

# **Yakima River Basin Integrated Water Resource Management Plan**

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## ***Cost Estimate and Financing Plan*** **Legislative Report**

**December 2014**



**Submitted to the  
House Capital Budget Committee and Senate Ways & Means Committee  
Pursuant to Substitute Senate Bill 5367**



**Publication No. 15-12-003**

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December 15, 2014

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

**RE: Yakima River Basin Integrated Water Resource Management Plan – Cost Estimate and Financing Plan – Legislative Report**

The 2014 *Yakima River Basin Integrated Water Resource Management Plan – Cost Estimate and Financing Plan – Legislative Report* was developed pursuant to the requirements of Second Substitute Senate Bill 5367, the Yakima River Basin Water Resource Management Act, and was prepared by the Department of Ecology, Office of Columbia River (OCR) and the Office of the State Treasurer.

This report identifies an estimate of costs associated with Yakima Basin Integrated Plan (Integrated Plan) implementation and a financing plan prepared by the Office of the State Treasurer that analyzes various options for financing those costs, past, current, anticipated future costs, and evaluates potential financing sources.

If you have any questions regarding this report or would like more information, please contact Derek at (509) 457-7120, [derek.sandison@ecy.wa.gov](mailto:derek.sandison@ecy.wa.gov), or Scott at (360) 902-9018, [scott.merriman@tre.wa.gov](mailto:scott.merriman@tre.wa.gov).

Sincerely,

A handwritten signature in blue ink that reads "Derek I. Sandison".

Derek I. Sandison, Director  
Office of Columbia River  
Washington State Department of Ecology  
141211

A handwritten signature in blue ink that reads "Scott Merriman".

Scott Merriman  
Office of the State Treasurer



# **The Yakima River Basin Integrated Water Resource Management Plan - Cost Estimate and Financing Plan - Legislative Report**

## **INTRODUCTION**

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The Yakima River Basin Integrated Water Resource Management Plan, Cost Estimate and Financing Plan, Legislative Report was developed pursuant to the requirements of Second Substitute Senate Bill (2SSB) 5367, the Yakima River Basin Water Resource Management Act, passed by the Washington State Legislature in 2013.

In passing the Act, the legislature found that:

. . . the interests of the state will be served by developing programs, in cooperation with the United States and the various water users in the basin, that increase the overall ability to manage basin waters in order to better satisfy both present and future needs for water in the Yakima River Basin. The interests of the state will also be served through coordination of federal and state policies and procedures in order to develop and implement projects within the framework of the integrated water resource management Integrated Plan for the Yakima River Basin (2SSB 5367, Sec. 1(1) (e) (f)).

The legislation authorizes the Department of 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 functions, and agricultural, municipal, and domestic water supply in the Yakima River Basin, consistent with the provisions of the Integrated Plan.

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 must be funded through federal, private, and other non-state sources, including a significant contribution of funding from local project beneficiaries (2SSB 5367, Sec. 11(1)(a)).

While the legislation acknowledges that significant benefits are anticipated to accrue from implementation of the Integrated Plan, its findings concluded that:

. . . in light of its substantial costs and the state's limited capacity to absorb them within existing resources, there is a need to identify and evaluate potential new state and local revenue sources to assist in paying the state and local share of implementation costs (2SSB 5367, Sec. 1(1)(h)).

As such, the legislature included a requirement in 2SSB 5367 that the Department of Ecology prepare an estimate of costs associated with implementation of the Integrated Plan and a financing Integrated Plan prepared by the Office of the State Treasurer that analyzes various options for financing those costs. The cost estimate and financing Integrated Plan is required to

include a description of prior state expenditures associated with implementation of the Integrated Plan and proposed future state expenditures with proposed financing sources for each project (2SSB 5367, Sec. 11(2)).

## **OVERVIEW OF THE YAKIMA RIVER BASIN INTEGRATED WATER RESOURCE MANAGEMENT PLAN**

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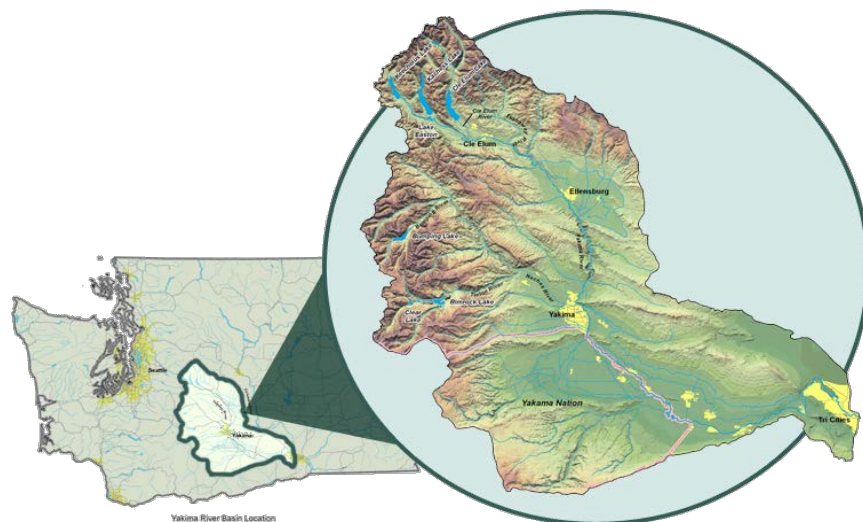
### **Background**

The Yakima River Basin is approximately a 6,000 square mile drainage basin in south central Washington (see Figure 1). It supports a population of about 360,000 people and is home to the Yakama Nation. The Yakima River Basin agriculture contributes over \$3 billion annually to the economy of the state of Washington. Yakima County ranks 12<sup>th</sup> nationally in the total value of agricultural products sold. Yakima County ranks first nationally, in apple, mint, winter pears, and hop production. The Yakima River Basin exports around \$1.8 billion in farm products through the ports of Seattle and Tacoma annually. In addition, historically, the Yakima River Basin was the second largest producer of salmon and steelhead runs in the entire Columbia River system.

