

# OMAHA, NE, DISTRICT

This district comprises portions of Montana, Wyoming, North Dakota, South Dakota, Minnesota, Colorado, Nebraska, Iowa, and Missouri, all embraced in the drainage basin of the Missouri River along the mainstem and tributaries to Rulo, NE.

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**Navigation**

**1. MISSOURI RIVER, SIOUX CITY, IA TO MOUTH (SIOUX CITY, IA TO RULO, NE)**

**Location.** Channel of the Missouri River extending from Sioux City, IA to Rulo, NE.

**Previous Projects.** For details see page 1893, Annual Report for 1915, and page 1175, Annual Report for 1938.

**Existing Project.** A navigation channel of 9-foot depth and width not less than 300 feet, obtained by revetment of banks, rock dikes to contract and stabilize waterway, cutoffs to eliminate long bends, closing minor channels, and removal of snags and dredging as required. Construction was initiated on this section of the project (Sioux City to Rulo) in FY 1928, the bank stabilization work was completed in April 1979, and the navigation feature was completed in September 1980. A reliable channel suitable for navigation is available through this section. Controlling depth at ordinary stages of the river is 9 feet, with additional depths available during high stages. Commercial navigation was inaugurated on this section in May 1939, and common carrier transportation service was inaugurated in October 1946. Seven riverside recreation sites are complete and in operation. (See Table 26-A for total cost of construction.)

**Local Cooperation.** Requirements are described in full on page 26-2 of FY 1988 Annual Report.

**Terminal Facilities.** Terminal facilities for loading and unloading grain, liquids and dry bulk products are maintained by private interests at various locations on this section of the river. A complete list of

terminal facilities is included in the Missouri River navigation maps and can be obtained from the Omaha District for a small fee.

**Operations During FY.** District personnel accomplished channel reconnaissance, surveys and mapping, engineering and design, surveys and layouts of construction, and supervision and administration. Local interests operate and maintain the recreation sites. Government Hired Labor Forces completed maintenance, which consisted of placing stone on damaged structures and placing structure markers to aid navigation.

**2. NAVIGATION WORK UNDER SPECIAL AUTHORIZATION**

**Small Navigation Projects Not Specifically Authorized by Congress (Sec. 107 of the River and Harbor Act of 1960, as amended, Public Law 645, 86th Congress).**

No work during the period.

**Flood Control**

**3. ANTELOPE CREEK, LINCOLN, NEBRASKA**

**Location.** Antelope Creek is located in the southeastern portion of Nebraska in Lancaster County and passes through the state capital of Lincoln.

**Existing Project.** The project consists of 2 miles of improved channel extending upstream from the mouth of Antelope Creek, a portion of which is a by-pass channel adjacent to a 4,060 foot-long concrete conduit in the downtown area. The project also includes a labyrinth weir control structure, two existing bridge replacements, one bridge modification, and 2.29

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miles of recreation trails along the proposed channel project. The channel improvement project will provide flood damage reduction to the city of Lincoln and the University of Nebraska-Lincoln campus. The Antelope Creek project is just one piece of a larger Antelope Valley project, which combines flood control, urban revitalization, and transportation projects.

**Local Cooperation.** This project is authorized under Section 101(b)(19) of the Water Resources Development Act of 2000. The Project Cooperation Agreement (PCA) with the Lower Platte South Natural Resources District and the Joint Antelope Valley Authority to sponsor the Antelope Creek project was executed in October 2002. PCA Amendment #1 was executed in March 2005 that afforded the sponsor authority to perform Section 215 project work. The current non-Federal cost estimate is \$34,083,000. The current Federal cost estimate is \$34,083,000 for a total project cost of \$68,166,000.

**Operations During FY.** Omaha District completed the design and advertised Phase 3 channel segment (S Street to J Street). A tree removal contract was advertised and awarded to Hofeling Enterprises and the work was completed by the end of February 2008. Park Construction Company was awarded the Phase 3 construction contract in July 2008 and commenced construction the following month. Phase 3 construction completion is scheduled for January 2010. Hawkins Construction Company, Omaha, Nebraska, completed construction of Phase 2B in September 2008. Real Estate reviewed numerous Phase 3 sponsor acquisitions and initiated the project crediting. Sponsor initiated and completed several utility and road/bridge relocation construction contracts, building demolitions, and continued extensive work on adjacent sponsor roadway projects.

### 4. BEAR CREEK LAKE, CO

**Location.** The dam site is on Bear Creek in Jefferson County, CO, about 8 miles above the confluence of Bear Creek with the South Platte River at Denver.

**Existing Project.** Earthfill dam 180 feet high, with a crest length of about 5,300 feet; and a supplementary earthfill dike with a height of 65 feet and a crest length of 2,100 feet, to the south of the main dam, and an uncontrolled earth and rock-cut emergency spillway. The lake provides storage capacity of 30,600 acre-feet for flood control and 1,979 acre-feet for sediment and recreation. Construction of the project was initiated in October 1973 and was completed in

September 1982, exclusive of recreation facilities. (See Table 26-A for total cost of construction.)

**Local Cooperation.** Requirements are described in full on page 21-3 of FY 1981 Annual Report.

**Operations During FY.** Maintenance: Continued routine operation and maintenance activities.

### 5. BIG SIOUX RIVER AND SKUNK CREEK, SIOUX FALLS, SOUTH DAKOTA

**Location.** Sioux Falls is located on a large bend of the Big Sioux River and at the confluence with Skunk Creek in the south half of Minnehaha County in southeastern South Dakota.

**Existing Project.** The project builds upon an existing project. It consists of raising an existing levee from the diversion dam to the upstream tie-off, raising the diversion channel levee, modifying the chute and stilling basin, raising the diversion dam, raising the levees on Skunk Creek, raising Big Sioux levees downstream of Skunk Creek, adding an inflatable dam on the Big Sioux upstream of Skunk Creek, and providing for bridge improvements.

**Local Cooperation.** This project is authorized under Section 101 of the Water Resources Development Act of 1996. The Project Cooperation Agreement (PCA) with the city of Sioux Falls to sponsor the Big Sioux River project was executed on 14 August 2000. The current 902(b) limit is \$51.4 M. The current recommended project cost is \$57.8 M which exceeds the 902(b) limit. The cost share on this project is 25% non-federal and 75% federal. The estimated cost to complete is \$24.7 M. The US Senate has proposed language in the 2009 Appropriation Bill, that, if enacted, will change the project authorized cost to \$51,000,000. This will raise the 902(b) limit to at least \$61,200,000. A post authorization change report is currently underway with an expected completion of December 2008/January 2009. The Sponsor has requested permission to accelerate and advance funding up to the current 902(b) limit to insure completion of the project in 2011.

**Operations During FY.** Phase 2A contract completed in FY08. Phase 2B contract was awarded in August 2007 and is expected to be completed in November/December 2008. Phase 2 C Dam Plans and Specifications completed in FY08. Phase 3 60% P&S completed in FY08.

## 6. BOWMAN-HALEY LAKE, ND

**Location.** The dam site is on North Fork of Grand River in southwestern North Dakota, about 6 miles above Haley, ND.

**Existing Project.** An earth-fill dam 79 feet high, with a crest length of 5,730 feet, and a reservoir with a flood storage capacity of about 72,700 acre-feet, plus 19,780 acre-feet for sediment storage, fish and wildlife conservation, recreation, and future water supply for communities of Bowman, Reeder, Scranton, and Gascoyne, ND. Construction was initiated in July 1964, and the project was completed in 1970. (See Table 26-A for total cost of construction.)

**Local Cooperation.** Requirements are described in full on page 26-2 of FY 1988 Annual Report.

**Operations During FY.** Maintenance: Continued routine operation and maintenance activities.

## 7. BUFORD TRENTON IRRIGATION DISTRICT, ND (LAND ACQUISITION)

**Location.** The Buford Trenton Irrigation District (BTID) is located in the flood plain along the left (north) bank of the Missouri River near its confluence with the Yellowstone River, in Williams County near Williston, ND.

**Existing Project.** The project consists of the acquisition of permanent flowage and saturation easements within and surrounding the BTID for land that has been affected by rising ground water and the risk of surface flooding. There are approximately 65 affected landowners and 120 tracts. Approximately 10,000 acres are irrigable and 1,750 non-irrigable. Acquisition of easements and relocation assistance under P. L. 91-646 began in FY 1998. The total cost of the project is capped at \$34,000,000 by authorizing legislation.

**Location Cooperation.** The project is authorized under Section 336(a) of the Water Resources Development Act of 1996, P. L. 104-303. Local cooperation is not applicable.

**Operations During FY.** During FY 2008, one additional easement was purchased on private land. In addition, the pump agreement was executed with the BTID and a check for \$60,000 was turned over to them. All acquisition activities were completed and the project will be closed out in FY09.

## 8. CHATFIELD LAKE, CO

**Location.** A dam site on the South Platte River, just below the mouth of Plum Creek, about eight miles upstream from Denver, CO.

**Existing Project.** Consists of rolled earth-fill dam with a maximum height of 148 feet and a crest length of 13,136 feet; a reservoir with flood control capacity of 235,098 acre-feet and sediment capacity of 26,692 acre-feet, which will be used for recreation; and an enlarged channel from the dam downstream to Denver to accommodate reservoir flood releases. The Corps participated with local interests in acquisition of lands and development of recreation facilities immediately downstream of the Chatfield Dam in lieu of a portion of the channel improvement. Construction of the project was initiated in August 1967 and was physically completed in 1992. (See Table 26-A for total cost of construction.)

**Local Cooperation.** Requirements are described in full on page 26-3 of FY 1993 Annual Report.

**Operations During FY.** Maintenance: Continued routine operation and maintenance activities.

## 9. CHERRY CREEK LAKE, CO

**Location.** A dam site on Cherry Creek in Arapahoe County, CO, approximately 6 miles southeast of Denver, CO, just outside of city limits. Cherry Creek joins South Platte River within city limits of Denver.

**Existing Project.** A rolled earth-fill dam with maximum height of 141 feet above streambed and a crest length of 14,300 feet. Project includes a reinforced concrete outlet works and an uncontrolled side channel spillway canal discharging into adjacent Toll Gate Creek. Cherry Creek project provides reservoir storage capacity of 92,126 acre-feet below spillway canal invert and, in addition, a surcharge storage of 134,470 acre-feet. Plan of operation in ultimate development for multiple-purpose uses includes 13,960 acre-feet for sediment storage and 79,960 acre-feet for conservation purposes. Construction began in FY 1946 and was completed in June 1961, exclusive of recreation facilities. (See Table 26-A for total cost of construction.)

**Local Cooperation.** None required except for recreation cost sharing.

**Operations During FY.** Maintenance: Continued

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routine operation and maintenance activities.

### 10. DENISON, IA

**Location.** East Boyer River is a left bank tributary of Boyer River. The East Boyer River is located south of Denison, Iowa. Denison is located in western Iowa in Crawford County.

**Existing Project.** The proposed project will construct a right bank levee and floodwall along the East Boyer River to reduce recurring flooding problems in the City of Denison, Iowa.

**Local Cooperation.** Section 205, Flood Control Act of 1948, as amended, applies. The City of Denison is paying the local share of this project. The Project Cooperation Agreement with the City of Denison, Iowa, to sponsor the Denison project was executed in November 2003. The current non-Federal cost estimate is \$1,554,538. The current Federal cost estimate is \$2,887,000 for a total project cost of \$4,441,538.

**Operations During FY.** A project dedication ceremony was held in October 2007. The Omaha District completed the Operation and Maintenance Manual in September 2008.

### 11. FALL RIVER BASIN, SD

**Location.** In Custer and Fall River Counties, in and near the town of Hot Springs, SD. Hot Springs unit is in the town of Hot Springs, immediately south of the junction of Cold Brook and Hot Brook, which combine to form the Fall River. Cold Brook Lake unit is approximately 1.25 miles north of the town of Hot Springs on Cold Brook, and Cottonwood Springs Lake unit is approximately 4.5 miles west of the town of Hot Springs on Cottonwood Springs Creek, one-half mile upstream from its confluence with Hot Brook.

**Existing Project.** The general plan of improvement provides flood protection for Hot Springs, SD. The Hot Springs channel improvement unit consisted of widening, deepening and straightening 6,000 feet of channel of Fall River. The Cold Brook Lake unit, an earth-fill dam with appurtenant structures, controls an area of 70.5 square miles. The Cottonwood Springs Lake unit consists of an earth-fill dam with appurtenant structures and controls an area of 26 square miles. Construction of Hot Springs unit was completed during FY 1951. Construction of Cold Brook unit dam and appurtenances was completed in FY 1953 with the exception of a road and parking area, which were completed in FY 1955. Construction of the Cottonwood Springs Dam was completed in FY 1970,

with the exception of the recreation facilities, which were completed in FY 1972. (See Table 26-A for total cost of construction.)

**Local Cooperation.** Local cooperation requirements have been fully complied with.

**Operations During FY.** Maintenance: Routine operation and maintenance activities were continued on the Cottonwood Springs and Cold Brook Dams and structures.

### 12. LOGAN CREEK, PENDER, NE

**Location.** This project is located in northeastern NE, approximately 75 miles north-northwest of Omaha, NE. Pender is located along the right bank of Logan Creek, about midpoint in the Logan Creek basin.

**Existing Project.** The selected and constructed plan is a combination levee and floodwall with a detention storage feature. It provides flood protection from Logan Creek as well as incidental benefit from Stage Creek flooding to the Village's residential and industrial area as well as its central business district. The levee extends approximately 15,000 feet in length along the north, east, and south edge of the community, averaging 10 feet in height.

**Local Cooperation.** Section 205, Flood Control Act of 1948, as amended; Flood Damage Reduction applies. The Village of Pender is paying the local share of the project.

**Operations During FY.** Real Estate crediting, final accounting, and project closeout activities were completed in FY 2008.

### 13. MISSOURI NATIONAL RECREATIONAL RIVER, NE AND SD

**Location.** On the Missouri River between Gavins Point Dam and Ponca State Park, NE. This includes Cedar and Dixon Counties in Nebraska, and Yankton, Clay, and Union Counties in South Dakota.

**Existing Project.** The designation as a National Recreational River will preserve outstanding and important scenic values and will provide additional opportunities for river access and recreation use. The project provides erosion control, consisting of bank stabilization and river management techniques designed to preserve the existing environment, and at the same time preserves high bank flood plain lands. Estimated total cost of construction is \$25,041,000 of which \$21,000,000 is the Federal cost of construction and

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\$4,041,000 is the non-Federal contributed funds.

**Local Cooperation.** All recreational construction on this project will be done in accordance with the cost-sharing and financing concepts reflected in the Water Resources Development Act of 1986. A cost-sharing contract with the state of South Dakota for the Myron Grove access site was signed on June 24, 1986; and the Yankton-Riverside Park Section 215 Agreement was signed on April 24, 1989. Construction was completed in June 1987 and June 1991, respectively. A Section 215 agreement was signed on May 30, 2001 with the Nebraska Game and Parks Commission for construction of the Ponca Resource and Education Center which was completed in 2004.

**Operations During FY.** Bank stabilization contracts were completed for Mulberry Bend and Ponca, Nebraska during FY08.

### 14. MISSOURI RIVER, KENSLERS BEND, NE, TO SIOUX CITY, IA

**Location.** Project is along Missouri River between Ponca Bend, NE, and combination bridge at Sioux City, IA.

**Existing Project.** Construction of dikes, revetments and channel improvement along Missouri River from Miners Bend and vicinity, SD and NE, to Sioux City, IA. Project was started in June 1946 and completed in June 1961. (See Table 26-A for total costs.)

**Operations During FY.** Routine operation and maintenance activities continued.

### 15. PAPILLION CREEK AND TRIBUTARIES LAKES, NE

**Location.** The Papillion Creek basin is located in Washington, Douglas, and Sarpy Counties, NE. Big Papillion Creek rises west of Blair and flows southeasterly through metropolitan Omaha. It is joined by the Little Papillion Creek just above Offutt AFB, forming Papillion Creek. The combined creeks flow along the side of Offutt AFB to its confluence with the Missouri River.

**Existing Project.** The project consists of a series of four dams and reservoirs, channel improvements, an effluent storage facility, and a flood warning system on tributaries of Papillion Creek. Construction was initiated in FY 1972. Completed projects include Standing Bear Lake, Glenn Cunningham Lake, and Wehrspann Lake. Estimated total costs for the project is

\$68,659,000 consisting of \$64,334,000 in Federal funds (\$1,367,000 to be reimbursed by the non-Federal sponsor) and \$2,958,000 non-Federal other costs and cash contributions.

**Local Cooperation.** Requirements are described in full on page 21-6 of FY 1981 Annual Report.

**Operations During FY.** Maintenance: Routine operation and maintenance activities continued.

### 16. PERRY CREEK, IA

**Location.** The Perry Creek basin is located in Woodbury and Plymouth Counties in northwestern Iowa. The downstream five miles of the basin lie within the corporate limits of Sioux City, IA, and drain the central portion of the city.

**Existing Project.** The project consists of 14,800 linear feet of grass and rock lined channel, 1,500 linear feet of new conduit, modification of 710 linear feet of existing conduit, and a concrete stilling basin, to provide capacity for the 100-year event. Also included are 4.25 miles of hiking/biking trail and a basin-wide flood warning system. Estimated project cost is \$95,143,000, of which \$57,836,000 is Federal cost and \$37,307,000 is non-Federal cost. WRDA 2007 increased the Federal contribution by up to \$4,000,000 to provide flood damage reduction benefits to at least a 100-year level of flood protection.

**Local Cooperation.** The project is authorized under the 1986 Water Resources Development Act and reauthorized in Section 151 of the Energy and Water Development Appropriations Act, FY 2004 (PL 108-137, December 1, 2003). The city of Sioux City, IA, is the local sponsor.

**Operations During FY.** Phase 4 contract completed in August 2008. Completed 30% Plans and Specification to increase the downtown levee height. The downtown levee raise is intended to provide flood damage reduction benefits to at least a 100-year level of flood protection per WRDA 2007 for that specific reach.

### 7. PICK-SLOAN MISSOURI BASIN PROGRAM (OMAHA DISTRICT)

**Location.** Flood control improvements in this project are along the Missouri River and several of its principal tributaries and in states comprising the Missouri River Basin.

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**Existing Project.** A general comprehensive plan for flood control and other purposes in the Missouri River Basin provides for levees along Missouri River between Sioux City, IA, and mouth and reservoirs on the Missouri River main stem and tributaries. See individual reports and Table 26-I for projects in the Omaha District included in the program. Also see Table 26-B for authorizing legislation.

### 18. PIPESTEM LAKE, ND

**Location.** On Pipestem Creek in Stutsman County, ND, three miles upstream from where Pipestem Creek joins the James River at Jamestown, ND.

**Existing Project.** The project consists of a rolled earthfill dam approximately 99.5 feet high with a crest length of 4,000 feet and outlet works of a gated reinforced concrete conduit. The reservoir provides 142,107 acre-feet of storage. The multipurpose pool provides space for silt storage and 840 acres of water surface for fish, wildlife and recreation needs. Construction of the project was initiated in FY 1970 and completed in FY 1977. (See Table 26-A for total construction costs.)

**Local Cooperation.** Requirements are described in full on page 26-6 of FY 1988 Annual Report.

**Operations During FY.** Routine operation and maintenance activities continued.

### 19. SALT CREEK AND TRIBUTARIES, NE

**Location.** Salt Creek Basin comprises an area of about 1,627 square miles in and around Lincoln in southeastern Nebraska.

**Existing Project.** The authorized project consists of a system of 10 dams and reservoirs, channel clearing, enlarging and realignment, levees and necessary bridge alternations. Pursuant to Senate Resolution adopted August 7, 1964, which authorized a review of the Salt Creek survey report, additional units were placed in "inactive" classification. Construction of the project began in the spring of 1962. All work under the active portion of the project, consisting of the 10 dams and reservoirs and the channel improvements and levees through Lincoln, was completed in 1969. Funds were transferred to the project in FY 1980 with concurrence of Congressional Committees. These funds were used to determine an effective method of correction for the dispersive clay problem in the completed downstream levees through Lincoln. (See Table 26-A for total

construction costs.)

**Local Cooperation.** Requirements are described in full on page 26-6 of FY 1988 Annual Report.

**Operations During FY.** Maintenance: Routine operation and maintenance activities continued.

### 20. SOUTH PLATTE RIVER BASIN, CO

**Location.** Flood control improvements in this project are along the South Platte River and its tributaries in Colorado.

**Existing Project.** General plan for flood control and other purposes to provide for construction of Chatfield Lake on the South Platte River, Bear Creek Lake on Bear Creek, and levee and channel improvements on the South Platte River. (See individual reports and Table 26-B for authorizing legislation).

### 21. VAN BIBBER CREEK, CO

**Location.** Van Bibber Creek is a right bank tributary of Ralston Creek with the confluence in Arvada, CO. The potential project area includes approximately one mile of the downstream portion of the creek located partially in Arvada and partially in Jefferson County.

**Existing Project.** The proposed project would include channel improvements including an underground conduit to convey Van Bibber Creek flood waters to Ralston Creek.

**Local Cooperation.** Section 205, Flood Control Act of 1948, as amended, applies. The City of Arvada is paying the local share of this project. The Project Cooperation Agreement with the City of Arvada, Colorado, to sponsor the Van Bibber Creek project was executed in April 2002.

**Operations During FY.** Real Estate crediting continued in FY 2008. Contract closeout, O&M manual preparation, and Real Estate crediting are scheduled for completion in FY 2009.

### 22. WESTERN SARPY AND CLEAR CREEK, NE

**Location.** The Western Sarpy and Clear Creek project area is located along and on both banks of the Lower Platte River and a portion of the Elkhorn River in Eastern Nebraska, specifically in Saunders and Sarpy Counties.

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**Exiting Project.** The proposed project will consist of 50-year left and right bank levees. Existing levees will be reconstructed, along with portions of new levee construction. The project will incorporate a new Camp Ashland (Nebraska Army National Guard) levee that has been funded by the Guard. Conservation measures to lessen impacts to endangered species are included with the project. Also, the sponsors are completing non-structural measures, consisting of flood proofing of cabins and homes.

**Local Cooperation.** This project is authorized under Section 101(b)(21) of the Water Resources Development Act of 2000. The Papio-Missouri River Natural Resources District, the Lower Platte North Natural Resources District, and the Lower Platte South Natural Resources District are paying the local share of this project. The Project Cooperation Agreement with the Papio-Missouri River Natural Resources District, the Lower Platte North Natural Resources District, and the Lower Platte South Natural Resources District to sponsor the Western Sarpy and Clear Creek project was executed in April 2004. The current non-Federal cost estimate is \$7,582,000. The current Federal cost estimate is \$14,082,000, for a total project cost of \$21,664,000.

**Operations During FY.** Omaha District continued design work during FY 2008, completing the 60% design of the entire project, and began final design of a Western Sarpy levee segment.

**23. WOOD RIVER, GRAND ISLAND, NE**

**Location.** This project is located in Hall County Nebraska, approximately midway between the city of Grand Island and Interstate 80.

**Existing Project.** This project consists of a five-mile long diversion channel with levees on both sides. The channel diverts Wood River flood flows to the Platte River. The diversion structure is located downstream from the Highway 281 bridge that crosses the Wood River. The diversion channel begins at that point and runs eastward to the Platte River. The current county and city bridges that cross the channels were designed and constructed by the sponsor. In addition, a two-mile long tie-off levee and small diversion channel were built west of highway 281 to prevent Wood River flood flows from spilling into the warm slough basin nearby and outflanking the diversion channel.

**Local Cooperation.** This project is authorized under the Water Resources Development Act (WRDA)

of 1996, Section 101K modified by WRDA of 1999, Section 335. The Project Cooperation Agreement (PCA) with the Central Platte Natural Resources District was executed on May 2, 2000. The total project cost at completion this FY is \$15,018,152. Of that amount, the Nonfederal share is \$4,290,468 and the Federal share is \$10,727,684.

**Operations During FY.** Project is complete and financial closeout is also complete this FY.

**24. INSPECTION OF COMPLETED FLOOD CONTROL WORKS**

Flood Control Act of June 22, 1936, and subsequent acts require local interests to furnish assurances that they will maintain and operate certain local protection projects after completion, in accordance with regulations prescribed by Secretary of the Army. District Engineers are responsible for administration of these regulations within the boundaries of their respective districts.

Inspections of completed local protection projects which have been turned over to local interests for maintenance and operation during the FY are set forth in Table 26-J, Inspections of Completed Local Protection Projects. FY 2008 costs were \$311,244.

**25. SCHEDULING FLOOD CONTROL RESERVOIR OPERATIONS**

Under Sections 7 and 9, Flood Control Act of December 22, 1944, the Corps of Engineers is responsible for detailed scheduling of operations involving storage capacity reserved for or assigned to flood control in reservoirs constructed by the Bureau of Reclamation as well as those constructed by the Corps of Engineers. Costs for FY 2008 were \$329,975; and total costs through September 30, 2008 were \$12,220,045.

**26. FLOOD CONTROL ACTIVITIES UNDER SPECIAL AUTHORIZATION**

**Emergency Response Activities - Repair, Flood Fighting and Rescue Work (Public Law 99, 84th Cong., and antecedent legislation.)**

**Operational Program Areas.** FY costs as follows:

Preparedness:	
All Hazards Planning Activities .....	\$ 483,956
All Hazards Training & Exercise.....	4
Facilities... ..	6,020

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National Centers of Expertise .....	0
Emergency Operations:	
Response Operations .....	187,719
After Action Report.....	0
Post Flood Response.....	0
Acquisition of Supplies & Equipment .....	313,995
Operational Support.....	101,657
Support For Others .....	10,256,762
Rehabilitation of Flood Control Works:	
Rehab. Federal Flood Control Works .....	570,986
Rehab. Non-Federal Flood Control Works .....	0
Shore Protection. ....	0
Field Investigations.....	58,313
Inspections .....	130,890
Interagency Levee Activities .....	0
Initial Eligibility Inspections .....	5,020
Emergency Water Supplies & Drought Assistance	
Drought Assistance.....	308,241
Field Investigations.....	0
Advance Measures:	
Advance Measure Assistance. ....	0
Field Investigations.....	0
Hazard Mitigation (By State):	
Hazard Mitigation Team Activities .....	0

**Small Flood Control Projects Not Specifically Authorized by Congress (Sec. 205, 1948 Flood Control Act as amended, Public Law 858, 80th Cong., June 30, 1948 as amended.)**

Federal costs for FY 2008 were \$746,658 for feasibility studies, plans and specifications and construction measures. See Table 26-L for detailed breakdown by project.

**Emergency Streambank Protection (Sec. 14, 1946 Flood Control Act, Public Law 526, 79th Cong., July 24, 1946 as amended.)**

Operations under this heading were as follows: Federal costs for FY 2008 were \$219,177 for projects in the planning and design analysis phase and projects in the construction phase. See Table 26-L for detailed breakdown by project.

**27. CHEYENNE RIVER SIOUX TRIBE, LOWER BRULE SIOUX TRIBE, AND STATE OF SOUTH DAKOTA TERRESTRIAL WILDLIFE HABITAT RESTORATION**

**Location.** Lands located in the state of South Dakota and acquired by the Secretary of the Army for the implementation of the Pick-Sloan Missouri River Basin program. Lands to be transferred to the State are Corps nonoperational lands located above the top of the exclusive flood pool of the Oahe, Big Bend, Fort Randall and Gavins Point projects and located outside of the external boundaries of a reservation of an Indian Tribe. Lands to be transferred to the Secretary of the Interior are nonoperational lands located above the top of the flood pool of the Big Bend and Oahe projects and located within the external boundaries of the reservation of the Cheyenne River Sioux Tribe and the Lower Brule Sioux Tribe. Sediment study and remedial action is in Cheyenne River.

**Existing Project.** Review and submittal to congress wildlife habitat restoration plans developed by the State and Indian Tribes. Accomplish the transfer of Corps of Engineers land to the State of South Dakota and the Department of Interior for the two Indian Tribes. Conduct sediment study and complete any necessary remedial action. Estimated total cost of the project is \$61,206,400.

**Local Cooperation.** This project has no cost-sharing sponsor. The entire project is being borne by the Federal government with no cost to either local or tribal governments or the affected state. Therefore, no Project Cooperation Agreements are required. Restoration of terrestrial wildlife habitat loss programs are being accomplished by the transferees through the use of grant instruments until ten years from date of enactment under which the trust funds established under project authorization are fully capitalized.

**Operations During FY.** Coordination efforts with state and tribal entities continued. Grant agreements were implemented. Land transfer to State on Oahe, Big Bend, and Fort Randall was completed. Work to obtain background samples for sediment study was initiated.

**28. LAKE SAKAKAWEA RURAL HEALTH CARE, ND**

**Location:** Fort Berthold Indian Reservation of the Three Affiliated Tribes, New Town, North Dakota.

**Existing Project:** Construct a full service rural health care facility of approximately 41,900 GSF for the Three Affiliated Tribes, Fort Berthold Reservation. The facility shall be capable of operating an extended-hours primary care clinic and a 24/7 Emergency Medical Service serving the Fort Berthold Reservation. (See

Table 26-A for total cost of construction.)

**Local Cooperation:** This project has no cost-sharing sponsor. The entire project is being borne by the Federal government with no cost to either local or tribal governments or the affected state. Therefore, no Project Cooperation Agreements are required. Upon construction completion the facility will be transferred to the Secretary of the Health and Human Services for operation and maintenance

**Operations During FY:** Coordinated requirements with the Indian Health Service and the Three Affiliated Tribes (TAT) for the replacement of the healthcare facility. Planned and developed the design alternatives as well as addressing permits, easements and other required real estate instruments. Initiated design of the facility.

## 29. LOWER DECATUR, NE

**Location.** The Missouri River's right (west) overbank including side channels, from river mile 684.5 to 689 on the Missouri River in Burt County, NE, about 2 miles southeast of Decatur, NE.

**Existing Project.** Modification of the Missouri River Bank Stabilization and Navigation Project (MRBSN) constructed from 1935 to 1982. Lower Decatur Bend is one of many bend cutoffs (straightenings) created by the Corps during channelization of the Missouri River for navigation and bank stabilization. The proposed project modification includes 3 main off-stream aquatic components: side-channel restoration, lowering of the riverward extent of closure spur dikes, and revetment lowering over an extended length to allow river flows to erode the river bank behind the revetment, thereby increasing the top width of the channel over an extended area. An opportunity existed at Lower Decatur Bend to restore the physical habitat to configurations more similar to those that existed prior to the channelization of this reach of the river.

**Local Cooperation.** Section 1135 of 1986 WRDA applies. The Papio-Missouri River Natural Resources District is providing all needed cost sharing, including real estate interests valued at approximately \$800,000 and cash of about \$193,000.

**Operations During FY.** Construction contractors completed construction and a final inspection was held in July. Preparation of the O&M Manual began and project turnover to the sponsor is anticipated in FY09.

## 30. MISSOURI RIVER FISH & WILDLIFE MITIGATION, IA, KS, MO, MT, NE, ND, & SD

**Location.** The project extends along the Missouri River from Sioux City, IA, to the mouth near St. Louis, Missouri.

**Existing Project.** To mitigate a portion of the fish and wildlife habitat losses resulting from the construction and operation of the Missouri River Bank Stabilization and Navigation project. Estimated total cost of the project is \$3,739,687,000 federal funds.

**Local Cooperation.** This project has no cost-sharing sponsor. The entire project is being borne by the Federal government with no cost to either local governments or the affected states. Therefore, no Project Cooperation Agreement is required. Although the affected states are not participating financially in the project, the states are very actively involved in the planning and design of the project. The states also are participating in the project by furnishing perpetual easements for construction and operation on existing state-owned lands. The states of Missouri and Iowa are the primary donors of such easements.

**Operations During FY.** Several shallow water habitat (SWH) design activities occurred in FY 2008. They include completed or partial development of Plans and Specifications (P&S) for Boyer Bend backwater project; Bullard Bend backwater project; Confluence Point project; Corning/Hemmies Bend; Dalbey Bottoms project; Fawn Island chute project; Hare Wildlife Area, Lower Barney Bend chute project; Lower Calhoun chute project; Middle Decatur Bend chute project; Nishnabotna project; Plattsmouth Bend backwater phase II project; and Tobacco Island chute revision project; Wolf Creek chute project and several design packages for River Structure Control Modifications from Sioux City, Iowa to Rulo, Nebraska,. The construction contracts for several SWH projects were awarded: Bullard Bend Backwater; Jameson Island Chute; Middle Decatur Bend Chute; Plattsmouth Bend Backwater Phase II; River Control Structure Modification South; Rush Bottoms Chute, Tarkio River Chutes T&C; Tyson Bend Chute and Backwater; There were also a number of construction activities ongoing during this period. Several construction contracts were awarded for the creation of emergent sandbar habitat below the Gavins Point Project. A 40 acre sandbar is located at River Mile (RM) 791.5; a 74 acre sandbar at RM 777; and a 27 acre sandbar at RM 775. Improvements were made to the fish hatcheries in

## OMAHA, NE DISTRICT

MT, ND, SD, and MO. In accordance with Section 5018 of the Water Resources Development Act 2007, a comprehensive study of the Missouri River was initiated and the Missouri River Recovery Implementation Committee (MRRIC) was established. The MRRIC membership includes members representing various stakeholder groups, the basin Tribes, Federal Agencies, and the following states, Iowa, Kansas, Missouri, Montana, Nebraska, North Dakota, South Dakota, and Wyoming.

### 31. RURAL MONTANA, MT

**Location.** This authority is to establish a program for providing environmental assistance to non-federal interests in rural Montana.

**Existing Project.** The authorization will establish a program for providing environmental assistance to non-federal interests in Montana. Assistance may be in the form of design and construction assistance for water related environmental infrastructure and resource protection and development projects. There is authorized to be appropriated \$25,000,000 for this program.

**Local Cooperation.** Section 595 of WRDA 1999 applies. The Federal share of project costs under each local cooperation agreement entered into shall be 75 percent and may be provided in the form of grants or reimbursements.

**Operations During FY.** Project Cooperation Agreements were established for seventeen projects; Conrad, Glasgow, Billings West Wicks, Cut Bank, Billings Heights, Power-Teton, Crow Nation, Belgrade, Butte-Silver Bow, Bigfork Ranch, Greater Woods, Dayton, Seeley, Hamilton, Philipsburg, Whitehall, Cabinet Heights for a total of \$4.6 million.

### 32. SAND CREEK, WAHOO, NE

**Location.** The Sand Creek Watershed study area is located in eastern Nebraska in Saunders County. This is a reach extending for several miles on Sand Creek, upstream of the confluence of Sand Creek and Wahoo Creek.

**Existing Project.** This project consists of the creation of a large and diverse lake, wetland, and upland habitat complex in the lower part of the watershed just below the confluence of Sand and Duck Creeks and just above the City of Wahoo. In addition, seven smaller ponds, wetland, and upland habitat

complexes will be created in the upper reaches of the watershed. Bottomland wetlands will be created at both the upper and lower parts of the watershed. Total project costs are currently estimated at \$15,107,000 with a Federal share of \$9,159,000.

**Local Cooperation.** The Project is authorized under Section 101(b)(20) of the Water Resources Development Act of 2000. The local sponsor is the Lower Platte North Natural Resources District.

**Operations During FY.** Sediment Trap contract awarded in September 2007 with an expected completion date of November/December 2008. Breakwater contract awarded in June 2008 with expected completion In Spring 2009.

### 33. UPPER CENTRAL PLATTE VALLEY COLFAX REACH, CO

**Location.** The project is 13 miles downstream of Chatfield Reservoir on the South Platte River in the City and County of Denver. The length of the reach is approximately 3000 feet from just upstream of Lakewood Gulch to approximately 500 feet downstream of I-25.

**Existing Project.** The project reestablished and improved the ecosystem structures and functions by restoring fish and wildlife habitat through environmentally sensitive bank modification and creating a low flow meandering channel. Rock jetties, drop structures and a 250 cfs low flow channel are project features. Wetlands and riparian communities were reestablished along the east bank to create an improved wildlife corridor. Total project costs are currently estimated at \$6,000,000 with a Federal share of \$4,500,000.

**Local Cooperation.** Section 1135 of 1986 WRDA applies. The Greenway Foundation with the support of the City Of Denver is providing all needed cost sharing including real estate interests.

**Operations During FY.** Project is complete pending documentation of sponsor real estate costs for financial closeout.

### Multiple Purpose Projects Including Power

### 34. BIG BEND DAM-LAKE SHARPE, MISSOURI RIVER BASIN, SD

**Location.** On the Missouri River, 987.4 miles above the mouth, near Fort Thompson, SD, and

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approximately 20 miles upstream from Chamberlain, SD. Dam is located in the upstream reach of Fort Randall reservoir (Lake Francis Case). Big Bend reservoir (Lake Sharpe) extends upstream to Pierre, SD.

**Existing Project.** A rolled earth-fill dam 95 feet high, with a crest length of 10,570 feet, a hydroelectric generating plant consisting of five 58,500 kilowatt units, three 67,276 kilowatt units, and a chute-type gated spillway. Reservoir provides gross storage of 1,859,000 acre-feet. Federal cost of the project was \$107,498,000. Construction began in September 1959 and was completed in September 1977, except for Code 710 recreation facilities.

**Local Cooperation.** None required except for recreation cost-sharing.

**Operation During FY.** Maintenance: Project was operated in conjunction with other Missouri River reservoirs for flood control, power production and other multiple purpose uses. Normal operation and maintenance procedures were accomplished during the FY. During the period, 451,877,170 net kilowatt-hours of electricity were produced.

### 35. FORT PECK DAM AND LAKE, MT

**Location.** The reservoir is in the Missouri River Valley in McCone, Valley, Garfield, Phillips, Petroleum, and Fergus Counties, MT. Dam is approximately 1,771.6 miles above the mouth of the Missouri River. Nearest towns are Glasgow, 17 miles northwest; and Nashua, nine miles north.

**Existing Project.** A hydraulic earthfill dam with a maximum height of 251 feet, with a crest length of 21,026 feet, and a reservoir for flood control, irrigation, navigation, hydroelectric power, and other purposes, with a gross storage capacity of 18,688,000 acre-feet at maximum operating pool. Work started on the original project in October 1933 and on the second power plant in August 1956. The project was completed in 1965. The power installations at the project were updated in FY 1979. The five generators have a total output of 185,250 KW: two generators at 40,000 KW each, two generators at 43,500 KW each and one generator at 18,250 KW. See page 818 of 1965 Annual Report and page 905 of 1958 Annual Report for project details. Federal cost of the project was \$158,428,000.

**Local Cooperation.** None required except for recreation cost-sharing.

**Operations During FY.** Maintenance: Project was operated in conjunction with the other Missouri River reservoirs for flood control, navigation, power production, and other multiple purpose uses. Normal operation and maintenance procedures were accomplished during the FY. Generating facilities produced 587,456,900 net kilowatt hours of electricity.

### 36. FORT RANDALL DAM-LAKE FRANCIS CASE, MISSOURI RIVER BASIN, SD

**Location.** Located on the Missouri River in Charles Mix and Gregory Counties, SD, about 82 miles above Yankton, SD. Site is 880 miles above the mouth of the Missouri River and 148 miles above Sioux City, IA.

**Existing Project.** A rolled earth-fill dam with a maximum height of 165 feet; a crest length of 10,700 feet; and a reservoir for flood control, irrigation, navigation, hydroelectric power, and other purposes, with a gross storage capacity of 5,418,000 acre-feet at maximum operating pool. The power installation consists of eight units rated at 40,000 kilowatts each. Construction began in May 1946 and was completed in 1969, except for Code 710 recreation facilities. Federal cost of the project was \$199,066,000. Non-Federal contribution for constructing approaches to the Platte-Winner Bridge was \$720,000.

**Local Cooperation.** None required except for recreation cost-sharing and bridge approaches.

**Operations During FY.** Maintenance: Project was operated in conjunction with other Missouri River reservoirs for flood control, navigation, power production, and other multiple purpose uses. Normal operation and maintenance procedures were accomplished during the FY. Generating facilities produced 891,260,250 net kilowatt hours of electricity.

### 37. GARRISON DAM MAJOR REHABILITATION, LAKE SAKAKAWEA, ND

**Location.** Located on the Missouri River in McLean and Mercer Counties, ND, about 11 miles south of Garrison, ND, and 9 miles west of Coleharbor, ND, 1,389.9 miles about the mouth and 75 miles above Bismarck.

**Existing Project.** Garrison Dam is a multi-purpose project consisting of a rolled earth-filled dam with a sheet pile cutoff, a hydroelectric power plant, and a reservoir with storage capacity of 23,821,000 acre feet for flood control, navigation, power, recreation,

irrigation, and municipal water supply. This major rehabilitation project will replace the turbine runners on all five existing units with new runners designed to improve reliability and maximize efficiency over a broad range of operating conditions and upgrade the electrical power train, including the switchyard, for a total project cost of \$105,183,000.

**Local Cooperation.** None required.

**Operations During FY.** Completed installation of new governors for each of the 5 units. The exciter installation contract continued with construction starting in late FY08. In addition, installation of the governor pump and kidney loop filters for 5 units was initiated. Awarded a contract in May 2008 for \$6.2 M for 2-115 kV generator step unit transformers with an option to purchase 3- 230 kV GSU transformers (subject to availability of funds). Design for the transformer and miscellaneous equipment storage area was completed and a contract award to construct was issued in Sep 08 in the amount of \$685,771. Design work continued on the next critical portion of work (electrical power train) which includes station service, transformers, switchyard, power cables, and miscellaneous support systems. The continuation of the major rehabilitation will allow us to improve the plant reliability and get the increased power from the power house upgrades to the public.

**38. GARRISON DAM-LAKE SAKAKAWEA, MISSOURI RIVER BASIN, ND**

**Location.** Located on the Missouri River in McLean and Mercer Counties, ND, about 11 miles south of Garrison, ND, and 9 miles west of Coleharbor, ND. 1,389.9 miles above the mouth and 75 miles above Bismarck, ND.

**Existing Project.** A rolled earth-fill dam 11,300 feet long with a maximum height of 210 feet, and a reservoir for flood control, irrigation, navigation, hydroelectric power, and other purposes, with a gross storage capacity of 23,821,000 acre-feet. It provides five power units (three units rated at 109,250 kilowatts each and two units rated at 95,000 kilowatts each), three flood control tunnels, and a gated spillway. Federal cost of the project was \$299,938,000, including \$4,208,000 for major rehabilitation. Non-Federal contribution in connection with widening Snake Creek Embankment was \$687,000. Construction of the project was initiated in April 1946 and completed in 1966, except for recreational development using Code 710 funds.

**Local Cooperation.** None required except cost-sharing with the state of North Dakota for widening the Snake Creek Embankment and recreation cost-sharing.

**Operations During FY.** Maintenance: Project was operated in conjunction with other Missouri River reservoirs for flood control, navigation, power production, and other multiple purpose uses. Normal operation and maintenance procedures were accomplished during the FY. Generating facilities produced 1,230,874,760 net kilowatt hours of electricity.

**39. GAVINS POINT DAM-LEWIS AND CLARK LAKE, MISSOURI RIVER BASIN, NE AND SD**

**Location.** On the Missouri River in Yankton County, SD, and Knox County, NE, about four miles upstream from Yankton, SD, and 811.1 miles above the mouth.

**Existing Project.** A concrete and rolled earth-fill dam with a maximum height of 74 feet, and a reservoir for flood control, irrigation, navigation, hydroelectric power, and other purposes, with a gross storage capacity of 470,000 acre-feet at maximum operating pool. The power installation consists of three units rated at 44,099 kilowatts each. Federal cost of the project was \$49,617,000. Construction of the original project was initiated in March 1952 and completed in 1964.

**Local Cooperation.** None required except for recreation cost-sharing.

**Operations During FY.** Maintenance: Project was operated in conjunction with other Missouri River reservoirs for flood control, navigation, power production, and other multiple purpose uses. Normal operation and maintenance procedures were accomplished during the FY. Generating facilities produced 474,414,750 net kilowatt hours of electricity during FY 2008.

**40. OAHE DAM-LAKE OAHE, MISSOURI RIVER BASIN, SD AND ND**

**Location.** Dam is on the Missouri River in Hughes and Stanley Counties, SD, about six miles northwest of Pierre, SD, and 1,072.3 miles above the mouth.

**Existing Project.** A rolled earth-fill dam with maximum height of 245 feet; a crest length of 9,300

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feet; and a reservoir for flood control, irrigation, navigation, hydroelectric power, and other purposes, with a gross storage capacity of 23,137,000 acre-feet at maximum operating pool. It contains seven power units rated at 112,290 kilowatts each. Federal cost of the project was \$346,521,000. Construction was initiated in August 1948 and the project was placed in operation in June 1963.

**Local Cooperation.** None required except for recreation cost-sharing.

**Operations During FY.** Maintenance: Project was operated in conjunction with other Missouri River reservoirs for flood control, navigation, power production, and other multiple purpose uses. Normal operation and maintenance procedures were accomplished during the FY. Generating facilities produced 1,082,108,320 net kilowatt hours of electricity.

### **41. MISSOURI RIVER, BETWEEN FT. PECK DAM, MT AND GAVINS POINT DAM, SD, NE**

**Location.** The project is located along the Missouri River between Fort Peck Dam, MT, and a point 59 miles downstream of Gavins Point Dam, SD and NE.

**Existing Project.** Consists of undertaking measures, including maintenance and rehabilitation of existing structures, to alleviate bank erosion and related problems associated with releases from the six Missouri River main stem dams that the Secretary determines will be needed. In lieu of structural measures, lands may be acquired in affected areas from willing sellers. The costs of the measures shall be apportioned among project purposes as a joint-use operation and maintenance expense. Estimated Federal cost of the project is between \$140 million for construction or \$14 million for the land requisition alternative. Cost is limited to no more than \$3 million per FY.

**Local Cooperation.** Non-federal funds are not required for this project. One reach, the Missouri National Recreational River downstream from Gavins Point Dam, requires, under its separate authorization, that the landowners make available appropriate land interests to maintain the recreational and scenic qualities of the river and adjacent lands. In the other river reaches, lands can be acquired on a willing-seller basis if land acquisition is the recommended measure for erosion control at a given river site.

**Operations During FY.** Completed "The Bank Stabilization Cumulative Impacts Analysis Final Technical Report" dated March 2008. The Technical Report indicates that there is no correlation between past bank stabilization construction and the evaluated habitat features. Without a correlation of past activities, the Corps has no geomorphologic basis on which to alter the rate or amount of bank stabilization permits currently being permitted in the Missouri River. Therefore, the Corps intends to postpone the preparation of a CEIS until further notice.

### **42. PIERRE, SD**

**Location.** The project area consists of the Missouri River just downstream of Oahe Dam near Pierre and Fort Pierre, South Dakota.

**Existing Project.** The legislation authorizes that the Secretary may acquire from willing sellers such land and property in the vicinity of Pierre, South Dakota or flood proof or relocate such property within the project area, as the Secretary determines is adversely affected by the full wintertime Oahe Powerplant releases. Total cost of this project is held at \$35,000,000 by authorizing legislation.

**Local Cooperation.** This project has no cost-sharing sponsor. The entire project is completely federally financed as the mitigation is for a problem caused by the Oahe Dam project. By funding the project 100 percent Federal, the costs are allocated to the Oahe Project with 45.83 percent of the costs considered as joint costs to allocate for repayment by the Western Area Power Administration (WAPA). When WAPA invokes the sub-allocation of 15.8 percent of power costs to future irrigation, the 45.83 percent joint use costs will actually result in a final cost share of 38.6 percent to be repaid by non-Federal interests.

