and water to inform actions and evaluate effectiveness

The Strategic Plan highlighted the need for a holistic strategy to unite the basin's monitoring efforts under a coordinated strategy. The purpose of an overarching monitoring strategy is to integrate data on key parameters from diverse sources across the basin into a picture of the health of the watershed's rivers and aquatic species. This will support ongoing project implementation across the landscape by tracking progress toward meeting quantitative goals and provide a basis for adaptative management as needed. Another goal of the strategy is to provide a platform for disbursing information to the public and for sharing monitoring data and information between entities working in the basin.

Quantitative Metrics

Due to the broad nature of strategy 1.10, no quantitative metrics are included or proposed for tracking. However, the actual monitoring strategy once complete will rely heavily on tracking quantitative metrics (see initial list of potential metrics in Table 5 below).

Implementation Pathway

Specific Actions/Next Steps

Washington Department of Fish and Wildlife (WDFW) is taking the lead in seeking funding to coordinate and develop an overarching monitoring strategy. First, WDFW will seek funding to initiate and manage strategy development. Once funding is secured, a specific workplan will be developed. However, the Monitoring and Metering Implementation Sub Work Group (ISWG) sketched out a rough approach for developing the strategy as a guide for WDFW and for this Plan:

1. **Action:** Analyze existing monitoring frameworks being used in the region to select a model that can be a basis for the Walla Walla strategy.
    - **Progress:** WDFW, in consultation with the Monitoring and Metering ISWG has identified the Bonneville Power Administration's (BPA) Research, Monitoring and Evaluation (RME) framework as a strong candidate for a model approach that could be downsized to the Walla Walla scale.
    - **Next Step:** Once funding is secured, make a final decision on one or more frameworks on which to base the Walla Walla monitoring strategy and integrate strategy development accordingly into the final workplan. The Monitoring and Metering ISWG emphasized the importance of simplicity to the durability and workability of any overarching monitoring strategy for the basin. This principle will be used to guide strategy development.
2. **Action:** Inventory what data are already being collected in basin as part of ongoing efforts.
    - **Progress:** The Monitoring and Metering ISWG drafted a preliminary inventory of data that are being collected in the basin (Table 5 below).
    - **Next Step:** Finalize the inventory by adding information including where data are currently being stored and in what format, and if/how data is being reported/summarized currently.
3. **Action:** Select key indicators from existing data to be the basis for tracking and reporting progress over time and agree on how indicators will be tracked.
    - **Progress:** The Monitoring and Metering ISWG discussed indicators but did not finalize a list of key indicators for the plan. Table 5 below provides an initial list of indicators brainstormed by the sub-workgroup.
    - **Next Step:** Upon completion of the data inventory discussed above and based on the final workplan developed for this effort, convene relevant entities to analyze, discuss and select key indicators to include in the monitoring strategy. Additionally, agree on how the indicators will be tracked and what baseline will be used for each.
4. **Action:** Develop a durable workflow for sharing data on an ongoing basis to support implementing the monitoring framework into the future.
    - **Progress:** The Monitoring and Metering ISWG discussed the importance and challenges associated with sharing data between diverse and distinct entities that collect it across the basin. The ISWG did not make any proposals about how to do this, but the entities involved are committed to the effort.

- **Next Step:** Integrate this action into the final workplan for monitoring strategy development.

5. **Action:** Develop a web-based platform for disseminating information to the public.
   - **Progress:** The Monitoring and Metering ISWG reviewed existing public monitoring databases and identified a GIS-based web platformed used in the Tucannon basin in SE Washington as a model for a similar platform to be developed in the Walla Walla (https://ctuirgis.maps.arcgis.com/apps/MapSeries/index.html?appid=7961a9f233684f0daf87970b37d8dc1c).
   - **Next Step:** Integrate this action into the final workplan for monitoring strategy development.

Table 5: Preliminary Data Inventory

Responsible Parties

WDFW is seeking funding to support coordinating and developing an overarching monitoring strategy for the Walla Walla basin. Due to the holistic nature of the proposed strategy however, it will require collaborating with the staff from both states and Confederated Tribes of the Umatilla Indian Reservation (CTUIR) as well as other entities working in the basin. Strategy development should also recognize ongoing efforts and avoid duplication. For example, for fish-specific data, CTUIR, OR and WA meet in a forum called Walla Walla Management Monitoring Evaluation and Operations Committee (WWMMEOC).

Required Coordination

This strategy focuses on coordination between the states, CTUIR and other entities across the basin to collaboratively develop and implement an overarching monitoring framework. Because coordination is a critical element of the strategy itself, no further discussion is required here.

Timeline

The final timeline for developing a monitoring framework will depend on success and timing of funding and the availability of staff time to draft a framework alongside the other co-managers. Once funding is in place, strategy development is anticipated to take approximately twelve to eighteen months.

Strategy 1.15: Expand and fund streamflow gauges throughout the basin

The current network of stream gauges in the Walla Walla Basin is insufficient to precisely monitor and regulate the full range of water rights in the watershed, adequately monitor instream flows and fully enable accurate bi-state water management. Regulating instream water rights alongside out-of-stream uses, especially across a border, requires a carefully considered system of gauges that is reliable, accurate, remotely accessible, provides legally defensible data that can be used for management by state regulatory agencies, and ideally provides data in real-time. Gauges must be located strategically in relation to points of diversion, tributary inputs and key river reaches. Strategy 1.15 calls for a concerted effort to expand and fund the streamflow gaging network in the basin to meet current and future challenges with intra and bi-state water management and water right regulation.

Quantitative Metrics

For strategy 1.15, the number of stream gauges installed and operating will be tracked over time. X number of new gauges are planned between X and X.

Table 6: Quantitative Metrics for Strategy 1.15

Metric	Planned (As of 2024)	Timeline
Number of Stream Gauges Installed and Operating		

Implementation Pathway

During Phase I of Strategic Plan development, the SPAC developed a list of proposed new gauge locations. The list is included below in Table 7; rows highlighted in light green represent gauges that were funded since completion of Phase I.

Table 7: Proposed New Gauge Locations

Stream	Location	Notes
Pine Creek	@Sand Pit Road	The site represents the contribution of Pine and Dry Creek (Oregon Dry Creek) to the Walla Walla River.
East Little Walla Walla River	@the mouth with the mainstem WWR	Represents the contribution from the East LWWR and Big Spring. The East LWWR contributes significant summer surface flow with cooler water temperatures to the Walla Walla River.
Yellowhawk Creek	@Hwy 125	Represents the total flow contribution to the Walla Walla River from not only Yellowhawk Creek, but also Cottonwood, Caldwell, and Russell Creeks.
Walla Walla River	@McDonald Road	The location is downstream of the last large irrigation diversion on the Walla Walla River.
Walla Walla River	@Stateline	Assist OWRD with managing instream water rights on the Walla Walla River.
Touchet River	@Sims Road	Ecology opted for a comparable location to the Touchet River @Luckenbill Rd site (below) due to access and data needs.

The SPAC also identified a list of historic gauges that are no longer operating but that the group believed should be brought back online to support water management in the basin. This list is included below in Table 8. Rows highlighted in light green were funded for the 2021-2023 biennium.

Table 8: Existing, Inoperable Gauge Sites Proposed for Reestablishment

Stream	Location	Notes
Walla Walla River	Below Lowden	Station ID 32A080
Walla Walla River	Near Lowden	Station ID 32A090
Walla Walla River	@Pepper Bridge Rd	Station ID 32A120
Touchet River	@Luckenbill Rd	Station ID 32B090
Touchet River	@ County Walla Walla Columbia County Line	Station ID 32B110

Stream	Location	Notes
Touchet River	Above Dayton	Station ID 32B140
Yellowhawk Creek	@the Mouth with WWR	Station ID 32D050
Yellowhawk Creek	Near mouth	Station ID 32D060
NF Touchet	Above Jim Creek	Station ID 32E150
Dry Creek	Near mouth	Station ID 32F060
Dry Creek	@Hwy 125	Station ID 32F150
Coppei Creek	Near mouth	Station ID 32G060
Coppei Creek	Near Coppei	Station ID 32G100
East Prong of Little Walla Walla	@Stateline	Station ID 32H090
Robinson Fork	Above Wolf Fork of Touchet Rover	Station ID 32J070
Wolf Fork Touchet R	@ Mountain Home Pk	Station ID 32K070
S.F. Touchet R.	Near Mouth Above Dayton	Station ID 32L070
Cottonwood Creek	Near Mouth	Station ID 32M060
Cottonwood Creek	@Hood Road	Station ID 32M100
Russell Creek	Near Langdon	Station ID 32N070

Specific Actions/Next Steps

Work on Strategy 1.15 will focus on prioritizing additional gauges for installation/re-establishment. The end use of gauge data can help guide planning for where gauges are installed and what types of gauges and measurement approaches are used. For example, for regulating water rights, continuous, real-time gauges that are accessible on-line should be the standard. Another important consideration is long-term viability. Bringing gauges online for a short period of time has limited benefits so work on this strategy should consider not only where to put gauges, but how to ensure that once installed, gauges can be operated for a meaningful duration.

1. **Action:** Increase funding for staff time to maintain and monitor gauges.
    - **Progress:**
    - **Next Step:**

2. **Action:** Select 3-5 sites for new installation and/or reestablishment based on consensus need for managing in and out-of-stream water rights; seek funding and install/operate gauges.
    - **Progress:**
    - **Next Step:**

Responsible Parties

The primary entities involved in stream gauge installation, operation and use are Oregon Water Resources Department (OWRD), Washington Department of Ecology (Ecology), the United States Geological Survey (USGS), and, to a lesser extent, the Walla Walla Basin Watershed Council (WWBWC). As the water regulating agencies, OWRD and Ecology have the most capacity and responsibility to oversee the expansion of the gauging network and produce data that are legally defensible and can be used for water management. USGS can play the role of supplementing the states with technical expertise resources and gauging data.

Required Coordination

OWRD and Ecology should solicit input from CTUIR and other basin water resource managers including WWBWC, water users (irrigation districts), as well as technical experts like USGS on where they would prioritize developing new/reestablishing gauges. This input can be used to help prioritize and select additional gauge sites for installation during the term of this plan.

Timeline

The goal for strategy 1.15 is to fund and install 3-5 gauges within the next two years.

Strategy 1.20: Improve agricultural irrigation metering and reporting programs in Washington and Oregon by installing telemetry and improving data use by agencies and water users

The final Tier 1 strategy in the Monitoring and Metering category is improving data collection and reporting related to agricultural water diversion and use. Improving data on agricultural water use has three primary purposes: 1) to support agriculture's ability to thrive despite growing scarcity; 2) to enable precise water management that gets water where it is needed, when it is needed, while balancing competing demands for in and out-of-stream supply; and 3) to inform regulatory agency decision making, planning and permitting.

Quantitative Metrics

For Strategy 1.20, the percentage of diversions and pumps in WA and OR that have meters installed can be tracked. Both states can also track and report periodically on reporting compliance and their own efforts to review reports. However, Washington State in particular, is currently challenged with lack of a comprehensive metering database and limited staff with which to engage in active water meter tracking or management. The goal for the term of this Plan is to have 100% of diversions/pumps that are legally required to be metered have a functioning meter in in Washington by X date and 100% in Oregon by X date. Additionally, both states will report periodically on compliance by water users with meter reporting requirements and with their own efforts to review reporting received from water users.

Table 9: Quantitative Metrics for Strategy 1.20

Metric	Goal	Timeline
Percentage of Diversions/Pumps with Meters Installed		
Compliance with Water Use Reporting		Ongoing
State Agency Review of Water Use Reports		Ongoing

Implementation Pathway

This strategy focuses on two related actions. The first action is expanding the number of meters installed on irrigation diversions and pumps in both Washington and Oregon and improving reporting from these meters. The second action is ensuring that data reported to state agencies is used for its intended purpose of supporting irrigation water use and basin water management to the greatest extent possible. A May 2023 workgroup identified three actions to improve metering on the Washington side of the Basin- improve Ecology's metering database, increase technical assistance and outreach related to metering and relaunch a metering cost-share program. Technical assistance (TA) includes a wide range of activities, including phone calls, answering emails, in person support, formal letters.

