2016 Cost Estimate & Financing Plan

Yakima River Basin Integrated Water Resource Management Plan

April 2017

Ecology Publication Number 16-12-011

DEPARTMENT OF ECOLOGY
State of Washington

THE OFFICE OF COLUMBIA RIVER
Water for Families, Farms, and Fish

TREASURER OF STATE
WASHINGTON

DEPARTMENT OF ECOLOGY
State of Washington

April 11, 2017

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

RE: 2016 Cost Estimate and Financing Plan Report – Yakima River Basin Integrated Water Resource Management Plan (April 2017)

This is the second Cost Estimate and Financing Plan report submitted to the Washington State Legislature and the Governor in accordance with RCW 90.38.120. This report builds on the information provided in the 2014 report by providing costs for the 2015-2017 and 2017-2019 biennia and summarizing the current 30-year and 10-year cost estimates. The report is now available at this website: https://fortress.wa.gov/ecy/publications/SummaryPages/1612011.html.

In addition to providing cost estimates, this report discusses funding options for the Integrated Plan. In collaboration with the Office of the State Treasure, the Financing Plan provides an overview of funding options including an overview of past state funding, pay as you go, bond, water quality grant opportunities, public private partnerships (P3), and state infrastructure programs. This section also outlines potential local financing sources from project beneficiaries.

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 Rauert by phone at (509) 454-4239 or email at: colleen.rauert@ecy.wa.gov.

Sincerely,

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

Ellen Evans
Deputy Treasurer
Office of the State Treasurer

GTT:JS:cmr (170408)

DEPARTMENT OF
ECOLOGY
State of Washington

Cost Estimate and Financing Plan

Yakima River Basin Integrated Water Resource Management Plan

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For more information, contact:

G. Thomas Tebb
Office of Columbia River
1250 W. Alder St
Union Gap, WA 98903
Phone: (509) 575-2490
E-mail: ocr@ecy.wa.gov

Washington State Department of Ecology - www.ecy.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

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Executive Summary

The Office of Columbia River was created by the Washington State Department of Ecology (Ecology) to implement the Columbia River Water Supply Development Act (RCW 90.90) passed by the State Legislature in 2006. The RCW directs Ecology to aggressively pursue water supply development for both instream and out-of-stream uses. Solving the water resource and aquatic resource problems of the Yakima River Basin has been among the highest priorities of the Office of Columbia River (OCR). To this end, OCR has collaborated with the US Bureau of Reclamation (USBR) and a range of stakeholders in preparing the Yakima River Basin Integrated Water Resource Management Plan (Integrated Plan). The Integrated Plan is a comprehensive package of projects developed to restore ecological functions in the Yakima River system and to provide reliable and sustainable water resources for the health of riverine environment and for agricultural, municipal, and domestic needs.

After passage of Yakima River Basin Water Resources Management Act[1] (RCW 90.38,) OCR embarked on an ambitious 30-year effort encompassing an unprecedented breadth of projects and programs designed to solve the water and aquatic resource needs of the Yakima River Basin in south central Washington. Over the last three years, the program has advanced a wide range of projects from planning, design, permitting, funding and construction as part of the first 10 years of project development (10-year Initial Development Phase).

This is the second Cost Estimate and Financing Plan report submitted to the Washington State Legislature and the Governor in accordance with RCW 90.38.120. This report builds on the information provided in the 2014 report by providing costs for the 2015-2017 and 2017-2019 biennia and summarizing the current 30-year and 10-year cost estimates.

The 30-year cost estimates, or the full buildout cost is an estimate based on the Integrated Plan programmatic environmental impact statement (PEIS) and project estimates of Yakima River Basin Water Enhancement Project (YRBWEP) partners (i.e. OCR and the USBR). The current full buildout cost estimate is $4.1 billion over 30 years. However, this number is likely to adjust as project planning advances through feasibility and design studies.

The current 10-year, or Initial Development Phase (IDP), cost estimates are currently $908.7 million. Of this, approximately 54 percent of the funding is expected to come from federal and other funding sources. The IDP represent the best available estimate based upon current information and is subject to change as feasibility studies proceed.

In addition to providing cost estimates, this report discusses funding options for the Integrated Plan. In collaboration with the Office of the State Treasure, the Financing Plan provides an overview of funding options including an overview of past state funding, pay as you go, bond, water quality grant opportunities, public private partnerships (P3), and state infrastructure programs. This section also outlines potential local financing sources from project beneficiaries.

One issued noted in the Financing Plan is the difficulty of funding infrastructure on a 2-year basis, which can be related easily to the 3-year federal funding cycles. Past State funding for the Integrated Plan typically came in set amounts from a series of biennial funding cycles. This funding was largely used to pay for Integrated Plan development, including appraisal and feasibility study of individual projects, including some design and early implementation. However, as the Integrated Plan moves toward full-scale implementation, during the intermediate and final development phases, several large-scale projects will need funding for final design, bid, and construction. The public bid process and construction of some of these facilities will span several biennial funding cycles.

1 Second Substitute Senate Bill 5367(aka 2SSB 5367)

OCR recognizes this as an upcoming challenge to realizing the Integrated Plan. OCR hopes to work with the OST and the legislature to find long-term solutions to this funding issue. Additionally, OCR plans to build funding portfolios matching specific projects with eligible funding sources such as grants, loans, and public-private partnerships to help provide diverse and stable funding to support program implementation.

Introduction

In 2013 the Washington State Legislature passed the Yakima River Basin Water Resource Management Act (second Substitute Senate Bill 5367, aka 2SSB 5367) now embodied in RCW 90.38. This legislation authorized implementation of the Yakima River Basin Integrated Water Resources Management Plan (Integrated Plan). The Integrated Plan is a consensus-based approach to watershed management led by a diverse group that includes representatives of the Yakama Nation; federal, state, county and city governments; environmental organizations, and irrigation districts.

The legislation authorizes the Department of Ecology (Ecology) to:

- Implement the Yakima River Basin Integrated Water Resource Management Plan through a coordinated effort of affected federal, state, and local agencies and resources;
- Develop water supply solutions that provide concurrent benefits to both instream and out-of-stream uses; and
- Address a variety of water resource and ecosystem problems affecting fish passage, habitat function, and agriculture, municipal, and domestic water supply in the Yakima River Basin, consistent with the provisions of the Integrated Plan.

Yakima Canyon

The legislation documents the State's intent to pay for a substantial portion of the total costs to finance the implementation of the Integrated Plan, but stipulates that at least one-half of those costs be funded through federal, private, and other non-state sources, including a significant contribution of funding from local project beneficiaries.

