

2011 Columbia River Basin Water Supply Inventory Report



*Submitted to the
Washington State
Legislature Pursuant
to RCW 90.90.040*



DEPARTMENT OF
ECOLOGY
State of Washington



office of columbia river



This report is available on the Department of Ecology website at:

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This 2011 Columbia River Basin Water Supply Inventory Report
was prepared by The Office of Columbia River

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2011 Report to the Legislature



Columbia River Basin Water Supply Inventory Report

Department of Ecology, Office of Columbia River

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How to Use This Report

This report is an inventory and comprehensive assessment of projects OCR is investing in to meet the four objectives the Legislature assigned OCR in 2006. It categorizes OCR's current investments by the problem OCR is trying to solve: Odessa Sub-area, New Permits, Drought, and Fish. An interactive funding map gives details on specific projects, estimates of project expenditures and economic and environmental benefits. A summary of legislative changes that will affect OCR and future project implementation is also provided. This report complements a second report, the *2011 Columbia Basin Long-Term Water Supply and Demand Forecast* that estimates how much water is needed in the future to meet Eastern Washington's demand, and where that demand is likely to occur. Both of these reports will inform OCR as they make decisions that maximize the benefits of project investments. The "OCR Funded Project" map, on pages 2 and 3 illustrates OCR's dedicated work to find solutions to the four Legislative objectives.

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Executive Summary

The Office of Columbia River (OCR), as directed by Chapter 90.90 RCW, is rapidly developing new water supplies for the Columbia River Basin to:

- ◆ Replace groundwater sources in the Odessa Subarea.
- ◆ Permit new water rights.
- ◆ Secure water for drought relief.
- ◆ Provide water for instream flows to benefit fish.

This report presents information on how OCR is making more water available for eastern Washington's farms, cities, instream flows and industries through project development and legislative amendments. Within the past year, OCR has funded construction projects that are adding approximately 150,000 ac-ft of water to Eastern Washington's water supply. Another 200,000 ac-ft of water will be made available in the near term with potentially millions of acre-feet under long-term development. Recent successes include:

- ◆ Issuance of the first new water right permits from the 25,000 acre-feet of water from the Lake Roosevelt Incremental Storage and Release Project for municipal, industrial and group domestic uses.
- ◆ Issuance of a secondary use permit to re-operate 14,000 acre-feet of water from Sullivan Lake in Pend Oreille County, with 9,333 acre-feet designated for future out-of-stream permits and 4,667 acre-feet designated for instream flows.
- ◆ Lease of 4700 acre feet of water from the Port of Walla Walla for short-term instream and out of stream uses.
- ◆ Purchase of 52.3 acre feet of water for new permits.
- ◆ Issuance of a draft Environmental Impact Statement for providing water supply to the Odessa Subarea.
- ◆ Construction of the Weber Siphon to provide transmission capacity for irrigation water across Interstate 90.
- ◆ Construction of pilot aquifer storage and recovery (ASR) wells for two projects: Kennewick ASR and Boise Wallula ASR.

In addition to project developments, significant rule and law amendments that will help in the funding of water supply projects were completed: WAC 173-153 was modified to allow priority processing of applications for OCR water storage projects; and RCW 90.90.090 was modified to include explicit cost recovery and pump exchange authority. The "OCR Funded Project" map, on the following two pages, illustrates OCR's dedicated work to find solutions to the four Legislative objectives.