Specific Actions/Next Steps

1. **Action:** Increase technical assistance and outreach related to water use metering in Washington. Technical assistance (TA) includes a wide range of activities, including phone calls, answering emails, in person support, formal letters.
    - **Progress: Ecology**
    - **Next Step: Ecology**

3. **Action:** Improve State metering database and communication with water users about metering data requirements and use of metering data.
    - **Progress: Ecology**
    - **Next Step: Ecology**
    -
4. **Action:** Relaunch metering cost-share program in Washington
    - **Progress: Ecology**
    - **Next Step: Ecology**

Responsible Parties

Ecology and OWRD are responsible for administering state law and regulation related to water use measurement and metering. They also receive water use reports from water users. These two agencies therefore play leadership roles in water use metering and reporting in the basin. In addition to the state agencies, other organizations like the Walla Walla County Conservation District in Washington support water use metering by helping water users with funding and technical assistance. Finally, because water use metering and reporting can be required by law, water users themselves, especially irrigation districts, play a key role in this strategy. Water users can be required to install meters and, importantly, to submit reports as required to OWRD or Ecology.

Required Coordination

Improved coordination is needed between State agencies, water users and technical service providers especially on the Washington side of the Basin.

Timeline

TBD based on input on this draft of the implementation plan.

5. Implementing Tier 1 Strategies for Floodplains, Habitat and Passage

Tier 1 strategies in the Floodplains, Habitat and Passage category represent a broad and diverse array of projects. The seven strategies included in this category are listed below in Table 10. Strategies in this category include two watershed scale strategies and four site-specific, or project-specific strategies. All the site/project-specific strategies are focused on fish passage projects. Because strategies 1.01 and 1.07 are closely related and involve project types that are often implemented together, these two strategies are discussed together in one section below.

Table 10: Tier 1 Strategies in the Floodplains, Habitat and Passage Category

Category	Strategy Number and Description	
Floodplains, Habitat and Passage	**1.01**	Reconnect floodplains and restore channel complexity basin wide to reduce flood risk and improve habitat
	1.06	Improve fish passage and habitat conditions in weir and concrete channel sections of flood control project in Mill Creek
	1.07	Restore and protect riparian habitat along tributaries, small streams, and the Walla Walla River Basin wide
	1.09	Protect and improve fish passage at Nursery Bridge and implement levee setback projects upstream and downstream of Milton Freewater
	1.12	Improve flow and timing of fish passage through the Hofer Dam fishway
	1.19	Improve fish passage at Gose Street long term
	1.23	Improve fish passage at Bennington Diversion Dam

Strategy 1.01 and 1.07 Basin wide efforts to reconnect floodplains and restore channel complexity to reduce flood risk and improve habitat; and restore and protect riparian habitat along tributaries, small streams, and the Walla Walla River

Strategy 1.01 focuses on river floodplain connectivity, channel complexity and riparian habitat across the landscape to address flood risk and improve habitat conditions. Strategy 1.07 focuses on a subset of Strategy 1.01- restoring and protecting riparian habitat along small streams and tributaries. Though they are listed as distinct strategies, these two approaches are closely linked, often have overlapping benefits and in fact, are often combined as part of one project.

Table 11: Strategic Plan Approaches to Restoring Floodplains and Habitat

Approach	Brief Description
Connecting Floodplains	Rivers can be connected to their floodplains by levee setback or removal and building new channels that encourage stream and river over-topping of banks to spread water onto adjacent floodplains; as part of these projects, floodplains may also be manipulated to develop wetlands and ponds and increase groundwater infiltration
Increasing Channel Complexity	Complexity can be restored by decreasing channel confinement caused by levees and other land uses through projects that construct new river channels and add woody debris and other habitat features
Restoring and Protecting Riparian Habitat	Riparian health can be increased by better buffering riparian areas from impacts and by planting additional/new streamside vegetation.

For example, projects that are designed to connect or reconnect the river to its floodplain often include instream habitat features like large wood and constructed river features (riffles, pools, others) and removal of invasive riparian species and planting native riparian vegetation. One project like this could address all three approaches outlined in. However, not all riparian restoration projects include floodplain reconnection, particularly when riparian buffers are being planted in developed urban or suburban areas or even agricultural areas where there is not an opportunity to fully reconnect floodplains due the built environment.

Due to this overlap and the potential for confusion, this plan considers **Floodplain Restoration** to include actions that reconnect rivers with their natural floodplains either by removing levees and other structures that prevent this connection, or by modifying a river channel in ways that promote periodic inundation of the floodplain. Floodplain restoration also commonly includes native plantings, side channel and wetland restoration and actions to improve instream channel habitat complexity.

Riparian restoration can be a subset of floodplain restoration but does not necessarily reconnect stream or rivers with their full floodplains and may focus on removal of invasive riparian species, planting native riparian vegetation, introduction of wood debris and in channel restoration. Floodplain restoration is not always possible in urban and suburban areas without significant impacts to the built environment. In these reaches therefore, riparian restoration may be a better fit. In less developed portions of the watershed including some agricultural areas, floodplain restoration and floodplain reconnection is the objective.

Quantitative Metrics

Progress toward increasing floodplain connectivity (Strategy 1.01) can be measured as the percent of linear amount of a river or stream channel that can naturally access its floodplain. Riparian protection and restoration (Strategy 1.07) across the basin can be measured as changes in the percentage (%) of maximum riparian function within a river or stream reach, width of riparian buffer and or percent of shade cover. Channel complexity is measured through a variety

of different metrics related to river features such as pools and riffles, and habitat elements like large wood and wetted are (Strategy 1.01, Table 13)

Table 12: Quantitative Metrics and Targets for Strategy 1.01 (Floodplain Reconnection) and 1.07

Metric	Target(s)	Timeline
Strategy 1.01: Percent of linear amount of river miles that can access their floodplains	80% or more of river miles can access their floodplains on the Walla Walla mainstem (including North and South Forks) and Touchet River.	
1.07: Percent of maximum potential riparian function	• Mill Creek to E. Little Walla Walla: At least 62% of max potential riparian function; • E. Little Walla Walla to Tumalum Bridge: At least 62% of max potential riparian function; • Tumalum to Nursery Bridge: At least 40% of max potential riparian function; • Little Walla Walla River to N. and S. Forks: At least 50% of max potential riparian function; • S. Fork Walla Walla River mouth to Elbow Creek: At least 20% of max potential riparian function; • N. Fork Walla Walla River mouth to L. Meadows Canyon Creek and L. Meadows: At least 50% of max potential riparian function.	

Table 13: Quantitative Metrics and Targets for Strategy 1.01 (Channel Complexity)

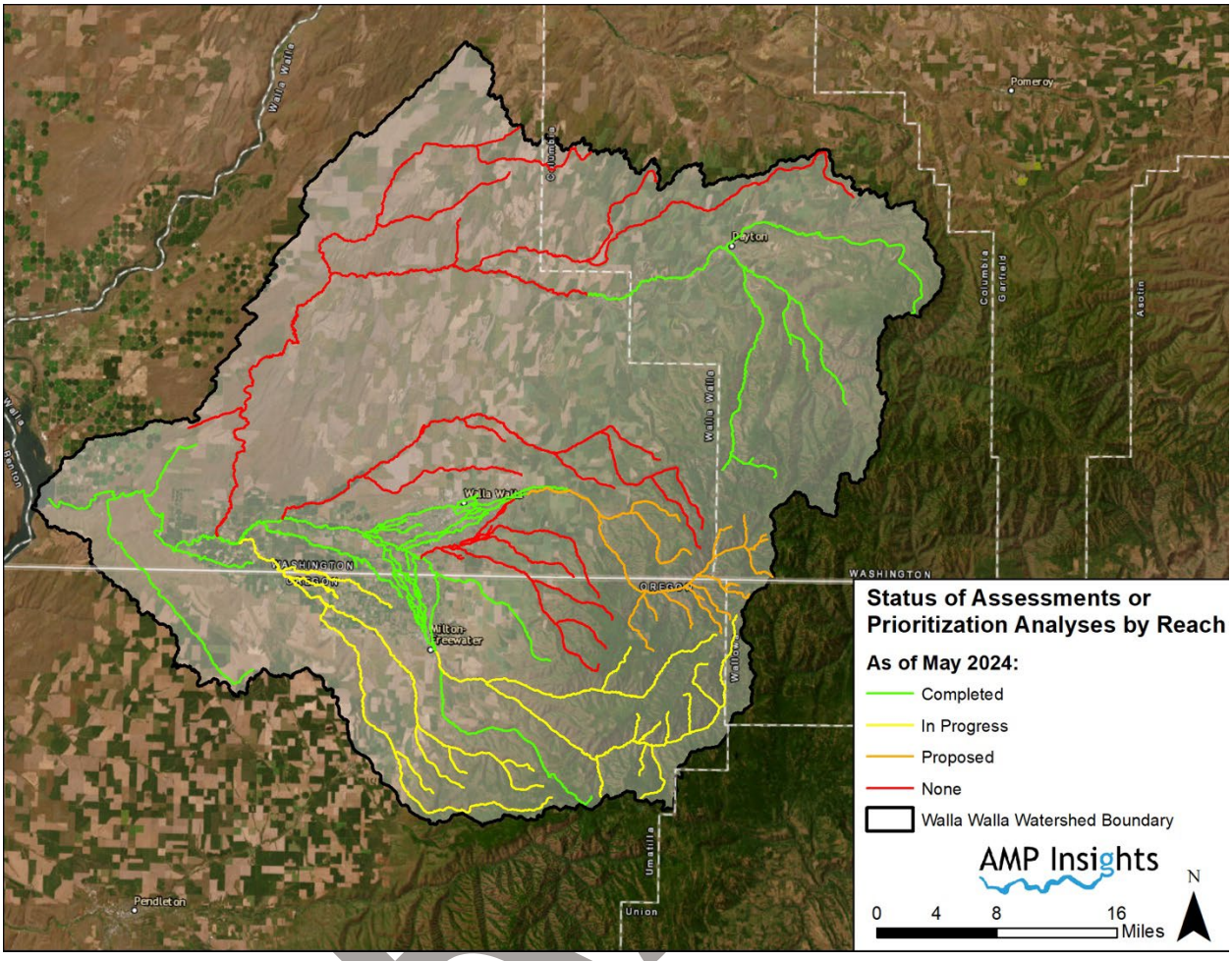
Metrics	Targets
• Number, depth and surface area of pools • Presence, number, and character of riffles, runs and other river features • Percentage of stream surface area covered by large wood during base flow • Number of large wood pieces of a specific size within the bankfull and/or wetted channel per 100 meters of stream	Targets are site and reach specific and developed on project-by-project basis

Implementation Pathway

Projects that promote floodplain reconnection and increase habitat complexity are multifaceted, site-specific and depend on factors like land access, past land use and permitting, among others. Rather than discuss implementation pathways for individual projects and/or project types, this section reviews completed and planned habitat assessments from across the watershed. While numerous assessments have been completed, they have not been compiled in one place and considered side-by-side. The primary purpose of doing so is to emphasize the highest priority river and stream reaches in the Walla Walla basin to help target floodplain and habitat project selection and implementation where it is needed most.

Figure 1 below shows the status of assessments on the basin's major rivers and streams as of May 2024. Many of the basin's stream miles have been assessed and significant additional areas are in progress. It is also important to note that a Touchet River assessment was completed in 2010 by U.S. Environmental Protection Agency (EPA), this study is not represented in Figure 1 because of the structure of the assessment. Rather than look at habitat and other functional needs in specific reaches, the EPA study selected six specific sites and tested for a variety of possible causes of stream impairment, primarily focused on water quality parameters. (National Center for Environmental Assessment Office of Research and Development 2010).