Consistent with RCW 90.38.120, this report fulfills the requirement that Ecology provide a cost estimate and financing plan to the Governor and the Washington State Legislature in each even-numbered year beginning in December 2014. The cost and financing plan must include the total estimated cost to implement the integrated plan and analyzes various financing options, including:

- A description of state expenditures as of September 28, 2013 that were incurred implementing the integrated plan;
- Proposed state expenditures in the 2017-2019 biennium, with proposed financing sources for each project; and
- Information prepared by the State's Treasurer's Office describing:
  - New state and local funding sources;
  - The viability and advantages and disadvantages of various financing mechanisms;
  - Past, current, and anticipated future costs; and
  - How to address cost overruns and what affect they have on long-term financing and options.

In addition to the state expenditures for the biennia required by RCW 90.38.120, this report includes proposed state expenditures in the 2017-2019 biennium and beyond.

This report presents the 2016 cost and financing plan, including 10-year and 30-year costs for implementing the Integrated Plan, and cost-share information. Additionally, this plan describes public-private funding opportunities, long-term financing planning, and other potential funding sources.

Overview of the Integrated Plan

Water supply shortages for irrigation and municipal supplies coupled with severe reductions or eliminations of major salmon and steelhead runs was the catalyst for developing a comprehensive water and aquatic resource management plan in the Yakima River Basin, known as the Integrated Plan. The Integrated Plan was developed by the Washington Department of Ecology (Ecology) and US Bureau of Reclamation (USBR) in partnership with the Yakama Nation and a group of stakeholders known as the Yakima River Basin Water Enhancement Project (YRBWEP). Its goals are to:

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

The Integrated Plan proposes to achieve those goals through implementation of the following seven (7) elements, which are also shown in Figure 1:

1. **Fish Passage Element**
   Yakima River tributaries provide the coldest, cleanest water in the Basin. The fish passage element of the Integrated Plan restores access to habitat above the five existing large storage reservoirs in the Yakima River Basin, and provides upstream and downstream passage for anadromous (ocean-going) salmon, bull trout and other resident fish. Construction of the fish passage facilities at all 5 major dams will provide fish access to cold, clean water to support spawning and rearing.

2. **Structural and Operational Changes Element**
   The Structural and Operational Change Element promotes operational efficiency and flexibility at existing in-basin facilities. This includes Keechelus-to-Kachess Conveyance (KKC), Cle Elum Pool Raise, Subordination of Power Generation, and Kittitas Reclamation District Canal Modification.

3. **Surface Water Storage Element**
   This element calls for the development an additional 450,000 acre-feet of surface water storage for supporting instream and out-of-stream water uses, and 50,000 acre-feet of water for future municipal use.

Figure 1. Yakima River Basin Integrated Water Resource Management Plan

4. **Groundwater Storage Element**
   The groundwater storage element uses surface water to recharge aquifers, store water for later withdrawal and use, and to improve stream flow conditions. It consists of a City of Yakima project and a regional approach using irrigation-district infrastructure to recharge groundwater.

5. **Habitat/Watershed Protection and Enhancement Element**
   The habitat element of the Integrated Plan includes actions to protect and enhance critical habitat for anadromous and resident fish. Of particular interest are several species of salmon, federally-listed steelhead, and federally-listed bull trout. The habitat element targets watershed protection and enhancement to be accomplished through protection and restoration of key land areas and associated ecosystem resources; and a mainstem and tributaries fish habitat enhancement program. This includes acquisition of tributary and headwater habitat, including the development of the 50,241 acre Teanaway Community Forest.

6. **Enhanced Water Conservation Element**
   The water conservation element of the Integrated Plan consists of additional agricultural water conservation actions not included in YRBWEP Title XII implementation plans, along with municipal and domestic water conservation programs.

7. **Market Driven Reallocation Element**
   This element of the Integrated Plan involves reallocating water through a water market and/or water banks, where water rights can be bought, sold, or leased on a temporary or permanent basis to improve water supply and instream flow conditions.

The total estimate cost of implementing the integrated plan in $4.1 billion, not considering inflation. Ecology and USBR developed cost estimates through the PEIS process, although these cost estimates are being refined as the program proceeds to feasibility and design of projects. The following sections provide detailed cost estimates on a 30-year scale, and for the IDP.

Estimated Costs and Funding Needs

The following sections present the estimated cost and funding needs for implementation of the Integrated Plan. These costs are presented for full buildout (30 year) by each Integrated Plan element and separated into three decade-long phases (Initial, Intermediate, and Final). Additionally, the IDP (10 year), current and total (through 2023) costs are presented by project.

Full Buildout (30 year) Costs

Ecology's December 2014 Cost Estimate and Financing Plan estimated full buildout (30 year) cost for implementing the Integrated Plan would be about $4 billion. Since then, additional investigations – including ongoing appraisal and feasibility studies – have been completed to refine full buildout costs. The current cost for implementing the Integrated Plan is estimated at $4.1 billion. These estimates do not include inflation.

The Integrated Plan element with the highest estimated costs, approximately $2.2 billion, is the Surface Water Storage Element. The Habitat/Watershed Protection and Enhancement, Fish Passage, and Enhanced Water Conservation Elements each represent between $480 million and $530 million in costs and about $1 billion in aggregate. Other project elements include Enhanced Water Conservation, which is anticipated to cost $430 million over the three-decade development period; Structural and Operational changes, which is anticipated to cost $326 million over the three-decade development period; and Groundwater Storage, which is anticipated

to cost $123.2 million over the three-decade development period. The lowest cost element is Market Driven Reallocation, which is a $3 million cost over the 30-year period. The Full Buildout cost estimates are provided in Table 1 by Plan Element.

The costs estimates provided in Table 1 were derived from a combination of the Initial Development Phase funding needs identified by the YRBWEP Workgroup and the estimated undiscounted capital cost found in the 2012 Yakima River Basin Integrated Plan Framework for Implementation Report, Table 2 (for decades two and three). The costs provided in Table 1 are high level estimates, which are being refined as projects undergo feasibility studies and design. Due to the nature of these numbers, there may be minor discrepancies between Table 1 and more developed cost estimates that are produced on the biennium level.

USBR and Ecology issued a four-accounts benefit to cost analysis of the Integrated Plan at full buildout (30 year costs) in 2012. That report tabulated the combined benefits and the combined costs of the full suite of Integrated Plan projects and programs. Analyzed as a whole, the Integrated Plan yields highly favorable benefit-to-cost ratios ranging from 1.4 to 3.2.

The variability in benefit-to-cost ratios is driven by consideration of a range of estimated Integrated Plan implementation costs and benefits. The 1.4 benefit-to-cost ratio represents the pairing of the largest estimated Integrated Plan costs with the smallest estimated benefits. Conversely, the 3.2 benefit-to-cost ratio represents the pairing of the smallest estimated project costs with the largest estimated project benefits.

USBR, Ecology, and the basin stakeholders recognize that when the Integrated Plan is separated into its isolated, component pieces, benefit-to-cost ratios of some individual projects will not be favorable. The integrated approach was specifically developed in order to capture the synergy of all Integrated Plan projects and activities acting in combination.