Office of Columbia River Policy Advisory Group Members

Dale Bambrick, NOAA Fisheries-U.S. Dept of Commerce

Brenda Bateman, Oregon Water Resources Dept

Dave Sauter, Klickitat County Commissioner

Gary Chandler, Association of WA Business

Kathleen Collins, Water Policy Alliance

Jon Culp, Washington State Conservation Commission

Jim Fredericks, U.S. Army Corps of Engineers

Michael Garrity, American Rivers

Leo Stewart, The Confederated Tribes of the Umatilla Indian Reservation

Bill Gray, Bureau of Reclamation

Tony Grover, NW Power & Conservation Council

Matt Watkins, City of Pasco

Mike Leita, Yakima County Commissioner

Joe Lukas, Grant County PUD

Mo McBroom, WA Environmental Council

Darryll Olsen, Columbia-Snake Rivers Irrigation Association

Rudy Plager, Adams County Commissioner

Gary Passmore, The Confederated Tribes of the Colville Reservation

Lisa Pelly, Trout Unlimited

Rudy Peone, Spokane Tribe

Phil Rigdon, Yakama Nation

Mike Schwisow, Columbia Basin Development League

Teresa Scott, WA State Dept of Fish & Wildlife

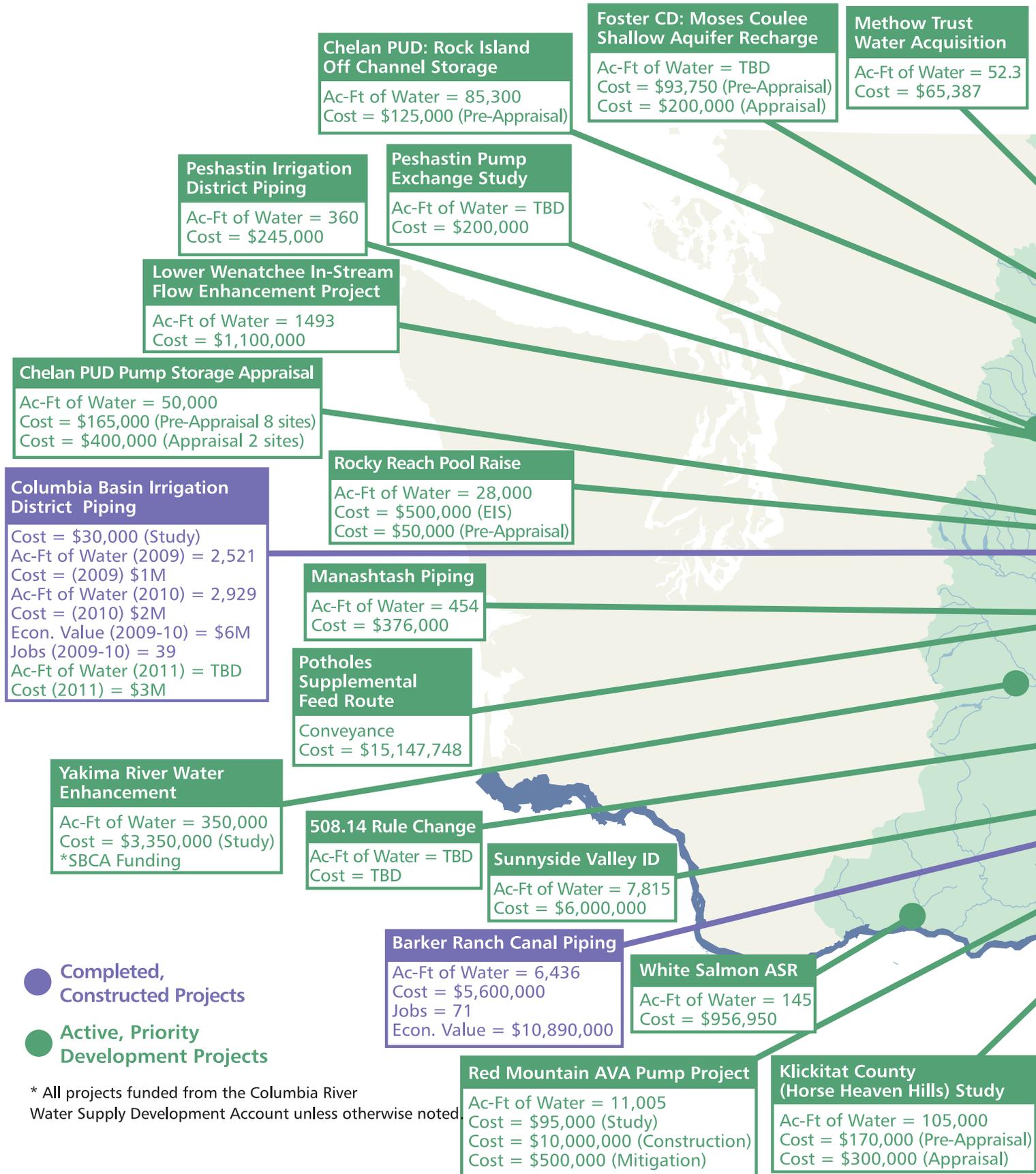
Craig Simpson, East Columbia Basin Irrigation District