Figure 1: Status of Habitat Assessments in the Walla Walla Basin



In addition to mapping past and ongoing assessments, Table 14 below summarizes the assessments used in creating the map in Figure 1 above.

Table 14: Summary of Habitat Assessments in the Walla Walla Basin

Reach	Description	Assessment Status	Responsible Organization	Completion Date
Lower Walla Walla River	RM0 to RM27.4	Completed	CTUIR	2014
Upper Walla Walla River	RM27.4 to confluence of Forks	In draft form	CTUIR	Fall 2024
Walla Walla Headwaters	North and South Forks	In draft form	CTUIR	Summer 2023
Little Walla Walla River	Entire system	Completed	WWBWC	2010
Lower Mill Creek	RM0 to 7 Mile Bridge (~RM19)	Completed	CTUIR	2017
Upper Mill Creek	Upstream of RM19	Proposed	WDFW, CTUIR	n/a
Yellowhawk Creek	Entire reach	n/a	n/a	n/a
Upper Touchet River	Upstream of Prescott	Completed	CCCD	2020; 2011
Lower Touchet River	Downstream of Prescott	n/a	n/a	n/a
Couse Creek	Entire reach	Completed	WWBWC	2020
Lower Pine Creek/Dry Creek (OR)	Unclear where Lower Pine Creek reach ends	In progress	WWBWC	Unknown

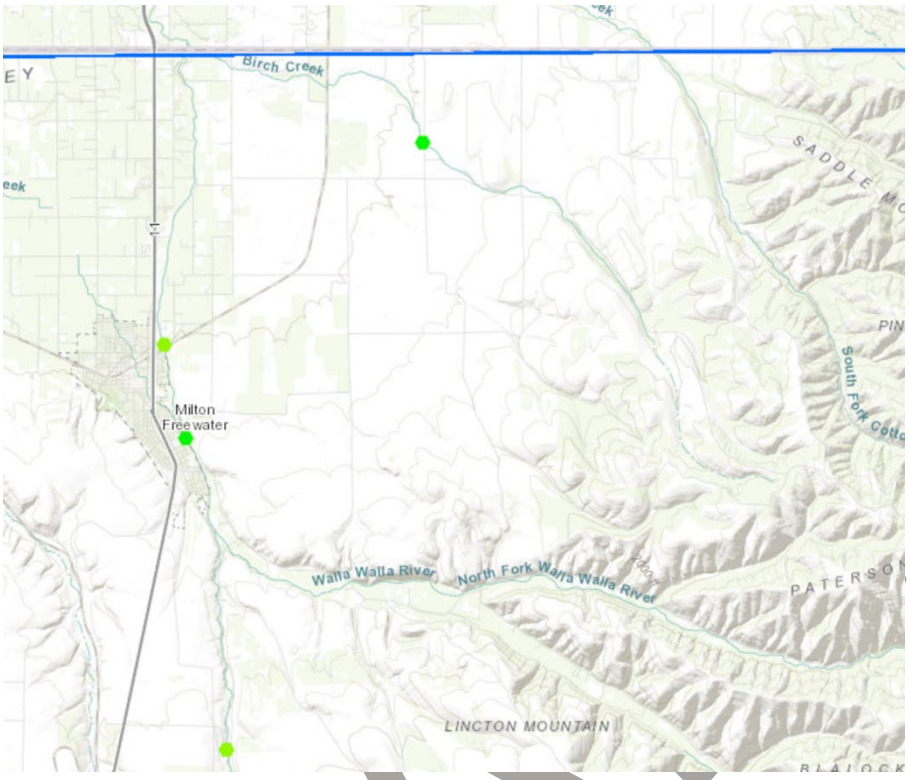
The habitat assessments listed above in Table 14 are not uniform in their approaches and substantive focuses, however some of them attempted to prioritize among stream reaches to identify those with the highest need for habitat restoration, floodplain reconnection and/or riparian protection/revegetation. Prioritization is primarily driven in these assessments by the presence and needs of key fish species at specific life stages. Table 15 below summarizes priority reaches identified by existing habitat assessments.

Table 15: Priority Reaches for Habitat, Floodplain and/or Riparian Restoration

Assessment	Assessment Status	Priority Reach(es)
Lower Walla Walla River	Completed	RM13 - 15 RM19.6 - 21.6 RM22.8 - 27.4
Upper Walla Walla River	In draft form	n/a
Walla Walla headwaters	In draft form	n/a
Little Walla Walla River	Completed	All reaches, except West LWW, flow into priority reaches of mainstem Walla Walla River and are considered priorities
Lower Mill Creek	Completed	RM0 to~RM15 at 7 Mile Bridge, including distributary system around City of Walla Walla
Upper Mill Creek	Proposed	n/a
Yellowhawk Creek	n/a	n/a
Upper Touchet River	Completed	Upper Wolf Fork Lower Wolf Fork Robinson Fork Upper North Fork
Lower Touchet River	n/a	n/a
Couse Creek	Completed	Specific project locations identified by reach, but not prioritized
Lower Pine Creek/Dry Creek (OR)	In progress	n/a

Though not identified as a Tier 1 strategy at the basin scale, fish passage barriers are another key habitat parameter. Both Oregon and Washington track passage barriers in the basin's rivers and streams. In Oregon, four passage barriers remain (Figure 2); these barriers include Nursery Bridge Dam and Little Walla Walla Dam on the Walla Walla mainstem, Powerline Road culvert on Birch Creek and the Couse Creek Gauge on Couse Creek.

Figure 2: Location of Remaining Fish Passage Barriers in Oregon



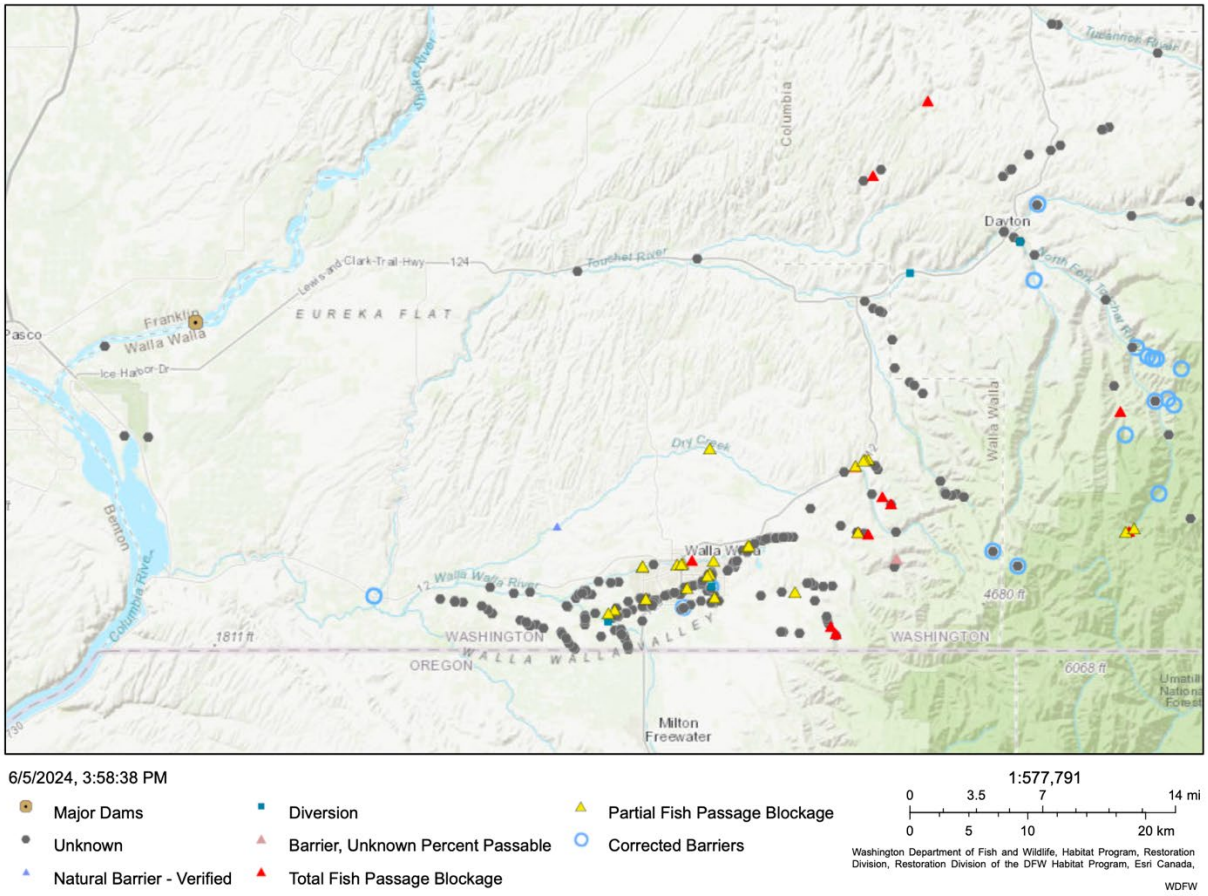
There are 37 passage barriers remaining in Washington, some of which completely bar passage and others that only partially hinder migrating fish (Table 16 and Figure 3 below). In addition to these barriers, the state is tracking nine irrigation diversions and natural barriers that have or may have an impact on fish passage.

Table 16: List of Remaining Fish Passage Barriers in Washington

Barrier Type	Feature Type	Stream Name	Tributary To Name
Total	Culvert	Russell Cr	Yellowhawk Cr
	Culvert	Russell Cr	Yellowhawk Cr
	Culvert	College Cr	Mill Cr
	Culvert	Spring Cr	Dry Cr
	Culvert	Spring Cr	Dry Cr
	Culvert	NF Touchet R	Touchet R
	Culvert	unnamed	Seaman Cr
	Culvert	Seaman Cr	Dry Cr
	Non Culvert Crossing	Dry Cr	Walla Walla R
	Culvert	Coates Cr	Wolf Fork Cr
	Culvert	North Patit Cr	Patit Cr
	Culvert	McKay Cr	Whetstone Cr
Partial	Culvert	Garrison Cr	Walla Walla R

Barrier Type	Feature Type	Stream Name	Tributary To Name
	Dam	Garrison Cr	Walla Walla R
	Dam	Garrison Cr	Walla Walla R
	Culvert	Caldwell Cr	Yellowhawk Cr
	Culvert	unnamed	Russell Cr
	Culvert	Stone Cr	Walla Walla R
	Culvert	NF Stone Cr	Stone Cr
	Culvert	NF Stone Cr	Stone Cr
	Fishway, Non Culvert Xing	Mill Cr	Walla Walla R
	Fishway, Other	Mill Cr	Walla Walla R
	Other, Fishway	Mill Cr	Walla Walla R
	Other	Mill Cr	Walla Walla R
	Other	Mill Cr	Walla Walla
	Fishway, Other	Mill Cr	Walla Walla R
	Culvert	Titus Cr	Mill Cr
	Dam		
	Culvert	Spring Cr	Dry Cr
	Culvert	NF Touchet R	Touchet R
	Culvert	NF Touchet R	Touchet R
	Culvert	Mud Cr	Dry Cr
	Culvert	Mud Cr	Dry Cr
	Culvert	Mud Cr	Dry Cr
	Culvert	Mud Cr	Dry Cr
	Culvert	Dry Cr	Walla Walla R

Figure 3: Locations of Remaining Fish Passage Barriers in Washington



Specific Actions

1. **Action:** Finalize in-progress assessments on the Upper Walla Walla River, North and South Forks of the Walla Walla River and Lower Pine Creek/Dry Creek and integrate findings into the tables/analysis above to aid project prioritization.
   - **Progress:** Completion of the Upper Walla Walla River assessment is expected XXX; Completion of assessment of the North and South Forks of the Walla Walla River is expected XXX; and Completion of the Lower Pine Creek/Dry Creek assessment is expected XXX.
   - **Next Step:** Complete assessments and integrate into Table 15 above.