Since 1905, when the state granted rights for all unappropriated surface water in the Yakima River Basin to the Bureau of Reclamation (Reclamation), river operations have been managed by Reclamation. Reclamation operates five existing reservoirs with a total capacity of about 1,000,000 acre-feet, which is about one-third of the annual runoff in the basin. The Yakima River Basin is heavily dependent on east-slope Cascade Range snowpack to supply water to the semi-arid lower basin during the summer months.

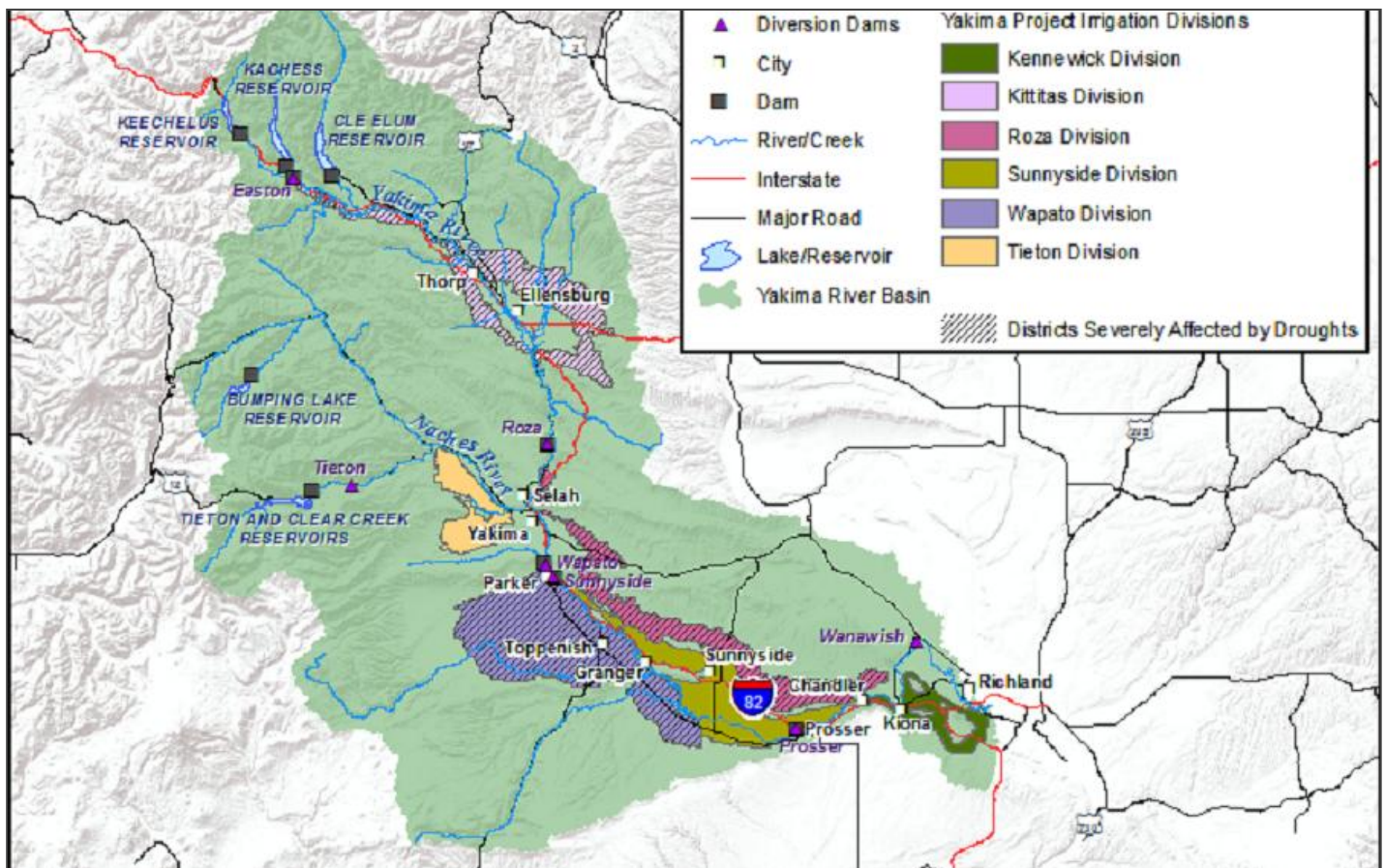
Water users in the Yakima River Basin are a combination of pre-1905 senior surface water right holders, direct customers of Reclamation served water under its 1905 surface water right, a small number of post-1905 junior surface water right holders, and groundwater right holders, mostly with post-1905 priority dates.

**Figure 1 - Yakima River Basin**



The surface water resources of the Yakima River Basin are over-appropriated, and a state court adjudication of those water rights has been ongoing since 1977. The state closed the Yakima River Basin to additional groundwater rights in the 1990s. Recently, the U.S. Geological Survey concluded that the Yakima River Basin’s groundwater aquifers are in continuity with surface waters. Thus, rights for groundwater, on which most of the Yakima River Basin’s municipalities depend, are at risk of being determined by a court to be junior to the 1905 water rights of Reclamation.

Frequent droughts over the past several decades have demonstrated the vulnerability of the Yakima River Basin’s water supplies. During droughts in 2001 and 2005, the irrigation districts served by Reclamation, referred to as the “proratable” irrigation districts, and received only about 40 percent of their water supply.



Instream flows and aquatic resources of the Yakima River Basin have also suffered. Out-of-basin and in-basin factors, including diminished stream flows and lack of fish passage at existing Yakima River Basin reservoirs, have combined to drastically reduce the numbers of salmon and steelhead.