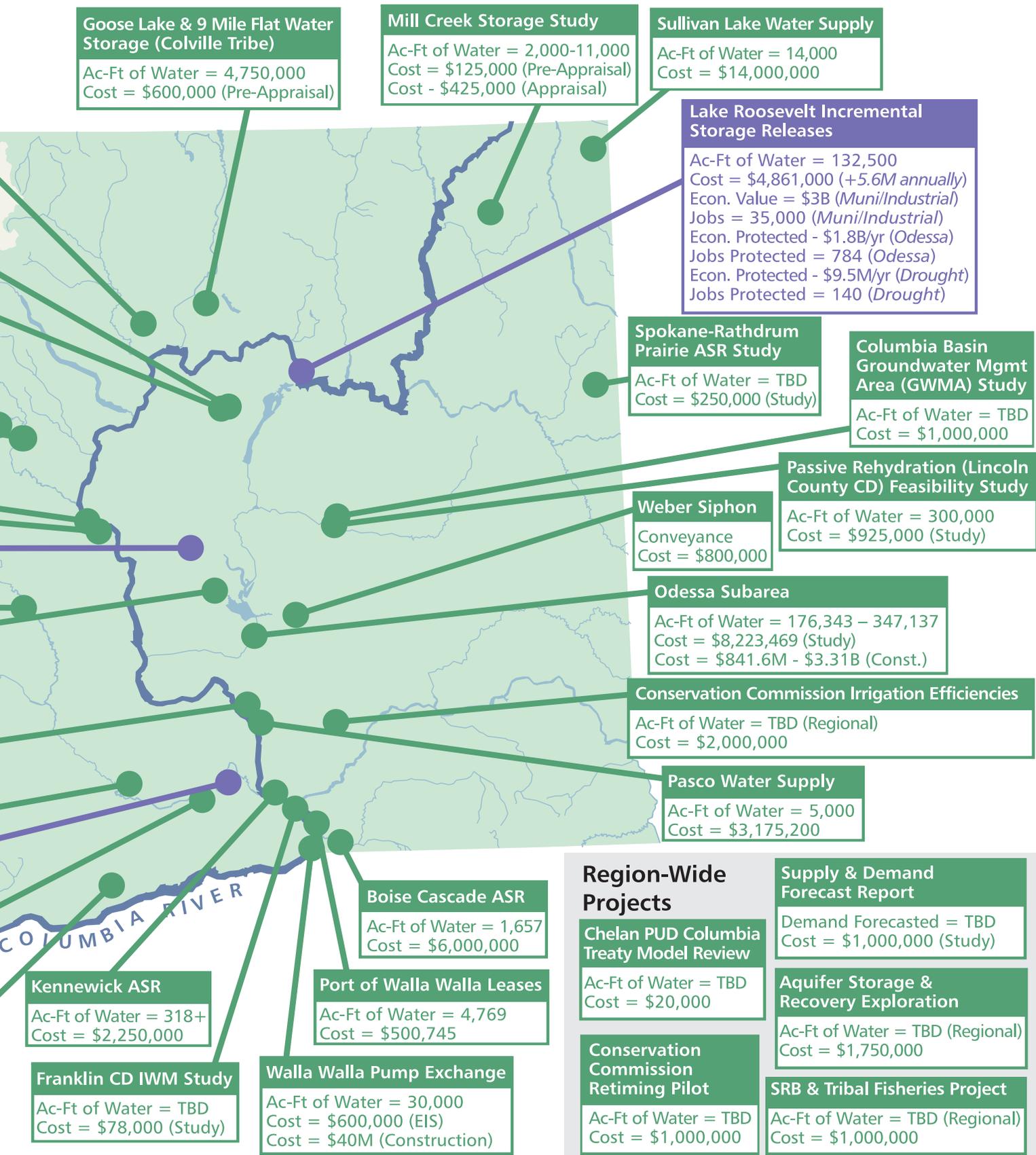
Rich Stevens, Grant County Commissioner

John Stuhlmiller, Washington State Farm Bureau

Rob Swedo, Bonneville Power Administration

Office of Columbia River Funded Projects





Goose Lake & 9 Mile Flat Water Storage (Colville Tribe)
 Ac-Ft of Water = 4,750,000
 Cost = \$600,000 (Pre-Appraisal)

Mill Creek Storage Study
 Ac-Ft of Water = 2,000-11,000
 Cost = \$125,000 (Pre-Appraisal)
 Cost - \$425,000 (Appraisal)

Sullivan Lake Water Supply
 Ac-Ft of Water = 14,000
 Cost = \$14,000,000

Lake Roosevelt Incremental Storage Releases
 Ac-Ft of Water = 132,500
 Cost = \$4,861,000 (+5.6M annually)
 Econ. Value = \$3B (Muni/Industrial)
 Jobs = 35,000 (Muni/Industrial)
 Econ. Protected - \$1.8B/yr (Odessa)
 Jobs Protected = 784 (Odessa)
 Econ. Protected - \$9.5M/yr (Drought)
 Jobs Protected = 140 (Drought)

Spokane-Rathdrum Prairie ASR Study
 Ac-Ft of Water = TBD
 Cost = \$250,000 (Study)

Columbia Basin Groundwater Mgmt Area (GWMA) Study
 Ac-Ft of Water = TBD
 Cost = \$1,000,000

Passive Rehydration (Lincoln County CD) Feasibility Study
 Ac-Ft of Water = 300,000
 Cost = \$925,000 (Study)

Weber Siphon
 Conveyance
 Cost = \$800,000

Odessa Subarea
 Ac-Ft of Water = 176,343 - 347,137
 Cost = \$8,223,469 (Study)
 Cost = \$841.6M - \$3.31B (Const.)

Conservation Commission Irrigation Efficiencies
 Ac-Ft of Water = TBD (Regional)
 Cost = \$2,000,000

Pasco Water Supply
 Ac-Ft of Water = 5,000
 Cost = \$3,175,200

Boise Cascade ASR
 Ac-Ft of Water = 1,657
 Cost = \$6,000,000

Kennewick ASR
 Ac-Ft of Water = 318+
 Cost = \$2,250,000

Port of Walla Walla Leases
 Ac-Ft of Water = 4,769
 Cost = \$500,745

Franklin CD IWM Study
 Ac-Ft of Water = TBD
 Cost = \$78,000 (Study)

Walla Walla Pump Exchange
 Ac-Ft of Water = 30,000
 Cost = \$600,000 (EIS)
 Cost = \$40M (Construction)

Region-Wide Projects

Chelan PUD Columbia Treaty Model Review
 Ac-Ft of Water = TBD
 Cost = \$20,000

Conservation Commission Retiming Pilot
 Ac-Ft of Water = TBD
 Cost = \$1,000,000

Supply & Demand Forecast Report
 Demand Forecasted = TBD
 Cost = \$1,000,000 (Study)

Aquifer Storage & Recovery Exploration
 Ac-Ft of Water = TBD (Regional)
 Cost = \$1,750,000

SRB & Tribal Fisheries Project
 Ac-Ft of Water = TBD (Regional)
 Cost = \$1,000,000

Water Supply Development Projects

The first permits from the Lake Roosevelt project were issued in December 2011. Permitting will continue until 25,000 acre-feet of water is allocated

Water for New Water Rights

Approximately 380 applications are pending approval within one mile of the Columbia River. Thousands more exist in tributaries to the Mainstem. Some applicants have been waiting 20 years to receive water rights because of litigation over the quantities of water necessary for instream and out-of-stream uses. Coupled with these pending applications is the growing need of communities and industries which increases the urgency to find available water.

The Office of Columbia River (OCR) is developing water supplies to meet both instream and out-of-stream needs. Two projects, the Lake Roosevelt Incremental Storage Releases and the Port of Walla Walla Leases, have permittable water available now. The first permits from the Lake Roosevelt project were issued in December 2011. Permitting will continue until the 25,000 acre-feet of water is allocated. Term permits from 4,761 acre-feet of water leased from the Port of Walla Walla and permits from 52.3 acre-feet of water from a 2011 water acquisition are also available. Within the next year, permits from the Sullivan Lake Water Supply Project totaling 9,333 acre-feet will start being issued.