2. **Action:** Utilize completed habitat assessments in concert to guide project selection and prioritization. By keeping Table 15 (Priority Reaches for Habitat, Floodplain and/or Riparian Restoration) updated, practitioners in the basin will have a clear reference for where floodplain, habitat and riparian projects can be implemented with the most benefit.
   - **Progress:** This is an ongoing task that depends on timing of completion of in-progress and additional habitat assessments. For reaches with completed assessments summarized in Table 15, the information can be used immediately.

- **Next Step:** Ongoing reference to and updating of Table 15.

3. **Action:** Convene relevant parties (Oregon, Washington fish and wildlife agencies, CTUIR, and others) to discuss prioritization between identified high priority reaches. Once agreement is reached, Table 15 can be revised to show the relative priority of reaches across the basin rather than simply showing priority within each assessment.
   - **Progress:** This effort has not begun.
   - **Next Step:** Identify a lead individual/entity and convene a kick-off meeting to discuss prioritization approach.
4. **Action:** Complete X miles of Floodplain restoration in priority areas
   - **Progress:** X miles are complete, X are in progress, x are done
   - **Next Step:**
5. **Action:** Complete X miles of riparian restoration along urban and suburban streams
   - **Progress:** X miles are complete, X are in progress, x are done
   - **Next Step:**

Responsible Parties

Floodplain, habitat and riparian restoration projects are done across the basin by a diverse set of implementers. CTUIR, one of the tri-sovereigns, work on projects and assessments basin wide in both WA and OR. Walla Walla County Conservation District (WWCCD) implements projects in WA only. Tri-State Steelheaders (TSS), have historically operated in WA, but can work in OR under project-specific grants. Walla Walla Basin Watershed Council (WWBWC) works in both OR and WA. Kooskooskie Commons works primarily in WA and is mostly focused on urban and suburban riparian restoration. Finally, both state fish and wildlife agencies (WDFW and ODFW) are involved in floodplain, habitat and riparian restoration in numerous ways, from helping with planning and assessment, to funding and implementation.

Required Coordination

Individual projects involve coordination between one or more of the responsible parties described above and will always involve coordination with public, private or tribal landowners. All floodplain and riparian restoration projects have multiple partners other partners could include local government or project implementors.

To complete actions 2 and 3 above additional coordination is needed between implementing agencies to align objectives and prioritize projects and opportunities between all the high priority river and stream reaches in the basin. This will require one entity to take the lead in convening the others and then will likely require a series of meetings over time to discuss an approach to prioritization and end by conducting the prioritization exercise itself.

Timeline

TBD based on input on this draft of the implementation plan.

Strategy 1.06 Improve fish passage and habitat conditions in weir and concrete channel sections of flood control project in Mill Creek

This strategy involves a variety of different approaches to improving conditions for aquatic species within the Mill Creek Flood Control Project (MCFCP) from Gose Street at approximately river mile 6.7 upstream to approximately river mile 11.

Quantitative Metrics

Metrics for this strategy are based on progress improving the connection of Mill Creek with its floodplain in a densely urban area with significant flood control considerations.

Table 17: Quantitative Metrics and Targets for Strategy 1.06

Metric	Target(s)	Timeline
Strategy 1.06: Percent of linear amount of river miles that can access their floodplains	Mill Creek in the MCFCP is between 50% and 100% disconnected from its floodplain; the minimum goal for the reach ranges between 40% and 90%, with optimal conditions between 30% and 80% (these goals are relatively low in recognition of the urban setting with strict flood control needs)	

Implementation Pathway

Recommendations to improve passage in the MCFCP include modifying the concrete sills in place to control flows, including notching or installing pool-forming structures in combination with a low-flow channel to increase passage success (Tetra Tech 2017). Other opportunities in this reach include actions to improve the quality of the pools formed by the sills. For example, adding large wood to some of the pools could have important refuge benefits for fish; alternating which side of the river these structures are placed in could help focus flows into a more sinuous pattern and encourage growth of aquatic vegetation (Tetra Tech 2017). It is important to note however, that US Army Corps of Engineers (ACOE) management rules might prevent or restrict installation of large wood in the MCFCP, though it may be possible to obtain variances.

Opportunities to eliminate channel confinement in the highly urbanized reach upstream of river mile 6.7 are severely limited, however, the existing channel might be transformed from its current artificial shape to a more naturalized shape that could include boulders and an irregular cross section to mimic natural stream features like pools and riffles (Tetra Tech 2017). Other concepts include removing the tunneled section. It is similarly difficult to improve habitat conditions in this reach without completely renovating the channel and severely impacting surrounding urban infrastructure.

This broad, multi-part effort is in various stages from concept to complete (Figure 4). Final designs are complete for the concrete channel except for the underground section and fish

passage treatment is either complete or planned to be complete in the concrete channel by 2027 depending on costs. Funding has been secured for fish passage improvement for the ~1-mile federal weir reach by the ACOE for implementation in 2024-25.

Figure 4: Mill Creek Concrete Channel Completed and Plan Fish Passage Improvements

1. **Action:** Complete construction to improve fish passage at key locations within the Mill Creek Channel including the 6th Ave Bridge replacement, 5th Ave Bridge replacement, 3rd to Colville reach.
   - **Progress:** In 2024, the 5th Ave bridge was removed and replaced with a pedestrian bridge, and the 6th Ave to 3rd Ave section of the concrete channel was treated for passage.
   - **Next Step:** 3rd to Colville and the 6th Ave bridge replacement are in early design. The 6th Ave project is scheduled for 2027. The 3rd to Colville reach may be implemented as two projects in 2026 and 2027 due to limited construction access and confined work space.

Responsible Parties

ACOE, City of Walla Walla, Tri-State Steelheaders, Walla Walla County (Board of County Commissioners and Public Works Dept.) as managers of the Mill Creek Flood Control Zone, Snake River Salmon Recovery Office, WDFW, CTUIR.

2. **Action:** Complete construction to improve fish passage within the weired portion of the Mill Creek Flood Control Project. From Tausick Way to Roosevelt Avenue.
   - **Progress:** Surveying is complete and the project is in the early design level.
   - **Next Step:** Design work to continue in 2025.

Responsible Parties

ACOE, Tri-State Steelheaders, Walla Walla County (Board of County Commissioners and Public Works Dept.) as managers of the Mill Creek Flood Control Zone, Snake River Salmon Recovery Office, WDFW, CTUIR.

Required Coordination

Coordination between the parties listed above has been critical to success to date and will continue to be important.

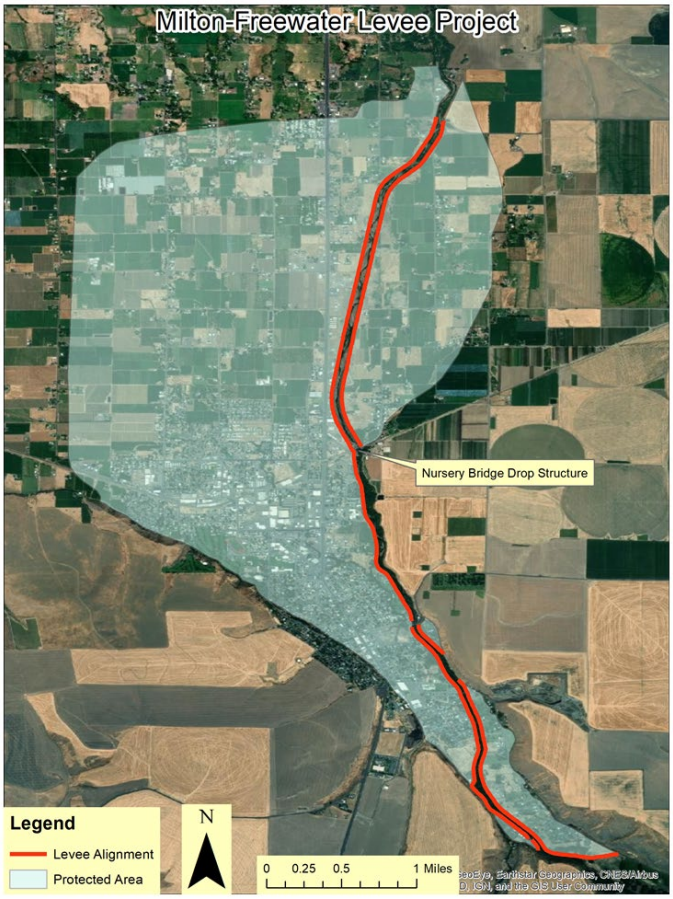
Timeline

TBD based on input on this draft of the implementation plan.

Strategy 1.09: Protect and improve fish passage at Nursery Bridge and implement levee setback projects upstream and downstream of Milton Freewater

This strategy is focused on continued implementation of a long-running project to address fish passage and other issues associated with the Nursery Bridge drop structure and the Milton-Freewater levy system on the mainstem Walla Walla River in Oregon (Figure 5). The habitat, fish passage and flood management issues associated with the levee system and drop structure are complex, but addressing these issues is critical to overall salmonid recovery in the Walla Walla Basin. CTUIR, in coordination with the Milton-Freewater Water Control District Board is leading the effort to develop solutions to address this multifaceted habitat challenge.

Figure 5: Milton-Freewater Levee Reach Project



Quantitative Metrics

In addition to completion of discrete phases described below in the implementation pathway for this strategy, important metrics that can be tracked for this project include successful installation of a new fish passage facility that meets current NOAA Fisheries passage hydraulic standards at all flows as well as the linear amount of river reconnected to its floodplain.

Table 18: Quantitative Metrics and Targets for Strategy 1.09

Metric	Target(s)	Timeline
Miles of habitat access improved by increased fish passage	70.61 miles	2026
Linear amount of river reconnected to floodplain	TBD	10-15 years

Implementation Pathway

Specific Actions

1. **Action: Implementation of Phase II**
    - **Progress:** $1 million in cost share has been secured from the National Marine Fisheries Service from the Infrastructure Act. This funding is supposed to be spent by FY25 with possibility of a one-year extension if progress on design and partner support happens. An additional $226,000 NMFS PCSRF grant funds have also been secured but those funds are also timing out depending on when this phase 2 project is implemented.
    - **Next Step: Address passage and habitat needs immediately above and below Nursery Bridge:** The focus of current work (Phase II of the project) is to address the impact of erosion and deposition on fish passage at Nursery Bridge Drop Structure in the quarter mile reaches above and below the Drop Structure. The project engineer (hired by CTUIR) and project team are currently considering options for proceeding. The current favored approach involves notching the Nursery Bridge Drop Structure and moving the WWRID's Eastside point of diversion upstream to the LWWR (where the primary WWRID and Hudson Bay diversion is located). Moving the Eastside diversion would also require determining a feasible alternative to convey irrigation water back across the river to serve water users on the Eastside and one potential solution for this is to run a pipeline across the 8th Street Bridge or run a pipeline through the levee from west to east. A final memorandum of agreement (MOA) solidifying the conceptual approach is the most immediate need/next step. Additional steps required in the short-term include:
        - Complete designs for modifications at Nursery Bridge and the WWRID diversion (funded by Bonneville Power Administration) (2025)
        - Obtain permitting clearance (2025)

- Secure cost share (2025).

Construction of Phase II is currently estimated to total $2 million or more; if desired timelines are met, construction is anticipated to begin in 2026.

2. **Action: Complete Phase III (Address floodplain functions within the Milton-Freewater levee):** Phase III work will include conceptual designs and construction to holistically improve river conditions within the Milton-Freewater flood control project area. The goal of Phase III is to restore the Walla Walla River channel within the 5-mile Walla Walla River Flood Control Project to improve floodplain-riverine processes and stop channel incision, enhance fish passage and rearing habitat and decrease surface water seepage while having no deleterious impact to flood risk management. Even though Phase II is not complete, coordination on Phase III has begun and can proceed in parallel to Phase II. CTUIR and the project team are coordinating to secure commitment for non-federal cost share for a USACE Aquatic Ecosystem Restoration General Investigation (under Section 216 of the Flood Control Act of 1970 (Public Law 91-611) to develop restoration and design alternatives. Agreement on design and approach is anticipated by 2028 with designs and funding secured in 2029. Construction of Phase III could then begin in 2030 and would last for several years. Current project cost estimates are roughly $10 million.