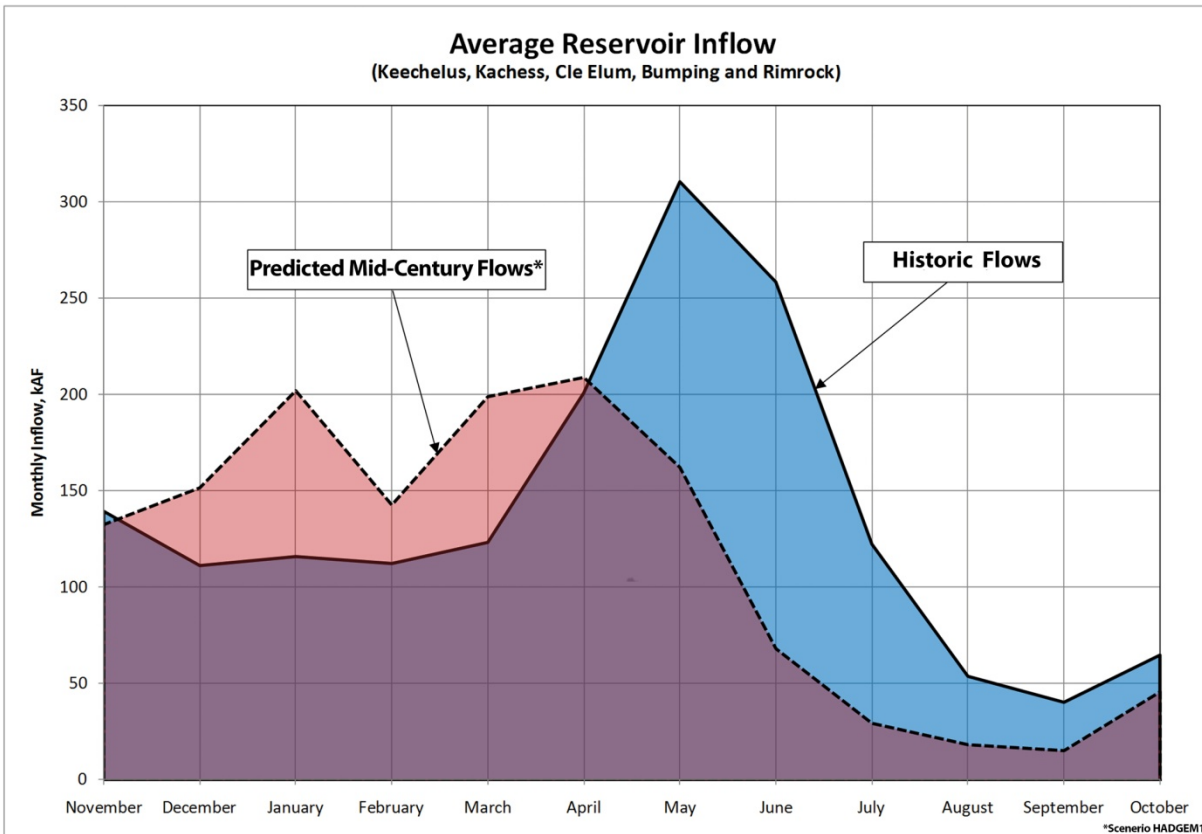


Runs of salmon and steelhead once numbered at least 800,000 fish, declined to about 8,000 fish by the 1980's. Sockeye, Coho, and summer Chinook salmon have all been extirpated; although efforts are underway, led by the Yakama Nation, to reintroduce new stocks of those species. The Yakima River Basin's steelhead and bull trout are listed as threatened species under the Endangered Species Act.

In addition, climate modeling by the University of Washington Climate Impacts Group and the federal River Management Joint Operating Committee predict that the effects of climate change will have profoundly negative impacts on the water resources and aquatic resources of the Yakima River Basin by mid-century. It is anticipated that warmer winter temperatures will reduce the amount of precipitation that will fall as snow resulting in substantial reductions in the Yakima River Basin's snowpack depth and duration. As demonstrated in Figure 2, under that scenario, peak runoff will shift from the May-June time frame to the mid- to late-winter time frame, summer and early-fall river flows will be significantly diminished, and water temperatures will increase. Such changes in conditions will negatively affect resident and anadromous fish populations as well as the quantities of water available for agricultural, municipal, and domestic uses.



**Figure 2 – Average Reservoir Inflow**



**By mid-century, stream flows in the Yakima Basin will be much lower in the summer, when water is needed most.**

## Integrated Plan Development

Water supply shortages coupled with severe reductions or elimination of major salmon and steelhead runs makes the need for drastic improvements to water resources and aquatic resources of the Yakima River Basin imperative. In 2009, the Department of Ecology's Office of Columbia River and Reclamation formed the Yakima River Basin Water Enhancement Project (YRBWEP) Workgroup to assist in identifying approaches for addressing critical resource needs (see Figure 3 - YRBWEP Workgroup List). The Office of Columbia River was created by the Washington State Department of Ecology to implement the Columbia River Water Supply Development Act (Chapter 90.90 RCW) passed by the state legislature in 2006. Chapter 90.90 RCW directs the department to aggressively pursue development of new water supplies 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.

The YRBWEP Workgroup, consisting of the Yakama Nation; federal, state, and local agencies; irrigation districts; conservation groups; county elected officials; and salmon and steelhead recovery entities, focused on developing a comprehensive strategy for expanding the work of the 1979 federal YRBWEP Congressional legislation and the 1994 Congressional Amendments that created YRBWEP Phase 2. That comprehensive strategy took shape in mid-2011 when consensus was reached on the Integrated Plan. Development of the Integrated Plan was facilitated by additional federal support resulting from the Yakima River Basin being selected as the recipient of Reclamation's first Basin Study grant nationally.