Wenatchee Area



Photo by Kevin De Angelis

Lake Roosevelt Incremental Storage Releases:

Annually, releases at Lake Roosevelt will draw down the lake by an additional foot, delivering 82,500 acre-feet of water. Of that, 25,000 acre-feet will be used to meet demand from over 100 pending municipal and industrial water right applications.

Water Right Acquisition:

In 2011, OCR purchased 52.3 acre-feet of water from a private water right holder. This water is available to offset new uses in Okanogan County (WRIA 49). OCR is evaluating how best to maximize the use of this water and plans to issue permits in 2012.

Sullivan Lake Water Supply:

OCR secured 9,333 ac-ft of water for new permits from the Pend Oreille County Public Utility District. Half of the water will be used for municipal/industrial and domestic water rights and the remainder will be allocated for all purposes (i.e. irrigation, stockwater, municipal/industrial, etc.) Under state law, the water may only be allocated to applicants in six north-eastern Washington counties: Douglas, Ferry, Lincoln, Okanogan, Pend Oreille, and Stevens counties.

Port of Walla Walla Leases:

OCR leased 4,761 ac-ft from the Port of Walla Walla. These permits provide water on a temporary basis, allowing time for water users to find a permanent supply. Term permits will be issued to seasonal water users and in some cases to unauthorized users as a means to attain temporary compliance.



Grand Coulee Dam



Permitting Water from "Port of Walla Walla Lease Project"

Red Mountain American Viticulture Area Pump Project:

Water supply to irrigate an additional 1,785 acres of vineyards will be developed by taking advantage of land use changes and making efficiency improvements to Kennewick Irrigation District’s conveyance system.



Red Mountain AVA

Kennewick Aquifer Storage and Recovery (ASR) Project:

OCR partnered with the City of Kennewick to pilot an ASR project adjacent to the Columbia River. During times of low demand, water will be pumped from the Columbia River into an aquifer for storage. When demand is high, water would be pumped back out to be used to meet the City’s growing municipal demand.

WAC 508-14 Rule Change:

This rule amendment will define how much groundwater in an area northwest of Pasco may be allocated by the State and how much is reserved for the federal Columbia Basin Project. This will allow new water rights to be issued in portions of Franklin, Adams and Grant Counties

Columbia River Basin Water Management Grants:

Since 2006, OCR has provided funding for grant projects that have the potential to yield tens of thousands of acre-feet of new water for pending applications. Projects range from:

- ◆ Underground storage sites such as Boise at Wallula, White Salmon, and Horse Heaven Hills.
- ◆ Pump exchange studies for the Walla Walla River and Peshastin Creek.
- ◆ Surface storage sites such as Goose Lake, Nine Mile, Mill Creek, Horse Heaven Hills and Rock Island (Off-Channel Storage).

Spokane River at Spokane



photo by Dana Pride

Water for the Odessa Subarea

For the last 40 years, farmers in the Odessa Subarea have relied on groundwater to irrigate crops. Originally, these farmers were to receive surface water from the Columbia River as part of the Columbia Basin Project. The groundwater is being withdrawn at a rate beyond the aquifer's capacity to refill. The ability of farmers to irrigate their crops is at risk. The loss of irrigation water in the area could cost \$1.6 billion a year in lost revenue and thousands of jobs. OCR is investigating a long-term solution by partnering with the Bureau of Reclamation on an Environmental Impact Statement. Through conservation, storage and delivery of surface water supplies, OCR is also working on providing immediate relief to farmers. Projects providing water for the Odessa Subarea include the following:

Lake Roosevelt Incremental Storage Releases:

Annually, releases at Lake Roosevelt will draw down the lake by an additional foot, delivering 82,500 acre-feet of water. Of that, 30,000 acre feet will be used to replace groundwater withdrawals with surface water that will support 10,000 acres of farmland in the Odessa subarea. Construction of a second siphon at Weber Complex is required in order to convey the water to the portion of the Odessa Subarea located south of Interstate 90. Construction of the siphon is expected to be completed 2012.

Coordinated Conservation Plan:

OCR assisted the Columbia Basin irrigation districts in developing a Coordinated Conservation Plan. Each year, Ecology funds conservation projects under the plan. Water savings are used to replace groundwater in the Odessa. In 2009, OCR contracted projects netting water savings totaling 2,521 ac-ft, with an additional 2,929 ac-ft in 2010, and another 5,000 ac-ft in 2011.

Odessa Subarea Special Study and Environmental Impact Statement:

With funding from OCR, the Bureau of Reclamation (Bureau) is investigating further development of the Columbia Basin Project. The Odessa Subarea Special Study looks at replacing groundwater with surface water. The study's preferred alternative is a "Modified Partial Groundwater Replacement" It requires 164,000 ac-ft of water for up to 70,000 acres of land.

Potholes Supplemental Feedroute:

This project received funding from OCR to give flexibility and reliability to the Columbia Basin Project by providing an additional route for conveying project water to Potholes Reservoir. By easing demand on the East Low Canal, this project has the potential to allow surface water to be delivered more efficiently to Odessa lands currently served by groundwater. The Bureau chose Crab Creek and Frenchman Hills Wasteway to serve as the supplemental feedroute. Construction of Frenchman Hills Wasteway was completed in March 2008. The Crab Creek feedroute is in the development phase.

Through conservation, storage and delivery of surface water supplies, OCR is working on providing immediate relief to farmers

Odessa Subarea



Photo courtesy Washington Potato Commission

Water for Drought Relief

During times of drought, about 370 interruptible Columbia River water right holders risk crop loss when their water use is curtailed. Such losses can add up to billions of dollars in lost revenue. In the Yakima River basin, water shortages result in water use curtailment and impaired native fisheries' populations and habitat. One of OCR mission is to develop alternative supplies that can be relied upon during periods of drought.