   Next Steps:

   Complete design and construction for improvements at Nursery Bridge: Funding has been secured for a redesign at the Nursery Bridge Drop Structure to allow for full fish passage and address downcutting but the final design needs to be selected. Once a design is complete, regulatory approval for construction will be needed and construction can be completed in 2026 (Department of Natural Resources Fisheries Program 2024).

   Phase III

   Obtain USACE approval for Phase III work: CTUIR has submitted a letter to USACE to request an Aquatic Ecosystem Restoration General Investigation Study. A broad coalition of support will help expedite obtaining approval and funding for the study from the USACE (Boen, 2021). Oregon Solutions initiated a process in Fall 2024 to help identify needs and requirement to achieve the broad coalition and partnerships necessary for a successful General Investigation Study. The results of the study will guide the development of designs that address impaired floodplain-riverine processes within the Project reach.

   Complete design and construction for floodplain restoration work: Construction of Phase III will be very significant and span multiple years and will require the project sponsor to acquire a real estate interest in any properties involved in potential levee setbacks or floodplain restoration projects. Permitting requirement of all in-channel and adjacent construction activities will also need to be acquired. There may also be a need for remedial investigation and possibly cleanup of gravel pits or industrial sites that are incorporated into floodplain restoration work.

Build broad community support: This project is complex and includes various potential benefits including flood control, irrigation infrastructure improvements habitat restoration, fish passage improvements, and recreational and aesthetic resources in the town of Milton-Freewater. Crafting a strong partnership between multiple interests for a broad coalition of support will help expedite funding for the USACE study and design funding as well attract other essential funding sources.

Many of these next steps could be supported and receive cost-share from the Walla Walla 2050 process. The Tri-Sovereigns and the 2025 Advisory Committee will need to review this suggested list for accuracy and make suggestions for next steps in the context of the larger portfolio of Walla Walla 2050 Phase II work beginning in 2025.

Responsible Parties

CTUIR is currently the project lead for securing funding, providing technical input, and coordinating other key partners which include the following entities. Walla Walla River Irrigation District and Hudson Bay District Irrigation Company currently divert from the Walla Walla River at Cemetery Bridge at the Little Walla Walla River headgate. WWRID also has a small diversion of about 5.5 cfs at Nursery Bridge called the Eastside diversion and consideration is being given to moving their point of diversion upstream to the Little Walla Walla River headgate which would eliminate the irrigation diversion from the Walla Walla River. WWRID will need to be closely involved with design and construction work as it relates to any change in their Eastside diversion.

Milton-Freewater Water Control District (MFWCD) currently owns the levees and has responsibility for managing and maintaining the Milton-Freewater Levee system. MFWCD will need to be involved in any proposed changes to the levee system. In the past they have collaborated on various studies and planning processes to explore management changes that take into account flood control and habitat needs (GeoEngineers 2012).

Oregon Water Resources Department will need to be involved in any water rights permitting issues especially pertaining to the potential move of the Eastside diversion upstream to the Little Walla Walla Diversion.

Walla Walla Basin Watershed Council is also a key leader in the Basin on habitat restoration and has worked to improve conditions in the reach in the past through restoration projects and feasibility studies/reports (GeoEngineers 2012). The watershed council will likely be a strong partner on various elements of Phase II and III.

NOAA/NMFS will also need to be involved in management changes as they relate to ESA-listed fish habitat issues as will ODFW. Currently, NMFS has been participating by reviewing Phase II designs. Overall, their goals are to decrease infrastructure in the channel and decrease harden streambanks through the reach.

The US ACOE built the levees and the Nursery Bridge Drop Structure and has requested funding for an Aquatic Ecosystem Restoration Feasibility Study under Section 206 and if this request is granted the USACE will take the lead on a Feasibility Study for Aquatic Ecosystem Restoration.

USACE participation as the lead for the Feasibility Study and congressional authorization of possible design and construction under Phase III is crucial to the success of this project.

Finally, leadership from Umatilla County, OR will also be important to moving forward with any major changes to the management of the Levee system as well as support in securing federal or state funds for upgrades. The City of Milton-Freewater and local property owners will also be key partners in managing the reach in the future. If levees setbacks are to occur it will likely mean acquiring land from willing private landowners along the leveed reach.

Required Coordination

There is an ongoing need to organize stakeholders and arrange for formal agreement via a memorandum of understanding on the preferred alternative for fish passage rectification at the Nursery Bridge drop structure (Department of Natural Resources Fisheries Program, 2020). As mentioned previously, this design work may also include moving the WWRID's Eastside point of diversion upstream to the Little Walla Walla River diversion at Cemetery Bridge. Potential parties to an MOA would include, CTUIR, WWRID, the Milton-Freewater Water Control District and USACE.

Timeline

TBD based on status update above

Strategy 1.12: Improve flow and timing of fish passage through the Hofer Dam fishway on the Touchet River

Located at approximately river mile 4 on the lower mainstem of the Touchet River, Hofer Dam is an irrigation diversion structure diverting water to the Touchet Westside Irrigation District (TWID). Prior to reconstruction in 2006, Hofer Dam and TWID's downstream syphon were significant passage barriers. TWID's diversion infrastructure included a non-compliant fish screen and utilized an unlined gravity fed canal system to deliver water. Between 2006 and 2009, the Walla Walla County Conservation District (WWCCD), Washington State Conservation Commission (WSCC), CTUIR, and Ecology replaced the old dam, adding a fish ladder, an automated diversion structure with adequate fish screens, and piped TWID's delivery system to conserve water and use these savings to restore stream flows through the creation of a large instream water right in Washington's Trust Water Rights Program.

Post construction, the new water circulation pattern in the diversion pool created unforeseen sedimentation issues that interfere with TWID's diversion. The problem may be caused by inadequate flow through the fish ladder compared to flows through the dam's spillway. In 2021, WWT and TWID agreed on a proposed strategy to address sedimentation issues while also improving instream flows in the Touchet River. Creating further challenges, the way the Trust Water Rights was created did not align with the actual savings created by the canal lining. This mismatch has proven problematic for TWID's operations, and has created challenges with the instream protection of the right under Washington's Trust Program

Quantitative Metrics

The project is beginning its design phase. Quantitative metrics will be developed during this phase. There are two goals for this phase of the project:

1. Identify a preferred alternative, to a conceptual level of design, to improve fish passage at Hoffer Dam to support migration of steelhead, spring Chinook and bull trout.
2. Identify a preferred alternative, to a conceptual level of design, for TWID's diversion and intake structure to allow them to divert their full water right and improve flows at the dam location for passage of steelhead, spring Chinook and bull trout.

Implementation Pathway

Specific Actions

1. **Action:** WWT outlined a series of next steps for the Hofer Dam project: 1) hire and engineer consultant; 2) solicit alternatives from stakeholders and complete an alternatives analysis; 3) select a preferred alternative; 4) complete conceptual designs for the preferred alternative.
    - **Progress:** WWT is currently seeking funding.
    - **Next Step:** Pending receipt of funding, begin conceptual design phase.

Responsible Parties

Washington Water Trust (WWT) has taken the lead to work with TWID to address passage at Hofer Dam.

Required Coordination

WWT will seek input from stakeholders on design alternatives.

Timeline

If funded, the project as proposed will run from December 2024 through summer 2026.

Strategy 1.19: Improve fish passage at Gose Street long term

This strategy is focused on designing and completing a permanent fix for the Gose Street fish passage ladder. Gose Street is located at approximately river mile 4.8 on Mill Creek, at the lower end of the flood control channel. In 2020, flood flow in Mill Creek created a new fish passage barrier below a fishway that transitions the flood control channel to the natural channel. An alternatives assessment has identified a preferred alternative, an 1,100-foot-long nature-like fishway.

Quantitative Metrics

This project will correct one fish passage barrier, improving access to about 60 miles upstream of Gose St (some partial barriers in the 60 miles are being addressed in other projects). Floodplain and riparian improvement will occur on both banks for about 1,100 feet. Sloped banks will improve floodplain function and provide for riparian planting.

Implementation Pathway

Specific Actions

TSS is seeking funding to construct the new fishway identified as the preferred alternative.

Responsible Parties

TSS is taking the lead to secure funding and complete the project.

Required Coordination

Because of its location near the MCFCP, close coordination will be required with USACE as the project moves forward. The design is moving through BPA's HIP process.

Timeline

Construction in 2025 is preferred. Timing of construction funding and permitting timelines may push construction to 2026.

Strategy 1.23: Improve fish passage at Bennington Diversion Dam

Strategy 1.23 involves completing improvements at the Bennington diversion dam fish ladder on Mill Creek. The Bennington Lake Diversion Dam fish ladder was constructed in 1982 on the left bank (south shore) of Mill Creek. The ladder provides basic fish passage but does not meet current NOAA Fisheries passage hydraulic standards at all flows. To address this issue a new ladder will be constructed on the right bank (north shore), and the existing ladder on the left bank will remain in place for redundancy. The new fish ladder will be longer with improved gradient and will include a vertical slot fish ladder design with a bypass channel for downstream passage, video monitoring and PIT Tag array capabilities, and improved attraction flows to the ladder.

Quantitative Metrics

For this project, the primary metric of success will be installation of a new fish passage facility that meets current NOAA Fisheries passage hydraulic standards at all flows.

Table 19: Quantitative Metrics and Targets for Strategy 1.23

Metric	Target(s)	Timeline
Improved Passage	Meets current NOAA Fisheries passage hydraulic standards at all flows	TBD

Implementation Pathway

This project is currently in the design stage and the ACOE is in the process of completing final designs. Implementation funding has been secured by the ACOE for construction of the new fish ladder and construction will occur in Fall 2024. The ladder design is complete and USACE received funding for construction through the Bipartisan Infrastructure Legislation (BIL). The Walla Walla District will award a contract for construction in FY 25, and construction of the

ladder will span two years (FY 25-26) due to the requirement to work in the in-water work window.

Responsible Parties

USACE

Required Coordination

NEPA work and ESA consultations are complete. USACE continues to coordinate with the Mill Creek Work Group and the Walla Walla 2050.

Timeline

Contract award in FY 25. Construction FY 25-26

6. Implementing Tier 1 Strategies for Streamflows, Groundwater and Water Supply

Tier 1 strategies in the Streamflows, Groundwater and Water Supply category include projects that impact streamflow and aquifer levels and drive many critical dynamics in the Walla Walla Basin. The amount of water flowing through the basin's streams dictates water availability for agricultural water rights and instream flow levels for important fish species; it also influences water quality, fish passage and other variables. At the same time, water flowing in streams is only one part of the basin's water budget; the basin's aquifers carry similar importance to the health of the basin. The six strategies included in this category are listed below in Table 20.

Table 20: Tier 1 Strategies in the Streamflows, Groundwater and Water Supply Category

Category	Strategy Number and Description	
Floodplains, Habitat and Passage	**1.02**	Support the ongoing analyses of the Bi-State Flow Study and work toward a recommendation on implementation of the preferred alternative*
	1.03	Direct additional winter flow down the Little Walla Walla River to support alluvial aquifer recharge and stream function
	1.04	Water rights acquisitions (short-term, long-term, and split season) to restore streamflow
	1.05	Improve and expand managed aquifer recharge (MAR)
	1.08	Decrease surface water diversions or substitute for basalt wells during low flow periods
	1.13	Expand and support Aquifer Storage and Recovery (ASR) to maintain groundwater quality and capacity
	* This strategy is being scoped in a parallel process by Jacobs Engineering, which will be integrated into this plan once completed	

Strategies highlighted in green in Table 20 above (1.03, 1.05 and 1.13) all rely on accessing water supply during winter and spring months, outside of the traditional irrigation season in the basin. The legal and physical availability of such water remains an open question, addressed further below. During development of this plan, the Streamflows, Groundwater and Water Supply (Water Work Group) developed Table 21 below to characterize potential competing demands for winter and spring water supplies in the basin. The purpose of this table is to demonstrate the cumulative potential demands for winter water in the basin and highlight the importance of better understanding legal and physical availability of water during the proposed times of year. Not only are there competing demands for this water, but there are instream and habitat values that will need to be considered as well.