Initial Development Phase (10 year) Costs

Ecology and its partners are currently working to implement projects and programs comprising the 10-year IDP of the Integrated Plan. The IDP began in July 2013 and will continue through June 2023. The IDP advances all seven elements of the plan in some portion. It provides tangible improvements in stream flow, fish habitat, and fish passage as well as to improve security of existing, out-of-stream water supplies.

Ecology's December 2014 Cost Estimate and Financing Plan estimated the cost of the IDP to be about $900 million, with anticipated costs updates as feasibility studies proceed. This current report provides updated information on projected costs. Cost estimates are somewhat fluid as project designs are developed and refined; funding sources are identified, and permitting and mitigation requirements are determined. It should be noted that estimates of future costs are in current dollars and do not contain any inflationary or fiscal growth factor.

Current funding estimates through the 2021-2023 Biennium total about $908.7 million, with federal and other project partners picking up approximately $490 million, or approximately 54 percent of expenses. These funding estimates are slightly off from the IDP in Table 1 because costs for the Box Canyon Creek project has not been determined. Additionally, Table 1 provides a high level estimate. The costs in Table 2 represent the best available estimate based upon current information and is subject to change as feasibility studies proceed. Costs by funding source and project are below in Table 2.

Table 1: Estimated Costs for Yakima Integrated Plan Development - 30 Year Implementation Period

Integrated Plan Element	Initial Development Phase (Decade 1)	Initial Development Phase (Decade 2)	Initial Development Phase (Decade 3)	Initial Full Development Costs (3 Decades)
Habitat/Watershed Protection and Enhancement	$346,100,000	$67,200,000	$67,200,000	$480,500,000
Fish Passage (6 projects)	$230,000,000	$200,000,000	$100,000,000	$530,000,000
Surface Water Storage	*$44,200,000	**$1,238,550,000	**$933,800,000	$2,216,550,000
Groundwater Storage - Regional and Municipal	$8,400,000	$57,400,000	$57,400,000	$123,200,000
Structural and Operational Changes	$199,100,000	***$63,500,000	***$63,500,000	$326,100,000
Enhanced Water Conservation	$77,900,000	$175,800,000	$175,800,000	$429,500,000
Market Driven Reallocation	$3,000,000	$475,000	$475,000	$3,950,000
Integrated Plan Update Costs		$1,500,000	$1,500,000	$3,000,000
TOTAL	**$908,700,000**	**$1,804,425,000**	**$1,399,675,000**	**$4,112,800,000**

* 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.

As illustrated in Table 2, IDP involves requests for funding for a number of specific capital projects including the:

- Kachess Drought Relief Pumping Integrated Plant – $36.2 million;
- Fish Passage at Cle Elum Dam – $ 135.1 million;
- Three-foot pool raise at Cle Elum Reservoir – $26.8 million; and
- Keechelus to Kachess Conveyance project -$172.3 million.

Other components of the Initial Development Phase include:

- $76.4 million in agricultural conservation projects, that would make about one-half of the conserved water available;
- $39.8 million in floodplain and tributary habitat restoration projects and acquisitions;
- $95 million for additional fish passage projects (excluding Cle Elum Dam);
- $8.4 million in aquifer storage and recovery projects;
- and $3 million for fostering water banking and exchange programs.

Approximately $15 million is estimated to be needed in the latter half of the IDP to conduct a feasibility study and prepare an environmental impact statement for one of the two large storage facilities identified in the Integrated Plan. The proposed project would begin in the Integrated Plan's intermediate development phase; the years 2024 through 2034.

Financing Plan

The following section presents a financing plan for implementation of the Integrated Plan, including supplemental information prepared by the State Treasurer's Office. 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;

Roza Dam

- 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. In addition, additional funding strategies and examples are presented to clarify overall financing issues related to the Integrated Plan.

Potential State Financing Sources

Bonds vs. Pay-go

Capital projects such as building construction, land acquisition, and transportation projects and the projects included in the Integrated Plan are typically funded with a combination of cash balances, revenues received over time or with proceeds of financings. Most financing by the State is provided through general obligation bonds which pledge its full faith, credit and taxing power to the payment of the bonds, or with lease/ purchase financing contracts for the acquisition of real estate and equipment. With each borrowing, the state commits to make regular and approximately equal payments over the term to repay the debt, which includes the principal amount borrowed plus some amount of interest.

The alternative to debt financing is to cash fund capital expenditures by relying on appropriations of revenues received over time, or "pay-go". Projects that require more than one biennium to be completed rely on a system of reappropriations to carry forward the expenditure authority initially established.

With debt financing, funds are available for project construction sooner and with greater predictability. Although the state pays interest, debt-financed capital projects can be cost-effective if borrowing costs are less than the costs associated with waiting to build. In addition, debt financing can promote tax equity as each asset is paid for over its useful life, and not all-at-once by taxpayers in a given year. However, leveraging future tax revenues with debt financing commits resources from future biennia for today's capital projects. For that reason, the amount of debt service (principal and interest payments) that can be paid in a given year is limited by the State Constitution to a percentage of general state revenues. Nearly all general obligation bonds issued for capital projects are subject to this limit.

Past State Funding

The 2013 Capital Budget (ESSB 5035) provided about $137 million for Integrated Plan implementation for the 2013-2015 period: Ecology was appropriated $32M to move several Integrated Plan projects and activities forward during this period. It authorized Washington Department of Natural Resources (DNR) to spend $99.344 million for the purchase of 50,000 acres of private forest land in the Teanaway watershed in Kittitas County. Of this amount, $10 million was provided by DNR as a loan from its real property replacement account and must eventually be repaid. An additional $5 million to Kittitas County for infrastructure and facilities that help offset impacts to the county from transfer of these lands from private to public ownership. An additional $1 million in the Operating Budget (3ESSB 5034) goes to DNR for Teanaway management costs.

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 Request 2019 - 2023		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 (CURRENT)	2017-2019	2019-2021	2021-2023	2014 & 2015	2016-2023[a]
Habitat	Teanaway Forest Acquisition	99.3		99.3	99.3						
	Teanaway Forest Planning & Operations	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]	12.9	7.1	5.8	5.8					1.3	5.8
	NRCS RCPP - Yakama Nation Projects	22.6	22.6							4.6	18.0
	NRCS EQIP	20.5	20.5							2.5	18.0
	NMFS Pacific Coastal Salmon Recover Fund	20.4	20.4							2.4	18.0
	USACOE levee reconfig., setback & removal	13.2	13.2							0.4	12.8
	BPA NPCC Fish and Wildlife Program	79.1	79.1							39.1	40.0
	Tributary/Mainstem Habitat Restoration Projects	39.8	19.9	19.9	2.4	2.5	5.4	4.8	4.8		19.9
	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				6.6	0.3
Fish Passage	Cle Elum Dam	135.1	71.9	63.2	8.8	9.0	9.0	23.6	12.8	5.4	66.5
	Tieton Dam	85.8	42.9	42.9	0.6	0.5		20.9	20.9		42.9
	Clear Lake Dam passage	9.0	4.5	4.5			1.5	1.5	1.5		4.5
	Box Canyon Creek	TBD	TBD	TBD			TBD	TBD	TBD		TBD
	USFWS National Fish Passage Program funds	0.1	0.1							0.1	
Structural & Operational Modifications	Keechelus to Kachess Conveyance Project	172.3	86.4	85.9	0.5	4.2		40.6	40.6	0.5	85.9
	Cle Elum Dam/Pool Raise	26.8	13.4	13.4	2.8	1.0	3.0	3.3	3.3		13.4
	Roza Power Subordination[d]	TBD	TBD	TBD	0.2		TBD	TBD	TBD		TBD
	Chandler Power Subordination[d]	TBD	TBD	TBD			TBD	TBD	TBD		TBD
	Kittitas Reclamation District Canal Modifications	TBD	TBD	TBD			TBD	TBD	TBD		TBD

