Institute for Water Resources

February 2013

2012 Irrigation Water Supply Database

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This report provides data on projects operated and maintained by the U.S. Army Corps of Engineers that contain irrigation as a purpose in a multipurpose reservoir project. The data in the report are generally developed along two lines, the static project data and the annual data related to water release and use. The municipal and industrial water supply module of the Operation and Maintenance Business Information Link has been modified to record these data. It is anticipated that the annual data will be updated on a yearly basis and reported in the Water Supply Database report published annually by the Institute for Water Resources.

These reports are produced by the U.S. Army Engineer Institute for Water Resources, Alexandria, VA.

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Institute for Water Resources

2012 Irrigation Water Supply Database

U.S. Army Corps of Engineers
Institute for Water Resources
Alexandria, VA 22315

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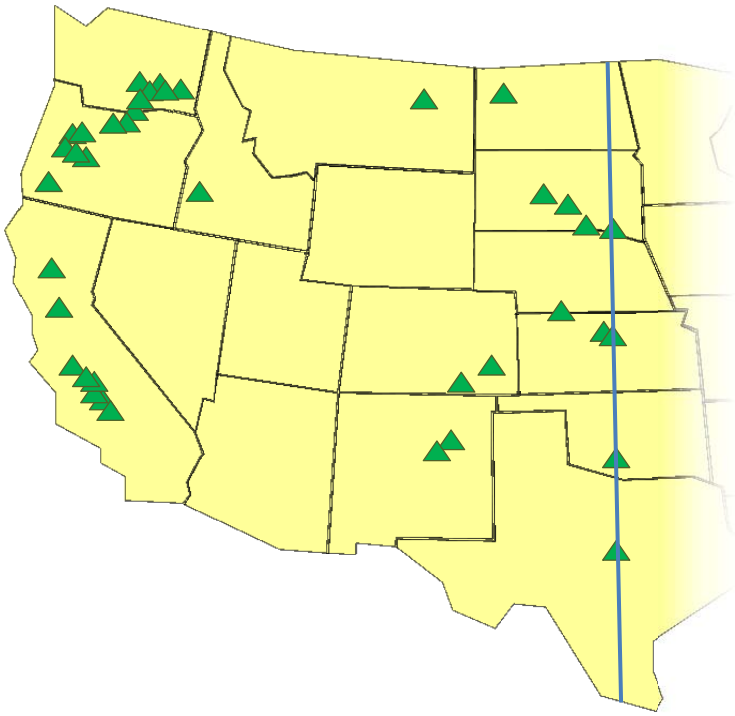

Prepared by:
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USACE National Water Supply Business Line Manager

PREFACE

This report provides data on projects operated and maintained by the U.S. Army Corps of Engineers (Corps) which contain irrigation as a purpose in a multipurpose reservoir project. While there are two projects in the Eastern portion of the United States which contain irrigation as a purpose, the Central and Southern Florida project and the Grand Prairie, Arkansas project, neither of these are multiple purpose reservoir projects. The data in this report, therefore, is limited to projects in the Western United States. Further, the only Corps projects in the West with irrigation are associated with those projects in the 17 contiguous Western States in which Reclamation Law applies.

The Corps in the past has not put a great deal of emphasis on collecting data on our irrigation projects as all the irrigation agreements are administered between the Bureau of Reclamation and the local water agencies. These irrigation projects do, however, provide a benefit to the Nation and without our projects this benefit would be lost. Because of this an effort was undertaken by the Corps to develop the data provided in this report to show not only the magnitude of the Corps irrigation program but also the Value to the Nation of the water released from these dams for use by local and regional irrigators.

The data in the report are generally developed along two lines, the static project data and the annual data related to water release and use. The municipal and industrial water supply module of the Operation and Maintenance Business Information Link has been modified to record these data. It is anticipated that the annual data will be updated on a yearly basis and reported in the Water Supply Database report published annually by the Institute for Water Resources.

ACKNOWLEDGEMENT

The data in the report are limited to the Corps' three Western Divisions; the North Pacific Division, the South Pacific Division and the Southwestern Division. The three division Water Supply Business Line managers at these divisions are, respectively, Jim Fredericks, Boniface Bigornia and Elaine Newbaker-London. I want to thank these individuals as well as all the individuals in their offices and their respective districts that helped developed the data used in this report. A list of the members of this project delivery team is provided in the report.

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2012 Irrigation Water Supply Database

A. BACKGROUND

1. Irrigation Authority. U.S. Army Corps of Engineer (Corps) lakes in the 17 contiguous Western States in which Reclamation Law applies (states lying partially or wholly west of the 98th meridian) may include irrigation as a project purpose upon the recommendation of the Secretary of the Interior under the provisions of the Federal Reclamation Law of 17 June 1902. The general authority for the Corps to include irrigation storage in our western projects is provided by Section 8 of Public Law 78-534, the Flood Control Act of 1944. Agricultural water supply is included in Corps reservoir projects in the Western states under repayment agreements between the Bureau of Reclamation and local sponsors. To date, there are no similar agricultural water supply agreements in Corps multipurpose reservoir projects in the Eastern states, although irrigation is an authorized project purpose in the Central and Southern Flood Control Project, Florida and the Grand Prairie, Arkansas Demonstration Project. This irrigation water supply database report addresses only the irrigation storage included in our western multiple purpose projects.

2. Types of Irrigation Authorization. Irrigation is authorized to be a project purpose in our multiple purpose projects in one of three ways: joint storage, specific storage or run-of-river.

a. Joint Storage. This is a project where irrigation is authorized in a conservation pool with other purposes, but where specific storage amounts are not assigned to any one particular purpose. These projects can be operated for irrigation with costs assigned and revenues collected.

b. Specific Storage. This is a project where irrigation is authorized in a conservation pool, where each purpose is assigned a specific storage amount. These projects can be operated for irrigation with costs assigned and revenues collected.

c. Run-of-River. This is a project with a very low head and is authorized for hydropower generation and/or navigation and where irrigation is authorized only as an incidental purpose. In these cases the projects are not operated for irrigation; there are no storage, cost or benefits assigned to irrigation; there are no billings to any possible irrigators; and no revenues collected.

B. DATABASE

1. Multipurpose Projects. There are a total of 45 multi-purpose Corps projects in the West with irrigation authorized as a purpose. At all of these projects, the irrigation function is administered by the Bureau of Reclamation. Of this number, 22 are authorized as joint storage, 16 are authorized as specific storage and 7 as run-of-river. This list of projects, by type of authority is provided in **Table 1**. From an observation of this list, it is obvious that the type of authorization differs by the region of the country and river basin. The projects in the Missouri River, Middle Snake, Willamette and other small basins in Oregon are authorized for joint storage. The projects in the Lower Snake and the Columbia River Basins are run-of-river projects. Projects in