Lake Roosevelt Incremental Storage Releases:

During drought years an additional 50,000 acre-feet will be released from Lake Roosevelt. From that, 33,000 acre-feet will be used for Columbia River mainstem interruptible water right holders. OCR will use this water to issue standby / reserve permits for interruptible water right holders, providing more reliability in times of drought.

Washington Water Trust / Trout Unlimited:

OCR continues to contract with Washington Water Trust and Trout Unlimited to identify and acquire water supplies for the Trust Water Rights Program. This effort gives OCR the ability to provide water for new permits, enhance instream flows, and issue standby / reserve permits to interruptible water right holders.

Columbia-Snake River Irrigators Association Voluntary Regional Agreement (CSRIA VRA):

OCR and CSRIA entered into the State's first VRA on July 18, 2008. One purpose of the VRA is to use acquired water to issue drought permits to interruptible water right holders on the Columbia and Snake Rivers.

Columbia River Drought Insurance Program:

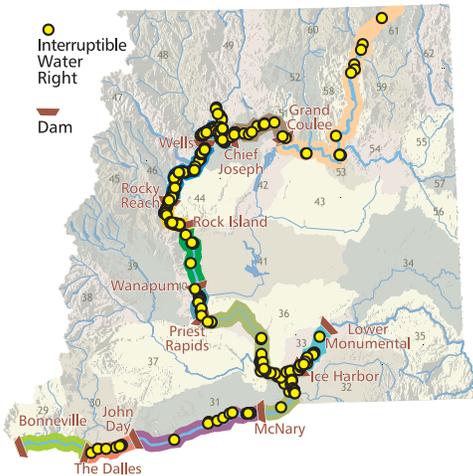
Acquisition is one of the water supply development tools that the Legislature directed Ecology to use in RCW 90.90.010. Acquisition can involve purchased or leased water rights, donated water rights, and transferred water savings from conservation projects funded by the Account. The Columbia River Drought Insurance Program will be used to administer water acquired under this program that can be used for interruptible water rights.

Out-of-Kind Mitigation:

OCR is working with Columbia River Policy Advisory Group stakeholders to identify projects with greater fish benefit than the impacts associated with drought pumping by interruptible water users. OCR plans to fund a pilot project in 2012-2013 to evaluate the potential for removing interruptibility provisions from these users in exchange for funding a fish project that improves fish productivity.

Yakima River Basin Water Enhancement Project (YRBWEP):

In March 2011, the YRBWEP's working group released an integrated plan, followed by an addendum in August 2011. As stated in the plan, the goals are to "protect, mitigate and enhance fish and wildlife habitat, provide increased operational flexibility to manage instream flows to meet ecological objectives". An Environmental Impact Statement is underway and a request to Congress and the Washington Legislature for funding the integrated plan is forthcoming.



Map of Water Resource Inventory Areas showing Columbia River mainstem interruptible water rights

Wenatchee River



Water for Instream Flows

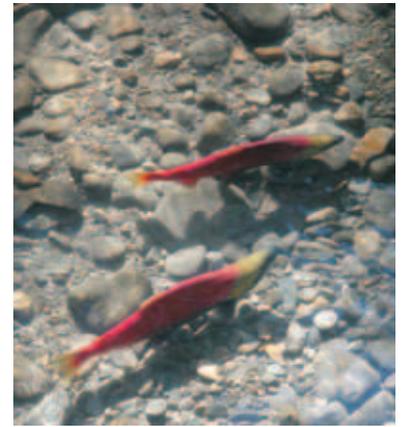
Low stream flows threaten salmon and steelhead populations, particularly within eastern Washington's eight fish and low flow critical basins. While the need for stream flow restoration is well recognized, more information is required on where restoration and how much water is needed. Water supply projects in which an instream flow benefit plays a key role is needed. OCR's mission is to find solutions by expanding the body of knowledge and funding projects that benefit fish. Numerous OCR projects contribute to improving instream flows.

Sullivan Lake Water Supply:

OCR secured 9,333 ac-ft of water for new permits from the Pend Oreille County Public Utility District. 4,667 ac-ft of that water will be put into Sullivan Creek and protected all the way to the Pacific Ocean.

Yakima Basin Integrated Water Resource Management:

OCR worked closely with the tribes, water users, and state, federal, and local governments and agencies to develop an integrated water resource management plan addressing the Yakima Basin's water needs. Instream flows will be enhanced through conservation efforts, storage, and operational and structural changes to existing facilities. Additionally, fish survival will be enhanced through habitat enhancement and passage improvement.



Spawning salmon

Yakima River



The Columbia River Instream Atlas" evaluated one hundred and eighty nine stream reaches for their potential to improve natural fish production through stream flow enhancement. OCR will use the information in tandem with consultation with WDFW, to select water supply projects that benefit fish

Lake Roosevelt Incremental Storage Releases:

Annually, releases at Lake Roosevelt will draw down the lake by an additional foot, delivering 82,500 acre-feet of water. Of that, 27,500 acre-feet will be used to benefit instream flows, and in drought years another 17,000 acre-feet will be added to that quantity.

Red Mountain American Viticulture Area Pump Project:

OCR funded moving Kennewick Irrigation District's diversion point on the Yakima River from Prosser to Kiona. The move adds 11,000 ac-ft of water to a critically low-flowing reach of the river.