Table 21: Estimated Winter Water Needs for Proposed Projects in the Walla Walla Basin

Strategy	Flow Amount (cfs)	Reach	Time of Year
1.03 -Additional winter flow down the Little Walla Walla River	n/a	WWR @ Little Walla Walla diversion	Nov 15 - March 1
1.05 - Managed Aquifer Recharge (MAR)	45	WWR - Tumalum Reach	Nov 1 - May 15
1.05 - Managed Aquifer Recharge (MAR)	4.5	Mill Creek	Dec 1 - May 31
1.13 - Aquifer Storage and Recovery (ASR)	8	Mill Creek	Nov 1 - April 15
1.13 - Aquifer Storage and Recovery (ASR)	20	Mill Creek	n/a
1.13 - Aquifer Storage and Recovery (ASR)	8.6	Walla Walla River	Winter
1.02 Support the ongoing analyses of the Bi-State Flow Study and work toward a recommendation preferred alternative	n/a	Walla Walla River mainstem	Dec-March
Bi-State flow study winter flow + peak flow targets	95	Walla Walla River mainstem below Milton-Freewater	December & January
Bi-State flow study winter flow + peak flow targets	120	Walla Walla River mainstem below Milton-Freewater	February & March

Strategy 1.02 Support the ongoing analysis of the Bi-State Flow Study and work toward a recommendation on implementation of the preferred alternative

This strategy is being scoped by Jacobs Engineering as part of a parallel effort to the Walla Walla 2050 planning process. The results of this work will be integrated into this plan/report when available.

Strategy 1.03 Direct additional winter flow down the Little Walla Walla River to support alluvial aquifer recharge and stream function

Additional flow in the Little Walla Walla River (LWWR) has been identified as a priority to support the shallow alluvial aquifer and, to a lesser extent, support stream function. Flow down the Little Walla Walla River is controlled entirely by a headgate – the river currently functions like an irrigation conveyance – and so any flow down the system is intentionally managed. Water directed down the little Walla Walla River is also diverted from and thus decreases streamflow in the mainstem of the Walla Walla River.

In recent years the Walla Walla River Irrigation District (WWRID) has been directing 15-20 cubic feet per second (cfs) of flow down the LWWR during the non-irrigation season for domestic and stock water needs from November 15th-March 1st. During the irrigation season from March 1st to

November 15th, flow down the little Walla Walla averages around 50 cfs. Winter flow down the Little Walla Walla falls under WWRID's year-round water right. OWRD does not provide any regulatory direction for winter flow down the Little Walla Walla river and the system is managed by WWRID within the bounds of their water right for domestic, stock and irrigation benefit.

Strategy 1.03 and several other strategies in this category rely on using water outside of the traditional irrigation season. A threshold issue for this strategy is identifying a legal source of water that can be diverted down the little Walla Walla River in the winter. Currently, any non-irrigation season water diversion down the little Walla Walla River is done under two mechanisms- under limited license for aquifer recharge (Strategy 1.05) or under the decreed water rights of WWRID. OWRD has communicated that there are not other legal paths to diverting winter water down the Little Walla Walla River

Quantitative Metrics

Currently, progress on this strategy is limited by key threshold deliverables including OWRD's winter water availability analysis and the USGS study. Also informative to the implementation of this strategy is quantification of amount of winter water flow that is desired down the little Walla Walla River. Pending the outcome of these analyses and further consideration and consultation by Oregon, Washington, CTUIR and the basin's stakeholders, metrics for project implementation may be developed.

Implementation Pathway

As noted above, implementing this strategy requires additional analysis on legal and physical availability of water outside of the season when water is used for irrigation. Given the likelihood that the amount of such water will not be sufficient to meet all the Tier 1 strategies that rely on it, an additional step will be prioritizing among strategies competing for winter water and/or modifying proposed strategies based on legal and physical water availability.

Specific Actions

1. **Action:** Complete OWRD water availability analysis and USGS study to provide information about legal and physical water availability and groundwater/surface water interactions in and around the project area.
    - **Progress:** Both studies are in progress. OWRD water availability study is in draft form and is being vetted by the Bi-State Flow Study work group. USGS study is in progress with anticipated completion in late 2025 or early 2026.
    - **Next Step:** Once both studies are complete, revisit this and other Tier 1 strategies that depend on winter water.
2. **Action:** Advocates for winter water flow down the little Walla Walla River could further articulate a range of desired winter flow levels and what benefits and tradeoffs at different levels.
    - **Progress:** Initial conversations on this complex topic have begun.
    - **Next Step:** Once the amount of flow desired is described then more specific discussion can begin related to legal and physical availably. Although as noted above physical

water availability is in high demand and legal availability of water to implement this strategy is constrained.

Responsible Parties

OWRD is responsible for completing the water availability analysis. USGS with support from OWRD and Ecology are responsible for completing the USGS Study. WWRID owns and operates the diversion and other infrastructure on the LWWR. Finally, WWBWC develops other shallow aquifer recharge projects in and around this project site.

Required Coordination

Once the OWRD and USGS studies are completed, WWRID, WWBWC, OWRD and Ecology will need to gather with CTUIR and basin stakeholders to determine how to manage limited winter water supply among competing demands.

Timeline

The anticipated completion of the OWRD water availability study is late 2024 or early 2025. Completion of the USGS study is anticipated in late 2025 or early 2026. There is no timeline estimate for any additional steps beyond completion of these studies.

Strategy 1.04 Water rights acquisitions (short-term, long-term, and split season) to restore streamflow

This strategy involves working to acquire senior water rights from willing sellers basin-wide and transfer these water rights instream to help meet instream flows. Various water acquisition tools will be used to pursue this strategy, such as leases, purchases,and split season agreements. Water right acquisition may also be a part of other types of water management projects including source switches, conservation easements, and water use efficiency projects. Acquired water rights will be legally protected instream from diversion by junior water right holders using the Washington State Trust Water Rights Program RCW 90.42, RCW 90.90.120, and the Oregon Instream Water Rights Act. The focus of this strategy is primarily on summer low-flow periods however it is important to recognize that there are instream flow needs during other times of the year.

Quantitative Metrics

The 2013 Walla Walla River Ecological Flows study recommended summer streamflow targets to support fisheries habitat and floodplain function (Stillwater Sciences 2013).The flows recommended by the 2013 Walla Walla River Ecological Flows study represent science-based targets considering fish species presence and life cycle timing; in other words, they are optimized to provide flows needed for the species (by age and life cycle status) in the basin's rivers and tributaries at specific times. These flow targets while not always physically available have been discussed at the workgroup level as appropriate flow restoration targets (Table 22).

Table 22: 2013 Stillwater Sciences Summer Instream Flow Targets (additional reach and seasonal targets detailed in the Stillwater report)

Ecological Flow Target Reach	Recommended Winter & Spring Flow (CFS)		
	July	August	September
S. Fork Walla Walla River	70	70	70
N. Fork Walla Walla River	11	6	7
Walla Walla River Reach 5	90	90	90
Walla Walla River Reach 4	91	90	90
Walla Walla River Reach 3	143	135	135
Walla Walla River Reach 2	146	137	137
Mill Creek Reach 5	51	44	44
Mill Creek Reach 2	52	45	45
N. Fork Touchet River	43	40	25
Touchet River Reach 2	35	25	32
Touchet River Reach 1	36	26	33

It is important to note that meeting flow targets, or even significant portions of the flow targets described above in Table 22, is a long-term goal. Instream flow transactions take time because they are complicated and involve delicate property rights issues. For this strategy, the Stillwater Sciences recommended flow targets are used as quantitative metrics for reference only and do not represent targets that can be met during the term of this plan specifically. Instead, metrics for this plan are expressed as the number of projects to be developed in the short-term, as well as the number of CFS and acre feet restored instream because of the water right acquisition projects.

Table 23: Quantitative Metrics and Targets for Strategy 1.04

Metric	Target(s)	Timeline
Number of Projects Developed	• Walla Walla River: 3 projects • Mill Creek: 2 projects • Touchet River: 3 projects	2025-2026
Cubic feet per second restored	Summer ecological flow targets recommended the Walla Walla River Ecological Flows study (Stillwater Sciences 2013)	Long-term goals, beyond the scope of this plan

Implementation Pathway

Implementing water acquisitions is time consuming. Because they rely on voluntary participation of active water users, timelines for individual transactions depend on those participants' comfort level and willingness to move forward. The basin does have some history of success

implementing transactions; therefore, the pace of acquisitions may be faster in the Walla Walla than in a watershed with no such history. At a high level, water acquisitions include four phases:

1. Outreach and project solicitation
2. Due diligence and negotiation
3. Negotiation and contracting
4. Water right change processes.

Moving through these steps is generally faster for temporary transactions than permanent transactions. Transactions based on capital projects like canal/ditch piping also take significantly longer than temporary transactions because they can only proceed at the (often slow) pace of the infrastructure work.

The simplest temporary transactions, like one to five-year full or split-season leases, can be completed in a matter of months if landowners are willing to move fast and administrative approvals through the state water agencies can be processed. Permanent transactions can take from one to multiple years depending on the complexity of the water rights involved and whether the state approval process proceeds without protests from other water users or the need for complex hydrological evaluations.

Responsible Parties

WWT is the lead entity in the basin for water acquisitions with Trout Unlimited providing a supporting role on the Oregon side of the basin. WWT works closely with CTUIR and all the basin's other stakeholders and water users to conduct outreach and identify project opportunities. When projects have been identified and contracted, water right change processes are handled by OWRD and Ecology. CTUIR and Blue Mountain Land Trust have also integrated water right acquisitions into their land conservation projects, often in partnership with WWT.

Required Coordination

WWT coordinates with organizations like the WWCCD, WWBWC and CTUIR to help identify potential projects. Once projects are developed, close coordination between WWT and the relevant state water resource agency (OWRD or Ecology) is required.

Timeline

Implementation steps described above will be ongoing to meet the targets identified above in Table 23 above during the 2025-2026 timeframe.

Strategy 1.05 Improve and expand managed aquifer recharge (MAR)

Improving managed aquifer recharge means better understanding how and where to implement MAR projects to meet the basin's objectives. Broadly speaking, MAR projects are implemented to increase water levels in the shallow aquifer both to support water users who pump from shallow wells and to support base flows in rivers, wetlands and springs that are connected to these aquifers. Expanding MAR means increasing the size and/or amount of water recharged at existing sites and/or developing new MAR sites.

Upcoming information from the ongoing USGS study represents an opportunity to improve MAR by providing information on how and where to develop MAR sites to maximize streamflow and other benefits. Awaiting the outcome of OWRD's winter water availability study as well as the implementation steps outlined above for Strategy 1.03 (prioritizing among competing demands for winter water) are both applicable to whether and how MAR could be expanded in the basin.

One of the primary questions related to improving and expanding MAR is clearly identifying its benefits. While WWBWC has data that suggest localized benefit for instream flows, it is important to note that, even if sites could be developed that have streamflow benefits, there is not a legal pathway to protect increased surface flow from MAR. Depending on the location of MAR and any resulting streamflow increases, the increased streamflow could be diverted by a downstream water user before it has the chance to benefit aquatic and riparian species. Similarly, once water infiltrates into the aquifer from a MAR site, it can be difficult to track and clearly identify the groundwater users who benefit.