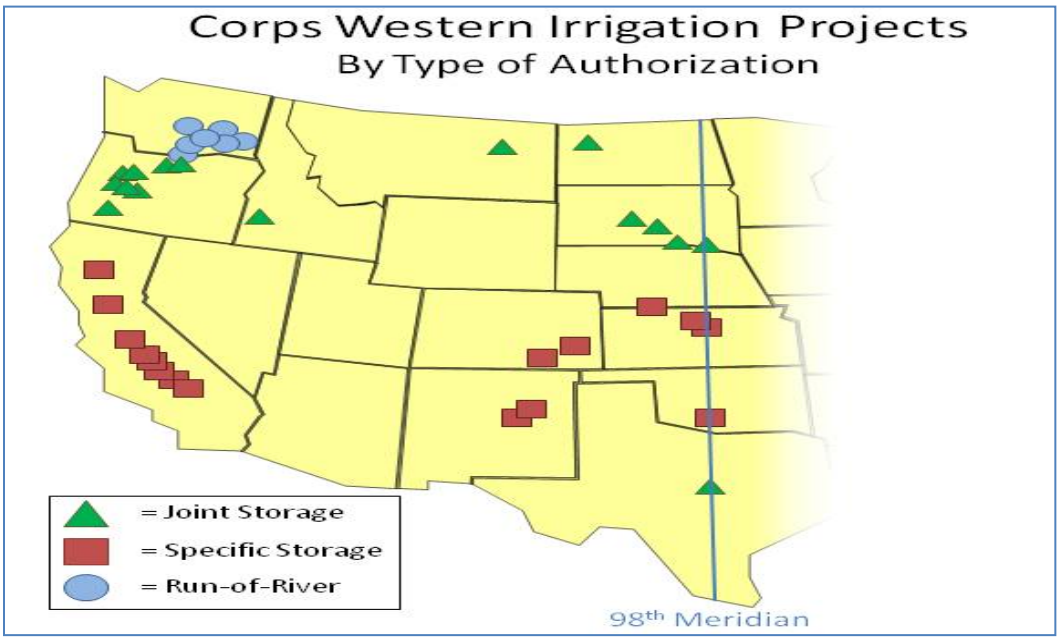
the rest of the West are basically authorized with specific storage with the exception of the Belton project in Texas that is authorized for joint storage.

Table 1: Corps Projects Authorized for Irrigation

District	Project	State	River Basin	Joint	Specific	Run-of-River	Irrigation Agreement	M&I Storage Agreement
Omaha	Ft. Peck	MT	Missouri	X				
	Garrison,	ND	Missouri	X				
	Oahe	ND/SD	Missouri	X				
	Big Bend,	SD	Missouri	X				
	Ft. Randall,	SD	Missouri	X				
	Gavins Point	SD/NE	Missouri	X				
Walla Walla	Lucky Peak	ID	Middle Snake	X			X	
	Ice Harbor	WA	Lower Snake			X		
	Little Goose	WA	Lower Snake			X		
	Lower Granite	WA	Lower Snake			X		
	Lower Monumental	WA	Lower Snake			X		
	Mc Nary	WA/OR	Middle Columbia			X		
Portland	John Day	WA/OR	Lower Columbia			X		
	The Dalles	OR	Lower Columbia			X		
	Willow Creek	OR	Willow Creek	X				
	Lookout Point / Dexter	0R	Willamette	X			X	
	Blue River	OR	Willamette	X			X	
	Cottage	OR	Willamette	X			X	
	Cougar	OR	Willamette	X			X	
	Detroit / Big Cliff	OR	Willamette	X			X	
	Dorena	OR	Willamette	X			X	
	Fall Creek	OR	Willamette	X			X	
	Fern Ridge	OR	Willamette	X			X	
	Foster	OR	Willamette	X			X	
	Green Peter	OR	Willamette	X			X	
	Hills Creek	OR	Willamette	X			X	
	Applegate	OR	Rogue	X			X	
	Lost Creek	OR	Rogue	X			X	
Kansas City	Harlan	NE	Republican		X		X	
	Kanopolis	KS	Smoky Hill		X			
	Wilson	KS	Smoky Hill		X			
Sacramento	Black Butte	CA	Sacramento		X		X	
	Eastman	CA	San Joaquin		X		X	
	Hensley	CA	San Joaquin		X		X	
	New Hogan	CA	San Joaquin		X		X	X
	Isabella	CA	Tulare-Buena Vista Lakes		X		X	
	Kaweah	CA	Tulare-Buena Vista Lakes		X		X	
	Pine Flat	CA	Tulare-Buena Vista Lakes		X		X	
	Success	CA	Tulare-Buena Vista Lakes		X		X	
Albuquerque	Conchas	NM	Upper Canadian		X			
	John Martin	CO	Upper Arkansas		X			
	Trinidad	CO	Upper Arkansas		X		X	
	Santa Rosa	NM	Upper Arkansas		X		X	
Ft. Worth	Belton	TX	Lower Brazos	X				X
Tulsa	Waurika	OK	Red-Washita		X			X
Total		**45**		**22**	**16**	**7**	**25**	**3**

A map of the 45 projects by type of Authorization is shown on **Figure 1**. This map graphically depicts that the type of authorization varies by region of the country. Note that the Willamette projects are so close together, not all are identified by a triangle.

Figure 1: Map of Irrigation Projects



2. Agreements. Table 1 also shows those projects where there are Bureau of Reclamation agreements for release of water for irrigation. The table also shows that three of the irrigation projects contain M&I water supply storage agreements.

3. Detail Project Data. Data was developed on a project basis. This data included, in addition to the type of authorization and annual data as described above, data on the public law that authorized the project or river basin, the project completion date and the total project storage and total project cost. This project data, summed by districts and divisions are provided in Appendix I. It is anticipated that this detailed project data will remain unchanged for most projects for the life of the project.

4. Variable Annual Data. Unlike the detailed project data, it is anticipated that the majority of this variable data will change yearly. Four parameters were identified for this category.

a. Total annual data billed to Irrigation. Project costs are assigned to the irrigation purpose. The operation and maintenance costs attributable to irrigation are reimbursable to the U.S. Treasury by arrangements spelled out in the various irrigation agreements between the Bureau of Reclamation and the local irrigator. In most cases the billing and receiving of the O&M money is between the Bureau, the irrigator and the Treasury. The Corps does not know the exact money returned to the Treasury, so the annual O&M value in these cases reflects the

value billed to the Bureau by the Corps. An exception to this normal cost collection procedure takes place with five projects in the Sacramento District. For these projects, the Corps bills the irrigator directly and the money is returned to the Corps for deposit in the Treasury.

b. Average yearly flow released for irrigation. Depending upon the location of the project and the various rainfall, snowmelt and hydrologic features of the project, the flow released for irrigation purposes can vary drastically among projects and from year to year. This flow, therefore, is an average flow released from project over a 12-month period. This period can vary from project to project.

c. Number of irrigation agreements in each project is a value provided by the Bureau of Reclamation. Some projects have only one or two agreements and other projects have many.

d. Number of acres irrigated. Similar to the average yearly flow, this number can vary greatly from project to project and year to year.

5. District Summary. A summary of the data provided in Appendix I by district are provided in **Table 2**. The run-of-the-river projects have only the basic project data as there are no joint or specific storage spaces or costs or annual data to be collected.