**Operations During FY.** Cities of Pierre and Ft. Pierre updated infrastructure plans and are working on contracts to expend funds remaining in escrow accounts.

OMAHA, NE DISTRICT

**Miscellaneous**

**43. CATASTROPHIC DISASTER  
PREPAREDNESS AND SUPPORT FOR  
FEMA**

P. L. 93-288 (and Antecedent Legislation)	
Continuity of Operations (510)	27,259
National Preparedness Planning (520)	60,754
Emergency Operations Center Support (530)	0
Catastrophic Disaster Training and Exercise (560)	<u>0</u>
Total Catastrophic Disaster Preparedness Program	\$88,013

**44. FLOOD CONTROL AND COASTAL  
EMERGENCIES (FC&CE)**

Flood control work under Authorization Emergency  
Flood Control Activities, Flood Fighting. P. L. 84-99.

Disaster Preparedness (100)	\$ 489,980
Emergency Operations (200)	603,372
Rehabilitation and Inspection Program (300)	765,208
Drought Assistance (400)	308,241
Advance Measures (500)	0
Hazard Mitigation (600)	0
Reimbursable Activities (900)	<u>10,256,762</u>
Total FC&CE	\$12,423,563

**45. REGULATORY FUNCTIONS**

Permit Evaluation	\$ 6,355,735
Enforcement	283,946
Studies	152,386
Environmental Impact Statement	0
Administrative Appeals	0
Compliance – Authorized Activities	412,939
Reimbursable Activities	<u>117,940</u>
Total Regulatory	\$ 7,322,946

**46. INVESTIGATIONS**

FY 2008 non-reimbursable costs totaled \$3,341,616 for all Investigation activities. See Table 26-K which covers Surveys, Collection and Study of Basic Data, Research and Development, Preconstruction Engineering and Design (projects not fully authorized), Planning and Engineering under Proposed Program Legislation, and Preconstruction Engineering and Design (fully authorized projects).

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**TABLE 26-A COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY05	FY06	FY07	FY08	Total Cost to September 30, 2008		
1.	Missouri River, Sioux City, IA to Mouth (Sioux City, IA to Rulo NE)	New Work:							
		Approp.	-----	-----	-----	-----	189,225,991 <u>1/</u>		
		Cost.	-----	-----	-----	-----	189,225,991 <u>1/</u>		
		Maint:							
		Approp.	5,442,000	2,004,470	2,137,900	1,748,000	161,437,792		
		Cost.	7,545,780	1,976,995	1,941,352	1,980,534	161,359,032		
3.	Antelope Creek Lincoln, NE	New Work:							
		Approp.	444,000	2,193,000	7,500,000	8,426,000	23,766,354		
		Cost.	444,874	2,193,095	3,569,434	5,626,407	17,036,188		
		Required Contributed Funds							
	Required Contributed Funds	New Work:							
		Approp.	255,000	1,132,000	2,715,286	9,361,390	14,688,925		
	Consolidated Summary	Cost	124,240	1,106,680	1,096,628	2,055,895	5,608,648		
		New Work:							
	Consolidated Summary	Approp.	699,000	3,325,000	10,215,286	17,787,390	38,855,279		
		Cost.	569,114	3,299,775	4,666,062	7,682,302	22,644,836		
	4.	Bear Creek Lake, CO	New Work:						
			Approp.	-----	-----	-----	-----	62,018,608	
Cost.			-----	-----	-----	-----	62,018,608		
Maint:									
Approp.			255,000	357,734	397,500	262,000	8,883,505		
Cost			253,570	356,256	350,161	297,249	8,867,120		
5.			Big Sioux River and Skunk Creek Sioux Falls, SD	New Work:					
				Approp.	1,018,000	1,483,000	2,649,608	1,873,000	16,884,608
	Cost.	926,668		1,263,341	1,252,712	2,704,582	16,000,243		
	Required Contributed Funds								
	Approp.	450,000		404,550	256,450	-----	2,403,000		
	Cost	307,908		177,760	711,912	(419,866)	1,776,398		
6.	Bowman-Haley Lake, ND	Consolidated Summary							
		New Work:							
		Approp.	1,468,000	1,887,550	2,906,058	1,873,000	19,287,608		
		Cost.	1,234,576	1,441,101	1,964,624	2,284,716	17,776,641		
6.	Bowman-Haley Lake, ND	New Work:							
		Approp.	-----	-----	-----	-----	4,372,174		
		Cost.	-----	-----	-----	-----	4,372,174		
		Maint:							
		Approp.	216,000	120,282	119,200	130,000	5,433,207		
		Cost	212,900	120,435	122,497	129,842	5,432,279		

1/ Includes \$18,325,581 National Industry Recovery Act funds, \$8,625,718 Emergency Relief Funds, and \$1,181,125 for previous project.

OMAHA, NE DISTRICT

**TABLE 26-A (Continued) COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY05	FY06	FY07	FY08	Total Cost to September 30, 2008
7.	Buford Trenton Irrigation District, ND (Land Acquisition)	New Work:					
		Approp.	1,402,000	867,000	150,000	-----	29,509,872
		Cost.	1,420,059	360,837	269,418	127,156	29,237,953
8.	Chatfield Lake, CO	New Work:					
		Approp.	-----	-----	-----	-----	95,444,010
		Cost.	-----	-----	-----	-----	95,444,010
	Required Contributed Funds	New Work:					
		Approp.	-----	-----	-----	-----	1,315,328
		Cost.	-----	-----	-----	-----	1,315,328
	Consolidated Summary	New Work:					
		Approp.	-----	-----	-----	-----	96,759,338
		Cost.	-----	-----	-----	-----	96,759,338
		Maint:					
		Approp.	1,751,000	1,678,000	3,077,000	1,652,000	29,850,782
		Cost	1,102,830	1,601,161	1,627,634	2,895,945	28,908,210
9.	Cherry Creek Lake, CO	New Work:					
		Approp.	-----	-----	-----	-----	15,220,364
		Cost.	-----	-----	-----	-----	15,220,364
		Maint:					
		Approp.	1,801,000	2,159,855	1,735,800	1,260,000	26,485,931
		Cost	1,048,101	1,842,848	1,934,685	1,743,387	25,716,892
10.	Denison, IA	New Work:					
		Approp.	-----	1,486,000	750,000	-----	2,236,000
		Cost.	-----	1,007,854	1,125,066	71,096	2,204,016
	Required Contributed Funds	New Work:					
		Approp.	-----	974,000	-----	-----	974,000
		Cost	-----	244,870	574,223	125,105	944,198
	Consolidated Summary	New Work:					
		Approp.	-----	2,460,000	750,000	-----	3,210,000
		Cost.	-----	1,252,724	1,699,289	196,201	2,952,013
11.	Fall River Basin, SD (Cottonwood & Coldbrook)	New Work:					
		Approp.	-----	-----	-----	-----	5,538,432
		Cost.	-----	-----	-----	-----	5,538,432
		Maint:					
		Approp.	593,000	375,632	1,041,002	1,041,002	12,284,811
		Cost	322,185	567,925	347,883	415,752	11,604,007

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**TABLE 26-A (Continued) COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY05	FY06	FY07	FY08	Total Cost to September 30, 2008	
12.	Logan Creek Pender, NE	New Work:						
		Approp.	12,000	-----	-----	55,245	4,193,902	
		Cost.	12,255	-----	-----	55,280	4,193,902	
	Required Contributed Funds	New Work:						
		Approp.	-----	-----	-----	(59,234)	387,312	
		Cost	(9,779)	2,085	5,787	(55,280)	387,312	
	Consolidated Summary	New Work:						
		Approp.	12,000	-----	-----	(3,989)	4,581,214	
		Cost.	2,476	2,085	5,787	-----	4,581,214	
13.	Missouri National Recreational River NE & SD	New Work:						
		Approp.	675,000	474,000	400,000	454,000	11,763,759	
		Cost.	635,083	267,903	281,316	401,104	11,334,635	
	Required Contributed Funds	New Work:						
		Approp.	153,352	-----	-----	-----	822,626	
		Cost.	14,052	153,352	-----	-----	822,626	
	Consolidated Summary	New Work:						
		Approp.	828,352	474,000	400,000	454,000	12,586,385	
		Cost.	649,153	421,255	281,316	401,104	12,157,261	
		Maint:						
		Approp.	150,000	-----	-----	-----	3,588,862	
		Cost	115,673	25,228	12,921	-----	3,588,862	
14.	Missouri River Kenslers Bend, NE, to Sioux City, IA	New Work:						
		Approp.	-----	-----	-----	-----	11,294,414	
		Cost.	-----	-----	-----	-----	11,294,414	
	Maint:	Approp.	146,000	136,000	124,300	149,000	6,264,518	
		Cost	141,354	140,491	124,438	145,487	6,260,576	
15.	Papillion Creek And Tributaries Lakes, NE	New Work:						
		Approp.	-----	-----	-----	-----	66,545,670 <u>2/</u>	
		Cost.	-----	-----	-----	-----	66,545,670 <u>2/</u>	
	Required Contributed Funds	New Work:						
		Approp.	-----	-----	-----	-----	955,000	
		Cost.	-----	-----	-----	-----	955,000	
	Consolidated Summary	New Work:						
		Approp.	-----	-----	-----	-----	67,500,670	
		Cost.	-----	-----	-----	-----	67,500,670	
		Maint:						
		Approp.	511,000	534,778	537,900	420,000	14,950,249	
		Cost	496,800	519,439	562,766	404,063	14,501,426	

2/ Does not include \$1,854,338 cost of inactive sites.

OMAHA, NE DISTRICT

**TABLE 26-A (Continued) COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY05	FY06	FY07	FY08	Total Cost to September 30, 2008	
16.	Perry Creek, IA	New Work:						
		Approp.	6,584,000	8,986,200	1,500,000	187,000	54,920,985	
		Cost.	6,608,017	7,065,050	2,785,308	719,566	54,796,635	
	Required Contributed Funds	New Work:						
		Approp.	649,313	2,245,791	-----	828,858	6,332,682	
		Cost	656,890	110,430	1,260,515	1,165,197	5,790,711	
	Consolidated Summary	New Work:						
		Approp.	7,233,313	11,231,991	1,500,000	1,015,858	61,253,667	
		Cost.	7,264,907	7,175,480	4,045,823	1,884,763	60,587,346	
18.	Pipestem Lake, ND	New Work:						
		Approp.	-----	-----	-----	-----	9,277,545	
		Cost.	-----	-----	-----	-----	9,277,545	
		Maint:						
		Approp.	588,000	303,601	426,600	488,000	12,319,326	
		Cost	490,987	377,644	401,528	518,043	12,300,090	
19.	Salt Creek and Tributaries, NE	New Work:						
		Approp.	-----	-----	-----	-----	12,197,621 <u>3/</u>	
		Cost.	-----	-----	-----	-----	2,197,621 <u>3/</u>	
		Maint:						
		Approp.	714,000	680,865	756,000	601,000	22,239,875	
		Cost	708,518	686,443	694,297	628,327	22,202,002	
21.	Van Bibber Creek, CO	New Work:						
		Approp.	2,165,000	3,324,000	193,411	-----	7,000,000	
		Cost.	2,165,000	3,324,000	193,416	-----	7,000,000	
	Required Contributed Funds	New Work:						
		Approp.	1,000,000	920,000	16,215	1	4,561,416	
		Cost.	792,084	1,569,539	46,004	50,372	4,514,704	
	Consolidated Summary	New Work:						
		Approp.	4,324,000	1,113,411	16,215	1	11,561,416	
		Cost.	4,116,084	1,762,955	46,004	50,372	11,514,704	

3/ Includes \$123,000 of government cost applicable to that portion of the project which is currently being carried in a deferred status.

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 26-A (Continued) COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY05	FY06	FY07	FY08	Total Cost to September 30, 2008	
22.	Western Sarpy and Clear Creek, NE	New Work:						
		Approp.	-----	1,477,000	3,300,000	436,000	5,413,000	
		Cost.	-----	1,278,955	698,098	1,075,652	3,052,705	
	Required Contributed Funds	New Work:						
		Approp.	-----	42,040	300,000	181,020	523,060	
		Cost	-----	-----	18,981	8,425	27,406	
	Consolidated Summary	New Work:						
		Approp.	-----	1,519,040	3,600,000	1,248,960	6,368,000	
		Cost.	-----	1,278,955	717,079	1,213,950	3,209,984	
23.	Wood River, Grand Island, NE	New Work:						
		Approp.	700,000	(11,000)	-----	-----	10,015,128	
		Cost.	215,537	364,907	60,732	(85,908)	9,877,185	
	Required Contributed Funds	New Work:						
		Approp.	-----	-----	-----	85,908	795,908	
		Cost	-----	-----	-----	85,908	795,908	
	Consolidated Summary	New Work:						
		Approp.	700,000	(11,000)	-----	85,908	10,811,036	
		Cost.	215,537	364,907	60,732	-----	10,673,093	
24.	Inspections of Completed Local Protection Projects	Maint:						
		Approp.	206,000	240,000	297,000	316,000	7,621,945	
		Cost.	211,468	239,437	298,627	311,244	7,616,293	
25.	Scheduling Flood Control Reservoir Operations	Maint:						
		Approp.	311,000	304,000	278,000	327,000	12,228,719	
		Cost.	305,500	300,580	276,609	329,975	12,220,095	
27.	Cheyenne River Sioux Tribe, Lower Brule Sioux Tribe & State of SD	New Work:						
		Approp.	5,109,000	3,701,000	4,099,732	3,936,000	48,507,587	
		Cost.	5,008,556	3,714,352	3,655,396	4,192,585	48,179,142	
	Terrestrial Wildlife Habitat Restoration, SD	Maint:						
		Approp.	2,371,000	1,980,000	1,939,000	2,804,000	18,502,980	
		Cost.	2,371,728	1,980,000	1,939,161	2,804,000	18,502,980	
28.	Lake Sakakawea Rural Health Care, ND	New Work:						
		Approp.	-----	-----	-----	2,952,000	2,952,000	
		Cost.	-----	-----	-----	94,017	94,017	

OMAHA, NE DISTRICT

**TABLE 26-A (Continued)**

**COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY05	FY06	FY07	FY08	Total Cost to September 30, 2008	
29.	Lower Decatur, NE	New Work:						
		Approp.	38,000	192,000	2,511,005	-----	3,894,505	
		Cost.	36,271	134,381	564,329	1,119,652	3,006,704	
	Required Contributed Funds	New Work:						
		Approp.	-----	-----	752,000	-----	852,000	
		Cost	5,039	1,877	93,729	79,360	272,925	
	Consolidated Summary	New Work:						
		Approp.	38,000	192,000	3,263,005	-----	4,746,505	
		Cost.	41,310	136,258	685,058	1,199,012	3,279,629	
30.	Missouri River Fish & Wildlife Recovery, IA, KS, MO, MT, NE, ND, & SD	New Work:						
		Approp.	20,960,865	32,343,000	52,500,000	33,432,000	184,506,865	
		Cost.	20,872,767	25,598,324	37,959,239	34,355,498	163,961,021	
31.	Rural Montana Montana	New Work:						
		Approp.	1,283,000	4,124,000	60,000	2,080,500	10,029,500	
		Cost.	739,317	2,793,791	1,377,380	636,787	8,028,031	
32.	Sand Creek, Wahoo, NE	New Work:						
		Approp.	489,000	1,723,000	1,600,000	1,591,000	6,252,000	
		Cost.	351,385	155,977	228,190	2,173,669	3,752,786	
33.	Upper Central Platte Valley, Colfax Reach Colorado	New Work:						
		Approp.	18,000	15,000	-----	-----	4,527,000	
		Cost.	20,188	7,720	2,874	2,599	4,522,139	
34.	Big Bend Dam-Lake Sharpe, Missouri River Basin, SD	New Work:						
		Approp.	-----	-----	-----	-----	107,497,597	
		Cost.	-----	-----	-----	-----	107,497,597	
		Maint:						
		Approp.	7,153,000	6,794,118	7,151,000	7,397,000	168,942,072	
		Cost.	6,135,015	5,910,356	7,109,603	8,266,024	167,839,373	
Customer Funding	Approp.	2,350,000	-----	3,050,000	2,560,000	7,200,000		
	Cost.	54,238	76,231	57,692	3,224,834	3,412,995		
35.	Fort Peck Lake, MT	New Work:						
		Approp.	229,000	222,000	-----	-----	159,013,115	
		Cost.	245,611	199,956	24,689	228	159,013,093	
		Maint:						
		Approp.	5,418,597	5,051,000	4,647,190	4,806,000	141,337,580	
		Cost	5,247,116	4,553,125	5,291,851	4,653,185	139,900,279	
	Customer Funding	Approp.	-----	-----	-----	10,143,000	10,143,000	
		Cost	-----	-----	-----	3,460,782	3,460,782	

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 26-A (Continued) COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY05	FY06	FY07	FY08	Total Cost to September 30, 2008	
36.	Fort Randall Dam-Lake Francis Case, Missouri River Basin, SD	New Work:						
		Approp.	-----	-----	-----	-----	199,065,883	
		Cost.	-----	-----	-----	-----	199,065,883	
		Maint:						
		Approp.	8,078,000	8,568,778	8,730,000	6,969,000	252,200,971 <u>4/</u>	
		Cost.	8,367,780	7,618,450	7,561,587	7,973,350	250,278,038 <u>4/</u>	
Customer Funding	Approp.	125,000	-----	-----	115,000	240,000		
	Cost.	6,255	117,647	-----	1,098	125,000		
37 & 38.	Garrison Dam Lake Sakakawea, Missouri River Basin, ND	New Work:						
		Approp.	-----	-----	-----	-----	295,729,613	
		Cost.	-----	-----	-----	-----	295,729,613	
		Maint:						
		Approp.	11,631,000	13,292,412	20,567,000	10,244,000	296,035,572 <u>4/</u>	
		Cost.	11,904,099	11,725,011	9,759,800	15,501,461	288,091,163 <u>4/</u>	
		Major Rehab:						
		Approp.	8,103,000	3,423,000	4,800,000	5,805,000	69,026,000	
		Cost.	6,721,364	2,051,950	1,625,077	1,812,564	59,105,579	
		Customer Funding	Approp.	1,400,000	-----	(439,060)	65,000	1,647,901
Cost.	10,125		928,605	22,210	-----	1,647,901		
39.	Gavins Point Dam-Lewis & Clark Lake Missouri River Basin, NE and SD	New Work:						
		Approp.	-----	-----	-----	-----	49,617,239	
		Cost.	-----	-----	-----	-----	49,617,239	
		Maint:						
		Approp.	9,983,000	6,574,353	8,434,800	5,361,000	194,765,974 <u>4/</u>	
		Cost.	8,841,547	6,141,775	6,642,730	7,521,163	193,438,756 <u>4/</u>	
Customer Funding	Approp.	1,650,000	-----	800,000	65,000	2,515,000		
	Cost.	-----	190,528	551,851	711,444	1,453,823		
40.	Oahe Dam-Lake Oahe, Missouri River Basin, ND & SD	New Work:						
		Approp.	-----	-----	-----	-----	346,520,603	
		Cost.	-----	-----	-----	-----	346,520,603	
		Maint:						
		Approp.	10,836,000	9,665,232	9,185,000	9,229,000	287,946,143 <u>4/</u>	
		Cost.	11,482,854	8,343,156	9,494,931	9,405,564	286,370,457 <u>4/</u>	
		Customer Funding	Approp.	-----	-----	140,000	3,880,000	4,020,000
			Cost.	-----	-----	16,228	234,828	251,056

4/ Includes Special Recreation Use Fees.

OMAHA, NE DISTRICT

**TABLE 26-A (Continued) COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY05	FY06	FY07	FY08	Total Cost to September 30, 2008
41.	Missouri River Between Ft. Peck Dam MT & Gavins Point Dam, SD & NE	Maint: Approp. Cost.	288,000 211,747	312,000 126,763	112,998 203,464	(11,000) 51,540	9,448,654 9,339,913
42.	Pierre, SD	New Work: Approp. Cost.	3,487,000 3,272,958	713,800 756,711	----- (59,530)	----- 68,611	35,000,000 34,751,834

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 26-B** **AUTHORIZING LEGISLATION**

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
<b>1.</b>		<b>MISSOURI RIVER, SIOUX CITY, IA TO MOUTH (SIOUX CITY, IA TO RULO, NE)</b>	
	Jan 12, 1927	Appropriation of \$12 million authorized for securing a 6 foot depth from Quindaro Bend (Kansas City, MO to Sioux City, IA).	H. Doc. 1120, 69 <sup>th</sup> Cong.
	July 3, 1930	Appropriation of \$15 million additional allotments totaling \$29,153,108 made by Public Works Administration under provisions of National Industrial Recovery Act of 1933, and \$9,669,791 allotted under provisions of Emergency Relief Appropriations Act of 1935.	PL 71-520 PL 73-67
	Aug 30, 1935	For completion of project from mouth to Sioux City, IA.	H. Doc. 238, 73 <sup>rd</sup> Cong PL 74-409
	Mar 2, 1945	For a channel of 9-foot depth and 300-foot width.	H. Doc. 214, 76 <sup>th</sup> Cong. PL 79-14
<b>3.</b>		<b>ANTELOPE CREEK, LINCOLN, NEBRASKA</b>	Section 101(b)(19) PL 106-541
	Water Resources Development Act of 2000 & 2007	A flood control project for channel improvement upstream from the mouth of Antelope Creek to the downtown area.	Section 3111 PL 110-114
<b>4.</b>		<b>BEAR CREEK LAKE, CO</b>	
	Aug 13, 1968	A flood control reservoir for protection of metropolitan Denver, CO.	S. Doc. 87, 90 <sup>th</sup> Cong. PL 90-483
<b>5.</b>		<b>BIG SIOUX RIVER AND SKUNK CREEK, SIOUX FALLS, SD</b>	
	Water Resources Development Act of 1996	A flood control project for raising levees and diversion dams, modification of chute and stilling basin, and providing bridge improvements.	Section 101 PL 104-303
<b>6.</b>		<b>BOWMAN-HALEY LAKE, ND</b>	
	Flood Control Act of 1962	Flood Control reservoir and water supply.	H. Doc. 574, 87 <sup>th</sup> Cong. PL 87-874
<b>7.</b>		<b>BUFORD TRENTON IRRIGATION DISTRICT, ND (LAND ACQUISITIONS)</b>	
	Water Resources Development Act of 1996	Acquisition of permanent flowage and saturation easements within and surrounding the BTID for land that has been affected by rising ground water and the risk of surface flooding.	Section 336(a) PL 104-303

OMAHA, NE DISTRICT

**TABLE 26-B (Continued) AUTHORIZING LEGISLATION**

See Section in Text Documents	Date Authorizing Act	Project and Work Authorized	
<b>8.</b>	Flood Control Act of 1950 Water Resources Development Act of 1986	<b>CHATFIELD LAKE, CO</b> Flood control reservoir and channel improvements to provide downstream protection for Denver, CO. Modified 1950 Flood Control Act to operate dam and other Federal improvements to achieve authorized level of protection, beginning at dam and ending 82 miles downstream. Reassigns a portion of the storage space in the lake project to joint flood control-conservation purposes. Modified 1974 WRDA to exempt prohibition of encroachment for Mineral Ave/Ken Caryl Rd. ext & transmission line.	H. Doc. 669, 80 <sup>th</sup> Cong. PL 81-516 H. Doc. 1013, 99 <sup>th</sup> Cong. PL 99-662
<b>9.</b>	Aug 18, 1941  Dec 22, 1944  Dec 22, 1944	<b>CHERRY CREEK LAKE, CO</b> Initiation and partial accomplishment of project.  PL 77-228 Completion of plan approved in Act of Aug 18, 1941.  PL 78-534 General comprehensive plan, Missouri River Basin.	H. Doc 426, 76 <sup>th</sup> Cong.  H. Doc 426, 76 <sup>th</sup> Cong.  H. Doc 475, and S. Docs. 191 and 247, 78 <sup>th</sup> Cong. PL 78-534
<b>10.</b>	Flood Control Act of 1948	<b>DENISON, IA</b> Section 205 of the Flood Control Act of 1948 as amended; flood damage reduction.	
<b>11.</b>	Aug 18, 1941	<b>FALL RIVER BASIN, SD</b> Provide flood control to the town of Hot Springs, SD.	H. Doc. 655, 76 <sup>th</sup> Cong. PL 77-228
<b>12.</b>	Flood Control Act of 1948	<b>LOGAN CREEK, PENDER, NE</b> Section 205 of the Flood Control Act of 1948 as amended; flood damage reduction.	
<b>13.</b>	National Parks and Recreation Act of 1978	<b>MISSOURI NATIONAL RECREATIONAL RIVER, NE AND SD</b> Preservation and enhancement of the Missouri River between the reaches from Gavins Point Dam, NE & SD to Ponca State Park, NE	Section 707 PL 95-625
<b>14.</b>	Aug 18, 1941 June 30, 1948	<b>MISSOURI RIVER, KENSLERS BEND, NE TO SIOUX CITY, IA</b> Construction of dike, revetments.	H. Doc. 821, 76 <sup>th</sup> Cong. PL 77-228 PL 80-858

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 26-B (Continued) AUTHORIZING LEGISLATION**

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
<b>15.</b>	Flood Control Act of 1968 Water Resources Development Act of 1986	<b>PAPILLION CREEK AND TRIBUTARIES LAKES, NE</b> Series of flood control reservoirs, providing protection for the metropolitan areas of Omaha, NE. Authorized additional \$4.8 million for channel improvement on Big Papillion Creek, and to Union Pacific RR bridge, recreation trail and flood warning system.	H. Doc. 349, 90 <sup>th</sup> Cong. PL 90-485 H. Doc. 1013, 99 <sup>th</sup> Cong. PL 99-662
<b>16.</b>	Water Resources Development Act of 1986, 2000 & 2007	<b>PERRY CREEK, IA</b> Provide flood protection for Perry Creek, Iowa	Section 401a, PL 99-662 Section 227 PL 106-541 Section 151 PL 108-357 Section 3069 PL 110-114
<b>17.</b>	June 28, 1938  Aug 18, 1941  Dec 22, 1944  July 24, 1946 May 17, 1950 Sep 3, 1954  Sep 3, 1954 May 2, 1956  July 3, 1958 July 14, 1960 Dec 30, 1963	<b>PICK-SLOAN MISSOURI BASIN PROGRAM (OMAHA DISTRICT)</b> Adopted general comprehensive plan for Missouri Flood Control Committee River basin and authorized \$9 million for Initiation and partial accomplishment. Modified general comprehensive plan to include Harlan County Dam and Reservoir on Republican River, NE and authorized additional \$7 million. Expanded general comprehensive plan for Missouri River Basin and authorized additional \$200 million. Authorized additional \$150 million for prosecution of general comprehensive plan for Missouri River Basin. Authorized additional \$250 million for prosecution of general comprehensive plan for Missouri River Basin. Expanded general comprehensive plan for Missouri River Basin and authorized additional \$217,710,000. Authorized \$5,384,014 to compensate Sioux Indians for Reservation lands required for Oahe, South Dakota project. Modified general comprehensive plan for Missouri River Basin by deletion of construction of Red Willow Dam and Reservoir, NE, and addition of Construction of Wilson Dam and Reservoir, KS. Expanded general comprehensive plan for Missouri River Basin and authorized additional \$200 million. Authorized additional \$207 million for prosecution of general comprehensive plan for Missouri River Basin. Authorized additional \$80 million for prosecution of general comprehensive plan for Missouri River Basin and modified the plan to include work protection and rectification works below Garrison Dam.	Doc. 1, 75 <sup>th</sup> Cong. PL 75-761 H. Doc. 842, 76 <sup>th</sup> Cong. PL 77-228 H. Doc. 475, and S. Docs. 191 and 247, 78 <sup>th</sup> Cong. PL 78-534 PL 79-526 PL 81-516 H. Docs. 549 and 642, 81 <sup>st</sup> Cong. PL 83-780 PL 83-776 PL 84-505 H. Doc. 409, 84 <sup>th</sup> Cong. PL 85-500 PL 86-645 PL 88-253

OMAHA, NE DISTRICT

**TABLE 26-B (Continued) AUTHORIZING LEGISLATION**

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
<b>17.</b>		<b>PICK-SLOAN MISSOURI BASIN PROGRAM (OMAHA DISTRICT) (cont.)</b>	
	June 18, 1965	Authorized additional \$116 million for prosecution of general comprehensive plan for Missouri River Basin.	PL 89-042
	Aug 13, 1968	Authorized additional \$38 million for prosecution of general comprehensive plan for Missouri River Basin.	PL 90-483
	Jun 19, 1970	Authorized additional \$109 million for prosecution of general comprehensive plan for Missouri River Basin.	H. Doc. 91-748 and S. Doc. 91-895 PL 91-282
	Dec 24, 1970	Changed comprehensive plan name to Pick-Sloan Missouri Basin Program.	S. Doc. 91-1100, 91 <sup>st</sup> Cong. PL 91-576
	Dec 31, 1970	Oahe Dam and Reservoir, ND.	H. Doc. 91-23 and PL 91-611
	Dec 23, 1971	Authorized additional \$101 million for prosecution of Pick-Sloan Missouri Basin Program.	PL 92-222
	Mar 7, 1974	Authorized additional \$72 million for prosecution of Pick-Sloan Missouri Basin Program.	PL 93-251
	July 8, 1976	Authorized additional \$85 million for prosecution of Pick-Sloan Missouri Basin Program.	PL 94-347
	Nov 16, 1977	Authorized additional \$59 million for prosecution of Pick-Sloan Missouri Basin Program.	PL 95-189
<b>18.</b>		<b>PIPESTEM LAKE, ND</b>	
	Flood Control Act of Oct 27, 1965	Provide flood control for Jamestown, ND and downstream areas.	H. Doc. 266, 89 <sup>th</sup> Cong. PL 89-29
<b>19.</b>		<b>SALT CREEK AND TRIBUTARIES, NE</b>	
	July 3, 1958	Series of dams and channel improvements for flood control around Lincoln, NE	H. Doc. 396, 84 <sup>th</sup> Cong. PL 85-500
<b>20.</b>		<b>SOUTH PLATTE RIVER BASIN, CO</b>	
	May 17, 1950	Adopted plan of improvement for South Platte River Basin and authorized \$26.3 million for initiation and partial accomplishment.	H. Doc 396, 84 <sup>th</sup> Cong. PL 81-516
	May 12, 1967	Authorized additional \$2 million for prosecution of plan.	PL 90-17
	Aug 13, 1968	Authorized additional \$12 million for prosecution of plan.	PL 90-843
	Jun 19, 1970	Authorized additional \$21 million for prosecution of plan.	PL 91-282
	Dec 23, 1971	Authorized additional \$37 million for prosecution of plan.	PL 92-222
	Mar 7, 1974	Authorized additional \$15 million for prosecution of plan.	PL 93-251
	Jul 8, 1976	Authorized additional \$22 million for prosecution of plan.	PL 94-347
	Nov 16, 1977	Authorized additional \$3 million for prosecution of plan.	PL 95-189 PL 110-114

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

<b>TABLE 26-B (Continued)</b>		<b>AUTHORIZING LEGISLATION</b>	
See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
21.	Flood Control Act of 1948	<b>VAN BIBBER CREEK, CO</b> Section 205 of the Flood Control Act of 1948 as amended; flood damage reduction.	
22.	Water Resources Development Act of 2000 & 2007	<b>WESTERN SARPY AND CLEAR CREEK, NE</b> Flood control project for reconstructing old levees and constructing new levees along and on both banks of the Lower Platte River and a portion of the Elkhorn River.	Section 101(b)(21) PL 106-541 Section 3113 PL 110-114
23.	Water Resources Development Act of 1996 and 1999	<b>WOOD RIVER, GRAND ISLAND, NE</b> Five-mile long diversion channel with levees.	Section 101k PL 104-303 and Section 335 PL 106-53
27.	Water Resources Development Act of 1999, 2000 & 2007	<b>CHEYENNE RIVER SIOUX TRIBE, LOWER BRULE SIOUX TRIBE AND STATE OF SOUTH DAKOTA AND TERRESTRIAL WILDLIFE HABITAT RESTORATION</b> Land transfer, mitigation and cultural work within the State of South Dakota	PL 106-53 Section 540 PL 106-541 Section 5129 PL 110-114
28.	Consolidated Appropriations Act of 2008	<b>LAKE SAKAKAWEA RURL HEALTH CARE, ND</b> The project constructs a full service rural health care facility for the Three Affiliated Tribes, Fort Berthold Reservation.	Section 115 PL 110-161
29.	Nov 17, 1986	<b>LOWER DECATUR, NE</b> Section 1135(b) of the Water Resources Development Act of 1986 as amended; environmental improvement.	PL 99-662
30.	Water Resources Development Act of 1986, 1999 & 2007	<b>MISSOURI RIVER FISH &amp; WILDLIFE MITIGATION, IA, KS, MO, MT, NE, ND, &amp; SD.</b> Mitigate fish and wildlife losses resulting from the construction and operation of the Missouri River Bank Stabilization and Navigation Project.	Section 601(a), PL 99-662 and Section 334, PL 106-53 PL 110-114

OMAHA, NE DISTRICT

**TABLE 26-B (Continued) AUTHORIZING LEGISLATION**

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
<b>31.</b>	Water Resources Development Act of 1999 and 2007	<b>RURAL MONTANA, MT</b> The authorization establishes a program for providing environmental assistance to non-federal interest in Montana.	Section 595 PL 106-53 and Sections 104 and 126 PL 108-7, 2003, HJ Res 2 and Section 117. PL 108-137, 2003, HR 2754 Section 5067 PL 110-114
<b>32.</b>	Water Resources Development Act of 2000 and 2007	<b>SAND CREEK, WAHOO, NE</b> An environmental restoration project to reestablish wetlands, reduce sedimentation and improve water quality for the benefit of fish and wildlife on the Sand Creek Watershed.	Section 101(b)(20) PL 106-541 Section 3112 PL 110-114
<b>33.</b>	Nov 17, 1986	<b>UPPER CENTRAL PLATTE VALLEY, COLFAX REACH</b> Section 1135(b) of the Water Resources Development Act of 1986, as amended; environmental improvement.	PL 99-662
<b>34.</b>	Dec 22, 1944	<b>BIG BEND DAM – LAKE SHARPE, SD</b> Expanded general comprehensive plan for flood control and other purposes in the Missouri River Basin.	H. Doc. 475 and S. Doc. 247, 78 <sup>th</sup> Cong. PL 78-534
<b>35.</b>	June 16, 1933 Aug 30, 1935  May 18, 1938	<b>FORT PECK LAKE, MT</b> Construction of earth dam, as recommended by Chief of Engineers Sep 30, 1933, was approved by Executive Order by the President and included in Public Work Administration program, Oct 14, 1933 as authorized by the National Industrial Recovery Act of 1933 and adopted by the River and Harbor Act of 1935 (PL 74-409). Completion, maintenance, and operation of a hydroelectric power plant, subject to certain provisions in act respecting transmission and sale of electric energy. Also authorizes installation of additional power-generating facilities by Secretary of War when deemed necessary in judgment of Bureau of Reclamation.	H. Doc. 238, 73 <sup>rd</sup> Cong. PL 74-409  PL 75-529
<b>36.</b>	Dec 22, 1944	<b>FORT RANDALL DAM – LAKE FRANCIS CASE, SD</b> Expanded general comprehensive plan for flood control and other purposes in the Missouri River Basin.	H. Doc. 475 and S. Docs. 191 and 247, 78 <sup>th</sup> Cong. PL 78-534
<b>37-38.</b>	Dec 22, 1944 PWA 1968	<b>GARRISON DAM – LAKE SAKAKAWEA,</b> Expanded general comprehensive plan for flood control and other purposes in the Missouri River Basin.	H. Doc 475 and S. Doc. 247, 78 <sup>th</sup> Cong. PL 78-534

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

<b>TABLE 26-B (Continued)</b>		<b>AUTHORIZING LEGISLATION</b>	
See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
39.	Dec 22, 1944	<b>GAVINS POINT DAM – LEWIS AND CLARK LAKE, MISSOURI RIVER BASIN, NE AND SD</b> Expanded general comprehensive plan for flood control and other purposes in the Missouri River Basin.	H. Doc. 475 and S. Doc. 247, 78 <sup>th</sup> Cong. PL 78-534
40.	Dec 22, 1944	<b>OAHE DAM – LAKE OAHE, MISSOURI RIVER BASIN, SD AND ND</b> Expanded general comprehensive plan for flood control and other purposes in the Missouri River Basin.	H. Doc. 475 and S. Docs. 191 and 247, 78 <sup>th</sup> Cong. PL 78-534
41.	Water Resources Development Act of 1988	<b>MISSOURI RIVER BETWEEN FT. PECK DAM, MT AND GAVINS POINT DAM, SD AND NE</b> Undertake measures to alleviate bank erosion and related problems associated with releases along the Missouri River from the six main stem dams.	Section 33, PL 100-676
42.	Water Resources Development Act of 1999	<b>PIERRE, SD</b> Mitigation for flooding caused by the Oahe Dam Project to the cities of Pierre and Ft. Pierre, SD.	PL 106-53

<b>TABLE 26-C</b>		<b>OTHER AUTHORIZED NAVIGATION PROJECTS</b>		
Project	Status	For Last Cost	Cost to September 30, 2008	
		Full Report See Annual Report for	Construction	Operation and Maintenance
Missouri River, Sioux City, IA to Fort Benton, MT	Complete	1948	3,123,141	644,863
Small Navigation Project at Sioux City, IA	Complete	1970	43,582	88,716

OMAHA, NE DISTRICT

**TABLE 26-E OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Project	Status	For Last Cost		Cost to September 30, 2008	
		Full Report See Annual Report for	Construction	Operation and Maintenance	
Aberdeen & Vicinity, SD	Complete	2007	1,788,743	-	
Belle Fourche, Cheyenne River, SD <u>1/</u>	Complete	1940	37,410	-	
Big Sioux River at Sioux City, IA <u>3/</u>	Complete	1982	7,479,899	-	
Blackbird Creek Near Mach, NE <u>2/</u>	Complete	1970	262,479	-	
Buffalo Creek, Meadow Grove, NE <u>2/</u>	Complete	1974	293,016	-	
Buffalo Creek, Scranton, ND <u>2/</u>	Complete	1960	102,980	-	
Cedar Canyon Dam, Rapid City, SD	Complete	1960	120,482	-	
City of Aurora, Westerly Creek, CO	Complete	1955	150,000	-	
Clarkson, NE, Maple Creek	Complete	1967	191,282	-	
Council Bluffs, IA (Act of 1936)	Complete	1939	-	-	
Council Bluffs, IA (Act of 1944)	Complete	1954	2,557,680	-	
Deadman's Gulch, Sturgis, SD <u>2/</u>	Complete	1981	3,000,000	-	
Dry Creek, Hawarden, IA	Complete	1964	400,000	-	
East Nisnabotna River At Red Oak, IA <u>2/</u>	Complete	1986	2,154,016	-	
Floyd River, Sioux City, IA	Complete	1970	11,556,667	-	
Forsyth, MT	Complete	1950	255,177	-	
Frazer-Wolf Point, MT	Complete	1982	435,000	-	
Gering Valley, NE	Complete	1971	5,989,663	-	
Glasgow, MT	Complete	1939	16,832	-	
Great Falls, MT	Complete	1991	11,905,000	-	
Greybull, WY	Complete	1960	248,507	-	
Havre, MT	Complete	1958	1,825,881	-	
Herried, Spring Creek, SD	Complete	1954	50,216	-	
Hooper, NE <u>2/</u>	Complete	1968	326,667	-	
Ida Grove, IA <u>2/</u>	Complete	1972	522,344	-	
Indian Creek at Emerson, IA <u>2/</u>	Complete	1986	333,000	-	
Jamestown Reservoir, ND	Complete	1950	-	-	
Linton, ND <u>2/</u>	Inactive	1973	-	-	
Little Papillion Creek, NE	Complete	1976	3,643,111	-	
Little Sioux River, IA	Complete	1992	20,630,000	-	
Loup River, Columbus, NE <u>2/</u>	Complete	1973	1,000,000	-	
Lower Heart River, ND	Complete	1964	1,961,173	-	
Lower Heart River, Mandan, ND <u>2/</u>	Complete	1991	1,153,430	-	
Madison, NE, Union and Taylor Creeks <u>2/</u>	Complete	1967	234,839	-	
Mandan, Heart River, ND	Complete	1960	676,916	-	
Marmarth, ND	Complete	1960	160,498	-	
McCook Lake, SD	Complete	1958	147,627	-	
Miles City, MT	Inactive	1956	-	-	
Milk River, Malta, MT	Complete	2004	1,718,356	-	
Missouri River, Aten, NE	Complete	1951	578,791	-	

1/ Completed as a Public Works Administration project.

2/ Authorized by Chief of Engineers.

3/ Design Deficiency Correction initiated in FY00.

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 26-E (Continued) OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Project	Status	For Last Cost	Cost to September 30, 2008	
		Full Report See Annual Report for	Construction	Operation and Maintenance
Missouri River Levee System, IA, NE, KS, and MO	Complete	1993	37,964,177	-
Missouri River, Niobrara, NE	Complete	1945	99,370	-
Mott, ND	Deferred	-	-	-
Mud Creek, Broken Bow, NE <u>2/</u>	Complete	1976	1,000,000	-
Nishnabotna River at Hamburg, IA	Complete	1948	236,000	-
Nishnabotna River at Hamburg, IA	Complete	2004	1,736,488	-
Norfolk, NE	Complete	1971	3,400,504	-
Omaha, NE	Complete	1954	5,903,640	-
Pebble Creek, Scribner, NE	Complete	2004	3,146,270	-
Pierce, NE	Complete	1967	296,597	-
Platte River Near Schuyler, NE <u>2/</u>	Complete	1948	74,940	-
Platte River and Lost Creek, Schuyler, NE	Complete	1971	257,398	-
Platte River and Tributaries, NE	Inactive	-	1,538,269	-
Rapid Creek, Rapid City, SD	Complete	1980	1,004,000	-
Saco, MT	Complete	1958	67,793	-
Sacred Heart Hospital Yankton, SD	Complete	1978	184,380	-
Sheridan, WY <u>3/</u>	Complete	1976	2,618,809	-
Shields River, Near Clyde Park, MT <u>2/</u>	Complete	1951	25,747	-
Sioux Falls, SD	Complete	1966	5,288,707	-
Thurman to Hamburg, IA	Complete	2001	1,438,350	-
Vaughn, MT, Sun River <u>2/</u>	Complete	1971	457,582	-
Waterloo, NE	Complete	1970	237,883	-
West Point, NE	Complete	1966	149,596	-
Yellowstone River, W. Glendive, MT	Complete	1960	230,294	-

2/ Authorized by Chief of Engineers.

3/ Includes inactive segment.

**TABLE 26-F OTHER MULTIPLE PURPOSE PROJECTS INCLUDING POWER**

Project	Status	For Last Cost	Cost to September 30, 2008	
		Full Report See Annual Report for	Construction	Operation and Maintenance
Gavins Point Dam – Lewis and Clark Lake, Relocation of Niobrara, NE	Complete	1980	13,516,459	-
Williston, ND Water Intake	Complete	1981	988,583	-

OMAHA, NE DISTRICT

**TABLE 26-G DEAUTHORIZED PROJECTS**

Project	For Last Full Report See Annual Report For	Deauthorization Document	Federal Funds Expended	Contributed Funds Expended
Billings, MT (Western Unit)	1976	Sec. 201, FC Act 1950 Mar 23, 1981	75,000	-
Boulder, CO	1976	FC Act 1950 WRDA of 1986 Oct 17, 1986	142,666	-
Buffalo, Johnson County Diversion Channel, WY	1961	FC Act 1950 WRDA of 1986 Oct 17, 1986	-	-
Castlewood Lake, Douglas County, CO	1943	PL 77-228 WRDA of 1986 Oct 17, 1986	-	-
Davids Creek Lake, IA	1972	Sec. 203, PL 90-483 WRDA of 1986 Oct 17, 1986	-	-
Dayton, WY	1956	Sec. 12, PL 93-251 WRDA of 1974 Aug 5, 1977	-	-
Elm Creek at Decatur, NE	N/A	Sec. 1001(b) WRDA of 1986 Oct 17, 1986	70,000	-
Giles Creek, Elkhorn, NE	1952	Sec. 12, PL 93-251 WRDA of 1974 Nov 6, 1977	-	-
Indian Creek Lake, IA	1969	Sec. 12, PL 93-251 WRDA of 1974 Jan 4, 1974	135,000	-
Lake Herman (Dredging), SD	N/A	Sec. 1001(a), PL 89-298 WRDA of 1986 Oct 17, 1986	-	-
Little Nemaha River, Nemaha, County, NE	1973	Sec. 204, PL 89-298 WRDA of 1986 Oct 17, 1986	-	-
Milk River, Havre, MT	N/A	Sec. 1001(a), PL 89-298 WRDA of 1986 Oct 17, 1986	-	-
Miles City, MT	1982	FC Act of 1950 Section 1001(b) WRDA of 1986 Oct 17, 1986	282,200	-
Morrison, Bear Creek, CO	1950	Sec. 12, PL 93-251 WRDA of 1974 Aug 5, 1977	30,000	-

The following investigations for flood control called for by Flood Control Acts and committee resolutions were deauthorized by WRDA of 1986, 17 Oct 86; Aowa & South Creek, NE; Bow Creek, NE; Cannonball River, ND; James River, ND & SD; Judith River Basin, MT; Niobrara River Basin, NE, SD & WY; Omaha Creek, NE; South Dakota Lakes, SD; Weeping Water Creek, NE; Windpower at Ft. Peck Lake, MT; Yellowstone River below Billings, MT; South Platte River, Denver-Ft. Lupton-Ft. Morgan, CO; Lower Big Sioux River IA & SD; Eagle Bay Highway Bridge, Missouri River Basin, ND; Sheridan, WY (Stage III); Missouri River Levee System Units: R531, R540, R553, R555, R577, R589, R603, R610, R623, R644, R645, R652, R661, R669, R676, R682, R686, R703, R717, R719, R725, R728, R742, R750.

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 26-G (Continued) DEAUTHORIZED PROJECTS**

Project	For Last Full Report See Annual Report For	Deauthorization Document	Federal Funds Expended	Contributed Funds Expended
Mott, ND	N/A	Sec. 1001(b) WRDA of 1986 Oct 17, 1986	-	-
Oahe Dam – Lake Oahe (Wildlife Restoration), ND	N/A	FC Act of 1970 Section 1001(b) WRDA of 1986 Oct 17, 1986	-	-
Redwater River and Hay Creek, Bell Fourche, SD	1966	Sec. 12, PL 93-251 WRDA of 1974 Jan 4, 1974	1,000	-
Shell Creek, NE	1962	Sec. 12, PL 93-251 WRDA of 1974 Oct 3, 1978	71,000	-
Upper Missouri River, SD Streambank Erosion Control Project	N/A	Sec. 1001(a), PL 89-298 WRDA of 1986 Oct 17, 1986	-	-
Vermillion River and Tribes, SD	1968	Sec. 12, PL 93-251 WRDA of 1974 Jan 4, 1974	208,000	-

The following investigations for flood control called for by Flood Control Acts and committee resolutions were deauthorized by WRDA of 1986, 17 Oct 86; Aowa & South Creek, NE; Bow Creek, NE; Cannonball River, ND; James River, ND & SD; Judith River Basin, MT; Niobrara River Basin, NE, SD & WY; Omaha Creek, NE; South Dakota Lakes, SD; Weeping Water Creek, NE; Windpower at Ft. Peck Lake, MT; Yellowstone River below Billings, MT; South Platte River, Denver-Ft. Lupton-Ft. Morgan, CO; Lower Big Sioux River IA & SD; Eagle Bay Highway Bridge, Missouri River Basin, ND; Sheridan, WY (Stage III); Missouri River Levee System Units: R531, R540, R553, R555, R577, R589, R603, R610, R623, R644, R645, R652, R661, R669, R676, R682, R686, R703, R717, R719, R725, R728, R742, R750.