To date, MAR has been implemented in the Eastside area of Milton-Freewater, the Little Walla Walla River subbasin and west of the Little Walla Walla River. The WWBWC, Hudson Bay District Improvement Company (HBDIC) and local landowners have worked cooperatively since the early 2000s to construct MAR sites. WWBWC has been the primary MAR implementor in the Walla Walla Basin and currently operates 17 sites in Oregon. These sites have been operated under a series of limited licenses from OWRD which are temporary, junior priority water rights. 2024 is the final year on WWBWC's current limited license and the organization is in the process of applying for a renewal.

Quantitative Metrics

At this time, progress on this strategy can only be measured by progress on key threshold deliverables including OWRD's winter water availability analysis and the USGS study. Pending the outcome of these analyses and further consideration and consultation by OWRD, Ecology, CTUIR and the basin's stakeholders, metrics for project implementation may be developed.

Implementation Pathway

1. **Action:** Complete OWRD water availability analysis and USGS study to provide information about legal and physical water availability and groundwater/surface water interactions in and around the project area.
    - **Progress:** Both studies are in progress. OWRD water availability study is in draft form. USGS study is in progress with anticipated completion in late 2025 or early 2026.
    - **Next Step:** Once both studies are complete, revisit this and other Tier 1 strategies that depend on winter water.
2. **Action:** Utilize OWRD and USGS studies to inform and direct future managed aquifer recharge efforts including understanding the instream and out of stream benefits of past, current and proposed aquifer recharge project sites.
    - **Progress:**

- **Next Step:** Once both studies are complete, revisit this and other Tier 1 strategies that depend on winter water.

Responsible Parties

OWRD is responsible for completing the water availability analysis. USGS and local basin partners are responsible for completing the USGS Study. WWBWC and other basin stakeholders, along with CTUIR and OWRD and Ecology will all have an advisory and consultation role in discussions about how to best use limited winter water supplies. WWBWC, WWCD have historically been implementors of MAR.

Required Coordination

Once the OWRD and USGS studies are completed, WWRID, WWBWC, OWRD and Ecology will need to gather with CTUIR and basin stakeholders to determine how to manage limited winter water supply among competing demands.

Timeline

The anticipated completion of the OWRD water availability study is late 2024 or early 2025. Completion of the USGS study is anticipated in late 2025 or early 2026. There is no timeline estimate for any additional steps beyond completion of these studies.

Strategy 1.08 Decrease surface water diversions or substitute for basalt wells during low flow periods

The primary example of Strategy 1.08 is City of Walla Walla's source switch from Mill Creek to basalt wells for the benefit of Mill Creek instream flows. There may be opportunities to work with other current conjunctive users of ground and surface water to swap one for the other to benefit streamflows. However, no other specific opportunities have been identified to date.

The City of Walla Walla's primary water source (88 to 90% of its supply) comes from surface water diversions from Mill Creek. During periods of low flow, the City supplements its water supply with groundwater from seven basalt wells (Tetra Tech 2017). The City is also engaged in an ASR program (see Strategy 1.13 below) which injects Mill Creek surface water into the basalt for the purposes of aquifer storage and recovery. The City's ASR program allows the City extra capacity to increase basalt water pumping in August and September and decrease surface water use when flows are lowest in Mill Creek.

The City has an agreement with the CTUIR to help compensate them during the summer months for the increased pumping costs that are required to switch their summer water source from Mill Creek to basalt wells. However, this agreement is temporary and not guaranteed over the long-term.

Quantitative Metrics

The primary short-term goal for strategy 1.08 is to develop a long-term agreement between the City of Walla Walla and CTUIR for how to operate the surface to groundwater switch. Details include what triggers the switch (time of year, flow in Mill Creek etc.) and other operational

parameters. While the source switch is operational, the benefits of the project can be measured as the increase of instream flow in Mill Creek from reduced diversion by the city.

Table 24: Quantitative Metrics and Targets for Strategy 1.08

Metric	Target(s)	Timeline
Increased flow in cfs because of decreased diversions	TBD	TBD

An additional goal is to investigate other contexts in the basin where similar projects might be implemented. For example, there are many agricultural water users that have access to both deep basalt groundwater and surface water and there may be opportunities to work with these water users to time water use in a way that benefits streamflows and maintains agricultural water supply. An assessment of opportunities would be needed to identify those users who might be potential candidates and to work with them to gauge interest in source substitutions that benefit streamflow.

Implementation Pathway

Specific Actions

1. **Action:** Finalize a long-term agreement between the City of Walla Walla and CTUIR for operating a switch from the City's Mill Creek surface diversion to its basalt wells.
   - **Progress:** Seeking an update to finalize this section
   - **Next Step:** TBD
2. **Action:** Initial assessment/feasibility inquiry into expanding use of the tool to other water users in the basin that have both surface and basalt well access.
   - **Progress:** None to date.
   - **Next Step:** Use existing work group capacity in the Walla Walla 2050 Strategic Planning process to identifying an organization to take on assessment/feasibility work. WWT was involved in the initial agreement with the City of Walla Walla and could be a candidate for taking on this responsibility.

Responsible Parties

The City of Walla Walla and CTUIR will be the primary parties to a long-term agreement to switch from the City's Mill Creek surface diversion to its basalt wells under specific low flow conditions. As needed, Ecology is responsible for any water right changes and accompanying ASR permitting needs that may arise. Finally, WWT initially worked with the City to develop the source substitution program to use less surface water during critical streamflow periods and may be a resource for expanding the use of this tool in the basin.

Required Coordination

The City of Walla Walla and CTUIR are responsible for coordinating to negotiate a long-term agreement. WWT or another organization investigating additional projects in the basin may need to coordinate with basin stakeholders, Oregon and Washington wildlife and water agencies and CTUIR to better understand whether additional opportunities exist for surface to basalt source switches to increase streamflows at key times of the year.

Timeline

TBD based on input on this draft of the implementation plan.

Strategy 1.13 Expand and support Aquifer Storage and Recovery (ASR) to maintain groundwater quality and capacity

Aquifer storage and recovery (ASR) is a method of aquifer recharge designed to allow recovery of a large portion of the water placed within a relatively hydrologically isolated geological unit, like those that can be found in the Walla Walla Basin's basalt aquifer systems. The City of Walla Walla has been utilizing the basalt aquifer as an ASR facility since 1999 and has planned upgrades to several of its wells to allow for the expansion of ASR to improve water security, address groundwater level declines and to allow a decreased reliance on diversions from Mill Creek in the summer, which provides a significant near-term opportunity to restore stream flows in both Mill Creek and the Walla Walla River (City of Walla Walla 2018).

In 2024, the City of Walla Walla paused ASR operations due to an unresolved issue with the water quality of the injection water. The City is currently working with Ecology to resolve this issue and restart ASR.

The City of Milton-Freewater has also been investigating the use of ASR with its existing basalt wells to store winter water diverted from the Walla Walla River in the basalt aquifer for use during the summer. Unlike the City of Walla Walla, the City of Milton-Freewater does not currently use its surface water right therefore establishing an ASR program for the City of Milton-Freewater with surface water as the source would require a new diversion of surface water. However, the City of Milton Freewater is growing, has the rights to use surface water and the City's current wells are in an area deemed by the Oregon Department of Water Resources as a Serious Water Management Problem Area (SWMPA).

Given this context, there have been several studies to examine the feasibility of establishing an ASR program for the City of Milton Freewater. The WWBWC completed a feasibility study in 2019 for the Milton-Freewater ASR project which determined that preventing future decreases in summer flows by implementing the ASR project is both needed and feasible (Walla Walla Basin Watershed Council 2019). The study found that diverting surface water for ASR in the winter (of 8.6 cfs) would provide significant benefit to fish habitat in the summer and would not impair hydrologic conditions nor fish habitat in winter. Relying on drinking water supplies obtained during winter when flows are abundant rather than relying on diversion during low-flow summer months would also increase the basin's resiliency to future climate change (Walla Walla Basin Watershed Council 2019). However, like MAR, any use of winter water needs to be assessed

considering the outcomes of the ongoing OWRD winter water availability analysis and the USGS study.

1. **Action:** Complete OWRD water availability analysis and USGS study to provide information about legal and physical water availability and groundwater/surface water interactions in and around the ASR project area(s).
    - **Progress:** Both studies are in progress. OWRD water availability study is in draft form and is being vetted by the Bi-State Flow Study work group. USGS study is in progress with anticipated completion in late 2025 or early 2026.
    - **Next Step:** Once both studies are complete, revisit this and other Tier 1 strategies that depend on winter water.
2. **Action:** Resolve water quality challenges with City of Walla Walla's ASR permit CTUIR/Ecology what else is needed to make progress on this
    - **Progress:** ?
    - **Next Step:** ?
3. **Action:** Apply for and secure new ASR permit for the City of Walla Walla from the Department of Ecology
    - **Progress:** ?
    - **Next Step:** ?
    -

Responsible Parties

OWRD is responsible for completing the water availability analysis. USGS and local basin partners are responsible for completing the USGS Study. Ecology and OWRD determine legal water availability for ASR projects. WWBWC and other basin stakeholders, along with CTUIR will all have an advisory and consultation role in discussions about how to best use limited winter water supplies.

Quantitative Metrics

At this time, progress on this strategy can be measured by progress on key threshold deliverables including OWRD's winter water availability analysis and the USGS study. Pending the outcome of these analyses and further consideration and consultation by OWRD, Ecology, CTUIR and the basin's stakeholders, metrics for project implementation may be developed.

Required Coordination

Once the OWRD and USGS studies are completed, the cities of Walla Walla and Milton Freewater, along with OWRD and Ecology will need to gather with CTUIR and basin stakeholders to determine how to manage limited winter water supply among competing demands.

Timeline

The anticipated completion of the OWRD water availability study is late 2024 or early 2025. Completion of the USGS study is anticipated in late 2025 or early 2026. There is no timeline estimate for any additional steps beyond completion of these studies.

7. Implementing Tier 1 Strategies for Water Quality

Strategies in this category include two focused on addressing nonpoint source pollution, one from urban stormwater runoff and one from agricultural practices, and one strategy addressing one of the point sources in the watershed: the City of Dayton's wastewater treatment plant. The six strategies included in this category are listed below in Table 25.

Table 25: Tier 1 Strategies in the Water Quality Category

Category	Strategy Number and Description	
Water Quality	**1.17**	Increase infiltration of stormwater rather than discharge to surface water bodies and improve coordination and management
	1.18	Upgrade Dayton wastewater treatment plant to meet Ecology requirements and watershed community environmental goals
	1.22	Implement conservation tillage and soil erosion BMPs to decrease nonpoint source pollution

Strategy 1.17 Increase infiltration of stormwater rather than discharge to surface water bodies and improve coordination and management

Pollutants carried by stormwater runoff as well as changes in the patterns of runoff from lands following development, affect the quality and habitat function of the Basin's waters (Washington State Department of Ecology 2019). To address pollutant loading from non-point sources in Washington, general NPDES permits, referred to as Phase II Municipal Stormwater Permits are applied at the city or county level.

Federal regulations specify minimum measures required for municipal stormwater programs for compliance with Phase II rules. The Department of Ecology's Stormwater Management Manual for Eastern Washington (Washington State Department of Ecology 2019) provides technical guidance for projects to comply with municipal stormwater requirements. The method by which the Manual mitigates the adverse impacts of development and redevelopment is through the application of Best Management Practices (BMPs).

Some of the challenges identified by the water quality sub-workgroup include lack of staffing capacity to implement stormwater regulations, lack of buy-in from private landowners on stormwater fees and the fact that stormwater regulations generally cover new rather than existing development.

Quantitative Metrics

For this strategy, the best metric to track will be the increase in the amount of stormwater being infiltrated into the ground rather than discharged directly into surface water bodies. The increase should be measured against a baseline chosen by the basin's stormwater managers, for

example an increase over the estimated amount of surface discharge the year before a project or effort begins to increase stormwater infiltration.