Table 2: Summary of District Data

Basic Project Data			Joint Storage Projects (millions)		Specific Storage Projects (millions)		Variable Annual Data			
District / Number of Projects	**Total Project Storage Space (MAF)**	**Total Project Cost ($M)**	**Joint Storage Space (MAF)**	**First Cost Assigned to Joint Storage Space ($M)**	**Specific Storage Space (MAF)**	**First Cost Assigned to Specific Storage Space ($M)**	**Total Annual Data Billed to Irrigation ($)**	**Average Yearly Flow Released for Irrigation (AF/YR)**	**Number of Irritation Agreements**	**Number of Acres Irrigated**
Omaha / 6	73.333	1,153.800	68.663	147.922	0	0	0	0	0	0
Walla Walla / 1	0.307	19.652	0.280	N/A	0	0	163,340	71,018	20	48,000
Portland / 14	3.055	873.326	1.981	583.828	0	0	3,053,107	60,369	502	33,283
Kansas City/ 3	2.015	84.738	0	0	0.538	11.529	186,449	N/A	2	62,900
Sacramento / 8	2.566	188.840	0	0	2.293	31.957	1,425,562	124,700	8	2,073,592
Albuquerque / 4	2.077	116.999	0	0	0.808	6.436	158,204	271,152	1	191,098
Ft. Worth / 1	1.098	17.191	0.045	0.087	0	0	0	0	0	0
Tulsa / 1	0.287	66.881	0	0	0.018	4.166	0	0	0	0
Storage Totals 8 Districts 38 Projects	**84.738**	**2,521.428**	**70.969**	**731.838**	**3.657**	**54.088**	**4,986,662**	**527,239**	**533**	**2,408,873**
Run-of-River Totals 2 Districts 7 Projects	**0.029**	**2,422,500**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

6. District Remarks on Table 2.

a. Omaha: Costs for the 6-Missouri Main stem projects are based on the Missouri Mainstem Reservoir System Allocation of Costs dated 22 December 1958. While there is irrigation use out of these reservoirs, there are no irrigation agreements or way to monitor this use and, accordingly, no way to measure this Value to the Nation.

b. Walla Walla: For the one project with joint storage space, there is no approved cost allocation and no way to measure the first cost to the joint storage space. For the district's five run-of-river projects, there are no costs associated with or assigned to irrigation. While some irrigation is possibly being performed, there is no way to measure this possible Value to the Nation.

c. Portland: This district has two projects that are re-regulation dams for hydroelectric power working in tandem with two main projects in order to provide the authorized system benefits. Basic project data for these re-regulation projects are included, but there are no costs associated with or assigned to irrigation. The Portland district also has two run-of-river projects. At these projects there are also no costs associated with or assigned to irrigation and while there may be some irrigation being performed, there are no agreements or way to measure this possible benefit.

d. Kansas City: Variable Annual Data is for only one of the three projects. For the other two projects the storage is not being used for irrigation nor is it expected to be in the foreseeable future.

e. Sacramento. For these five projects, the annual operation and maintenance payments billed to the irrigator by the Bureau are returned to directly to the Corps for deposit into the U.S. Treasury: New Hogan Lake, Pine Flat Lake, Lake Kaweah (Terminus Dam), Success Lake and Lake Isabella (Isabella Dam).

f. Ft. Worth: The district has only one project with irrigation. At this project there are 45,000 acre-feet earmarked for irrigation or municipal and industrial water uses. Costs for this storage space are not available. Neither municipal and industrial nor irrigation is currently utilizing the 45,000 acre-feet of storage space.

7. Public Laws. Public Laws authorizing irrigation date back to 1936, with most projects constructed in the 1940's and 1950's. The public laws, the generic name of these laws and the purpose of these authorizations are contained in the **Table 3**.

Table3: Pertinent Laws Authorizing Irrigation Projects and/or Irrigation Storage

Public Law	Name	Project or Basin Authorization	Authority for Irrigation
74-738	Flood Control Act of 1936	x	x
75-761	Flood Control Act of 1938	x	
78-534	Flood Control Act of 1944	x	x
79-14	River & Harbor Act of 1945	x	x
79-525	River & Harbor Act of 1946	x	
79-526	Flood Control Act of 1946	x	x
81-516	Flood Control Act of 1950	x	x
83-780	Flood Control Act of 1954	x	
84-505	Urgent Deficiency Appropriations Act of 1956		x
85-500	Flood Control Act of 1958	x	
87-874	Flood Control Act of 1962	x	x
88-253	River Basin Plans Appropriation, 1963	x	
89-298	Flood Control Act of 1968	x	
94-423	1976 Authorization of Federal Reclamation Projects		x

C. OPERATION AND MAINTENANCE BUSINESS INFROMATION LINK.

1. OMBIL Module. A module in the Operation and Maintenance Business Information Link (OMBIL) is being developed by a contractor (CDM Smith) in conjunction with the Institute for Water Resources to report the various features of our multiple purpose projects that contain irrigation storage and the associated benefit of such storage. The basic module will have two forms; an Irrigation Form and an Irrigation Annual Data Form.

a. The Irrigation Form will contain:

- Project Data. This consists of the MSC, District and Project name; public law that authorized either the project or basin, as appropriate; the authority for the irrigation purpose; the project completion date; and the total project storage space and assigned first cost.
- Irrigation Authorized as Joint Use Storage. This data provides the joint use storage in the project, the construction cost assigned to this joint use storage space, the percent of O&M costs assigned to irrigation and the purposes that share the joint use storage space.
- Irrigation Authorized as Specific Storage. This data provides the specific irrigation storage in the project, the construction cost assigned to this specific irrigation storage, the percent of O&M costs assigned to irrigation and other project purposes that share the conservation storage space.
- Remarks pertinent to the project

b. The Irrigation Annual Data Form will contain:

- The total annual O&M cost assigned to irrigation.

- The average yearly flow released for irrigation.
- The number of irrigation agreements.
- The number of acres irrigated.

The data on this form is in essence, the Value to the Nation.

2. Module Maintenance. The data on the Irrigation Form will be entered into the module by CDM Smith from data in Appendix I of this report and will remain constant unless the project is modified. Should the project become modified in such a manner to impact the irrigation storage space, the module in OMBIL is designed to pick up these modifications based on data supplied by the appropriate Corps district. The second form, on the annual data, is designed to be updated on a yearly basis by the appropriate district. This annual data is the data that attempts to represent the actual Value to the Nation of Corps multiple purpose projects which contain irrigation storage. Except for the annual O&M billed, this annual data must be obtained from the Bureau of Reclamation. At this time IWR is attempting to determine if the billed O&M value is available in CEFMS.

D. VALUE TO THE NATION.

1. Value to the Nation. The value to the nation of this storage space for 2012 can be measured by the following parameters:

a. Storage Space. There are 38 Corps multipurpose projects in the western states that contain storage space for irrigation water. Of these projects 22 contain 71 million acre-feet of joint use storage space with an assigned cost for this storage of $732 million. The remaining 16 projects contain 3.6 million acre-feet of specific irrigation storage with an assigned cost of $54.1 million.

b. Associated Operation and Maintenance Expense. The total annual operation and maintenance cost billed to the Bureau of Reclamation is $5.0 million.

c. Average Yearly Flow. The total average yearly flow released for irrigation is 527,339 acre-feet/year.

d. Irrigation Agreements. In our 38 Western Corps of Engineers projects where irrigation is included as a purpose, there are 533 irrigation agreements between the Bureau of Reclamation and local water districts.

e. Irrigated Farm Land. There are 2.4 million acres of farm land irrigated by these Corps projects.

