

2018 Cost Estimate and Financing Plan

Yakima River Basin Integrated Water Resource Management Plan

October 2018
Publication 18-12-006



Publication and Contact Information

This document is available on the Department of Ecology's website at:

<https://fortress.wa.gov/ecy/publications/summarypages/1812006.html>

For more information, contact:

Office of Columbia River
1250 W Alder St
Union Gap, WA 98903-0009
Phone: 509-575-2490

Washington State Department of Ecology — www.ecology.wa.gov

- Headquarters, Olympia 360-407-6000
- Northwest Regional Office, Bellevue 425-649-7000
- Southwest Regional Office, Olympia 360-407-6300
- Central Regional Office, Union Gap 509-575-2490
- Eastern Regional Office, Spokane 509-329-3400

To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 509-575-2490 or visit <https://ecology.wa.gov/accessibility>. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

Cover photo – Phase II construction of the Cle Elum juvenile fish passage facility.

2018 Cost Estimate and Financing Plan

Yakima River Basin Integrated Water Resource Management Plan

Submitted by

The Office of Columbia River
Washington State Department of Ecology
Union Gap, WA

And

Debt Management Division
Office of the State Treasurer
Olympia, WA



October 5, 2018

The Honorable Jay Inslee, Governor
Honorable Members of the Washington State Legislature
Olympia, Washington

RE: 2018 Cost Estimate & Financing Plan for the Yakima River Basin Integrated Water Resource Management Plan

The Department of Ecology (Ecology) and the Office of the State Treasurer (Treasurer) respectfully submit this *2018 Cost Estimate & Financing Plan for the Yakima River Basin Integrated Water Resource Management Plan*, the third in the series as required under RCW 90.38.120.

Compiled by Ecology's Office of Columbia River in collaboration with the Treasurer's Debt Management Division, this report provides cost estimates of implementing the Yakima Basin Integrated Plan, which are broken out by the full build out cost and cost by 10-year phases. This report also includes possible funding options from state, federal, tribal, and local sources.

This report is now available at this website:

<https://fortress.wa.gov/ecy/publications/summarypages/1812006.html>

If you have any questions regarding this report or would like more information, please contact me by phone at (509) 574-3989 or by email at: thomas.tebb@ecy.wa.gov. If you would like hard copies of the report, contact Colleen Smith by phone at (509) 454-4239 or email at: colleen.smith@ecy.wa.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "G. Thomas Tebb".

G. Thomas Tebb, L.Hg., L.E.G.
Director
Office of Columbia River

A handwritten signature in black ink, appearing to read "Jason Richter".

Jason Richter
Deputy Treasurer, Debt Management
Office of the State Treasurer

Table of Contents

	<u>Page</u>
Statutory Directive RCW 90.38.120.....	iii
Executive Summary	1
Initial Development Phase - Five Year Update	1
Investments	2
Innovative Funding Partnerships	2
Introduction.....	4
An Adaptable Approach	9
Estimated Costs and Funding Needs.....	10
Full Buildout Costs - 2013 to 2043.....	10
Initial Development Phase - 2013 to 2023.....	12
Financing Plan	14
State Funding Mechanisms.....	14
Non-State Funding Sources	20
Financing Mechanism Viability Matrixes	28
Future Outlook	32
Adaptive Management Plan.....	32
Funding Challenges	33
Funding Successes	34
Next Steps	35
Appendix A - Members of the Yakima River Basin Water Enhancement Plan Workgroup ...	36

List of Figures and Tables

	<u>Page</u>
Figures	
Figure 1: YRBWEP to YBIP	3
Figure 2: Annual Economic Output from the Yakima Basin	5
Figure 3: Integrated Plan Project Elements	8
Figure 4: Cle Elum Fish Passage Conceptual Buildout & Cost Estimate.....	9
Figure 5: Initial Development Phase Estimated Costs.....	12
Tables	
Table 1: Estimated Costs for Integrated Plan 30 Year Implementation Project	11
Table 2: Initial Development Phase Estimated Costs	15
Table 3: Other Potential State Funding Sources	19
Table 4: Other Potential Federal Funding Sources	22
Table 5: Other Potential Tribal Funding Sources	23
Table 6: Other Potential Nongovernmental Funding Sources	27
Table 7: State Funding Matrix	28
Table 8: Federal Funding Matrix	29
Table 9: Tribal Funding Matrix	30
Table 10: Local and Other Funding Matrix	31

Statutory Directive RCW 90.38.120

Legislative intent - Cost to implement the integrated plan.

- (1)
 - (a) It is the intent of the legislature for the state to pay its fair share of the cost to implement the integrated plan. At least one-half of the total costs to finance the implementation of the integrated plan must be funded through federal, private, and other nonstate sources, including a significant contribution of funding from local project beneficiaries. This section applies to the total costs of the integrated plan and not to individual projects within the plan.
 - (b) The state's continuing support for the integrated plan shall be formally reevaluated independently by the governor and the legislature if, after December 31, 2021, and periodically thereafter, the actual funding provided through nonstate sources is less than one-half of all costs and if funding from local project beneficiaries does not comprise a significant portion of the nonstate sources.
- (2) The department shall deliver, consistent with the intent of this section, a cost estimate and financing plan that addresses the total estimated cost to implement the integrated plan and analyzes various financing options. The cost estimate and financing plan must include a description of state expenditures as of September 28, 2013, incurred implementing the integrated plan and proposed state expenditures in the 2015-2017 biennium and beyond with proposed financing sources for each project.
- (3) In addition, the office of the state treasurer shall prepare supplementary chapters to the cost estimate and financing plan for the department that:
 - (a) Identifies and evaluates potential new state financing sources to pay for the state's contribution towards the overall costs of the Yakima integrated plan's implementation;
 - (b) Identifies and evaluates potential new local financing sources to pay for a significant local contribution towards the overall costs of the Yakima integrated plan's implementation;
 - (c) Considers the viability, and evaluates the advantages and disadvantages of various financing mechanisms such as revenue bonds, general obligation bonds, and other financing models;
 - (d) Identifies past, current, and anticipated future costs that will be, or are anticipated to be, paid by nonstate sources such as federal sources, private sources, and local sources; and
 - (e) Considers how cost overruns of projects associated with the integrated plan could affect long-term financing of the overall integrated plan and provides options for how cost overruns can be addressed.
- (4) The department may, in the sole discretion of the department, contract with state universities or private consultants for any part of the cost estimate and financing plan required under this section.
- (5) The initial cost estimate and financing plan required by this section must be provided to the governor and the legislature, consistent with RCW [43.01.036](#), by no later than December 15, 2014, for consideration in preparing the 2015-2017 biennial budget and future budgets. The cost estimate and financing plan must be updated by September 1st of each successive even-numbered year.

[[2013 2nd sp.s. c 11 § 11.](#)]

Executive Summary

The Yakima River Basin Integrated Water Resources Management Plan (Integrated Plan) began in 2009 as an offshoot of the Yakima Basin Storage Study. Basin stakeholders developed the Integrated Plan as a commonsense approach to solving decades of water conflicts. This plan defines a vision for addressing chronic water supply issues, drought resiliency, climate change, fish passage, ecosystem restoration, economic vitality and growing communities. After the passage of the Yakima River Basin Water Resource Management Act (RCW 90.38) in 2013, the Department of Ecology's Office of Columbia River (OCR) in collaboration with the US Bureau of Reclamation (Reclamation) and the Yakama Nation embarked on implementing the 30-year Integrated Plan.

Compiled by OCR in collaboration with the Office of the State Treasurer, this report builds upon information provided in previous legislative reports with updated cost estimates to implement the unprecedented range of projects within the Integrated Plan for full build-out (30-year) and for the first decade.

Initial Development Phase - Five Year Update

Over the past five years, OCR, Reclamation, the Yakama Nation and many other partners advanced a wide range of projects through feasibility, planning, and design, to environmental review, permitting, and funding, with a few projects even reaching the construction phase, as part of the first 10-year phase of the Integrated Plan, also known as the Initial Development Phase (IDP).

As the Integrated Plan hits the halfway point of its IDP, we submit this third Cost Estimate and Financing Plan for the Yakima River Basin Integrated Water Resources Management Plan, in accordance with RCW 90.38.120. The full buildout, 30-year (2013 thru 2043) cost estimates in this report were originally identified in the Yakima River Basin Integrated Water Resource Management Plan Programmatic Environmental Impact Statement¹ ([PEIS](#)). The current full buildout cost is now estimated to be approximately \$4.1 billion. Cost estimates will be adjusted as needed as projects advance through their various feasibility, design and construction stages.

The current cost estimate of the IDP, which began in 2013 and continues through 2023, is approximately \$990 million, but has ranged from \$896 million up to \$990 million in any given year since 2013. Out of \$990 million, \$639.7 million (65 percent) is expected to come from federal and other funding sources, with the State contributing approximately \$351.2 million (35 percent). It is important to note these percentages are likely to change as project planning advances and annual federal and biennial state appropriations are realized.

¹ Integrated Plan PEIS website: <https://fortress.wa.gov/ecy/publications/documents/1212002.pdf>

Investments

To date, the State has invested over \$200 million directly in the Integrated Plan. This does not include earlier investments made by the State prior to the legislation passing in 2013, nor does it include ongoing work in the basin under Yakima River Basin Water Enhancement Project Phase 2. Overall investments in the Integrated Plan have been growing since it launched in 2013, including increased annual federal funding, which peaked at \$43 million in 2017, up from the \$24 million contributed in 2014.

Over the past 5 years, many stakeholders have made smaller capital investments, ranging from several thousand dollars to several million dollars per year, in water conservation, habitat restoration and water banking. These same stakeholders, including state and federal agencies, the Yakama Nation, irrigation districts, counties, cities and conservation groups, also contributed operating dollars to support implementation of the Integrated Plan through workgroup participation, subcommittee meetings, and overseeing project implementation.

A variety of funding opportunities from federal, tribal, state, local and private sources are detailed in this report, which are instrumental in leveraging state funds and bring additional financial support to the Integrated Plan.

Innovative Funding Partnerships

The success of the Integrated Plan is due, in part, to its flexible adaptive management approach and the innovative funding partnerships with its federal-state-local-private stakeholders. An example of this successful partnership is reflected in the Kachess Drought Relief Pumping Plant with OCR and Reclamation funding the design, permitting and environmental review, and the proratable irrigation districts financing the construction and operation and maintenance of this project.

Even with its flexible adaptive management approach and funding partnerships, there are funding challenges that Integrated Plan projects will need to overcome. For instance, the funding needs of large construction projects will vary widely over several biennia. One such project is the Cle Elum fish passage facility. The cost of this project increases greatly as it moves from design and permitting (approximately \$15 million) to construction (estimated < \$200 million) and dropping again to less than \$10 million during the operation and maintenance (O&M) phase. Budgeting a large capital project within the State biennial budget cycle and a federal 3-year budget cycle can be challenging, coupled with unforeseen project delays, helps one quickly grasp the complexity of Integrated Plan project development and project management.

Similar to the first five years, the next five years of the IDP implementation of the Integrated Plan will continue to adapt and change in order to meet project needs and overall goals of the Integrated Plan. This approach allows new projects to come online while older projects are completed, and allows all seven elements of the Integrated Plan to progress simultaneously. Over the next two years, OCR plans to coordinate with the Office of State Treasurer to develop a funding plan for the second 10-year phase, also known as the Middle Development Phase (MDP), of the Integrated Plan, which will include options on how the State will contribute up to 50 percent of the projected \$1.6 billion MDP cost, setting the stage for the 2020 Integrated Plan Cost Estimate and Financing Plan.