OMAHA, NE DISTRICT

**TABLE 26-H MISSOURI RIVER LEVEE SYSTEM, SIOUX CITY, IA TO RULO, NE**

	Unit	Miles of Levee	Status
L627-624	Mosquito Creek Levee	14.2	Complete 1950
L601	Watkins-Waubonsie Ditch Levees	15.0	Complete 1966
L594	Pleasant Valley Levee	11.4	Complete 1964
R580	Nebraska City Levee	0.2	Complete 1950
L575	Thurman-Hamburg Levee	45.8	Complete 1950
R573	Otto County Drainage District No. 2	5.9	Complete 1950
R562	Peru Dike	7.6	Complete 1950
L561-550	Atchison County Levee District No. 1	41.3	Complete 1952
R548	Brownville-Nemaha Levee	19.5	Complete 1952
L536	Mill Creek Levee	13.6	Complete 1952
R520	Richardson County Drainage District No. 8	6.3	Complete 1960
R613	Papillion Creek-Platte River Levee	14.0	Complete 1971
R616	Bellevue-Papillion Creek Levees	4.5	Complete 1987
L611-614	Mosquito-Keg Creek Levees	22.0	Complete 1988
L627, L624, L561-550	Remedial Studies on Completed Units		Studies Complete
Comprehensive	Restudy of Levee System		Studies Complete

**PICK-SLOAN MISSOURI RIVER BASIN PROGRAM**

**TABLE 26-I (See Section 17 of Text)**

Project	Estimated Federal Cost	Estimated Non-Federal Cost
Fort Peck Lake, MT <u>1/</u> , <u>2/</u>	158,428,000	1,103,000
Garrison Dam, Lake Sakakawea, ND <u>1/</u> , <u>2/</u> , <u>3/</u>	367,581,887	
Missouri River Levee System, IA, NE, KS and MO (Sioux City, IA to Rulo, NE) <u>1/</u>	37,931,000	4,618,000
Oahe Dam-Lake Oahe, SD and ND <u>1/</u> , <u>2/</u>	346,521,000	2,320,000
Big Bend Dam-Lake Sharpe, SD <u>1/</u> , <u>2/</u>	107,498,000	302,000
Fort Randall Dam, Lake Francis Case, SD <u>1/</u> , <u>2/</u>	199,066,000	1,609,000
Gavins Point Dam, Lewis & Clark Lake, SD & NE <u>1/</u> , <u>2/</u>	49,617,000	137,000
Gavins Point Dam, Lewis & Clark Lake, SD & NE – Relocation of Niobrara, NE <u>2/</u>	13,516,000	-
Omaha, NE <u>2/</u>	5,904,000	362,000
Council Bluffs, IA <u>2/</u>	2,558,000	146,000
Missouri River, Garrison Dam to Lake Oahe, ND <u>2/</u>	9,413,000	270,000
Cherry Creek Lake, CO <u>1/</u> , <u>2/</u>	15,220,000	285,000

1/ Details presented on individual report.

2/ Completed.

3/ Active portion of project.

**INSPECTION OF COMPLETED LOCAL PROTECTION PROJECTS**  
**TABLE 26-J** (See Section 24 of Text)

Location	Month Inspected
<b>Montana</b>	
* Milk River, Malta (Sewer Line)	Sep 07
* Yellowstone River, Livingston (N.E. Livingston Bridge)	Sep 02
* Milk River, Chinook (Finley Bridge)	Sep 07
* Battle Creek, Chinook (Uhrh Bridge)	Sep 07
* Yellowstone River, Near Livingston (Hwy 89 – 7 Miles East of Livingston)	Sep 02
* Shields River, Near Livingston (Hwy 89)	Sep 02
* Teton River, Near Choteau (Hwy 89)	Oct 06
* Madison River, Quake Lake	Sep 03
* Dearborn River – Hwy 287, Wolf Creek	Oct 06
* Muddy Creek – Int Hwy 15 – Frontage Road, Vaughn	Oct 06
* Badger Creek – Hwy 89, Browning	Oct 06
* Yellowstone River, Glendive	Jun 08
* Coulsen Park, Yellowstone	Sep 06
* Missouri River, Culbertson	Sep 06
* Wolf Point, Missouri River	Sep 08
- Saco, MT, Beaver Creek	Sep 08
- Glasgow, MT, Milk River	Oct 06
- Havre, MT, Milk River	Aug 08
- Forsythe, MT, Yellowstone River	Sep 08
- West Glendive, MT, Yellowstone River	Sep 08
- Vaughn, MT, Sun River	Sep 08
- Great Falls, MT, Sun River	Sep 08
- Malta, MT, Milk River	Aug 08
- Havre, MT, Bull Hook Dam	Aug 08
- Havre, MT, Scott Coulee Dam	Aug 08
** Cotton Wood Levee, Glendive, MT	Aug 08
<b>Wyoming</b>	
* Baldwin Creek, Lander (Sewage Lagoons)	Sep 03
* Powder River, Arvada	Sep 06
* Tongue River, Ranchester, WY	Sep 06
- Greybull, WY, Big Horn River	Sep 08
- Sheridan, WY, Big and Little Goose Creeks	Sep 08
<b>North Dakota</b>	
- Mandan, ND, Lower Heart River	Sep 08
- Scranton, ND, Buffalo Creek	Sep 08

- \* Denotes Section 14 Projects
- Denotes Section 205 Projects Under PL 84-99
- \*\* Denotes PL 84-99 Non-Federal Projects

**INSPECTION OF COMPLETED LOCAL PROTECTION**

**PROJECTS**

**TABLE 26-J (Continued)**

**(See Section 24 of Text)**

<b>Location</b>	<b>Month Inspected</b>
<b>Colorado</b>	
* South Platte River, Logan County (Bridges 175A & 173)	May 08
* Cache La Poudre, Boxelder Sanitation	Jun 08
* South Platte, Weld Cty Bridges (Hwy 28, 61 & 87)	Jun 08
- Aurora, CO, Westerly Creek	Feb 08
- Aurora, CO, Kelley Road Dam	Aug 08
- Littleton Chatfield Downstream Channel, Denver, CO	Feb 08
**Town of Wiggins, CO	Sep 07
**Town of Erie, CO	Sep 07
**Fort Collins North, CO	Sep 07
**Fort Collins Wastewater Treatment Plant, CO	Sep 07
<b>South Dakota</b>	
* Missouri River, Bank Protection, Greenwood	Sep 02
* White River, Winner	Sep 02
* James River, Yankton	Jul 07
- Elk Point, SD, Big Sioux River, Union County	Jun 08
- Big Sioux River, North Sioux City, SD	Jun 08
- Sioux Falls, SD, Big Sioux River	Jun 08
- Belle Fourche, SD, Belle Fourche River	Sep 08
- Rapid City, SD, Rapid Creek	Aug 08
- Rapid City, SD, Cedar Canyon	Aug 08
- Hot Springs, SD, Fall River Channel	Aug 08
- Herried, SD, Spring Creek	Aug 08
- Sturgis, SD, Deadman Gulch	Sep 08
**City of Waubay, SD	Dec 99

- \* Denotes Section 14 Projects
- Denotes Section 205 Projects Under PL 84-99
- \*\* Denotes PL 84-99 Non-Federal Projects

**INSPECTION OF COMPLETED LOCAL PROTECTION**

**PROJECTS**

**TABLE 26-J (Continued)**

**(See Section 24 of Text)**

Location	Month Inspected
<b>Nebraska</b>	
* Nebraska City South Table Creek	Jul 02
* South Elkhorn River, near Ewing, NE	Apr 03
* Elkhorn River, near Beemer	May 04
* East Bow Creek, Wynot	May 06
* Ginger Cove, Platte River	Apr 04
* Lincoln, Salt Creek	Nov 03
- Macy, NE, Blackbird Creek	Jul 08
- Lincoln, NE, Salt Creek & Tributaries	May 08
- Meadow Grove, NE, Buffalo Creek	May 08
- Columbus, NE, Loup River	Sep 08
- Broken Bow, NE, Mud Creek	Sep 08
- Lost Creek, Columbus, NE	Sep 08
- Omaha, NE, Missouri River	Aug 08
- Waterloo, NE, Elkhorn River	May 08
- West Point, NE, Elkhorn River	May 08
- Pierce, NE, Elkhorn River	Jul 08
- Clarkson, NE, Middle Fork, Maple Creek	Jul 08
- Hooper, NE, Elkhorn River	Jun 08
- Norfolk, NE, North Fork, Elkhorn River	May 08
- Madison, NE, Union & Taylor Creeks	May 08
- Schuyler, NE, Lost Creek & Platte River	Aug 08
- Grand Island, NE, Wood River	Oct 08
- Pender, NE, Logan Creek	Jul 08
- Little Papillion Creek, Omaha, NE	Sep 08
- Scribner, NE, Elkhorn River	Jun 08
- Howells, NE, Maple Creek	Jul 08
- Big Papio Creek, Omaha, NE	Sep 08
- Gering, NE, Gering Drain	Sep 08
- Sidney, NE, Lodgepole Creek	Sep 08

\* Denotes Section 14 Projects

- Denotes Section 205 Projects Under PL 84-99

\*\* Denotes PL 84-99 Non-Federal Projects

OMAHA, NE DISTRICT

**INSPECTION OF COMPLETED LOCAL PROTECTION**

**PROJECTS**

**TABLE 26-J (Continued)**

**(See Section 24 of Text)**

Location	Month Inspected
<b>Missouri River Levees</b>	
- L624 & L627, Mosquito Creek & Sieck Levees, Council Bluffs, IA	Sep 08
- L601, Watkins Levee District	Aug 08
- L601, Miller-Sturgeon Levee District	Aug 08
- L601, Missouri River Levee District #1	Aug 08
- L594, Waubansie Drainage District	Sep 08
- L594, Pleasant Valley Levee District	Sep 08
- L575, Benton-Washington Levee District	Aug 08
- L575, McKissock Island Levee District	Sep 08
- L575, Buchannan Levee District	Sep 08
- L575, Missouri River Levee	Sep 08
- L561, L550, L536, Atchison County Levee District	Sep 08
- L611-614, M & P Missouri River Levee District	Aug 08
- R613, Papio Natural Resources District	Sep 08
- R548, Little Nemaha Levee District, Brownville, NE	Sep 08
- R548, Little Nemaha Levee District #3	Aug 08
- R520, Richardson Co. Levee District #8	Aug 08
- R573, Otoe County Drainage District #2	Aug 08
- R616, Sarpy County Papio Natural Resources District	Sep 08
- R562, Peru Levee District	Aug 08
**Union Dike, Valley, NE	Jun 08
**No Name Dike, Valley, NE	Jun 08
**Big Papio Creek, West Branch 96 <sup>th</sup> – 44 <sup>th</sup> , Papillion, NE	Jun 08
**YMCA Camp Kataki, South Bend, NE	Jul 08
**Omaha Fish & Wildlife Club, NE	Sep 07
**Clear Creek, Ashland, NE	Jun 08
**Lake Waconda SID #1, Union, NE	Sep 07
**Ames Diking District, Ames, NE	Sep 07
**Big Papio L Street to Capehart Road, Omaha, NE	Sep 08
**Wakefield, NE, Wakefield, Levee	Sep 08
<b>Iowa</b>	
* West Nishnabotna River, Mills County Bridge, near Malvern	Apr 05
* East Nishnabotna River, Page County Bridge, near Essex (M41)	Jul 05
* Keg Creek, Minden	Mar 05
* Hastings Bridge, West Nishnabotna, Mills County	Apr 05
* Near Oakland, IA, Bridge Abutment, Pott. County	May 05
* East Nishnabotna, near Essex, Page County, 1 & 12 Pierce	May 05
- Sioux City, IA, Big Sioux City	Jun 07
- Ida Grove, IA, Maple River-Odebolt Creek	Jun 08
- Sioux City, IA, Floyd River	Jul 08
- Hawarden, IA, Dry Creek	Jun 08
- Hamburg, IA, L575, Nishnabotna River	Sep 08
- Little Sioux, IA, Intercounty D.D., Little Sioux River	Sep 08
- Little Sioux, IA, Nagel D.D., Little Sioux River	Sep 08
- Little Sioux, IA, Bennett-McDonald-Smithland D.D., Little Sioux River	Jul 08
- Red Oak, IA, East Nishnabotna River	Jun 08
- Emerson, IA, Indian Creek, Mills County	Sep 08
**Winslow Seg #1 (Upstream) Hamburg, IA	Jun 08
* Denotes Section 14 Projects	
- Denotes Section 205 Projects Under PL 84-99	
** Denotes PL 84-99 Non-Federal Projects	

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

<b>ACTIVE INVESTIGATIONS</b>		
<b>TABLE 26-K</b>	<b>(See Section 46 of Text)</b>	
Item	Federal Cost Fiscal Year 08	Totals By Subtotal and Category
<b>SURVEYS (Category 100)</b>		
<b>Flood Damage Prevention Studies (120)</b>		
Reconnaissance Study (121)		
Ralson-Leyden Creek, NE	(25,938)	
Boulder Creek, CO	82,945	
Feasibility Study (122)		
Cache La Poudre River	314,195	
James River, ND & SD	192,469	
Lower Platte River and Tribs., NE	127,002	
<b>Subtotal</b>		<b>690,673</b>
<b>Special Studies (140)</b>		
Ecosystem Restoration RECON (143)		
Adams County	4,721	
Zuni & Sun Valley Reaches	232	<b>4,953</b>
<b>Comprehensive Studies (150)</b>		
Feasibility Study (152)		
Yellowstone River Corridor, MT	921,473	<b>921,473</b>
<b>Review of Authorized Projects (160)</b>		
Review of Completed Project:		
Feasibility Study (164)		
Chatfield, Cherry Creek & Bear Creek	419,947	<b>419,947</b>
<b>Miscellaneous Activities (170)</b>		
Special Investigations (171)	74,556	
FERC Licensing Activities (172)	1,023	
Interagency Water Resources Development (173)	21,083	
North American Waterfowl Management Plan (176)	1,630	
<b>Subtotal</b>		<b>98,292</b>
<b>Coordination Studies with Other Agencies (180)</b>		
Cooperation With Other Water Resources		
Agencies (181)	9,777	
Planning Assistance to States (186)	289,319	
<b>Subtotal</b>		<b>299,096</b>
<b>TOTAL (Category 100)</b>		<b>2,434,434</b>

OMAHA, NE DISTRICT

**ACTIVE INVESTIGATIONS**  
**TABLE 26-K (Continued) (See Section 46 of Text)**

Item	Federal Cost Fiscal Year 08	Totals By Subtotal and Category
<b>COLLECTION AND STUDY OF BASIC DATA (Category 200)</b>		
Flood Plain Management Services (250)		
Flood Plain Management, Omaha, NE	33,737	
National Flood Proofing Committee (NFPC)	90,895	
Platte River, Columbus to Clarks Reach	10,430	
Nashua Flood Risk Assessment	38,329	
Technical Services, General	136	
Papillion Creek Watershed	554,965	
Hydrologic Studies (260)		
General Hydrologic Studies (262)	469	
<b>TOTAL (Category 200)</b>		<b>728,961</b>
 <b>PRECONSTRUCTION ENGINEERING AND DESIGN - PROJECTS NOT FULLY AUTHORIZED (400)</b>		
Local Protection (451)		
Watertown and Vicinity	178,197	
Antelope Creek	12	
<b>TOTAL (Category 400)</b>		<b>178,209</b>
 <b>PRECONSTRUCTION ENGINEERING AND DESIGN - PROJECTS FULLY AUTHORIZED (600)</b>		
Local Protection (651)		
Western Sarpy and Clear Creek	12	<u>12</u>
<b>GRAND TOTAL GENERAL INVESTIGATIONS</b>		<b>3,341,616</b>

**FLOOD CONTROL ACTIVITIES UNDER SPECIAL AUTHORIZATION**

**TABLE 26-L (See Section 26 of Text)**

Project Name	Stage	Fiscal Year 08 Cost
<b>Flood Control and Coastal Emergencies</b>		
Disaster Preparedness (100)	-	489,980
Emergency Operations (200)	-	603,372
Rehabilitation & Inspection Program (300)	-	765,208
Emergency Water Supplies & Drought Assistance (400)	-	308,241
Advance Measures (500)	-	0
Hazard Mitigation (600)	-	0
Support for Others (900)	-	<u>10,256,762</u>
<b>Total (FCCE)</b>		<b>12,423,563</b>
<b>Section 205:</b>		
Coordination Account	-	16,462
Capitol Basin, Cheyenne, WY	F	45,687
Denison, IA	D&I	71,096
Livingston, MT	F	109,119
Logan Creek, Pender, NE	D&I	55,280
Platte River, Fremont, NE	F	171,517
Platte River, Schuyler, NE	F	126,446
Randolph, NE	F	150,170
Red Oak Creek, IA	F	<u>881</u>
<b>Total (Section 205's)</b>		<b>746,658</b>
<b>Section 14:</b>		
Coordination Account	-	11,405
Allen Creek, IA	F	29,603
Big Sioux River, Akron, IA	F	47,684
Elkhorn River, Scribner, NE	F	6,284
Nishnabotna River, Mills County, IA	D&I	78,270
Willow Creek NE, IA	F	23,828
Willow Creek NW, IA	F	<u>22,103</u>
<b>Total (Section 14's)</b>		<b>219,177</b>
<b>TOTAL FLOOD CONTROL ACTIVITIES</b>		<b>13,389,398</b>

**L** = Litigation                      **R** = Recon  
**D&I** = Construction              - = Does Not Apply  
**F** = Feasibility  
**PDA** = Planning & Design Analysis (Section 14 only)

OMAHA, NE DISTRICT

**TABLE 26-M**

**ENVIRONMENTAL**

**Modification of projects for the purpose of improving  
the quality of the environment in the public interest.**

(Includes Section 1135, Public Law 99-662, as amended and Section 206, Public Law 104-303, as amended)

Study/Project Location	Fiscal Year 08 Federal Funds Expended	Fiscal Year 08 Contributed Funds Expended
Cheyenne River Sioux Tribe, Lower Brule Sioux Tribe and State of South Dakota Terrestrial Wildlife Habitat Restoration	4,192,585	-
Coordination Account Funds (1135)	16,171	-
Coordination Account Funds (206)	14,130	-
Goose Creek, CO	103,726	-
Heron Haven, NE	80,323	-
Lake Sakakawea Rural Health Care, ND	94,017	-
Lower Boulder Creek, CO	322,416	-
Lower Decatur Bend, NE	1,119,652	79,360
Missouri & Mid-Mississippi River Enhancement	51,313	-
Missouri River Fish & Wildlife Recovery, IA, KS, MO, MT, NE, ND & SD	34,355,498	-
Missouri River Restoration, SD	44,318	-
Missouri River Restoration, ND	139,470	-
Prison Farm Shoreline Habitat, ND	204,636	-
Rural Montana, MT	636,787	-
Sand Creek, NE	2,173,669	-
Upper Central Platte Valley (Colfax Reach), CO	2,599	-



# KANSAS CITY, MO DISTRICT

The district comprises a portion of southwestern Iowa; northwestern, central and western Missouri; northern Kansas; southern Nebraska; and a portion of northeastern Colorado embraced in drainage basin of the Missouri River and tributaries from Rulo, Nebraska, to the mouth. Report on navigation project for section of Missouri River from Sioux City, Iowa, to Rulo, Nebraska, is in report of Omaha District.

## IMPROVEMENTS

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## Navigation

### 1. MISSOURI RIVER, SIOUX CITY, IA, TO MOUTH (RULO, NE, TO MOUTH)

**Location.** Jefferson, Madison, and Gallatin Rivers conjoin at Three Forks, Montana, to form the Missouri River, which flows southeasterly 2,315 miles (1960 mileage) across or along seven states to the Mississippi River, 17 miles above St. Louis. For description see page 1149, Annual Report for 1932. The river is commercially navigable from Sioux City, Iowa, to the mouth, a distance of 732 miles. The portion of project in Kansas City District extends from Rulo, Nebraska, to the mouth, a distance of 498 miles.

**Previous Projects.** For details see page 1891 of Annual Report for 1915, and pages 1153 and 1175 of Annual Report for 1938.

**Existing Project.** A channel of 9-foot depth and width not less than 300 feet, obtained by revetment of banks, construction of permeable dikes to contract and stabilize the waterways, cutoffs to eliminate long bends, closing minor channels, removal of snags, and dredging as required. The improved reach within the Kansas City District extends from the mouth to Rulo, Nebraska, a distance of 498.4 miles. The Bank Stabilization and Navigation features of the project were completed in September 1980. For the reach from Rulo, Nebraska, to the mouth, the total construction cost was \$237,942,190 including \$8,665,594 for previous project. River access sites have been completed at 11 locations. Ordinary and extreme stage fluctuations are 16 and 38 feet, respectively.

**Local cooperation.** Cooperation from benefited localities may be required where any improvement may confer special benefit. The receipt of contributions from private parties are to be expended along with Government funds upon authorized work where such work would be in the interest of navigation, as authorized by 1915 Rivers and Harbors Act. Secretary of the Army approved general principle of cooperative construction on Missouri River below Kansas City on basis that 25 percent of cost of any special installation shall be paid by the United States and 75 percent by local interests. Total contributed by local interests in cooperation with the United States from 1918 to June 30, 1964, was \$675,663, of which \$8,647 was returned to contributors. Local interests must share in cost of recreation facilities in accordance with provisions of the Federal Water Project Recreation Act of 1965. Local interests have contributed \$171,816 for cost sharing on

construction of recreation in addition to constructing portions of the facility.

**Terminal facilities.** A listing of terminal facilities was included in Missouri River Navigation Charts and can be obtained from Kansas City District Engineer for a small fee.

**Operations during FY.** Field hired labor accomplished repairs of 8 high priority dikes to correct low water navigation problems. In addition, a Contractor repaired 40 high priority navigation structures. Contract and District personnel constructed over 140 notches to improve aquatic habitat of the river. District personnel also accomplished channel reconnaissance, stream gauging condition studies, surveys and mapping, engineering and design, surveys and layouts of construction, and contract supervision and administration. Project tonnage on the river for CY 2007 is estimated at 8 million tons, excluding waterway improvement materials. District estimates the recreation use on the Missouri River (NWK) at 1.3 million recreation days annually.

### 2. MISSOURI RIVER RECOVERY PROGRAM (MRRP)

**Location.** This project authority extends along the Missouri River from Sioux City, Iowa, to the mouth near St. Louis, Missouri, a river distance of 735 miles. Individual project site may be located along the 735 miles at locations adjacent with the river and within the historic floodplain.

**Existing project.** This project was authorized under WRDA86 and WRDA99, and WRDA 2007. The purpose of this project, currently known as Missouri River Recover Program (MRRP), is to mitigate losses of fish and wildlife habitat resulting from construction and operation of the Missouri River Bank Stabilization and Navigation Project. An estimated 522,000 acres of aquatic and terrestrial floodplain habitats have been lost in the project area. A total of 166,750 acres has been authorized for mitigation, roughly 32% of the estimated loss. The major components of MRRP are acquisition, design, development and monitoring of floodplain habitats. MRRP can be implemented on either existing publicly owned lands or could involve acquisition of private lands from willing sellers. The estimated funded cost of the project is \$1,330,000,000 (Oct 2001 price level). The project is 100% Federally funded, including O&M. If the project is funded through 2042, the estimated project cost after inflation is \$3,100,000,000. Kansas City District has overall project management responsibility. Omaha District is involved in the implementation of the project in the States of Iowa and Nebraska. Field hired labor,

## KANSAS CITY, MO DISTRICT

construction contractors and District personnel conduct routine maintenance of a variety of river navigation and bank stabilization structures and performed other work including channel reconnaissance, stream gauging condition studies, surveys and mapping, engineering and design, surveys and layouts of construction and supervision and administration of work. Much special effort (\$422,200) was devoted to activities needed to carryout mandates associated with recent USFWS Biological Opinions concerning river habitats for Threatened and Endangered Species, including development of wetlands, emerging sandbar habitat and shallow water habitat. Work also commenced on a special study of river bed degradation in the Kansas City reach of the river.

**Local cooperation.** There is no non-Federal sponsor for the project. The U.S. Fish & Wildlife Service, EPA and the states of Iowa, Nebraska, Kansas, and Missouri are voluntarily serving on a coordinating team, which is actively involved in ongoing project activities and site-specific operation and maintenance. Missouri and Iowa are also furnishing perpetual easements for construction and operation on existing state owned lands.

**Operations during FY.** Funding was continued for land acquisition and construction of mitigation and shallow water habitat features. Work completed by each district in FY 2008 included the following: Completion of land acquisition of 4,664 acres, including 1,567 acres in Kansas and 3,097 acres in Missouri. The Kansas City District worked to address issues raised by the Missouri Clean Water Commission through a study by the National Academy of Science. Several shallow water habitat (SWH) design activities occurred in FY 2008. They include completed or partial development of Plans and Specifications (P&S) for Boyer Bend backwater project; Bullard Bend backwater project; Confluence Point project; Corning/Hemmies Bend; Dalbey Bottoms project; Fawn Island chute project; Hare Wildlife Area, Lower Barney Bend chute project; Lower Calhoun chute project; Middle Decatur Bend chute project; Nishnabotna project; Plattsmouth Bend backwater phase II project; and Tobacco Island chute revision project; Wolf Creek chute project and several design packages for River Structure Control Modifications from Sioux City, Iowa to Rulo, Nebraska,. The construction contracts for several SWH projects were awarded: Bullard Bend Backwater; Jameson Island Chute; Middle Decatur Bend Chute; Plattsmouth Bend Backwater Phase II; River Control Structure Modification South; Rush Bottoms Chute, Tarkio River Chutes T&C; Tyson Bend Chute and Backwater; There were also a number of construction activities ongoing during this period. Several

construction contracts were awarded for the creation of emergent sandbar habitat below the Gavins Point Project. A 40 acre sandbar is located at River Mile (RM) 791.5; a 74 acre sandbar at RM 777; and a 27 acre sandbar at RM 775. Improvements were made to the fish hatcheries in MT, ND, SD, and MO. In accordance with Section 5018 of the Water Resources Development Act 2007, a comprehensive study of the Missouri River was initiated (Missouri River Ecosystem Restoration Program (MRERP) and the Missouri River Recovery Implementation Committee (MRRIC) was established. The MRRIC membership includes members representing various stakeholder groups, the basin Tribes, Federal Agencies, and the following states, Iowa, Kansas, Missouri, Montana, Nebraska, North Dakota, South Dakota, and Wyoming.

### Flood Control

#### 3. BLUE RIVER BASIN, KANSAS CITY, MO

**Location.** Along the left bank of the Blue River from U.S. Highway 71 upstream for a distance of about 1-1/4 miles in Jackson County, Missouri, to the Bannister Federal Complex levee.

**Existing project.** The recommended project includes construction of approximately 1-1/4 miles of levee to provide flood protection to 280 acres in the Dodson Industrial Area and surrounding area in Kansas City. Estimated Federal cost through construction of the project (2008) is \$21,424,000, and estimated non-Federal cost of lands damages and relocations is \$7,540,000. Funds were provided in FY 2002 for a new construction start.

**Local Cooperation.** The Project Cooperation Agreement (PCA) was executed in September 2001.

**Operations during FY.** Phase 1 of the project, consisting of construction of the floodwall, was completed September 2004. Phase 2, consisting of an I-wall transition, was completed in March 2006. The Phase 3 construction contract, consisting of sewer modifications, drainage structures, and earthen embankment was awarded September 2006 and is currently under construction. Phase 4, which is the final component of the project, is at a 65 percent level of design completion for FY2008.

#### 4. BLUE RIVER CHANNEL, KANSAS CITY, MISSOURI

**Location.** Along the Blue River and tributaries in Jackson County, Missouri.

**Existing Project.** Project consists of 12.5 miles of improved channel along the Blue River within Kansas City, Missouri. Estimated Federal cost through construction of the project (2008) is \$259,558,000, and estimated non-Federal cost of lands, damages and relocations is \$35,594,000.

**Local Cooperation.** Section 2, Flood Control Act of June 22, 1936 applies. The City of Kansas City, Missouri, passed a resolution of intent on December 9, 1975 to provide the required assurances of local cooperation when requested. The Kansas City District Engineer signed the Section 221 agreement on September 8, 1983.

**Operations during FY.** All work on stages 1 and 2 has been completed. The Stage 3 reach of the project consists of six construction contracts. The 12<sup>th</sup> to 19<sup>th</sup> Street, the 19<sup>th</sup> to Stadium Drive and the Stadium Drive to Brush Creek and the Alteration of the Union Pacific Railroad Bridges contracts are complete. Channel modifications have been completed on 10.5 miles from the I-435 Highway bridges to the Brush Creek confluence. The current construction contract consisting of work from Brush Creek to 53<sup>rd</sup> Street was awarded 30 November 2007. Preliminary design of the remaining channel from 53<sup>rd</sup> to 63<sup>rd</sup> Street is underway.

#### 5. CLINTON LAKE, WAKARUSA RIVER, KANSAS

**Location.** Damsite is on Wakarusa River at the west edge of Lawrence, in Douglas County, Kansas. The lake extends into Shawnee and Osage Counties, Kansas.

**Existing project.** An earthfill dam about 9,250 feet long constructed to a height of about 114 feet with an uncontrolled spillway in left abutment. Total reservoir storage capacity 397,200 acre-feet (258,300 for flood control, 28,500 for sediment reserve, and 110,400 of multipurpose storage for municipal and industrial waste supply and recreation). Cost of constructing the completed project was \$57,415,433. Construction was initiated in January 1972, and the project was placed in operation in November 1977.

**Local cooperation.** Section 2, Flood Control Act of June 28, 1938 applies. Reimbursement in the estimated amount of \$6,768,000 is required for water supply storage in accordance with the Water Supply Act of 1958. A contract was signed by the State on September 6, 1978 and was approved by the Secretary of the Army on October 30, 1978. Utilization of storage was initiated in December 1979. Repayment also began at that time.

**Operations during FY.** Visitation for FY 2008 was 9,905,269 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$973,475,000. Maintenance: Activities consisted of two special funded road work projects "Congressional Adds" in which the dam road received a crack fill and "Cape Seal", followed by a micro-surface treatment and pavement remarking. The second project will be completed in FY2009 and consist of upgrading and widening the "Toe" Road below the dam. After the project is complete, future maintenance responsibilities for the "Toe" Road will be transferred to the City of Lawrence, Kansas.

#### 6. HARLAN COUNTY LAKE, REPUBLICAN RIVER, NEBRASKA

**Location.** Dam is on main stem of Republican River about 235 miles above confluence of stream with Smoky Hill River. Site is in Harlan County, 1-1/2 miles south of Republican City and 13 miles west of Franklin, Nebraska.

**Existing project.** An earthfill dam about 107 feet above streambed with a total length of 11,827 feet, including a gate-controlled, concrete, gravity-type spillway section near the center of dam. Reservoir provides storage capacity of 814,111 acre-feet (500,000 for flood control and 314,111 [sediment survey effective January 2001] for irrigation, sedimentation allowance, and other authorized purposes.). Initial cost of constructing the project was \$45,279,532. Total Federal cost of project, including \$1,017,623 for major rehabilitation work and \$1,832,394 supplemental recreation development (Code 710), is \$48,129,549. Construction of the project was initiated in August 1946. The project was placed in operation in December 1952. Major rehabilitation work was completed in FY 1968.

**Local cooperation.** Section 2, Flood Control Act of 1938, applies.

**Operations during FY.** Visitation for FY 2008 was 6,333,793 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$186,666,000. Unexpected flooding in the Republican River Basin contributed to a rise in pool elevation to more historic levels. Maintenance activities consisted of securing low water boat ramps and day use sites within the low pool areas and restoring existing ramps and day use sites. Other activities included installing a new CXT shower in Hunter Cove Park and the addition of several new restroom facilities that meet ADA requirements.

**7. HILLSDALE LAKE, BIG BULLCREEK, KANSAS**

**Location.** The project is located approximately 12 miles above the mouth of Big Bull Creek, a tributary of the Marais des Cygnes River and about 2½ miles west of Hillsdale, in Miami County, Kansas.

**Existing project.** An earthfill embankment about 11,600 feet long (including approximately 3,300 feet of dike section) about 75 feet above rising valley flood plain. The spillway is gravity type uncontrolled and the outlet works are controlled. The total reservoir storage capacity is 160,000 acre-feet (81,000 for flood control, 11,000 for sediment reserve, and 68,000 for multipurpose storage for water supply, water quality control, and recreation). Construction was initiated in December 1974, and the project was placed in operation in October 1981. Federal cost of construction was \$64,161,400.

**Local cooperation.** Section 2, Flood Control Act 1938, applies. Local interests must make reimbursement of \$21,145,338 for water supply storage in accordance with Water Supply Act of 1958. The Kansas Water Resources Board signed a contract in January 1974, approved by the Secretary of the Army in April 1974, for the entire 53,000 acre-feet of water supply storage. The Kansas Department of Wildlife and Parks has a 50-year lease on 12,880 acres for management of land and water areas for public park, recreational, and fish and wildlife purposes.

**Operations during FY.** Visitation for FY 2008 was 1,368,439 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$32,116,000. Maintenance: Activities consisted of ordinary operation and maintenance. A significant project involved realignment and replacement of all the hydraulic pumps in the control tower. A contract with Blaze Mechanical for \$35,480 was awarded and work completed.

**8. KANOPOLIS LAKE, SMOKY HILL RIVER, KANSAS**

**Location.** The dam is on the Smoky Hill River about 184 river miles above the mouth of the stream, and about 11 miles northwest of Marquette, Kansas.

**Existing project.** An earthfill dam about 131 feet above streambed, having a total length of 15,360 feet, including 4,070 feet of dike section on the left abutment and 2,550 feet of dike section on right abutment. The reservoir provides storage capacity of 450,000 acre-

feet, (400,000 for flood control and 50,000 for recreation and streamflow regulation). Outlet works and spillway are in right abutment. Initial cost of constructing the project was \$12,327,735. Total Federal cost of project, including \$249,492, supplemental recreational development (Code 710), was \$12,577,227. Construction was initiated in June 1940, and project was placed in operation in May 1948.

**Local Cooperation.** Section 2, Flood Control Act of 1938, applies.

**Operations during FY.** Visitation for FY 2008 was 1,660,456 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$1,586,486,000. Maintenance: Activities consisted of ordinary operation and maintenance including special emphasis on road repair and upgrading sanitary facilities to improve accessibility. Spring floods returned the pool to normal and above levels. for the first time in two years.

**9. LITTLE BLUE RIVER LAKES, MO**

**Location.** This project consists of two lakes in Jackson County, Missouri, located in Kansas City, Missouri, and suburban communities. The Blue Springs Lake site is on the East Fork of the Little Blue River about ½ mile south of U.S. Highway 40, and the Longview Lake site is on the main stem at approximately 109<sup>th</sup> Street.

**Existing Project.** The Blue Springs dam is an earthfill embankment about 2,500 feet long and rising about 78 feet above the streambed, with an uncontrolled service spillway and uncontrolled outlet conduit. The total reservoir storage capacity is 26,600 acre-feet (15,700 for flood control, 10,600 for multipurpose storage for water quality and recreation, and 300 for sedimentation). The Longview dam is an earthfill embankment about 1,900 feet long and rising about 120 feet above the streambed, with an uncontrolled service spillway and an uncontrolled outlet conduit. The total reservoir storage capacity is 46,900 acre-feet (24,300 for flood control and 20,600 for multipurpose storage for water quality and recreation, and 2,000 for sedimentation). Federal cost (1992) for both lakes through construction of the project was \$140,809,200. Construction was initiated in September 1977, and the project became operational in September 1988.

**Local cooperation.** Section 2 of the Flood Control Act of June 28, 1938 applies. Local interest must share in separable costs allocated to recreation in accordance with Federal Water Project Recreation Act of 1965. The Jackson County Legislature approved a

## REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

recreation cost-sharing contract on July 5, 1974, which was approved by the Secretary of the Army on June 24, 1976. A supplemental agreement, signed by Jackson County officials on June 5, 1978, and approved by the Secretary of the Army January 10, 1979, revised the existing contract to include additional costs involved in raising the multipurpose pool elevation at the Blue Springs Lake. Reimbursement for recreation was \$15,047,000, which \$450,000 was accomplished during construction by local interests.

**Operations during FY.** Visitation for FY 2008 was 4,332,249 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$50,813,000. Maintenance: Activities consisted of ordinary operation and maintenance. The Missouri Department of Transportation (MODOT) established a 24.25 acre wetland mitigation bank downstream of the Blue Springs Dam.

### 10. LONG BRANCH LAKE, LITTLE CHARITON RIVER, MO

**Location.** The Damsite is on the East Fork Little Chariton River in north central Missouri about 2 miles west of Macon in Macon County.

**Existing project.** An earthfill dam about 3,800 feet long and about 71 feet high with an uncontrolled outlet conduit and an uncontrolled service spillway in the right abutment. Total reservoir storage capacity is 65,000 acre-feet (29,000 for flood control, 4,000 for sediment reserve, and 32,000 of multipurpose storage for water supply, water quality control, fish and wildlife, and recreation). Estimated Federal cost (1997) is \$20,288,000, and estimated non-Federal cost is \$3,605,000. Construction was initiated in March 1973. The project was placed in useful operation for flood control on September 1, 1980.

**Local cooperation.** Section 2, Flood Control Act of June 28, 1938 applies. Local interests must make reimbursement of \$5,567,000 for water supply storage in accordance with Water Supply Act of 1958 and share in separable cost of \$3,589,000 allocated to recreation in accordance with Federal Water Project Recreation Act of 1965. On September 15, 1972 the Secretary of the Army approved a contract signed by the City of Macon, Missouri, for water supply and recreation development. Missouri State agencies indicated their intent to sponsor future water supply and signed a contract on June 17, 1977 to sponsor recreational development in lieu of the City of Macon. After review by the Office of the Secretary of the Army, the state signed the contract in December 1979, and it was approved by the Secretary of the Army on April 18,

1980. Supplemental Agreement No. 1 to this contract was approved December 28, 1993 to provide for additional recreational facilities.

**Operations during FY.** Visitation for FY 2008 was 1,431,440 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$48,427,000. Maintenance activities consisted of ordinary operation and maintenance. Excessive rainfall throughout the year resulted in numerous high pool events. A new record high pool of 803.73 occurred on July 29, 2008. Several periods of increased and critical surveillance of the dam and outlet works was performed throughout the summer of 2008.

### 11. MELVERN LAKE, MARAIS DES CYGNES (OSAGE) RIVER, KS

**Location.** Damsite is on Marais des Cygnes (Osage) River in Osage County, Kansas, about 4 miles west of Melvern, Kansas.

**Existing project.** An earthfill dam about 9,700 feet long and about 98 feet high with an uncontrolled chute-type spillway in the left abutment. Total reservoir storage capacity is 363,000 acre-feet (200,000 for flood control, 26,000 for sediment reserve, and 137,000 for multipurpose storage for water supply, water quality control, and recreation). Cost of constructing the completed project was \$37,436,530. Construction was initiated in July 1967, and the project was placed in operation in August 1972.

**Local cooperation.** Section 2, Flood Control Act of 1938 applies. Project storage was reallocated in 1989 to include municipal and industrial water supply in accordance with provisions of the Water Supply Act of 1958. In accordance with the provisions of the Memorandum of Understanding between the State of Kansas and the Department of the Army dated 1985, payment in full of \$7,131,834 for 50,000 acre-feet of water supply storage was made in March 1995. Utilization of storage for water supply was initiated in September 1993 under an interim contract and continues under the current contract signed in January 1995.

**Operations during FY.** Visitation for FY 2008 was 5,580,266 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$196,555,000. Maintenance Activities consisted of ordinary operation and maintenance. The site work on nine new pre-fab restroom facilities that meet ADA requirements was completed and opened. These new facilities are in three park areas and improve the accessibility of facilities at the project. Road work

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was completed in the Outlet Park and various other areas.

### **12. MILFORD LAKE, REPUBLICAN RIVER, KS**

**Location.** The Damsite is on the Republican River near the village of Alida about 10 miles above confluence of Republican and Smoky Hill Rivers which form Kansas River; and about 4 miles northwest of Junction City, Kansas.

**Existing project.** An earthfill dam about 6,300 feet long and 126 feet high with an uncontrolled service-chute spillway in a saddle on right abutment. Total reservoir storage capacity is 1,160,000 acre-feet (700,000 for flood control, 160,000 for sediment reserve and 300,000 of multipurpose storage for water supply, water quality control, and recreation). Water supply storage is included in the project at the request of the Governor of Kansas under provisions of the Federal Water Supply Act of 1958. Initial cost of constructing the completed project was \$48,268,843. Total Federal cost of project, including \$1,297,649 supplemental recreational development (Code 710), was \$49,566,492. Construction was initiated in July 1961. The project was placed in operation in June 1965.

**Local cooperation.** Section 2, Flood Control Act of 1938 applies. Local interests must make reimbursement of \$12,162,134 for water supply storage in accordance with Water Supply Act of 1958. Utilization of storage for water supply was initiated in October 1984. Reimbursement was initiated, at the option of the State, in September 1976.

**Operations during FY.** Visitation for FY 2008 was 8,864,217 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$1,205,228,000. Maintenance: Activities included ordinary operation and maintenance, road repairs, upgrading sanitary facilities to improve accessibility. Due to an anticipated long-term increase in troop numbers, Ft. Riley reestablished a marina recreation site on project joint-use lands on the east side of Milford Lake.

### **13. MISSOURI RIVER LEVEE SYSTEM IA, NE, KS AND MO (RULO, NE, TO MOUTH)**

**Location.** On both banks of the Missouri River from Sioux City, Iowa, about 760 miles to the mouth near St. Louis, Missouri. The portion of the project in

Kansas City District extends from Rulo, Nebraska, 498 miles to mouth.

**Existing project.** A series of levee units and appurtenant works along both sides of Missouri River from Sioux City, Iowa, to the mouth, for protection of agricultural lands and small communities against floods. Estimated fully funded (2002) for the active portion of the project from Rulo, Nebraska, to mouth is \$209,379,000, including \$157,521,000 Federal and \$22,720,000 non-Federal contributions, and costs of \$29,138,000 for lands and damages are to be borne by local interests. Remaining portion of project consists of units on which planning and construction are being delayed pending restudy to assure that additional levee construction is economically justified. Current cost estimate for deferred, inactive, and deauthorized portion of project Rulo, Nebraska, to mouth is \$168,865,000 (1964, 1986, and 1987 price levels), of which \$153,233,000 is Federal cost for construction and \$15,632,000 for lands and damages to be borne by local interests. Construction of the project was initiated in June 1948.

**Local cooperation.** Section 3, Flood Control Act of 1936 applies. Fully complied with for all completed units and units under construction. Local sponsors provide all operation and maintenance.

**Operations during FY.** Status of individual units of active portion at end of FY is shown in Table 27-H on Missouri River Levee System. The contract to construct Unit L-385 was awarded on 28 March 2002 with the notice to proceed being issued on April 26, 2002. The project is about 99% complete as of January 2006. The design for L-142 Unit was 95% complete in FY 2005. No funding allocated to this project in FY 2006, FY 2007 and FY 2008 has prevented any further progress.

### **14. PERRY LAKE, DELAWARE RIVER**

**Location.** The Damsite is on the Delaware River about 5 miles above the mouth in Jefferson County, and about 3 miles northwest of Perry, Kansas.

**Existing project.** An earthfill dam about 7,750 feet long constructed to an elevation about 95 feet above valley floor with gated-outlet works and an uncontrolled spillway in left abutment. Total reservoir storage capacity is 770,000 acre-feet (480,000 for flood control, including 140,000 for sediment reserve and 150,000 of multipurpose storage for water supply, water quality control, and recreation). Water supply storage is included in the project plan at the request of the State of Kansas under provisions of the Federal

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Water Supply Act of 1958. Initial cost of constructing the completed project was \$48,371,706. Total Federal cost of project, including \$724,212 supplemental recreational development (Code 710), is \$49,095,918. Construction was initiated in March 1964, and the project was placed in operation in January 1969.

**Local cooperation.** Section 2, Flood Control Act of 1938 applies. Local interests must make reimbursement of \$8,551,805 for water supply storage in accordance with Water Supply Act of 1958. Utilization of storage for water supply was initiated in October 1991. Reimbursement was initiated at the option of the State in September 1978.

**Operations during FY.** Visitation for FY 2008 was 5,194,641 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$4,993,235,000. Maintenance Activities included ordinary operation and maintenance, an asphalt overlay to portions of the Rock Creek PUA and a new precast Concrete toilet for Dedication Point.

**15. PICK-SLOAN MISSOURI BASIN PROGRAM (KANSAS CITY DIST.)**

**Location.** Flood control improvements included in this project are on and along the Missouri River and several of its principle tributaries, in states comprising the Missouri River Basin.

**Existing project.** The Pick-Sloan Missouri Basin program for flood control and other purposes in Missouri River Basin provides for levees along Missouri River between Sioux City, Iowa, and the mouth, flood-protection works at certain municipalities, and reservoirs on main stem of Missouri River and on tributaries for control of flooding. (See Table 27-B for authorizing legislation and Table 27-I on Kansas City District projects included in Pick-Sloan Missouri Basin program.) See individual project reports.

**16. POMME DE TERRE LAKE POMME DE TERRE RIVER, MO**

**Location.** The dam is on the main stem Pomme de Terre River, about 44 miles above the mouth in Hickory County, Missouri. The lake extends upstream into Polk County, Missouri. The site is about 4 miles south of Hermitage, Missouri, and 20 miles north of Bolivar, Missouri.

**Existing project.** An earth and rockfill dam about 4,630 feet long constructed to about 155 feet above riverbed and a dike section on left abutment about 2,790 feet long, providing storage capacity of

650,000 acre-feet (407,000 for flood control and 243,000 for sedimentation and multi-purpose). Initial cost of constructing the complete project was \$14,946,784. Total Federal cost of project, including \$329,140 area redevelopment and \$2,089,529 supplemental recreational development (Code 710), is \$17,365,453. Construction was initiated in January 1957, and the project was placed in useful operation in October 1961.

**Operations during FY.** Visitation for FY 2008 was 12,984,826 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$66,679,000. Maintenance: Activities consisted of ordinary operation and maintenance, development of a hiking/bicycling trail in Outlet Park, replaced two old change houses at Nemo Beach with a waterborne CXT building, construction of two volunteer campsites, construction of a new sewage dump station at the Outlet Park, and continued rebuilding of severe tornado damaged campsites in Damsite Campground.

**17. POMONA LAKE, ONE HUNDRED TEN MILE CREEK, KS**

**Location.** The dam is on One Hundred Ten Mile Creek, a tributary of Marais des Cygnes (Osage) River, 7 miles above mouth of stream in Osage County, Kansas, about 8 miles northwest of Pomona, Kansas, and 34 miles upstream from Ottawa, Kansas.

**Existing project.** An earthfill dam 7,750 feet long constructed to an average height of about 85 feet above streambed, with gated-outlet works and an ungated chute-type spillway near left abutment. Total reservoir storage capacity is 230,000 acre-feet (160,000 for flood control, 14,000 for sediment reserve, and 56,000 of multipurpose storage for water quality control, and recreation). Initial cost of constructing the completed project was \$13,272,108. Total Federal cost of project, including \$731,130 supplemental recreational development (Code 710), was \$14,003,238. Construction began in July 1959, and the project was placed in operation in October 1963.