2. Additional Not Quantified Value.

a. The vast majority (97%) of the storage space in Corps' Western projects for joint use, one purpose of which is irrigation, is contained in the Omaha district's 6-Missouri main stem reservoirs. The Missouri River Master Manual revised in 2004 and amended in 2006 shows a

total of 891 irrigation intakes from these lakes, of which 199 are on Tribal Reservation land. As none of this water is under an irrigation repayment agreement, however, there is no way to measure any possible Value to the Nation.

b. There are seven projects in the Pacific Northwest which authorize irrigation as a purpose on a "run-of-river" basis. At this time, as there is no storage or costs assigned to irrigation and hence no irrigation agreements, there is no way to measure the possible Value to the Nation.

E. PROJECT DELIVERY TEAM.

The development of the irrigation data and this report was the result of many individuals. A list of these individuals is contained in **Table 4**.

Table 4: Irrigation Water Supply Database Project Delivery Team

Office	Name	Office Symbol
Northwestern Division	Jim Fredericks	NWD-PDD
Omaha	Larry Janis	NWO-OD-T
	Tiffany Vanosdall	NWO-PM-AP
Portland	Laurie Nicholas	NWP-EC-HR
	Kathryn Warner	NWP-EC-HR
	Bruce Duffe	NWP-EC-HR
Walla Walla	Cindy Boen	NWW-PM-PD-PF
Kansas City	John Grothaus	NWK-PM-PF
	Margaret Ryan	NWK-PM-PF
South Pacific Division	Boniface Bigornia	SPD-RBT
Sacramento	James Sandner	CECO-C-RAO (SPK)
San Francisco	Michael Dillabough	SPN-OR
Los Angeles	Ned Araujo	SPL-ED-HR
Albuquerque	Dennis Garcia	SPA-OD-W
	Curtis McFadden	SPA-OD-W
Southwestern Division	Elaine Newbaker-London	SWD-PDC
	Ted Kerr	SWD-PDO
Ft. Worth	Christy Smith	SWF-OD-TP
Tulsa	Aimee Jordan	SWT-PE
Institute for Water Resources	Ted Hillyer	IWR-GI
	Margaret Moses	IWR-GI
	Ruth Betts	IWR-NDC
	Richard Whittington	IWR-GR

APPENDIX A

Project Data for Irrigation

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Annual Data and Remarks A-10

Project Data for Irrigation Module of OMBIL

MSC, District and Project			Authorizations and Total Project Storage and Costs						
MSC	**District**	**Project**	**Basin**	**Basin Authority (PL)**	**Project Authority (Public Law)**	**Authority for Irrigation (PL)**	**Project Completion Date**	**Total Project Storage Space (AF)**	**Total Project Cost ($)**
NWD	Omaha	Ft. Peck, MT	Missouri River	Section 9 PL78-534	N/A	PL 78-534	1940	18,688,000	161,100,000
NWD		Garrison, ND					1960	23,821,000	294,000,000
NWD		Oahe, ND/SD					1958	23,137,000	380,000,000
NWD		Big Bend, SD					1963	1,859,000	85,000,000
NWD		Ft. Randall, SD					1956	5,418,000	185,900,000
NWD		Gavins Point, SD/NE					1957	410,000	47,800,000
NWD	**TOTAL NWO**	**6 projects**						**73,333,000**	**1,153,800,000**
NWD	Walla Walla	Lucky Peak, ID	N/A	N/A	PL 79-525	PL 78-534	1955	307,000	19,652,081
NWD	**sub with storage**	**1 project**						**307,000**	**19,652,081**
NWD		Ice Harbor, WA	Lower Snake River	PL 79-14	N/A	PL 79-14	1962	0	124,406,300
NWD		Little Goose, WA					1970	0	210,179,000
NWD		Lower Granite, WA					1975	0	369,876,000
NWD		Lower Monumental, WA					1969	0	233,145,000
NWD		McNary, OR/WA	Columbia River	PL 79-14	N/A	PL 79-14	1953	0	284,991,373
NWD	**sub run-of-the-river**	**5 projects**						**0**	**1,222,597,673**
NWD	**TOTAL NWW**	**6 projects**						**307,000**	**1,242,249,754**
NWD	Portland	Blue River,OR	Williamette River	PL 81-516	N/A	PL 78-534	1968	89,500	33,839,752
NWD		Cottage, OR					1942	48,000	5,168,657
NWD		Cougar, OR					1963	200,000	127,730,937
NWD		Detroit / Big Cliff, OR					1953	472,600	101,206,962

Project Data for Irrigation Module of OMBIL

MSC, District and Project			Authorizations and Total Project Storage and Costs						
MSC	District	Project	Basin	Basin Authority (PL)	Project Authority (Public Law)	Authority for Irrigation (PL)	Project Completion Date	Total Project Storage Space (AF)	Total Project Cost ($)
NWD		Dorena, OR					1949	131,100	15,210,444
NWD		Fall Creek, OR					1965	125,100	22,407,616
NWD		Fern River, OR					1941	111,400	10,652,529
NWD		Foster, OR					1967	60,800	
NWD		Green Peter, OR					1967	428,100	97,648,868
NWD		Hills Creek, OR					1962	355,600	55,743,250
NWD		Lookout Point / Dexter, OR					1955	477,700	126,649,869
NWD		Applegate, 0R	Rouge	PL 87-874	N/A	PL 87-874	1980	76,160	90,018,688
NWD		Lost Creek, OR					1976	465,000	150,204,595

Project Data for Irrigation Module of OMBIL

MSC, District and Project			Authorizations and Total Project Storage and Costs						
MSC	**District**	**Project**	**Basin**	**Basin Authority (PL)**	**Project Authority (Public Law)**	**Authority for Irrigation (PL)**	**Project Completion Date**	**Total Project Storage Space (AF)**	**Total Project Cost ($)**
NWD		Willow Creek, OR	N/A	N/A	PL 89-298	PL 89-298	1984	14,090	36,844,339
NWD	**sub with storage**	**14 projects**						**3,055,150**	**873,326,506**
NWD		John Day, OR/WA	Lower Columbia	PL 81-516	N/A	PL 81-516	1971	Run-of-river no storage	706,041,704
NWD		The Dalles, OR/WA					1973	Run-of-river no storage	493,861,110
NWD	**sub run-of-the-river**	**2 projects**						**0**	**1,199,902,814**
NWD	**TOTAL NWP**	**16 projects**						**3,055,150**	**2,073,229,320**
NWD	Kansas City	Harlan County	N/A	N/A	PL 78-534	PL 78-534	1952	850,000	51,837,000
NWD		Kanopolis	N/A	N/A	PL 75-761	PL 78-534 PL 94-423	1946	389,087	12,327,735
NWD		Wilson	N/A	N/A	PL 78-534	PL 78-534 PL 84-505	1964	776,000	20,573,293
NWD	**TOTAL NWK**	**3 projects**						**2,015,087**	**84,738,028**
Division Totals									
NWD With Storage		**24 projects**						**78,710,237**	**2,131,516,615**
NWD Run-of-River		**7 projects**						**0**	**2,422,500,487**
TOTAL NWD		**31 projects**						**78,710,237**	**4,554,017,102**
SPD	Sacramento	Black Butte Lake, CA	N/A	N/A	PL 78-534	PL 78-534	1962	160,000	14,500,000
SPD		Eastman, CA	N/A	N/A	PL 87-874	PL 87-874	1976	150,000	29,000,000
SPD		Hensley, CA	N/A	N/A	PL 87-874	PL 87-874	1975	90,500	31,785,000
SPD		Isabella Lake, CA	N/A	N/A	PL 78-534	PL 78-534	1953	570,000	22,027,000
SPD		Kaweah Lake, CA	N/A	N/A	PL 78-534	PL 78-534	1962	185,630	19,303,000
SPD		New Hogan Lake, CA	N/A	N/A	PL 78-534	PL 78-534	1964	325,000	15,906,000
SPD		Pine Flat, CA	N/A	N/A	PL 78-534	PL 78-534	1954	1,000,000	42,072,000