**Figure 3 - YRBWEP Workgroup List**

<p><b>Jaelyn Hancock</b> WA Department of Agriculture</p>	<p><b>Mike Balboni</b> US Forest Service</p>
<p><b>Dale Bambrick</b> NOAA Fisheries Service</p>	<p><b>Alex Conley</b> Yakima Basin Fish &amp; Wildlife</p>
<p><b>Seth Defoe</b> Kennewick Irrigation District</p>	<p><b>Jerome Delvin</b> Benton County Commission</p>
<p><b>Rick Dieker</b> Yakima-Tieton Irrigation District</p>	<p><b>Urban Eberhart</b> Kittitas Reclamation District</p>
<p><b>Michael Garrity</b> American Rivers</p>	<p><b>Dave Fast</b> Yakama Nation</p>
<p><b>Paul Jewell</b> Kittitas County Commission</p>	<p><b>Bill Lover</b> City of Yakima</p>
<p><b>Mike Leita</b> Yakima County Commission</p>	<p><b>Lisa Pelly</b> Trout Unlimited</p>
<p><b>Sid Morrison</b> Yakima Basin Storage Alliance</p>	<p><b>Phil Rigdon</b> Yakama Nation</p>
<p><b>Ron VanGundy</b> Roza Irrigation District</p>	<p><b>Derek Sandison</b> WA Department of Ecology</p>
<p><b>Rick Roeder</b> WA Department of Natural Resources</p>	<p><b>Jeff Thomas</b> US Fish &amp; Wildlife Service</p>
<p><b>Mike Livingston</b> WA Department of Fish &amp; Wildlife</p>	<p><b>Dawn Wiedmeier</b> US Bureau of Reclamation</p>
<p><b>Jim Trull</b> Sunnyside Valley Irrigation</p>	

The goals of the Integrated Plan 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 elements:

- ***Fish Passage Element***
  - Provide fish passage at all major Yakima River Basin Dams,
- ***Structural and Operational Changes Element***
  - Promote operational efficiency and flexibility at existing in-basin facilities,
- ***Surface Water Storage Element***
  - Develop an additional 450,000 acre-feet of additional water storage for supporting instream and out-of-stream uses in the Yakima River Basin,
- ***Groundwater Storage Element***
  - Recharge underground soil or rock formations with surface water for storage and recovery for future use,
- ***Habitat/Watershed Protection and Enhancement Element***
  - Protect and enhance critical habitat for anadromous and resident fish and wildlife,
- ***Enhanced Water Conservation Element***
  - Aggressively implement water use efficiency measures that improve water supply available for instream flow support in critical stream reaches, and
- ***Market Driven Reallocation Element***
  - Create conditions within which water banks can facilitate the sale or lease of water between willing parties on a temporary or permanent basis.

## **Objectives of the Yakima River Basin Integrated Water Resource Management Plan**

The Integrated Plan proposes major ecological restoration of the Yakima River Basin. Fish passage will be constructed at all major in-basin reservoirs to provide salmon and steelhead access to upper basin spawning and rearing areas that have been blocked for nearly a century. The Integrated Plan calls for substantial mainstem and tributary habitat enhancements. It will also involve restoration of substantial portions of the upper watershed for both terrestrial and aquatic species. The Integrated Plan includes operational modifications to improve the

efficiency and flexibility of existing facilities necessary for adequate response to short-term droughts and longer-term climate change effects.

The Integrated Plan also proposes substantial improvements in water supply. Water supply improvements will come in several different forms. Efficiency of existing use of water will be fostered through reducing barriers to sales and transfers of water between willing buyers and willing sellers. Municipal and agricultural conservation efforts will be enhanced. For example, the Integrated Plan calls for supplementing the 72,000 acre-feet of conserved irrigation water achieved as part of the 1994 YRBWEP Phase 2 efforts with another 170,000 acre-feet of conservation savings. In addition, studies are underway to better understand the potential role of aquifer storage in providing passive recharge to the mainstem of the Yakima River in targeted locations.

However, the objectives of the Integrated Plan cannot be met without significant improvements in surface water storage. The Department of Ecology's Office of Columbia River and Reclamation determined, based on an analysis of water supply needs, that development of an additional 450,000 acre-feet of water storage capacity in the form of modified and new surface storage facilities, will be needed to provide:

- Drought relief to existing irrigators in the Yakima River Basin,
- Water supply security for our municipalities and resources to meet their future needs, and
- Adequate water for fish outmigration and pulse flows in all years.

The Integrated Plan recognizes that the only effective means of offsetting predicted reductions in snow pack depth and duration associated with climate change are improving flood plain aquifer storage potential and increasing surface storage capacity. Sensitivity analysis modeling of the Integrated Plan indicates that after implementation of the Integrated Plan's water supply elements, about 500,000 acre-feet more water will be available under drought conditions by mid-century with the Integrated Plan than without.

It is recognized that implementation of the surface storage elements of the Integrated Plan will be difficult and expensive, but there are no other sources of water supply available aside from storage that would be capable of meeting the needs of the basin. Conservation is often suggested as a substitute for water storage; however, there are severe limitations to the role of conservation as a source of water supply, particularly out-of-stream water supply.

As noted previously, the Integrated Plan anticipates capturing another 170,000 acre-feet of agricultural conservation savings. Those savings will provide valuable flow improvements in targeted stream reaches where those flow benefits will improve conditions for fish. It must be remembered that most conservation efforts focus on reducing the amount of water that leaks from conveyance systems (for example, canals or ditches) or from irrigation practices that result in more water being applied than is needed by the crops being grown. Generally, the leaked water returns through runoff or through groundwater to the river from which it was diverted some distance downstream of the point where it was diverted. Along the Yakima River mainstem, return flows rejoin the river within days or a few weeks after diversion and contribute to downstream river flows. If through conservation measures the leakage or overapplication of water is reduced or eliminated, the amount of water diverted from the river can be reduced.

Diversions add flow to the river, but only between the point of diversion and the point where return flows historically rejoined the river. Below the return flow point, there is no residual benefit to the river. If the conserved water described in the preceding example was used for some out-of-stream purpose, flow below the return flow point would be diminished. The long-term net effect would be to dewater the river.