YRBWEP to YBIP

Yakima Basin Integrated Plan

HOW 30 YEARS OF STUDIES, PARTNERSHIPS,
FISH PASSAGE AND CONSERVATION
CREATED WASHINGTON'S MOST
SUCCESSFUL INTEGRATED WATER
MANAGEMENT PLAN.

STUDIES AUTHORIZED

1979



After a devastating drought in 1977, Congress directed the Bureau of Reclamation to work with the State of Washington to conduct studies and develop a plan to provide water for irrigation, treaty rights, aquatic life and fish habitat. This effort was titled the **Yakima River Basin Water Enhancement Program (YRBWEP)**

Early studies identified fish passage issues. The Hoover Power Plant Act of 1984 authorized fish passage facilities throughout the Yakima Basin, partially funded by the Bonneville Power Administration. YRBWEP 1 designed and enacted fish passage basinwide.



1984

YRBWEP 1
Fish Passage

YRBWEP 2 Voluntary Conservation

1994



After the 1992-1994 drought, legislation authorized water conservation and instream flow projects. Costs for water conservation are shared by Reclamation, the Washington Dept. of Ecology and irrigators. 2/3rds of irrigation water conserved remains instream to help with flows, while 1/3 is retained by irrigators for use in drought years.

Following another drought in 2005, Reclamation and Ecology built on YRBWEP 1 and 2 by creating a stakeholder workgroup to address other elements of the water supply and fisheries issue. In 2009, this group began developing the **Yakima Basin Integrated Plan (YBIP)**, a watershed-scale approach to sustainable water supply for fish, families, farms and forests.

2009

YBIP
(YRBWEP 3)
Yakima Basin
Integrated
Plan



YBIP is a 30 year package of actions divided into three 10-year phases of its own.



Rev. 7.18.18



Figure 1: YRBWEP to YBIP

Introduction

In 2013, the Washington State Legislature passed the Yakima River Basin Water Resource Management Act (Second Substitute Senate Bill 5367) to address the Yakima River Basin's chronic water supply shortages. This act is now codified in RCW 90.38 and authorizes the Department of Ecology (Ecology) to implement the extensive 30-year effort known as the Yakima River Basin Integrated Water Resource Management Plan. This management plan, also known as the Yakima Basin Integrated Plan (Integrated Plan), is the third phase of the Yakima River Basin Water Enhancement Program (YRBWEP) (Figure 1).

Developed by Ecology and US Bureau of Reclamation (Reclamation), in partnership with the Yakama Nation and a group of basin stakeholders known as the YRBWEP workgroup (Appendix A), the Integrated Plan is a collaborative effort that stretches beyond the decade of conflict that preceded it, and provides a comprehensive approach to water supply improvements and ecosystem restoration in the Yakima River Basin. Through this approach, the Integrated Plan aims to improve water reliability for both instream and out-of-stream water uses, restore salmon and steelhead, and protect the basin's economy, communities, and watersheds. The success of the Integrated Plan is thanks in part to the diverse parties that make up the YRBWEP workgroup and its subcommittees putting aside their differences, coming together as one.

Located east of the Cascade Mountains in south-central Washington, the Yakima River Basin encompasses 6,155 square miles and is home to a population of approximately 370,000, which includes over 10,000 members of the Yakama Nation. This basin provides cold-water habitats vital to the spawning and rearing of salmon, steelhead, and the federally listed Bull Trout. The Yakima River Basin also supports over 96,000 water dependent jobs that provide \$13.1 billion in annual economic activity.

As one of the most productive agricultural regions of the State, the agricultural and food processing industries alone provide 44,300 of these jobs that drive the \$4.5 billion economic engine, leading to over \$1 billion² in agricultural exports annually (Figure 2 next page). In a river basin plagued by chronic water supply shortages, this can lead to severe economic losses. During the 2015 drought, three of Yakima's irrigation districts felt the impacts of water supply shortages in the form of \$122 million in crop losses.

Improving water supply reliability allows the basin to buffer snowpack losses, prepare for periods of declared drought, secure the regional economy that is dependent on water supply, and prepare for future population growth. Water supply improvements will also aid in fishery restoration and addressing the federal treaty obligation to the Yakama Nation. With salmon and steelhead numbers increasing to 50,000 fish, from 3,000 fish documented in the mid-1990's, it is estimated that with continued instream flow improvements these numbers could eventually reach up to 300,000³.

² ECONorthwest. (2017). Water Security for the Yakima River Basin's Economy, Communities, and Watersheds. Washington Department of Ecology (Publication No. 17-12-010).

³ Wildlife, W. D. (2002). Status Report Columbia River Fish Runs and Fisheries 1938-2000. Washington Department of Fish and Wildlife.

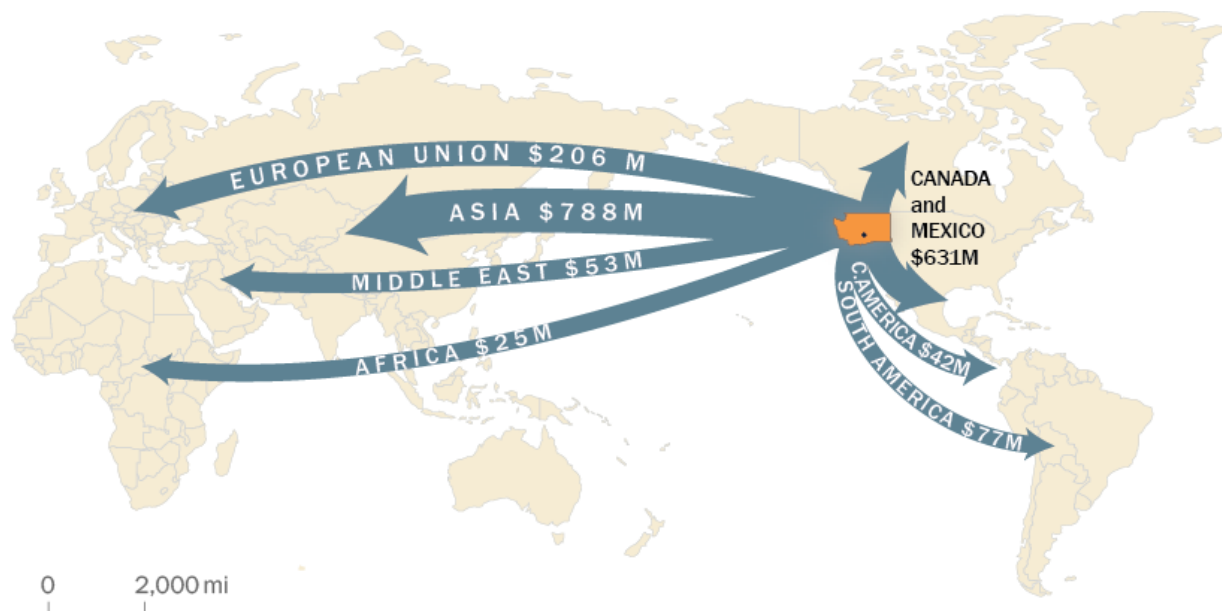


Figure 2: Annual Economic Output from the Yakima Basin

To ensure the basin remains as a place for families, farms and fish to thrive today and into the future, the Integrated Plan is a 30-year vision with the following goals:

- Provide opportunities for comprehensive watershed protection, and ecological restoration that address instream flows, aquatic habitat, and fish passage.
- Improve water supply reliability during drought years for agricultural and municipal needs.
- Develop a comprehensive approach for conservation of water supplies for crop irrigation, municipal and domestic uses, and power generation.
- Improve the ability of water managers to respond and adapt to the potential effects of climate change.
- Contribute to the vitality of the regional economy and sustain the riverine environment.

For a project to be selected under the Integrated Plan it must provide tangible improvements to instream flows, fish habitat, fish passage, and/or increased water security of existing out-of-stream water supplies in the Yakima Basin. These projects may also improve economic and environmental sustainability, meet the needs of water users, restore salmon, Bull Trout, and steelhead runs, and/or conserve and restore vital habitats.

Ecology, Reclamation, and its partners are working with the YRBWEP workgroup Executive Committee to develop a process of qualitatively and quantitatively evaluating new and modified projects. This evaluation process, once finalized, will be used to verify that projects are meeting the goals of the Integrated Plan. All Integrated Plan projects are housed within one of seven elements (Figure 3) and the diverse and broad group of supporters of the Integrated Plan are committed to moving all seven elements forward simultaneously.

These seven elements are as follows:

1. **Habitat/Watershed Protection and Enhancement** - Targets critical habitat for wildlife and anadromous (ocean migrating) and resident fish, particularly several salmon species, including sockeye salmon, the federally-listed Bull Trout and the federally listed steelhead, through land acquisition, watershed protection and habitat restoration and enhancement projects.

In 2013, the State purchased 50,241 acres of forestland in the upper Yakima Basin, moving the plan closer towards achieving its goal to conserve and restore 70,000 acres of vital watershed, shrub-steppe, and forest habitats. The Legislature designated this land as the State's first community forest and named it the Teanaway Community Forest (TCF). Integrated Plan partners continue to manage recreation and grazing activities and habitat restoration efforts in the TCF.

2. **Fish Passage** - Focuses on providing both upstream and downstream fish passage at all five major storage reservoirs in the basin, allowing fish to reach their historic spawning sites in the coldest and cleanest water located in the headwaters of the Yakima Basin.

Phase II construction of the Cle Elum fish passage facility is currently underway. Construction of all phases is anticipated to be completed in 2022.

3. **Enhanced Water Conservation**⁴ - Strives to improve both instream flows in critical stream reaches and reliable water supplies for proratable water users by achieving more precise water delivery through aggressive implementation of water delivery and water use efficiency measures.

To date, projects under this element have conserved over 10,000 acre-feet (ac-ft.) of water, with a total of 85,000 ac-ft. planned to be conserved by 2023. The Integrated Plan aims to reach its goal to conserve over 170,000 ac-ft. of water by the end of its final development phase.

4. **Structural and Operational Changes** - Promotes operational efficiency and flexibility at existing in-basin facilities, some of which are over 100 years old, through facility expansion and conveyance improvements.

A major accomplishment under this element is the completion of the 3 feet radial gate (pool raise) construction at Cle Elum Dam. Once shoreline stabilization around the reservoir is complete, Cle Elum reservoir will hold an additional 14,600 ac-ft. of water for fish flows.

⁴Water conservation efforts are only one part of securing reliable water supply in the Yakima Basin. Conservation efforts at the top of the basin may reduce water supply for downstream users, limiting their ability to exercise their water right. Lining or piping a canal reduces seepage, but seeping water eventually makes its way back to the river and the downstream users awaiting that water. Unless offset by managed aquifer recharge, reducing seepage may also limit groundwater infiltration, which recharges aquifers and helps cool stream temperatures during summer months.

5. **Surface Water Storage** - Seeks to develop an additional 450,000 ac-ft. of new surface water storage for supporting instream and out-of-stream water uses.

The Kachess Drought Relief Pumping Plant will access 200,000 ac-ft. of water held in the Kachess reservoir below the existing dam outlet works. The Supplemental Draft Environmental Impact Statement (EIS) for the Kachess Drought Relief Pumping Plant and Keechelus-to-Kachess projects was released to the public April 2018 with a final EIS expected by the end of 2018.

6. **Groundwater Storage** - Utilizes surface water to recharge aquifers to store water for later withdrawal and use, and improve stream flow conditions.