Project Data for Irrigation Module of OMBIL

MSC, District and Project			Authorizations and Total Project Storage and Costs						
MSC	**District**	**Project**	**Basin**	**Basin Authority (PL)**	**Project Authority (Public Law)**	**Authority for Irrigation (PL)**	**Project Completion Date**	**Total Project Storage Space (AF)**	**Total Project Cost ($)**
SPD		Success Lake, CA	N/A	N/A	PL 78-534	PL 78-534	1961	85,000	14,247,000
SPD	**TOTLA SPK**	**8 projects**						**2,566,130**	**188,840,000**
SPD	Albuquerque	Conchas, NM	N/A	N/A	PL 74-738	PL 74-738	1939	671,179	15,760,000
SPD		John Martin, CO	N/A	N/A	PL 74-738	PL 74-738	1948	793,400	15,300,000
SPD		Santa Rosa, NM	N/A	N/A	PL 83-780	PL 78-534	1979	447,100	41,039,056
SPD		Trinidad, CO	N/A	N/A	PL 85-500	PL 78-534	1977	165,267	44,900,000
SPD	**TOTAL SPA**	**4 projects**						**2,076,946**	**116,999,056**
TOTAL SPD		**12 Projects**						**4,643,076**	**305,839,056**
SWD	Ft. Worth	Belton	N/A	N/A	PL 79-526 modified by PL 83-780	79-526	1954 with a pool raise in 1972	1,097,600	17,191,734
SWD	**TOTAL SWF**	**1 Project**						**1,097,600**	**17,191,734**
SWD	Tulsa	Waurika	N/A	N/A	PL 88-253	PL 78-534	1977	287,200	66,880,696
SWD	**TOTAL SWT**	**1 Project**						**287,200**	**66,880,696**
TOTAL SWD		**2 Project**						**1,384,800**	**84,072,430**
NATIONAL TOTALS									
	With Storage	**38 Projects**						**84,738,113**	**2,521,428,101**
	Run-of- River	**7 Projects**						**0**	**2,422,500,487**
	National Total	**45 Projects**						**84,738,113**	**4,943,928,588**

Footnotes:

N/A = Not Applicable

[1]: Present year can be either calendar of fiscal year, which ever matches the available data.

Project Data for Irrigation Module of OMBIL

			Joint Storage Projects										
MSC, District and Project			Cost and Storage Data			Purposes authorized to share in Joint Use Storage							
MSC	**District**	**Project**	**Project Joint Use Storage Space (AF)**	**First Cost Assigned to Joint Use Storage ($)**	**Percent O&M Costs Assigned to Irrigation (%)**	**Irr.**	**FC**	**Hydro**	**Envir. Flows including F&WL and Water Quality**	**Nav.**	**Rec**	***M&I* WS**	**Other (identify)**
NWD	Omaha	Ft. Peck, MT	17,713,000	34,306,500	Not Available	x	x	x	x	x	x	x	
NWD		Garrison, ND	22,332,000	57,864,800	Not Available	x	x	x	x	x	x	x	
NWD		Oahe, ND/SD	22,035,000	55,750,500	Not Available	x	x	x	x	x	x	x	
NWD		Big Bend, SD	1,799,000	Not Available	Not Available	x	x	x	x	x	x	x	
NWD		Ft. Randall, SD	4,433,000	Not Available	Not Available	x	x	x	x	x	x	x	
NWD		Gavins Point, SD/NE	351,000	Not Available	Not Available	x	x	x	x	x	x	x	
NWD	**TOTAL NWO**	**6 projects**	**68,663,000**	**147,921,800**									
NWD	Walla Walla	Lucky Peak, ID	280,000	N/A	27	x	x		x	x	x		
NWD	**sub with storage**	**1 project**	**280,000**	**0**									
NWD		Ice Harbor, WA	Run of River			x		x		x	x		
NWD		Little Goose, WA	Run of River			x		x		x	x		
NWD		Lower Granite, WA	Run of River			x		x		x	x		
NWD		Lower Monumental, WA	Run of River			x		x		x	x		
NWD		McNary, OR/WA	Run of River			x		x		x	x		
NWD	**sub run-of-the-river**	**5 projects**	**0**	**0**									
NWD	**TOTAL NWW**	**6 projects**	**280,000**	**0**									
NWD	Portland	Blue River,OR	78,800	33,140,052	28	x	x		x	x	x		
NWD		Cottage, OR	28,900	2,974,080	32		x		x		x		
NWD		Cougar, OR	136,800	53,345,532	6	x	x	x	x	x	x		
NWD		Detroit / Big Cliff, OR	281,600	44,189,640	8		x	x	x	x	x		

Project Data for Irrigation Module of OMBIL

			Joint Storage Projects										
MSC, District and Project			Cost and Storage Data			Purposes authorized to share in Joint Use Storage							
MSC	District	Project	Project Joint Use Storage Space (AF)	First Cost Assigned to Joint Use Storage ($)	Percent O&M Costs Assigned to Irrigation (%)	Irr.	FC	Hydro	Envir. Flows including F&WL and Water Quality	Nav.	Rec	*M&I* WS	Other (identify)
NWD		Dorena, OR	65,000	14,612,568	40.4	x	x		x	x	x		
NWD		Fall Creek, OR	108,200	21,531,831	41	x	x		x	x	x		
NWD		Fern River, OR	94,500	5,220,699	45	X	X		x	X	x		
NWD		Foster, OR	24,800	N/A		X	X	X	x	X	x		
NWD		Green Peter, OR	249,900	97,934,426	6.5	X	X	X	x	X	x		
NWD		Hills Creek, OR	194,600	42,137,032	11.5	X	X	X	x	X	x		
NWD		Lookout Point / Dexter, OR	324,200	79,010,800	2	X	X	X	x	X	x		
NWD		Applegate, 0R	75,000	80,693,212	2		X		x			x	
NWD		Lost Creek, OR	315,000	109,038,469		X	X		x			X	