Barker Ranch Canal Piping:

OCR provided funding to convert Horn Rapids Canal from an open ditch to a closed pipe system. The piping of the water conveyance system to Barker Ranch decreases withdrawals from the Yakima River by 6,436 ac-ft each year.

Columbia River Instream Atlas:

The Atlas is part of the *2011 Columbia River Basin Long-Term Water Supply and Demand Forecast*. Developed by Washington Department of Fish and Wildlife (WDFW), the Atlas evaluated one hundred and eighty nine stream reaches for their potential to improve natural fish production through stream flow enhancement. OCR will use the information in tandem with consultation with WDFW, to select water supply projects that benefit fish.

Columbia River Basin Water Management Grants:

Since 2006, OCR has provided funding for grant projects that have the potential to yield tens of thousands of acre-feet of new water for instream flows. Projects range from:

- ◆ Conservation projects including Manashtash Piping and Peshastin Irrigation District Piping
- ◆ Underground storage sites such as Boise at Wallula, White Salmon, and Horse Heaven Hills.
- ◆ Pump exchange studies for the Walla Walla River and Peshastin Creek.
- ◆ Surface storage sites such as Goose Lake, Nine Mile, Mill Creek, Horse Heaven Hills and Rock Island (Off-Channel Storage).

For more information about Columbia River Basin Water Management Grants, see OCR Projects & Funding at: http://www.ecy.wa.gov/programs/wr/cwp/cr_grants.html.

Legislative Amendments and Rulemaking

Chapter 90.90 RCW, “Columbia River Basin Water Supply”

In 2011, the Legislature approved three amendments to RCW 90.90:

1. *Expand Cost Recovery Authority*: this change creates ways to recover invested funds from permittees receiving water from OCR that are then available to finance future projects.
2. *Expand Pump Exchange Authority*: This change allows pump exchange projects to be included in the project category designated as “new storage facilities”.
3. *Allocation of Water in the Northeastern Counties*: This change requires that permits from the Sullivan Lake Water Supply Project be issued only to applicants in the six northeastern counties. It also requires that at least half of the out-of-stream water is for municipal, domestic and industrial uses.

Chapter 173-152 WAC, “Water Rights”

In 2011, the Department of Ecology made two amendments to WAC 173-152:

1. *Move new applications for diversionary rights into reservoirs ahead of competing applications*: This change allows OCR supply projects to be permitted first, which are necessary to fulfill the demand for earlier-filed water right applications for farms, cities and industry.
2. *Describe OCR’s processing of permit applications*: This clarified OCR’s business practices in rule, which was important because OCR operates in three Ecology regions with many overlapping projects. It provided clarity on how projects and permits would be processed so applicants had certainty in expectations on water allocation decisions.

Chapter 508-14 WAC

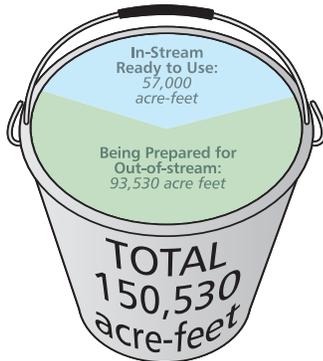
OCR continues to move forward on amendment of *Chapter 508-14 WAC, Columbia Basin Project – Groundwater*. The current rule allows Ecology to issue groundwater permits in parts of Adams, Grant and Franklin counties. However, since it is unknown how much water is available, only a limited number of permits have been issued. This lack of knowledge produces regulatory uncertainty. It creates a financial burden for permit holders and applicants since they cannot predict long-term access to water for their projects. OCR and the Bureau of Reclamation are in the development stages of a groundwater study to clarify how much groundwater is available for permitting. The study will provide the needed information for amending the rule.

Water Development Progress

OCR has added nearly 150,000 acre-feet to Eastern Washington’s water supply and continues to develop additional water resources through near term and long term projects. Once new water supplies are developed for instream flows, they are available for use. Minimal processing is required. However, making water available for out-of-stream uses requires several steps before permits are issued. Numerous requirements are followed and may include: consultations with government agencies, tribal councils and interested parties; environmental reviews and, sometimes, litigation. Typically, it takes one year or more to issue a permit. The graphic below shows the status of OCR’s water supply development activity.

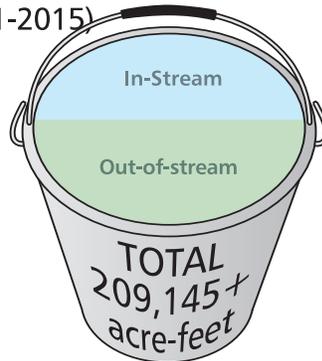
New Water Supply Developed by the Office of Columbia River

Developed



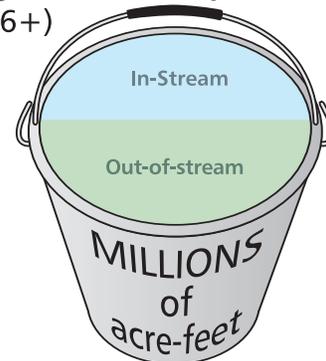
- > Barker Ranch Canal Piping: 6436 ac-ft
- > Columbia Basin Irrigation District Piping: 5450 ac-ft
- > Donations: 6,066 ac-ft
- > Lake Roosevelt: 132,500 ac-ft
- > Potholes Supplemental Feed Route (conveyance)
- > Okanogan Water Right Acquisition: 79 ac-ft

Near Term Development (2011-2015)