The City of Yakima Aquifer Storage and Recovery project water right permit has been issued. Other regional approaches using irrigation district infrastructure to recharge groundwater are currently being evaluated.

7. **Market Driven Reallocation** - Improves water supply and instream flow conditions through water banking and exchange programs that build on existing water market programs. This will reduce barriers to exchanging water and focus on water transfer between districts, which may require changes to existing laws and policies.

In September 2017, a Reclamation WaterSMART Water Marketing Strategies Grant was awarded to the Kittitas Reclamation District (KRD), in partnership with Trout Unlimited, to begin a water marketing analysis for the Yakima Basin. Both Yakima County and Kittitas County are also working on water banking programs to enable construction of property developments and individual homes that rely on water acquisition or mitigation credits from willing sellers.



Kachess Reservoir

Building A Future for Water, Wildlife, and Working Lands

Yakima River Basin Integrated Water Resource Management Plan

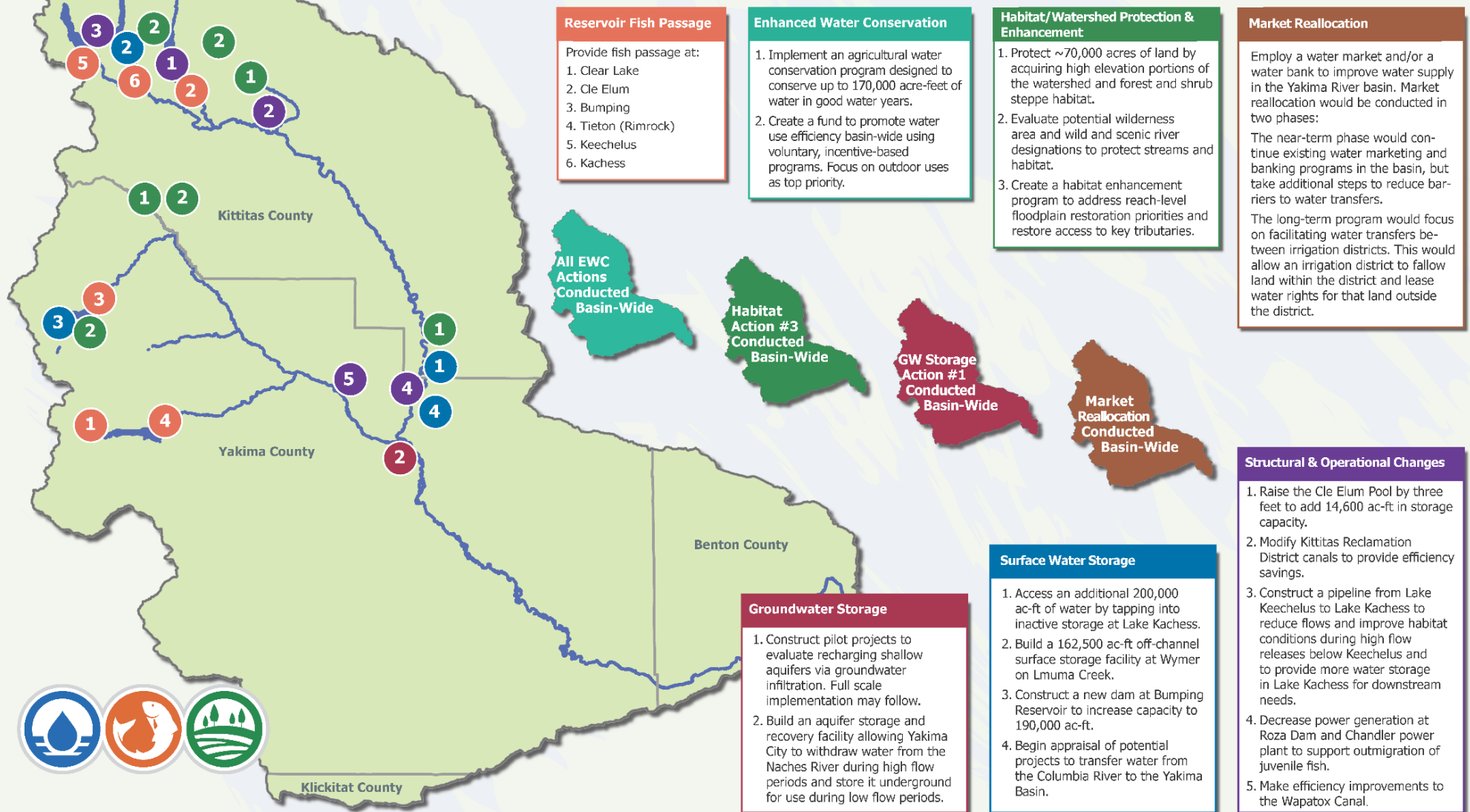


Figure 3: Integrated Plan Project Elements

An Adaptable Approach

The success of the Integrated Plan is due to its flexible adaptive management approach and the innovative funding partnerships with federal-state-local-private stakeholders. An example of this successful partnership is reflected in the Kachess Drought Relief Pumping Plant with OCR and Reclamation funding the design, permitting and environmental review and the proratable irrigation districts financing the construction and operation and maintenance of this project.

Even with its flexible adaptive management approach, Integrated Plan projects still face funding challenges they will need to overcome. For instance, the funding needs of large construction projects, such as the Cle Elum fish passage project, will vary widely over several biennia. As illustrated in Figure 4, the Cle Elum fish passage project spans multiple state biennial budget cycles, with varying costs of each stage of the project. Budgeting this large capital cost project within the State biennial budget cycle and a federal 3-year budget cycle can be challenging, as seen in the decreased dip in funding for 2017-2019, which may affect project phasing and completion dates.

Along with these current funding challenges, new funding challenges are likely to transpire as multiple large-scale capital construction projects, such as a major surface water supply project and a fish passage project enter their high cost construction phases simultaneously.

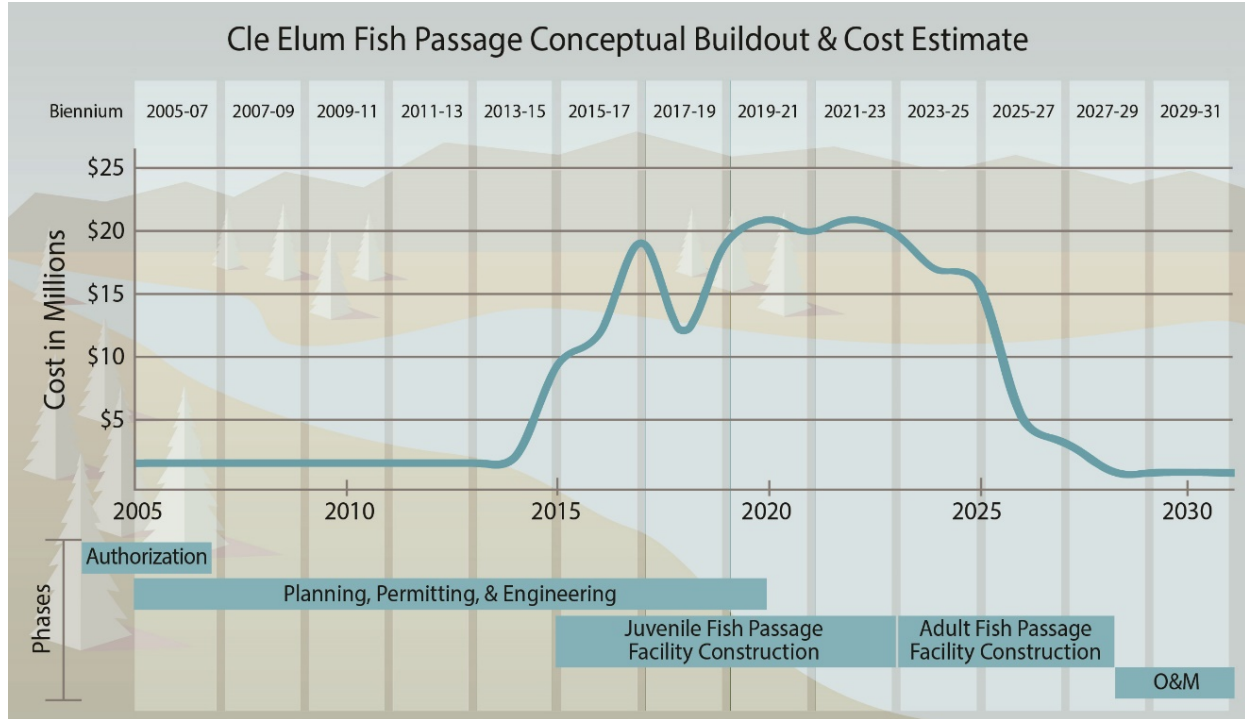


Figure 4: Cle Elum Fish Passage Conceptual Buildout & Cost Estimate

Estimated Costs and Funding Needs

The estimated cost and funding needs⁵ for implementation of the Integrated Plan are presented in the following sections. These sections include the cost estimates for the full buildout (30-year) by element and separated into three decade-long phases (Table 1). Detailed cost estimates for the IDP are laid out in Table 2.

Full Buildout Costs - 2013 to 2043

The current estimated cost for implementing the full buildout of the Integrated Plan is approximately \$4.1 billion, remaining consistent with the previous 2016 Cost Estimate and Financing Plan. Over the last two years additional investigations, project proposals, and changing timelines have shifted cost among the three development phases. Regardless of these timeline changes, the full buildout cost estimate of the plan have remained relatively unchanged since 2013.

The cost estimates provided in Table 1 are high-level estimates, which are being refined as projects undergo feasibility studies and design. The Surface Water Storage Element holds the highest estimated full buildout costs among all seven elements, at approximately \$2.2 billion. The lowest projected full buildout cost estimate is for the Market Driven Water Reallocation Element at \$4.0 million. Cost estimates of the other five elements, Habitat/Watershed Protection and Enhancement, Fish Passage, Structural and Operational Changes, Enhanced Water Conservation Elements, and Groundwater Storage all range in the multiple hundreds of millions, specifically between approximately \$123 million to \$530 million.

Full buildout cost estimates are derived from a combination of the Initial Development Phase funding needs as identified by the PEIS⁶, and the estimated undiscounted capital cost found in the 2012 Yakima River Basin Integrated Water Resource Management Plan Framework for Implementation Report. Ecology and Reclamation also issued a four-accounts benefit to cost analysis of the Integrated Plan at full buildout (30-year costs) in 2012.

The benefit to cost analysis tabulated the combined benefits and the costs of the full suite of Integrated Plan projects. Analyzed as a suite of integrated projects versus individual projects, the Integrated Plan yields favorable benefit-to-cost ratios. However, when the Integrated Plan is separated into its component pieces, benefit-to-cost ratios of some individual projects are not favorable, putting a few project's economic viability into question. This is why the integrated approach was specifically developed to capture the synergy of all elements, projects, and activities progressing simultaneously.

⁵ Cost estimates do not include inflation.