Additionally, the amount of water savings that could be captured through conservation is greatly reduced under drought conditions, because, simply put, you can't conserve water that doesn't exist. The Department of Ecology's Office of Columbia River and Reclamation estimate that of the 170,000 acre-feet of average year conservation called for in the Integrated Plan, only about 50,000 acre-feet of savings would be available for capture in drought years like 2001 and 2005.

## **YAKIMA RIVER BASIN INTEGRATED WATER RESOURCE MANAGEMENT INTEGRATED PLAN ESTIMATED COSTS AND FUNDING NEEDS**

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### **Full Buildout (30 year) Costs**

The Department of Ecology's Office of Columbia River and Reclamation estimate the total 30-year development costs of the Integrated Plan to be roughly \$4.0 billion. Those costs have been further broken down to reflect three phases, each one decade in duration: the Initial, Intermediate, and Final Development Phases.

The Integrated Plan element with the highest estimated costs, approximately \$2.4 billion, is the Surface Water Storage Element. The Habitat/Watershed Protection and Enhancement, Fish Passage, and Enhanced Water Conservation Elements each represent between \$400 million and \$500 million in costs and about \$1.3 billion in aggregate.

The costs estimates provided in Figure 4 were derived from a combination of the Initial Development Phase funding needs identified by the Yakima Integrated Plan Implementation Committee 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).

Reclamation 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 highest level of estimated Integrated Plan costs with the lowest level of estimated benefits. Conversely, the 3.2 benefit-to-cost ratio represents the pairing of the lowest estimates of project costs with the highest level of estimated project benefits.

Reclamation, 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.

**FIGURE 4**  
**ESTIMATED COSTS FOR YAKIMA INTEGRATED PLAN DEVELOPMENT**  
**30 YEAR IMPLEMENTATION PERIOD**

INTEGRATED PLAN ELEMENT	INITIAL DEVELOPMENT PHASE (Decade 1)	INTERMEDIATE DEVELOPMENT PHASE (Decade 2)	FINAL DEVELOPMENT PHASE (Decade 3)	FULL DEVELOPMENT COSTS (3 Decades)
Habitat/Watershed Protection and Enhancement	\$201,700,000	\$139,400,000	\$139,400,000	\$480,500,000
Fish Passage (6 projects)	\$186,400,000	\$133,600,000	\$108,400,000	\$428,400,000
Surface Water Storage	*\$413,900,000	**\$1,003,600,000	**\$999,000,000	\$2,416,500,000
Groundwater Storage - Regional and Municipal	\$6,400,000	\$58,400,000	\$58,400,000	\$123,200,000
Structural and Operational Changes	\$150,000	***\$63,500,000	***\$63,500,000	\$127,150,000
Enhanced Water Conservation	\$87,500,000	\$171,000,000	\$171,000,000	\$429,500,000
Market Driven Reallocation	\$850,000	\$1,050,000	\$1,050,000	\$2,950,000
Integrated Plan Update Costs		\$1,500,000	\$1,500,000	\$3,000,000
<b>TOTAL</b>	<b>\$896,900,000</b>	<b>\$1,572,050,000</b>	<b>\$1,542,250,000</b>	<b>\$4,011,200,000</b>

\* *Includes Keechelus to Kachess Pipeline which was classified as Operational Modifications in IDP*  
Costs include estimates for both the Kachess Reservoir Drought Relief Pumping Plant Project and the Keechelus to Kachess Conveyance Project. The Keechelus to Kachess Conveyance Project is included in the Operational Modifications Element of the Integrated Plan; however, subsequent evaluations determined that the Kachess Reservoir Drought Relief Pumping Plant Project is unlikely to be viable without inclusion of the conveyance system as a project component.

\*\* *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.

## **Initial Development Phase (10 year) Costs**

Subsequent to passage of 2SSB 5367, the Integrated Plan Implementation Committee collaborated with Reclamation and the Department of Ecology's Office of Columbia River concerning the composition of the Initial Development Phase of the Integrated Plan. This phase is intended to span the time frame from passage of the state's Integrated Plan authorizing legislation in 2013 through the year 2023.

Consistent with the objectives of the Integrated Plan, the projects and activities that Reclamation and the Department of Ecology's Office of Columbia River are including in the Initial Development Phase will concurrently advance some portion of all seven elements of the Integrated Plan. The Initial Development Phase represents a set of projects and activities that will quickly achieve tangible improvements in stream flow, habitat, and fish passage as well as to provide increased security of existing out-of-stream water supplies (see Figure 5). The Initial Development Phase will involve requests for funding for a number of specific capital projects including the:

- Kachess Drought Relief Pumping Integrated Plant – \$205 million,
- Fish Passage at Cle Elum Reservoir – \$87 million, and
- Three-foot pool raise at Cle Elum Reservoir – \$18 million.

A fourth project, the \$159 million Keechelus to Kachess Conveyance project, will likely be included as an adjunct to the Kachess Drought Relief Pumping Integrated Plant project, pending verification of its efficacy in improving the speed and reliability of Kachess Reservoir refill, or improving summer flow conditions in the Keechelus-to-Easton reach of the Yakima River, or both.

Other components of the Initial Development Phase include proposals for \$85 million in agricultural conservation projects that would make available about one-half of the 170,000 acre-feet of conserved water envisioned by the Integrated Plan, \$100 million in floodplain and tributary habitat restoration projects and acquisitions, \$90 million for additional fish passage projects, \$6 million in aquifer storage and recovery projects, and \$500,000 for fostering water banking and exchange programs. Attempts to attain Wild and Scenic River designations for vital headwater stream reaches will also be advanced during the Initial Development Phase beginning with portions of the upper Cle Elum River system.

Subject to the results of an ongoing fatal flaw analysis, about \$15 million will be sought in the latter half of the Initial Development Phase to conduct a feasibility study and prepare an environmental impact statement to ready one of the two large storage facilities identified in the Integrated Plan for possible inclusion in the Integrated Plan's subsequent development phase. The subsequent or middle development phase would span the time frame from the year 2024 through 2034.