- > Boise Cascade ASR: 1,657 ac-ft
- > Columbia Basin I.D.: 5,337 ac-ft
- > Conservation Commission I.E.: TBD
- > 508-14 Rule Change: TBD
- > Kennewick ASR: 318+ ac-ft
- > Lower Wenatchee: 1,493 ac-ft
- > Manashtash Piping: 454 ac-ft
- > Odessa Sub-area: 164,000 ac-ft
- > Okanogan Water Right Acquisition: 958 ac-ft
- > Peshastin I.D. Piping: 360 ac-ft
- > Red Mountain: 20,423 ac-ft
- > SRB & Tribal Fisheries: TBD
- > Sullivan Lake: 14,000 ac-ft
- > Weber Siphon: conveyance
- > White Salmon ASR: 145 ac-ft

Long Term Development (2016+)



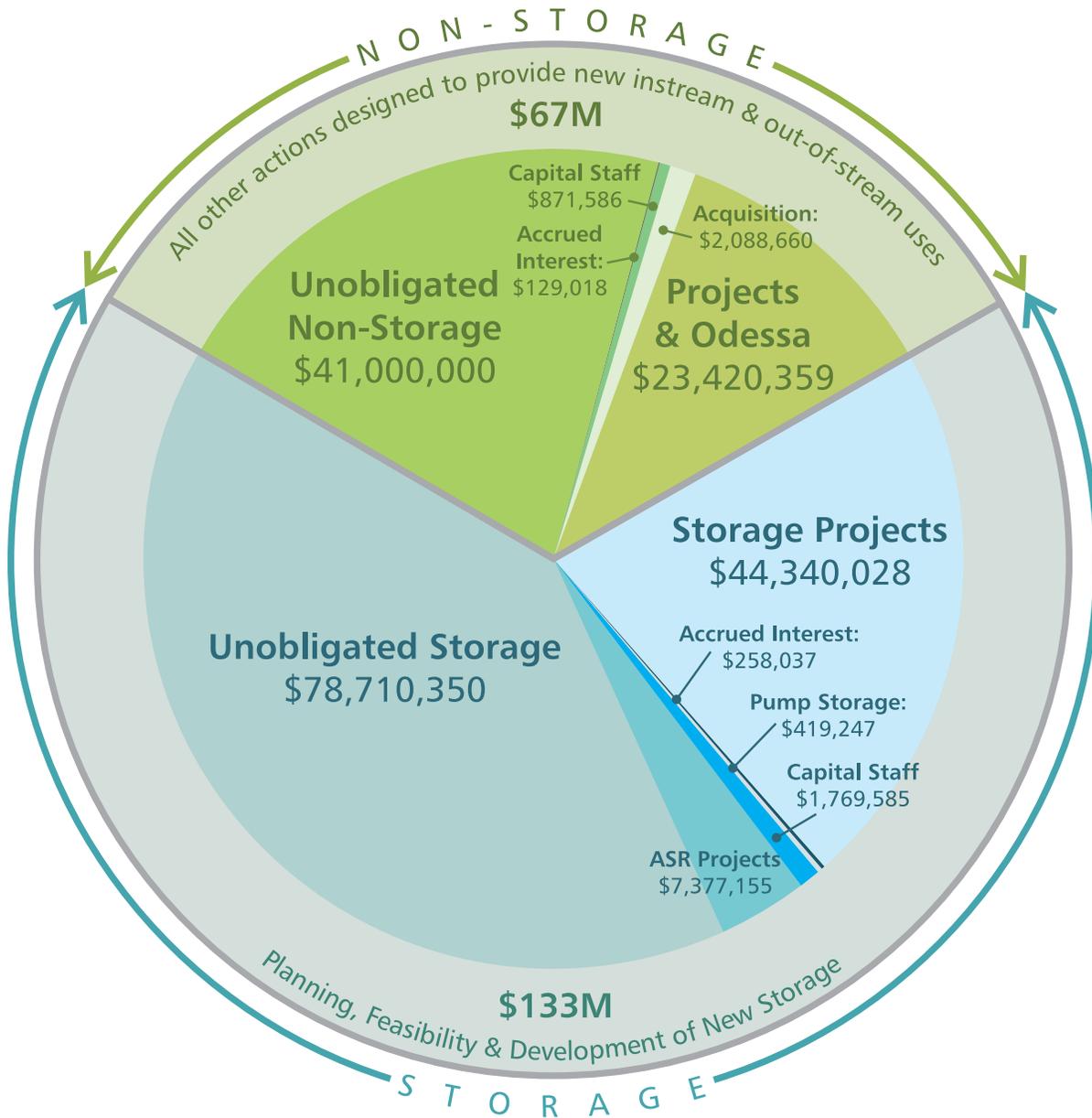
- > Aquifer Storage & Recovery Exploration: TBD
- > Chelan PUD Pump Storage: 50,000 ac-ft
- > Conservation Commission Retiming: TBD
- > Foster C.D. Moses Coulee S.A.R.: TBD
- > Goose Lake & 9 Mile Flat Storage: 4,750,000 ac-ft
- > Klickitat County Horse Heaven Hills: 105,000 ac-ft
- > Lincoln CD Passive Rehydration: 300,000 ac-ft
- > Mill Creek Storage : between 2,000 - 11,000 ac-ft
- > Peshastin Pump Exchange: TBD
- > Spokane-Rathdrum Prairie A.S.R.: TBD
- > Walla Walla Pump Exchange: 30,000 ac-ft
- > Yakima River Water Enhancement: 450,000 ac-ft

The first bucket shows the total amount of water currently developed through new projects for out-of-stream and instream uses. The second bucket shows the amount of water expected to be developed within 1 to 5 years. The third bucket shows the amount of water expected to be developed beginning 6 or more years from now.