⁶ Integrated Plan PEIS website: <https://fortress.wa.gov/ecy/publications/documents/1212002.pdf>

Table 1: Estimated Costs for Integrated Plan 30 Year Implementation Project

INTEGRATED PLAN ELEMENT	INITIAL DEVELOPMENT PHASE (DECADE 1)	MIDDLE DEVELOPMENT PHASE (DECADE 2)	FINAL DEVELOPMENT PHASE (DECADE 3)	FULL DEVELOPMENT COSTS (3 DECADES)
Habitat/watershed protection and enhancement	\$361,400,000	\$59,550,000	\$59,550,000	\$480,500,000
Fish passage (6 projects)	\$185,200,000	\$244,800,000	\$100,000,000	\$530,000,000
Surface water storage	*\$247,700,000	**\$986,425,000	**\$982,425,000	\$2,216,550,000
Groundwater storage - regional and municipal	\$7,400,000	\$57,900,000	\$57,900,000	\$123,200,000
Structural and operational changes	\$120,500,000	***\$102,800,000	***\$102,800,000	\$326,100,000
Enhanced water conservation	\$65,600,000	\$181,950,000	\$181,950,000	\$429,500,000
Market driven reallocation	\$3,100,000	\$475,000	\$475,000	\$4,050,000
Integrated plan update costs		\$1,500,000	\$1,500,000	\$3,000,000
Total	\$990,900,000	\$1,635,400,000	\$1,486,600,000	\$4,112,900,000

*Keechelus to Kachess Pipeline was classified as Operational Modifications in the IDP Costs. The Kachess Reservoir Drought Relief Pumping Plant Project is included as Surface Water Storage.

**Average costs of next two projects recommended under the Integrated Plan, plus updated water needs analysis and Columbia River availability analysis. The cost of subsequent storage projects described in the Integrated Plan have been averaged and divided equally between decade two and decade three because final decisions regarding whether to proceed with those projects and project sequencing have not been made. Decade two costs also include estimates for providing updated water needs and Columbia River water availability analyses.

***Includes prorated costs of Wapatox Canal Conveyance, KRD Main Canal, South Branch Modifications and Roza subordination. Estimated costs for the Wapatox Canal Conveyance, KRD Main Canal and South Branch Modification, and Roza Subordination projects have been totaled and divided equally between decade two and decade three because decisions regarding project sequencing have not been made.

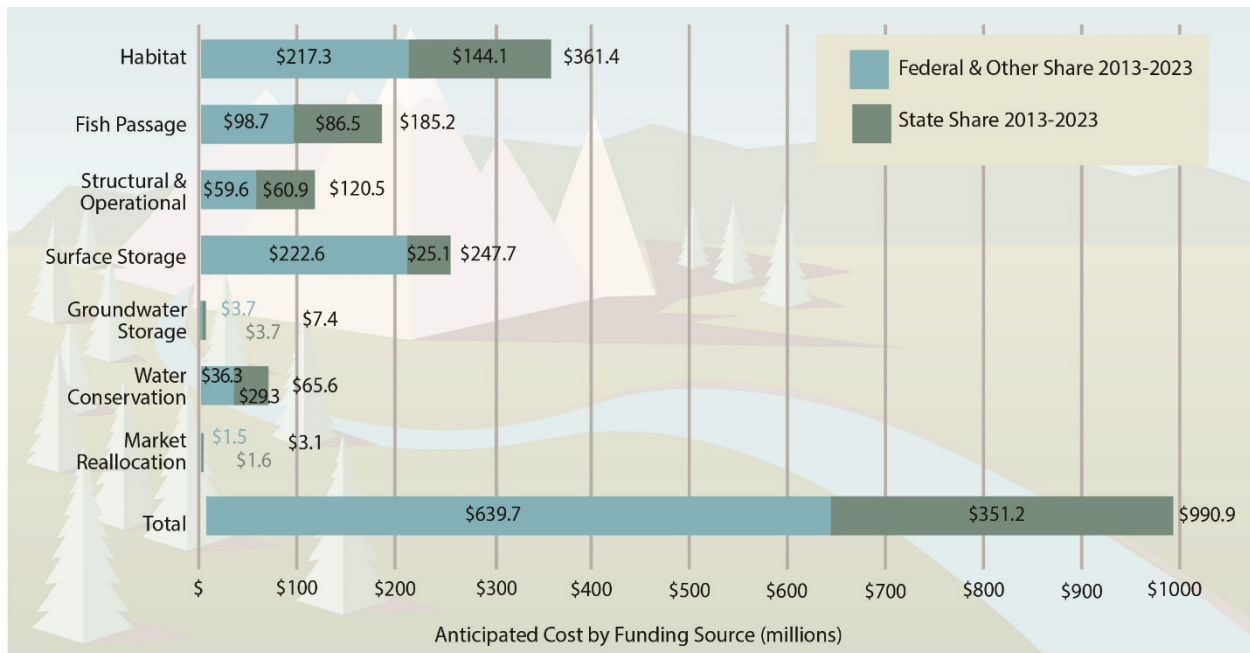


Figure 5: Initial Development Phase Estimated Costs

Initial Development Phase - 2013 to 2023

The Initial Development Phase (IDP) is the first 10-year phase, beginning in July 2013 and continuing through June 2023. Current funding estimates for the IDP are approximately \$990.9 million, with federal and other project partners expected to contribute approximately \$640 million (65%) of estimated costs (Figure 5). The cost estimate of the IDP has ranged from \$896 million up to \$990 million in any given year since 2013.

Projected cost estimates are expected to change as project designs are developed and refined; funding sources are identified, feasibility studies are completed and permitting and mitigation requirements are determined. While the full buildout costs have remained relatively unchanged since the 2013, funding needs have shifted between all three development phases (Figure 1) as project priorities and timelines have been modified and additional projects are incorporated into the IDP. The difference between the IDP estimates are largely the result of the movement of several projects between development phases.

In particular, an additional \$200 million was moved from the Middle Development Phase (MDP) to the IDP cost estimate for the potential construction of the Kachess Drought Relief Pumping Plant, increasing the anticipated IDP cost estimate (and lowering the MDP). Furthermore, several large projects originally anticipated to start mid-IDP are now expected to span both the Initial and Middle phases. Both the Keechelus to Kachess Conveyance Project and the Tieton Dam Fish Passage Project are now expected to shift portions of their project timelines into the MDP, spreading out the anticipated cost between the IDP and MDP. Further discussion on these changes are discussed in the Adaptive Management Plan section of this report.



Yakima Valley

The IDP⁷ includes funding for a number of specific large capital projects including (Table 2)

- Kachess Drought Relief Pumping Plant – \$236.2 million.
- Fish Passage at Cle Elum Dam – \$ 131.6 million.
- Three-foot pool raise at Cle Elum Reservoir – \$26.8 million.

Other components of the IDP to highlight include:

- \$57.4 million in agricultural conservation.
- \$99.3 million for the acquisition of the Teanaway Community Forest.
- \$7.4 million in aquifer storage and recovery projects. \$3.1 million for fostering water banking and exchange programs.

⁷ These dollars amounts do not necessarily reflect total project costs, but rather the cost of implementation for each project during the IDP.

Financing Plan

Consistent with RCW 90.38.120(3), the financing plan must:

- *Identify and evaluate potential new state financing sources to pay for the State's contribution towards the overall cost of Integrated Plan implementation;*
- *Identify and evaluate potential new local financing sources to pay for a significant local contribution towards the overall cost of Integrated Plan implementation;*
- *Consider the viability and evaluates the advantages and disadvantages of various financing mechanisms such as revenue bonds, general obligation bonds, and other financing models;*
- *Identify past, current, and anticipated future costs that will be, or are anticipated to be, paid by non-state sources; and*
- *Consider how cost overruns of projects associated with the Integrated Plan could affect long-term financing of the overall plan, and provide options for addressing cost overruns.*

Each of these requirements are addressed in the sections below. Additional funding strategies and potential funding sources are also presented here to clarify overall financing issues related to the Integrated Plan.

State Funding Mechanisms

State backed capital projects are typically funded through two primary mechanisms, bonds and cash (pay-go). These projects and their funding sources are determined by the legislature and are included in the biennial capital budget. Additionally, there are alternative financing mechanisms, including grants, loans, and Public Private Partnerships (P3s), that may be available to fund portions of the Integrated Plan projects, if approved.

The Legislature has delegated to the State Finance Committee the authority to supervise and control the issuance of all State bonds and other state obligations, including financing leases, authorized by the Legislature. The Committee is composed of the Governor, Lieutenant Governor and Treasurer. The Treasurer is the Chairman of the Committee, and the Office of the State Treasurer provides administrative support to the Committee.

Table 2: Initial Development Phase Estimated Costs

Amount in Millions (blank cells denote "0" funding or request)				Appropriated State Funding			Requested State Funding	Anticipated State Funding	Federal & Other Sources of Funding		
Integrated Plan Elements	Projects	Projected Funding Requests from all Sources 2013-2023	Anticipated Federal & Other Share 2013-2023	Anticipated State Share 2013-2023	2013 - 2015	2015 - 2017	2017 - 2019	2019-2021	2021-2023	2014-2018	2019-2023 ^a
Habitat	Teanaway Forest Acquisition	99.3		99.3	99.3						
	Teanaway Forest Planning & Operations (non-Ecology)	7.5		7.5	1.0	0.5	1.5	2.3	2.2		
	Kittitas County impacts offset for Teanaway Forest	10.0	5.0	5.0	5.0						5.0
	Other State Land Acquisitions ^b	14.0	8.2	5.8	5.8					8.2	0.0
	NRCS RCPP - Yakama Nation Projects	22.6	22.6							5.3	17.3
	NRCS EQIP	20.5	20.5							5.0	15.5
	NMFS Pacific Coastal Salmon Recover Fund	20.4	20.4							6.0	14.4
	USACOE levee reconfiguration., setback & removal	13.2	13.2							4.7	8.5
	BPA NPCC Fish and Wildlife Program	94.3	94.3							94.3	0.0
	Tributary/Mainstem Habitat Restoration Projects	38.8	19.4	19.4	2.4	2.5	5.4	4.3	4.8		19.4
	Bull Trout Enhancement	13.6	6.8	6.8		1.7	1.7	1.7	1.7		6.8
	Federal, Tribal, Local Habitat Actions & Land Acquisitions ^c	7.2	6.9	0.3		0.3				6.9	0.0
Fish Passage	Cle Elum Dam	131.6	71.9	59.7	8.8	9.0	9.0	20.1	12.8	32.4	39.5
	Tieton Dam	44.8	22.0	22.8	0.6	0.5		0.8	20.9		22.0
	Clear Lake Dam passage	8.0	4.0	4.0			1.5	1.0	1.5		4.0
	Box Canyon Creek	TBD	TBD	TBD				TBD	TBD		TBD
	USFWS National Fish Passage Program funds	0.8	0.8							0.8	0.0
Structural & Operational	Keechelus to Kachess Conveyance Project	89.0	43.7	45.3	0.5	4.2		0.0	40.6	1.0	42.7
	Cle Elum Dam/Pool Raise	26.8	13.4	13.4	2.8	1.0	3.0	3.3	3.3	2.0	11.4
Modifications	Roza Power Subordination ^d	0.2		0.2	0.2						0.0
	Chandler Power Subordination ^d	TBD	TBD	TBD				TBD	TBD		TBD
	Kittitas Reclamation District Canal Modifications	TBD	TBD	TBD				TBD	TBD		TBD
	Upper Yakima System Storage	4.5	2.5	2.0				2.0			2.5

Surface Storage	Kachess Drought Relief Pumping Plant (KDRPP) ^e	236.2	218.6	17.6	12.6	4.3	0.7			2.6	216.0
	Wymer Dam and Reservoir	10.5	3.5	7.0	0.5		3.0	3.5			3.5
	Bumping Reservoir Enlargement	1.0	0.5	0.5	0.5						0.5
Groundwater Storage	Regional Storage Options	7.0	3.5	3.5	0.2	0.5	1.1	0.6	1.1		3.5
	Municipal ASR Projects	0.4	0.2	0.2	0.2						0.2
Water Conservation	Agricultural Conservation Projects	57.4	28.7	28.7	2.4	4.8	5.0	4.5	12.0	3.8	24.9
	Municipal/Domestic Conservation Programs	1.2	0.6	0.6	0.1	0.2	0.1	0.1	0.1		0.6
	BIA WIP improvements	7.0	7.0							7.0	0.0
Market Driven Water Reallocation	General support for markets and banking	3.1	1.5	1.6	0.4	0.5	0.6	0.1		0.1	1.4
Total		990.9	639.7	351.2	143.3	30.0	32.6	44.3	101.0	180.1	459.6
percentage Share		100%	64.6%	35.4%	14.5%	3.0%	3.3%	4.5%	10.2%	18.2%	46.4%

Notes:

(1) RCW 90.38.120 - Legislative Intent - Cost to implement integrated plan states: (1)(a) It is the intent of the legislature for the State to pay its fair share of the cost to implement the integrated plan. At least one-half of the total costs to finance the implementation of the integrated plan must be funded through federal, private, and other nonstate sources, including a significant contribution of funding from local project beneficiaries. This section applies to the total costs of the integrated plan and not to individual projects within the plan.