The total estimated additional costs of the Initial Development Phase would be about \$766 million. These costs represent the best available estimates based upon current information and may be subject to change as feasibility studies proceed.

**Figure 5**  
**INITIAL DEVELOPMENT PHASE ESTIMATED COSTS**

<b>Integrated Plan Element</b>	<b>Integrated Plan Projects</b>	<b>Current (13-15) Biennium Funding</b>	<b>Initial Development Phase Funding Needs (through 2023)</b>	<b>Project/Funding Detail</b>
<b>Habitat</b>	Tributary/Mainstem Enhancement	\$2,400,000	\$100,000,000	Construction activities spread over all 10 years. Weighted slightly to second five-year period.
	Watershed Acquisitions	\$99,300,000		
<b>Fish Passage</b>	Cle Elum Reservoir	\$8,800,000	\$87,000,000	Construction completed in first five years. Opens access to 29.4 miles of spawning/rearing habitat.
	Additional Fish Passage Project	\$100,000	\$90,000,000	Design of second passage facility in first five-year period. Construction completed in second five-year period.
		\$500,000		
<b>Operational Modifications</b>	Keechelus to Kachess Pipeline	\$500,000	\$159,000,000	Construction completed in first five-year period, provided project need verified.
	Subordination of Power Generation (Roza and Chandler)	\$150,000	TBD	Pending outcome of current studies to determine fish flow needs.
<b>Surface Storage</b>	Cle Elum Pool Raise	\$2,800,000	\$18,000,000	Construction completed in first five-year period. Creates 14,600 acre-feet of additional water supply.
	Kachess Drought Relief Pumping Integrated Plant	\$12,600,000	\$205,000,000	Construction in first five-year period. Provides up to 200,000 acre-feet of additional water in drought years.
	Wymer Reservoir	\$500,000	\$15,000,000	Prepare feasibility study and EIS for one project after fatal flaw analysis completed and recommendation to proceed from Work Group. Weighted to second five-year period.
	Bumping Reservoir Enlargement	\$500,000		
<b>Aquifer Storage and Recovery (ASR)</b>	Yakima ASR and regional ASR	\$400,000	\$6,000,000	Funding needs may increase pending outcome of regional siting study. Weighted slightly to second five-year period.
<b>Water Conservation</b>	Agricultural Conservation	Ag \$2,400,000	\$85,000,000	Construction activities spread over all 10 years. Weighted slightly to second five-year period. Creates 85,000 acre-feet of conserved water.
		Muni \$100,000		
<b>Market Driven Water Reallocation</b>	Water Bank/Exchange Programs	\$350,000	\$500,000	Support for banking and exchange programs throughout basin. Funding may increase depending on need and program success.
<b>TOTALS</b>	All elements	\$131,400,000	\$765,500,000	Rollup: \$896,900,000



The estimated additional costs do not include the \$99.3 million appropriated by the 2013 state legislature for the Teanaway watershed acquisition, nor the \$32.1 million appropriated by the 2013 state legislature for currently active Integrated Plan projects. Those currently active projects include:

- Completing environmental review, design, and permitting for the Kachess Reservoir and Cle Elum Reservoir suite of projects necessary to allow construction of those projects to commence as early as the end of 2015;
- Constructing fish habitat improvements;
- Implementing water conservation projects;
- Developing water banking and exchange programs; and
- Designing and pilot testing aquifer storage and recovery projects.

### **Existing Funding Sources Available to Support Integrated Plan Implementation**

Current non-state funding and financing mechanisms available to support are somewhat limited and are discussed in more detail in the following section. At the federal level, direct funding potentially available for Integrated Plan Project implementation is limited primarily to the *Water and Related Resources Account*, the *Land and Water Conservation Fund*, and the *Regional Conservation Partnership Program (RCPP)*, all discussed in more detail below. Programmatic funding is also being directed by entities such as the U.S. Forest Service, Bureau of Indian Affairs, National Oceanic and Atmospheric Administration (NOAA) Fisheries, and the Bonneville Power Administration to projects and activities that generally support Integrated Plan implementation.

The *Water and Related Resources* account is the Bureau of Reclamation's principal operating account and supports the development, management, and restoration of water and related natural resources in the 17 Western States. The account includes funds for operating and maintaining existing facilities and to conduct studies on ways to improve the use of water and related natural resources. Typically, work under the account is done in partnership and cooperation with non-Federal entities and other Federal agencies to facilitate solutions to complex water issues and stretch limited water supplies. The account funds activities such as Reclamation's Endangered Species Act recovery programs, actions in support of the goals of the America's Great Outdoors Program, the WaterSMART Grants Program, and climate change adaptation efforts.

Created by Congress in 1964, the *Land and Water Conservation Fund (LWCF)* provides funding to federal, state and local governments to purchase land, water and wetlands for the benefit of general public. Lands and waters purchased through the LWCF are used to:

- Provide recreational opportunities,
- Provide clean water,
- Preserve wildlife habitat,

- Enhance scenic vistas,
- Protect archaeological and historical sites, and
- Maintain the pristine nature of wilderness areas.

The program is divided into two distinct funding accounts: state grants and federal acquisition funds. Subsequent to the Integrated Plan being formalized in 2012, approximately \$11.2 million in federal funds have been appropriated for watershed enhancement efforts in the Yakima River Basin.

The U.S. Department of Agriculture's National Resource Conservation Service (NRCS) operates the RCPP under provisions of the federal Farm Bill. The RCPP promotes coordination between NRCS and its partners to deliver conservation assistance to producers and landowners. NRCS provides assistance to producers through partnership agreements and through program contracts or easement agreements. NRCS is authorized to designate eight Critical Conservation Areas nation-wide to place special emphasis and make funding available for actions in high priority areas. NRCS recently designated the Columbia River Basin Critical Conservation Area (CCA), which includes the Yakima River Basin.