**Local cooperation.** Section 2, Flood Control Act of 1938 applies. Pomona has water supply reimbursement under Water Supply Act of 1958 totaling \$862,923.

**Operations during FY.** Visitation for FY 2008 was 3,101,259 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$197,570,000. Maintenance: Activities consisted of ordinary operation and maintenance. Other

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activities included the first stage of the development of a show complex in Wolf Creek Park with the installation of pre-fab shower building and replacement of the Coon Creek Causeway pipe.

**18. RATHBUN LAKE, CHARITON RIVER, IA**

**Location.** The Damsite is on the Chariton River about 7 miles north of Centerville and 1 mile north of Rathbun, Appanoose County, Iowa.

**Existing project.** An earthfill dam 10,600 feet long constructed to an elevation about 86 feet above valley floor, with gated-outlet works and an uncontrolled service chute with paved sill spillway about a mile upstream from left abutment. Total reservoir storage capacity is 552,000 acre-feet (339,000 for flood control, 24,000 for sediment reserve and 189,000 of multipurpose storage for navigation, water quality control, and recreation). Initial cost of constructing the project was \$27,033,210. Total Federal cost of project, including \$588,948 supplemental recreation development (Code 710), was \$27,622,158. Construction of the project was initiated in September 1964 and completed in November 1969. The operating plan for this project was revised to reduce flood control releases during critical times of the year to allow local farmers better access during planting and harvesting and to facilitate field drainage and drying out. The revised plan has resulted in more frequent high pool elevations than anticipated, which has inundated roads and recreation facilities.

**Local cooperation.** Section 2, Flood Control Act of 1938 applies.

**Operations during FY.** Visitation for FY 2008 was 6,085,683 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$148,412,000. Maintenance: Activities included ordinary operation and maintenance and completion of the Critical Project Security Program. Rathbun Lake reached its second all time record high pool level on 1 Aug 2008. Critical dam safety surveillance was accomplished for 25 days and increased surveillance for over an additional 60 days. The State of Iowa dedicated its long-planned Honey Creek Lodge Resort in October 2008. It features a golf course, hotel, cabins, hiking trails, and waterfront activities. A contract to resurface the road over the Buck Branch Dam was awarded for construction in Spring 2009.

**19. SMITHVILLE LAKE, LITTLE PLATTE RIVER, MO**

**Location.** The Damsite is on the Little Platte River about 1 mile northeast of Smithville and about 5 miles north of Kansas City, in Clay and Clinton Counties, Missouri.

**Existing project.** Earthfill dam about 4,200 feet long and 95 feet high with an uncontrolled service spillway. A dike about 2,400 feet long crosses a saddle in the left abutment. Total reservoir storage capacity is 246,500 acre-feet (92,000 for flood control, 52,300 for sediment reserve, and 102,200 of multipurpose storage for water supply, water quality control, and recreation). Cost of constructing the project was \$87,685,314. Construction was initiated in November 1973, and the project was placed in operation in March 1982.

**Local cooperation.** Section 2, Flood Control Act of June 28, 1938 applies. Reimbursement of \$24,000,000 will be required for water supply storage in accordance with Water Supply Act of 1958, and reimbursement of \$7,500,000 will be required for recreation development in accordance with Federal Water Recreation Act of 1965. Additional non-Federal contribution for recreation amounts to \$737,000. All contracts for local cooperation were approved by the Secretary of the Army on November 27, 1972.

**Operations during FY.** Visitation for FY 2008 was 8,272,390 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$849,756,000. Maintenance: Activities consisted of ordinary operation and maintenance, road repairs, and construction of a Section 1135 Shoreline Protection Program at twenty-five percent complete and the completion of the Critical Project Security Program. Activities also consisted of Dam Safety Repairs to flood damages on the dike. Initial construction started for Springtown Bridge replacement, and successful operation of the largest Managed Handicapped Deer Hunt in the United States.

**20. TURKEY CREEK BASIN, KS & MO**

**Location:** The Turkey Creek Basin is a 23-square mile area within Kansas City, KS and suburbs in Johnson and Wyandotte Counties in Kansas.

**Existing Project.** The recommended project is estimated to cost \$92,547,000, with an estimated Federal cost of \$56,852,000 and an estimated non-Federal cost of \$35,695,000, including construction of channel modification and structures to control hillside

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runoff. This project was reauthorized in 2003 and has moved into Construction funding.

**Local Cooperation.** The PCA was signed in FY 2006.

**Operations during FY.** In FY 2008, construction has continued on tunnel retrofitting. In addition, work has progressed on 3.8 railroad bridge modifications, roadway modifications, and design has continued on channel modifications, levee and environmental enhancements. Value engineering reports were completed on the Mill Street Bridge and the walled channel.

### 21. TUTTLE CREEK LAKE, BIG BLUE RIVER, KS

**Location.** The dam is on the main stem of the Big Blue River, about 12 miles above the stream mouth in Riley and Pottawatomie Counties, Kansas. Site is about 3 miles north of Manhattan, Kansas.

**Existing project.** An earth and rock-fill dam 7,500 feet long and 157 feet high. Total reservoir storage capacity is 2,346,000 acre-feet (1,933,000 for flood control, 228,000 for sediment reserve and 185,000 for multipurpose storage, for low-flow regulation, navigation, and recreation). Initial cost of constructing the completed project was \$80,051,031. Total Federal cost of project, including \$533,048 supplemental recreational development (code 710), was \$80,584,079. Construction began in October 1952. Project was placed in Operation in July 1962.

**Local cooperation.** Section 2, Flood Control Act of 1938 applies.

**Operations during FY.** Visitation for FY 2008 was 1,506,806 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$5,748,611,000. The project provided primary water releases into the Big Blue and Kansas Rivers to meet minimum in-stream flow requirements in accordance with agreements with the state of Kansas. The project also provided water releases for supplemental navigation flows on the Missouri River for a portion of the navigation season in FY 2008. Maintenance: Activities included ordinary operation and maintenance.

**Dam Safety Assurance Program:** A \$246 million project to address seismic and hydrologic concerns at Tuttle Creek Dam was approved in 2003. Recent investigation and construction modifications will bring the project in under budget by \$75 million

and ahead of schedule. In 2006 the design and development of contracts for all aspects of the project were underway. The state of the art Dam Failure Warning System was completed in 2005 and is currently operational. Construction was completed on new campgrounds that serve the purpose of mitigating impacts to the existing downstream campgrounds. The base contract for the Ground Modification Project was awarded in September of 2005. A downstream test program, which was an option to the contract, was awarded in April of 2006 for 3.6 million and completed in 2007. Stabilization of the downstream toe of the dam began in 2007 and is expected to be completed in FY 2010. The spillway tainter gate contract was awarded in June of 2007 for \$6.9 million and will be completed in FY 2009.

### 22. WILSON LAKE, SALINE RIVER, KS

**Location.** The dam is on the Saline River about 130 miles above its mouth, near the eastern edge of Russell County, Kansas, about 50 miles west of Salina, 10 miles north of Wilson, and 20 miles east of Russell, Kansas.

**Existing project.** An earthfill dam about 5,600 feet long and 160 feet high with a gated-outlet works, chute spillway, storage capacity is 776,000 acre-feet (511,000 for flood control, 40,000 for sediment reserve and 225,000 multipurpose storage for irrigation, navigation, and low-flow regulation). Initial cost of constructing the project was \$20,015,023. Total Federal cost of project, including \$448,344 supplemental recreational development (Code 710), was \$20,463,367. Construction began in April 1961, and the project was placed in operation in December 1964.

**Local cooperation.** Section 2, Flood Control Act of 1938, applies.

**Operations during FY.** Visitation for FY 2008 was 2,317,373 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$1,400,977,000. Above normal inflows contributed to a 3 feet rise above conservation pool. Maintenance: Activity included ordinary operation and maintenance and construction of a new fee booth and installation of a new CXT vault toilet. Minooka Park improvements included a new courtesy dock, one and one-half miles of chip seal and also a new CXT vault toilet as upgrading sanitary facilities to meet accessibility standards

**23. SCHEDULING OF FLOOD CONTROL RESERVOIR OPERATIONS**

Under Sections 7 and 9, 1944 Flood Control Act, the Corps is responsible for detailed scheduling of operations concerning storage capacity reserved for or assigned to flood control in reservoirs constructed by Bureau of Reclamation as well as those constructed by the Corps. FY costs were \$302,000.

**24. INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS**

Flood Control Act of June 22, 1936, P.L. 738, and subsequent acts require local interests to furnish assurances that they will maintain and operate certain local protection projects after completion in accordance with regulations prescribed by the Secretary of the Army. District Engineers are responsible for administration of these regulations within boundaries of their respective district. (See Table 27-J on inspection of completed flood control projects.)

**Multiple Purpose Projects Including Power**

**25. HARRY S. TRUMAN DAM AND RESERVOIR, OSAGE RIVER, MO**

**Location.** The Damsite is on the main stem of the Osage River about 1.5 miles northwest of Warsaw, Benton County, Missouri. Reservoir extends into Bates, Henry, Hickory, St. Clair, and Vernon Counties, Missouri.

**Existing project.** An earthfill dam about 5,000 feet long constructed to an average height of about 96 feet above streambed, including a gate-controlled overfall spillway and a power installation consisting of six inclined pump-generating units with a combined generating capability of 160,000 kilowatts. Total reservoir storage capacity is 5,202,000 acre-feet (3,918,000 for flood control, 244,000 for sediment reserve, and 1,040,000 multipurpose storage for power, low-flow regulation, and recreation). The operating purposes of the project are flood control, hydroelectric power, water supply, recreation, and fish and wildlife. Public Law 91-267, approved May 26, 1970, authorized a change in project name from Kaysinger Bluff Dam and Reservoir, Osage River Basin, Missouri, to the Harry S. Truman Dam and Reservoir. Initial cost of constructing the completed project was \$550,909,000. Construction of relocated Missouri Highway M-13 was initiated September 1964 and completed May 1966. Construction of the dam and reservoir was initiated in October 1964. The project was operational for flood

control in October 1979, and multipurpose pool was reached in November 1979. The first power unit was placed on line on December 22, 1979. Subsequent problems with the turbine bearings required remedial repair that was completed in FY 1999. Through September 2008, power generation totaled 7,398,564,380 kilowatt-hours. Of the gross income from the sale of power by Southwestern Power Administration, \$186,160,815 was allocated to the Corps of Engineers for project power operating costs, interest, and investment recovery.

**Local cooperation.** Section 2, Flood Control Act of 1938 applies.

**Operation during FY.** Visitation for FY 2008 was 16,250,357 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$1,848,458,000. During FY 2008, 421,632,000 kilowatt-hours of electrical power were generated resulting in estimated earned revenue of \$10,664,000. Power generation was much greater than normal resulting from high water events in the Spring and Summer of FY 2008. Maintenance activities consisted of ordinary operation and maintenance, road work, boat ramp expansion, and installation of an accessible lift for the disabled at the visitor center. Work continued on certification of hydraulic steel structures in preparation of contract specification for the draft tub bulkhead cylinder repairs and SCADA upgrade/replacement contracts schedule to be advertised and awarded in FY 2009.

**26. STOCKTON LAKE, SAC RIVER, MO**

**Location.** The Damsite is on the Sac River about 49.5 miles above its confluence with the Osage River, and about 1 mile east of Stockton, Cedar County, Missouri. The lake extends into Dade and Polk Counties.

**Existing project.** A rock-shell dam with impervious core about 5,100 feet long constructed to an average height of about 128 feet, with a gated overfall spillway and a 45,200-kilowatt power installation. Total reservoir storage capacity is 1,674,000 acre-feet (774,000 for flood control, 25,000 for sediment reserve and 875,000 multipurpose storage for power and recreation). The authorized project purposes are flood control, hydroelectric power, water quality, water supply, recreation, and fish and wildlife. Initial cost of constructing the completed project was \$75,715,300. Cost of the project, including \$3,758,000 for downstream channel work and \$502,057 for supplemental recreational development (Code 710), was \$79,975,357. Construction was initiated in

October 1963, and the project was placed in operation in December 1969. Power operation problems were encountered with the initial operation in March 1973 because the downstream channel did not have the capacity which earlier observations and computations indicated. As a result, it has been necessary to restrict the power operation to about the 30,000-kilowatt level. Right-of-way for construction of a channel cutoff and bridge at Horseshoe Bend were acquired, and construction completed. Sloughing easements downstream to Caplinger Mills were acquired. Completion assured downstream channel capacity to Caplinger Mills of 8,000 c.f.s. for powerplant operation. Discharge in this range will accommodate power operations at a 39,500-kilowatt level. Through September 2008, power generation totaled 2,035,451,700 kilowatt-hours. Of the gross income from the sale of power by Southwestern Power Administration, \$56,271,577 was allocated to the Corps of Engineers for project operating costs, interest, and investment recovery.

**Local cooperation.** Section 2, Flood Control Act of 1938, applies.

**Operations during FY.** Visitation for FY 2008 was 8,000,868 visitor hours. Cumulative Damages Prevented from Project Implementation through FY 2008 totaled \$202,260,000. During FY 2008 94,889,000 kilowatt-hours of electrical power were generated resulting in estimated earned revenue of \$2,690,700. Power generation was much greater than normal resulting from high lake pools during the Spring and Summer of FY 2008. Stockton Lake reached its third highest pool level on record at 883.53' (above msl) in April of 2008. The pool level has remained above normal since the spring of this year. The high pool levels have caused extensive damage to the park areas. Additional funds in the amount of \$357,000 have been allocated for repairs to the damaged facilities. A partnership agreement has been established with West Central Missouri Community Action Agency to provide additional labor to assist with repairs that were caused by the high water conditions. CXT facilities were purchased for installation at the Ruark Bluff Beach and the Masters Beach. Through an agreement with the Bureau of Reclamation some park facilities were assessed for compatibility with accessibility standards. This effort also served as training for other Kansas City District lake projects to be utilized for assessing other lake facilities. The Cedar Oak Lodge and Resort was purchased by Mr. John Selsor, and a new limited motel / resort lease was established. Continued discussions with the Tri-States Water Coalition reference their effort to identify additional sources for drinking water supply. Project

staff and customers dealt with the default of the existing mowing contractor, and the establishment of a new mowing contract for a one year period. Other activities consisted of ordinary operation and maintenance and preservation of a downstream archeological site known as "Big Eddy". Work continued on certification of hydraulic steel structures and preparation of contract specifications for the SCADA upgrade/replacement contract scheduled to be advertised and awarded in FY2009.

## Work Under Special Authorities

### 27. CONTINUING AUTHORITIES

**Small Beach Erosion Control Projects Not Specifically Authorized by Congress (Sec. 103, 1962 River and Harbor Act as amended, Public Law 874, 87<sup>th</sup> Cong., Oct. 23, 1962, as amended).** Each project selected must be complete in itself, economically and environmentally justified, and limited to a Federal cost of not more than \$3 million. The local sponsoring agency must agree to provide without cost to the Department of the Army, all lands, easements, and rights-of-way, including highway bridge, and utility relocations and alterations; hold and save the Department of the Army free from damages; maintain and operate the project after completion; assume all project costs in excess of the Federal cost limit; and prevent future encroachments on improved channels. The non-Federal sponsors of Section 103 projects are required to pay 50 percent of all feasibility study costs over \$100,000. The sponsor must pay in cash during the construction at least 5 percent of the construction cost. The sponsor's cash and other contributions must equal 35 percent of the total construction cost, but will not be required to exceed 50 percent. There were supervisory and administrative negotiations under the Section 103 Coordination Account in FY 2007. See Table 27-K for expenditures under Section 103 during 2008.

**Small Flood Control Projects Not Specifically Authorized by Congress (Sec. 205, 1948 Flood Control Act, Public Law 858, 80<sup>th</sup> Cong., June 30, 1948, as amended).** Each project selected must be complete in itself, economically and environmentally justified, and limited to a Federal cost of not more than \$7 million. The local sponsoring agency must agree to provide without cost to the Department of the Army, all lands, easements, and rights-of-way, including highway bridge, and utility relocations and alterations; hold and save the Department of the Army free from damages; maintain and operate the project after completion; assume all project costs in excess of the Federal cost

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limit; and prevent future encroachments on improved channels. The non-Federal sponsors of Section 205 projects are required to pay 50 percent of all feasibility study costs over \$100,000. For structural flood control projects, the sponsor must pay in cash during the construction at least 5 percent of the construction cost. The sponsor's cash and other contributions must equal 35 percent of the total construction cost, but will not be required to exceed 50 percent. There were no Section 205 projects under construction in FY 2008. See Table 27-K for expenditures under Section 205 during 2008.

### **Crosscreek, Rossville, Kansas**

**Location.** The project is located on the Kansas River floodplain along Cross Creek in northwestern Shawnee County, about 18 miles northwest of Topeka on Highway 24. Cross Creek flows on the west side of town and is tributary to the Kansas River.

**Existing project.** Rossville experiences frequent flooding from the 178 square miles of drainage area upstream of the city. Severe flooding has occurred in 1951, 1973, 1982, and 1987, and 2005. This project will evaluate alternatives for flood damage reduction with the likely recommendation of a levee and/or channel modification to protect the city.

**Local cooperation.** Section 205, 1948 Flood Control Act, Public Law 858, 80<sup>th</sup> Cong., June 30, 1948, as amended), applies.

**Operation during FY.** During FY 2008, Work continued on the feasibility phase incurring costs of \$15,459.

### **Concordia, Kansas**

**Location.** The project is located in northeastern Kansas in Cloud County along Interstate Highway 81, and is the County seat

**Existing project.** In the feasibility phase to evaluate alternatives for the flood hazard with potential for high loss of life and property damage exists due to the deteriorated condition of an old earth fill embankment on an unnamed tributary on the south side of the City. This embankment was breached as a result of heavy rainfall in April of 1950 and flood waters devastated the downtown business district. The embankment acts as a detention dam. It was rebuilt and has subsequently been subjected to several high water events over the years. During the 1993 flood, the embankment was close to being overtopped and evacuation of homes immediately downstream was recommended. The condition of the embankment has further degraded over time. There currently is a housing development immediately downstream of the embankment, and the downtown business district is also downstream. There have been several high intensity and large volume rainfall events passing near Concordia in recent years, raising concerns regarding

the risk to life and property. The embankment needs to be reconstructed as a flood protection project to current design standards.

**Local cooperation.** Section 205, 1948 Flood Control Act, Public Law 858, 80<sup>th</sup> Cong., June 30, 1948, as amended), applies.

**Operation during FY.** During FY 2008, Work continued on the feasibility phase incurring costs of \$15,076.

### **Blacksnake Creek, St. Joseph, Missouri**

**Location.** The project is located in the northern edge of the city limits of St. Joseph, Missouri along St. Joseph Avenue. Blacksnake Creek is a left bank tributary of the Missouri River (confluence at river mile 449.1). Total watershed area is 8.2 square miles.

**Existing project.** Flash flooding within the Blacksnake Creek watershed affects numerous residential, commercial, and industrial properties along St. Joseph Avenue. One of the most serious recent floods occurred in 1984 causing several million dollars in damages. Heavy rains in 2004 threatened to cause severe flooding in that same corridor. This project will develop a comprehensive flood protection project that will reduce flood damages for up to the 1 percent chance (100-year) flood along St. Joseph Avenue.

**Local cooperation.** Section 205, 1948 Flood Control Act, Public Law 858, 80<sup>th</sup> Cong., June 30, 1948, as amended), applies.

**Operation during FY.** During FY 2008, Work continued on the feasibility phase incurring costs of \$64,201.

### **Eureka Creek, Manhattan, Kansas**

**Location.** The project is located at the Manhattan Regional Airport approximately 5 miles southwest of the City of Manhattan, Kansas, Eureka Creek is a left bank tributary of the Kansas River. The total watershed area is approximately 5 square miles, about half of which lies within the Fort Riley Military Reservation.

**Existing project.** A large portion of the Manhattan Regional Airport is subject to damages from recurring flooding on Eureka Creek. Damages affect the airport facilities and the infrastructure including utilities. Flooding causes damages to nearby residential areas and commercial development along Kansas Highway (K-18). The study will evaluate plans for detention and diversion structures on Eureka Creek to alleviate flooding. The airport is a potential power projection platform to support the adjacent Fort Riley Army installation in its future expanded mission.

**Local cooperation.** Section 205, 1948 Flood Control Act, Public Law 858, 80<sup>th</sup> Cong., June 30, 1948, as amended), applies.

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**Operation during FY.** During FY 2008, Work continued on the feasibility phase incurring costs of \$5,839.

**Emergency Streambank Protection (Section 14, 1946 Flood Control Act, Public Law 526, 79<sup>th</sup> Cong., July 24, 1946) as amended.** Each project selected must be complete in itself, engineering feasible, economically justifiable environmentally acceptable, and limited to a Federal statutory cost of not more than \$1,500,000. The local sponsoring entity must agree to provide without cost to the Department of the Army, all lands, easements, and rights-of-way, including highway, highway bridge, and utility relocations and alterations required for project construction; provide over the period of construction, an amount equal to not less than 35 percent or more than 50 percent of total project cost, at least 5 percent of which will be cash; operate, maintain, repair, replace, and rehabilitate the project upon completion; hold and save the Department of the Army free from damages arising from the construction, operation, and maintenance of the completed project; and assume all project costs in excess of the Federal statutory cost limit. See Table 27-K for Emergency Streambank Protection expenditures during FY 2008.

**Argosy Road Bridge, Riverside, Missouri**

**Location.** The project is located at the Argosy Road Bridge in Riverside, Missouri on the Line Creek tributary to the Missouri River.

**Existing project.** The severe bank erosion of Line Creek over a 900 foot length is threatening to undermine the piers and the abutments of the Argosy Road Bridge on a large City of Riverside commercial/industrial access road.

**Local cooperation.** Section 14, Flood Control Act of 1946 applies. The sponsor is the City of Riverside.

**Operation during FY.** During FY 2008, Work continued on the design and plan specifications incurring costs of \$58,459.

**Golden Eagle Bank Erosion**

**Location.** The project is located at the Kickapoo Tribe on the Delaware River, just west of Horton in Northeastern Kansas.

**Existing project.** Severe and ongoing streambank erosion on the Delaware River has threatened to destroy the water supply intake structure for the Kickapoo Tribe, the only source of water, which threatens the cultural and economic survival of the Tribe.

**Local cooperation.** Section 14, Flood Control Act of 1946 applies. The sponsor is the Kickapoo Tribe.

**Operation during FY.** During FY 2008, Work continued on the feasibility phase was completed and approved, while incurring costs of \$76,900. The Project Cooperation Agreement (PCA) was signed with the Kickapoo Tribe enabling the project to progress to design and implementation. This project is a very successful cooperative effort between multiple agencies including the Indian Health Service, the Kickapoo Tribe, FEMA, and the EPA. Other agencies are providing support to the Tribe outside of the Section 14 program, coordinated in large part by the Corps of Engineers taking a comprehensive approach for integrated water resources assistance to the Tribe. The Indian Health Service is providing matching funds on behalf of the Tribe as allowed by the Section 14 program

**Platte River Bridge, Conception, Missouri**

**Location.** The project is located at the City of Conception in northwestern Missouri, in Nodaway County on the Platte River.

**Existing project.** The severe bank erosion of the Platte River over an 800 foot length is threatening to undermine and cut off access to the major concrete county bridge at Conception, Missouri.

**Local cooperation.** Section 14, Flood Control Act of 1946 applies. The sponsor is Nodaway County, MO.

**Operation during FY.** During FY 2008, Work continued on the design and plan specifications incurring costs of \$15,543

**Platte City Sewer Stabilization Project, Platte City, Missouri**

**Location.** The project is located at Platte City, Missouri, in Platte County on the Platte River.

**Existing project.** The project is to protect the main sanitary sewer for Platte City, Missouri, from streambank erosion on the Platte River.

**Local cooperation.** Section 14, Flood Control Act of 1946 applies. The sponsor is the City of Platte City.

**Operation during FY.** During FY 2008, Work continued on the design and plan specifications incurring costs of \$62,966. The project was approved in 2008 and the Project Cooperation Agreement was signed with The City of Platte City, Missouri.

**Rush Creek at English Landing Park, Parkville Missouri**

**Location.** The project is located in the City of Parkville, Missouri in English Landing Park in Platte County, approximately 10 miles north of Kansas City, Missouri.

**Existing project.** Very rapid and severe stream bank erosion was occurring on the both the left and

right banks of Rush Creek, in English Landing Park, impacting the historic Waddell "A" Truss Bridge and the Main Street Bridge, the Parkville public water main, sanitary sewer force main, low water crossing, large sanitary pumping station, administrative office, parking lots, and three baseball fields. The Waddell A Truss Bridge, listed on the National Register of Historic Places, is used as a footbridge crossing Rush Creek. The erosion area is roughly 2000 feet long and if the site remains unprotected, eventual loss of the bridges, utility lines, pumping station, and ball fields can be expected. A highly successful construction project was completed in FY2008 which stopped the erosion; around Rush Creek is a very high public use area. The City of Parkville, local Congressional office, and the entire community was highly pleased.

**Local cooperation.** Section 14, Flood Control Act of 1946 applies.

**Operation during FY.** During FY 2008, Work completed and closed out the project incurring costs of \$1,578.

#### **South Fork Clear Creek, Route FF, Marysville, Missouri**

**Location.** The project is located at the MoDOT Route FF Bridge on the South Fork of Clear Creek, 7 miles west of Maryville, Missouri in Nodaway County.

**Existing project.** The severe bank erosion of the South Fork of Clear Creek is threatening to cut off the abutment of the large concrete MoDOT Bridge at on Route FF Highway.

**Local cooperation.** Section 14, Flood Control Act of 1946 applies. The sponsor is the Missouri Department of Transportation (MoDOT).

**Operation during FY.** During FY 2008, Work continued on the design and plan specifications incurring costs of \$45,093. The project was approved and the Project Cooperation Agreement was signed with the Missouri Department of Transportation.

#### **Stranger Creek at K-32, Kansas**

**Location.** The project is located along Kansas Highway 32 at Linwood, Kansas adjacent to the Stranger Creek.

**Existing project.** The severe bank erosion of Stranger Creek over a 1,000 foot length adjacent to Highway K-32 is threatening to cut off access of that important Kansas arterial and flank the bridge abutment. Kansas City District gets the biggest Section 14 projects, and this one is no exception. K-32 is a major east-west artery for the State of Kansas, and this project is to address a serious threat to that road and bridge and is a very high priority for the State of Kansas.

**Local cooperation.** Section 14, Flood Control Act of 1946 applies. The sponsor is the Kansas Department of Transportation (KDOT)

**Operation during FY.** During FY 2008, Work continued on the design and implementation phase incurring costs of \$62,083. The 90 percent design was completed in 2008, and the project is ready for project approval and construction.

**Project Modifications for Improvement of Environment (Section 1135, Water Resources Development Act of 1986, Public Law 662, 99<sup>th</sup> Cong., November 17, 1986).** Section 1135 authorizes review of the operation of completed water resources projects to determine need for modifications for the purpose of improving environmental quality. See Table 27-K for Section 1135 studies status and expenditures for FY 2008.

#### **Kansas City Riverfront, Missouri**

**Location.** The project will modify the Corps of Engineers Missouri River Bank Stabilization and Navigation Project (BSNP). The project entails construction of approximately 0.2 acre of emergent wetland, 1.3 acres of planted bottomland hardwood, 3 acres of native grasses and forbs, and preservation of 0.2 acres along the riverfront.

**Existing project.** The project is located in Kansas City, Missouri on the Port Authority property between downtown Kansas City and the Missouri River. The project is bounded by Interstate 35 to the east and the Corps of Engineers wharf area to the west, at the foot of Main Street.

**Local cooperation.** Section 1135, Water Resources Development Act of 1986 applies. The sponsor is the Port Authority of Kansas City, Missouri.

**Operation during FY.** During FY 2008, Work continued on design and implementation phase incurring costs of \$83,551 on the project. The PCA was signed and the construction contract was awarded in September of 2008.

#### **Rathbun Lake Habitat Restoration Project, Iowa**

**Location.** The Rathbun Lake is located on the Chariton River at river mile 142.3, approximately seven miles northwest of Centerville, Iowa, and 85 miles southeast of Des Moines, Iowa. The restoration project is located on the South Fork Chariton River within the upper portion of the flood control pool of Rathbun Lake.

**Existing project.** This project is part of a larger restoration and resource protection strategy being undertaken by IDNR and the Corps of Engineers at Rathbun Lake and their associated environs including aquatic restoration opportunities. It consists of wetland, aquatic, shoreline / riparian restoration supporting the

lake ecosystem. This wetland project would comprise a total of 200 acres wetlands when the entire area is flooded to provide habitat for migrating waterfowl. The wetland area would be operated, as needed, in series with IDNR's Coffee Marsh wetland located to the east. Water control structures would allow greater control of the seasonal water regime in this wetland and in Coffee Marsh, greatly enhancing effective habitat management. No fee title land acquisition is required for the project. Shoreline restoration will contribute the comprehensive habitat corridor supporting a contiguous ecosystem at the lake.

**Local cooperation.** Section 1135, Water Resources Development Act of 1986 applies. The sponsor is the Iowa Department of Transportation.

**Operation during FY.** During FY 2008, Work continued on design and implementation phase in restoration incurring costs of \$50,818 on the project.

**Smithville Aquatic Plantings**

**Location.** The project is located at Smithville Lake in Clay County, Missouri on the Little Platte River at the town of Smithville, Missouri, 20 miles north of Kansas City, Missouri.

**Existing project.** The project will improve and restore approximately 3,000 feet of lake shoreline, and up to 75 coves including the stabilization of 5 points bars, providing bank stabilization, food and shelter for fish and aquatic life, sediment reduction, pollutant/nutrient absorption and a general improvement in water quality.

**Local cooperation.** Section 1135, Water Resources Development Act of 1986 applies. The sponsor is the Missouri Department of Conservation.

**Operation during FY.** During FY 2008, Work continued on design and implementation phase incurring costs of \$560,340 on the project. Construction was initiated on this exemplary representation of cooperation between NWK, the Smithville Lake Project Office, the State of Missouri Department of Conservation, and Clay County, Missouri. The project has received significant publicity from local media and is a success story for the Kansas City District.

**Aquatic Ecosystem Restoration (Section 206, Water Resources Development Act of 1996, Public Law 303, 104th Cong., October 12, 1996).** Section 206 authorizes small aquatic ecosystem restoration projects to improve the quality of the environment if in the public interest and cost effective. The feasibility study continues for the Chariton Watershed Section 206 project. It will authorize and construct an array of several hundred small detention structures and in stream structures to improve aquatic, riparian, and wetland habitat in the basin. It will serve to reduce

sediment and contaminant inflow into Rathbun Lake, greatly improving water quality and habitat in the lake. See Table 27-K for Section 206 Studies status and expenditures for FY 2008.

**Chariton River/Rathbun Lake Watershed, Iowa**

**Location.** The project is located in south central Iowa encompassing portions of Appanoose, Clarke, Decatur, Lucas, Monroe, and Wayne counties.

**Existing project.** Rathbun Lake supplies water to the Rathbun Regional Water Association (RRWA). The RRWA provides 7 million gallons of water daily to over 70,000 people in 18 counties in Southern Iowa and Northern Missouri. Rathbun Lake also provides recreation opportunities to over one million visitors annually, flood protection for 150,000 acres of land, fish and wildlife habitat in the 11,000-acre lake and on 21,000 acres of adjacent public lands, and downstream water quality improvement. The watershed of Rathbun Lake includes over 354,000 acres. There are approximately 27,000 acres of floodplain in the watershed. The entire watershed has been subdivided into 61 sub-watersheds ranging in size from approximately 2,589 acres to 16,430 acres. Twenty-two of these sub-watersheds have been identified as priority hydrologic units in terms of the amount of sediment that they contribute to Rathbun Lake. The consequences of increased erosion include: significant degradation of in-stream and lake habitat for fish and aquatic organisms, increased water treatment costs, and reduced sediment storage in Rathbun Lake. This project will identify locations for over 200 structures (small ponds or wetlands) that will reduce the amount of sediment delivered to Rathbun Lake while increasing wildlife habitat, aquatic habitat, water quality in Rathbun Lake, and wetland acreage in the watershed. Additional benefits include: water sources for pastured livestock, recreation opportunities for landowners, and the general public improved subsurface water quality, reduced streambank erosion, slowing of stormwater, and rural fire protection.

**Local cooperation.** Section 206, Water Resources Development Act of 1996 applies. The sponsor is the 10 county cooperative agency, the Southern Iowa Development Cooperative Agency (SIDCA).

**Operation during FY.** During FY 2008, Work continued on design and implementation phase incurring costs of \$34 on the project in completion of the draft feasibility report. In future, subject to availability of funding, we will complete reviews and final drafting of the feasibility report which has been in temporary suspension for several years due to lack of funding.

**28. EMERGENCY RESPONSE ACTIVITIES**

**A. Disaster Preparedness.**

(1.) The Disaster Preparedness Program (DPP) involves planning, training, inspection of flood control projects, and maintaining supplies and equipment. Planning activities also involve development of response and recovery plans and exercises in support of natural/national disasters and terrorist activities. (2.) Emergency Management (EM) Branch provided District representation at the monthly meetings for the interagency Kansas City Regional Continuity of Operations (COOP) Working Group. NWK prepared for the Kansas City Pandemic Regional Interagency COOP Exercise 2008 (KCPRICE08) during the year but due to the June 2008 Flood Fight response the NWKs' participation in the exercise was cancelled. NWK was able to complete the telework portion of the exercise and an After Action Review of the telework effort. (3.) The National Disaster Program Manager participated in the NWD PDT for development of the All Hazards Policy. The All-Hazards Plan will be used to prepare command to conduct incident response operations and, on order, provide relief to disaster victims in a timely manner, and to support post-disaster recovery operations. (4.) Emergency Management personnel attended the annual conference of the Missouri State Emergency Management Agency in March 2008 and the NWD Regional EM conference Buffalo, New York, in July 2008. (5.) Disaster preparedness includes operational readiness, maintaining the necessary supplies and equipment to support disaster response. To support flood-fighting efforts, an inventory is maintained of over 1 million sandbags, 55 pumps and 3 sandbag filling machines. (6.) USACE personnel provided flood fight training for the sponsors of the Kansas City Metropolitan Flood Protection Projects (CID, East Bottoms, NKC Airport and NKC Lower Section, Fairfax, Argentine, and Armourdale) in March 2008. (7.) Activities to support disaster preparedness in FY 2008 included training of the District's Emergency Water Planning and Response Team (PRT). In April 2007 the District's Water Team assumed the role as primary National ESF#3 Water Team from the New England District until April 2008. NWK Water Team members attended training during 2007 and selected members participated in an SOP rewrite workshop.

**B. Public Law 84-99. Rehabilitation of Flood Control Works.** Following the May and July 2007 floods, 30 non Federal and 10 Federal levees experienced some damage. Field inspections were conducted and Project Information Reports were

prepared. Rehabilitation efforts consumed most of the year with a goal of having all repaired by the Spring 2008 flood season. Funding was received for these rehabilitation efforts in July and August of 2007.

**C. Inspection of Completed Works (ICW) Program.** Thirty-nine (49) Federal flood control projects were inspected during FY 2008.

**D. Emergency Response.**

(1.) The District experienced a very active flood season. The NWK District EOC was activated for 24-hour coverage for one event. Flood Events were declared on four separate occasions. (2.) In March 2008, significant rainfall was observed over the southern portion of the Osage River Basin with Stockton, Pomme De Terre, and Truman reservoirs receiving significant inflows. Additionally, Kansas City District provided support in the form of sandbags and pumps to both St. Louis District and Little Rock District for this event. EOC was activated to Level II (Emergency Watch). (3.) From June 2008 to July 2008, the NWK District was impacted by major flooding on the Missouri River. The NWK District activated their EOC with 24 hour coverage from June 6 thru June 19, 2008. Record flooding was observed within the Chariton River basin in north central Missouri. During the two week response almost 150 District personnel responded in some manner and almost two hundred thousand sandbags and several pumps were issued to the State and impacted Counties. (4.) From July 25, 2008 to August 1, 2008, North Central Missouri experienced significant rainfall within the Grand River and Chariton River basins. Record stages were again observed on the Chariton River. The EOC was activated to Level II (Emergency Watch). (5.) In September 2008, Mid-Missouri was again hit with heavy rainfall. Flooding occurred along the Missouri River from Brunswick, Missouri to St. Charles, Missouri. The Grand River and the Chariton Rivers basins experienced significant flooding. Several non-Federal levees were overtopped near the mouth of the Osage River. The EOC was activated to Level II (Emergency Watch). (6.) In FY 2008, the NWK District personnel provided support for Hurricanes Gustav, Ike, and Omar. A Water Action Officer deployed to FEMA's NRCC in support of Hurricane Omar. (7.) The deployments to Iraq and Afghanistan for the Global War on Terrorism (GWOT) missions continued. The Emergency Management staff facilitated the deployment of NWK District employees during FY 2008. This effort will continue into the foreseeable future.

### **E. Levee Rehabilitation.**

(1.) Levee Rehabilitation efforts have been significant since May 2007. Forty levee sponsors were determined to have levees with damages eligible for Public Law 84-99 rehabilitation assistance. \$14M in Class 300 funding was received to execute levee repairs. Thirty projects have been completed. Eight are currently under construction. (2.) Following flooding throughout the summer of 2008, twenty-nine levee rehabilitation requests for assistance were received. Nineteen of the requests were determined to be eligible for Public Law 84-99 rehabilitation assistance. \$11.8M in Class 300 funding was received to execute levee repairs.

### **General Investigations**

#### **29. INVESTIGATIONS**

FY 2008 costs totaled \$2,011,514 for all Investigations activities. See Table 27-L, which covers Cumulative Damages Prevented, Surveys, Collection and Study of Basic Data and Preconstruction Engineering and Design expenditures in FY 2008.

### **Other Activities**

#### **30. CATASTROPHIC DISASTER PREPAREDNESS PROGRAM**

FY 2008 expenditures of \$14,961 provided for activities required for local and national preparedness.

#### **31. MISSOURI RIVER BASIN COLLABORATIVE WATER RESOURCES, PLANNING/PARTNERING PROCESS**

Missouri River Basin Association and the Corps will manage and facilitate the process of collaboration for some limited studies. The collaborative effort allows input from the states, tribes, and Federal agencies economic and environmental interest groups and the general public on both the operation issues, i.e. Master Manual, and non-operational issues. In addition, the collaborative process could address recreation industry development, ecosystem management, streambank erosion, project mitigation, structural changes for endangered species, environmental monitoring tribal water rights, and support to navigation and agriculture.

### **32. REGULATORY PROGRAM**

**Statutes.** The Corps of Engineers is charged with regulatory responsibility for all waters of the United States, including wetlands. This is accomplished through a Department of the Army permit program pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act.

**Operations during FY.** The Kansas City District completed 2,224 permit actions (IP, GP, NWP, and NPR) during the year. A total of 72 violations were reported and evaluated. Thirty-Eight of the violations were resolved by issuance of permits, voluntary restoration, administrative action or other means. The remaining twelve violations were unresolved at the end of the reporting period. The total cost of the regulatory program in the Kansas City District for FY 2008 was \$3,471,033 (including Permit Evaluation - \$2,666,800 Enforcement - \$303,092, Administration Appeals \$4,033 and Compliance-Authorized Activities - \$497,107).

**Special projects and significant actions during the year included: Mitigation:** As a Lead District Initiative project, NWK worked with the other Missouri Districts to complete and implement the Missouri Stream Mitigation Method. The method is a quick conditional assessment of a stream that results in a rationale for required stream mitigation based upon a credit and debit system. NWK worked with the Kansas Natural Resources Sub-cabinet and the Kansas Stream Mitigation Task Force to develop and implement the Kansas Stream Mitigation Guidance (KSMG). The Kansas Stream Mitigation Guidance (KSMG) was drafted and placed on public notice on 30 March 2008. NWK is the lead for the development, the interagency coordination, and the approval of the method. The KSMG, when finalized will be the primary tool used by NWK to evaluate stream impacts and mitigation proposals for new permit actions within the State of the Kansas, including Indian Country.

#### **Permit Actions:**

a.) Commercial Sand Dredging: (1.) Missouri River. Permit reauthorization for the Missouri River was completed FY07. Department of the Army (DA) permits were issued to four active dredging companies and permit denials were issued to six companies. The Three companies accepted the permit, but two companies filed administrative appeals of the permit decision. The appeal process is ongoing. The EIS process for the next permit cycle has been initiated. A Memorandum of Understanding has been drafted between the Dredgers, NWK and a 3<sup>rd</sup> party contractor

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for the completion of the NEPA process. (2.) Kansas River. The monitoring data from 2007 indicated degradation between river miles 45.5 through 50.6 is approaching 2 feet. No dredge sites will be closed or opened based on this information after reviewed of subsequent monitoring reports.

b.) South Lawrence Trafficway (SLT), KS. In November 2005, U.S. Senator Pat Roberts succeeded in adding \$1.5 million to the Transportation, Treasury, and Housing and Urban Development, the Judiciary, the District of Columbia, and Independent Agencies Appropriations Act of 2006, for the SLT. These dollars are to be administered by the Federal Highway Administration (FHWA). Accordingly, FHWA assumed lead federal agency status for the SLT project and requested addition as a signatory party to the completed Memorandum of Agreement (MOA) for the completed Section 106 consultation process. In letters dated 14 August 2007, to the MOA signatory agencies, we requested that FHWA be added as a signatory. The process was completed and the First Amendment to the MOA was issued on 31 October 2007. The FHWA provided their Final Department of Transportation Act of 1966 Section 4(f) evaluations and Notice of adoption of our Final EIS for the project. In addition, the FHWA issued their agency's Record of Decision selecting the 32nd Street alternative alignment.

c.) Burlington North Santa Fe (BNSF) Intermodal Facility, Gardner KS. BNSF plans to construct a large intermodal storage and transport facility at Gardner, Kansas. Due to the applicant's proposal to impact waters of the United States, the Corps of Engineers NWK is the lead Federal agency for NEPA compliance and a NEPA document is being developed. Several studies to determine environmental impacts as outlined in NEPA are being conducted by the applicant.

d.) TransCanada Keystone Pipeline, L.P. (Keystone). The applicant applied to the U.S. Department of State (DOS) for a Presidential Permit to construct and operate a crude oil pipeline and related facilities to transport Western Canadian Sedimentary Basin crude oil from an oil supply hub in Alberta, Canada to destinations in the Midwest United States. DOS issued the Final Environmental Impact Statement in January 2008, with NWK as cooperating agency along with other impacted Corps Districts. A draft Section 10 and 404 permit application was submitted in October 2008 for the construction within NWK Regulatory Boundaries, 305 miles of pipeline in Kansas and 145.5 miles of pipeline in Missouri, with crossings of several hundred potential jurisdictional waters.

e.) Winnebago Lake Expansion Project, Jackson County, MO. Co-applicants South Lake Winnebago Partners, LLC and the City of Lake Winnebago, Missouri are seeking a Section 404 permit to replace and relocate the existing dam and spillway for Lake Winnebago approximately 1 mile downstream. The costs of construction would be offset by the development of new residential and commercial property around the expanded lake. Impacts to waters of the U.S. are an estimated 4,067 linear feet (3.72 acres) of perennial stream, 11,812 linear feet (1.08 acres) of non-perennial stream, 15.28 acres of palustrine emergent wetland and 1.29 acres of forested wetland and .27 acres of open water. Stream mitigation proposed as restoration and preservation of 118 acres of Middle Big Creek floodplain located 2 miles downstream of the project site. Wetland mitigation includes creation of 15 acres of emergent and preservation of 6 acres of forested wetland at a site in the Grand River floodplain. The decision document is pending.

f.) East Side Investments, LLC; Newmarket V, LLC; and the City of Wichita, Kansas. This joint application for commercial development and stormwater detention in Cadillac Lake (wetlands) was evaluate. The applicant's original proposal was for the fill of 18.5 acres of wetlands. Significant public interest was generated through the public participation phase of the review process. The decision document and permit, authorizing 12.24 acres of wetland fill, was executed on 23 April 2008.

g.) Pawnee Watershed Joint District No. 81/Horse Thief Reservoir, Hodgeman County, KS. The watershed district proposed to construct an earthen dam across Buckner Creek and impound 450-surface acres for the primary purposes of flood control and water-based recreation. Approximately 4.78 miles of Buckner Creek, an intermittent stream with perennial reaches and permanent pools, and approximately 0.24 miles of fringe wetlands, would be impacted by the proposed project. The project involved resolution of negative resource agency comments and applicant difficulty in providing a compensatory mitigation plan. The Department of the Army permit was executed in March 2008 and groundbreaking was held in June 2008.

h.) Merriam Drainage District (MDD), Johnson County KS. MDD had submitted a 5-year plan for work in Turkey Creek. The project was in conflict with the regional watershed plan and stormwater detention for the Merriam Village project. NWK initiated discussion with MDD on the preliminary determination to deny their permit application based upon failure to demonstrate project need, and failure to comply with

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Clean Water Act guidelines. MDD decided to withdraw their current permit application and reevaluate the project, and propose modifications or demonstrate project need and guideline compliance.

i.) Norris Aggregate Products Company, Randolph County MO. The applicant proposed land clearing of 1.2 acres of wetland and two stream channels for site preparation and expansion of a limestone quarry. In accordance with the February 2007 interim guidance for the January 2007 Tulloch II court decision, our recommendation to assert jurisdiction over this activity has been elevated through NWK Office of Counsel to HQ Counsel.

j.) Schlitterbahn Vacation Village, Wyandotte County, KS. This development located on a 370 acre site across I-435 from the Legends Shopping Center and the NASCAR Speedway will include a water park, retail and other entertainment venues. This activity was verified as authorized by Nationwide Permit (NWP) 39, using the flexibility of a discretionary waiver of the 300 linear foot impact limit. Verification conditions require compensatory mitigation for all impacts to waters of the United States. The proposal includes the onsite avoidance of all wetlands (0.91 acre) and 13,742 linear feet of streams.

k.) GSA Lee's Summit Project, Jackson County MO. GSA was issued a Section 404 permit for the design-build project for the Department of Energy, National Nuclear Security Administration (NNSA). This new facility will replace the NNSA Kansas City Plant (KCP) at the Bannister Federal Complex at 95th Street and Troost. The proposed action could result in the discharge of fill into approximately 6,723 linear feet of unnamed tributaries and 1.23 acres of wetlands from site grading, road crossings, ingress/egress design constraints, clearing, and construction.

### **General Permits:**

a.) Lake of the Ozarks, Missouri. General Permit (GP) 38M (Lake of the Ozarks Shoreline Development Activities) authorizes various shoreline activities, which occur below the ordinary high water mark (658.5 Union Electric datum) at the Lake of the Ozarks. AmerenUE, under a Standard Operating Procedures (SOP) with NWK, continues to verify authorization of activities under GP-38M. However, NWK remains responsible for individual applicant compliance with the GP. NWK is working with AmerenUE in the development of compliance inspection strategy for the GP to meet the annual compliance performance goal.

b.) Flood Detention Dams, Missouri. General Permit (GP) 39M was reissued on 10 October 2007, for the discharge of dredged or fill material in waters of the United States for the construction of earthen flood detention dams designed as part of a regional watershed management plan and prepared under the authority of the Watershed Protection and Flood Prevention Planning Program, Public Law 83-566.

c.) Agriculture Conservation Practices, Kansas. General Permit (GP) 40 was issued on 18 March 2008, for the discharge of dredged or fill material in waters of the United States for the following Natural Resources Conservation Service (NRCS) designed or approved agriculture conservation practices, subject to the general and special conditions of GP 40: 1) Grassed waterways; 2) Grade stabilization structures; 3) Heavy use protection areas; 4) Pipelines; 5) Spring and seep developments; 6) Ponds; 7) Diversions; 8) Water and sediment control basins; and 9) Wetland enhancement, creation and restoration.

d.) Flood Recovery and Repair Activities, Kansas and Missouri. General Permit (GP) 41 was issued on 21 March 2008, for authorization of excavation or placement of fill material for protection and/or repair of existing flood damaged structures, damage land areas and/or damaged fills.

e.) Comprehensive Bank Stabilization, Missouri. General Permit 42M is being developed through the Lead District Initiative for Statewide issuance, the public notice will be issued by each District in Missouri 29 May 2008. This GP is intended to authorize bank stabilization activities in Missouri that result in minimal impacts to the aquatic ecosystem. It will include activities that currently fall within existing nationwide permits (NWPs) as well as others previously authorized on a case-by-case individual permit basis. This should provide farmers and other riparian landowners a simple and streamlined tool for protecting their property.