Surface Storage	Kachess Drought Relief Pumping Plant (KDRPP)[e]	36.2	18.6	17.6	12.6	4.3	0.7			1.0	17.6
	Wymer Dam and Reservoir	7.0	3.5	3.5	0.5		3.0				3.5
	Bumping Reservoir Enlargement	1.0	0.5	0.5	0.5						0.5
Groundwater Storage	Regional Storage Options	8.0	4.0	4.0	0.2	0.5	1.1	1.1	1.1		4.0
	Municipal ASR Projects	0.4	0.2	0.2	0.2						0.2
Water Conservation	Agricultural Conservation Projects	76.4	40.1	36.3	2.4	4.8	5.0	12.1	12.0	3.8	36.3
	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	0.3	0.3							0.3	
Market Driven Water Reallocation	General support for markets and banking	3.0	1.5	1.5	0.4	0.5	0.6				1.5
Total		908.7	490.0	418.7	143.3	30.0	32.6	112.0	101.0	68.0	422.0
Percentage Share		100%	53.9%	46.1%	15.8%	3.3%	3.6%	12.3%	11.1%	7.5%	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) 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.

(b) Includes Tieton Cattle Co./North Fork Cowiche 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.

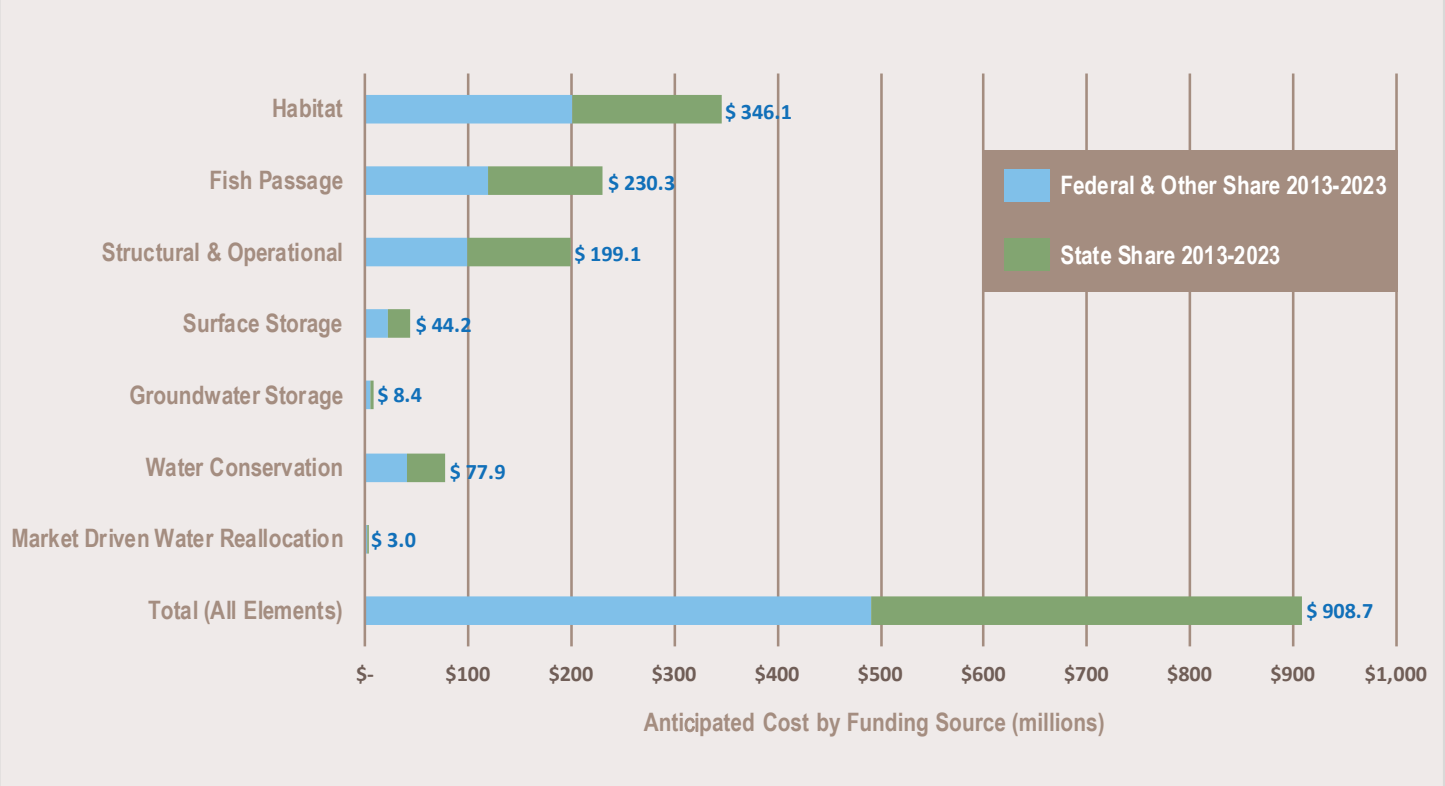

Figure 2. Initial Development Phase Estimated Costs

The 2015 Capital Budget (2EHB 1115) provides $30 million for the Integrated Plan during the 2015-2017 period. This appropriation was provided for tributary/mainstem enhancement and watershed acquisitions; fish passage projects at the Cle Elum, Keechelus, Kachess, and Tieton reservoirs; the Keechelus to Kachess pipeline; the Cle Elum pool raise and Kachess reservoir drought relief pumping plant. Additionally, this appropriation was for aquifer storage and recovery projects, agricultural and municipal conservation projects, and market reallocation.