(2) RCW 90.38.120 - Legislative Intent - Cost to implement integrated plan states: (1)(b) The State's continuing support for the integrated plan shall be formally reevaluated independently by the governor and the legislature if, after December 31, 2021, and periodically thereafter, the actual funding provided through nonstate sources is less than one-half of all costs and if funding from local project beneficiaries does not comprise a significant portion of the nonstate sources.

(3) The projects and specific costs are subject to change or modification as new information becomes available over the course of the 30 year implementation schedule of the Yakima Integrated Plan. The State and non-state cost share is yet to be defined. This estimate is guided by the projected state support provided over the next three biennia. If non-state funding was increased during this time, the required state funding might need to be increased to conform to RCW 90.38 and in conformance with agreed upon cost-share methodology. The estimates provided in this projection illustrates a possible state and non-state cost share approach and may not be consistent with other published cost estimates for the overall integrated plan.

(4) Costs do not include inflation. They are listed in dollars from the most recent study available (typically 2012 to 2015 dollars) and are subject to change as new information becomes available through additional feasibility and design studies and/or changes by the Yakima Integrated Plan Workgroup.

(a) In 2016, the funding estimate for 2016-2023 federal and other sources is projected to be equivalent to the anticipated state share of funding for the 2013-2023 timeframe. The specific amount dedicated to each project is yet to be determined for the federal and other sources of funding. The 2019 - 2023 estimates were not updated as a result of this original equivalency estimate.

(b) Includes Tieton Cattle Co. /North Fork Cowlitz Creek; and Heart of the Cascades/Manastash Block.

(c) Funded by LWCF in 2014 and 2015. Includes acquisitions in Naches watershed; Cabin Creek, Log/Thetis Creek. Some of these went beyond "primary" YBIP goals.

(d) Funding for power subordination costs and KRD canal modification costs are listed as TBD due to insufficient information to reasonably cost-out. Inclusion of costs for these three items will increase the total state and non-state share of overall funding.

(e) Includes funds spent by Roza ID on Kachess Emergency Floating Pumping Plant - cost assumes floating plant alternative.

Taxes

The State's options for increasing taxes to pay for the Integrated Plan are very limited. The one exception would be the State public utility tax. This tax applies to gross income derived from operation of public and privately owned utilities. These utilities include the general categories of transportation, communications, and the supply of energy and water. Income from utility operations is taxed under the public utility tax and is in lieu of the Business & Occupation tax. Any increase in the public utility tax would be universal across the State.

Pay-Go

Historically, the State's most common method of financing capital projects such as building construction, land acquisition, and transportation is through appropriations of State revenues, or "pay-go". Pay-go offers the most cost effective way to pay for projects with State funds, as it removes the interest costs included with debt financings. Note that cash funding projects may be subject to political pressures. If the project construction takes place over more than one biennium, it will require re-appropriation to carry forward the expenditure authority initially established.

Bonds

The alternative to cash funding state capital projects is to issue bonds. Bonds are a form of debt financing that are issued in exchanged for guaranteed future principal and interest payments (debt service) to the bondholders. With debt financings, funds are available for the project immediately and with greater predictability than other sources of funds. Although the State pays interest, debt-financed capital projects can be cost-effective if borrowing costs are less than the costs associated with construction delays. In addition, debt financing can promote tax equity, as each asset is paid for over its useful life and not all-at-once by current taxpayers in a given year. Various forms of bonds that the State has historically issued include general obligation (GO) bonds, revenue bonds, and certificates of participation.

GO bonds are the most common type of bond issued by the State. A GO bond is debt backed by the full faith, credit, and taxing power of the State. The State's GO bond program is structured to be very conservative. These bonds are issued with a 25-year maturity and level debt service payments over the life of the bonds. Nearly all GO debt is subject to the debt limit. The GO pledge and the conservative structure of the program allow the State to maintain a strong credit rating with the major rating agencies⁸.

Obligating future tax revenues for the repayment of debt commits resources from future biennia for today's capital projects. For this reason, the amount of debt service that can be paid in a given

⁸ The State's GO credit rating is Aa1, AA+, AA+ (Moody's, A&P, Fitch). Having a strong credit rating is valuable, as a rating downgrade would substantially add to the interest costs when issuing debt.

year is limited by the State Constitution to a percentage of the general state revenues. RCW 90.38 was amended to established two accounts in the State Treasury specifically for the deposit of proceeds from bond sales for the Yakima River Basin Integrated Water Resource Management projects.

Other State Funding Sources

Lease/Purchase Program – Office of the State Treasurer

Certificates of Participation (COPs) are a form of debt issued by the Office of the State Treasurer through the State’s Lease/Purchase program. The Lease/Purchase Program provides state agencies with alternative ways to finance essential real estate and equipment over a multi-year period. COPs consolidate financing contracts from the various agencies that agree to pay a lease on property or equipment purchased through the State. This program benefits agencies with the programs low tax-exempt financing rates and provides economy of scale.⁹ Each lease requires a minimum \$10,000 threshold, and terms of the lease cannot exceed the useful life of the asset being financed (maximum 20 years). Local governments have access to COPs through the Office of State Treasurer’s LOCAL Program.

Recreation and Conservation Office

The Recreation and Conservation Office (RCO) is a state agency that manages a variety grant programs to create outdoor recreation opportunities, protect the State’s wildlife, habitat, and farmland, and to help return salmon from near extinction. RCO supports numerous funding programs through the Recreation and Conservation Funding Board (RCFB) and the Salmon Recovery Funding Board (SRFB). The RCFB was established in 1964 by Citizen Initiative 215 to finance recreation and conservation projects throughout the State.

RCFB funds can be used for a variety of projects including the construction of parks, trails, ball fields, and boating facilities to the conservation and restoration of wildlife habitat. Specific grant programs administered by the RCFB include Aquatic Lands Enhancement Account, the Land and Water Conservation Fund, and the Washington Wildlife and Recreation Program.

In 1999, the Washington State Legislature established the SRFB to administer state and federal funding and to assist with a broad range of salmon-related activities with the primary goal of recover salmonids (salmon, trout, and steelhead) by providing grants to local organizations. The SRFB provides funding for habitat projects that will achieve sustainable and measurable benefits for salmon and other fish species. Projects can include riparian, freshwater, estuarine, nearshore, saltwater, and upland protection and restoration of salmon habitat. Specific grant programs administered by the SRFB include the Estuary and Salmon Restoration Program, the Family Forest Fish Passage Program, and the Salmon Recovery Grants.

⁹ The State’s COP credit rating is rated Aa2 by Moody’s, a slight step down from the Aa1/AA+/AA+ (Moody’s S&P, Fitch) rating of the State’s GO program.

Centennial Clean Water Program Grants

Authorized by Chapter 173-95A WAC and Chapter 70.146 RCW, the Centennial Clean Water program is funded by state dollars, provided primarily via the State Building Construction Account. The Centennial program provides grants for water quality infrastructure and nonpoint source pollution projects to improve and protect water quality. Ecology is responsible for the administration of Centennial Program grants to local governments, special purpose districts, conservation districts, and federally recognized Tribes. Eligible infrastructure projects are limited to wastewater treatment preconstruction and construction projects for qualified hardship communities. Eligible nonpoint projects include stream restoration and buffers, on-site septic repair and replacement, education and outreach, and other eligible nonpoint activities.

Floodplains by Design

Floodplains by Design is a collaborative partnership integrating flood risk reduction with habitat protection and restoration. While Ecology, The Nature Conservancy, and the Puget Sound Partnership lead the initiative, the hallmark of Floodplains by Design is that the supported projects are built from the ground up by local project proponents and community stakeholders.

Since 2013, the State of Washington has been investing in projects using the Floodplains by Design approach by leveraging significant funds from other state and federal sources. As the Floodplains by Design partnership has grown, so have the number of floodplains projects in need of funding. The State awarded new funding in the 2015-2017 budget for this program, allowing seven projects to move forward including the Yakima Floodplain Management Program.

Other potential state funding sources are summarized below in Table 3.

Table 3: Other Potential State Funding Sources

SOURCE OF FUNDS	FUNDING AGENCY	TYPES OF PROJECTS	REPAYMENT SOURCE
Public Works Board	Washington State Department of Commerce	Infrastructure Improvements	Loan
Clean Water State Revolving Fund Loans	Washington State Department of Ecology	Pollution Control Projects	Loan
Washington Water Acquisitions Program	Washington State Department of Ecology	Water Rights Acquisitions	Grant
Family Forest Fish Passage Program	Washington State Department of Natural Resources	Culvert and stream Crossings Improvements	Grant
Brian Abbott Fish Barrier Removal Board	Washington State Department of Fish and Wildlife	Fish barrier removal	Grant

Non-State Funding Sources

Federal

The Bureau of Reclamation has partnered with the State of Washington since 2009 to develop the Integrated Plan. While the State passed the Yakima River Basin Water Resource Management Act in 2013, to date no federal legislation has passed. Currently there are two bills regarding the Integrated Plan moving through the 115th Congress, Senate Bill 714 and House Resolution 4419. Both bills have passed out of their respective committees and are awaiting further action in their houses of origin.

The two bills are different in terms of how they propose to move the Initial Development Phase of the Integrated Plan forward. The Integrated Plan's Implementation Committee has been working with Washington's Congressional delegation to support these efforts and eventually reconcile the two legislative approaches if and when they move through the next steps in the 115th Congress. Unfortunately, until the proposed legislation moves forward through Congress, the large scale funding needed for implementation of major projects is not available from the federal government.

Although no Integrated Plan federal legislation has passed to date, Congress has passed relevant legislation related to the Yakima River Basin. In 1979, Congress authorized the Yakima River Basin Water Enhancement Project (93 Stat. 1241, Public Law 96-162). In 1984, Congress authorized the Hoover Power Plant Act, which authorizes Reclamation to install fish passage on Reclamation's dams. Finally, in 1994, Congress authorized Title XII of the Yakima River Basin Watershed Enhancement Project (Public Law 103-434). It is with these federal authorities that Reclamation has provided significant contributions to the Cle Elum Fish passage facility construction.

Water and Related Resources Account

The Water and Related Resources account is the Bureau of Reclamation's principal operating account. It supports the development, management, and restoration of water and related natural resources in 17 Western States. The account includes funds for the operation and maintenance of existing facilities and to conduct studies focused on ways to improve water use and related natural resources. Projects and programs funded under this account are conducted in partnership with other Federal agencies and non-Federal entities. Examples of funded programs include Reclamation's Endangered Species Act recovery programs, actions in support of the goals of the America's Great Outdoors Program, and the WaterSMART Grants Program.