In making the designation, NRCS noted that the Columbia River Basin provides habitat for salmon and steelhead, which are essential components of a healthy ecosystem and critical to Indian tribes and local communities. With its Critical Conservation Area designation, NRCS has established its commitment to build on existing partnerships in the basin to improve water quality and quantity in order to restore critical components of salmon habitat and aid in the recovery of Pacific salmon while maintaining a strong agricultural sector. Funding awards associated with the RCPP are expected to occur in December 2014.

One additional federal program worth noting is the Water Resources Reform Development Act of 2014 - *Water Infrastructure Finance and Innovation Program* (WIFIA). While the provisions of WIFIA do not apply to Bureau of Reclamation Projects, it is viewed as representative of the manner in which Congress will likely authorize all water projects in the future.

The WIFIA program is a pilot program administered by both the Secretary of the Army and the Administrator of the EPA. It establishes a 5-year pilot program, beginning in federal fiscal year 2015, to provide low cost loans for water, wastewater, and flood control infrastructure projects. Modeled after the Transportation Infrastructure Finance and Innovation Act (TIFIA), the program is intended to leverage nonfederal funds by providing loan guarantees and direct loans at long-term Treasury rates. WIFIA funds can achieve a significant leverage because they only have to cover the risk of project defaults, which historically have been infrequent. In order to be eligible for WIFIA, 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.

Currently available non-federal and non-state funding sources are somewhat limited in scope and include county and municipal direct appropriations, irrigation district direct appropriations, and irrigation district repayment mechanisms. These and potential new financing and funding sources are discussed in the following section.

## **SOURCES**

<http://www.tpl.org/land-and-water-conservation-fund-lwcf>

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/farmland/rcpp/>

<http://www.doi.gov/budget/appropriations/2015/highlights/upload/BH035.pdf>

<http://www.infrainsightblog.com/2014/05/articles/financing/congress-passes-wifia-pilot-program/>

<http://www.nawc.org/uploads/documents-and-publications/documents/WIFIA%20in%20WRRDA%20summary.pdf>

# Office of the State Treasurer's Finance Strategy Recommendation

The Legislature directed the Department of Ecology and the Office of the State Treasurer to develop a Yakima River Integrated Plan finance strategy.

The Department of Ecology and the federal Bureau of Reclamation in conjunction with the Yakama Nation and the Yakima River basin stakeholders developed the Integrated Plan through a formal review and adoption process. Neither the State nor Reclamation assumes the project would be funded like previous Reclamation projects that used very long term and very low interest loans from the federal government. Both agencies assume there will be cost sharing amongst the partners but because specific cost sharing provisions have not yet been determined it is difficult to recommend a coherent finance strategy.

In the past, state level water infrastructure investments have typically been funded from the Public Works Assistance Account, State Revolving Funds and bond proceeds appropriated in the capital budget. At the local level they have primarily relied on assistance from state and federal programs and local funding through rates and assessments.

The cities within Benton, Kittitas and Yakima counties operate municipal water utilities that provide potable water generally inside cities. The utilities are typically operated as an enterprise activity within the city. The utility revenue must be spent on city owned utilities. Because they are rate based, they have easier access to credit markets and can utilize revenue bonds based on their rates rather than general obligation bonds.

Benton, Kittitas and Yakima county governments don't operate water utilities. However, they are typically responsible for flood risk-reduction, watershed planning and storm water management. They rarely access the credit markets for project financing. While their existing revenue streams are better suited to use of general obligation bonds, their narrow and declining tax bases make it difficult to pledge those revenues.

There are three pro-rated irrigation districts (they can have their water shut off if needed) that generally provide irrigation water to farms and in limited instances also serve residential customers – Kittitas Reclamation District, Roza Irrigation District and Wapato Irrigation District. Their revenue comes primarily from property assessments and rates. Some of the irrigation districts have federal loan repayments and don't have bonded debt. They generally have two to three years of operating expenses in reserve. Because they are rate-based they can utilize both revenue and general obligation bonds. They also appear to have capacity to raise assessments and rates to make additional investments if needed. Crop values per acre can be a limiting factor in increasing rates and access to markets

Because 2SSB 5367 requires at least half of Integrated Plan funding to come from non-state resources, requiring to local governments, federal government and beneficiaries/rate payers to share in the costs. A successful finance strategy will require long term commitments from the partners and new funding sources that can be dedicated to the Integrated Plan.

Though a specific finance strategy is difficult to create until the cost allocation is decided, there are several general finance suggestions to keep in mind:

## **Overarching Decisions Needed**

While there is cost allocation agreement between the Integrated Plan partners, a specific cost share agreement is needed between the partners in order to develop a predictable finance strategy.

## **Program and Policy Coordination**

Coordinate and target the multiple state agency infrastructure program investments within the region so they can focus on financially feasible projects called out in the Integrated Plan.

Coordinate and target the environmental restoration and land purchase program investments within the region so they too can focus on projects that fit the Integrated Plan.

## **Local Funding Options**

Irrigation and reclamation districts, cities and counties can increase their use of credit markets to help pay their share of the costs.

A targeted program can be developed to assist those often smaller jurisdictions that rarely access the credit markets to help them obtain more cost effective financing.

Irrigation and reclamation districts and water utilities should evaluate their rates in order to increase their financial contribution to the Integrated Plan.

A new specific property tax levy could be considered for the three counties that could go to support Integrated Plan investments – outside the \$1.80 limit and within the \$.50 gap.

## **State Funding Options**

Create a Yakima River bond authorization modeled after the Columbia River program, which are general obligation bonds reserved for projects within the Columbia River basin, for the state's share. Create a water conservation program for exempt wells and privately owned water systems that doesn't have a lending of credit constraint.

## **Background**

### **Statutory Direction from 2SSB 5367**

The legislation directed the Office of the State Treasurer to prepare supplementary chapters to the cost estimate and financing plan that:

- 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 provides options for how cost overruns can be addressed (2SSB 5367, Sec. 11(3)).