### **Mitigation Banks and In-lieu Fee Mitigation:**

a.) Missouri Department of Transportation (MoDOT). 1) The Blue Springs Lake Wetland Mitigation Bank has been approved for construction and is now under construction downstream of the dam at Blue Springs Lake, Jackson County, Missouri. The bank will contain 24.25 acres of wetland mitigation credit. These credits will offset wetland losses resulting from fill activities resulting from various MoDOT roadway projects within the approved service area of the bank. 2) MoDOT initiated discussion for a stream habitat bank on the Maries River. This is an area of high priority for MoDOT as they anticipate many new

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projects in the watershed that will require mitigation and habitat restoration for the Niangua Darter. 3) Little Niangua River Stream Mitigation Bank is in the final review stages. The banking instrument has been reviewed by NWK-OC and issues concerning the placement of real estate covenants, required performance standards and documentation of financial assurances are being resolved with MoDOT and OC.

b.) Terra Technologies, Inc. This firm proposed several private wetland mitigation banks in Jackson (Sni-a-bar Mitigation Bank), Cass (Osage Plains Wetland and Stream Mitigation Bank), Carroll (North Grand River Mitigation Bank), Gasconade and Moniteau (Smith Creek Wetland and Stream Mitigation Bank) Counties, Missouri. Decisions to execute the Jackson and Cass Counties banking agreements are pending.

c.) Watershed Institute. The Watershed Institute submitted a proposal for an In-Lieu-Fee (ILF) Missouri Mitigation Program. The Public noticed was issued soliciting public comment. Proposed plan is being evaluated for compliance with the new 10 April 2008 National Mitigation Rule.

### **Highway Projects:**

a.) The MoDOT submitted an application for the proposed upgrades to the I-70/I-35/I-29 corridor in downtown Kansas City, Missouri. The project includes construction of a bridge over the Missouri River to replace the existing "Paseo" bridge as a Design-Build project. The DA Permit was issued 14 November 2007 (FY 08).

b.) The City of Independence, Missouri submitted and application for construction of a 7-mile segment of the Little Blue Parkway. The DA Permit is scheduled for issuance in FY2009.

c) Federal Highways and MoDOT I-70 in Missouri Renovation/Replacement. NWK is a cooperating agency for the NEPA Tier I EIS for the entire 200 mile route from Kansas City to St. Louis, and for the Tier II seven "Sections of Independent Utility (SIU)" documents (EISs, EAs and Categorical Exclusion determinations).

### **Historic Properties:**

a.) Rodrock Development, Inc. applied for a Department of the Army Permit to convert approximately 30 acres on the Kenneth Smith Residence and Golf Club Factory into a residential subdivision. The Kansas City District determined that the property is eligible for listing on the National

Register of Historic Places and that the undertaking (proposed project) will result in an adverse affect. Under the Section 106 consultation process, the applicant has agreed to save the most historically significant structure (Kenneth Smith's residence) and the associated yard area. The consulting parties are currently in agreement with the proposed plan and a Memorandum of Agreement (MOA) describing the stipulations to be carried out is being finalized by the applicant. The consulting parties (Kansas State Historical Society, Kansas Preservation Alliance, National Trust for Historic Preservation, Fairway Hills Homes Association and Advisory Council on Historic Preservation) have indicated that they will sign the final MOA.

b.) With the Federal Highway Administration (FHWA) assuming the role as the lead agency for the South Lawrence Trafficway (SLT), the first amendment to the Memorandum of Agreement (MOA) concerning historic properties that will be adversely affected by construction was initiated. The proposed amendment added the FHWA as a signatory to the previously executed MOA. The process was completed and First Amendment to the MOA was issued on 31 October 2007. The FHWA and the Kansas Department of Transportation will assure that the stipulations of the MOA be carried out if the roadway is constructed. Currently the SLT project is in litigation.

c.) Horse Thief Reservoir by Pawnee Watershed District No. 81, KS. The Section 106 Memorandum of Agreement between Kansas State Historic Society (State Historic Preservation Officer), Pawnee WJD No. 81, the Osage Nation and the Corps for a National Register eligible archeological site located within the project limits was executed in early 2008 and the Department of the Army permit was executed in March 2008.

d.) Boonville Bridge of Missouri River/Osage River project, Booneville, MO. The Union Pacific Railroad (UPR) proposed to remove the former Missouri-Kansas-Texas Railroad (KATY) Bridge across the Missouri River at Booneville and to reuse the spans for a new bridge across the Osage River. The bridge is eligible for listing on the National Register of Historic Places. The United States Coast Guard (USCG) has regulatory authority over bridges across navigable waters. After much debate, the USCG concluded in April 2008 that it is the lead Federal agency for Section 106 of the National Historic Preservation Act consultation, and completed a consulting parties meeting and announced a public participation meeting for FY09. The Corps has a pending permit application for construction of staging

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areas for the removal operation and for the Osage River construction, and will rely on the lead Federal agency conclusions for Section 106 compliance.

e.) TransCanada Keystone Pipeline Project, KS and MO. As a result of the cultural and historical issues associated with this project, a Programmatic Agreement was signed by various SHPOs and Federal Agencies to address the requirements and responsibilities under Section 106 of the NHPA.

### Appeals:

a.) Administrative Appeal of Jurisdictional Determination (JD), Michael Currie, Saline County, KS. NWD Chief, Program Support Division, for the commander, found merit with the appeal and remanded the JD to NWK for reconsideration. NWD determined that the record does not adequately delineate the waterbodies due to confusion resulting from different terminology and site numbering by the USDA and the Corps in the administrative record. A reconsideration memorandum and new JD are in draft.

b.) Administrative Appeals of Jurisdictional Determination, Jay Armistead, Cole County, MO. NWD Chief, Program Support Division, for the commander, found merit with the appeal and remanded the JD to NWK for reconsideration. NWD determined that the record contains insufficient documentation to conclude that the stream on the appellant's property has a significant nexus to traditional navigable waters. Regulatory has drafted a reconsideration memorandum and new JD for decision.

c.) Administrative Appeals of Missouri Commercial Sand Dredging Permit Denial. Edward N. Rau Contractor (for permit denial) and Hermann Sand & Gravel, Inc. (for unacceptable conditions) filed administrative appeals. The administrative record was transferred to NWD and NWD has scheduled the appeals conferences for FY2009.

### Other Items:

a.) As Lead Regulatory District in the State of Missouri, NWK coordinated with MVS to prepare and issue a single response to the Federal Energy Regulatory Commission (FERC) notices and requests for comments concerning preliminary permit applications submitted by Free Flow Power Corporation (FFPC) for multiple hydrokinetic generation arrays in the Missouri River. The FERC preliminary permits would provide geographic protection from competition for the sites while Free Flow Power Corporation studies

the feasibility of constructing and operating the in-stream generation systems.

b.) NWK is working with the other districts and government agencies to 1) develop a statewide wetland mitigation and impact assessment methodology, 2) guidelines for the organization of a statewide mitigation Interagency Review Team, 3) establish criteria for application of the Nationwide Permit (NWP) 300 linear foot limit waiver provisions for NWPs 29, 39, 40, 42 and 43, 4) develop a replacement joint permit processing agreement with Missouri Department of Natural Resources (MDNR) for Section 404/401 applications, 5) establish a coordination process with MDNR for the permitting of sand and gravel mining operations in Missouri streams, and 6) continue the review and refining of the Missouri Stream Assessment method.

b.) NWK participated in the first of a series of workshops in Missouri to bring together several non-profit organizations, resource agencies and experts from different agencies to discuss current water quality issues and future concerns. Topics discussed included the importance of good water quality in the Lake of the Ozarks, current water testing programs, sediment and erosion control rules and regulations, and effective best management practices to keep certain pollutants out of the Lake.

c.) NWK, in partnership with the Natural Resources Conservation Service, conducted three training sessions on the new Great Plains Regional Supplement to the 1987 Wetland Delineation Manual. These training sessions were attended by personnel from the Natural Resources Conservation Service, Kansas Department of Wildlife and Parks and Kansas Department of Health and Environment.

d.) NWK presented information on the new mitigation regulations and the post Rapanos/Carabell guidance on Clean Water Act jurisdiction to the Midwest Chapter of the Society for Wetland Scientists.

e.) NWK provided a Regulatory briefing and updates on the March 2007 reissuance of Nationwide Permits and on the June 2007 Rapanos/Carabell jurisdictional guidance to the Eastern Chapter of the Kansas Professional Engineers Association. Approximately 40 professionals attended.

f.) NWK continues work through the evolution of the OMBIL Regulatory Module (ORM), which was first implemented in October 2006 and upgraded in the spring of 2007. During FY2008, the entry of data for jurisdictional determinations was enhanced to allow the documentation to be completed through the database.

KANSAS CITY, MO DISTRICT

**TABLE 27-A COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 2005	FY 2006	FY 2007	FY 2008	Total cost to Sep 30, 2008
1.	Missouri River, Sioux City, IA to Mouth (Rulo, NE, to Mouth) (Federal Funds)	New Work:					
		Approp.	--	--	--	--	237,942,190 <sup>1/</sup>
		Cost	--	--	--	--	237,942,190 <sup>1/</sup>
		Maint.					
		Approp.	5,432,000	4,354,000	4,774,000	5,609,000	387,499,074 <sup>2/</sup>
		Cost	5,432,000	3,589,130	5,417,426	4,805,884	286,624,514 <sup>3/</sup>
	Contributed Funds	New Work:					
		Approp.	--	--	--	--	816,190
		Cost	--	--	--	--	816,190
		Maint.					
		Approp.	--	--	--	--	22,642
		Cost	--	--	--	--	22,642
	FY08 War Supplemental	Suppl Approp.	--	--	--	2,120,000	2,120,000
		Cost	--	--	--	78,000	78,000
Consolidated Summary	New Work:						
	Approp.	--	--	--	--	238,758,380 <sup>1/</sup>	
	Cost Maint	--	--	--	--	238,758,380 <sup>1/</sup>	
	Maint.						
	Approp.	5,432,000	4,354,000	4,774,000	7,729,000	389,641,716 <sup>2/</sup>	
	Cost	5,432,000	3,589,130	5,417,426	4,883,884	286,647,156 <sup>3/</sup>	
2.	Missouri River Recovery Program IA, KS, MO, MT, NE, ND & SD	New Work:					
		Approp.	6,750,000	21,582,000	32,500,000	16,752,000	131,275,400
		Cost	6,781,183	15,861,545	17,779,444	28,863,124	122,932,114
3.	Blue River Basin Kansas City, MO (Federal Funds)	New Work:					
		Approp.	757,000	3,660,000	4,600,000	1,805,000	15,429,000
		Cost	436,378	900,318	4,573,756	2,909,685	13,415,365
		New Work:					
	Contributed Funds	Approp.	50,000	263,033	271,705	208,298	1,100,000
		Cost	18,106	82,679	59,321	118,559	522,371
	Consolidated Summary	New Work:					
		Approp.	807,000	3,923,033	4,871,705	2,013,298	16,529,000
		Cost	454,484	982,997	4,633,077	3,028,244	13,937,736

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TABLE 27-A		COST AND FINANCIAL STATEMENT					
See Section in Text	Project	Funding	FY 2005	FY 2006	FY 2007	FY 2008	Total cost to Sep 30, 2008
4.	Blue River Channel	New Work:					
	Kansas City, MO (Federal Funds)	Approp.	8,837,000	4,950,000	9,750,000	3,277,000	218,984,821
		Cost	8,570,450	4,731,890	1,620,500	7,253,940	214,324,910
	Contributed Funds	New Work:					
		Approp.	-249,241	--	--	--	9,609,831
		Cost	3,223	--	--	--	9,609,829 <sup>4/</sup>
	Consolidated Summary	New Work:					
		Approp.	8,587,759	4,950,000	9,750,000	3,277,000	228,594,652
		Cost	8,573,673	4,731,890	1,620,500	7,253,940	223,934,739 <sup>4/</sup>
5.	Clinton Lake, Wakarusa River, KS	New Work:					
		Approp.	--	--	--	--	57,415,433
		Cost	--	--	--	--	57,415,433 <sup>5/</sup>
		Maint.					
		Approp.	1,885,000	1,747,000	1,849,000	2,804,000	44,732,227
		Cost	1,833,821	1,798,179	1,849,000	2,343,654	44,271,881
	FY08 War Supplemental	Suppl Approp	--	--	--	40,000	40,000
		Cost	--	--	--	--	--
6.	Harlan County Lake, Republican River, NE	New Work:					
		Approp.	--	--	--	--	47,111,926
		Cost	--	--	--	--	47,111,926 <sup>6/</sup>
		Maint.					
		Approp.	2,266,000	1,957,000	2,911,000	2,046,000	53,566,102
		Cost	2,265,500	1,909,649	1,798,442	2,137,191	52,497,384
		Rehab.					
		Approp.	--	--	--	--	1,017,623
		Cost	--	--	--	--	1,017,623
7.	Hillsdale Lake, Big Bull Creek, KS	New Work:					
		Approp.	--	--	--	--	64,161,400
		Cost	--	--	--	--	64,161,400
		Maint.					
		Approp.	749,000	643,000	694,000	806,000	20,060,127
		Cost	749,000	643,000	694,000	803,684	20,057,811
8.	Kanopolis Lake, Smoky Hill River, KS	New Work:					
		Approp.	--	--	--	--	12,577,227
		Cost	--	--	--	--	12,577,227 <sup>7/</sup>
		Maint.					
		Approp.	1,600,000	1,494,000	1,534,000	1,268,000	47,865,497
		Cost	1,599,000	1,495,000	1,526,107	1,222,863	47,812,467
	FY08 War Supplemental	Suppl Approp.	--	--	--	60,000	60,000
		Cost	--	--	--	--	--

KANSAS CITY, MO DISTRICT

**TABLE 27-A COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 2005	FY 2006	FY 2007	FY 2008	Total cost to Sep 30, 2008	
9.	Little Blue River Lakes, Little Blue River, MO	New Work:						
		Approp.	--	--	--	--	140,809,200	
		Cost	--	--	--	--	140,809,200 <sup>8/</sup>	
		Maint.						
		Approp.	782,000	668,000	704,000	985,000	16,893,179	
		Cost	765,500	693,500	704,000	982,624	16,890,803	
10.	Long Branch Lake Little Chariton River, MO	New Work:						
		Approp.	--	--	--	--	18,216,177	
		Cost	--	--	--	--	18,216,177	
		Maint.						
			Approp.	908,000	829,000	827,000	958,000	18,919,212
			Cost	908,000	829,000	827,000	894,534	18,855,746
	Contributed Funds	New Work:						
		Approp.	--	--	--	--	1,139,455	
			Cost	--	--	--	1,139,332 <sup>9/</sup>	
	FY08 War Supplemental	Suppl Approp	--	--	--	65,000	65,000	
Cost		--	--	--	--	--		
Consolidated Summary	New Work:							
	Approp.	908,000	829,000	827,000	1,023,000	20,123,667		
	Cost	908,000	829,000	827,000	894,534	19,955,078		
11.	Melvern Lake Osage (Marais des Cygnes) River, KS	New Work:						
		Approp.	--	--	--	--	37,436,530	
		Cost	--	--	--	--	37,436,530	
		Maint.						
			Approp.	2,080,000	1,856,000	2,257,000	1,941,000	49,866,629
			Cost	2,079,500	1,856,500	2,257,000	1,919,125	49,844,754
FY08 War Supplemental	Suppl Approp	--	--	--	80,000	80,000		
	Cost	--	--	--	--	--		
12.	Milford Lake, Republican River, KS	New Work:						
		Approp.	--	--	--	--	49,566,492	
		Cost	--	--	--	--	49,566,492	
		Maint.						
		Approp.	2,653,000	1,860,000	1,934,000	2,376,000	61,680,270	
		Cost	2,445,453	2,067,547	1,934,000	2,368,000	61,671,820	

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**TABLE 27-A COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 2005	FY 2006	FY 2007	FY 2008	Total cost to Sep 30, 2008
13.	Missouri River Levee System IA, NE, KS and MO (Federal Funds)	New Work: Approp.	2,365,000	528,000	2,500,000	93,000	112,325,730
		Cost	2,375,890	533,744	861,944	1,195,212	111,761,800
	Contributed Funds	New Work: Approp.	2,206,000	--	--	--	21,210,000
		Cost	2,365,062	90,548	17,074	--	21,190,272 <sup>10/</sup>
	Consolidated Summary	New Work: Approp.	4,571,000	528,000	2,500,000	93,000	133,535,730
		Cost	4,740,952	624,292	897,018	1,195,212	132,952,072 <sup>10/</sup>
14.	Perry Lake, Delaware RiverKS	New Work: Approp.	--	--	--	--	49,095,918
		Cost	--	--	--	--	49,095,918
		Maint. Approp.	2,224,000	1,922,000	2,198,000	2,083,000	62,221,372
		Cost	2,170,500	1,975,500	2,198,000	2,021,784	62,160,156
	FY08 War Supplemental	Suppl Approp	--	--	--	90,000	90,000
		Cost	--	--	--	--	--
15.	Pomme de Terre Lake, Pomme de Terre River, MO	New Work: Approp.	--	--	--	--	17,365,452
		Cost	--	--	--	--	17,365,452
		Maint. Approp.	2,449,000	2,000,000	2,206,000	2,005,000	57,024,582
		Cost	2,254,500	2,194,500	2,206,000	2,005,000	57,024,582
	FY08 War Supplemental	Suppl Approp	--	--	--	75,000	75,000
		Cost	--	--	--	3,688	3,688
16.	Pomona Lake, One Hundred Ten Mile Creek, KS	New Work: Approp.	--	--	--	--	14,003,238
		Cost	--	--	--	--	14,003,238
		Maint.Approp.	1,942,000	1,745,000	1,900,000	2,011,000	51,525,028
		Cost	1,941,000	1,746,000	1,900,000	2,003,961	51,517,988
	FY08 War Supplemental	Suppl Approp	--	--	--	140,000	140,000
		Cost	--	--	--	--	--

KANSAS CITY, MO DISTRICT

**TABLE 27-A COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 2005	FY 2006	FY 2007	FY 2008	Total cost to Sep 30, 2008
17.	Rathbun Lake, Chariton River, IA	New Work: Approp. Cost	-- --	-- --			27,622,159 27,622,159
		Maint.Approp. Cost	2,781,500 2,728,000	2,068,000 2,121,500	2,292,000 2,292,000	2,837,000 2,244,577	65,644,293 65,051,870
	FY08 War Supplemental	Suppl Approp Cost	-- --	-- --	-- --	1,720,000 61,530	1,720,000 61,630
19.	Smithville Lake, Little Platte River, MO	New Work: Approp. Cost	-- --	-- --	-- --		87,685,314 87,685,314
		Maint.Approp. Cost	1,238,500 1,184,500	1,055,000 1,109,000	1,116,000 1,116,000	1,273,000 1,231,298	28,347,304 28,305,602
	FY08 War Supplemental	Suppl Approp Cost	-- --	-- --	-- --	150,000 --	150,000 --
20.	Turkey Creek Turkey Creek Basin, KS & MO (Federal Funds) Contributed Funds	New Work: Approp. Cost	172,000 206,649	2,970,000 1,028,662	5,500,000 5,694,988	8,856,000 6,011,282	17,884,000 13,289,136
		New Work: Approp. Cost	-- --	2,900,000 0	0 228,700	750,000 1,682,111	3,650,000 1,910,811
	Consolidated Summary	New Work: Approp. Cost	172,000 206,649	5,870,000 1,028,662	5,500,000 5,923,688	9,606,000 7,693,392	21,534,000 15,199,946
21.	Tuttle Creek Lake Big Blue River, KS	New Work: Approp. Cost	8,997,000 6,858,264	26,730,000 22,474,878	36,000,000 20,828,028	28,044,000 43,847,037	187,455,079 <sup>111</sup> 181,643,593
		Maint.Approp. Cost	1,998,000 2,047,821	1,947,000 1,965,800	1,866,000 1,829,776	2,226,000 2,117,834	64,387,462 64,235,297
	FY08 War Supplemental	Suppl Approp Cost	-- --	-- --	-- --	125,000 --	125,000 --
22.	Wilson Lake, Saline River, KS	New Work: Approp. Cost	-- --	-- --	-- --	-- --	20,463,367 20,463,367
		Maint.Approp. Cost	2,485,000 2,794,000	1,426,000 1,427,000	1,497,000 1,497,000	1,542,000 1,542,000	47,380,544 47,380,544

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

TABLE 27-A		COST AND FINANCIAL STATEMENT					
See Section in Text	Project	Funding	FY 2005	FY 2006	FY 2007	FY 2008	Total cost to Sep 30, 2008
23.	Scheduling Flood Control Reservoir Operations	Maint. Approp.	286,000	284,000	275,000	302,000	59,537,569
		Cost	286,000	284,000	275,000	302,000	59,537,569
24.	Inspection of Completed Flood Control Projects	Maint. Approp.	493,000	483,000	620,000	502,000	14,003,731
		Cost	493,000	483,000	620,000	502,000	14,003,731
25.	Harry S. Truman Dam & Reservoir Osage River, MO	New Work: Approp.	--	--	--	--	550,909,000
		Cost	--	--	--	--	550,908,965
		Maint. Approp.	9,524,000	6,791,000	8,355,000	8,676,000	195,722,819
		Cost	7,983,217	8,122,415	7,892,148	7,999,037	194,373,636
Contributed Funds							
		Maint. Approp	460,000	2,453,998	179,113	220,000	6,944,984 <sup>12/</sup>
		Cost	594,377	75,571	385,869	160,085	3,743,471
	FY08 War Supplemental	Suppl Approp.	--	--	--	105,000	105,000
		Cost	--	--	--	29,643	29,643
Consolidated Summary		New Work: Approp.	--	--	--	--	550,909,000
		Cost	--	--	--	--	550,908,965
		Maint. Approp	9,984,000	9,244,998	8,534,113	8,896,000	202,772,803
		Cost	8,577,595	8,197,986	8,278,017	8,159,122	198,146,750
26.	Stockton Lake, Sac River, MO	New Work: Approp.	--	--	--	--	79,975,357
		Cost	--	--	--	--	79,975,357
		Maint. Approp.	5,375,000	4,197,000	3,773,000	3,523,039	98,750,542
		Cost	5,096,835	4,409,152	3,874,012	3,482,601	98,695,103
Contributed Funds							
		Maint. Approp	100,000	-32,584	--	45,000	672,464 <sup>12/</sup>
		Cost	209,407	60,656	--	--	490,111
	FY08 War Supplemental	Suppl Approp.	--	--	--	357,000	357,000
		Cost	--	--	--	5,891	5,891

KANSAS CITY, MO DISTRICT

**TABLE 27-A COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 2005	FY 2006	FY 2007	FY 2008	Total cost to Sep 30, 2008
	Consolidated Summary	New Work: Approp.	--				104,181,950
		Cost	--				104,181,950
		Maint. Approp	5,475,000	4,164,416	3,773,000	3,925,039	99,152,542
		Cost	5,306,242	4,469,808	3,874,012	3,488,492	98,700,994
27.	Mississippi River Main Stem Model Development	Maint. Approp.	--	--	--	--	90,000
		Cost	--	--	--	--	90,000
30.	Catastrophic Disaster Response Planning	Maint. Approp.	--	62,431	24,290	14,961	4,255,113
		Cost	--	62,431	24,290	14,961	4,255,113
31.	Missouri River Basin Collaborative Effort	New Work: Approp.	--	--	--	--	508,850
		Cost	--	--	--	--	508,850
	Anti-Terrorism/Force Protection	New Work: Approp.	--	--	--	--	792,336
		Cost	--	--	3,419	--	792,336

1/ Includes \$8,665,595 cost of new work for previous project.

2/ Includes \$738,109 for maintenance of previous project and correction of FY03 total.

3/ Includes funds appropriated under FY 1993 Emergency Flood Supplemental Appropriation, 96 3/7 3123; Missouri River, Rulo NE to Mouth, \$40,000; and Milford Lake, KS, \$40,000

4/ Exclude \$35,296 non-Federal contribution not required for authorized Blue River Channel project (Blue River Channel Mobay Chemical (1984-1987)

5/ Excludes \$118,805 non-Federal contribution not required for authorized Clinton Lake project (1973-1979).

6/ Excludes cost of materials furnished Harlan County project without charge in the amount of \$24,198.

7/ Excludes cost of materials furnished Kanopolis Lake project without charge in the amount of \$7,885.

8/ Excludes \$2,732,554 thru FY 1990 non-Federal contributions not required for authorized Little Blue Lakes project.

9/ Corrected total. Excludes \$42,149 interest during construction at Long Branch Lake project, and \$500,000 work-in-kind.

10/ Corps is relocating utilities requested by sponsor, City of Riverside, MO, that is required for the authorized project.

11/ Dam Safety Assurance.

12/ Contributed funds are from City of Jonesboro, Ark; contributions began in FY2001

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<b>TABLE 27-B</b>		<b>AUTHORIZING LEGISLATION</b>	
<b>See Section in Text</b>	<b>Date of Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
1.		<b>MISSOURI RIVER, SIOUX CITY, IA, TO MOUTH (RULO, NE, TO MOUTH)</b>	
	Jul 25, 1912	Project adopted for securing a permanent navigable channel of 6-foot depth from Kansas City, MO to mouth.	H. Doc. 1287, 61 <sup>st</sup> Cong., (contains latest published map). P.L. 241-62
	Aug 8, 1917	Fixed upstream limit of improvement at upper end of Quindaro Bend (274.8 miles from mouth) and provided for dredging.	H. Doc. 463, 64 <sup>th</sup> Cong., (contains latest published map).
	Mar 3, 1925	For a minimum width of 200 feet and depth of 6 feet, with a reasonable additional width around bends, mouth to upper end of Quindaro Bend, Kansas City, MO.	P.L. 585-68
	Jan 12, 1927	Appropriation of \$12 million authorized for securing a 6-foot channel depth between Kansas City, MO, Quindaro Bend, and Sioux City, IA.	H. Doc. 1120, 60 <sup>th</sup> Cong., P.L. 560-70
	Jul 3, 1930	Appropriation of \$15 million additional authorized; Additional allotments totaling \$29,153,108 were made by Public Works Administration under provisions of National Industrial Recovery Act of 1933, and \$9,669,791 allotted under provisions of Emergency Relief Appropriation Act of 1935.	P.L. 67-73 H.R. 11781 P.L. 520-71
	Aug 30, 1935	Completion of improvement from mouth to Sioux City, IA.	H. Doc. 238, 73d Cong., (contains latest published map). P.L. 409-73
	Mar 2, 1945	Securing a navigable channel of 9-foot depth and a minimum width of 300 feet.	H. Doc. 214, 76 <sup>th</sup> Cong., (contains latest published map). P.L. 14-79
2.		<b>MISSOURI RIVER RECOVERY, IA, KS, MO, MT, NE, ND &amp; SD</b>	
	Nov 17, 1986	Project for mitigation of fish and wildlife losses Missouri River Bank Stabilization and Navigation Project, MO, KS, IA & NE: April 24, 1984, Report of Chief of Engineers, authorized at estimated cost of \$51,900,000.	Title VI, Section 601(a), Water Resources Development Act of 1986, P.L. 99-662.
	Aug 17, 1999	The above act is modified to increase by 118,650 acres the amount of land and interest in land to be acquired for the project.	Title III, Section 334, Water Resources Development Act of 1999, P.L. 106-53
	8 Nov 2007	Act is amended by adding at the end the following: "The Secretary may carry out any recovery or mitigation activities in the upper basin of the Missouri River, including the States of Montana, Nebraska, North Dakota, and South Dakota, using funds made available under this paragraph in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) and consistent with the project purposes of the Missouri River Mainstem System as authorized by section 10 of the Flood Control Act of December 22, 1944 (58 Stat. 897)."	Title III, Section 3176 (a) and (b), Water Resources Development Act of 2007, P.L. 110-114.

KANSAS CITY, MO DISTRICT

<b>TABLE 27-B (Continued)</b>		<b>AUTHORIZING LEGISLATION</b>	
<b>See Section in Text</b>	<b>Date of Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
	8 Nov 2007	<p>This section(a) provides that the Secretary (Army), in consultation with MRRIC (see below), shall conduct a study of the Missouri River and its tributaries to determine action to: (1) mitigate losses of aquatic and terrestrial habitat; (2) recover ESA listed Species; and, (3) restore the ecosystem to prevent further specie declines. The study is to be funded out of amounts appropriated to carry out the Missouri River recovery and mitigation plan authorized by 601(a), WRDA 1986. (b) requires the Secretary to establish, within 6 months, a committee known as the Missouri River Recovery Implementation Committee (MRRIC). This committee shall include representations from: Federal agencies; states, other entities including, water management and fish and wildlife agencies, Indian Tribes, navigation, irrigation, flood control, fish, wildlife, conservation, recreation and power supply interests. (b) (3) provides that the duties of MRRIC are to (1) provide guidance to the Secretary, any affected Federal agency, State or Indian tribe regarding the Study referred to in Section 5018(a) and (2) provide guidance to the Secretary regarding the Missouri River recovery and mitigation plan which includes recommendations related to: changes to the implementation strategy from the use of adaptive management; coordination of the development of consistent projects, activities, and priorities for the Missouri River recovery and mitigation plan; exchange of information relating to programs, projects and activities of agencies and entities on MRRIC to promote the goals of recovery and mitigation; establishment of work groups to carry out the duties MRRIC including public policy and scientific issues; facilitating the resolution of interagency and intergovernmental conflicts between the entities on MRRIC; coordination of scientific and other research; annual preparation of work plan and budget requests. (b) (4) states that the members of MRRIC in providing recommendation and guidance may include dissenting opinions. (b) (5) provides that the members of MRRIC shall not receive compensation from the Secretary in carrying out their duties and will not be eligible for Federal reimbursement of travel expenses. (c) states that the Federal Advisory Committee Act (FACA) shall not apply to the Committee.</p>	<p>Title V, Section 5018 (a), (b), and (c) Water Resources Development Act of 2007, P.L. 110-114.</p>

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

<b>TABLE 27-B (Continued)</b>		<b>AUTHORIZING LEGISLATION</b>	
<b>See Section in Text</b>	<b>Date of Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
3.	Oct 12, 1996	<b>BLUE RIVER BASIN, KANSAS CITY, MO</b> Project for flood control along the left bank of the Blue River from U.S. Highway 71 upstream for a distance of about 1 1/4 miles in Jackson County, MO, to the Bannister Federal Complex levee: Report of the Chief of Engineers, dated Sep 5, 1996, at a total cost of \$17,082,000, with an estimated Federal cost of \$12,043,000 and an estimated non-Federal cost of \$5,039,000.	Title I, Section 101(a), Water Resources Development Act of 1996, P.L. 104-303
4.	Dec 31, 1970	<b>BLUE RIVER CHANNEL, KANSAS CITY, MO</b> Adopted plan for Blue River Basin and authorized \$40,000,000 for initiation and partial accomplishment.	H. Doc. 91-332, 91 <sup>st</sup> Cong.
5.	Oct 23, 1962	<b>CLINTON LAKE, WAKARUSA RIVER, KS</b> The project for the Kansas River, KS, NE and CO is authorized at an estimated cost of \$88,070,000.	1962 Flood Control Act, H. Doc 578, 87 <sup>th</sup> Cong. P.L. 87-874.
6.	Jun 28, 1938	<b>HARLAN COUNTY LAKE, REPUBLICAN, NE</b> Adopted general comprehensive plan for Missouri River Basin and authorized \$9 million for initiation and partial accomplishment.	Flood Control Committee Doc. 1, 75 <sup>th</sup> Cong., P.L. 761.
	Aug 18, 1941	Modified general comprehensive plan to include Harlan County Dam and Reservoir on Republican River, NE, other supplemental flood control works on upper Republican River, and authorized \$7 million additional expenditure.	H. Doc. 842, 76 <sup>th</sup> Cong.; P.L. 77-228
	Dec 22, 1944	Expanded general comprehensive plan for Missouri River Basin and authorized \$200 million additional expenditure.	H. Doc. 475 and S. Docs. 191 and 247, 78 <sup>th</sup> Cong., P.L. 534.
7.	Sep 3, 1954	<b>HILLSDALE LAKE, BIG BULL CREEK, KS</b> The comprehensive plan for the Missouri River Basin, Approved by the Act of June 28, 1938, and as amended and supplemented is further modified to include the project for flood protection on the Kansas River and tributaries. It is further modified to include the project for flood protection on the Osage River and tributaries.	P.L. 780, 83 <sup>rd</sup> Cong., H. Doc. 549, 81 <sup>st</sup> Cong.

KANSAS CITY, MO DISTRICT

<b>TABLE 27-B (Continued)</b>		<b>AUTHORIZING LEGISLATION</b>	
<b>See Section in Text</b>	<b>Date of Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
8.		<b>KANOPOLIS LAKE, SMOKY HILL RIVER, KS</b>	
	June 28, 1938	Adopted general comprehensive plan for Missouri River Basin and authorized \$9 million for initiation and partial accomplishment.	Flood Control Committee Doc. 1, 7 <sup>th</sup> Cong., P.L. 761.
	Aug 18, 1941	Modified general comprehensive plan to include Harlan County Dam and Reservoir on Republican River, NE, other supplemental flood control works on upper Republican River, and authorized \$7 million additional expenditure.	H. Doc. 842, 76 <sup>th</sup> Cong.; P.L. 77-228
	Dec 22, 1944	Expanded general comprehensive plan for Missouri River Basin and authorized \$200 million additional expenditure.	H. Doc. 475 and S. Docs. 191 and 247, 78 <sup>th</sup> Cong., P.L. 534.
9.		<b>LITTLE BLUE RIVER LAKES, MO</b>	
	Aug 13, 1968	Additional \$38 million for prosecution of general comprehensive plan for Missouri River Basin	P.L. 90-483, H. Doc. 169, 90 <sup>th</sup> Cong.
10.		<b>LONG BRANCH LAKE, LITTLE CHARITON RIVER, MO</b>	
	Oct 27, 1965	The project for flood protection on the Chariton and Little Chariton Rivers and tributaries, IA and MO, is authorized at an estimated cost of \$9,167,000.	1965 Flood Control Act P.L. 89-298, H. Doc. 238, 89 <sup>th</sup> Cong
11.		<b>MELVERN LAKE, MARAIS DES CYGNES (OSAGE) RIVER, KS</b>	
	Sep 3, 1954	Expanded general comprehensive plan for Missouri River Basin and authorized \$217,710,000 for additional expenditure.	H. Docs. 642, 549 1/ and 561, 81 <sup>st</sup> Cong.; 83 <sup>rd</sup> Cong., P.L. 780
12.		<b>MILFORD LAKE, REPUBLICAN RIVER, KS</b>	
	Sep 3, 1954	Expanded general comprehensive plan for Missouri River Basin and authorized \$217,710,000 for additional expenditure.	H. Doc. 549 1/, 81 <sup>st</sup> Cong.; P.L. 780
13.		<b>MISSOURI RIVER LEVEE SYSTEM, IA, NE, KS AND MO</b>	
	Aug 18, 1941	Levees along both sides of river from Sioux City to Kansas City.	H. Doc 821, 76 <sup>th</sup> Cong. P.L. 77-228
	Dec 22, 1944	Extended project from Kansas City to the mouth and Provided for increased protection.	H. Doc 475 and S. Docs. 191 and 247, 78 <sup>th</sup> Cong.
14.		<b>PERRY LAKE, DELAWARE RIVER, KS</b>	
	Sep 3, 1954	Expanded general comprehensive plan for Missouri River Basin and authorized \$217,710,000 additional expenditure.	H. Docs. 642, 549 1/, and 561, 81 <sup>st</sup> Cong.; 83 <sup>rd</sup> Cong., P.L. 780

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

<b>TABLE 27-B (Continued)</b>		<b>AUTHORIZING LEGISLATION</b>	
<b>See Section in Text</b>	<b>Date of Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
15.		<b>PICK-SLOAN MISSOURI BASIN PROGRAM (KANSAS CITY DISTRICT)</b>	
	Jun 28, 1938	Adopted general comprehensive plan for Missouri River Basin and authorized \$9 million for initiation and partial accomplishment.	Flood Control Committee Doc. 1, 75 <sup>th</sup> Cong.
	Aug 18, 1941	Modified general comprehensive plan to include Harlan County Dam and Reservoir on Republican River, NE, other supplemental flood control works on upper Republican River, and authorized \$7 million additional expenditure.	H. Doc. 842, 76 <sup>th</sup> Cong.; P.L. 77-228
	Dec 22, 1944	Expanded general comprehensive plan for Missouri River and authorized \$200 million additional expenditure.	H. Doc. 475 and S. Docs. 191 and 247, 78 <sup>th</sup> Cong.
	Jul 24, 1946	Additional expenditure of \$150 million for prosecution of General comprehensive plan for Missouri River Basin.	
	May 17, 1950	Additional expenditure of \$250 million for prosecution of General comprehensive plan for Missouri River Basin.	
	Sep 3, 1954	Expanded general comprehensive plan for Missouri River Basin and authorized \$217,710,000 for additional expenditure.	H. Docs. 642 and 549 1/ 81 <sup>st</sup> Cong.; 83 <sup>rd</sup> Cong., P.L. 780
	May 2, 1956	Modified general comprehensive plan for Missouri River Basin by deletion of construction of Red Willow Dam and Reservoir, NE, and addition of construction of Wilson Dam and Reservoir, KS.	
	Jul 3, 1958	Expanded general comprehensive plan for Missouri River Basin and authorized \$200 million additional expenditure.	H. Doc. 409, 84 <sup>th</sup> Cong.
	Jul 14, 1960	Additional expenditure of \$207 million for prosecution of General comprehensive plan for Missouri River Basin.	
	Dec 30, 1963	Additional expenditure of \$80 million for prosecution of General comprehensive plan for Missouri River Basin and modified plan to include bank protection or rectification works below Garrison Dam.	
	Jun 18, 1965	Additional \$116 million for prosecution of general comprehensive plan for Missouri River Basin.	
	May 12, 1967	Additional \$20 million for prosecution of general comprehensive plan for Missouri River Basin.	
	Aug 13, 1968	Additional \$38 million for prosecution of general comprehensive plan for Missouri River Basin.	
	Dec 24, 1970	Change comprehensive plan name to Pick-Sloan Missouri River Basin Program.	S. Doc. 91-1100, 91 <sup>st</sup> Cong.
	Dec 23, 1971	Additional \$101,000,000 for prosecution of general comprehensive plan for Pick-Sloan Missouri River Basin Program.	S. Doc. 92-222, 92 <sup>nd</sup> Cong.
	Mar 7, 1974	Additional \$72,000,000 for prosecution of general comprehensive plan for Pick-Sloan Missouri River Basin Program.	

KANSAS CITY, MO DISTRICT

<b>TABLE 27-B (Continued)</b>		<b>AUTHORIZING LEGISLATION</b>	
<b>See Section in Text</b>	<b>Date of Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
16.		<b>POMME DE TERRE LAKE, POMME DE TERRE RIVER, MO</b>	
	Jun 28, 1938	Adopted general comprehensive plan for Missouri River Basin and authorized \$9 million for initiation and partial Accomplishment.	Flood Control Committee Doc. 1, 75 <sup>th</sup> Cong., P.L. 761.
	Dec 22, 1944	Expanded general comprehensive plan for Missouri River Basin and authorized \$200 million additional expenditure.	H. Doc. 475 and S. Docs. 191 and 247, 78 <sup>th</sup> Cong., P.L. 534.
	Sep 3, 1954	Expanded general comprehensive plan for Missouri River Basin and authorized \$217,710,000 additional expenditure.	H. Doc. 642, 549 <u>1</u> /, and 561, 81 <sup>st</sup> Cong.; 83 <sup>rd</sup> Cong., P.L. 780.
17.		<b>POMONA LAKE, ONE HUNDRED TEN MILE CREEK, KS</b>	
	Sep 3, 1954	Expanded general comprehensive plan for Missouri River Basin and authorized \$217,710,000 additional expenditure.	H. Doc. 549 <u>1</u> /, 561, 81 <sup>st</sup> Cong.; 83 <sup>rd</sup> Cong., P.L. 780
18.		<b>RATHBUN LAKE, CHARITON RIVER, IA</b>	
	Sep 3, 1954	Expanded general comprehensive plan for Missouri River Basin and authorized \$217,710,000 additional expenditure.	H. Doc. 561, 81 <sup>st</sup> Cong., 83 <sup>rd</sup> Cong., P.L. 780
19.		<b>SMITHVILLE LAKE, LITTLE PLATTE RIVER, MO</b>	
	Oct 27, 1965	The project for flood protection on the Platte River and tributaries, MO and IA, is authorized at an estimated cost of \$26,889,000.	1965 Flood Control Act, P.L. 89-298 (H. Doc. 262, 89 <sup>th</sup> Cong.)
20.		<b>TURKEY CREEK BASIN, KS &amp; MO</b>	
	Aug 17, 1999	Project for flood control at the lower reaches of Turkey Creek Basin in Kansas City, KS and Kansas City, MO. Report of the Chief of Engineers dated April 21, 1999, at a total cost of \$42,875,000, with an estimated Federal cost of \$25,596,000 and an estimated non-Federal cost of \$17,279,000.	Title I Section 101(a) Water Resources Development Act of 1999, P.L. 106-53
	Feb 20, 2003	Authorizing to construct the project in accordance with the plans and subject conditions, recommended in a final report of the Chief of Engineers completed by December 31, 2003 at a total project cost of \$73,380,000 with estimated Federal cost of \$45,304,000 and estimated non-Federal cost of \$28,076,000	Title I Section 101(a) Water Resources Development Act of 2003, P.L. 108-7, Sec. 123

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

<b>TABLE 27-B (Continued)</b>		<b>AUTHORIZING LEGISLATION</b>	
<b>See Section in Text</b>	<b>Date of Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
21.		<b>TUTTLE CREEK LAKE, BIG BLUE RIVER, KS</b>	
	Jun 28, 1938	Adopted general comprehensive plan for Missouri River Basin and authorized \$9 million for initiation and partial accomplishment.	Flood Control Committee Doc. 1, 75 <sup>th</sup> Cong., P.L. 761.
	Aug 18, 1941	Modified general comprehensive plan to include Harlan County Dam and Reservoir on Republican River, NE, other supplemental flood control works on upper Republican River, and authorized \$7 million additional expenditure.	H. Doc. 842, 76 <sup>th</sup> Cong.; P.L. 77-228
	Dec 22, 1944	Expanded general comprehensive plan for Missouri River Basin and authorized \$200 million additional expenditure.	H. Doc. 475 and S. Docs. 191 & 247, 78 <sup>th</sup> Cong., P.L. 645
	WRDA 1986	Dam Safety Assurance Program, (DSAP)- On Jan 13 <sup>th</sup> , 2003, Dwight Beranke, Directorate of Civil Works, HQUSACE, signed Record of Decision on the Evaluation Report and Environmental Impact Statement for Tuttle Creek ground modification project. ASA for Civil Works and/or Congressional authorization was not required for any documents associated with the DSAP.	WRDA 1986, Sec 1203 P.L. 99-662
22.		<b>WILSON LAKE, SALINE RIVER, KS</b>	
	Dec 22, 1944	Expanded general comprehensive plan for Missouri River Basin and authorized \$200 million additional expenditure.	H. Doc. 475 and S. Docs. 191 & 247, 78 <sup>th</sup> Cong., P.L. 534
	Jul 14, 1960 <u>2/</u>	Additional expenditure of \$207 million for prosecution of general comprehensive plan for Missouri River Basin	S. Doc. 96, 86 <sup>th</sup> Cong., P.L. 645
23.		<b>HARRY S. TRUMAN DAM AND RESERVOIR, OSAGE RIVER, MO</b>	
	Sep 3, 1954	Expanded general comprehensive plan for Missouri River Basin and authorized \$217,710,000 additional expenditure.	H. Doc. 549 <u>1/</u> , 81 <sup>st</sup> Cong.; 83 <sup>rd</sup> Cong., P.L. 780
	Oct 23, 1962	The Kaysinger Bluff Reservoir is hereby modified in accordance with recommendations of the Chief of Engineers in H. Doc. 578, 87 <sup>th</sup> Cong., at an estimated additional cost of \$43,245,000; provided, that nothing in this Act shall be construed as authorizing the acquisition of additional lands for the establishment of a national wildlife refuge at the reservoir.	1962 Flood Control Act, H. Doc. 578, 87 <sup>th</sup> Cong., P.L. 87-874
24.		<b>STOCKTON LAKE, SAC RIVER, MO</b>	
	Sep 3, 1954	Expanded general comprehensive plan for Missouri River Basin and authorized \$217,710,000 additional expenditure.	H. Doc. 549 <u>1/</u> , 81 <sup>st</sup> Cong.; 83 <sup>rd</sup> Cong., P.L. 780

1/ Contains latest published maps of Missouri River

2/ Report of Chief of Engineers on justification of Wilson Dam and Reservoir, submitted in compliance with Public Law 505, 84<sup>th</sup> Congress, published as Senate Document 96, 86<sup>th</sup> Congress, was approved July 14, 1960 (Public Law 645).

KANSAS CITY, MO DISTRICT

**TABLE 27-C OTHER AUTHORIZED NAVIGATION PROJECTS**

Project	Status	For Last Full Report See Annual Report For	Cost to September 2008	
			Construction	Operation and Maintenance
Fort Leavenworth Bridge removal	Complete	1965	270,393	--
Gasconade River, MO <sup>1/</sup> <sub>2/</sub>	Complete	1931	139,003	85,077

<sup>1/</sup> Improvement, adequate for existing needs. Project for maintenance only. Curtailment of project in H. Doc. 467, 69<sup>th</sup> Congr.

<sup>2/</sup> Inactive portion of project deauthorized Jan 1, 1990, in accordance with Section 1001(b)(1) of Water Resources Development Act (WRDA) of 1986 (P.L. 99-662).