Project Data for Irrigation Module of OMBIL

			Joint Storage Projects										
MSC, District and Project			Cost and Storage Data			Purposes authorized to share in Joint Use Storage							
MSC	District	Project	Project Joint Use Storage Space (AF)	First Cost Assigned to Joint Use Storage ($)	Percent O&M Costs Assigned to Irrigation (%)	Irr.	FC	Hydro	Envir. Flows including F&WL and Water Quality	Nav.	Rec	*M&I* WS	Other (identify)
NWD		Willow Creek, OR	3,710		20.8	X	X		X				
NWD	**sub with storage**	**14 projects**	**1,981,010**	**583,828,341**									
NWD		John Day, OR/WA	Run of River			x	x	x	x	x	x		
NWD		The Dalles, OR/WA	Run of River			x		x	x	x	x		
NWD	**sub run-of-the-river**	**2 projects**	**0**	**0**	**0**								
NWD	**TOTAL NWP**	**16 projects**	**1,981,010**	**583,828,341**									
NWD	Kansas City	Harlan County	N/A	N/A	N/A								
NWD		Kanopolis	N/A	N/A	N/A								
NWD		Wilson	N/A	N/A	N/A								
NWD	**TOTAL NWK**	**3 projects**											
Division Totals													
NWD With Storage		**24 projects**	**70,924,010**	**731,750,141**									
NWD Run-of-River		**7 projects**	**0**	**0**									
TOTAL NWD		**31 projects**	**70,924,010**	**731,750,141**									
SPD	Sacramento	Black Butte Lake, CA	N/A	N/A	N/A								
SPD		Eastman, CA	N/A	N/A	N/A								
SPD		Hensley, CA	N/A	N/A	N/A								
SPD		Isabella Lake, CA	N/A	N/A	N/A								
SPD		Kaweah Lake, CA	N/A	N/A	N/A								
SPD		New Hogan Lake, CA	N/A	N/A	N/A								
SPD		Pine Flat, CA	N/A	N/A	N/A								

Project Data for Irrigation Module of OMBIL

			Joint Storage Projects										
MSC, District and Project			Cost and Storage Data			Purposes authorized to share in Joint Use Storage							
MSC	**District**	**Project**	**Project Joint Use Storage Space (AF)**	**First Cost Assigned to Joint Use Storage ($)**	**Percent O&M Costs Assigned to Irrigation (%)**	**Irr.**	**FC**	**Hydro**	**Envir. Flows including F&WL and Water Quality**	**Nav.**	**Rec**	***M&I* WS**	**Other (identify)**
SPD		Success Lake, CA	N/A	N/A	N/A								
SPD	**TOTLA SPK**	**8 projects**											
SPD	Albuquerque	Conchas, NM	N/A	N/A	N/A								
SPD		John Martin, CO	N/A	N/A	N/A								
SPD		Santa Rosa, NM	N/A	N/A	N/A								
SPD		Trinidad, CO	N/A	N/A	N/A								
SPD	**TOTAL SPA**	**4 projects**											
TOTAL SPD		**12 Projects**	**0**	**0**									
SWD	Ft. Worth	Belton	45,000	87,466		x					x	x	
SWD	**TOTAL SWF**	**1 Project**	**45,000**	**87,466**									
SWD	Tulsa	Waurika											
SWD	**TOTAL SWT**	**1 Project**											
TOTAL SWD		**2 Project**	**45,000**	**87,466**									
NATIONAL TOTALS													
	With Storage	**38 Projects**	**70,969,010**	**731,837,607**									
	Run-of- River	**7 Projects**	**0**	**0**									
	National Total	**45 Projects**	**70,969,010**	**731,837,607**									
Footnotes:													
N/A = Not Applicable													
[1]: Present year can be either calendar of fiscal year, which ever matches the available data.													

Project Data for Irrigation Module of OMBIL

			Specific Storage Projects										
MSC, District and Project			Cost and Storage Data			Specific authorized purposes							
MSC	**District**	**Project**	**Specific Irrigation Storage Space (AF)**	**First Cost Assigned to Specific Irrigation Storage ($)**	**Percent O&M Costs Assigned to Irrigation (%)**	**Irr.**	**FC**	**Hydro**	**Envir. Flows including F&WL and Water Quality**	**Nav.**	**Rec**	***M&I* WS**	**Other (identify)**
NWD	Omaha	Ft. Peck, MT	N/A	N/A	N/A								
NWD		Garrison, ND	N/A	N/A	N/A								
NWD		Oahe, ND/SD	N/A	N/A	N/A								
NWD		Big Bend, SD	N/A	N/A	N/A								
NWD		Ft. Randall, SD	N/A	N/A	N/A								
NWD		Gavins Point, SD/NE	N/A	N/A	N/A								
NWD	**TOTAL NWO**	**6 projects**											
NWD	Walla Walla	Lucky Peak, ID	N/A	N/A	N/A								
NWD	**sub with storage**	**1 project**											
NWD		Ice Harbor, WA	N/A	N/A	N/A								
NWD		Little Goose, WA	N/A	N/A	N/A								
NWD		Lower Granite, WA	N/A	N/A	N/A								
NWD		Lower Monumental, WA	N/A	N/A	N/A								
NWD		McNary, OR/WA	N/A	N/A	N/A								
NWD	**sub run-of-the-river**	**5 projects**											
NWD	**TOTAL NWW**	**6 projects**											
NWD	Portland	Blue River,OR	N/A	N/A	N/A								
NWD		Cottage, OR	N/A	N/A	N/A								
NWD		Cougar, OR	N/A	N/A	N/A								
NWD		Detroit / Big Cliff, OR	N/A	N/A	N/A								

Project Data for Irrigation Module of OMBIL

			Specific Storage Projects										
MSC, District and Project			Cost and Storage Data			Specific authorized purposes							
MSC	**District**	**Project**	**Specific Irrigation Storage Space (AF)**	**First Cost Assigned to Specific Irrigation Storage ($)**	**Percent O&M Costs Assigned to Irrigation (%)**	**Irr.**	**FC**	**Hydro**	**Envir. Flows including F&WL and Water Quality**	**Nav.**	**Rec**	***M&I* WS**	**Other (identify)**
NWD		Dorena, OR	N/A	N/A	N/A								
NWD		Fall Creek, OR	N/A	N/A	N/A								
NWD		Fern River, OR	N/A	N/A	N/A								
NWD		Foster, OR	N/A	N/A	N/A								
NWD		Green Peter, OR	N/A	N/A	N/A								
NWD		Hills Creek, OR	N/A	N/A	N/A								
NWD		Lookout Point / Dexter, OR	N/A	N/A	N/A								
NWD		Applegate, 0R	N/A	N/A	N/A								
NWD		Lost Creek, OR	N/A	N/A	N/A								

Project Data for Irrigation Module of OMBIL

			Specific Storage Projects										
MSC, District and Project			Cost and Storage Data			Specific authorized purposes							
MSC	**District**	**Project**	**Specific Irrigation Storage Space (AF)**	**First Cost Assigned to Specific Irrigation Storage ($)**	**Percent O&M Costs Assigned to Irrigation (%)**	**Irr.**	**FC**	**Hydro**	**Envir. Flows including F&WL and Water Quality**	**Nav.**	**Rec**	***M&I* WS**	**Other (identify)**
NWD		Willow Creek, OR	N/A	N/A	N/A								
NWD	**sub with storage**	**14 projects**											
NWD		John Day, OR/WA											
NWD		The Dalles, OR/WA											
NWD	**sub run-of-the-river**	**2 projects**											
NWD	**TOTAL NWP**	**16 projects**											
NWD	Kansas City	Harlan County	150,000	11,528,800	15.35								
NWD		Kanopolis	162,500	unknown									
NWD		Wilson	225,000	unknown									
NWD	**TOTAL NWK**	**3 projects**	**537,500**	**11,528,800**									
Division Totals													
NWD With Storage		**24 projects**	**537,500**	**11,528,800**									
NWD Run-of-River		**7 projects**	**0**	**0**									
TOTAL NWD		**31 projects**	**537,500**	**11,528,800**									
SPD	Sacramento	Black Butte Lake, CA		Unknown	40.2	x	x						
SPD		Eastman, CA	140,000	1,600,000	40.4	x	x		x		x		
SPD		Hensley, CA	90,500	1,230,000	15.5	x	x		x		x		
SPD		Isabella Lake, CA	535,000	4,573,000	21.7	x	x						incidental
SPD		Kaweah Lake, CA	142,000	3,160,000	14.1	x	x						
SPD		New Hogan Lake, CA	310,000	5,757,972	36.2	x	x						
SPD		Pine Flat, CA	1,000,000	14,259,000	37.4	x	x						