Over the past several years, the State has repeatedly requested through our congressional delegation that the Bureau of Reclamation be appropriated additional funding to help fund authorized portions of the Integrated Plan such as fish passage and water supply projects. For fiscal year 2019, the State requested \$30 million dollars be appropriated to Reclamation for Integrated Plan support.

Water Infrastructure Finance and Innovation Program

The Water Infrastructure Finance and Innovation Program (WIFIA) was established in 2014 by the Water Infrastructure Finance and Innovation Act. The WIFIA program is a federal credit program administered by the EPA to provide long-term, low cost supplemental loans for regionally and nationally significant water infrastructure projects. Modeled after the Transportation Infrastructure Finance and Innovation Act, the program is intended to leverage nonfederal funds by providing loan guarantees and direct loans at long-term Treasury rates. WIFIA funds can achieve significant leverage because they only have to cover the risk of project defaults, which historically have been infrequent. WIFIA eligible projects must be determined to be creditworthy with loans repayable from a dedicated revenue source within 35 years of project completion. In October 2014, the House Natural Resource Committee passed proposed legislation that would apply the basic provisions of WIFIA to Reclamation projects.

WaterSMART

Reclamation's WaterSMART Water and Energy Efficiency Grants (formerly Challenge Grants) provide 50/50 cost share funding to irrigation and water districts, tribes, states, and other entities with water or power delivery authority. Projects are selected through a competitive process and the focus is on projects that can be completed within two to three years. Water and Energy Efficiency grants are awarded to projects that result in quantifiable water savings and those that support broader water reliability benefits. Additional grant types of the WaterSMART program initiative include Small-Scale Water Efficiency Projects and Water Marketing Strategy Grants. Small-Scale Water Efficiency Projects are awarded to small-scale water management projects identified through previous planning efforts. Water Marketing Strategy Grants are awarded to entities exploring actions that develop or facilitate water marketing.



Completed Cle Elum Pool Raise 3' Radial Gate Expansion

Other potential federal funding sources are summarized below in Table 4.

Table 4: Other Potential Federal Funding Sources

SOURCE OF FUNDS	FUNDING AGENCY	TYPES OF PROJECTS	REPAYMENT SOURCE
The Water Infrastructure Improvements for the Nation (WIIN) Act	U.S. Army Corps of Engineers, U.S. Bureau of Reclamation	Water Infrastructure Improvement	Grant
North American Wetlands Conservation Act (NAWCA)	U.S. Fish & Wildlife	Wetland Habitat Restoration	Grant
Fish & Wildlife Conservation Act	U.S. Forest Service, NOAA	Conservation of Nongame Fish and Wildlife	Grant
Cooperative Endangered Species Conservation Fund (CESCF)	U.S. Fish & Wildlife	Endangered Species Conservation	Grant
Regional Conservation Partnership Program (RCCP)	U.S. Department of Agriculture's National Resource Conservation Service	Voluntary Land Conservation	Grant
Land and Water Conservation Fund (LWCF)	U.S. Department of Interior	Land, Water, and Wetlands Purchases	Grant
Partners for Fish & Wildlife	U.S. Fish & Wildlife	Habitat Restoration	Grant
USFWS Recovery Implementation Program	U.S. Fish & Wildlife	Endangered Species Conservation	Grant
BLM/USFS Interagency Special Status/Sensitive Species Program (ISSSP) Grants	U.S. Bureau of Land Management/ U.S. Forest Service	Conservation and Management of Rare Species	Grant
EPA Clean Water Act Section 319 Grants	U.S. Environmental Protection Agency	Water Pollution Prevention	Grant
Hazard Mitigation Grant Program	Federal Emergency Management Agency	Flood Prevention/Habitat Restoration	Grant

Tribal

Bureau of Indian Affairs

As part of the Division of Natural Resources, the Branch of Water Resources contains the Water Management, Planning, & Predevelopment Program that funds projects that aid in the protection and management of their water resources. These projects typically include, but are not limited to, ground and surface water studies regarding quantity and quality of water, water needs assessments, stream gauging, and the preparation of comprehensive water management plans.

Bonneville Power Administration Columbia Fish Accords

Signed in May 2008, the Bonneville Power Administration Columbia Fish Accords secured \$900 million for salmon restoration projects throughout the Columbia River Basin that focus on adaptive management of dam operations addressing salmon passage and survival. Projects can focus on sustainable harvesting, fish passage, fish propagation strategies, habitat conservation and restoration, lamprey recovery, and/or public education and outreach.

Clean Water Act Section 106 Tribal Grant Program

This program assists federally recognized Tribes in developing institutional capacity for the administration of water quality and natural resource protection programs. Eligible projects include water quality monitoring and assessments, developing a monitoring strategy, developing and implementing ground water quality monitoring programs, producing annual water quality assessment reports, and developing tribal-approved water quality standards.

Clean Water Act Section 319 Tribal Grant Program

This program provides grants and technical assistance to federally recognized tribal environmental programs for the assessment and management of nonpoint source pollution problems and threats. Eligible projects include, but are not limited to, watershed-based development plans, riparian planting, livestock exclusion fencing, nonpoint source pollution ordinance development, and public outreach and education.

Other potential tribal funding sources are summarized below in Table 5.

Table 5: Other Potential Tribal Funding Sources

SOURCE OF FUNDS	FUNDING AGENCY	TYPES OF PROJECTS	REPAYMENT SOURCE
Community Economic Revitalization Board	Washington State Department of Commerce	Public Infrastructure	Loan
Indian Affairs Loan Guarantee Program	Bureau of Indian Affairs	Tribe-Owned or Small-Business Projects	Loan
Water and Wastewater Predevelopment Planning Grants	U.S. Environmental Protection Agency	Development of Rural Water and Waste Disposal Projects	Grant

Local

Property Taxes

Local property taxes are one of the main revenue sources for municipal governments across the state. The non-voter approved total property tax limit in Washington is \$10 per \$1,000 of assessed value. The state (including education) receives up to \$3.60 of this amount and local districts receive \$5.90. The remaining \$0.50 goes to additional purposes such as affordable housing and criminal justice. Of the \$5.90 limit for local government, cities can receive up to \$3.375 and counties can receive up to \$1.80 for the general fund. Counties can also increase county road levies up to \$2.25 in unincorporated areas. Junior taxing districts (e.g. fire, water, hospital, etc.) then receive any remainder. Public Utility Districts (PUDs) and port districts are senior districts that have an additional limit of \$0.45 and are not subject to the \$5.90 aggregate limit for local regular levies.

A local government can utilize the single year or multi-year levy authorization. Each levy is voter approved and is for specific purposes. A single year levy approach is not practical for long-term investments. However, a multi-year levy could help authorize some components of the Integrated Plan. An alternative is for the legislature to authorize a specific levy within the three counties for plan investments. All three counties under the Integrated Plan have the ability to increase their total tax level. Benton County's levy rate is \$1.279 per \$1,000 of assessed value, Kittitas County's value is \$1.347 per \$1,000 assessed value, and Yakima County's is \$1.620 per \$1,000 of assessed value.

Local Sales Taxes

Local governments have the ability to propose sales tax increases in their district, subject to voter approval, for a variety of purposes. The state has rights to the first 6.5% of sales taxes. Examples of this include Prosser, which currently has a 2.1% sales tax on top of the state's portion, and the City of Yakima that currently has an additional 1.7% sales tax on top of the state's portion.

City Utility Tax

City utility taxes can be levied on the gross operating revenues earned by private utilities from operations within the boundaries of a city, and by a city's own municipal utilities. Taxable utilities include electric, water, sewer, solid waste, storm water, gas, telephone, cable TV and internet, and steam. Limitations to utility taxes include the set rate of 6% on electric, gas, cable, steam and telephone. Taxes on utilities are allowed to be put in the general fund, unlike rates collected by utilities, which must be spent on that specific enterprise.

Municipal Bonds

Similar to the state, local governments also have the ability to issue municipal bonds. The Washington State Constitution limits the amount of outstanding debt a government can have. This limitation is based on a percentage of the assessed valuation of the taxable properties within the jurisdiction. The formula is uniform for all jurisdiction types, but allows two exceptions - one for cities and towns and one for school districts.

Local government's limitation is 1.5% of assessed value for non-voter approved debt. When debt is approved by 60% of a jurisdiction's voters, total allowable debt increases to 5% of assessed value. Cities and towns are allowed an additional 5%, provided the extra 5% is voter-approved and is used to supply the city or town with jurisdiction-owned and operated water, lighting, and sewer services. School districts are also allowed an additional 5% for capital outlays, assuming the projects are voter approved.

Revenue and special assessment debt are the two main categories of debt that do not count against debt capacity. Revenue debt pledges a specific stream of revenue. Examples include debt for jurisdiction-owned water and sewer systems, which pledge the fees paid by system users. Special assessment debt may be paid off by collecting property taxes assessed only on the specific parcels that benefit from a financed project. A typical example is taxes assessed on an individual neighborhood for the installation of streetlights or sidewalks.

Certificates of Participation (LOCAL Program) - Office of the State Treasurer

Similar to the State's Lease/Purchase program, the Office of the State Treasurer offers a COP program to municipal governments, called the LOCAL program. Local governments are able to achieve economies of scale and use the LOCAL programs strong credit rating to finance real estate and equipment.

Local Improvement Districts

Most municipal governments (cities, counties, water and sewer districts, ports, fire protection districts) can use the basic Local Improvement Districts (LID) processes established in RCW 35.43 through 35.56. The LIDs are a way to assist local municipal governments in financing needed capital improvements through the formation of special assessment districts. Special assessment districts permit improvements to be financed and paid for over a period of time through assessments on the benefiting properties.

A LID sells bonds to investors and then repays those bonds via annual assessments on the property owners within the district. The goal of the LID process is to develop a structure with a credit that is attractive to investors, and with assessments that are as fair as possible in relation to special benefits received. Statutes specify that parcel assessments must not exceed the special benefit of the improvement to that parcel, which is defined as the difference between the fair market value of the property before and after the local improvement project. The assessments must also be proportionate to one another.

Irrigation and Reclamation Districts

Irrigation districts focus on providing irrigation water whereas reclamation districts are responsible for reclaiming and/or maintaining land threatened by permanent or temporary flooding for agricultural, residential, commercial, or industrial use. Both are governed by an elected board of directors and derive their revenue primarily from property assessments tied to the delivery of irrigation water. Both districts have the authority to issue general obligation and revenue bonds to pay for capital improvements. Landowners within the district have the authority to petition the district for a local improvement district, which will have the authority to incur debt for specific improvements.

Public Utility District Grant

Northern Wasco and Klickitat County Public Utility Districts (PUD) provide financial support for the McNary Mitigation Fund. The McNary Mitigation Fund provides grant funding for projects that focus on fish and habitat restoration efforts above the McNary Dam. Project proposals are reviewed by the McNary Fisheries Compensation Committee, which is made up of representatives from the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Columbia River Inter-Tribal Fish Commission, Oregon Department of Fish and Wildlife, Washington Department of Fish and Wildlife, the Yakama Indian Nation, and the PUD.

Public-Private Partnerships

In general, a Public Private Partnership (P3) is a long-term contract between a private party and a government entity to deliver a public asset or service in which the private party bears a certain amount of risk and management responsibility. P3s, with appropriate state legislation, could be authorized at the local, state, and federal levels and can take a variety of forms, but typically involve a private party participating in a combination of five different aspects of project delivery: design, build, finance, operate, and maintain. At the end of the contract, the asset is generally transferred back to the public.