Past state funding for the Integrated Plan has typically come in set amounts from a series of biennial funding cycles. This funding has largely been used to pay for Integrated Plan development, including appraisal and feasibility study of individual projects, including some design and early implementation. An example of early implementation includes final permitting and groundbreaking of the Cle Elum Fish Passage Facilities. However, as the Integrated Plan moves toward full-scale implementation, during the intermediate and final development phases, several large-scale projects will need to be funded for final design, bid, and construction. The public bid process and construction of several of these facilities will span several biennial funding cycles. To illustrate this, Figure 3 shows the expected annual expenditure of final design and construction of the Wymer Dam and Reservoir. If long-term financing for implementation of the project is tied to the 2-year biennial cycle, the project will need to be split into multiple phases, each with their own bid and contracting requirement, which may increase both state oversight and overall implementation cost. Therefore, in order for timely and cost-effective project implementation, funding will need to be secured beyond the typical 2-year biennial funding cycle.

As noted above, this may be possible to accomplish through the typical capital budget process for projects with longer construction or development timelines.

State Infrastructure Assistance Programs

The following sections describe some of the specific state funding programs that may have a nexus that intersects Integrated Plan goals. Some of the programs provide grants; others offer loans at or below prevailing market rates.

Public Works Board

The Public Works Board provides low-interest loans for local governments to help finance public infrastructure construction and rehabilitation. Eligible projects must improve public health and safety, respond to environmental issues, promote economic development, or upgrade system performance. Eligible applicants include: cities, counties, special purpose districts and quasi-municipal organizations. Eligible infrastructure systems include: domestic water, roads/streets, bridges, sanitary sewer, solid waste recycling and storm water.

Community Economic Revitalization Board

The Community Economic Revitalization Board (CERB) provides loans and grants to local governments and federally recognized tribes for public infrastructure, which supports private business growth and expansion. Eligible projects for CERB funding include domestic and industrial water, storm water, wastewater, public buildings, and telecommunications and port facilities, among others.

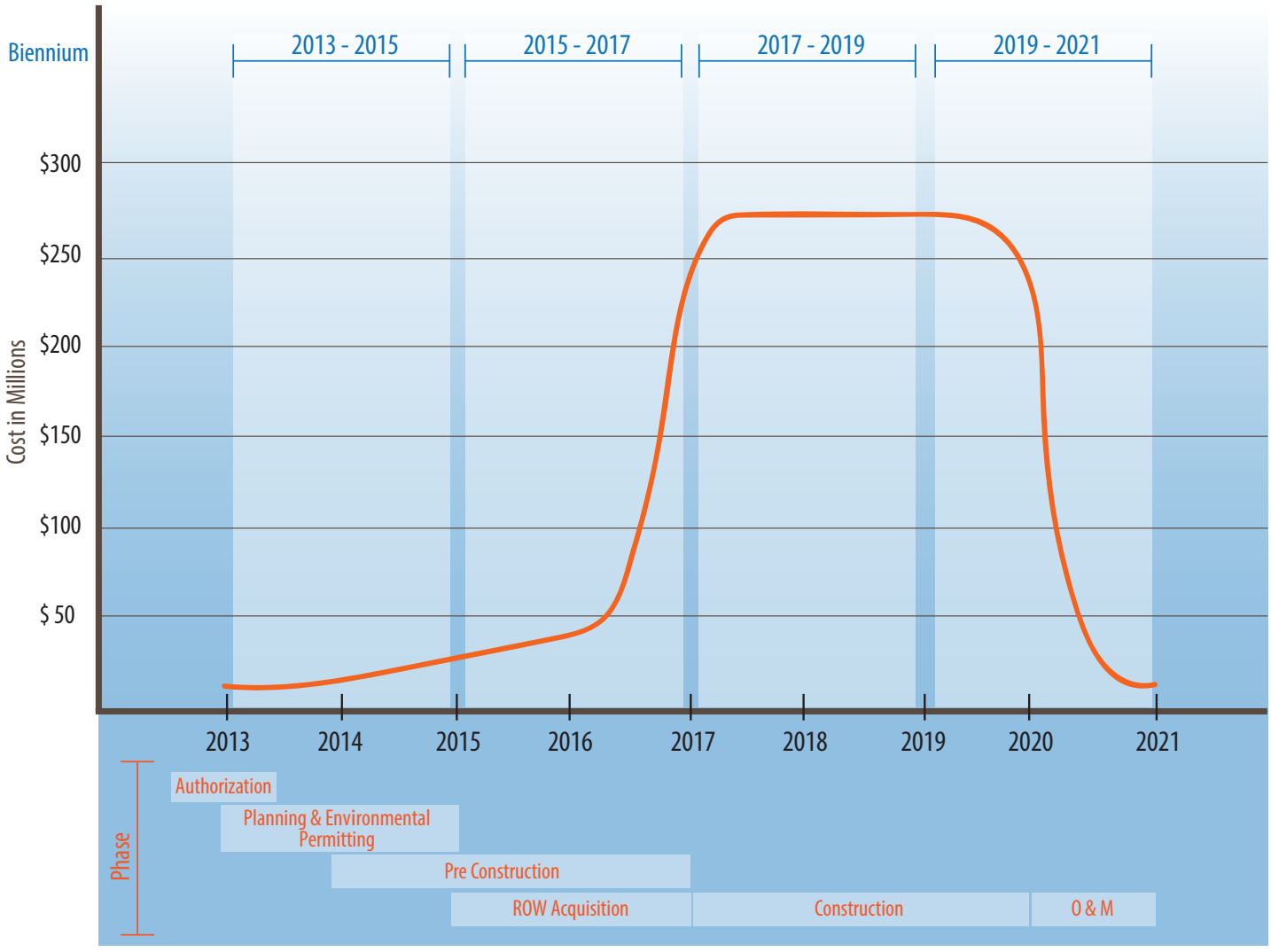

Figure 3. Wymer Dam and Reservoir Conceptual Buildout and Funding Cycle

Resource Conservation

The Recreation and Conservation Funding Board administers nearly a dozen state and federal grant programs that fund a variety of organizations to build parks, trails, ball fields, firearm and archery ranges, and boating facilities, conserve and restore wildlife habitat, and preserve farmland. The board sets the criteria based on statutory requirements and ensures projects meet state, local, or national priorities for outdoor recreation and conservation.

All of the board's grant processes are open and competitive. Generally, grant applications are accepted in even-numbered years. The grant proposals are first reviewed by panels of volunteers, experts, and staff. The panels weigh the merits of the proposals against established grant program criteria, strategic plans, and in some cases, national priorities. They compile ranked lists of projects that the board considers for funding. In some cases, the board makes recommendations for funding to the Governor, Legislature, or federal government.

Funding for the grants comes from federal funds, state gas taxes, fees, and the state's sale of general obligation bonds.

State Water Quality Funding Opportunities

Ecology administers an integrated funding program for projects that improve and protect water quality throughout the state. The program combines grants and loans from state and federal funding sources with technical assistance to program applicants. Ecology manages water quality grant and loan applications under one process. Ecology has one combined funding cycle, one application, one competitive rating process, and one funding offer list.