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 27-E OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Project	Status	For Last Full Report See Annual Report For	Cost to September 2008	
			Construction	Operation and Maintenance
Abilene, KS	Completed	1961	1,099,350	--
Atchison, KS	Completed	1973	4,099,590	--
Barnard, KS <sup>1/</sup>	Completed	--	127,860	--
Bartley, NE	Completed	1953	118,269	--
Bedford, East Fork, 102 River, IA <sup>1/</sup>	Completed	1974	652,414	--
Big Blue river, Seward, NE <sup>1/</sup>	Completed	--	126,887	--
Big Stranger Creek, KS <sup>1/</sup>	Completed	--	337,131	--
Blue River Basin, Overland Park KS Indian Creek Channel Modification <sup>1/</sup>	Completed	1994	269,288 <sup>2/</sup>	--
Chariton-Little Chariton Basin, MO (1965 Act) <sup>3/</sup>	Completed	1977	692,706 <sup>3/</sup>	--
Chariton River, MO (1944 Act)	Completed	1973	8,052,990	--
Elk Creek, Clyde, KS <sup>1/</sup>	Completed	1984	989,015	--
Fairbury, Little Blue River, NE	Completed	1973	726,966	--
Frankfort, Black Vermillion River, KS	Completed	1966	1,271,025	--
Gypsum, Gypsum Creek, KS <sup>1/</sup>	Completed	1984	2,782,793 <sup>4/</sup>	--
Indianola, NE	Completed	1950	67,275	--
Kansas City, Kansas River, KS (62 Mod)	Completed	1984	25,010,500 <sup>5/</sup>	--
Kansas Citys on MO and KS Rivers, MO and KS	Completed	1980	42,434,197 <sup>6/</sup>	--
Lawrence, Kansas River, KS	Completed	1985	8,773,488 <sup>7/</sup>	--
Little Blue river Channel Improvement, Little Blue River, MO	Completed	1989	25,530,083	--
Manhattan, Kansas River, KS	Completed	1967	2,488,585	--
Missouri River at New Haven, MO (Sec 212, 1950 Act)	Completed	--	139,883	--
Osawatomie, Pottawatomie Creek, KS	Completed	1973	2,036,624	--
Ottawa, Osage, (Marais des Cygnes) River, KS	Completed	1966	4,462,661	--
Perry Lake Area (Road Improvements), KS	Completed	1982	5,315,168	--
Rathbun Lake Fish Hatchery	Completed	1975	700,000	--
Salina, Smoky Hill River, KS	Completed	1967	3,878,668	--
Seward, NE <sup>1/</sup>	Completed	--	126,887	--
Stonehouse Creek, Jefferson Co., KS <sup>1/</sup>	Completed	1972	246,995	--
Topeka, Kansas River, KS	Completed	1974	21,174,593	--
Trimble Wildlife area, Smithville Lake, MO	Completed	1990	1,570,000	--

<sup>1/</sup> Authorized by the Chief of Engineers under Section 205, Public Law 858, 80<sup>th</sup> Congress, as amended.

<sup>2/</sup> Required non-Federal contributions \$129,680.

<sup>3/</sup> Inactive units Little Chariton River (East and Middle Fork) and Mussel Fork were deauthorized Jan 1, 1990, by Section 1001(b)(1) of the Water Resources Development Act of 1986, P.L. 99-662. Construction cost includes \$481,106 cost of completed Shoal Creek Unit and \$211,600 cost of deauthorized Little Chariton River and Mussel Fork units.

<sup>4/</sup> Includes \$130,841 non-Federal contributions.

<sup>5/</sup> Inactive units Kansas Avenue Bridge and Approach, and Lower Argentine Units were deauthorized July 9, 1995, in accordance with Section 1001(b)(2) of WRDA of 1986, P.L. 99-662. Construction cost above includes \$67,500 for deauthorized Bridge and Approach Unit; does not include \$1,181,000 non-Federal Contributions.

<sup>6/</sup> Includes \$619,787 non-Federal contributions for work desired by local interests, but not required under the project. The project as a whole is complete except for Turkey Creek facilities in Central Industrial District Unit.

<sup>7/</sup> Includes \$153,377 non-Federal contributions.

KANSAS CITY, MO DISTRICT

<b>TABLE 27-G</b>		<b>DEAUTHORIZED PROJECTS</b>			
<b>Project</b>	<b>For Last Full Report See Annual Report For</b>	<b>Date and Authority</b>	<b>Federal Funds Expended</b>	<b>Contributed Funds Expended</b>	<b>Date Deauthorized</b>
Arlington Lake, MO	1948	Flood Control Act approved June 28, 1938 as modified by Flood control Act approved August 18, 1941, and expanded by Flood Control Act approved December 22, 1944	\$8,651	--	Aug 5, 1977
Beatrice, Big Blue River, NE	1965	Flood Control Act approved September 3, 1954	\$16,317	--	May 6, 1981
Braymer Lake, Shoal Creek, MO	1966	1965 Flood Control Act P.L. 89-298, (H. Doc. 241, 89 <sup>th</sup> Cong., 1 <sup>st</sup> Sess.)	--	--	Jul 16, 2002
Brookfield Lake, Yellow Creek, MO	1976	1965 Flood Control Act P.L. 89-298, (H. Doc. 241, 89 <sup>th</sup> Cong., 1 <sup>st</sup> Sess.)	\$451,400	--	Jul 16, 2002
Chariton-Little Chariton Basin, MO (1965 Act)—Inactive Units Little Chariton River (East and Middle Fork) and Mussell Fork Units only 1/	1977	1965 Flood Control Act P.L. 89-298, (H. Doc. 241, 89 <sup>th</sup> Cong., 1 <sup>st</sup> Sess.)	\$211,600	--	Jan 1, 1990
Dry fork and East Fork Lakes, Fishing River, MO	1974	1965 Flood Control Act P.L. 89-298, (H. Doc. 241, 89 <sup>th</sup> Cong., 1 <sup>st</sup> Sess.)	\$51,989	--	Jan 1, 1990
East Muddy Creek, MO	1966	Authorized by 1965 Flood Control Act P.L. 89-298	--	--	Jul 16, 2002
Fort Scott Lake	1976	1954 Flood control Act (H. Doc. 549, 81 <sup>st</sup> Cong., 2 <sup>nd</sup> Sess.)	\$757,500	--	Apr 5, 1999
Garnett Lake, Pottawatomie Creek, KS	1973	Flood Control Act approved September 3, 1954	\$71,466	--	Nov 17, 1986
Gasconade River Navigation, MO	1931	Curtailed of project in H. Doc. 467, 69 <sup>th</sup> Cong., 1928	<sup>2/</sup>	--	Jan 1, 1990
Grand River, MO Lower Grand River (1965 Act)	1966	1965 Flood Control Act P.L. 89-298, (H. Doc. 241, 89 <sup>th</sup> Cong., 1 <sup>st</sup> Sess.)	--	--	Jul 16, 2002
Upper Grand River (1965 Act)	1966	1965 Flood Control Act P.L. 89-298, (H. Doc. 241, 89 <sup>th</sup> Cong., 1 <sup>st</sup> Sess.)	--	--	Jul 16, 2002
Grove Lake, Soldier Creek, KS	1977	1962 Flood Control Act (S. Doc. 122, 87 <sup>th</sup> Cong., 2 <sup>nd</sup> Sess.)	\$1,754,019	--	Nov 17, 1986

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

TABLE 27-G (Continued)

DEAUTHORIZED PROJECTS

Project	For Last Full Report See Annual Report For	Date and Authority	Federal Funds Expended	Contributed Funds Expended	Date Deauthorized
Hackleman corners Lake, Cedar Creek, MO	--	Authorized by Flood Control Act approved September 3, 1954	--	--	Aug 5, 1977
Harry S. Truman Dam and Reservoir, MO (Downstream Fish and Wildlife Mitigation)	--		--	--	Jul 16, 2002
Hays, Big Creek, KS 3/	1974	1965 Flood Control Act P.L. 89-298, (S. Doc. 22, 89 <sup>th</sup> Cong., 1 <sup>st</sup> Sess.)	\$499,200	--	Jan 18, 1978
Indian Lake Blue River, KS	1976	1970 Flood Control Act (H. Doc. 332, 91 <sup>st</sup> Cong., 2 <sup>nd</sup> Sess.)	\$127,297	--	Nov 17, 1986
Kansas City, Kansas River, KS (62 Mod)—Inactive Units	1984	1962 Flood Control Act P.L. 87-874, (S. Doc. 122, 87 <sup>th</sup> Cong.)	\$67,500 5/	--	Jul 9, 1995
Kansas Avenue Bridge approach, and Lower Argentine Units Only					
Kansas River Navigation	1980	1965 Flood Control Act P.L. 89-298, (Sec 201)	\$259,900	--	Nov 17, 1986
Lawrence, Kansas River, KS, South Lawrence Unit	1981	1954 Flood Control Act (H. Doc. 642, 81 <sup>st</sup> Cong., 2 <sup>nd</sup> Sess.)	--	--	Apr 5, 1999
Marysville, KS	--	Flood Control Act of September 3, 1954	\$133,682	--	Jan 1967
Melvorn Lake and Pomona Lake (Road Improvements) KS (1974 Act)	--	Water Resources Development Act of 1974, Section 17	--	--	Jan 1, 1990
Mercer Lake, Weldon River, MO	1976	1965 Flood Control Act P.L. 89-298, (H. Doc. 241, 89 <sup>th</sup> Cong., 1 <sup>st</sup> Sess.)	\$432,245	--	Jul 16, 2002
Merriam, Turkey Creek, KS	1970	Flood Control Act of September 3, 1954	\$39,708	--	Nov 27, 1973
Mill Lake, Blue River, MO	1971	1970 Flood Control Act (H. Doc. 332, 91 <sup>st</sup> Cong., 2 <sup>nd</sup> Sess.)	--	--	Nov 17, 1986
Missouri River Levee System, IA, NE, KS, and MO: Deauthorized by Section 1002, Water Resources Development Act of 1968, P.L. 99-662, Section 1002: Units R402; R393-395; and R414	--	Flood Control Act of August 18, 1941, P.L. 228, 77 <sup>th</sup> Cong.	\$57,500	--	Nov 17, 1986

KANSAS CITY, MO DISTRICT

TABLE 27-G (Continued)		DEAUTHORIZED PROJECTS			
Project	For Last Full Report See Annual Report For	Date and Authority	Federal Funds Expended	Contributed Funds Expended	Date Deauthorized
Deauthorized by WRDA Section 1001(b)(1): Units L36; R42; L51; R55-59-61; L68-92; R70; L78; R87; L94; L99; L103; R104; R107; R112; L117; L121; L124; L129; L134; L137-139; L145; R150; L154; L157; R161; L164; R169; L175; R179-184; L191-196; L205; L217; R226; R240; R251; L256; R259; L263-270 s/ ; R272; R284; R302; R336; L353; L357; R361; L362; L392; L419-426; L435; R512-513, Section III L330-345; L319-325; L294; L504-512-519; R331; R328; L100	--	Flood Control Act of August 18, 1941, P.L. 228, 77 <sup>th</sup> Cong.	\$1,631,700	--	Jan 1, 1990
Onaga Lake, Vermillion Creek, KS	--	Flood Control Act of 1962, October 23, 1962 (P.L. 87-874)	\$2,178,261	--	Nov 17, 1986
Osage River Navigation, MO, Lock and Dam	1952	Original lock and dam authorized March 3, 1899; improvements authorized in 1928; placed in standby status July 1952, and operation and maintenance discontinued.	\$658,076 <sup>6/</sup>	--	Jan 1, 1990
Pattonsburg Lake, Grand River, MO 1965 Act	1976	1965 Flood Control Act, P.L. 89-298	--	--	Jul 16, 2002
I-35 Highway Relocation	1976	(H. Doc. 241, 89 <sup>th</sup> Cong., 1 <sup>st</sup> Sess.)	\$393,623	--	Jan 1, 1990
Town Relocation	1976		\$91,929	--	Jan 1, 1990
Pioneer Lake, KS	1952	Flood Control Act approved June 28, 1938, as modified by Flood Control Act approved August 18, 1941, and expanded by Flood Control Act approved December 22, 1944.	\$95,692	--	Aug 5, 1977
Platte River, MO Channel Improvement	1973	1965 Flood Control Act, P.L. 89-298 (H. Doc. 262, 89 <sup>th</sup> Cong., 1 <sup>st</sup> Sess.)	\$222,193	--	Jul 16, 2002
Pomme de Terre Lake (Power Addition), MO	1954 1974	Flood control Act of 1954 (H. Doc. 549, 81 <sup>st</sup> Cong., 2 <sup>nd</sup> Sess.)	--	--	Nov 17, 1986
Richland Lake, MO	1948	Flood Control Act approved June 28, 1938, as modified by Flood Control Act approved August 18, 1941, and expanded by Flood Control Act approved December 2, 1944.	\$8,548	--	Aug 5, 1977

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 27-G (Continued)**

**DEAUTHORIZED PROJECTS**

<b>Project</b>	<b>For Last Full Report See Annual Report For</b>	<b>Date and Authority</b>	<b>Federal Funds Expended</b>	<b>Contributed Funds Expended</b>	<b>Date Deauthorized</b>
Smithville Channel, Little Platte River, MO	1973	1965 Flood Control Act, P.L. 89-298 (H. Doc. 262, 89 <sup>th</sup> Cong., 1 <sup>st</sup> Sess.)	\$6,896	--	Jul 16, 2002
Tomahawk Lake, Blue River, KS	1976	1970 Flood Control Act (H. Doc. 332, 91 <sup>st</sup> Cong., 2 <sup>nd</sup> Sess.)	\$77,189	--	Nov 17, 1986
Trenton Lake, Thompson River, MO	1966	1965 Flood Control Act, P.L. 89-298 (H. Doc. 241, 89 <sup>th</sup> Cong., 1 <sup>st</sup> Sess.)	--	--	Jul 16, 2002
Tuttle Creek Lake, KS (Road Improvement—1974 Mod.)	1977	Section 18 of WRDA of 1974	\$3,000	--	Nov 17, 1988
Tuttle Creek Lake, KS Road and Bridge (1976 Act)	--	Water Resources Development Act of 1976, Section 189, P.L. 94-587		--	Jan 1, 1990
Wolf-Coffee Lake, Blue river, KS	1976	1970 Flood Control Act (H. Doc. 332, 91 <sup>st</sup> Cong., 2 <sup>nd</sup> Sess.)	\$1,095,020	--	Nov 17, 1986

1/ For completed Shoal Creek unit of Chariton-Little Chariton Basin, MO, see Table 27-E.

2/ For completed project see Table 27-C. Deauthorized under Sec. 1001(b)(1) WRDA of 1986, P.L. 99-662.

3/ Hays, Lincoln Draw, KS, Section 205 feasibility study terminated in March 1991 due to lack of identifiable project that would meet dam safety concerns.

4/ For completed argentine, Amourdale, and Central Industrial Units of project, see Table 27-E.

5/ Incorrectly shown as R263-270 in the deauthorization act.

6/ Operation and maintenance costs \$850,495. Deauthorized under Sec. 1001(b)(1) WRDA of 1986, P.L. 99-662.

KANSAS CITY, MO DISTRICT

<b>MISSOURI RIVER LEVEE SYSTEM</b>		
<b>(See Section 13 of Text)</b>		
<b>TABLE 27-H</b>		
<b>Unit</b>	<b>Miles of Levee</b>	<b>Status</b>
R512-513 Richardson Co. D. D. No.7	19.1	Complete – 1958
R500 Iowa Point D. D. No.4	4.1	Complete – 1954
Kimsey Holly Creek	4.4	Complete – 1970
L497 Forest City L. D.	16.0	Complete – 1962
L488 Holt Co. D. D. No.7	11.5	Complete – 1955
R482 Burr Oak D. D. No.3	8.2	Complete – 1954
L476 Amazonia L. D.	10.8	Complete – 1956
R460-471 Elwood-Gladden L. D.	13.8	Complete – 1968
L455 S. St. Joseph L. D.	15.6	Complete – 1967
L433-448 Halls L. D.	17.3	Complete – 1957
R440 Atchison & Doniphan Co. D. D.	10.7	Complete – 1959
L408 Farley-Beverly D. D.	12.2	Complete (Levee raise modification) – 1972
L400 Waldron L. D.	7.6	Complete – 1957
L385 Riverside-Quindaro D. D.	6.5	Complete – 2005
R351 Atherton L. D.	15.9	Complete – 1966
L330-345 Orrick L. D.	43.4	Inactive
L319-325 Henrietta-crooked river D. D.	35.0	Inactive
L246 Brunswick-Dalton D. D.	20.0	Complete – 1983
L142 Jefferson City	6.0	Planning underway
Remaining Units		Detailed planning not initiated

**KANSAS CITY DISTRICT PROJECTS INCLUDED IN PICK-SLOAN  
MISSOURI BASIN PROGRAM**

**TABLE 27-I**

(See Section 15 of Text)

<b>Project</b>	<b>Status <sup>1/</sup></b>	<b>Federal Cost <sup>2/</sup></b>	<b>Non-Federal Cost <sup>3/</sup></b>	<b>Non-Federal Reimbursable <sup>4/</sup></b>
Abilene, Smoky Hill River, KS	C	\$1,099,350	\$287,000	
Bartley, Republican river, NE	C	118,269	9,500	
Fort Scott Lake, Marmaton River, KS	D	71,186,000	19,314,000	\$44,800,000 <sup>5/</sup>
Garnett Lake, Pottawatomie Creek, KS	D	71,466	--	
Harlan County Lake, Republican River, NE	C	48,129,549	--	
Harry S. Truman Dam and Reservoir, Osage River, MO	C	550,908,965	--	138,385,000 <sup>6/</sup>
Hillsdale lake, Big Bull Creek, KS	C	64,161,400	--	21,145,338 <sup>5/</sup>
Indianola, Republican River, NE	C	67,275	7,592	
Kanopolis Lake, Smoky Hill River, KS	C	12,577,227	--	
Lawrence, KS River, KS	C	8,620,111	2,130,000	
Manhattan Kansas River, KS	C	2,488,585	265,000	
Melvorn Lake, Osage (Marais des Cygnes) River, KS	C	37,436,530	--	7,131,834 <sup>7/</sup>
Melvorn Lake and Pomona Lake (Road Improvements), KS (1974 Authorization)	D	--	--	--
Milford Lake, Republican River, KS	C	49,566,492	--	12,162,134
Missouri River Levee System <sup>8/</sup> Osawatomie, Osage (Marais des Cygnes) River, KS	A	161,184,944	52,520,074	
Ottawa, Osage (Marais des Cygnes) River, KS	C	2,036,624	348,300	
Perry Lake, Delaware River, KS	C	4,462,661	876,000	
Pomme de Terre Lake, Pomme de Terre River, MO	C	49,095,918	--	8,551,805 <sup>5/</sup>
Pommona Lake, Osage River Basin, KS	C	17,365,453	--	
Salina, Smoky Hill River, KS	C	14,003,238	--	862,923 <sup>5/</sup>
Stockton Lake, Sac River, MO	C	3,878,668	1,960,000	
Topeka, Kansas River, KS	C	79,975,357	--	24,206,593 <sup>9/</sup>
Tuttle Creek Lake, Big Blue River, KS	C	21,174,593	10,383,492	
Tuttle Creek Lake, KS—Road and Bridge (1976 Act)	C	80,584,079	--	2,333,916 <sup>5/</sup>
Tuttle Creek Lake, (Road Improvement), KS (1974 Modifications)	D	--	--	
Wilson Lake, Saline River, KS	D	3,000	--	
Wilson Lake, Saline River, KS	C	20,463,367	--	

<sup>1/</sup> Status: A = Active; C = Completed; D = Deauthorized; I = Inactive.

<sup>2/</sup> Actual appropriations for completed and deauthorized projects; estimated appropriation requirements for active and inactive projects.

<sup>3/</sup> Estimated cost during construction.

<sup>4/</sup> Future reimbursement of initial Federal cost.

<sup>5/</sup> Estimated reimbursement costs allocated to water supply.

<sup>6/</sup> Estimated reimbursement costs allocated to power.

<sup>7/</sup> In accordance with the Memorandum of Understanding between the State of Kansas and the Dept. of the army dated 1985, payment in full of \$7,131,834 for 50,000 acre-feet of water supply was made in March 1995.

<sup>8/</sup> Active portion of project. Currently estimated cost (2005): Deferred portion of project--\$46,753,000 Federal and \$4,336,000 non-Federal; Inactive portion of project--\$104,791,000 Federal and \$11,296,000 non Federal. Actual cost of deauthorized units (1990) is \$1,689,200 Federal.

<sup>9/</sup> Includes \$22,116,864 estimated reimbursement costs allocated to power, and \$2,089,729 estimated reimbursement costs allocated to water supply.

KANSAS CITY, MO DISTRICT

**INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS**  
**(See Section 28 of Text)**

**TABLE 27-J**

<b>Project</b>	<b>Month Inspected</b>
<b><u>Missouri River Main Stem</u></b>	
R482, R500, R440 and Atchison, KS	Apr-2008
L497, L488, L476	Apr-2008
Kimsey Holley Creek, MO	Apr-2008
Birmingham, MO	May-2008
Fairfax Jersey Creek (KCK)	Apr-2008
North Kansas City, MO (Lower Section)	May-2008
R471-460 and R351-I	May-2008
KCMO Units – CID (MO), East Bottoms, NKC Airport	Jun-2008
L400, L408	Jul-2008
L448-443, L455	Aug-2008
L246, Lower Chariton, MO and New Haven, MO	Aug 2008
R512-513, R385	Oct-2008
<b><u>Kansas River</u></b>	
North Topeka, Soldier Creek	Apr-2008
South Topeka Units-Oakland, South Topeka, Auburndale and Waterworks Unit	Apr-2008
Manhattan, KS	Apr-2008
Ft Riley, KS	Oct-2008
Lawrence, KS	Sep-2008
Kaw Valley–Argentine, Armourdale, Lower Fairfax, CID (KS), Lower Fairfax (all KCK)	Oct-2008
<b><u>Osage River (MO) Marais des Cygnes (KS)</u></b>	
Ottawa, KS	Jun-2008
Osawatomie, KS	Jun-2008
<b><u>Smokey Hill, Saline, Solomon Rivers &amp; Tributaries (KS)</u></b>	
Abilene, KS	Jun-2008
Salina, KS	Oct-2008
Barnard, KS	Sep-2008
Gypsum, KS	Sep-2008
<b><u>Republican River</u></b>	
Clyde, KS	May-2008
Indianola, NE	Sep-2008
<b><u>Big and Little Blue Rivers (KS &amp; NE)</u></b>	
Frankfort, KS	May-2008
Fairbury, NE, Seward, NE	Sep-2008

**INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS**  
**TABLE 27-J (Continued)** **(See Section 28 of Text)**

<b>Project</b>	<b>Month Inspected</b>
<b><u>Blue River (MO)</u></b>	
GSA Complex (KCMO)	May-2008
Blue River Channel & Brush Creek (KCMO)	Jun-2008
<b><u>Little Blue River Channel, Jackson County, MO</u></b>	
R351-II	May-2008
Little Blue River Channel, Jackson, MO	Jul-2008
Lake City AAP, MO	Jul-2008
<b><u>Miscellaneous – Improved Channels</u></b>	
Bedford, IA	May-2008
Shoal Creek, MO	Aug-2008
Macon-Adair Project, Kirksville, MO	Aug-2008
Stonehouse Creek, KS and Stranger Creek, KS	Oct-2008
Stranger Creek, KS	Oct-2008

KANSAS CITY, MO DISTRICT

**WORK UNDER SPECIAL AUTHORITIES**

**TABLE 27-K**

(See Section 27 of Text)

<b>Study</b>	<b>Status</b>	<b>Fiscal Year Cost</b>
<b>Small Beach Erosion Control—Section 103, 1962 River and Harbor Act</b>		
<b>Public Law 874, 87<sup>th</sup> Congress, October 23, 1962, as Amended</b>		
Section 103 Coordination Account (420) – 163813	O	\$5,017
<b>TOTAL ALL SECTION 103 ACTIVITIES</b>		<b>\$5,017</b>
<b>Flood Control Activities Pursuant to Section 205, 1948 Flood Control Act</b>		
<b>Public Law 858, 80<sup>th</sup> Congress, June 30, 1948, as Amended</b>		
Section 205 Coordination Account (516) – 062516	O	\$4,984
Crosscreek, Rossville Kansas (516) – 146253	F	\$15,459
Concordia, Kansas (516) –146256	F	\$15,076
Blacksnake Creek, St. Joseph (516) – 170801	F	\$64,201
Eureka creek, Manhattan, Kansas (516) – 178482	F	<u>\$5,839</u>
<b>TOTAL ALL SECTION 205 ACTIVITIES</b>		<b>\$105,559</b>
<b>Emergency Streambank Protection—Section 14, 1946 Flood Control Act</b>		
<b>Public Law 526, 79<sup>th</sup> Congress, July 24, 1946, as Amended</b>		
Section 14 Coordination Account (517) – 062517	O	\$4,941
West Creek, Topeka, Kansas (517) – 095080	Z	\$2,015
Golden Eagle Bank Erosion	F	\$76,900
Platte River Bridge, Conception, MO (517) – 160258	C	\$15,543
Middle Fork, Grand US 169, MO (517) – 169051	Z	\$(974)
South Fork Clear Creek, Route FF, (517) – 172053	C	\$45,093
Thompson River, Route 6, Trenton, MO (517) – 176931	Z	\$(74,468)
Rush Creek, Parkville, MO (517) – 179930	Z	\$1,578
Stranger Creek at K32, KS (517) – 180343	C	\$62,083
Argosy Road Bridge, Riverside, MO (517) – 181173	C	\$58,459
Platte River Sewer, Platte City, MO (517) – 183808	C	<u>\$62,966</u>
<b>TOTAL ALL SECTION 14 ACTIVITIES</b>		<b>\$254,135</b>
<b>Project Modifications for Improvement of Environment</b>		
<b>Section 1135, Water Resources Development Act of 1986</b>		
<b>Public Law 662, 99<sup>th</sup> Congress, November 17, 1986</b>		
Section 1135 Coordination Account (722) – 062092	O	\$7,348
Rathbun Lake Habitat Restoration, IA (722) – 096126	C	\$50,818
Kansas City Riverfront, MO (722) – 169053	C	\$83,551
Smithville Aquatic Plantings (722) – 174832	C	\$560,340
Greenville Marsh, IA (722) – 175919	Z	\$1,179
Rathbun Shoreline Site Restoration, IA (722) – 183720	Z	<u>\$17,120</u>
<b>TOTAL ALL SECTION 1135 ACTIVITIES</b>		<b>\$720,356</b>
<b>Aquatic Ecosystem Restoration, Section 206, Water Resources Development Act of 1996</b>		
<b>Public Law 303, 104<sup>th</sup> Congress, October 12, 1996</b>		
Section 206 Coordination Account (732) – 062091	O	\$12,964
Chariton River/Rathbun Lake Watershed (732) –	F	<u>34</u>
<b>TOTAL ALL SECTION 206 ACTIVITIES</b>		<b>\$12,999</b>

1/ Status: I = Initial; F = Feasibility; C = Design & Implementation; O = Coordination; Z = Complete

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

<b>WORK UNDER SPECIAL AUTHORITIES</b>		
<b>TABLE 27-K (Continued) (See Section 27 of Text)</b>		
<b>Environmental Restoration</b>		
<b>Section 514, Water Resources Development Act of 1996</b>		
<b>Public Law 303, 104<sup>th</sup> Congress, October 12, 1996</b>		
<b>Account</b>	<b>Status</b>	<b>Fiscal Year Cost</b>
Missouri & Middle Mississippi River Enhancement (771) – 010642	C	\$285,190
<b>Emergency Response Activities (See Section 28 of Text)</b>		
<b>Emergency Flood Control Activities – Repair</b>		
<b>Flood Fighting, and rescue Work</b>		
<b>Public Law 99, 84<sup>th</sup> Congress, and Antecedent Legislation</b>		
<b>Activity</b>	<b>Approp. 96X3125 FY 2008 Expenditures</b>	<b>Total by Category</b>
<b>FLOOD CONTROL AND COASTAL EMERGENCIES</b>		
Disaster Preparedness Program – 100		
Planning Activities SFO/CORP (110) – 000120	\$255,545	
Planning Activities-Spec Supplement (116) – 000120	0	
Planning Activities-Spec Supplement (117) – 000120	\$235,144	
Training and Exercise-Spec Supplement (126) – 000120	\$2,326	
Equip, Facilities, Supplies SFO/CORP (130) -000120	\$394	
Equip, Facilities, Supplies- Spec Supplement (136) - 000120	<u>\$5,003</u>	
Total Disaster Preparedness Program – 100		\$498,412
Emergency Operations – 200		
Response Operations (210) – 005480	\$212,184	
Response Operations-Spec Supplement (216) – 005480	\$0	
Operational Support- Supls & Equip. (240) – 005480	\$25,759	
Operational Deployment	<u>\$0</u>	
Total Emergency Operations – 200		\$237,943
Rehabilitation and Inspection Program – 300		
Federal Flood Coastal Project Repairs FY07 Supplemental (317) -- 008750	\$311,460	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 018330	\$439,561	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 030127	\$102,169	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 030480	\$129,246	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 030795	\$69,548	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 030828	\$75,527	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 034397	\$50,587	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 084104	\$304,011	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 084125	\$122,928	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 084129	\$1,358,923	

KANSAS CITY, MO DISTRICT

<b>WORK UNDER SPECIAL AUTHORITIES</b>		
<b>TABLE 27-K (Continued)</b>	<b>(See Section 27 of Text)</b>	
<b>Emergency Response Activities (See Section 28 of Text) (Continued)</b>		
<b>Emergency Flood Control Activities – Repair</b>		
<b>Flood Fighting, and rescue Work</b>		
<b>Public Law 99, 84<sup>th</sup> Congress, and Antecedent Legislation</b>		
<b>Activity</b>	<b>Approp. 96X3125 FY 2008 Expenditures</b>	<b>Total by Category</b>
Rehabilitation and Inspection Program – 300 (Continued)		
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 084130	\$376,226	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 084252	\$60,274	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 084298	\$1,076,322	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 084318	\$232,849	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 084320	\$112,807	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 084331	\$46,055	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 084362	\$13,854	
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 084381	<u>\$46,309</u>	\$4,928,656
Rehabilitation Project Midwest Floods FY08 War Supplemental (31C) – 084104	\$1,235	
Rehabilitation Project Midwest Floods FY08 War Supplemental (31C) – 084318	<u>\$818</u>	\$2,053
Non-Federal Flood Control Works (320) – 084252	<u>\$368</u>	\$368
Field Investigation (340) – 018330	\$203	
Field Investigation (340) – 030845	<u>\$216,863</u>	\$217,066
Initial Inspections (350) – 084000	<u>\$0</u>	0
Continuing Eligibility Inspections (360) – 030548	<u>\$94,836</u>	\$94,836
Total Rehabilitation and Inspections Program – 300		<u>\$5,242,981</u>
FLOOD CONTROL AND COASTAL EMERGENCIES		
TOTAL NON-REIMBURSEABLE ACTIVITIES		\$5,979,336
	<b>Rivers and Harbors Contributed Funds Approp. 96X8862 FY 2008 Expenditures</b>	<b>Total by Category</b>
SPONSOR CONTRIBUTED FUNDS		
Federal Flood Coastal Project Repairs FY07 Supplemental (317) – 084129	\$8,122	
Total Sponsor Contributed Funds		<u>\$8,122</u>
TOTAL ALL EMERGENCY RESPONSE ACTIVITIES EXPENDITURES		\$5,987,458

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

<b>ACTIVE INVESTIGATIONS</b>		
<b>(See Section 29 of Text)</b>		
<b>TABLE 27-L</b>	<b>Federal Cost</b>	<b>Total by</b>
<b>Item and PWI Number</b>	<b>FY2008</b>	<b>Category</b>
SURVEYS (Category 100)		
Navigation Studies - 110		
Missouri River Degradation (Recon) – 111 124302	<u>116,991</u>	
Subtotal	\$116,991	
<b>Damages Prevented</b>		
<b>Cumulative to FY2008</b>		
Flood Damage Prevention Studies – 120		
Kansas City, MO & KS (Feas) – 013268	\$9,457,441,000	\$ 511,540
Manhattan, KS (Feas) – 013394	\$15,622,000	108,489
Brush Creek Basin (Feas) – 013396		172,580
Upper Turkey Creek, KS (Feas) – 014411		183,199
Wears Creek, Jefferson City, MO – 081377		0
Topeka, KS (Feas) – 081396	\$309,318,000	<u>6,674</u>
Subtotal		\$982,482
<b>Damages Prevented</b>		
<b>Cumulative to FY2008</b>		
Review of Authorized Projects – 160		
MRLS, Units L455 and R460-471 (164) – (Feas)– 013267	\$438,822,000	\$0
Miscellaneous Activities – 170		
Special Investigations (171) – 017250		80,367
Interagency Water Resources Development (173) – 014713		12,674
North American Waterfowl Mgmt (176) – 053904		<u>0</u>
Subtotal		\$93,041
Coordination with other Agencies and Non-Federal Interests – 180		
COOP with Other Water Resources Agencies (181) – 053907		\$ 2,766
Planning Assistance to States (186)		151,438
Subtotal		\$154,204
TOTAL SURVEYS (Category 100)		<u>\$1,346,716</u>

KANSAS CITY, MO DISTRICT

<b>TABLE 27-L (Continued)</b>		<b>ACTIVE INVESTIGATIONS (See Section 29 of Text)</b>	
<b>Item and PWI Number</b>		<b>Federal Cost FY08</b>	<b>Total by Category</b>
COLLECTION AND STUDY OF BASIC DATA (Category 200)			
Flood Plain Management Services – 250			
Flood Plain Management Service Unit – 082030		\$17,263	
Technical Services – 082040		16,192	
Quick responses – 082045		9,632	
Flood Plains Management Study – 082500		0	
Special Studies – SS Union County, Approx. Study, IA – 083945		0	
Special Studies – H&H Data Evaluation of N. Topeka – 134749		<u>1,588</u>	
Subtotal		\$44,675	
Hydrologic Studies – 260			
General Hydrology Studies (262) – 053820		\$0	
TOTAL COLLECTION AND STUDY OF BASIC DATA (Category 200)			\$ <u>44,675</u>
PRECONSTRUCTION ENGINEERING AND DESIGN (PED) (400)			
Flood Control Projects	<b>Damages Prevented</b>		
(Projects Not Fully Authorized) – 450	<b>Cumulative to FY2008</b>		
Swope Park Industrial Kansas City, MO (451)			
– 012821		\$130,420	
MRLS, Units L455 and R460-471 (451) –			
013267	See Above	30,332	
Kansas Citys, MO & KS (451) – 013268	See Above	-6,546	
Topeka, KS (451) – 081396	See Above	80,396	
Subtotal			<u>\$234,602</u>
PRECONSTRUCTION ENGINEERING AND DESIGN (PED) (600)			
Flood Control Projects	<b>Damages Prevented</b>		
(Projects Fully Authorized) – 600	<b>Cumulative to FY2008</b>		
Kansas Citys, MO & KS (651) – 013268	See Above	\$385,520	
Subtotal			<u>\$385,520</u>
TOTAL PRECONSTRUCTION ENGINEERING AND DESIGN (PED)			\$ <u>620,122</u>
GRAND TOTAL ACTIVE INVESTIGATIONS			<b>\$2,011,514</b>

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

<b>REGULATORY PROGRAM</b>		
<b>Approp. 96X3126</b>		
<b>FY 2008 Expenditures</b>		
<b>(See Section 32 of Text)</b>		
<b>TABLE 27-M</b>	<b>Federal Cost</b>	<b>Total by</b>
<b>Item and PWI Number</b>	<b>FY08</b>	<b>Category</b>
<b>REGULATORY PROGRAM</b>		
Permit Evaluation -- 100		
REG – Individual Permits (110) – 008204	\$1,095,759	
REG – General Permits (120) – 008204	\$1,193,069	
REG – Other, permit work, Not Involving specific Permits (130) – 008204	\$377,972	
Total Permit Evaluation – 100		\$2,666,800
Enforcement -- 200		
REG – Enforcement (210) – 008205	\$231,034	
REG – Enforcement (220) – 008205	\$0	
Total Enforcement – 200		\$231,034
Environmental Impact Statement -- 500		
REG – Environmental Impact Statement – 088870	\$0	
Total Environmental Impact Statement -- 500		\$0
Administrative Appeals -- 600		
REG – Administrative Appeals (600) – 013579	\$4,033	
Total Administrative Appeals -- 600		\$4,033
Compliance –Authorized Activities & Mitigation -- 700		
REG – Compliance –Authorized Activities & Mitigation (700) – 008205	\$15,007	
Total Compliance –Authorized Activities & Mitigation -- 700		\$15,007
Compliance –Authorized Activities & Mitigation -- 800		
REG – Enforcement (800) – 008205	\$57,051	
REG – Compliance –Authorized Activities & Mitigation (800) – 008205	\$497,107	
Total Compliance –Authorized Activities & Mitigation -- 800		\$554,158
<b>TOTAL REGULATORY PROGRAM</b>		<b>\$3,471,033</b>



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**Navigation**

**1. CHETCO RIVER, OR**

**Location.** Rises in Siskiyou Mountains of Coast Range at an elevation of 4,000 feet, flows for about 51 miles in a circuitous route, and empties into Pacific Ocean at Brookings, OR, 300 miles south of entrance to Columbia River and 345 miles north of San Francisco Bay. (See National Oceanic and Atmospheric Administration Charts 18600 and 18203).

**Existing project.** Provides for two jetties at the mouth of the river. Modification of 1965 authorized an entrance channel 120 feet wide by 14 feet deep; a barge turning basin about 250 feet wide, 650 feet long, and 14 feet deep; and a small boat access channel 100 feet wide by 12 feet deep. Also authorized was a 450-foot extension of North Jetty with an increase in elevation of existing portion and a protective dike about 1,800 feet long with a top elevation of 18 feet. Mean lower low water is plane of reference. Tidal range between mean lower low water and mean higher high water is 6.9 feet and extreme is about 12 feet.

Construction of jetties was completed December 1957. Removal of rock pinnacles and an abandoned bridge structure was accomplished in June 1959. Under authorized modification of October 1965, two contracts were completed. Construction of entrance channel and extension of North Jetty was completed in July 1969. Construction of a protective dike, turning basin and small boat access channel was completed in March 1970. The authorization was modified by WRDA 92 to "direct the Secretary of the Army to assume maintenance of the approximately 200-foot long access channel to the south commercial boat basin consistent with authorized project depths". This channel will be maintained in lieu of the small boat access channel.

**Local cooperation.** Fully complied with.

**Terminal facilities.** The Port of Brookings has developed two large boat basins, one for commercial fishing boats and the other for sport boats, and a public boat-launching ramp. There are four fish receiving docks and a sea-going barge dock for lumber loading and storage. There is also a privately owned marina and a Coast Guard Station.

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**Operations during FY.** Maintenance: Routine operations and maintenance continued. (See Table 28R for dredging operations.)

### 2. COLUMBIA AND LOWER WILLAMETTE RIVERS BELOW VANCOUVER, WA AND PORTLAND, OR

**Location.** The Columbia River rises in British Columbia, through which it flows for 425 miles. It enters the United States in northeastern Washington, and empties into the Pacific Ocean 645 miles north of San Francisco Bay and 160 miles south of Strait of Juan DeFuca. Total length of river is 1,210 miles. (See NOAA Charts 18520, 18521, 18522, 18523, 18524, 18526, and 18531; also Geological Survey Map of Washington.) Willamette River rises in Cascade Range in western Oregon, flows northerly, and empties into Columbia River about 100 miles from the sea. Its length from source of Middle Fork is about 294 miles. Project embraces 103.5 miles of Columbia River below Vancouver, WA, and 14.6 miles of Willamette River below Portland, OR. (See NOAA Chart 18526 and Geological Survey Map, State of Oregon.)

**Existing project.** Provides for a channel 35 feet deep and 500 feet wide from River Mile 106.5 to 105.5, the distance between existing highway and railroad bridges; a channel 40 feet deep and 600 feet wide from Vancouver, WA, River Mile 105.5 to mouth of Columbia River, River Mile 3; a turning basin at Vancouver, WA, 40 feet deep, 800 feet wide, and about 5,000 feet long; a turning basin at Longview, WA, 40 feet deep, average width of 1,200 feet, and about 6,000 feet long; and a channel 40 feet deep in the Willamette River with varying widths of 600 to 1,900 feet from the mouth (River Mile 0) to Broadway Bridge (River Mile 11.6) which encompasses Portland Harbor area, subject to provisions that channel from mouth of Willamette River to turning basin at Vancouver, WA, be limited to 500 feet in width until need for additional width is demonstrated by developed traffic. Existing project also provides for auxiliary channels 10 feet deep and 300 feet wide near Cathlamet, WA; 30 feet deep and 300 feet wide in St. Helens, (Oregon); and 30 feet deep and 500 feet wide connecting upper end of St. Helens Channel with main ship channel of Columbia; 24 feet deep and 200 feet wide along frontage of town of Rainier, OR, extended to its upper and lower ends to deep water in Columbia River, 8 feet deep and 150 feet wide from this depth in Columbia River through old mouth of Cowlitz River to a point about 3,000 feet upstream from present terminus of harbor line; a channel from Longview Port dock downstream

along pier head line and past Weyerhaeuser Timber Co. plant at Longview to a connection with main ship channel below Mount Coffin, the downstream 2,400 feet of this channel to be 30 feet deep and 300 feet wide and remainder to be 28 feet deep and 250 feet wide; construction of a small boat mooring basin at Astoria, OR, to include a sheet pile, sand-filled breakwater about 2,400 feet long with a 30-foot roadway along its full length, and steel pile shore wings totaling about 1,460 feet long and for stone-and-pile dikes and revetments. Plane of reference in estuary from mouth of Harrington Point is mean lower low water; thence to Portland and Vancouver, adopted low water. Tidal range between mean lower low water and mean higher high water at mouth of Columbia is about 8 feet, and at Portland and Vancouver, about 3 feet at low stage of rivers. Extreme tidal ranges are about 13 and 3 feet, respectively. Annual freshets have little effect on stage of tide at mouth of Columbia; at Portland and Vancouver, they average about 12 feet, while highest know reached a stage of 33 feet above water at Portland.

Work on the 40-foot channel in Columbia River from Portland, OR, and Vancouver, WA, to the sea was completed in 1976. Auxiliary channel in vicinity of Longview was completed in 1949, and improvement of mouth of Cowlitz River and small boat mooring basin at Astoria were completed in 1950. Project depths are maintained all year except for the period immediately following the annual freshet in May-June when shoaling occurs at several locations. Timing of vessel movement with tidal fluctuations permits maximum draft conditions. In Columbia and Willamette Rivers between mouth and Broadway Bridge at Portland a depth of 40 feet at low tide and 42 feet at high tide is practicable all year. In Columbia River between mouth of Willamette River and Vancouver, WA, depths of 40 and 42 feet at low and high tide, respectively, are practicable all year. (For details relating to previous project, see pages 1995 and 1998 of Annual Report for 1915 and page 1746 of Annual Report for 1938.)

**Local cooperation.** Fully complied with. Requirements are described in full on page 37-3 of FY 1981 Annual Report.

**Terminal facilities.** At Portland, OR, there are six Port of Portland terminals consisting of 43 berths equipped to handle general cargo, bulk cargo, lumber, automobiles, lift-on-lift-off and roll-on-roll-off containers, and break-bulk vessels. The Port of Portland owns and operates a major ship repair yard, which includes the west coast's largest, and the world's third largest, floating dry dock. Also

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available in the harbor area are privately operated facilities for receiving, storing and out loading petroleum, wood chips, grain, logs, sand and gravel, cement, and steel products.

At Astoria, OR, there is a terminal with facilities for receiving and handling various types of general cargo.

At Vancouver, WA, there are municipal facilities capable of berthing five ships simultaneously. Each berth is completely outfitted with mechanical and lift facilities for receiving and handling all types of cargo. The port has a low dock to handle roll-on-roll-off and side-port discharging vessels. The grain terminal has a storage capacity of 4,500,000 bushels.

Port of Longview has a public terminal on Columbia River and a privately owned grain elevator with a capacity of 6,900,000 bushels. This port also has a heavy lift facility, with a capacity of 600 tons.

Port of Kalama has two berthing areas, one port owned and one private.

At other locations on the Columbia River between Portland and Columbia River entrance there are sufficient private facilities to accommodate river vessels and fishing craft. These facilities, with planned extensions, are considered adequate for existing commerce. (For details, see Port Series Nos. 33 and 34, Corps of Engineers, published in 1974 and 1975 respectively.)

**Operations during FY.** Maintenance: Routine operations and maintenance continued. (See Table 28R for dredging operations and Table 28H total cost of existing project.)

### 3. COLUMBIA RIVER AT BAKER BAY, WA

**Location.** Baker Bay is a shallow body of water about 15 square miles in extent on the north side of Columbia River Estuary near its mouth. The bay is separated from the river by Sand Island, a low-lying sand bar only a few feet above high tide level. (See NOAA Chart 18521.)

**Existing project.** A mooring basin 10 and 12 feet deep, about 20 acres in extent with protecting breakwaters; and a west channel 16 feet deep and 200 feet wide for the first 2,000 feet, then 16 feet deep and 150 feet wide to the boat basin; a channel east of Sand Island to Port of Ilwaco, a distance of about 4 miles. Mean lower low water is plane of reference. Tidal range between mean lower low water and mean higher high water is about 8 feet, and extreme about 13 feet.

Channel extending through easterly passage of Sand Island was completed in 1934. This portion of authorized project is not passable and is not

maintained at the present time. Dredging west channel to 8 feet was accomplished September 1948. Deepening west channel to 10 feet, and boat basin and breakwater construction at Ilwaco, WA, was finished December 1957, and again, deepening of the west channel to 16 feet completed in August 1985 under Section 107, finished the project.

**Local cooperation.** Fully complied with.

**Terminal facilities.** Wharves, floats, ramps, and berths, for fishing craft, barges and towboats. Small-boat basin and protecting breakwater provides moorings for numerous fishing and recreational craft all year. Facilities are considered adequate for existing commerce.

**Operations during FY.** Maintenance: This project encountered infill due to winter storms. Manson Construction removed a total of 59,742 cubic yards from the channel by clamshell during the FY. Additional material to be removed in October (FY 2009).

### 4. COLUMBIA RIVER BETWEEN CHINOOK, WA, AND HEAD OF SAND ISLAND

**Location.** At easterly end of Baker Bay, lying on north side of Columbia River near mouth. (See Coast and Geodetic Survey Chart 6151.)

**Existing project.** Channel 10 feet deep and 150 feet wide, extending from head of Sand Island to Chinook; a turning and mooring basin at upper end of channel, 10 feet deep, 660 feet long, and ranging from 275 to 500 feet wide; reconstruction of easterly 393 feet of existing breakwater; and extension of existing breakwater easterly and thence northerly to connect with shore in vicinity of Portland Street, Chinook, WA. Tidal range between mean lower low water and mean higher high water is about 8 feet and extreme about 13 feet.

Project as originally authorized was completed in 1940. The 10-foot channel depth modification was accomplished September 1958. Rehabilitation of existing breakwater was completed September 1962.

**Local cooperation.** Fully complied with.

**Terminal facilities.** Chinook Packing Company owns a wharf for receiving fresh fish, and one additional fish buying company is located at Chinook. A portion of wharf is also used as a public landing. At upper end of channel there is a turning and mooring basin with facilities for mooring 350 fishing and recreational craft. Adequate terminal and

## PORTLAND, OR, DISTRICT

mooring facilities include a public launching ramp, hoist with 10-ton capacity and suitable supply facilities.

**Operations during FY.** Maintenance: No maintenance dredging was performed during the FY. However, this project encountered increased infill due to winter storms. A contract including the Baker Bay West Channel was started during the FY and Chinook Channel will be dredged in FY 2009.

### 5. COLUMBIA RIVER AT THE MOUTH, OR AND WA

**Location.** The Columbia River entrance is 645 miles north of San Francisco Bay. Project is about 120 miles downstream of Portland, OR and Vancouver, WA. For description of Columbia River see Section 3.