The private party's compensation can be linked to their performance in executing their contracted service. Legal and transaction costs can be significant due to the challenge of setting terms for the transaction and defining, measuring, and allocating the responsibilities, compensation, and risk for each of the parties over several decades. In accordance with recommendations from the Government Finance Officials Association, the Office of the State Treasurer strongly recommends that proposed public-private partnership transactions undergo a careful review by state finance professionals. This review will include a detailed comparison of public and private costs for major components, as well as a scenario analysis that address risks associated with different possible economic and financial outcomes over the term of the transaction.

Other – Nongovernmental Funding Sources

National Fish and Wildlife Foundation

The National Fish and Wildlife Foundation provides funding on a competitive basis through several programs. Projects that are eligible for these funds must focus on sustaining, restoring, and enhancing fish, wildlife, and plants and their habitats. Two examples of these programs include the Bring Back the Natives program and the Columbia Basin Water Transactions Program. The Bring Back the Natives program funds conservation projects that improve and protect aquatic ecosystems, increase in-stream flows, and create partnerships that benefit native fish species by coordinating with private landowners and federal agencies, tribes, corporations, and states. The Columbia Basin Water Transactions Program funds projects that address chronically diminished stream flows in tributaries of the Columbia River through acquiring water rights voluntarily from willing landowners.

Western Native Trout Initiative Small Grants Program

The Western Native Trout Initiative Small Grants Program provides funding for projects that focus on restoration and/or protection of fish habitat. These projects can focus on riparian and instream habitat restoration, fish barriers construction or removal, population and watershed needs for prioritization and planning improvements, instream flow improvement measures, and/or development of native trout community outreach and education programs.

Other potential nongovernmental funding sources are summarized below in Table 6.

Table 6: Other Potential Nongovernmental Funding Sources

SOURCE OF FUNDS	FUNDING AGENCY	TYPES OF PROJECTS	REPAYMENT SOURCE
Climate Resilience Fund	Non-Governmental Organization/Private Foundation	Climate Resilience Projects	Grant
National Forest Foundation	Non-Governmental Organization/Private Foundation	Forest Health and Recreation	Grant
Trout and Salmon Foundation	Non-Governmental Organization/Private Foundation	Trout and Salmon Restoration	Grant
World Trout Initiative	Non-Governmental Organization/Private Foundation	Habitat restoration and conservation. Instream flow improvement.	Grant

Financing Mechanism Viability Matrixes

The following series of tables (Tables 7-10) provide summaries on the potential advantages and disadvantages (as determined by Ecology and the Washington State Treasurer’s Office) of various Integrated Plan funding sources and financing alternatives: Table 7: State Funding Matrix, Table 8: Federal Funding Matrix, Table 9: Tribal Funding Matrix, and Table 10: Local and Other Funding Matrix.

Table 7: State Funding Matrix

SOURCE OF FUNDS	ADVANTAGES	DISADVANTAGES
Pay-go	Lowest total cost; does not require borrowed capital	Subject to political pressure; increased costs for phasing large scale capital projects in 2-year biennial cycles
State General Obligation (GO) Bonds (Financing) ¹⁰	Lowest cost of borrowing capital	Counts against State’s debt limit
Revenue Bonds (Financing)	Does not count against debt limit	Typical has a higher cost of borrowing than the State's GO debt
Certificates of Participation (Financing)	Allows state agencies to finance real estate and equipment outside the State's Debt Limit	Slightly higher cost of borrowing than the State's GO debt
State Public Utility Tax	Tax on public/private utilities	Increase must be statewide
RCO Recreation and Conservation Funding Board	Multiple grants administered by the board	Grants may require additional recreation or conservation plan
RCO Salmon Recovery Funding Board	Multiple grants administered by the board	Projects must pass through local lead entity review and prioritization
Ecology Centennial Grants Program	State funded grant program	Limited to water quality infrastructure and nonpoint source pollution projects
Floodplains by Design	Heavy local stakeholder involvement	Limited to flood risk reduction with habitat protection and restoration
Public Works Board	Low interest loans	Only qualified applicants and limited to infrastructure
Clean Water State Revolving Fund Loans	Low interest and forgivable loans	Limited to wastewater treatment, eligible nonpoint source reduction.
Washington Water Acquisitions Program	State has cost share partners for this program	Voluntary based program
Family Forest Fish Passage Program	Multi-State agency coordination, option for small forest landowners	Eligibility requirements, Prioritized based on fish habitat benefit
Brian Abbott Fish Barrier Removal Board	No grant cap, except for design only projects which are limited to \$200,000	Eligible projects must address fish barriers

¹⁰ GO Bonds, via the State Building Construction Account (SBCA), are the current funding source for Ecology’s biennial capital appropriations for the Integrated Plan since 2013.

Table 8: Federal Funding Matrix

SOURCE OF FUNDS	ADVANTAGES	DISADVANTAGES
US Bureau of Reclamation Water and Related Resources Account	Principal operating account that can include design, technical support and O & M for federal Reclamation Projects (including Integrated Plan)	Annual action by U.S. Congress, Competition for limited resources
EPA ¹¹ Water Infrastructure Finance and Innovation Program (WIFIA)	Loan program for non-federal water projects, long repayment period with deferred payment option	Loan fees are applicable
US Bureau of Reclamation WaterSMART	Grant program	Requires 50% match
Water Infrastructure Improvements for the Nation (WIIN) Act	New Federal funding authority	Support up to 50% of costs for existing federally owned SW ¹² storage project or up to 25% of a non-federal GW ¹³ or SW project
North American Wetlands Conservation Act (NAWCA)	Small Grants (< \$75,000) Program	Requires 50% match
Fish and Wildlife Conservation Act	Authorizes Federal agencies to assist any State in developing conservation plans	Requires congressional reauthorization
USFWS ¹⁴ Cooperative Endangered Species Conservation Fund (CESCF)	Requires 25% of non-federal match ¹⁵	State must have a cooperative agreement in place to receive grant funding
NRCS ¹⁶ Regional Conservation Partnership Program (RCCP)	Three different funding pools (Critical Conservation Areas, National, State), Columbia River Basin designated one of the CCAs	Competition amongst farming, ranching, and forest operations for funding
Land and Water Conservation Fund (LWCF)	Provides funds for federal, state, and local governments to purchase land, water, and wetlands	Set to expire Sept 30, 2018 without action from Congress
USFWS Partners for Fish & Wildlife	Provides technical and financial assistance to private landowners and Tribes	Requires congressional reauthorization
USFWS Recovery Implementation Program	No cost share requirement	Annual funding notification, small (10k to 80k) funding awards
BLM ¹⁷ /USFS Interagency Special Status/Sensitive Species Program (ISSSSP) Grants	Target species broader than federally listed Threatened or Endangered species	Competition for limited resources
EPA Clean Water Act Section 319 Grants	Focus on State and local nonpoint source efforts	Requires 40 % match, high priority on Total Maximum Daily Load (TMDL) reductions
FEMA ¹⁸ Hazard Mitigation Grant Program	Requires 25% of non-federal match	Limited opportunities for Integrated Plan overlap

¹¹ EPA - Environmental Protection Agency

¹² SW - Surface water

¹³ GW - Groundwater

¹⁴ USFWS - U.S. Fish and Wildlife Service

¹⁵ For this analysis, 25% or less match is considered an advantage

¹⁶ NRCS - Natural Resource Conservation Service

¹⁷ BLM - Bureau of Land Management

¹⁸ FEMA - Federal Emergency Management Agency

Table 9: Tribal Funding Matrix

SOURCE OF FUNDS	ADVANTAGES	DISADVANTAGES
BIA ¹⁹ Water Management, Planning, & Predevelopment Program	Can encompass a wide variety of water related projects that support the management, conservation, and utilization of trust water resources	Non-recurring appropriations through the U.S. Congress
BPA ²⁰ Columbia Basin Fish Accords	Secures available funding for a ten year period	Five years into the original 10 year agreement
EPA Clean Water Act Section 106 Tribal Grant Program	Limited match requirements	Competition for funds with all federally recognized tribes
EPA Clean Water Act Section 319 Tribal Grant Program	Focus on nonpoint source (NPS) pollution	Requires an approved NPS Assessment Report
Community Economic Revitalization Board	Loans and grants to recognized Native American Tribes	Limited to public infrastructure
BIA Indian Affairs Loan Guarantee Program	Up to 90% loan guarantee or loan insurance	\$500,000 maximum
USDA ²¹ Water and Wastewater Predevelopment Planning Grants	Financial assistance for low income communities, Requires at least 25% match	Rural areas with populations or 10,000 or less

¹⁹ BIA - Bureau of Indian Affairs

²⁰ BPA - Bonneville Power Administration

²¹ USDA - U.S. Department of Agriculture

Table 10: Local and Other Funding Matrix

SOURCE OF FUNDS	ADVANTAGES	DISADVANTAGES
LOCAL		
Local Property Tax	Well established for local infrastructure	Maximum tax rate of \$1.80 per \$1,000 of assessed value, requires legislative action
Local Sales Tax	Local funding	Additional tax on local communities, Subject to political pressure on revenue priorities
City Utility Taxes	City general fund	Considered enterprise funds and must be spent accordingly
Municipal Bonds (Financing)	Easy and immediate access to capital	Statutory limitations, requires pay back of borrowed capital, may require voter approval
Certificates of Participation (Financing)	Provides economies of scale for local governments	Limited to real estate and equipment
Local Improvement Districts	Benefits local properties needing capital improvements	Limited to financing infrastructure improvements
Irrigation and Reclamation Districts	Revenue based on property assessments	Requires support of Board of Directors and voting of membership
OTHER		
Public-Private Partnerships	Private sector participation in portions of financing, design, construction, and long-term O&M, possibilities for shared risk	Needs legislative approval, significantly higher legal and financing costs, requires long-term contract
McNary Fisheries Compensation Committee	No state or federal affiliation required	Limited geographically to upstream of McNary Dam
National Fish and Wildlife Foundation	Competitive Grant program	Federal funding not available as match dollars
Western Native Trout Initiative	Small dollar amounts, < \$3,000	Competition with all western states
Climate Resilience Fund	Climate change project focused	501(c)(3) applicant status only, Typically require 50% match
National Forest Foundation	Multiple grant programs	Various levels of match requirements and eligibility requirements
Trout and Salmon Foundation	Small dollar amounts, < \$10,000	Typically require 50% match
World Trout Initiative	Small dollar amounts, between \$5,000 and \$15,000	One proposal per group per fiscal year (May 1 to April 30)
Washington Water Trust	Voluntary, market-based transactions	Limited applicability

Future Outlook

Adaptive Management Plan

The Integrated Plan is an ambitious 30-year effort encompassing a wide variety of both short-term (1-2 year) and long-term (> 10 year) projects. Planning and cost estimates of this 30-year plan must be broken into the State of Washington's biennial (2-year) funding cycles or the federal 3-year funding cycles. A flexible adaptive management approach is critical to the long-term success of the Integrated Plan.

As the full buildout of the Integrated Plan moves forward, individual project schedules, costs, and timelines can change. These changes alter the IDP's timeline, affecting funding requests for the upcoming biennium. For example, construction schedules for fish passage projects (Cle Elum, Tieton Dam, and Clear Lake Dam) are being shifted to allow for design, permitting, technical and project management staff to focus on the first Integrated Plan fish passage project (Cle Elum Dam fish passage). As construction of an innovative fish passage facility was underway at Cle Elum dam, Ecology and Reclamation recognized that getting the first fish passage facility nearly complete was a priority before starting the second major fish passage facility at Tieton Dam.