Applicants looking for these grants can apply for funds through the annual Water Quality Combined Funding Cycle and its application process, where one application would be submitted for funding consideration for the following three funding opportunities: Clean Water State Revolving Fund (CWSRF) loans, Centennial grants or loans or 319 grants. Other opportunities for projects involving flood risk reduction with habitat protection and restoration include Floodplains by Designs.

These funding opportunities are described in the following sections.

Centennial Grants

Authorized by Chapter 173-95A WAC and Chapter 70.146 RCW, the Centennial 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. Eligible infrastructure projects are limited to wastewater treatment construction projects for financially distressed communities. Eligible nonpoint projects include stream restoration and buffers, on-site septic repair and replacement, education and outreach, and other eligible nonpoint activities.

The Centennial Program is a Washington State funded grant program. Ecology administers the Centennial Program as grants to local governments, special purpose districts, conservation districts, and federally recognized Tribes.

Section 319 Grants

The United States Congress established the Section 319 program (Section 319) as part of the Clean Water Act amendments of 1987. The EPA provides Section 319 grant funds to Washington State and the State is required to provide a 40 percent match. Much of the program is steered by federal regulations and guidelines, as well as State Centennial rule. A high priority is placed on the collection of data associated with estimating pollutant load reductions for nitrogen, phosphorus, and sediment in state water bodies.

Clean Water State Revolving Fund Loans

Provided for by the federal Clean Water Act (CWA), the Clean Water State Revolving Fund (CWSRF) program is funded via an annual EPA capitalization grant, state matching funds, and principal and interest repayments on past CWSRF loans. This program provides low interest and forgivable principal loan funding for wastewater treatment construction projects, eligible nonpoint source pollution control projects, and eligible Green projects. This program is managed in accordance with federal regulations and guidelines, as well as state rule and statute.

The United States Congress established the CWSRF as part of the CWA Amendments of 1987. Congress wanted to move away from a large federal construction grant program. Nationally, the program has provided more than $5 billion annually to fund water quality protection projects for wastewater treatment, nonpoint source pollution control, and watershed and estuary management. CWSRF's have funded over $89 billion, providing over 30,012 low interest loans to date.

The EPA offers states capitalization grants each year according to a formula established in the CWA. The capitalization grants are required to be matched with 20 percent state funds and are added to payments of principal and interest from previous loans. The combined funds are loaned out to eligible public bodies and repaid to the CWSRF with interest. This means that the CWSRF continues to revolve and grow and more money becomes available to fund water quality projects. Today, the majority of the fund consists of repaid principal and interest.

Floodplains by Design

Floodplains by Design is a collaborative partnership integrating flood risk reduction with habitat protection and restoration. While the Washington State Department of 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.

The State of Washington has been investing in projects using the Floodplains by Design approach since 2013, leveraging significant funds from other state and federal sources. As the Floodplains by Design partnership has grown, so have the number of innovative, collaborative floodplains projects in need of funding. The state awarded new funding in the 2015-17 budget for the Floodplains by Design program, allowing seven projects to move forward. These projects included the Yakima Floodplain Management Program, and several projects located in western Washington.

The 2017-2019 selection process is currently underway. Proposed projects include several Yakima Basin projects:

- The Yakima River Corridor Plan, (Kittitas County)
- Gap to Gap 1135 (Yakima County)
- Rambler's Park Phase VI (Yakima County)
- N7 Naches Levee Flood, Fish, and Outfall Optimization (Yakima County)
- Manastash Creek Corridor Plan Phase II (Kittitas County)

More information on the 2014-2019 application and selection process can be found at Ecology's website: *http://www.ecy.wa.gov/programs/sea/floods/FloodplainsDesign2017.html*

The three lead organizations support these integrated floodplain projects through regular workshops and networking events, project review and the administration of the state's Floodplains by Design grant program. Collectively the partnership is pursuing a vision of effective, collaborative management across Washington's floodplains.

Public-Private Partnerships

A Public-Private Partnership is a long-term contract between a private party and a government entity, to provide a public asset or service, in which the private party bears a certain amount of risk and management responsibility, and compensation may be linked to performance.

Public-private partnerships have long contract periods of 25 to 30 years or longer. The private partner may participate broadly in designing, completing, implementing, funding and maintaining the project, while the public partner may have a narrower focus of defining and monitoring compliance with the objectives. Alternatively, the private sector may be asked to provide a more limited scope of services, perhaps restricted to construction or maintenance. Risks are distributed between the public and private partners based on a negotiated agreement. If the partnership includes financing, it is typically executed at the more expensive taxable rates and is repaid from payments from the public sector and/or users over the project's lifetime. Legal and transaction costs can be significant due to the challenges of setting the terms for the transaction and defining, measuring and allocating the responsibilities and compensation for each of the parties over several decades.

Public-Private Partnerships can be authorized at the local, state, and federal levels.

In accordance with recommendations from the Government Finance Officials Association (GFOA), the Office of the State Treasurer strongly recommends that proposed public- private partnership transaction undergo a careful review by state finance professionals. This review should include a detailed comparison of public and private costs for major components. It should also incorporate scenario analysis addressing risks associated with different possible economic and financial outcomes over the term of the transaction.

Performance-Based Infrastructure

One example of a Public-Private Partnership is Performance-Based Infrastructure (PBI). OCR has been working with West Cost Infrastructure Exchange (WCX) on identifying potential PBI's. WCX is a nonprofit that specializes in using PBI's to help finance infrastructure projects. PBI is a project contracting and delivery method that keeps assets in public ownership and consolidates responsibility for the key phases of a project's full lifecycle-design, construction, and maintenance--into a performance-based contract with a private partner (WCX, 2016). This consolidation responsibility, with its emphasis on payment for performance, can create additional public benefits when compared with traditional procurement methods: design and construction innovations, shorter design and construction timelines, improved cost and schedule certainty, lower total lifecycle costs, and long-term performance guarantees. PBI procurements may also include elements of private sector financing and operational responsibility. PBI includes shared public-private risk allocation with guaranteed design and construction costs, pay for short and long-term performance, with appropriate turnback provisions.

A potential example of performance-based infrastructure being evaluated as part of the Integrated Plan is described in the next section.

Case Study - Kachess Drought Relief Pumping Plant

Specific to the Yakima River Basin and the Integrated Plan, USBR completed a feasibility study of the Kachess Drought Relief Pumping Plant (KDRPP), which would access water below the existing outlet structure in Lake Kachess. The feasibility study estimated the cost of the project and the project benefits, for either a stand-alone project or a project in combination with the Keechelus-to-Kachess Conveyance (KKC) project. In addition, USBR and Ecology prepared a draft environmental impact statement issued in January 2015, evaluating both KKC and KDRPP.