**Existing project.** Provides for a one-half-mile-wide channel across a bar 55 feet deep (mean lower low water) for the northernmost 2,000 feet, and 48 feet deep (mean lower low water) along the southern 640 feet, to be secured by two rubble mound jetties, spur jetty "A" on the north shore and by dredging. The North Jetty is about 2.5 miles long and the South Jetty about 6.6 miles long; spur jetty "A" is about 0.3 miles long. Tidal range on bar between mean lower low water and mean higher high water is about 8 feet, and extreme about 13 feet. Ocean Dredged Material Disposal Sites include the deep water site and a shallow water site both designated by the Environmental Protection Agency on April 1, 2005. An additional Clean Water Act Disposal Site known as the North Jetty Site is also available for use.

The originally authorized project depth of 40 feet was completed in 1918, South Jetty completed in 1914 and North Jetty in 1917. A spur jetty (jetty "A") was completed in 1939 (repaired in 1961) for the purpose of channel stabilization. Spur jetty "B" currently is classified "inactive." Dredging of the 48-foot bar channel started April 1956 was completed in September 1957. South Jetty rehabilitation started June 1962 was completed September 1964. North Jetty rehabilitation started January 1965 was completed April 1965. Additional rehabilitation of the South Jetty was initiated in May 1982 and completed in September 1982. Deepening bar channel to 55 feet completed September 1984. In FY 95 a 500-foot section of the south jetty was removed to allow unimpeded access by fisheries resources to 603 acres of intertidal habitat under Section 1135 authority. Interim repairs were completed for the North and South Jetties from FY 2004 to 2007. The North Jetty interim repair was completed in

November 2005 with 58,000 tons of stone placed over 3,000 feet. The South Jetty interim repair was completed in September of 2007 with 168,000 tons placed over 5,300 feet. Reach A was finished in 2006 with 82,000 tons of stone placed over 2,200 feet and Reach B was completed in 2007 with 86,000 tons placed over 3,100 feet. (For details relating to previous projects, see page 1999 of the Annual Report for 1915 and page 1740 of Annual Report for 1938.)

**Local cooperation.** Fully complied with. Local interests contributed \$500,000 toward construction of the North Jetty, which was completed in 1917.

**Operations during FY.** Due to storm damage in early December 2007, the north jetty sand berm was repaired using 125,397 cubic yards of dredged sand placed in the area to the north of the jetty using a hopper dredge with pump-ashore capability. Sand fences were installed after the placement was completed to stabilize the area. Routine operations and maintenance dredging was also conducted. (See Table 28R for dredging operations.) Jetty Major Rehabilitation Study on-going.

### 6. COLUMBIA RIVER BETWEEN VANCOUVER, WA, AND THE DALLES, OR

**Location.** On Columbia River, between Interstate Bridge at Vancouver, WA, 106.5 miles above mouth and The Dalles, OR, mile 191. For description of Columbia River, See Section 2, "Columbia and Lower Willamette Rivers below Vancouver, WA, and Portland, OR."

**Existing project.** Channel 27 feet deep and 300 feet wide between Vancouver, WA, and The Dalles, OR, 84.5 miles; a channel 10 feet deep and 200 feet wide at the upstream entrance to Oregon Slough, OR; a suitable turning basin adjacent to site of port development in the vicinity of Camas and Washougal, WA; a boat basin at Hood River, OR, 500 by 1,300 feet and 10 feet deep at normal Bonneville pool level, with a connecting channel 10 feet deep to deepwater, and a protecting breakwater on easterly side; a barge channel to waterfront at Bingen, WA, 10 feet deep at normal Bonneville pool level, 200 feet wide and about 1 mile long, and an access channel 7 feet deep at normal Bonneville pool level, 100 feet wide and about 1,000 feet long, to a natural mooring basin for small boats near east end of channel; and construction of The Dalles small boat basin, to provide a breakwater and shear boom protected basin about 400 by 800 feet in size with depth of 8 feet below a pool elevation of 72.5 feet at

mean sea level. Tidal range between mean lower low water and mean higher high water at Vancouver is about 3 feet and at Bonneville about 0.2 foot at low stages of the river. Extreme tidal ranges are about 4 feet and 0.4 foot, respectively.

Existing project is complete. Construction of The Dalles small boat basin was completed in 1949. Channel dredging at upper end of Oregon Slough was accomplished in 1957. Project depth of 27 feet between Bonneville and The Dalles, OR, was achieved April 1959. The 27-foot channel depth between Vancouver, WA, and Bonneville, OR, was completed May 1938. Improvement of lower entrance of Bonneville Dam lock was completed in May 1961. At the present time, the channel is maintained to a depth of 17 feet, which is adequate for user traffic. Construction of a boat basin at Hood River, OR, and of Camas-Washougal, WA, turning basin was accomplished February 1962. Construction of a barge channel in Columbia River near Bingen, WA, was completed September 1963. Small boat recreation channel 100 feet wide 6 feet deep at South Channel Government Island completed 1985 under section 107.

**Local cooperation.** Fully complied with.

**Terminal facilities.** At Vancouver, WA, upstream of Interstate Highway Bridge at River Mile 108.1 on site of former shipyard are numerous shipbuilding facilities equipped with railway and river moorage facilities. Also in this area are a paper-storage warehouse with barge slip, two boat-building businesses, and a storage dock with gantry crane. Sites are available for development to suit lessee.

At Camas, WA, about 13.5 miles upstream from Vancouver, there is a private wharf used for transfer of paper-mill supplies and paper to and from barges, and facilities for discharging bulk oils from barges.

At Port of The Dalles (mile 44 above Bonneville) there is a municipal wharf 125 by 1,100 feet for use by tugs and barges. There is a one-story timber and corrugated iron warehouse, 94 by 461 feet, on this wharf. A private elevator with a capacity of 40,000 bushels and a public elevator of 1,113,800-bushel capacity for handling bulk grain to barges are also at The Dalles. Public elevator has rail, truck, and water connections. There is a port owned rail connection about three-fourths mile below municipal wharf where certain types of cargo may be handled between railroad cars and barges.

At numerous locations along the entire waterway there are facilities for transfer of logs to water from trucks and public and private boat basins. Facilities are considered adequate for present commerce.

**Operations during FY.** Maintenance: Routine operations and maintenance continued. (See Table 28R for dredging operations.)

## 7. COLUMBIA RIVER CHANNEL IMPROVEMENTS, OR

**Location.** The project area includes the Lower Columbia and Willamette Rivers. Work includes deepening the existing 40 feet deep navigation channel to 43 feet, construction of wildlife mitigation features and environmental restoration features. The Columbia River section extends from the mouth near river mile (RM) 3 to RM 106.5. The Willamette River section extends from the mouth to RM 11.6. The Willamette River portion of the project has been deferred and will be reevaluated in a subsequent NEPA document after resolution of cleanup issues associated with its being named to the federal National Priorities List by USEPA under the Comprehensive Environmental Response, Compensation, and Liability Act.

**Existing project.** Refer to Columbia & Lower Willamette Rivers below Vancouver, WA and Portland, OR project

**Local cooperation.** The project is sponsored by the five lower Columbia River Ports: Port of Portland, on the Oregon side and the Ports of Vancouver, Woodland, Kalama, and Longview on the Washington side.

**Operations during FY.** New Work: In FY 2008 work continued on a contract that was awarded to Great Lake Dredge and Dock Company of Chicago, Illinois. The dredge Terrapin Island mobilized to the area during FY07 and began dredging in FY08. During the FY, 6.4 million cubic yards of material was removed and placed at approved upland sites and in-water sites.

Work continued on construction of a mitigation site in the Webb Diking District in Clatskanie, Oregon. This contract was awarded in May 2007 to Big River construction of Astoria, OR. This is the first of three mitigation sites for the project. Work spanned two FYs. All earth work to construct the levee for the mitigation site was completed in FY 2007; the pump station, water control structures and replacement tide gates were constructed in FY 2008. Total amount of the contract was \$5.2 million.

**8. COOS BAY, OR**

**Location.** On Oregon coast 200 miles south of mouth of Columbia River and 445 miles north of San Francisco Bay. It is about 13 miles long and 1 mile wide, with an area at high tide of about 15 square miles. (See NOAA Charts 18580 and 18587.)

**Existing project.** Initial Authorization included two rubble mound, high-tide jetties at entrance; a channel across the outer bar 45 feet deep and 700 feet wide, reducing gradually to 35 feet deep and 300 feet wide near River Mile 1 and continuing to about mile 9; thence a channel 35 feet deep and generally 400 feet wide to mile 15; an anchorage area 35 feet deep, 800 feet wide, and 1,000 feet long at Empire (River Mile 5.5); turning basins at North Bend (River Mile 12.5) and Coalbank (River Mile 14.7) 35 feet deep, 650 feet wide and 1,000 feet long; a channel 22 feet deep and 150 feet wide from Smith's Mill (River Mile 15) to Millington (River Mile 17); a small boat basin, about 500 by 900 feet at Charleston, with a connecting channel, 16 feet deep, 150 feet wide and 6,200 feet long, to deep water in Coos Bay, and construction of a protecting breakwater and bulkhead. Plane of reference is mean lower low water. Tidal range between mean lower low water and mean higher high water is 7 feet and extreme is about 11 feet at both the entrance and at Coos Bay.

South Jetty was completed in 1928, North Jetty in 1929, and 24-foot channel in 1937. The South Jetty was restored in 1941 and 1942 by construction of a concrete cap for full length of the jetty. Excavation of channel to 30 feet deep and generally 300 feet wide from entrance of Isthmus Slough was completed in 1951. Dredging outer bar channel to a depth of 40 feet, decreasing to 30 feet at Guano Rock was completed in 1952. Construction of the Charleston Channel and small-boat basin was completed in September 1956. Rehabilitation of South Jetty was started in June 1962 and completed December 1963. Repair of North Jetty was completed in August 1989. Construction of the deeper and wider channel to mile 15 was completed in 1979. Deepening of Charleston channel and turning basin was completed in 1985 under Section 107. (For details relating to previous projects, see page 1987 to Annual Report for 1915 and page 1728 of Annual Report for 1938.)

A modification to the existing project was authorized in the FY 1996 Energy and Water Development Appropriations Act, Public Law 104-46, November 13, 1995. This authorization provided for deepening the channel by 2 feet to 47 feet below mean lower low water (MLLW) from the entrance to Guano Rock (river mile 1) and to 37 feet below MLLW from river mile 1 to 15. Public Law 104-46

also provided for deepening by two feet and expanding the turning basin at river mile 12 by 100 feet from 800 by 1000 feet to 900 by 1000 feet. The excavation material for the channel deepening was transported to the ocean for disposal. The cost for preparation of the plans and specifications and the construction of the project was \$11,616,000, of which \$8,116,000 was federal and \$3,500,000 was non-federal. In addition, the sponsor paid 100 percent of the estimated cost for dredging the berth areas.

**Local cooperation.** Fully complied with. Requirements are described in full on page 37-5 of FY 1981 Annual Report.

The sponsor, International Port of Coos Bay, signed a Project Cooperation Agreement on May 8, 1996 for the project modification to deepen the channel as authorized in Public Law 104-46. In accordance with cost sharing requirements of the Water Resources Development Act of 1986, the Federal Government provided 75 percent of the costs associated with the general navigation features of the project. The non-federal sponsor was required to provide 25 percent of the total construction cost of the general navigation features up front. The sponsor was also required to provide an additional 10 percent of the cost of the general navigation features of the project in cash over a period not to exceed 30 years.

**Terminal facilities.** At North Bend there is a municipal dock 649 feet long fronting on channel, about 2,380 feet of privately owned mill docks, and three oil receiving terminals in vicinity.

At Coos Bay there is a privately owned dock with a frontage of 1,345 feet, open to the public on equal terms; several small landings for fishing and harbor craft; and three lumber docks with 1,300-foot, 576-foot and 500-foot frontages, respectively.

In the North Spit industrial area, there is one woodchip loading facility having a frontage of 1200 feet and a smaller T-dock operated by the Port of Coos Bay.

At Eastside, on Isthmus Slough, there is a 200-foot dock.

At Empire there is a privately owned lumber dock with frontage of 510 feet, and an oil terminal, owned by Port of Coos Bay, for receipt of petroleum products by barge. A barge slip also owned by the Port was completed in 1986.

At Charleston there are wharves, for receipt of fresh fish and shellfish and large seafood receiving and processing plant. There are also two municipally owned small-boat basins, open to all on equal terms, capable of mooring 250 fishing and recreation craft. Servicing facilities for small craft are available at all

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facilities and public launching ramps have been constructed in Charleston area by private interests. A privately owned floating moorage on Joe Ney Slough has facilities for mooring about 50 fishing vessels.

At Jordan Cove area there is a dock, 248 feet long, for wood chip ships.

**Operations during FY Maintenance:** Routine operations and maintenance continued. (See Table 28R for dredging operations.) Interim Jetty Repair contract was awarded Sep 11, 2009, for work to be executed in FY 2009.

### 9. COQUILLE RIVER, OR

**Location.** Rises in Coast Range, flows generally westerly for about 100 miles, and empties into Pacific Ocean at Bandon, OR, 225 miles south of mouth of Columbia River and 420 miles north of San Francisco Bay. (See NOAA Charts 18580 and 18186.)

**Existing project.** Two rubble mound high-tide jetties at river mouth, South Jetty 2,700 feet long and the north, 3,450 feet long; and a channel 13 feet deep at mean lower low water and of suitable width from the sea to a point 1 mile above old Coquille River Lighthouse, and snagging to State Highway Bridge at city of Coquille. Mean lower low water is plane of reference. Tidal range between mean lower low water and mean higher high water at mouth is 7 feet and extreme about 10 feet.

Jetties were completed in 1908 and entrance channel in 1933. North Jetty was reconstructed in 1942 and a 750-foot extension to easterly end was constructed in 1951. South Jetty was repaired in 1954 and North Jetty in 1956. Coquille Lighthouse rehabilitation was completed June 21, 1976. Port of Bandon constructed boat basin facility in conjunction with protective breakwater and entrance channel construction in 1985, under Section 107. (For details relating to previous projects, see page 1986 of Annual Report for 1915 and page 1727 of Annual Report for 1938.)

A plan to deepen the entrance channel of the Coquille River from 13 feet to 18 feet was approved in May 1988. The economics were reevaluated in FY1993 and the project was not economically feasible at that time.

**Local cooperation.** Restoration of lighthouse using Code 710, Recreation Facilities at Completed Projects funding, and required 50 percent cost sharing with non-Federal sponsor (Oregon State Parks).

**Terminal facilities.** At Bandon: A publicly owned wharf and a small-boat basin open to all on equal terms.

**Operations during FY Maintenance:** Routine operations and maintenance continued. (See Table 28R for dredging operations.)

### 10. DEPOE BAY, OR

**Location.** Harbor on Oregon coast 100 miles south of mouth of Columbia River. (See Coast and Geodetic Survey Chart 5902.)

**Existing project.** Two breakwaters north of entrance; an entrance channel 8 feet deep and 50 feet wide; an inner basin 750 feet long, 390 feet wide and 8 feet deep with retaining wall along easterly side; and a stone spending beach. Mean lower low water is plane of reference. Tidal range between mean lower low water and mean higher high water is 8 feet and extreme is about 12 feet. Project as originally authorized was completed in 1939 and project modifications, enlarging the basin and deepening to 8 feet, were accomplished in June 1952 and August 1966.

**Local cooperation.** Fully complied with.

**Terminal facilities.** Facilities, in inner basin, consist of landings and floats to accommodate operators of excursion and commercial fishing boats. Facilities considered adequate for existing commerce.

**Operations during FY Maintenance:** Conducted routine hydrographic surveys.

### 11. PORT ORFORD, OR

**Location.** On Oregon coast 250 miles south of Columbia River entrance and 390 miles north of San Francisco Bay. (NOAA Chart 18203 and Geological Survey Quadrangle, Port Orford, OR)

**Existing project.** Improvement of harbor by 55-foot extension of existing locally constructed breakwater and dredging of a channel 16 feet deep, 90 feet wide, and 750 feet long. Breakwater was completed October 1968. Channel was completed September 1971. The authorization was modified by WRDA 92 to allow the Corps to maintain the authorized navigation channel within 50 feet of the port facility.

**Local cooperation.** Fully complied with.

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**Terminal facilities.** In FY 2000 local interests replaced the aging wooden pile dock with a sheet pile bulkhead and backfill dock. This dock provides almost 3 acres of dock area and two large-capacity cranes.

**Operations during FY.** Maintenance: Routine operations and maintenance continued. (See Table 28R for dredging operations.)

### 12. ROGUE RIVER HARBOR AT GOLD BEACH, OR

**Location.** Rises in Cascade Range in southwestern Oregon; flows westerly through Coast Range, and empties into Pacific Ocean 264 miles south of mouth of Columbia River and 381 miles north of San Francisco Bay. (See NOAA Chart 18202.)

**Existing project.** Two jetties at entrance, and a channel 13 feet deep and 300 feet wide from ocean to a point immediately below State highway bridge, about 1 mile, including widening channel at a point about 0.25 mile below bridge to form a turning basin 13 feet deep, 500 feet wide, and 650 feet long, and a Boat Basin Channel 10 feet deep by 100 feet wide approximately 2,500 feet long. At request of local interests, turning basin was located in south portion of estuary downstream from a point 0.25 mile below bridge. This change was effected to permit adequate terminal facilities to be constructed adjacent to turning basin. Mean lower low water is plane of reference. Range of tide between mean lower low water and mean higher high water is 7 feet, and extreme about 14 feet.

Project as authorized has been completed. Construction of two jetties at entrance was completed September 1960. Dredging river channel by contract and entrance bar by government plant was completed October 1961. North Jetty rehabilitation along channel side was completed October 1966. Breakwater construction and dredging, under contract awarded in September 1964, was 17 percent accomplished when flood of December 1964 destroyed all completed works. Contract was terminated as further construction at that location was considered unfeasible. Bank protection work at Wedderburn location was completed in October 1972. A breakwater, constructed by Port of Gold Beach, was completed during 1973. In 1985, three pile dikes, located on the south side of channel ocean ward of the boat basin entrance, were completed. In 1997, at the direction of Congress, the boat basin entrance channel was relocated approximately 1,000

feet upstream to a new opening in the breakwater provided by the Port of Gold Beach.

**Local cooperation.** Fully complied with.

**Terminal facilities.** There are various landings for fishing and recreational craft. At Wedderburn, across river from Gold Beach, is a facility to accommodate excursion passengers and small freight items destined for various private landings between Wedderburn and Agness, OR. Facilities considered adequate for existing commerce.

**Operations during FY.** Maintenance: Routine operations and maintenance continued. (See Table 28R for dredging operations.)

### 13. SIUSLAW RIVER, OR

**Location.** Rises in coast range, flows about 110 miles westerly and empties into Pacific Ocean about 160 miles south of entrance of Columbia River and 485 miles north of San Francisco Bay, CA. (See NOAA Charts 19583 and 18580.)

**Existing project.** Provides for 2 high-tide, rubble mound jetties 750 feet apart at the outer end, the North Jetty 8,390 feet long (600 feet un-constructed) and the south jetty 4,200 feet long; an entrance channel 18 feet deep and 300 feet wide from deep water in ocean to a point 1,500 feet inside the outer end of existing North Jetty; thence a channel 16 feet deep, 200 feet wide with additional widening at bends, and about 5 miles long, to a turning basin, 16 feet deep, 400 feet wide, and 600 feet long, opposite Siuslaw dock at Florence; a channel 12 feet deep, 150 feet wide from Florence to mile 16.5; and at River Mile 15.5 a turning basin 12 feet deep, 300 feet wide, and 500 feet long. Mean lower low water is plane of reference. Tidal range between mean lower low water and mean higher high water at mouth of river is 7 feet and extreme about 11 feet. During low stages of river, tidal effect extends to Mapleton, 20.5 miles above mouth. (For details relating to previous project, see page 1988 of Annual Report for 1915.)

A modification to the existing project was authorized by public law 96-367, October 1, 1980. North and South Jetty modifications were completed in FY 86. Modifications provide for extending the North and South Jetties by 1,900 and 2,300 feet respectively. The jetty extensions terminate at approximately the minus 25-foot contour. Spur jetties were constructed on each jetty extension to reduce long shore currents from transporting material around the heads of the jetties. Each spur jetty is 400 feet long and originates approximately 900 feet

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shoreward of the jetty head. The North Jetty spur is oriented 45 degrees to the north of the existing jetty alignment and the South Jetty spur 45 degrees to the south of the jetty alignment.

In cooperation with local interests and the U.S. Coast Guard, the entrance channel was realigned in FY00. This has resulted in a safer entrance and reduced dredging.

**Local cooperation.** Fully complied with.

**Terminal facilities.** Port dock at Florence, 150 feet wide and 350 feet long, is about 5.3 miles above river entrance and accommodates a fish-receiving station at east end of wharf which maintains a 2-ton capacity winch and supplies gasoline, oil and ice to fishermen. Other facilities at Florence consist of various float ways that provide docking facilities for fishing vessels and other small craft and a floating dock with accommodations for 75 commercial fishing vessels. Adjacent to commercial basin is mooring basin with accommodations for 200 sport boats of all sizes.

Modern docks for loading ocean-going barges with packaged lumber is maintained at Mapleton and owned by the Davison Lumber Company.

There are also a number of private landings and log booms between Cushman and Mapleton to accommodate river traffic. These facilities are considered adequate for existing traffic.

**Operations during FY.** Maintenance: Routine operations and maintenance continued. (See Table 28R for dredging operations.)

### 14. SKIPANON CHANNEL, OR

**Location.** In tidal waterway extending south 2.7 miles from deep water in Columbia River. Channel enters Columbia about 10 miles above mouth and 4 miles below Astoria, OR. (See NOAA Chart 18523.)

**Existing project.** Channel 30 feet deep and generally 200 feet wide extending from deep water in Columbia River to railroad bridge at Warrenton, OR, distance of 1.8 miles, turning basin of same depth, mooring basin 12 feet deep at mean lower low water at Warrenton, OR, and channel 7 feet deep, generally 40 feet wide, with increased widths at log dumps and terminals, for 4,500 feet via cutoff channel above railroad bridge. Channel is maintained to 17 feet, which is adequate for user traffic. Mean lower low water is plane of reference. Tidal range between mean lower low water and mean higher high water is about 8 feet; extreme is about 13 feet.

Project as authorized is complete. Dredging river channel and turning basin was completed in 1939. Construction of small-boat mooring basin at Warrenton, OR, was completed October 1957, and fill stabilization work was accomplished in August 1958.

**Local cooperation.** None required.

**Terminal facilities.** City of Warrenton owns wharf with a 300-foot frontage open to public on equal terms. One privately owned cannery wharf with a 300-foot frontage is used for unloading fish and handling fishnets. One privately owned boatyard has floats and moorage facilities for use by a maximum of 80 small boats. Small-boat basin has facilities for numerous fishing and recreation craft, and a privately owned lumber mill has a barge loading facility for chips and lumber. Facilities are considered adequate for existing commerce.

**Operations during FY.** Maintenance: None. Project depth was adequate for current use.

### 15. TILLAMOOK BAY AND BAR, OR

**Location.** Bay is on Oregon coast about 50 miles south of mouth of Columbia River. (See NOAA Charts 18520 and 18558.)

**Existing project.** Provides for a jetty about 5,700 feet long on north side of entrance and a jetty 8,000 feet long on south side; a channel through bar 18 feet deep and of such width as can be practically and economically obtained; for a channel 200 feet wide and 18 feet deep from deep water in bay to Miami Cove; and for initial dredging to 12 feet deep of a small-boat basin and approach thereto at Garibaldi, OR. Project also provides for improvement of Bay ocean Peninsula, OR, by construction of sand and rock fill dike 1.4 miles long, on alignment extending between Pitcher Point and town of Bay Ocean. Mean lower low water is plane of reference. Tidal range between mean lower low water and mean higher high water is 8 feet; extreme is about 14 feet. Hobsonville Channel portion of project is inactive.

Except for construction of Hobsonville Channel portion, classified inactive, channels were completed in 1927, North Jetty in 1933, improvement of Bay ocean Peninsula in 1956 and small-boat basin in 1958. The North Jetty was rehabilitated in 1965 and again in 1991. South Jetty construction was initiated in 1969, extended in 1974, and completed to the authorized 8,000 feet in 1978. 18-foot channel to Miami Cove is inactive due to mill closure. (For details relating to previous projects, see page 1989 of

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Annual Report for 1915 and page 1474 of Annual Report for 1936.)

**Local cooperation.** Fully complied with. Requirements are described in full on page 37-9 of FY 1981 Annual Report.

**Terminal facilities.** At Garibaldi: A facility owned by the Port of Bay City, for shipping lumber and receiving logs, a public landing suitable for mooring fishing vessels, towboats, and other craft. Small-boat basin has adequate facilities for mooring fishing and recreational craft. A privately owned boat ramp and moorage is available for recreational craft.

At Bay City: A privately owned wharf used exclusively for receipt of fresh fish and shellfish. Facilities considered adequate for existing commerce.

**Operations during FY.** Maintenance: North Jetty shoreline monitoring was completed.

### 16. UMPQUA RIVER, OR

**Location.** Rises in Cascade Range, flows westerly about 120 miles, and empties into Pacific Ocean 180 miles south of Columbia River and 465 miles north of San Francisco Bay. (See NOAA Charts 18580 and 18584.)

**Existing project.** A jetty on north side of entrance about 8,000 feet long, a South Jetty 4,200 feet long extending to a point 1,800 feet south of outer end of North Jetty; dredging to provide a usable entrance channel 26 feet deep, and a river channel 22 feet deep and 200 feet wide, from mouth to Reedsport, a distance of about 12 miles with a turning basin at Reedsport 1,000 feet long, 600 feet wide, and 22 feet deep; deepening of channel at Winchester Bay to 16 feet deep by 100 feet wide for 3,100 feet, then adding 16 feet deep by 100 feet wide for 500 feet, and 12 feet deep by 75 feet wide for 950 feet beyond boat basin making up the East Boat Channel. A new West Boat Channel was added 16 feet deep by 100 feet wide for 4,300 feet and completed in 1984. Project was modified in 1951 to provide a channel in Scholfield River, but this portion of the project is currently inactive. Mean lower low water is plane of reference. Tidal range between mean lower low water and mean higher high water at river mouth is 7 feet, and extreme range is about 11 feet.

North Jetty was completed in 1930. Extension to original South Jetty was completed in 1938. Dredging a 22-foot channel from mouth of river to Reedsport was completed in 1941. Gardiner Channel and turning basin was completed in 1949 and Winchester Bay Channel and mooring basin in 1956.

Rehabilitation of South Jetty was completed August 1963. Extension of training jetty was completed October 9, 1980. Deepening Winchester Bay East Channel and new West Channel completed 1984 under Section 107. (For details relating to previous projects, see page 2967 of Annual Report for 1898 and page 1732 of Annual Report for 1938.)

**Local cooperation.** None required.

**Terminal facilities.** At Gardiner there is about 650 feet of wharf frontage. Port of Umpqua owns one wharf with 456 feet of water frontage, of which 228 feet is usable for vessels and another with about 75 feet of water frontage which has not been used generally for commercial shipping.

On Bolon Island across the river from Reedsport a wharf was constructed which has about 5 acres of open storage for lumber and available to all on equal terms.

At Winchester Bay, 2 miles from river entrance there is a major sports and commercial fishing harbor. Facilities are considered adequate for existing commerce.

**Operations during FY.** Maintenance: Routine operations and maintenance continued. (See Table 28R for dredging operations.)

### 17. WILLAMETTE RIVER AT WILLAMETTE FALLS, OR

**Location.** Locks and dam covered by this project are at Willamette Falls, a rocky reef in Willamette River at Oregon City, OR, about 26 miles above mouth of river.

**Existing project.** Canal and locks were originally constructed by private interest in 1873 and were purchased by the United States in April 1915 for \$375,000. Final report on purchase and rehabilitation of canal and locks is in the Annual Report for 1923, when project was reported 98 percent complete. The project includes four locks a canal basin and an extra guard lock used to prevent flooding when river levels are high. The system acts as a fluid staircase between the upper and lower reaches of the Willamette River. Total length of existing canals and locks is about 3,500 feet. Principal features of existing canal and locks at Willamette Falls are set forth-in Table 28-J. Ordinary fluctuation of stage of water above locks is 12 feet and extreme, due to flood conditions, 20 feet. Below locks, ordinary fluctuation is 15 feet and extreme 50 feet.

Until the 1940's, the gates were opened manually. Now, the gates are operated by hydraulic pumps

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controlled by switches in two control stations with the aid of closed-circuit television and radio communication. All the gates have been replaced under minor rehabilitation funds. Existing locks and grounds are in good condition and in continuous operation. New service building was completed in 1988 costing \$523,000. The project was placed on the National Register of Historic Places in 1974, and was established as an Oregon Civil Engineering Landmark in 1991.

As a result of the mill closure in 1996, one of two shifts was eliminated and hours of operation reduced.

**Local cooperation.** Fully complied with. 2006 Agreement signed with the Corps of Engineers and the Oregon Department of Transportation to address transportation enhancement activities under provisions of 23 USC 132 and Section 225 of WRDA 1992.

**Terminal facilities.** Simpson Paper closed the mill in 1996 after over 100 years of operations. The mill was sold to West Linn Paper. West Linn Paper has a timber wharf about 850 feet long, extending to and supported by a concrete division wall built in lock canal by the United States. The use of the wharf for operations purposes by the mill may be changed due to shipping changes by the new owner.

**Operations during FY.** Maintenance: The Locks were not operated during this calendar year due to the need for HSS (Hydraulic Steel Structures) inspections of the gates. The only passage was the emergency passage of the Willamette Queen in January. The passage was required to allow the vessel to receive Coast Guard inspection.

### 18. YAQUINA BAY AND HARBOR, OR

**Location.** Yaquina Bay is on Oregon coast, 113 miles south of mouth of Columbia River. (See NOAA Charts 18580 and 18581.)

**Existing project.** Two high tide rubble mound jetties at entrance, North Jetty 7,000 feet, and South Jetty 8,600 feet long; a spur jetty on channel side of South Jetty 4,700 feet from its sea end, 800 feet long; five groins channel ward from South Jetty; channel 40 feet deep for a general width of 400 feet across bar and at outer end of entrance channel; a channel 30 feet deep and 300 feet wide to a turning basin of same depth, 900 to 1,200 feet wide and 1,400 feet long, and a channel 18 feet deep and 200 feet wide from 30-foot channel at about mile 2.4, thence upstream to abandoned railroad terminus at Yaquina, a distance of about 4.5 miles. Project also provides

for two small boat-mooring basins at Newport, OR. Mean lower low water is plane of reference. Tidal range between mean lower low water and mean higher high water is 8 feet and extreme is about 12 feet. At mile 1.2 a 1,300 foot long breakwater protecting the Port of Newport South Beach Marina together with an entrance channel 8 feet long by 100 feet wide for a distance of 2,035 feet.

Project as originally authorized was completed in May 1952. Restoration of jetties was completed in 1934 and extension of North Jetty 1,000 feet seaward was completed in 1940. Construction of mooring basin at Newport and dredging of channel and turning basin to project dimensions, were completed during FY 1949. Restoration of North Jetty was again accomplished in 1956. Under modification of July 3, 1958, extension of North Jetty was completed in September 1966, dredging of 40-foot bar channel and 30-foot river channel was completed in October 1968, and extension of South Jetty was completed in June 1972. The North Jetty was rehabilitated in 1978, in 1988, and again in 2001. (For details relating to previous projects see Annual Report for 1893, part 4, page 3314, and Annual Report for 1938, page 1736.)

**Local cooperation.** None required.

**Terminal facilities.** At McLean Point, on north side of bay, about 2 miles from entrance, Port of Newport has two berths capable of serving ocean-going vessels, one 435 feet long, the second 520 feet long. At the time the second berth was dredged, a retaining wall and fill of 6 acres were constructed adjacent to deep water. There now is 40 acres of filled land adjacent to deep water, and of this total 7 acres were constructed in 1956-57. This facility has necessary carriers and lifts trucks for handling lumber cargoes, warehouse for covered cargo storage, and is open to all on equal terms.

Port of Newport also has a public wharf with 300 feet of frontage for servicing fishing boats. In addition, Port of Newport maintains 510 berths for mooring commercial and sport fishing vessels. There are several seafood companies on the bay, which have their own facilities for handling fresh fish and crab. Supplies and petroleum products are readily available for small vessels. On south side of bay about 1.2 miles above entrance, Port of Newport has constructed South Beach Marina which can handle approximately 600 pleasure craft and shallow draft fishing boats. Public facilities include public automobile and boat trailer parking, boat launching ramp, fuel dock, fishing pier, and picnic area. A dry boat moorage of 120 boats is complete. A swing hoist with 3-ton capacity is currently available and one with 60-ton capacity is planned.

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About 2.0 miles above entrance, Oregon State University, in conjunction with the Marine Science Center on 52 acres, maintains a 220-foot pier for docking large and small research vessels and a 100-foot float for docking small boats. Docking facilities are restricted to research vessels and State of Oregon small boats.

**Operations during FY.** Maintenance: Routine operations and maintenance continued. (See Table 28R for dredging operations.)

### 19. YAQUINA RIVER, OR

**Location.** Rises in Coast Range, flows about 50 miles in a westerly direction, and empties into Yaquina Bay, on Oregon coast. (See US Coast and Geodetic Survey Charts Nos. 5802 and 6058.)

**Existing project.** Provides for two controlling half-tide dikes of piling, brush, and stone, each about 1,100 feet long (constructed by local interests), and for a channel 10 feet deep and generally 150 feet wide on Yaquina River and 200 feet wide in Depot Slough, extending from town of Yaquina near RM 4.0 to Toledo at RM 14.4.

Mean lower low water is plane of reference. Tidal range between lower low water and mean higher high water is 8 feet and extreme about 12 feet. Freshet heights are about 12 feet at mouth of Depot Slough. Channel work authorized March 1913 was completed in 1914. Additional work authorized in 1960 was completed in 1969.

**Local cooperation.** Fully complied with.

**Terminal facilities.** Near town of Yaquina at river mouth, which is also head of Yaquina Bay, there is a moorage for small vessels and a small-craft shipyard. The Port of Toledo has public-terminal facilities for accommodation of local craft. There are also privately owned facilities for loading lumber barges, receipt of bunker fuel, and log rollways for receipt of logs. These facilities are considered adequate for existing commerce.

**Operations during FY.** Maintenance: None. Project depth was adequate for current use.

### 20. PROJECT CONDITION SURVEYS

Hydrographic surveys are conducted to determine navigation conditions at boat basins, small navigation projects, and channels not funded on a project basis for the current FY. Soundings in subject areas are conducted in order to evaluate shoaling conditions.

Hydrographic charts are prepared and distributed. FY costs were \$139,000. See Table 28-I for surveys conducted during the FY.

### 21. NAVIGATION ACTIVITIES UNDER SPECIAL AUTHORIZATION

**Navigation Activities Pursuant to Section 107 of the 1960 Rivers and Harbors Act, Public Law 645, 86th Congress, as Amended.** In addition to general requirements, each project is limited to a federal statutory cost of not more than \$7,000,000 per project. The local sponsor must agree to provide an amount, in cash, not less than 10 percent or more than 50 percent of total project cost for navigation depending upon the planned depth of channel or basin; pay an additional 10 percent of the construction costs in cash over a period not to exceed 30 years after project completion. The non-federal sponsor must also agree to provide, maintain, and operate an adequate public parking, landing or wharf, service facilities, berthing areas, floats, pier, slips and similar marina and mooring facilities. The remaining portion of the project, such as the access channel or breakwater structure, is maintained by the Corps of Engineers at Federal expense within a limited amount. Federal expenditures for operation and maintenance under the Section 107 authority are administratively limited to the greater of \$4,500,000, or 2.25 times the Federal costs of the project including costs for the feasibility through the construction phases. No projects were under construction during the FY.

See Table 28-L for expenditures during the FY.

**Mitigation of Shore Damages Attributable to Navigation Works, Pursuant to Section 111 of the 1968 Rivers and Harbors Act Public Law 483, 90<sup>th</sup> Congress, as Amended.** In addition to general requirements, each project is limited to a federal statutory cost of not more than \$5,000,000. The non-federal sponsor must agree to provide a cost share amount in the same proportion as the cost sharing provisions applicable to the project causing the damage. The non-federal sponsor must also provide interests in real estate in the same manner required for the project causing the shore damage. The non-federal sponsor must also agree to operate and maintain the mitigation measures, and, in the case of interest in real property acquire in conjunction with nonstructural measures, to operate and maintain the property for public purposes in accordance with regulations prescribed by the Corps of Engineers. No projects were under construction during the FY.

See Table 28-L for expenditures during the FY.

## Shore Protection

### 22. SHORE PROTECTION ACTIVITIES UNDER SPECIAL AUTHORIZATION

**Hurricane and storm damage reduction pursuant to Section 103 of the River and Harbor Act of 1962, Public Law 874, 87<sup>th</sup> Congress, as Amended.** In addition to general requirements, each project is limited to a Federal statutory expenditure of not more than \$3,000,000 per project. Costs for protection of federally owned properties are 100 percent Federal. Costs assigned to areas meeting public use criteria are 35 percent non-Federal. Costs assigned to protection of privately owned undeveloped lands and shores that are not open to the public are 100 percent non-Federal. No projects were under construction during the FY

See Table 28-L for expenditures during the FY.

## Flood Control

### 23. APPLGATE LAKE, ROGUE RIVER BASIN, OR

**Location.** In Jackson County, OR, on Upper Applegate River, a tributary of Rogue River, at River Mile 46, about 23 airline miles southwest of Medford, OR.

**Existing project.** A gravel-fill embankment dam, 242 feet high from streambed to crest with an overall length of 1,300 feet. A gate-controlled concrete chute-type spillway on the left abutment, and a regulating outlet conduit, and intake tower with multilevel intakes. Applegate Lake, 5 miles long, provides 75,000 acre-feet of usable storage for flood control and water conservation utilization. Project controls runoff from a drainage area of 223 square miles. In addition to flood control, the reservoir is operated to provide irrigation, fish and wildlife enhancement, water quality control, and recreation benefits. Recreation facilities were provided by the Corps of Engineers, with operation and maintenance by the USFS under a memorandum of agreement. Project is complete and operating.

Freshets regulated by Applegate Lake on Applegate River and Rogue River are shown in Table 28-K.

**Local cooperation.** Authorizing act requires that State of Oregon insure maintenance of stream flow released for fishery. In addition, costs allocated to irrigation would have to be repaid in a manner and to an extent consistent with reclamation laws and

policies. Oregon Department of Fish and Wildlife made filing May 31, 1962 with State Engineer for water rights for use of stored water and natural flows for fish habitat improvement in amounts and at times specified in project authorization. The U.S. Bureau of Reclamation has made a feasibility study of Applegate Irrigation Division. The results of the study indicate that at present there does not appear to be a feasible Federal irrigation project for the Applegate River valley. Local interests have furnished all local cooperation specified by the 1970 Flood Control Act. The Secretary of the Army approved the assurances on May 8, 1975.

**Operations during FY.** Maintenance: Routine operation and maintenance continued.

### 24. BLUE RIVER LAKE, OR

**Location.** On Blue River, a major tributary of McKenzie River, 1.8 miles above confluence of the two streams at the confluence of Quartz Creek and Blue River and about 42 miles easterly of Eugene, OR.

**Existing project.** A gravel-filled embankment dam of 1,329 feet long at crest including spillway and 319 feet above the lowest point of the general foundation. A concrete gravity chute-type spillway with two gates is located on left abutment. Outlet works are in left abutment. On left shore of reservoir an earth-and-gravel fill embankment, about 1,535 feet long and 70 feet high, closes a low saddle between Blue River and McKenzie River. Project controls runoff from drainage area of 88 square miles. Reservoir provides 85,000 acre-feet of usable flood control storage and is operated as a unit of coordinated reservoir system to protect Willamette River Valley and increase low water flows for navigation and other purposes. The U.S. Forest Service under a Memorandum of Agreement provides recreation facilities. Project is complete. Construction of dam and appurtenant works was initiated in May 1963 and operation for flood control was effective in October 1968. Settlement of claims was completed in May 1974. The project is operated remotely from Lookout Point Dam in Lowell, OR.

Eugene Water and Electric Board (EWEB) were granted a FERC license in November 1989 to install two small hydropower units at Blue River Lake project. EWEB has delayed their plans for hydropower units pending the conclusion of a Corps proposal to add water temperature control to the regulating outlet tower. Refer to the Willamette River Temperature Control project write-up (number 48) for additional information.

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Freshets regulated by Blue River Lake project on Blue River, a major tributary of McKenzie River, are shown in Table 28-K.

**Local cooperation.** None required.

**Operations during FY.** Maintenance: Routine operation and maintenance work performed.

### 25. COTTAGE GROVE LAKE, OR

**Location.** On Coast Fork of Willamette River, 29 miles from mouth. Coast Fork rises in Douglas County, OR, on western slope of Cascade Range and northern slope of Calapooia Range, flows north for 49 miles, and unites with Middle Fork to form main Willamette River.

**Existing project.** An earth fill dam, 1,750 feet long at crest, 114 feet high from lowest point of the general foundation, a concrete gravity free overflow spillway 264 feet long near the right abutment, and a concrete gravity non-overflow section 96 feet long forming the right abutment. Total length of dam is 2,110 feet. Outlet works, consisting of three gate-controlled conduits, pass through spillway section. Reservoir provides 30,060 acre-feet of usable flood control storage and controls runoff of drainage area of 104 square miles. Project is operated as a unit of coordinated reservoir system to protect Willamette River Valley and increase low water flow for navigation and for other purposes. Recreational development consists of day use and overnight facilities at five sites operated by the Corps of Engineers. Construction of project initiated August 1940 was completed April 1952. Dam and reservoir have been in continuous operation since September 1942. The project is operated remotely from Lookout Point Dam in Lowell, OR.

Freshets regulated by Cottage Grove Lake on Coast Fork Willamette River are shown in Table 28-K.

**Local cooperation.** Development of additional recreation facilities will require a local sponsor willing to cost share and assume all operation and maintenance of park facilities.

**Operations during FY.** Maintenance: Routine operation and maintenance continued.

### 26. DORENA LAKE, OR

**Location.** On Row River, OR, 7 miles from mouth. Row River rises in Lane County on western slope of Cascade Range, flows northwest for 19

miles, and enters Coast Fork of Willamette River 19.5 miles above mouth.

**Existing project.** An earth fill embankment dam of, 3,352 feet long at crest and 145 feet high from lowest point of the general foundation. Concrete gravity free-overflow spillway, 200 feet long, forms right abutment. Outlet works on five slide-gate-controlled conduits pass through spillway section. Reservoir provides 70,500 acre-feet of usable flood control storage and controls runoff of 265 square miles. The Project is operated as a unit of coordinated reservoir system to protect Willamette River Valley and increase low water flows for navigational and other purposes. Construction of project initiated June 1941 was completed October 1952 except for construction of additional recreation facilities that were funded under the Code 710 program. Future recreation facility construction will be accomplished in accordance with the cost-sharing contract with Lane County, OR. Dam and reservoir have been in continuous operation since November 1949. The project is operated remotely from Lookout Point Dam in Lowell, OR.

Freshets regulated by Dorena Lake project on Row and Coast Fork Willamette Rivers are shown in Table 28-K.

**Local cooperation.** A multiple project cost sharing agreement has been in force with Lane County since Sept. 1976. It includes 4 projects and 14 parks. At Dorena Lake, 6 parks included in the agreement are managed by Lane County under a lease agreement. Future recreation development will require cost sharing.

**Operations during FY.** Maintenance: Routine operation and maintenance continued.

### 27. ELK CREEK LAKE, ROGUE RIVER BASIN, OR

**Location.** In Jackson County, OR at River Mile 1.7 on Elk Creek, a tributary of Rogue River, about 26.5 miles northerly from Medford, OR.

**Existing project.** Construction work for the 249-foot high roller compacted concrete gravity dam, 2,600 feet long at the crest, with a gate controlled concrete chute spillway, regulating outlet conduits, power penstock and multiple use intake tower attached to the upstream face of the dam has been halted due to a court injunction. The project would control runoff from a drainage area of 135 square miles, and provide future municipal and industrial water supply, irrigation, fish and wildlife

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enhancement, water quality control, and recreation benefits.

Funds to initiate preconstruction planning were appropriated in FY65, and for construction in FY71. Construction was deferred in FY77 due to a lack of state support. Following significant review, evaluation, and a public hearing, the Water Policy Review Board reversed its position and in April 1981 voted to support Elk Creek. Funds were appropriated in FY82 and FY83 to update and continue project design, plans, and specifications. Funds were appropriated in FY85 to resume construction. After initiation of construction, an injunction was placed against completion of the project and additional analysis under National Environmental Policy Act (NEPA) was required in order to remove the injunction. Construction of the project was terminated with the project at 83 feet, one-third its design height.

After completion of the final Environmental Impact Statement Supplemental #2, the Department of Justice filed a motion with the Court to remove the injunction. The Ninth Circuit Court of Appeals issued a ruling on April 21, 1995. In a 2-1 decision, the Court also reversed the District Court decision that EISS #2 met the requirements of the earlier Ninth Circuit opinion and awarded attorneys fees to the plaintiffs. The case was remanded with instructions to prepare a third supplement adequately addressing all issues raised under the NEPA process.

Due to the Ninth Circuit Court of Appeals decision and the current Federal budgetary climate, the Corps does not plan to perform the environmental studies under NEPA necessary to remove the Federal court injunction against completion of the project. Therefore, an evaluation of the requirements for long term of the project in its uncompleted state will be required.

The FY97 Energy and Water Development Appropriation Act provided funds for long-term management in an incomplete state, including passive fish passage. Since 1998 the Corps has attempted to remove a section of the Dam to provide a long-term fish passage solution at the project. A National Marine Fisheries Service January 2001 Biological Opinion stated that this was not the only option available to avoid jeopardy to listed Coho Salmon. The Opinion also stated that there was the potential that risks associated with a new trap haul facility could be reduced to an acceptable level. Based on concerns raised by locally elected officials, an agency level review of our plan to remove a section of the Dam was conducted. In order to allow for this review, our effort to remove a section of the Dam was deferred in FY02. Until a permanent fish passage solution is implemented, fish passage around

the project will be provided through operation of a temporary trap and haul facility.

**Local cooperation.** Authorizing act requires that State of Oregon take action prior to construction to insure maintenance in stream of flow to be released for fishery. In addition, costs allocated to irrigation would have to be repaid in a manner and to an extent consistent with the U.S. Bureau of Reclamation laws and policies. On February 24, 1966, State of Oregon Water Resources Board filed for withdrawal rights of 25 cubic feet per second to maintain a minimum flow for fish. Development of recreation facilities requires a local sponsor willing to cost share in recreation development and assume operations and maintenance of park facilities.

**Operations during FY.** New Work: Completed design and construction of the "notch" which is necessary to provide permanent fish passage through the incomplete dam structure.

### 28. FALL CREEK LAKE, OR

**Location.** On Fall Creek, a tributary of Middle Fork Willamette River, about 7 miles above confluence of the streams and about 19 miles southeasterly of Eugene, OR.

**Existing project.** An earth-and-gravel fill embankment about 5,100 feet long at crest and 193 feet high from lowest point of the general foundation. A gated concrete gravity spillway is in left abutment. Outlet is in right abutment. Reservoir provides 115,000 acre-feet of usable flood control storage and is operated as a unit of coordinated reservoir system to protect Willamette River Valley and increase low water flows for navigation and other purposes.

Construction of project began May 1962 and was essentially complete November 1965. Reservoir storage for flood control was effective October 1965. The project is operated remotely from Lookout Point Dam in Lowell, OR. Sky Camp Lodge was completed October 1978. Future recreation facilities will be provided in accordance with the cost-sharing contract with Bethel School District. Bethel School District has a sub-agreement with the Springfield Kiwanis Club for management of this facility. The Corps manages one park at the project.