An example of this adaptive timeline is the implementation of the Tieton Dam Fish Passage Project. This project will now shift from beginning in the 2019-2021 biennium to the following 2021-2023 biennium or maybe even the 2023-2025 biennium to allow for the Cle Elum Fish Passage project to remain fully funded and on schedule (projected juvenile fish passage facility completion goal is 2022).

Another example of schedule shifting is the Kachess Drought Relief Pumping Plant (KDRPP) and the Keechelus to Kachess Conveyance (KKC) project. In 2015, the Roza Irrigation District (Roza) proposed to finance and develop an emergency temporary pumping project to help offset drought related impacts by accessing water storage below the existing outlet structure in the Kachess Reservoir that is normally unavailable during drought conditions. As new information on design options, project costs, and forecasted precipitation came through in late 2015, Roza's Board of Directors decided not to pursue the temporary pumping plant. Instead, the board decided to support a permanent pumping facility known as the Kachess Drought Relief Pumping Plant (KDRPP) and has continued to progress on the design, feasibility and environmental review of the facility.

The proposed primary funding source for KDRPP will be provided by the water users that would benefit from the proposed project. In 2016, Roza, Kittitas Reclamation District (KRD), and Wapato Irrigation Project have all signed a letter of participation as it relates to the Supplemental Draft Environmental Impact Statement of this project. Roza continues to explore P3 financing strategies with the US Department of Interior's Natural Resource Investment Center as KDRPP moves through the environmental review process.

The KKC project was originally proposed to begin implementation in the 2019-2021 biennium as a standalone project. However, as environmental review process of KKC proceeds, KKC is no longer proposed as a standalone project but rather is coupled with the some but not all Kachess Drought Relief Pumping Plant (KDRPP) alternatives. Depending on which KDRPP alternative is selected, will determine the fate of KKC proceeding in the IDP. If a KDRPP alternative that includes KKC is selected as a preferred alternative as a result of the environmental review process, the earliest KKC would proceed is the 2021-2023 biennium, subsequently-delaying the capital funding request also.

The Wymer Reservoir project is one of the proposed surface water storage projects in the Integrated Plan. This project is designed to create an off-channel surface water storage facility in the stream channel of Lmuma Creek. The confluence of Lmuma Creek is approximately eight miles upstream of the Roza Diversion Dam on the Yakima River. The proposed reservoir site is currently under private ownership and would hold up to 162,500 acre-feet.

In 2014 as part of the long term planning process, a Cost Risk Assessment (CRA) workshop was conducted for the proposed Wymer Reservoir. This workshop updated and built upon a previous CRA conducted in 2012. The objective of the 2014 CRA workshop was to quantify uncertainty and risk related to costs and schedules of the preconstruction and construction of the Wymer Reservoir under three different storage capacity scenarios. As a result of this workshop, 20 high-risk elements or potential events were identified that could potentially impact the project cost or schedule. As new information becomes available, the CRA is reevaluated. By identifying high-risk elements or events beforehand, project planners are better equipped to estimate project costs and prepare more develop schedules.

Funding Challenges

One of the challenges for a long-term project is the potential of individual project cost overruns causing scheduling delays and escalating overall Integrated Plan costs. Ecology and the Treasurer's Office considered how cost overruns of Integrated Plan projects could affect the long-term financing of the overall plan.

There are numerous steps that can be taken to minimize the likelihood of project cost overruns. The primary method is to include a reasonable contingency for construction overruns at each phase (e.g., 10%) and then roll that forward into the next biennium if unused. Additional steps include pledging local match in excess of funding needed to cover this contingency, or using supplemental budget requests in between biennia to cover any cost overruns.

The Office of the State Treasurer routinely recommends that long-term finance plans should be based on conservative projections of revenues and expenditures. Scenario analysis must address alternative sources of revenue and project scoping in the event that deliverables are not met. Due to the planning steps outlined above, cost overruns have not been a major challenge for the Integrated Plan to date.

As you reflect on year five of the IDP, federal legislation to authorize all major Integrated Plan projects, with the exception of Cle Elum Dam fish passage, still eludes the planning process. The

Integrated Plan Implementation Committee has been actively working with the State’s congressional delegation on this critical milestone for 2 years; unfortunately, to date, no federal legislation has passed. Therefore, the large scale funding needed for implementation of major projects is still not available from the federal government. Until such time, the state of Washington will continue to support the Integrated Plan and work towards its successful implementation with Reclamation in coordination with the basin stakeholders.

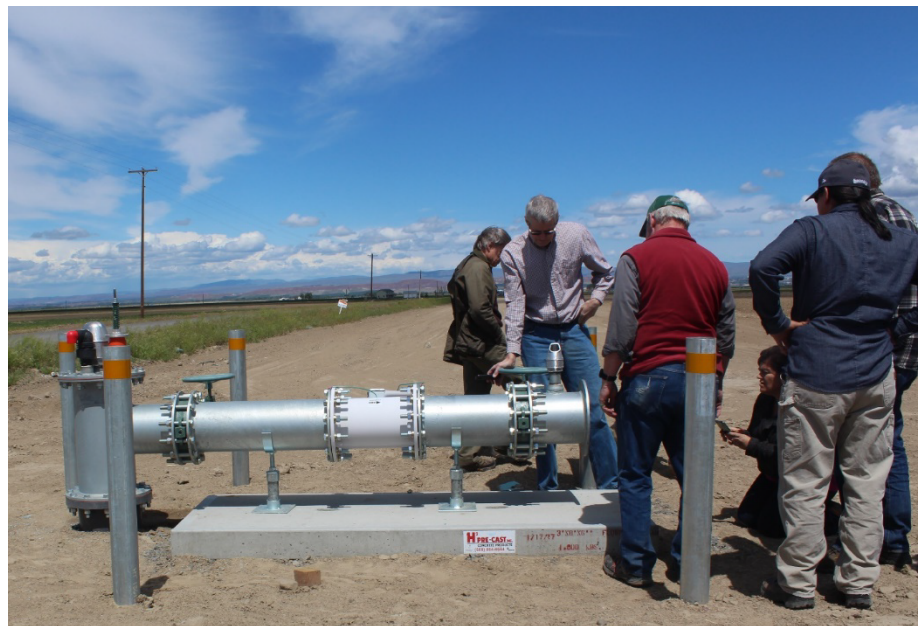
A final challenge has been the recent successes in acquiring matching project funds. These matching project funds have the potential to complicate the proposed budget projections, as they require an “in kind” match of dollars from the Integrated Plan, which are difficult to predict ahead of time. While this is largely considered a positive problem, the difficulty in predicting the success of these funding requests requires an additional level of planning and contingency.

Funding Successes

Non-state Integrated Plan partners, including the Yakama Nation, county governments, cities, major irrigation districts (IDs), and environmental groups, continue to successfully bring outside funds from a variety of sources to work on Integrated Plan related projects. These more local based funding sources can be spent on both administrative related tasks (e.g., meeting attendance, environmental and permitting review, outreach) and project implementation and constructing. The Integrated Plan also continues to receive support from many federal agency funding programs for all seven elements.

As an example, the Yakama Nation has successfully leveraged state Integrated Plan funds to receive Regional Conservation Partnership Program (RCPP) funding for water conservation and pipeline replacement projects as part of the Wapato Irrigation Project in Yakima County. The Kittitas Conservation Trust has successfully leveraged Integrated Plan project funding to secure a US Fish and Wildlife

Service Cooperative Award for habitat restoration and work on large woody debris restoration in Box Canyon Creek, in Kittitas County. Ecology will continue to work with and support our Integrated Plan partners to seek out additional non-state funding opportunities.



WIP Infrastructure Improvements

Next Steps

The 30-year Integrated Plan is now half way through its first 10-year phase known as the Initial Development Phase (IDP), which runs from 2013-2023. Up-to-date cost estimates for the IDP are currently at \$990.9 million, with the State projected to contribute approximately \$351.2 million (35%). Projected full buildout costs of the Integrated Plan have remained steady since 2013 at approximately \$4.1 billion.

Each of the three development phases contain a balanced mix of projects that span all seven elements of the Integrated Plan. These projects provide tangible improvements to instream flows, fish habitat, fish passage, and increased water security of existing out-of-stream water supplies in the Yakima Basin, which in turn provides improvements to economic and environmental sustainability, meeting the needs of water users, restoring salmon, Bull Trout, and steelhead runs, and conserving and restoring vital habitat.

Even with the \$990 million cost estimate for the IDP, the Integrated Plan has a long way to go in securing the overall \$4.1 billion needed to see the plan to completion. This translates to the state funding up to \$2 billion dollars over 30 years or \$1.793 billion over the next 25 years (\$2 billion minus \$207 million invested by the State from 2013 - 2018). In order to successfully continue implementation of the Integrated Plan as it progresses through its IDP and into its next phase, it is crucial that a framework supporting a combined cost sharing approach from federal, State, and local sources be incorporated into the State's budgeting process.

The Office of Columbia River and the Office of the State Treasurer will look to provide a more detailed financial analysis for the next iteration (2020) of this Yakima Basin Cost Estimate and Financing Plan report. This detailed analysis will be one of the building blocks needed as the Integrated Plan moves from the IDP to the MDP, further outlining the financial planning options to meet the funding challenges anticipated as multiple large scale projects proceed concurrently.

Also, to attain the plan's full buildout funding needs and water supply goals, Ecology will continue to:

- Support federal legislation to implement the Integrated Plan.
- Leverage state funds and explore a variety of funding opportunities discussed in the previous sections of this report.
- Utilize our flexible adaptive management approach as projects enter new phases (feasibility, environmental review, design, permitting, construction), while some projects come to completion.
- Implement projects that move all seven elements of the Integrated Plan forward.

In conclusion, the Integrated Plan is a watershed-scale, commonsense approach to solve decades of water conflict. Founded on an innovative federal-state-local-private funding partnership, the Integrated Plan provides a collaborative model for others to emulate nationwide. To ensure a smooth transition from the Initial Development Phase to the Middle Development Phase, federal authorization and a secure state funding framework are crucial steps to continued implementation of large scale, high cost, capital funded infrastructure projects. This ambitious plan provides both water supply security and ecosystem restoration, ensuring the basin's natural resources, culture and economy remain in balance for generations to come.

Appendix A - Members of the Yakima River Basin Water Enhancement Plan Workgroup

American Rivers	Wendy McDermott
Benton County Commission	Jerome Delvin
Kennewick Irrigation District	Seth Defoe
Kittitas County Commission	Cory Wright
Kittitas Reclamation District	Urban Eberhart
National Marine Fisheries Service	Dale Bambrick
Roza Irrigation District	Scott Revell
Sunnyside Valley Irrigation District	Ron Cowin
Trout Unlimited	Lisa Pelly
US Army Corps of Engineers	Bret Walters
US Bureau of Reclamation	Dawn Wiedmeier
US Fish and Wildlife Service	Jim Craig
US Forest Service	Mike Williams
WA Department of Agriculture	Jaclyn Hancock
WA Department of Ecology	Tom Tebb
WA Department of Fish and Wildlife	Mike Livingston
WA Department of Natural Resources	Josh Wilund
Yakama Nation	Phil Rigdon and Dave Fast
Yakima Basin Fish & Wildlife Recovery Board	Alex Conley
Yakima Basin Storage Alliance	Sid Morrison
Yakima City Council	Carmen Mendez
Yakima County Commission	Mike Leita
Yakima-Tieton Irrigation District	Rick Dieker