Table 26: Quantitative Metrics and Targets for Strategy 1.17

Metric	Target(s)	Timeline
Increase in stormwater infiltrated above baseline	TBD	TBD

Implementation Pathway

Specific Actions

1. **Action:** Increase the staffing capacity of the City of Walla Walla, City of College Place, City of Milton Freewater and Walla Walla County to help enforce and monitor compliance with existing stormwater regulations.
   - **Progress**: City and County staff have identified the need for more staffing to address stormwater management needs
   - Next Step: Follow up conversation with each City and County department to identify how many FTEs are needed, for what purposes and potential funding sources to support new positions.
2. **Action:** Identify and secure increased funding for stormwater project implementation
   - **Progress**: See funding plan
   - **Next Step:**
3. **Action:** Investigate potential incentives for participation in stormwater management by new and existing developers. Examples might include reduced fees or broader ideas like a stormwater credit trading market.
   - **Progress**:
   - **Next Step:**

Responsible Parties

Cities of Walla Walla, College Place and Milton-Freewater, Walla Walla County, Walla Walla Basin Watershed Council, Oregon Department of Environmental Quality, Ecology.

Required Coordination

With funding sources identified coordination with eligible entities and support for proposals to relevant funders may be needed.

Timeline

TBD based on input on this draft of the implementation plan.

Strategy 1.18: Upgrade Dayton wastewater treatment plant to meet Ecology requirements and watershed community environmental goals

The City of Dayton's Wastewater Treatment Plant (WWTP) collects the City's municipal wastewater and treats it before discharging it into the Touchet River at river mile 52.1. The warm, dry-weather months of May through October are the critical period for the Touchet River, which is impaired under the Clean Water Act for temperature, pH, fecal coliform bacteria, and dissolved oxygen. During these critical low flow periods, the City's effluent discharge to the Touchet River is not meeting water quality standards. The waste load allocations for the Dayton Wastewater Treatment Plant are so restrictive that they cannot be met with currently available technology; the plant will therefore need to avoid any wastewater discharge into the river from May through October and remove pollutants from their waste water during the months that they are allowed to discharge. The focus of this strategy now is on constructing a storage facility to store the City's discharge during the low flow months so the City can treat it and discharge it at a time of year when doing so will not violate the Clean Water Act permits.

Quantitative Metrics

There are no quantitative metrics to track for this strategy other than to monitor ongoing implementation. The City of Dayton have and will continue to have numerous metrics to track as part of their regulatory compliance at the WWTP but these are outside the scope of this implementation plan.

Implementation Pathway (Note: Update needed by City of Dayton or project partner)

Specific Actions

In early 2023, the City of Dayton was focused on purchasing a 65-acre property for an upgraded wastewater treatment facility. The city has since signed purchase and sale agreement and is beginning geotechnical work and other due diligence efforts on the site. Funding for the land purchase will be provided by Department of Ecology through a low-interest loan. Monitoring wells are being installed at locations approved by Department of Ecology, and monthly sampling will begin immediately after installation for 37 parameters. In addition to providing data on the quality of the groundwater at the site, monitoring will establish direction of flow and any potential hydraulic connectivity to the Touchet River. Geotechnical borings, infiltration testing, topographic surveying and additional site explorations are expected to take place in August 2023 after the existing crop has been harvested. The city initiated consultation with the Department of Archaeology and Historic Preservation (DAHP) and received a determination of "no effects", so additional cultural resources work will not be needed at this time.

Responsible Parties

The City of Dayton is responsible for this strategy in coordination with the regulatory agencies charged with oversight of point source discharges in the basin under the Clean Water Act.

Required Coordination

While the City is legally required to comply with its regulatory obligations under the Clean Water Act, participants in the Walla Walla Strategic Planning process can support the City, and more specifically water quality in the Touchet River, by backing funding proposals by the City as needed and as able, and providing technical and other assistance when possible.

Timeline

Design of the improvements will begin in 2024, with construction of the preferred alternative expected in 2025. Design and construction of needed improvements will allow the City to construct a facility that will protect surface and groundwater and critical fisheries.

Strategy 1.22: Implement conservation tillage and soil erosion BMPs to decrease nonpoint source pollution

Oregon and Washington both have plans for reducing pollution from agricultural and rural lands consistent with goals for nonpoint source pollution reduction established in the Walla Walla Basin TMDLs. Key to these plans are tools and technical assistance for landowners to identify actions they can take to voluntarily support water quality in their home watersheds. This strategy is focused on ensuring that landowners have the resources, including funding and technical assistance where necessary, to implement relevant practices to benefit water quality.

Quantitative Metrics

The primary metric for this strategy is the number of acres on which practices are adopted that benefit water quality. Over time, progress toward meeting TMDLs may also be tracked and tied to this practices.

Table 27: Quantitative Metrics and Targets for Strategy 1.22

Metric	Target(s)	Timeline
Acres enrolled with new conservation tillage and soil erosion BMPs		
Progress toward meeting TMDLs		

Implementation Pathway

Specific Actions

1. **Action:** Increase technical assistance
    - **Progress:**
    - **Next Step:**

Responsible Parties

WWCCD, WWBWC, Oregon Department of Agriculture, Umatilla Soil and Water Conservation District, USDA Farm Service Agency and Natural Resources Conservation Service, WSDA, Counties,

Required Coordination

To be further developed with input on this draft of the implementation plan

Timeline

TBD based on input on this draft of the implementation plan.

8. Policy and Regulation

Strategy 1.11: Address legal implications of Bi-State surface water management and protection of instream flow across the state border and protection of instream flow within States

Significant progress has been made on this strategy since the Strategic Plan was adopted in June of 2021. In 2023 the Washington State legislature passed Second Substitute House Bill 1322 (2SHB 1322) which is now codified under RCW 90.90.120. Among other things, the legislation defines the concept of "developed water" as "any increase in the quantity of water supply due to a project being implemented under the Walla Walla Water 2050 plan that is completed after July 23, 2023." This language enables the Department of Ecology to protect water savings associated with specific developed water projects instream against out of stream water rights. Ecology can also protect Oregon water rights as developed water. In August and September of 2024 Ecology and OWRD undertook a pilot project to transfer a portion of the City of Walla Walla's Oregon water right instream and protect is as develop water. This was the first pilot project for developed water and States will likely complete additional pilots to demonstrate the utility of their new legislation. Eventually water form a future infrastructure project such as a reservoir or pump exchange with the Columbia River could be protected from out of stream users via the developed water provision of RCW 90.90.120.

On the other side of the border, Oregon also passed legislation in the form of Senate bill 1567 which directs assessment of bi-state water management and developed water. Together these two pieces of legislation address a long-standing legal conundrum paving the way for instream flow protection across the State border.

Specific Actions

ORWD/ Ecology any specific actions you'd like to mention related to Strategy 1.11? More pilots?

1. **Action:** Complete the Walla Walla Basin Drought Response Plan
    - **Progress:** to be drafted
    - **Next Step:** to be drafted.

Strategy 1.14: Improve coordination and response to drought management Basin-wide between Counties and State water management entities

Basin partners have long recognized the need for improved drought planning and response in the Walla Walla Watershed. Current drought response efforts are not well organized or coordinated resulting in limited actual response. Workgroup members recognized a need to share the burden of drought with all out of stream waters users in the basin. This requires better planning and short-term coordination to implement response measures. Drought response needs to be comprehensive and include all types of water users municipal and domestic to agricultural including both surface and groundwater. At this time, most drought response measures are voluntary so incentives may need to be developed to encourage participation.

Some ideas brainstormed and discussed by the workgroup include, pulse flows, water right leasing of agricultural water rights, and cash for grass and other native plant and heritage programs and updates of current municipal response measures. Many of these measures would save water during drought and non-drought periods.

Recognizing the need for a coordinated response, the Walla Walla County Conservation District recently applied for and was awarded a grant from the Department of Ecology to draft a Walla Walla Basin Drought Response Plan. The WWCCD, in partnership with WWT, has secured funds to develop a comprehensive, basin-wide drought preparedness plan. This plan will bring together existing plans and build on them to create a drought management plan that address the whole Walla Walla River Basin, including Oregon. This plan will include a Water Security Risk Assessment and identify water supply and drought projects. The plan will include a partner committee/ workgroup that will develop the content of the plan.

Quantitative Metrics

Tracking the success of this strategy will involve first ensuring completion of a drought response plan and then tracking, over time, the number of agricultural water users who voluntarily participate in drought response. Additional quantitative metrics may be available once the plan is being implemented, for example measurements of reductions in water use during drought, maintenance of instream flows, and other performance-based metrics that might emerge out of the planning process.

Table 28: Quantitative Metrics and Targets for Strategy 1.22

Metric	Target(s)	Timeline
Complete Drought response plan		
Number of water users to participate in drought year programs		

Implementation Pathway

Specific Actions

1. **Action:** Complete the Walla Walla Basin Drought Response Plan
   - **Progress:** Funding secured to be drafted
   - **Next Step:** to be drafted.
2. **Action:** Implement municipal water use drought responses measures
   - **Progress:** Specific details will be generated from the drought response planning process**.**
   - **Next Step:** to be drafted.
3. **Action:** Implement agricultural water use drought responses measures

- **Progress:** Specific details will be generated from the drought response planning process.
- **Next Step:** to be drafted.

Responsible Parties

Walla Walla County Conservation District with Ecology, OWRD, CTUIR, Cities of Walla Walla, Milton Freewater and College Place, Walla Walla County, Walla Walla Basin Watershed Council.

Required Coordination

To be drafted with additional input on this draft of the implementation plan.

Timeline

The planned completion of the Walla Walla Basin Drought Response plan is 2025-2026?

Strategy 1.16: Increase coordination and enforcement of floodplain and riparian regulations and management between Counties and State Management Agencies

The most pressing need to move this strategy forward is developing a shared understanding between the basin's planning/municipal/county staff and fish and natural resources managers. Developing this understanding should commence with two simultaneous efforts. The first effort is to identify which entities and individuals are critical to bring together and then convene this group for the first time.

The group should work to define the challenge and come to a shared understanding about what kinds of improvement are needed in floodplain and riparian development regulations. An initial meeting could be planned to determine whether the right people/entities are in the room and begin to develop a plan for how the group can work together and what it might accomplish. To support this group, a study could be funded and undertaken to more fully outline existing floodplain and riparian regulations and determine if and how they could be improved. Some concerns raised by workgroup members that could be fully vetted in the study include, lack of common understanding around buffer requirements under the Critical Area Ordinance, lack of CAO enforcement and regulation and lack of understanding of development restrictions around small stream by developers.

Implementation Pathway

Quantitative Metrics

To be drafted with additional input on this draft of the implementation plan.

Table 29: Quantitative Metrics and Targets for Strategy 1.16

Metric	Target(s)	Timeline

Metric	Target(s)	Timeline

Specific Actions

- **Action:** Complete a study to more fully outline existing floodplain and riparian regulations and determine if and how they could be improved
- **Progress:**
- **Next Step:**

Responsible Parties

Regulatory and permitting agencies: ODEQ, Ecology, Walla Walla, County and Umatilla Counties, Cities of Walla Walla, Milton- Freewater and College Place. Implementing entities: Walla Walla County Conservation District, Kooskooskie Commons.

Required Coordination

To be drafted with additional input on this draft of the implementation plan.

Timeline

To be drafted with additional input on this draft of the implementation plan 2025-2026?

Strategy 1.21 Additional Bi-State coordination on groundwater regulation

Ecology and OWRD are currently working on parallel research to the USGS Groundwater study to better understand groundwater conditions and movement in the area of the stateline in the Walla Walla Basin. A next step is for the States to present their findings and identify the implications for policy and management and begin to discuss a bi-state framework for working together to manage groundwater.

Implementation Pathway

Ecology and OWRD can you sketch out the latest on what you are working, next steps, timing and metrics?

Quantitative Metrics

Table 30: Quantitative Metrics and Targets for Strategy 1.21

Metric	Target(s)	Timeline

Specific Actions

2. **Action:**
    - **Progress:**
    - **Next Step:**

Responsible Parties

OWRD, Ecology

Required Coordination

?

Timeline

2025-2026?

9. References

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