Project Data for Irrigation Module of OMBIL

			Specific Storage Projects										
MSC, District and Project			Cost and Storage Data			Specific authorized purposes							
MSC	**District**	**Project**	**Specific Irrigation Storage Space (AF)**	**First Cost Assigned to Specific Irrigation Storage ($)**	**Percent O&M Costs Assigned to Irrigation (%)**	**Irr.**	**FC**	**Hydro**	**Envir. Flows including F&WL and Water Quality**	**Nav.**	**Rec**	***M&I* WS**	**Other (identify)**
SPD		Success Lake, CA	75,000	1,377,500	9.5	x	x						
SPD	**TOTLA SPK**	**8 projects**	**2,292,500**	**31,957,472**									
SPD	Albuquerque	Conchas, NM	254,203	0		x	x	x			x		
SPD		John Martin, CO	333,912	0		x	x				x		
SPD		Santa Rosa, NM	200,000	0		x	x						
SPD		Trinidad, CO	20,000	6,435,600	19.82	x	x				x		sediment
SPD	**TOTAL SPA**	**4 projects**	**808,115**	**6,435,600**									
TOTAL SPD		**12 Projects**	**3,100,615**	**38,393,072**									
SWD	Ft. Worth	Belton	0	**0**									
SWD	**TOTAL SWF**	**1 Project**	**0**	**0**									
SWD	Tulsa	Waurika	18,200	4,166,040		x	x					x	
SWD	**TOTAL SWT**	**1 Project**	**18,200**	**4,166,040**									
TOTAL SWD		**2 Project**	**18,200**	**4,166,040**									
NATIONAL TOTALS													
	With Storage	**38 Projects**	**3,656,315**	**54,087,912**									
	Run-of- River	**7 Projects**	**0**	**0**									
	National Total	**45 Projects**	**3,656,315**	**54,087,912**									
Footnotes:													
N/A = Not Applicable													
[1]: Present year can be either calendar of fiscal year, which ever matches the available data.													

Project Data for Irrigation Module of OMBIL

MSC, District and Project			Annual Data				Remarks	
MSC	**District**	**Project**	**Total annual O&M cost assigned to Irrigation ($) [1]**	**Average Yearly flow released for irrigation (AF/Year**	**Number of Irrigation Agree-ments**	**Number of Acres Irrigated**	**District**	**Project**
NWD	Omaha	Ft. Peck, MT	0	0	0	0	Costs based on Missouri Mainstem Reservoir System Allocatio of Costs (22 December 1958). While there is some irrigation use out of these reservoirs, there are no irriagtion agreements or way to mesure this value to the nation.	
NWD		Garrison, ND	0	0	0	0		
NWD		Oahe, ND/SD	0	0	0	0		
NWD		Big Bend, SD	0	0	0	0		
NWD		Ft. Randall, SD	0	0	0	0		
NWD		Gavins Point, SD/NE	0	0	0	0		
NWD	**TOTAL NWO**	**6 projects**	**0**	**0**	**0**	**0**		
NWD	Walla Walla	Lucky Peak, ID	163,340	71,018	20	48,000		
NWD	**sub with storage**	**1 project**	**163,340**	**71,018**	**20**	**48,000**		
NWD		Ice Harbor, WA	0	0	0	0		Run-of-River project, incidential irrigation
NWD		Little Goose, WA	0	0		0		Run-of-River project, incidential irrigation
NWD		Lower Granite, WA	0	0	0	0		Run-of-River project, incidential irrigation
NWD		Lower Monumental, WA	0	0	0	0		Run-of-River project, incidential irrigation
NWD		McNary, OR/WA	0	0	0	0		Run-of-River project, incidential irrigation
NWD	**sub run-of-the-river**	**5 projects**	**0**	**0**	**0**	**0**		
NWD	**TOTAL NWW**	**6 projects**	**163,340**	**71,018**	**20**	**48,000**		
NWD	Portland	Blue River,OR	247,155	2,579	15	1,495	(1) Additional legislation in House Document 531. (2) This project is one of 13 projects in the Willamette Basin operated as a system. There is 1.6 million AF of joint-use storage in the system. (3) Irrigation contracts are broken out by reach. Some reaches are supplied by multiple projects. The number of irrigation agreements and acres irrigated is an estimate based on proportion of conservation storage.	
NWD		Cottage, OR	266,111	1,122	5	613		See Blue River
NWD		Cougar, OR	145,740	4,476	26	2,595		See Blue River
NWD		Detroit / Big Cliff, OR	148,887	13,096	36	3		Values provided are for Detroit. Big Cliff is a re-regulation dam acting together with Detroit as a system. Big Cliff primarily is for hydropower production and provides no storage or benefits for irrigation.

Project Data for Irrigation Module of OMBIL

MSC, District and Project			Annual Data				Remarks	
MSC	District	Project	Total annual O&M cost assigned to Irrigation ($) [1]	Average Yearly flow released for irrigation (AF/Year	Number of Irrigation Agree-ments	Number of Acres Irrigated	District	Project
NWD		Dorena, OR	372,129	2,464	9	1,306		(1) Additional legislation in House Document 544. (2) This project is one of 13 projects in the Willamette Basin operated as a system. There is 1.6 million AF of joint-use storage in the system.
NWD		Fall Creek, OR	587,345	2,915	8	1,717		See Blue River
NWD		Fern River, OR	755,182	15,085	56	7,044		See Dorena
NWD		Foster, OR	N/A	N/A	N/A	N/A		See Detroit. (1) Additional legislation in SD 104. (2) Costs and joint use storage percent combined with Green Peter. (3) Storage not typically used to satisfy irrigation demand. The demand is met with flows from Green Peter.
NWD		Green Peter, OR	233,414	4,622	23	2,613		See Blue River
NWD		Hills Creek, OR	217,652	5,255	11	3,093		See Blue River
NWD		Lookout Point / Dexter, OR	79,492	8,755	18	5,153		Values provided are for Lookout Point. Dexter is a re-regulation dam acting together with Lookout Point as a system. Dexter is primarily is for hydropower production and provides no storage or benefits for irrigation.
NWD		Applegate, 0R	N/A	N/A	143	1,917		66,000 AF in the normal conservation pool with 9,000 of carryover storage. 26,000 AF allocated for irrigation, however, according to F&A, all of the district's projects have irrigation as only a joint-use purpose.
NWD		Lost Creek, OR	N/A	N/A	151	3,196		180,000 AF in the normal conservation pool with 135,000 AF of carryover storage. 35,000 AF allocated for irrigation, however, according to F&A, all of the district's projects have irrigation as only a joint-use purpose.