Responding to concerns from the proratable irrigation districts about the cost of the project, USBR led a Value Analysis Study in June 2015 to explore alternate project configurations and sizes. Results from the Value Analysis Study led the Roza Irrigation District (Roza) to propose to finance and develop a temporary project that could produce 50,000 acre feet of water to offset drought impacts in 2016, possibly in conjunction with other irrigation entity partners. This effort was driven by the severe drought experienced in 2015, and a desire to avoid even more severe shortages in 2016 if drought conditions were to persist for a second year.

Roza's Board of Directors (Board) initially authorized the district to pursue a temporary, one-year emergency facility in October. However, the Board decided in December to not pursue the temporary emergency floating pumping plant facility due to new information on increased projected costs and increase precipitation for the 2016 water year. Roza continues to support a permanent KDRPP project and work has progressed on feasibility and design of the permanent KDRPP facility. Roza, Kittitas Reclamation District and Wapato Irrigation Project have all signed a participation letter in 2016.

USBR and Ecology anticipate that the primary funding burden for a permanent project will be borne by water users that would benefit from the project. Roza has engaged through a Memorandum of Understanding (MOU) with the US Department of Interior's Natural Resource Investment Center (Center) to explore P3 financing strategies.

Under the U.S. Department of the Interior (Interior) the Center uses market-based tools and public-private collaborations to conserve natural resource, cultivate efficient water allocation, and promote increased investment in critical infrastructure. The Center's purpose is to increase investment in water conservation and buildup water supply resilience, foster private investment to advance efficient permitting and facilitate meaningful conservation, and increase investment in critical water infrastructure. The Center's role is to identify and articulate the role of private sector investments in infrastructure work conducted with the help of Interior.

The Center is a relatively new entity in public-private partnerships, and OCR is evaluating the potential benefits of partnering with the Center on developing P3 opportunities for YBIP projects.

Lake Kachess

Potential Local Financing Sources

Ecology is evaluating a multitude of local financing sources to meet the not-more-than 50% state funding requirement of the Integrated Plan.

Impact of State Loans on Local Government Debt Capacity

Loans are exempt from being counted against statutory municipal debt limits under RCW 39.69.020. Loans are most often used to fund construction or upgrades of facilities, such as water and sewer facilities, that produce fee revenues with which to pay off the loan.

The government loan exemption, adopted in 1987, applies only to the calculation of statutory debt limits. To the extent that government loans constitute actual revenue debt, they are also exempt from the calculation of constitutional debt limits. However, not all government loans have user fee revenues pledged. Any government loans without pledged revenues still count against constitutional debt limits.

This can result in an unintended situation in which a jurisdiction with a large number of government loans that do not have pledged revenues can be in compliance with its statutory limitation, but in violation of its constitutional limitation. This situation primarily impacts cities because of how close the city statutory 7.5 percent limit is to the constitutional 10 percent of assessed valuation limit.

Increasing the Local Property Tax Levy

Virtually all citizens are affected by property taxes, either by the taxes they pay directly as homeowners or the component of rents attributable to taxes paid by landlords. Property taxes could be used to provide a local funding contribution to the Integrated Plan.

There are certain desirable features of the system. The tax is well established and has been in operation much longer than other taxes. Unlike many of the state excise taxes, property taxes are quite visible, and taxpayers are aware of their annual liability. Administration occurs largely at the county level, which gives taxpayers a sense of local control. Further, the cost of many services provided by local government (streets, schools, police and fire protection, etc.) correlate well with property values.

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 isn't a practical approach for long term investments. However, a multi-year levy could help authorize some components of the Integrated Plan. An alternative approach is for the legislature to authorize a specific levy within the three counties for plan investments.

County government has a maximum regular property tax rate of $1.80 per $1000 of assessed value. Both Benton County and Kittitas County have room under their countywide property tax rate, while Yakima County has less flexibility. A five-cents per thousand levy in the three counties would generate a combined $1.829 million per year. The new levy would generate $796,597 in Benton County, $281,452 in Kittitas County and $751,235 per year in Yakima County. Increasing the property tax above the $1.80 per $1,000 of assess value ceiling would require legislative action.

Increasing the State Public Utility Tax

The State Public Utility Tax applies to gross income derived from operation of public and privately owned utilities, including 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 B&O tax.

Any increase in the public utility tax would have to be statewide, rather than just for Integrated Plan counties. Increasing all of the public utility taxes statewide by five percent would raise $44.9 million for the 2015-17

biennium. A 15 percent increase in the water distribution tax statewide would raise $17.0 million for the 2015-17 biennium. It would take a fairly large increase in these taxes to generate revenue of the amounts needed to support portions of the Integrated Plan.

Increasing the Local Sales Tax

Increasing the local sales tax by one-tenth would generate $3.4 million/year in Benton County, $696,301/year in Kittitas County and $3.252 million/year in Yakima County. Benton, Kittitas and Yakima County voters have all enacted the 3/10ths public safety tax. None of the counties have enacted the optional 1/10th mental health sales tax.

City Utility Taxes

City utility taxes may 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. Utilities on which taxes may be levied include electric, water, sewer, stormwater, gas, telephone, cable TV, and steam. The following utility rates are capped at six percent unless increased by the voters: electricity, gas, steam and telephone. There are no limits for sewer/ stormwater, solid waste, water and cable TV. Cable TV cannot be unduly discriminated against. Utility taxes can be deposited into the city's general fund. Utility rates are considered enterprise funds and must be spent on that enterprise.

Local Improvement Districts

Most municipal governments (cities, counties, water and sewer districts, ports, fire protection districts, etc.) can use the basic Local Improvement Districts (LID) processes in Chapters 35.43 through 35.56 RCW. LIDs are a means of assisting benefiting properties 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. There are differences (some very subtle) in required or allowable processes among the several forms of municipal government, which would need to be carefully reviewed before applying them to Integrated Plan elements.

A variation of the LID is the Utility Local Improvement District (ULID). The difference between ULIDs and LIDs is that utility revenues are pledged to the repayment of the ULID debt, in addition to the assessments on the benefiting properties. State statutes provide that an LID can be converted to a ULID after formation, but the reverse is not possible.

The most important point to realize about LIDs is that the entire LID process is about financing infrastructure improvements, not constructing them. LID processes lead, ultimately, to the sale of bonds to investors and the retirement of those bonds via annual assessments on the property owners within a district. Goals of the LID process are twofold:

- To present a bond portfolio to investors that will entice them to invest at as low a rate of return as possible; and
- To assess property owners as fairly as possible in relation to special benefits received.

Statutes specify that the assessment per parcel 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. In addition, the assessments must be proportionate to one another. A corollary to these principles is that property not benefited by the improvements may not be assessed.

Irrigation and Reclamation Districts

Irrigation districts generally focus on providing irrigation water. Reclamation districts are a form of special-purpose districts responsible for reclaiming and/or maintaining land threatened by permanent or temporary flooding for agricultural, residential, commercial, or industrial use. Both districts are governed by an elected board of directors. They derive their revenue primarily from property assessments tied to the delivery of irrigation water to the parcel.