(Figure 6 continued)

## Yakima River Basin Integrated Water Resource Management Plan

Agency	Projects/Programs Supporting the Integrated Plan	FY 2011 Funding	FY 2012 Funding	FY 2013 Funding	FY 2014 Funding	FY 2015 Funding	Purpose for funds
Bonneville Power Administration	Northwest Power and Conservation Council's Fish and Wildlife Program	\$22.7M	\$20.5M	\$20.0M	\$17.6M	\$21.5M	Water Conservation, Tributary Habitat Restoration, Fish Passage, Water/Land Acquisitions and Restoration, Monitoring and Evaluation, Artificial Production
Bureau of Indian Affairs	Lining and piping on Wapato Irrigation Project			1.8M	TBD	TBD	Water Conservation
US Fish and Wildlife	Partners for Fish and Wildlife	TBD	TBD	TBD	TBD	TBD	Habitat Restoration
Bureau of Land Management	Region Water Conservation program	TBD	TBD	TBD	TBD	TBD	Water Conservation

### State Funding Programs

The state of Washington borrows money primarily to undertake large capital projects such as building construction, land acquisition, and transportation projects. With each borrowing, the state commits to make regular and approximately equal payments over the term of the borrowing to repay the debt, which includes the principal amount borrowed plus some amount of interest. Moreover, the term of the borrowing is within the expected useful life of the asset.

The alternative to debt financing is to cash fund capital expenditures by relying on revenues received over time. 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.

Bonds are "general obligations of the state" when the state irrevocably pledges its full faith, credit and taxing power to the payment of the bonds. The ability of the state to make this pledge is provided in the State Constitution.

Limited obligation bonds are secured by a dedicated stream of revenues such as tolls, special taxes, or fees, without the general obligation backing of the state. These bonds typically have lower ratings and higher borrowing costs than general obligation bonds.

## **State Infrastructure Assistance Programs**

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: cities, counties, special purpose districts and quasi-municipal organizations. Eligible infrastructure systems: Domestic Water, Roads/Streets, Bridges, Sanitary Sewer, Solid Waste/Recycling and Storm Water. CERB provides loans and grants to local governments and federally recognized tribes for public infrastructure which support 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.

## **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 first are 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.

## **New Revenue Options**

### **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.

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 lid authorization. Each is voter approved and is for specific purposes. This levy lid lift approach isn't a practical approach for long term investments. An alternative approach is for the legislature to authorize a specific levy within the three counties for plan investments.

Both Benton County and Kittitas County do have room under their countywide rate. Yakima County has just about levied up to the \$1.80. 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 to the property tax about \$1.80 requires legislative action.

### **Increasing the state public utility tax**

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.



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. Any increase in the public utility tax would have to be statewide. It would take a fairly large increase in these taxes to generate revenue of any amount.

### **Increasing the local sales tax**

Increasing the sales tax by one-tenth would generate \$3.4 million/yr in Benton County, \$696,301 in Kittitas County and \$3.252 million in Yakima County. Kittitas and Yakima county voters have enacted the 3/10 public safety tax and Benton County will begin collecting January 2015. None of the counties have enacted the optional 1/0 mental health sales tax.

### **Current Local Funding Sources**

Cities 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.

Counties currently do not have the authority to impose utility taxes. Counties derive their revenue from property tax and sales tax. The property tax growth is capped at one percent and the majority of sales tax revenues are generated inside urban growth areas.

### **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. [Please note that these chapters directly address LIDs in cities.] There are differences (some very subtle) in required or allowable processes among the several forms of municipal government. The enabling statutes for each type of government should be carefully reviewed.

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.

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. The reverse is not possible.

### **LIDs are Only Financing Tools**

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.

## **LID Assessments are Subject to Strict Criteria**

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.

## **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.

## **What counts against debt capacity?**

Under current statutes, only general-obligation (GO) debt counts against a jurisdiction's debt capacity. GO debt pledges the "full faith and credit" of the jurisdiction to pay off the debt. In other words, any and all of a jurisdiction's taxes, revenues, and other sources of money may be used to pay off the debt.

GO debt includes GO bonds and notes, whether or not they are voter-approved. It also includes most long-term financial obligations, such as lease/purchase contracts. Routine recurring financial obligations do not count against debt limits. In addition to routine operational obligations such as rent and payroll, pension obligations and compensated absences (owed to jurisdictional employees for sick or vacation leave) do not count against debt limits; they don't meet the "borrowed money" portion of the debt definition.

If a jurisdiction participates in bonds issued by the Office of the State Treasurer as "Certificates of Participation" through the Local Option Capital Assets Lending program, those debts also count against debt capacity. This program aggregates small purchases by several jurisdictions into a single bond to create volume savings on issuance costs.

Certificates of Participation typically finance purchases of equipment such as school buses or fire engines that are too small to individually warrant the costs of issuing a bond, but for which conventional bank financing is prohibitively expensive.

## **What doesn't count and why?**

Two main categories of debt do not count against debt capacity: revenue and special assessment debt. Revenue debt is debt — bonds or notes, mainly — for which the jurisdiction has pledged a specific stream of revenue. Examples include debt for jurisdiction-owned water and sewer systems, for which the fees paid by system users are pledged to pay off the debt.

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.

## **What about government loans?**

Loans are exempt from being counted against statutory municipal debt limits under RCW 39.69.020. In addition, they are most often used for construction or upgrades of facilities, such as water and sewer facilities, that have 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.

### **Irrigation and Reclamation Districts**

Irrigation districts are generally focused on providing irrigation water. The districts are governed by an elected board of directors. They derive their revenue primarily from property assessments and then water rates. 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 indebtedness for specific improvements.

The 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. Water rates are set by individual water districts. Some districts also serve residential customers with irrigation water.

The districts also collect and remit the United States Bureau of Reclamation construction loan payments.

The State Auditor regularly audits the Roza Irrigation District and Kittitas Reclamation District and provides the audits on their website. Roza has very little debt, a healthy cash balance and revenues 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.

Financial information for the Wapato Irrigation District wasn't readily available.