Long term projects are either under study or waiting for federal or other approval. The results will determine if the projects move forward.

Status of the Columbia River Basin Water Supply Account

The pie chart shows the current appropriation of funds from the Columbia River basin Water supply Development Account. Under RCW 90.90.010(2)(b), two-thirds of the account must be spent on storage and one third for other purposes. The arrows surrounding the circle reflect this split. The pie slices that make up the circle reflect the allocated and remaining funds within each category.



Projects funded by other sources such as State Building Construction Account and Operating Budget include: Programmatic Environmental Impact Statement Mainstem Storage Alternatives Study, Walla Walla Pump Exchange, Metering, Odessa Subarea, Supplemental Feed Route, Lake Roosevelt Supplemental Environmental Impact Statement (SEIS), Crab Creek SEIS, Frenchman Hills Construction, Yakima Storage Study, Fish & Wildlife Project Support, Conservation Commission staff, Legislative Report Forecasting, and Yakima Basin Water Supply projects.

Supply Inventory

Three new projects were submitted for the 2011 inventory, bringing the total projects compiled between 2006-2011 to 6,185. OCR's grant program focuses on projects that will deliver permittable water to the Columbia River or one of its tributaries. Permittable water is water that is stored, retimed or conserved through crop management practices such as crop changes, fallowing, and capturing return flows. OCR screens the projects in its inventory and meets with project proponents to determine grant eligibility. While the inventory shows approximately 11 million ac-ft of water supplies that could be developed, the inventory includes projects whose feasibility is untested, lack project proponents and inadequate funding. Also, OCR's prioritization of projects seeks to balance where supply is available with the demands for the four legislative directives: New Permits, Odessa Subarea, Drought Relief and Instream Flows. Since OCR's \$200 million dollar funding is relatively small to the total costs to develop projects, OCR favors projects that leverage other federal, state and local funding sources. This approach maximizes the public return on investment.

Type of Project	Number of Projects Listed		Projects with Water Savings (Projects with Cost Data)		Projects with Water Savings & Cost Data		Estimated Water savings, acre-ft/year		Estimated Cost		Estimated Cost per ac-ft	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
New Large Storage (>1,000,000 ac-ft)	5	5	5 (5)	5 (5)	5	5	9,580,000	9,580,000	\$13,457,886,563	\$13,457,886,563	\$1,405	\$1,405
New Small Storage (<1,000,000 ac-ft)	117	117	96 (60)	96 (60)	49	49	270,353	270,353	\$771,920,425	\$771,920,425	\$2,855	\$2,855
Aquifer Storage and Recovery	38	38	8 (14)	8 (14)	4	4	2,581	2,581	\$8,857,000	\$8,857,000	\$3,432	\$3,432
Modification to Existing Storage	9	9	8 (4)	8 (4)	2	2	84,300	84,300	\$47,500,000	\$47,500,000	\$563	\$563
Lining/Piping	178	179	116 (132)	117 (133)	114	115	484,391	484,430	\$547,642,587	\$548,313,372	\$1,131	\$1,132
On-farm Efficiency	5,589	5,591	5,404 (5,412)	5,406 (5,414)	5,401	5,403	263,143	263,211	\$343,079,425	\$343,450,614	\$1,304	\$1,305
Irrigation Water Management ^	35	35	2 (2)	2 (2)	1	1	243,503	243,503	\$9,167,184	\$9,167,184	\$38	\$38
Automation & System Control	46	46	21 (40)	21 (40)	21	21	26,307	26,307	\$9,757,000	\$9,757,000	\$371	\$371
General Water Conservation*	89	89	5 (9)	5 (9)	4	4	12,914	12,914	\$7,196,300	\$7,196,300	\$557	\$557
Tail Water Reuse	4	4	4 (4)	4 (4)	4	4	5,800	5,800	\$1,040,000	\$1,040,000	\$179	\$179
Surface to Groundwater Conversion	1	1	1 (1)	1 (1)	1	1	360	360	\$200,000	\$200,000	\$556	\$556
Reclaimed Water	1	1	0 (0)	0 (0)	0	0	unknown	unknown	unknown	unknown	unknown	unknown
Municipal Conservation	0	0	0 (0)	0 (0)	0	0	unknown	unknown	unknown	unknown	unknown	unknown
Partial Season Acquisitions/Leases**	10	10	5 (3)	5 (3)	3	3	80,360	80,360	\$6,700,000	\$6,700,000	\$83	\$83
Fallowed Corners/Land Retirement	45	45	31 (31)	31 (31)	31	31	392	392	\$392,100	\$392,100	\$1,000	\$1,000
Crop Water Duty Reductions	15	15	0 (0)	0 (0)	0	0	unknown	unknown	unknown	unknown	unknown	unknown
Land Conservation Programs	0	0	0 (0)	0 (0)	0	0	unknown	unknown	unknown	unknown	unknown	unknown
Crop Change	0	0	0 (0)	0 (0)	0	0	unknown	unknown	unknown	unknown	unknown	unknown
Total (all)	6,182	6,185	5,706 (5,717)	5,709 (5,720)	5,640	5,643	11,054,404	11,054,511	\$15,211,338,584	\$15,212,380,558		
Total (conservation & acquis. only)	6,013	6,016	5,589 (5,634)	5,592 (5,637)	5,580	5,583	1,117,170	1,117,277	\$925,174,596	\$926,216,570		

2011 numbers reflect 2010 data with added and updated data from 2011.

*General Water Conservation projects include public education, planning, researching and developing innovative irrigation implementation.

**Annual cost per acre-ft