They also have the authority to issue general obligation and revenue bonds to pay for capital improvements. Landowners within the district also have the authority to petition the district for a local improvement district LID. LIDs have the authority to incur debt for specific improvements.

Property assessments must be made in proportion to the benefits accruing to the assessed lands. The assessments are typically on a per acre basis and the assessment roll is filed with the county treasurer. Some districts serve residential customers with irrigation water. The districts also collect and remit the USBR construction loan payments.

The State Auditor regularly audits the Yakima Project Irrigation District, including Roza, Kittitas Reclamation District, Sunnyside Valley Irrigation District (SVID), Kennewick Irrigation District (KID), and Wapato Irrigation District (WID). Copies of these audits are available on the Auditor's website. Roza has very little debt, a healthy cash balance and revenue has exceeded expenses. Kittitas Reclamation District financial position is also healthy. Their debt load is higher than Roza and their expenses have exceeded revenues for the last three years. Information regarding the other districts was not readily available.

Yakima River near Benton City

Municipal Bonds

The state constitution limits the debt each unit of government is allowed to carry 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.

Debt that is not voter-approved is limited to 1.5 percent of assessed valuation for all local jurisdiction types. When debt has been approved by three-fifths of the voters, total allowable debt increases to 5 percent of assessed valuation. Cities and towns are allowed an additional 5 percent, provided the extra 5 percent is voter-approved and is used to supply the city or town with jurisdiction-owned and operated water, lighting, and sewer services.

Plans for local financing must take into account limitations on local governments' ability to issue general obligation debt. Two main categories of debt do not count against debt capacity: revenue and special assessment debt. 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 street lights or sidewalks.

Financing Mechanism Comparison

Ecology and the Treasurer's Office considered the various State and local funding sources summarized herein relative to the needs of the Integrated Plan. Table 3 provides a summary of the State and local funding and financing alternatives, their potential applicability, advantages and disadvantages.

Past, Current, and Anticipated Future Costs that will be, or are Anticipated to be, Paid by Non-State Sources

Additionally, non-state stakeholders are bringing funds to bear on the YBIP as well. These non-state funding sources are spent on both administrative related tasks (meeting attendance, environmental and permitting review, outreach, etc.) and project implementation congruent with the objectives of YBIP (i.e. water conservation, habitat restoration and enhancement and groundwater storage projects) by county governments (Kittitas, Yakima, and Benton), major irrigation districts (IDs) and the Yakima Basin Joint Board, Yakima Basin Fish and Wildlife Recovery Board (YBFWRB), the City of Yakima, Yakama Nation, and environmental groups. A good example of local dollars that are leveraged against state dollars; Roza Irrigation District (Roza) independently invested $15.4 million over 5 years from 2011 to 2016 on water conservation within the irrigation district, while Roza received $350,000 from state YBIP funds to implement conservation projects from 2013 to 2017. All of these Roza conservation projects contribute to the water supply goals of the conservation element of the YBIP. The investments of all non-state entities exceed $60 million from 2011 to 2016.

Table 3: Financing Mechanism Viability Matrix

Funding Source	Advantages	Disadvantages
Public Works Board	Low interest loans	Limitation on applicants and infrastructure
Community Economic Revitalization Board	Loans and grant to recognized Native American Tribes	Limited to public infrastructure
Resource Conservation	Federal grants, open and competitive	Strict statutory requirements
Centennial Grants	State funded grant program	Limited to water quality infrastructure and nonpoint source pollution projects
Section 319 Grants	EPA grant program	Requires 40 percent match, high priority on load reductions
Clean Water State Revolving Fund Loans	Low interest and forgivable loans	Limited to wastewater treatment, eligible nonpoint source reduction. Requires 20 percent State match
Floodplains by Design	Heavy local stakeholder involvement	Limited to flood risk reduction with habitat protection and restoration
Public-Private Partnerships	Private sector participation in portions of financing, design, construction, and long-term O&M. Possibilities for shared risk.	Significantly higher legal and financing costs; requires long-term contract
Local Property Tax Levy	Well established for local infrastructure	Maximum tax rate of $1.80 per $1,000 of assessed value, requires legislative action
State Public Utility Tax	Tax on public/private utilities	Increase must be statewide.
Local Sales Tax	Local funding, tax available	Additional tax on local communities
City Utility Taxes	City general fund	Considered enterprise funds and must be spent accordingly
Local Improvement Districts	Benefits local properties needed 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
Municipal Bonds: general or limited obligation	Local support, may require voter approval	Statutory limitations
Revenue Bonds	Does not count against debt capacity	Repayment from revenue generated by project
Government Loans	Exempt from statutory municipal debt limits	Cannot exceed 10 percent of assessed valuation limit

Update on Federal Legislation Related to the Integrated Plan

Since the Yakima River Basin Water Resource Management Act was passed in the Washington State Legislature in 2013, much progress has been made on the Federal front. U.S. Senator Maria Cantwell introduced proposed legislation identified as bill number S1694 to the U.S. Senate Energy and Natural Resources Committee in July 2015. The bill passed out of committee in November 2015. Members of Washington's congressional delegation have introduced a companion bill in the House of Representatives.

If enacted, this bill would authorize implementation of the Integrated Plan in a staged fashion over 30 years representing "Phase 3" of YRBWEP. The bill identified the 10-year Initial Development Phase consisting of several specific projects. It requires coordination of federal and state actions with the Yakama Nation, irrigation districts, local governments and non-governmental organizations. S1694 further requires that project actions

would be subject to feasibility studies, environmental reviews and cost-benefits and other analyses. It would add municipal, industrial and domestic purposes to the authorized uses of water from USBR's Yakima Project. The bill requires that the federal cost share for the Initial Development Phase not exceed 50 percent. The bill also updates other provisions of the existing federal YRBWEP statutes, besides those associated with the Integrated Plan.

USBR has partnered with Washington since 2009 to develop the Integrated Plan. USBR and Ecology provided funding for the Yakima River Basin Study in 2010 and 2011 that were used in developing the plan. USBR and other federal agencies provided funding to advance a range of related activities in federal fiscal years 2012-2016. However, the large scale funding needed for construction of major projects has not been available from the federal government and is pending passage of a bill authorizing the projects. If enacted, S1694 would provide that authorization and would enable USBR and other federal agencies to seek more robust funding levels to implement the Integrated Plan.

Cost Overruns

As a final requirement, Ecology and the Treasurer's Office considered how cost overruns of projects associated with the Integrated Plan could affect long-term financing of the overall plan. In addition, options for how cost overruns can be addressed are provided. These include:

1. Include reasonable contingency for construction overruns at each phase (e.g. 10%) and then roll that forward into the next biennium if unused.
2. Pledge local match in excess of funding need to cover this contingency.
3. Use supplemental budget requests in between biennia to cover these.
4. 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 should be developed to address alternative sources of revenue or project scoping in the event that the project or revenues do not materialize as anticipated.