Project Data for Irrigation Module of OMBIL

MSC, District and Project			Annual Data				Remarks	
MSC	**District**	**Project**	**Total annual O&M cost assigned to Irrigation ($) [1]**	**Average Yearly flow released for irrigation (AF/Year**	**Number of Irrigation Agree-ments**	**Number of Acres Irrigated**	**District**	**Project**
NWD		Willow Creek, OR	N/A	N/A	1	2,538		(1) 3,710 AF of combined joint-use and specific irrigation storage. 1,787 AF is joint-se and 1,923 AF is specific irrigation storage, however, according to F&A, all of the district's projects have irrigation as only a joint-use purpose. (2) Recent Congressional action and a 2008 FONSI has changed irrigation operation from emergency use in drought situations to provide for the long-term withdrawal of storage water as an irrigation source for downstream agricultural lands.
NWD	**sub with storage**	**14 projects**	**3,053,107**	**60,369**	**502**	**33,283**		Run-of-river, no conservation storage
NWD		John Day, OR/WA	0	0	0	0		Run-of-river, no conservation storage
NWD		The Dalles, OR/WA	0	0	0	0		
NWD	**sub run-of-the-river**	**2 projects**	**0**	**0**	**0**	**0**		
NWD	**TOTAL NWP**	**16 projects**	**3,053,107**	**60,369**	**502**	**33,283**		
NWD	Kansas City	Harlan County	186,449	0	2	62,900		
NWD		Kanopolis	0	0	0	0		While there is irrigation authority, there are currently no contracts
NWD		Wilson	0	0	0	0		While there is irrigation authority, there are currently no contracts
NWD	**TOTAL NWK**	**3 projects**	**186,449**	**0**	**2**	**62,900**		
Division Totals								
NWD With Storage		**24 projects**	**3,402,896**	**131,387**	**524**	**144,183**		
NWD Run-of-River		**7 projects**	**0**	**0**	**0**	**0**		
TOTAL NWD		**31 projects**	**3,402,896**	**131,387**	**524**	**144,183**		
SPD	Sacramento	Black Butte Lake, CA	[*]		1	64,000	SPK Water Management Section does not differentiate irrigation flows from other flows. Two water districts had the data; SPK working to get data from others. [*] For these lakes water contracts do not require collection of payments through the Costs. SPK working to get data from BOR.	
SPD		Eastman, CA	[*]		1	85,000		
SPD		Hensley, CA	[*]		1	228,292		
SPD		Isabella Lake, CA	304,878		1	109,000		O&M returned to Corps for deposit.
SPD		Kaweah Lake, CA	103,534	54,700	1	340,000		O&M returned to Corps for deposit.
SPD		New Hogan Lake, CA	327,246		1	143,300		O&M returned to Corps for deposit.
SPD		Pine Flat, CA	633,693		1	1,000,000		O&M returned to Corps for deposit.

Project Data for Irrigation Module of OMBIL

MSC, District and Project			Annual Data				Remarks	
MSC	**District**	**Project**	**Total annual O&M cost assigned to Irrigation ($) [1]**	**Average Yearly flow released for irrigation (AF/Year**	**Number of Irrigation Agree-ments**	**Number of Acres Irrigated**	**District**	**Project**
SPD		Success Lake, CA	56,211	70,000	1	104,000		O&M returned to Corps for deposit.
SPD	**TOTLA SPK**	**8 projects**	**1,425,562**	**124,700**	**8**	**2,073,592**		
SPD	Albuquerque	Conchas, NM	0	25,582	0	41,379		Memorandum of Understanding in effect between xxxxx and xxxxx
SPD		John Martin, CO	0	164,690	0	130,000		Interstate Compact in effect between xxxx and xxxx
SPD		Santa Rosa, NM	0	31,555				Researching with BOR
SPD		Trinidad, CO	158,204	49,298	1	19,719		
SPD	**TOTAL SPA**	**4 projects**	**158,204**	**271,125**	**1**	**191,098**		
TOTAL SPD		**12 Projects**	**1,583,766**	**395,825**	**9**	**2,264,690**		
SWD	Ft. Worth	Belton	0	0	0	0		Congress authorized up to 45,000 AF for joint use for irriagiton and M&I water supply. Neither purposes currently utilizing this storage space.
SWD	**TOTAL SWF**	**1 Project**	**0**	**0**	**0**	**0**		
SWD	Tulsa	Waurika	0	0	0	0		Irrigation storage never been utilized. Current interest in reallocating to M&I.
SWD	**TOTAL SWT**	**1 Project**	**0**	**0**	**0**	**0**		
TOTAL SWD		**2 Project**	**0**	**0**	**0**	**0**		
NATIONAL TOTALS								
	With Storage	**38 Projects**	**4,986,662**	**527,212**	**533**	**2,408,873**		
	Run-of- River	**7 Projects**	**0**	**0**	**0**	**0**		
	National Total	**45 Projects**	**4,986,662**	**527,212**	**533**	**2,408,873**		

Footnotes:

N/A = Not Applicable

[1]: Present year can be either calendar of fiscal year, which ever matches the available data.

Institute for Water Resources

The Institute for Water Resources (IWR) is a U.S. Army Corps of Engineers (USACE) Field Operating Activity located within the Washington DC National Capital Region (NCR), in Alexandria, Virginia and with satellite centers in New Orleans, LA; Davis, CA; Denver, CO; and Pittsburg, PA. IWR was created in 1969 to analyze and anticipate changing water resources management conditions, and to develop planning methods and analytical tools to address economic, social, institutional, and environmental needs in water resources planning and policy. Since its inception, IWR has been a leader in the development of strategies and tools for planning and executing the USACE water resources planning and water management programs.

IWR strives to improve the performance of the USACE water resources program by examining water resources problems and offering practical solutions through a wide variety of technology transfer mechanisms. In addition to hosting and leading USACE participation in national forums, these include the production of white papers, reports, workshops, training courses, guidance and manuals of practice; the development of new planning, socio-economic, and risk-based decision-support methodologies, improved hydrologic engineering methods and software tools; and the management of national waterborne commerce statistics and other Civil Works information systems. IWR serves as the USACE expertise center for integrated water resources planning and management; hydrologic engineering; collaborative planning and environmental conflict resolution; and waterborne commerce data and marine transportation systems.

The Institute's Hydrologic Engineering Center (HEC), located in Davis, CA specializes in the development, documentation, training, and application of hydrologic engineering and hydrologic models. IWR's Navigation and Civil Works Decision Support Center (NDC) and its Waterborne Commerce Statistical Center (WCSC) in New Orleans, LA, is the Corps data collection organization for waterborne commerce, vessel characteristics, port facilities, dredging information, and information on navigation locks. IWR's Risk Management enter is a center of expertise whose mission is to manage and assess risks for dams and levee systems across USACE, to support dam and levee safety activities throughout USACE, and to develop policies, methods, tools, and systems to enhance those activities.

Other enterprise centers at the Institute's NCR office include the International Center for Integrated Water Resources Management (ICIWaRM), under the auspices of UNESCO, which is a distributed, intergovernmental center established in partnership with various Universities and non-Government organizations; and the Conflict Resolution and Public Participation Center of Expertise, which includes a focus on both the processes associated with conflict resolution and the integration of public participation techniques with decision support and technical modeling. The Institute plays a prominent role within a number of the USACE technical Communities of Practice (CoP), including the Economics CoP. The Corps Chief Economist is resident at the Institute, along with a critical mass of economists, sociologists and geographers specializing in water and natural resources investment decision support analysis and multi-criteria tradeoff techniques.

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