Freshets regulated by Fall Creek Lake project on Fall Creek, a tributary of the Middle Fork, Willamette River are shown in Table 28-K.

**Local cooperation.** Fall Creek parks are managed by Oregon State Parks under lease agreement. Future

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development will not require a cost sharing agreement.

**Operations during FY.** Maintenance: Routine operation and maintenance continued.

### 29. FERN RIDGE LAKE, OR

**Location.** On Long Tom River, 23.6 miles from the mouth. Long Tom River rises in Lane County, OR, on eastern slope of Coast Range, flows north for 50 miles, and enters Willamette River 147 miles above its mouth.

**Existing project.** A main dam of 6,624 feet long at crest and 49 feet high from lowest point of the general foundation and two auxiliary dikes, 915 and 3,929 feet long, along northeasterly boundary of lake. Main dam consists of an earth fill embankment dam 6,330 feet long, a concrete gravity spillway near left abutment with a non-overflow structure 46 feet long, containing outlet works, and an overflow structure, 248 feet long, controlled by six automatic gates. Project includes rectification of channel of Long Tom River downstream of dam. Reservoir provides 110,000 acre-feet of usable flood control storage and controls runoff of tributary drainage area of 275 square miles. Reservoir protects Long Tom River Valley and is operated as a unit of coordinated reservoir system to protect Willamette River Valley generally and to increase low water-flows for navigation and other purposes. Dam was originally constructed in 1941 to height of 47 feet. Provision of additional storage for flood control was obtained in 1965 by raising embankments 2 feet to 49 feet above lowest point of the general foundation. The project is operated remotely from Lookout Point Dam in Lowell, OR.

In December 2004, a panel of experts determined that the embankment dam was in an "active state of failure." The panel recommended severe restrictions on reservoir operations and immediate repairs to the dam. Subsequent analysis determined that the probability of a storm event that would cause severe flooding downstream, with these new restrictions in place, was very high. Authority for an emergency repair of the dam was supported at all Corps levels. The Portland District began design work in early February 2005, awarded a contract in May and completed a repair of the entire 1.1 mile-long embankment dam prior to the 2005/2006 flood control season. The repair involved removing approximately 1/3rd of the embankment dam, replacing the internal drain system and restoring the embankment. Over 60,000 cubic yards of material excavated from the dam repair were used to develop

3 new sub impoundments comprising 394 acres of sub-impoundments managed for over wintering waterfowl or to control non-native vegetation.

Construction of project initiated April 1940 was completed August 1951, except for provision of additional storage for flood control authorized in 1962 and completed April 1965, and construction of additional recreation facilities funded through the Code 710 program. Construction of three water flow impoundments was completed in 1994 under Section 1135 authority. Dam and reservoir have been in continuous operation since December 1941. Development of future recreation facilities will be in accordance with the cost-sharing contract with Lane County, and requires a 50 percent contribution by the county. Development is subject to availability of funds by the Government and the county.

Portions of Federal lands surrounding Fern Ridge Lake were recently designated critical habitat for Fender's Blue Butterfly, Kincaid's Lupine and the Willamette Daisy, all federally listed species. Approximately 250 acres of Fern Ridge are designated as one of the Corps' few Research Natural Areas, and provide some of the best examples of remnant Willamette Valley wet prairie. Routine O&M efforts include restoration of both upland and wet native prairie plant communities, in cooperation with many local and regional partners.

Freshets regulated by Fern Ridge Lake project on Long Tom River are shown in Table 28-K.

**Local cooperation.** Fern Ridge Lake is included in the Lane County multiple project cost sharing agreement. Three parks are managed by Lane County under lease agreements. Future development will require cost sharing. The Oregon Department of Fish and Wildlife co-manages 5,000 acres of land and water for migratory waterfowl under a license agreement. This license was revised and renewed for 25 years in 2008.

**Operations during FY.** Maintenance: Routine operation and maintenance continued.

### 30. LOWER COLUMBIA RIVER BASIN BANK PROTECTION, OR AND WA.

**Location.** Columbia River and tributaries between Sandy River, OR, and Mouth of Columbia River.

**Existing project.** Provides for construction of approximately 224,000 linear feet of bank protection works at 96 locations along Lower Columbia River below River Mile 125 and along principal tributaries in this reach, to protect existing improvements such as levees and developed industrial lands from further

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erosion. Existing project is a unit of general comprehensive plan for flood control, navigation, and other purposes in Columbia River Basin. Construction of project began in July 1961 and is 88 percent complete. A total of 191,000 linear feet of bank protection work at 84 locations has been completed.

**Local cooperation.** Flood Control Act of 1950 provides local interests furnish lands and rights-of-way; make necessary highway, Highway Bridge, and utility alterations; hold the United States free from damages; and maintain and operate completed works. Under Section 103 of the Water Resources Development Act of 1986, Local Interests will also be required to make cash contribution for construction of each site.

**Operations during FY.** New Work: None.

### 31. MOUNT ST. HELENS SEDIMENT CONTROL, WA.

**Location** Sediment Retention Structure (SRS) - North Fork Toutle River, 2 miles upstream from its confluence with the Green River, in Cowlitz County, southwest Washington. Levee Improvements - Kelso, Washington on the Cowlitz River (river mile 3 to river mile 8). The river systems impacted by the project include Toutle, Cowlitz and a portion of the Coweeman and Columbia Rivers. Most of the population affected by the problems resides in the communities of Longview, Kelso, Lexington, and Castle Rock, Washington.

**Existing project.** The project was authorized by the Supplement Appropriations Act, 1985 (Public Law 88, 99th Congress, August 15, 1985). The Act includes authorization "... to construct, operate and maintain a sediment retention structure near the confluence of the Toutle and Green River, Washington, with such design features and associated downstream actions as are necessary, in accordance with the Feasibility Report of the Chief of Engineers dated December 1984." As authorized, the project will provide a permanent solution to potential flooding on the Cowlitz River from sedimentation problems created by the eruption of Mt. St. Helens. The Decision document recommended construction of a single sediment retention structure (SRS) with a 125-foot high spillway at the Green River site on the North Fork Toutle River, improvements to the levee system at Kelso, Washington, and out-year dredging downstream from the SRS and/or other measures to maintain authorized flood protection levels through year 2035.

On September 24, 2008 the US House of Representatives, Committee on Transportation and Infrastructure passed Resolution Docket 2816 for US Army Corps of Engineers to assess existing information to determine whether modifications to the original Mount St Helens plan is recommended in order to address flood damage reduction for Kelso, Washington associated with Coweeman River flood waters.

**Local cooperation.** Local interests were responsible for provision of all lands, easements, and rights-of-way for the sediment retention structure, dredging disposal areas, and levee improvements. Local interests were also responsible for all alterations and relocations of buildings, roads, bridges and other structures or utilities made necessary by implementation of the project. In addition, operation and maintenance of fish facilities, the levee system at Kelso and dredged material disposal sites are the responsibility of local interests. Non-federal cash contribution is \$3,600,000 and the estimated non-federal land, easements, right-of-ways, and relocations costs are \$21,000,000.

**Operations during FY.** New Work: Cowlitz River monitoring of stream gages and hydrographic surveys were used to assess rates of sediment movement and fill in the river, and ultimately to calculate the current flood protection levels. Verification analysis comparing forecasted vs. actual sediment migration identified the need to update historic assumptions regarding channel geometry and hydrology for use in future Level of Protection forecasting. Current efforts are focused on collecting and analyzing sediment data to assess whether the congressionally mandated flood control can be maintained through the project life, year 2035. Approximately \$0.5 million was spent to collect and monitor sediment movement in the watershed. This recent monitoring verified the need to expedite the development of a long-term sediment management plan. In the near term specific actions were identified and include dredging the lower Cowlitz River and improving 1,700 feet of the Castle Rock levee along the Cowlitz River. During the period of November 2007 to February 2008 and August 2008 about \$7.6 million was spent to remove over 2.5 million cubic yards of material from the lower 3 miles of the Cowlitz River. Approximately \$1.2 million has been spent to complete the evaluation of the levee system and initiate the long-term planning effort. The ongoing data collection and analysis work is a critical step in determining what additional measures will be required to maintain long-term flood protection for these communities.

**Maintenance:** Routine operation and maintenance continued.

### **32. WILLAMETTE RIVER BASIN BANK PROTECTION, OR.**

**Location.** On the Willamette River and its tributaries (Clackamas, Pudding, Santiam, McKenzie, Middle Fork, Coast Fork and Row Rivers), between Cascade Range and Coast Range, from various points south of Eugene to Portland, OR.

**Existing project.** Projects provide for clearing, sloping, and riveting riverbanks; construction of pile and timber bulkheads and drift barriers; minor channel improvements; and maintenance of existing works for control of floods and prevention of erosion at various locations along Willamette River and its tributaries to maintain an efficient discharge channel below the flood control reservoirs operated by the Corps. The current scope of the project is a total of 510,000 linear feet of bank protection at 236 locations. Estimated Federal cost is \$30,700,000.

Construction of project began in 1938 and is 96 percent complete. A total of 489,795 linear feet of bank protection work at 230 locations consisting of revetment of riverbanks, pile and timber bulkheads, drift barriers, and channel improvements, have been completed along the Willamette River and its tributaries. The 65 projects completed before the Flood Control Act of 1950 are maintained by the Corps.

**Local cooperation.** Section 3, Flood Control Act of 1936; the 1950 FCA required local sponsorship and maintenance of revetments. PL 81-516, Flood Control Act of May 17, 1950 (H. Doc. 531, 81st Congress, 2nd Session, 8-volume encyclopedic project authorization, 1949) and Section 103, Water Resources Development Act of 1986 applies.

Estimated costs for all requirements of local cooperation under terms of project authorization were \$2,300,000.

**Operations during FY.** New work: None.

**Maintenance:** All locally sponsored revetments were aerially inspected to determine whether damage occurred during flood season and necessary maintenance was being accomplished to assure continued service of structures. Continued sponsored coordination and evaluation of local erosion problems. Evaluated various locations to determine whether levees existed within this program that should more appropriately be handled and inspected under the levee ICW program.

### **33. WILLOW CREEK LAKE, HEPPNER, OR.**

**Location.** On Willow Creek immediately upstream from Heppner and just downstream from junction of Balm Fork and Willow Creek in Section 35, Township 2 South, Range 26 East, Willamette Meridian.

**Existing project.** Project provides flood protection to the city of Heppner and downstream area by controlling runoff from a drainage area of 96 square miles. The dam is a roller compacted concrete structure 160 feet high at crest elevation 2,130. Ancillary features include a center uncontrolled spillway with a maximum flood capacity of 93,300 cfs (cubic feet per second), an outlet works with a capacity of 500 cfs, a minor flow works and diversion works. Gross storage capacity of the project is 13,250 acre-feet, consisting of 7,750 acre-feet for exclusive flood control, 1,750 acre-feet for joint flood control and irrigation, 1,750 acre-feet exclusive irrigation, and 2,000 acre-feet dead storage for fish, wildlife, recreation, sediment accumulation, and aesthetics. Limited recreation facilities are being provided.

Willow Creek Parks and Recreation District has leased recreation facilities and operates a campground and day use area at Willow Creek Lake. A courtesy handling dock was constructed by the Recreation District utilizing Oregon State Marine Board funds. A playfield area below the dam has been leased to the City of Heppner. The Corps of Engineers manages a fishing access site and wildlife management area where dispersed recreation occurs.

The final Environmental Impact Statement was filed with the Environmental Protection Agency on December 20, 1979. The provisions of the Clear Water Act were met by a Section 404(b) (1) Evaluation and a public notice issued January 12, 1980, and a section 401 certification from the State of Oregon on February 15, 1980. Land acquisition is about 99 percent complete.

**Local cooperation.** Development of additional recreation facilities will require a local sponsor willing to cost share and assume all operation and maintenance of facilities.

**Operations during FY.** Maintenance: Routine operation and maintenance continued.

### **34. INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS**

Funds appropriated for inspection of completed local flood protection works are used to determine

maintenance condition of completed works, and to ascertain whether local interests properly maintain those works. Numerous levied areas and federal constructed bank protection works were inspected at locations along both banks of Lower Columbia River below Bonneville Dam, southwest Washington along Oregon Coast, in eastern Oregon, in southern Oregon and in Willamette River Basin. A representative of sponsoring districts accompanied the Portland the District representatives performing the levee inspections. Deficiencies in maintenance and needs for repair were discussed with sponsoring districts' representatives and a report was sent to each sponsor with outlining the inspection results and recommendations for maintenance. The program to improve maintenance of completed Federal projects initiated by House Appropriations Committee on Civil Functions was continued. A rating of "Unacceptable" will no longer be eligible for rehabilitation consideration per guidance provided in a policy letter dated September 26, 2006.

Refer to Table 28-Q for information relating to completed works. FY costs were \$199,789.

**35. SCHEDULING FLOOD CONTROL RESERVOIR OPERATIONS**

Corps of Engineers monitored flood control operations at four Bureau of Reclamation projects (Prineville, Ochoco, Emigrant, and Scoggins), one local project operated by Douglas County (Galesville), and two municipal power project operated by Tacoma Power (Mossyrock and Mayfield). The projects were partially constructed with flood control funds, thereby subjecting project operation to monitoring by the Corps of Engineers under Section 7, Flood Control Act of 1944.

The four Bureau of Reclamation projects, the Douglas County project, the two Tacoma Power projects were operated during the FY within the flood control regulations specified for each project. Reservoirs, in particular in western Oregon, were able to capture significant storm runoff during December and January thus providing flood damage reduction benefits. Total cost of monitoring and flood control direction of the six projects during the FY was \$71,210.

**36. FLOOD CONTROL ACTIVITIES UNDER SPECIAL AUTHORIZATION**

**Flood Control Activities Pursuant to Section 205 of the 1948 Flood Control Act, Public Law 858, 80th Congress, as Amended:** In addition to general requirements, each project selected is limited to a federal statutory cost of not more than

\$7,000,000. The local sponsor must agree to provide an amount not less than 35 percent or more than 50 percent of total project cost, at least 5 percent of which will be cash; and operate, maintain, repair, replace, and rehabilitate the project upon completion. No projects were under construction during the FY.

See Table 28-L for expenditures during the FY.

**Emergency Stream bank Protection Activities Pursuant to Section 14 of the 1946 Flood Control Act, Public Law 526, 79th Congress, as Amended:**

In addition to general requirements, each project is limited to a federal statutory expenditure of not more than \$1,500,000 per project. The local sponsor must agree to provide an amount not less than 35 percent or more than 50 percent of total project cost at least 5 percent of which will be cash; and operate, maintain, repair, replace, and rehabilitate the project upon completion. No projects were under construction during the FY.

See Table 28-L for expenditures during the FY.

**Snagging and Clearing for Flood Control Activities Pursuant to Section 208 of the 1954 Flood Control Act, Public Law 780, 83rd Congress, as Amended:**

In addition to general requirements, each project is limited to a federal statutory expenditure of not more than \$500,000 per project. The local sponsor must agree to provide an amount not less than 35 percent or more than 50 percent of total project cost at least 5 percent of which will be cash; and operate, maintain, repair, replace, and rehabilitate the project upon completion. No projects were under construction during the FY.

See Table 28-L for expenditures during the FY.

**Multiple - Purpose Projects, Including Power**

**37. BONNEVILLE LOCK AND DAM - LAKE BONNEVILLE, OR AND WA**

**Location.** Project is on Columbia River, 40 miles east of Portland, OR, about 146 miles above mouth of river. For description of Columbia River, see Sec # 2.

**Existing project.** A dam, power plant, and lock for power and navigation. Spillway dam extends across main channel from Cascade Island (WA) to Bradford Island (OR). Overflow crest at 24 feet above mean sea level is surmounted by 18 vertical-lift steel gates, 16 with remote control hoists placed between piers which extend to elevation 99 feet where a service roadway provides access, and two 350-ton gantry cranes for regulating gates.

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Powerhouse No. 1 extending across Bradford Slough to the Oregon shore has an installation of 10 units, consisting of two units of 48,000 kilowatts, and eight units of 60,000 kilowatts each, totaling 576,000 kilowatts. Ordinary and extreme fluctuations of river at lower lock gate are about 21 and 47 feet respectively. Project includes fish ladders to serve main channel, Bradford Slough Channel, and Powerhouse II channel. Navigation lock and powerhouses are founded on andesite, and main dam rests on solidified sedimentary rock of volcanic origin. The pool created by dam provides a navigable channel 27 feet deep between Bonneville and The Dalles Dams, a distance of 47 river miles. Principal data concerning navigation lock, spillway dam, and power plant are set forth in Table 28-N.

Dam, navigation lock, 10-unit power generating installation, fish ways, and attendant buildings and grounds cost \$83,239,395, of which \$6,072,480 is for navigation facilities, \$39,350,824 for power facilities and \$37,816,091 for joint facilities, consisting of dam, fish ways, buildings and grounds, and headwall section of power units 0 to 6, cost of which \$2,106,000 is allocated to dam and lake facilities.

In response to flow regulations and peaking from upstream plants operating under conditions of Canadian storage and Pacific Northwest-Southwest Intertie, two modifications were undertaken at the Bonneville project. The modification for peaking project was undertaken to minimize adverse environmental effects under rapidly changing flow conditions from upstream dams. The project was completed in 1978 at a cost of \$27,195,000. The second modification provided for increased power installation by building a second powerhouse located on the Washington shore adjacent to the end of the existing spillway. The new powerhouse contains eight units of 66,500 kilowatts each and two fish attraction turbine generator units of 13,100 kilowatts each for a combined capacity of 558,200 kilowatts, bringing the entire Bonneville capacity to 1,145.7 megawatts. Additional fish facilities consist of the powerhouse collection system, second fish ladder on the Washington shore, transportation channel connecting the Cascade Island fish ladder with new exit control section, and fingerling bypass facilities which include fish screens in both the powerhouses. To provide for the anticipated increased visitor use, onsite visitor facilities are included. Under authority of the Bonneville Project Act (August 20, 1937), a letter from Bonneville Power Administration to North Pacific Division dated January 21, 1965, requested construction of a second powerhouse.

Construction of original project started October 1933, was completed February 1943. Modification of powerhouse control equipment started March 1957

was completed September 1958. First two power units were placed in operation during FY 1938. Powerhouse with complete installation of 10 units was in operation December 1943.

Construction of modification for peaking work commenced in September 1970 and was completed in September 1978.

Construction of second powerhouse is complete. Final environmental impact statement was filed with Council on Environmental Quality in April 1972. In response to increasing visitation which now exceeds 600,000 a year at the dam site itself and 2,700,000 project wide, a visitor center with windows into the fish ladders, a 60-seat theatre, exhibits and displays was completed on Bradford Island in 1975. Units 11 through 18 were on-line by October 1982. The visitor facility for the new powerhouse (which does not require cost-sharing) is an integral part of that structure. The total cost for construction of the second powerhouse was \$678,945,000.

In June 1993 work began on the rehabilitation of the First Powerhouse. In the first phase the existing circuit breakers and eight transformers were replaced and the switchyard was rehabilitated. Circuit breaker work was completed in 1995. The remaining work was completed in 1997. Phase I cost was \$24,120,000. The second phase consists of replacing the windings of six generators and replacing ten turbines. The new turbines have minimum gap runners which will increase efficiency and reduce injuries to fish. Second phase work was contracted in 1994 and is scheduled for completion in 2010. Phase II will cost an estimated \$143,000,000. Phase II has expanded to include all 10 first power house turbines and generator windings.

Construction of a new navigation lock just south of the existing lock was authorized in the FY 1985 Supplemental Appropriations Act, Public Law 99-88, August 15, 1985. Inland Waterways Trust Fund funded 50 percent of the project cost in accordance with the Water Resources Development Act of 1986, Public Law 99-662, November 17, 1986. The new lock chamber is 86 feet depth of water over the sill. Cost for construction of the new navigation lock was \$348,100,000. The lock opened to shipping on March 26, 1993. Restoration of the grounds and historic buildings is complete.

The first powerhouse, spillway, navigation lock and associated facilities have been designated as a National Historic District in 1987.

Development of recreation facilities at Home Valley was completed in FY 1989. This is out granted to Skamania County Parks and Recreation Department.

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Electrical power generation for the FY is shown on Table 28-P. Net power generated is marketed by Bonneville Power Administration.

Local cooperation. None required, except for non-federal cost sharing for development of recreational facilities.

**Operations during FY:** Maintenance: Routine operation and maintenance continued. Performed increased activities to protect and enhance the anadromous fisheries in the Northwest. This year we continued the Fish Guidance Efficiency efforts and anticipate completion in early 2008. Continue HTRW site investigation and risk assessment of Bradford Island landfill. Capital improvements include repair/replacement of the static exciters, governors, cranes, power plant efficiency improvements, main unit circuit breakers (completed), and head gates refurbished. Intake Gantry Crane on Powerhouse I was replaced and old crane removed.

This year saw the start of the modernization of the 70+ year old Spillway Power Distribution system. Anticipated completion is in 2009. The Barrier Guidance Structure was installed in the forebay of Powerhouse 2 to guide juvenile fish to the Corner Collector thereby improving fish guidance.

The Fish Management agencies began the removal of Sea Lions this year. It was anticipated that up to 85 Sea Lions would be removed, however after the unanticipated death of 6 sea lions; the removal was postponed pending a court ruling. It is anticipated that the removal will begin again in 2009.

Major repairs this year include action on Unit One's Operating Ring, Unit Eleven's Rotor- Stator, Unit Fifteen's Rotor – Pole connection and Bay Fifteen's failed gate hoist. Repairs continue on Unit 11 and Gate 15.

Major Rehabilitation: A contract to rehabilitate the generators and turbines in the first powerhouse is in progress. Eight units have been rehabilitated to date. Two units remain with anticipation overall completion in 2010.

### 38. COLUMBIA RIVER TREATY FISHING ACCESS SITES, OR & WA

**Location.** This project provides for construction of 32 sites along the Columbia River on Bonneville pool, John Day pool, and The Dalles pool.

**Existing project.** In 1988, Congress provided authority through public law to implement a wide range of land management, transfer, acquisition and development actions to provide fishing access for Indian tribes who exercise treaty fishing rights on the

Columbia River. The law designates certain federal sites on Bonneville, John Day, and The Dalles pools for fishing access. The improvements required at the access sites are specified in the authorizing legislation. They include all weather access roads, camping facilities, boat ramps, docks, sanitation, and fish cleaning facilities. Construction of these facilities will greatly improve access by the four tribes, which have fishing rights along this reach of the Columbia River. In March of 2004, Congress authorized rehabilitation of Celilo Village, OR in conjunction with the ongoing project.

**Local cooperation.** None required.

**Operations during FY.** New Work: Completed construction of 15 new houses and appurtenant infrastructure at Celilo Indian Village, OR. Subsequently relocated 15 families into new houses.

### 39. COUGAR LAKE, OR

**Location.** At mile 4.4 on South Fork McKenzie River which joins McKenzie River about 56.5 miles above its confluence with Willamette River. Project is about 42 miles east of Eugene, OR.

**Existing project.** A rock fill dam with an impervious earth core, about 1,738 feet long at crest and 445 feet high above the streambed. Reservoir is 6 miles long with storage capacity at full pool of 219,000 acre-feet and controls runoff of tributary drainage area of 210 square miles. Spillway is on right abutment and outlet and power tunnels in left abutment. Outlet tunnel is provided with a chute and stilling basin. Power plant consists of two 12,500-kilowatt units with minimum provisions for installing a third unit of 35,000 kilowatts for future peaking capacity. Improvement functions as a unit in coordinated system of reservoirs for multiple-purpose development of water resources in Willamette River Basin Recreation facilities are provided by the U.S. Forest Service. Also authorized (but un-constructed) is a re-regulating dam, Strube Lake, below Cougar Lake, which would permit Cougar to operate as a peaking power plant. The Strube dam would contain two units totaling 4,600 kilowatts. Estimated Federal cost of Strube Lake and Cougar Additional Units is \$114,000,000.

Construction of project initiated June 1956 is complete, excluding Strube Lake and Cougar Additional Unit for which planning is essentially complete. Also, plans and specifications for the first construction contract (relocations) have been completed. Generating units 1 and 2 were placed in commercial operation March 23 and February 4,

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1964, respectively. Physical in-service date for flood control was November 29, 1963. Turbines were replaced and generating units were re-wound and commissioned in 2005. The project is operated remotely from Lookout Point Dam in Lowell, OR.

Freshets regulated by Cougar Lake on South Fork McKenzie River are shown on Table 28-K.

Electrical power generation for the FY is shown on Table 28-P. Net power generated is marketed by Bonneville Power Administration.

Project water intakes now use the Willamette River Temperature Control Tower. Refer to number 48, Willamette River Temperature Control project for additional information.

**Local cooperation.** None required.

**Operations during FY.** Maintenance: Routine operation and maintenance continued.

### 40. DETROIT LAKE - BIG CLIFF, OR

**Location.** On North Santiam River with dam 50 miles from mouth 40 miles southeast of Salem, OR. North Santiam River flows north and west for 85 miles, and unites with South Santiam River to form Santiam River, which 10 miles downstream enters Willamette River 108 miles above its mouth.

**Existing project.** Main dam and a re-regulating dam, both with power-generating facilities. Detroit Dam is a concrete gravity structure about 1,522 feet long and 454 feet high from lowest point of the general foundation to roadway deck. Spillway is a gate-controlled overflow section, and outlet works are gate-controlled conduits through dam. Powerhouse with two units having a capacity of 50,000 kilowatts each is in right abutment immediately below dam. Reservoir has a storage capacity at full pool of 454,900 acre-feet and controls runoff of tributary drainage area of 438 square miles. It is being operated as a unit in coordinated reservoir system to protect Willamette Valley from floods, to increase low water flows in interest of navigation and irrigation, to generate power, and for other purposes. Re-regulating dam 3 miles downstream at Big Cliff site is concrete gravity type, about 191 feet high from lowest point of the general foundation to roadway deck. Power installation consists of one unit with a capacity of 18,000 kilowatts. Reservoir has a storage capacity of 5,930 acre-feet at full pool. Project is a unit of comprehensive plan for flood control and other purposes in Willamette Basin. Big Cliff is remotely operated from Detroit. Recreation facilities are provided by the U.S. Forest Service, Oregon State Park System and the town of Detroit.

Construction of project begun in May 1947 was completed December 1960. The two powerhouse generating units were placed in commercial operation June and October 1953. At Big Cliff powerhouse, single generating unit was placed on-line June 1954. Use of Big Cliff Dam for re-regulating fluctuating flow from Detroit units was effective October 1953.

Capital improvements complete in 2006 included repair/replacement of the bridge crane and additional plant automation.

A switchgear fire in June, 2007, due to failed relay protection disrupted power generation at Detroit and Big Cliff power plants and caused significant damage to the facility. Big Cliff was returned to service in August, 2007. One Detroit generator was returned to service in March, 2008. Detroit is in the process of repair and plant modernization, and is anticipated to return the other generating unit to service in the spring of 2009.

Electrical power generation for the FY is shown on Table 28-P. Net power generated is marketed by Bonneville Power Administration.

Freshets regulated by the Detroit Lake project on North Santiam River are shown in Table 28-K.

**Local cooperation.** None required.

**Operations during FY.** Maintenance: Routine operation and maintenance continued. Detroit spillway gates and regulating outlets were operated to improve temperature control of the North Santiam River for migrating Spring Chinook salmon, in compliance with the Willamette River Biological Opinion. This impacted hydropower generation and placed additional stress on aging spillway gates, controls and wire ropes. A replacement effort on wire ropes was undertaken during the fall of 2008, and will be complete by the spring of 2009, improving facility safety, reliability and longevity. Additional automation, communication, relay protection, and electrical reliability work is ongoing, as are rewinds on Detroit Unit -2 and Big Cliff generators.

### 41. GREEN PETER-FOSTER LAKES, OR

**Location.** At approximate mile 5.5 on Middle Santiam River which joins South Santiam River about 56.8 miles above its confluence with Willamette River. Dam is about 30 miles southeast of Albany in Linn County, OR.

**Existing project.** Main dam and a re-regulating dam, both with power-generating facilities. Green Peter Dam is a concrete gravity structure, 1,400 feet long and 385 feet high above the lowest point of the

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general foundation with a gate-controlled spillway. Outlet works consist of two conduits through spillway, discharging into a stilling basin. Power plant, on right bank adjacent to spillway stilling basin, consists of two units with an installed capacity of 80,000 kilowatts. Reservoir provides storage capacity at full pool of 430,000 acre-feet, extending 6.5 miles up Quartzville Creek and some 7.5 miles up Middle Santiam River above creek junction, forming a Y-shaped pool. Reservoir controls runoff of tributary drainage area of 277 square miles.

Foster Dam, 7 miles downstream from Green Peter Dam is located on South Santiam River about 38 miles above its confluence with Santiam River and 1.5 miles below its confluence with Middle Santiam River. Foster Dam consists of an earth, gravel, and rock-filled embankment, 146 feet high from lowest point of the general foundation and a concrete gravity gate controlled spillway and stilling basin for a total length of 4,800 feet. Power installation consists of two units with capacity of 20,000 kilowatts. Foster Lake has a storage capacity, at full pool, of 61,000 acre-feet. Project functions as a unit in coordinated system of reservoirs for multiple-purpose development of water resources in Willamette River Basin. Green Peter is remotely operated from Foster.

All construction on Green Peter-Foster Lakes project initiated June 1961 is completed. Green Peter Lake was placed in operation for useful flood control June 1967 as a unit of coordinated reservoir system for protection of the Willamette River Basin. First power-generation unit was placed on the line June 9, 1967 and second, June 28, 1967. Use of Foster Lake for re-regulating fluctuating flows from Green Peter units was effective December 1967. First power generation unit was placed on-line August 22, 1968 and second, September 6, 1968.

During the summer of 2008, structural deformation was detected on all the Foster spillway gates. It was determined that original design weaknesses and past maintenance practices led to buckling of main structural gate members, requiring emergency repairs. The reservoir was lowered in the fall of 2008 impacting recreation and power generation. During the repair of the first gate, the project passed inflows and lacked capacity to safely store water. Repairs to the first gate were accomplished by mid-January, 2009, and project benefits and operating conditions were restored. Repairs on the remaining gates will be accomplished during the remainder of FY09 and into FY10.

Electrical power generation for the FY is shown on Table 28-P. Net power generated is marketed by Bonneville Power Administration.

Freshets regulated by Green Peter Lake project on Middle Santiam River are shown in Table 28-K.

**Local cooperation.** Future recreation development at Foster or Green Peter will require cost sharing. Recreation facilities at Foster Lake include 4 parks and 2 parks at Green Peter Lake. Five of these parks were developed by the Corps and are operated by Linn County under lease agreement. One park is operated by the Corps.

**Operations during FY.** Maintenance: Routine operation and maintenance continued. Impacts to power generation and recreation were experienced from October 2008 through early January 2009 for spillway gate repairs. Major repairs were also accomplished on the turbine draft tube liner.

### 42. HILLS CREEK LAKE, OR

**Location.** On the Middle Fork, Willamette River, 47.8 miles from mouth and 26.5 miles upstream from Lookout Point Dam. Middle Fork, Willamette River rises on west slope of Cascade Range and flows northwesterly to its junction with Coast Fork, Willamette River. Dam is about 45 miles southeast from Eugene, OR.

**Existing project.** An earth-and-gravel-fill dam about 2,150 feet long at the crest and 338 feet above lowest point of the general foundation. A gate-controlled concrete gravity chute-type spillway is in right abutment. Diversion tunnel, outlet tunnel and power tunnel are in same abutment. Powerhouse with two 15,000-kilowatt units is located next to spillway. Hills Creek Lake is about 8.5 miles long and provides storage capacity at full pool of 356,000 acre-feet. Project controls runoff of drainage area of 389 square miles and is an integral unit of comprehensive plan for development of water resources of Willamette River Basin. Hills Creek Lake and Lookout Point Lake are operated as a unit for control of floods and generation of power on Middle Fork Willamette River. These projects, in conjunction with Dexter re-regulating dam and Fall Creek Lake flood control system, effectively manage flooding risks on the Middle Fork and provide maximum efficient generation of hydroelectric power. The U.S. Forest Service provides recreation facilities. Hills Creek power units are remote controlled from Lookout Point.

Construction of project, initiated May 1956, was completed June 1963. The project was placed in service for useful flood control in November 1961. On May 2, 1962, the two power units were placed

## PORTLAND, OR, DISTRICT

on-line. The project is operated remotely from Lookout Point Dam in Lowell, OR.

Electrical power generation for the FY is shown on Table 28-P. Net power generated is marketed by Bonneville Power Administration.

Freshets regulated by Hills Creek Lake on Middle Fork Willamette River are shown in Table 28-K.

**Local cooperation.** None required.

**Operations during FY.** Maintenance: Routine operation and maintenance continued.

### 43. JOHN DAY LOCK AND DAM – LAKE UMATILLA, OR AND WA

**Location.** On Columbia River about 3 miles downstream from mouth of John Day River and about 215 miles above mouth of Columbia River.

**Existing project.** A dam, power plant, navigation lock, fish ladders, and appurtenant facilities with a slack-water lake about 75 miles long extending to McNary Lock and Dam. Included is relocation of railroads, highways, utilities, and communities affected by the impoundment. The project as originally authorized would have provided 2,000,000 acre-feet of flood control storage. As modified, the project provides 500,000 acre-feet of flood control storage between elevations 257 and 268. The structure is 5,900 feet in length and stands about 161 feet above streambed. Powerhouse has space for 20 generating units of 135,000 kilowatts each; 16 units have been installed for a present capacity of 2,160,000 kilowatts. In 1998, synchronous condensing capability was added to four units. It was done to provide increased stability to the BPA transmission system. Principal project data are set forth in Table 28-N.

A detailed description of project as authorized and modified is on pages 1992 and 1993 of Annual Report for 1962 under the Walla -Walla District.

Construction began July 1958 and the project was opened to navigation April 1968. The main dam contract is complete. Lock rehabilitation work begun in FY 1980 was completed in FY 1986. Other significant Lock repair work completed in 2004.

Electrical power generation for the FY is shown on Table 28-P. Net power generated is marketed by Bonneville Power Administration.

**Local cooperation.** Recreation facilities at five parks and 4 wildlife areas are operated and maintained by local agencies under lease agreement with the Corps. Five developed recreation areas are operated and maintained by the Corps of Engineers.

Dispersed recreation is also managed by the Corps and occurs at 4 minimally developed sites as well as over 47,000 acres of lands and natural resource areas surrounding Lake Umatilla. In 2003 Sundale shared use site and shared use ramps at LePage and Railroad Island (North Shore) were developed as part of a test associated with the Columbia River Treaty Fishing Access Site program. Further recreation development will require cost sharing and assumption of operation and maintenance by local, non-federal sponsor

**Operations during FY.** Maintenance: Routine operation and maintenance continued. Activities to protect and enhance the anadromous fisheries in the Northwest included continuation of a multiyear project to rehabilitate the South Fish Attraction Water Turbines/Pumps. Navigation repairs of the upstream gate were completed. Gate was damaged on Feb 29, 2008 when upstream bound barge came into contact with the gate. Capital improvements to the powerhouse included completion of upgrades to the blade linkages of main unit 16 generator.

### 44. LOOKOUT POINT - DEXTER LAKES, OR

**Location.** On Middle Fork, Willamette River at Meridian site, 21.3 miles from mouth. Middle Fork, Willamette River, rises in Lane County on western slope of Cascade Range and flows northwesterly to its junction with Coast Fork, which is head of mainstream Willamette River. Dam is about 22 miles southeast from Eugene, OR.

**Existing project.** A main dam at Meridian site and a re-regulating dam 3 miles downstream at Dexter site. Both dams are earth-and-gravel-fills with concrete spillways and have power generating facilities. Main dam is 258 feet high from lowest point of the general foundation to deck and is 3,381 feet long at crest forming a reservoir 14.2 miles long providing storage of 456,000 acre-feet at full-pool level. Reservoir controls runoff of tributary drainage area of 991 square miles. Spillway, 274 feet long, is a gate-controlled overflow type, forming right abutment. Outlet works consisting of slide-gate-controlled conduits pass through spillway section. Powerhouse has three main generating units with a capacity of 120,000 kilowatts. Dexter re-regulating dam has a maximum height of 107 feet above lowest point of the general foundation and is 2,765 feet long at crest, forming a full pool of 27,500 acre-feet extending upstream to main dam and providing pondage to regulate Lookout Point powerhouse water releases to a uniform discharge. Spillway consists of a gate-controlled overflow section 509 feet long forming right abutment.

Flow regulation is accomplished by use of spillway gates and releases through powerhouse, which contains one 15,000-kilowatt unit. Lookout Point and Dexter Lakes are operated as a single unit of a coordinated system of reservoirs to protect Willamette River Valley against floods; to provide needed hydroelectric power, and to increase low water flows for navigation, irrigation, and other purposes. Existing project authorized as a unit of comprehensive plan for flood control and other purposes in Willamette River Basin.

Construction of project initiated May 1947 was completed June 1961, except for construction of additional recreation facilities funded through the Code 710 programs. Future recreation facilities will be provided in accordance with the cost-sharing contract with Lane County and will require a 50 percent contribution by Lane County and is subject to funding availability by the Government and the County. At Lookout Point powerhouse, generating units #1, #2 and #3 were placed in commercial operation December 1954, February 1955, and April 1955, respectively. At Dexter powerhouse the single unit was placed on-line May 1955. Dexter was placed in operation for re-regulation in December 1954. Dexter main unit circuit breaker and protective relays were updated in 2006. Dexter is remotely operated from Lookout Point.

Electrical power generation for the FY is shown on Table 28-P. Net power generated is marketed by Bonneville Power Administration

Freshets regulated by Lookout Point Lake project on Middle Fork Willamette River are shown in Table 28-K.

**Local cooperation.** Recreation opportunities are provided at three parks on Dexter Lake, two of which are operated by Oregon State Parks via lease instruments. Another park on Dexter is leased to the City of Lowell, OR. The north shore of Lookout Point Lake is operated by the Corps for recreation purposes; including Signal Point Boat Ramp, which was developed cooperatively with the State of Oregon. Ivan Oakes Campground is also operated by the Corps and was rehabilitated and commissioned during the summer of 2007. Future development will not require a cost sharing agreement.

**Operations during FY.** Maintenance: Routine operation and maintenance continued. Station service breakers and protective relays were updated. A \$30 million contract was awarded in 2008 for replacement of two turbine runners at Lookout Point and an option for a third. This work will be accomplished from 2009-2012.

#### 45. LOST CREEK LAKE, ROGUE RIVER BASIN, OR

**Location.** On Upper Rogue River at mile 153.6 about 30 miles northeasterly from Medford, OR.

**Existing project.** A rock and gravel-fill embankment dam about 327 feet high from streambed to crest, with an overall length of 3,750 feet with an impervious earth core and a gate-controlled concrete spillway. Powerhouse is on right abutment and houses two Francis-type turbines with installed capacity of 24,500 kilowatts each. Regulating outlet facility with provisions for temperature regulation for releases in interest of fishery enhancement is also on right bank. Reservoir 10 miles long provides 315,000 acre-feet of usable storage. Project provides control of runoff of drainage area of 674 square miles. In addition to flood control, project provides hydroelectric power generation, irrigation, municipal and industrial (M&I) water supply, fish and wildlife enhancement, water quality control and recreation benefits.

Construction of project initiated July 1967 is complete. Generating units 1 and 2 were placed in commercial operation July 6 and July 13, 1977, respectively. Physical in-service date for flood control was February 18, 1977. Final environmental statement was filed with Council on Environmental Quality in June 1972. Four parks at the project provide recreation opportunities. The State of Oregon operates 2 parks, including a 200-unit campground, part of Stewart State Park.

Electrical power generation for the FY is shown on Table 28-P. Net power generated is marketed by Bonneville Power Administration

Freshets regulated by Lost Creek Lake on Rogue River are shown in Table 28-K.

**Local cooperation.** Authorizing act required that local agencies furnish assurances prior to construction that demands will be made for future use of water supply storage within a period that will permit repayment of costs, including interest, allocated to water supply within life of the project; that State of Oregon take action, prior to construction to insure maintenance in stream of flows to be released for fishery; in addition, costs allocated to irrigation would have to be repaid in manner and to an extent consistent with reclamation laws and policies; and costs allocated to power will be repaid on a system basis by revenue from sales of power in Pacific Northwest Federal system by Bonneville Power Administration. A survey in September, 1980 of M&I water supply needs showed nine communities with water supply needs. An agreement

for M&I supply has been completed with six of the communities. An assortment of Water Districts, quasi-municipal utility companies, and vital industries to the region has also entered into agreements. Other rural areas are in the process of forming water districts so they can secure water supply for their communities.

On February 26, 1966 Oregon State Department of Fish and Wildlife agreed to operate Cole M. Rivers Fish Hatchery for mitigation and enhancement of fish. The Corps provides full funding for the operation and maintenance of the hatchery. The hatchery became operational in 1972.

**Operations during FY.** Maintenance: Routine operation and maintenance

#### 46. THE DALLES LOCK AND DAM - LAKE CELILO, WA AND OR

**Location.** On Columbia River at head of pool behind Bonneville Dam, about 192 miles above mouth of river and 88 miles east of Portland, OR.

**Existing project.** A dam, power plant, navigation lock, and appurtenant facilities. Improvement provides for navigation and hydroelectric power generation. Dam is designed for a normal pool at elevation 160 feet at mean sea level. Normal pool forms a reservoir extending upstream about 23 miles providing slack water to John Day Dam site. The Dalles Dam is 8,700 feet long and consists of a rock, gravel, and sand river closure section from Oregon shore connecting to a non overflow section which in turn joins powerhouse, then concrete non overflow sections connecting spillway with powerhouse and spillway with navigation lock at right abutment on Washington shore. Fish-passage facilities including two ladders and a fish lock are provided. Powerhouse was constructed for 14 units initially with substructure for eight additional units, an ultimate total of 22 units. Initial installation, excluding two 13,500-kilowatt fish-water units, was 1,092,000 kilowatts. The total generating capacity with all units was 1,806,800 kilowatts. Structures are founded on Columbia River basalt.

Principal data concerning lock, spillway, and powerhouse are set forth in Table 28-N.

Major construction of project initiated February 1952, was completed October 1960 when unit No. 14 was placed in commercial operation. Initial contract for additional units 15-22 was awarded in September 1967. Additional 8-unit phase was completed when unit 22 was placed in commercial operation in November 1973. In 1998, synchronous condensing capability was added to six units. It was done to

provide increased stability to the BPA transmission system.

Basic recreation facilities were developed with construction funds at 4 parks on Lake Celilo. These parks were further expanded with code 710 funds in the late 60's and early 70's. Washington State Park Commission operates two parks under a lease agreement. In 2003 the Avery shared use site was developed on a test basis as part of the Columbia River Treaty Fishing Access Program. Dispersed recreation occurs at 4 minimally developed sites and upon over 4000 acres of lands and natural resource areas surrounding Lake Celilo. The shared use site and lands are managed by the Corps.

Studies for adding power generation facilities to the North Shore Fish Ladder Auxiliary Water supply System were initiated in October 1979 and completed in December 1980. These facilities would provide base load generation (3.5 megawatts) and would not impact the present operation of the North Fish Ladder. However, it was determined that it was not within the Chief of Engineer's authority to add these power facilities. A local interest, North Wasco County Public Utility District pursued the construction of these power facilities through the FERC license processes and awarded a construction contract in September 1989.

Seufert Visitor Center was completed in September 1980.

In October 1996 work began on major rehabilitation of powerhouse units 1-14. This rehab project was not funded in the FY 05 civil works appropriation. The Bonneville Power Administration, the Northwest Power Marketing Agency, signed an agreement with the Northwestern Division to fund the completion of this rehab project.

Electrical power generation for the FY is shown on Table 28-P. Net power generated is marketed by Bonneville Power Administration.

**Local cooperation.** Further recreation development will require cost sharing and assumption of operation and maintenance by local, non-federal sponsor.

**Operations during FY.** Maintenance: Routine operation and maintenance continued.

During the annual Navlock maintenance outage, significant weld repairs were required to address cracking in the structure around the pintle bearing area of miter gate south leaf. Powerhouse capital investment projects continued including HVAC improvements and high voltage disconnect replacement. A multi-year station service power improvements project was started.

## Environmental

### 47. COLUMBIA RIVER FISH MITIGATION, OR AND WA

**Location.** At Bonneville, The Dalles, and John Day Dams on the Columbia River in the States of Oregon and Washington. This project encompasses work at five other locations within Walla Walla District.

**Project description.** The eight Corps hydroelectric projects on the lower Columbia and Snake Rivers have been identified as a contributing factor in significantly reduced runs of migrating salmon and steelhead. Eleven stocks of salmon and steelhead that must pass through the projects have been listed by NMFS as threatened or endangered under the Endangered Species Act. The Corps has recognized the need to reduce juvenile mortality and has undertaken measures that include fish bypass systems, surface bypass and barge and truck transportation. Spill, as an additional bypass route over the spillways, is being used to divert fish from entering turbine units, but it is a significant adverse economic factor due to forgone electric power generation.

The plan of improvement at the three Portland District dams (Bonneville, The Dalles and John Day) includes biological research, prototype development and testing, operational changes, and design and construction of new or modified fish passage facilities to improve passage efficiencies and survival. The types of improvements under investigation and development include modified juvenile guidance, bypass and outfall systems, surface passage technology, spillway gas abatement, reduced turbine passage injury and mortality, adult fish ways, and juvenile and adult fish monitoring facilities. Other related investigations include studies to analyze impacts of federal Columbia River hydro system operation and other activities on estuary habitat, lamprey passage, avian and sea lion predation and factors affecting adult returns and spawning.

The estimated project cost, excluding Bonneville Power Administration contributions, is \$1,600,000,000 which includes improvements in Walla Walla District and in Portland District. For information on the planned improvements at McNary and Snake River dams see Walla Walla District's Annual Report

**Local cooperation.** None required.

**Operations during FY.** New work: General: Continued to collect biological and hydraulic data,

develop alternatives to improve existing fish bypass methodology and systems, install passage monitoring technology, improve turbine passage survival, and evaluate adult lamprey passage issues.

**Bonneville Dam:** At the 2nd Powerhouse, continued construction of guidance improvements for the screened bypass system. Continued evaluations of 1st Powerhouse passage and spillway measures. Constructed a forebay guidance curtain to improve juvenile passage through the surface bypass corner collector at the 2nd powerhouse. Initiated construction of new sluice gates that will improve juvenile passage at the 1<sup>st</sup> Powerhouse. Continued construction and evaluation of adult lamprey passage systems.

**The Dalles Dam:** Continued passage and survival studies, and evaluations of additional spillway measures, forebay guidance, sluiceway modifications, and adult ladder improvements. Initiated construction of a new extended downstream spill wall to improve juvenile survival in the tailrace.

**John Day Dam:** Continued evaluations of alternative juvenile passage improvements, including surface bypass facilities and tailrace measures.

### 48. WILLAMETTE RIVER TEMPERATURE CONTROL, OR

**Location.** At Blue River and Cougar Lake projects in the McKenzie River sub-basin of the Willamette River basin in western Oregon.

**Project Description.** The initial project authorization provides for retrofitting the intake tower structures with movable weir intakes to allow modification of water temperatures downstream from Blue River and Cougar projects. A new tower was commissioned at Cougar in 2005 and has proven very effective in emulating natural river temperatures, benefiting Willamette Spring Chinook salmon. Previously, water temperatures were cooler in the spring/summer and warmer in the fall/winter than pre-project conditions, impacting fisheries in the McKenzie sub-basin. Especially affected was Willamette spring Chinook salmon and bull trout, both species of national and regional significance. Construction of the Blue River temperature control tower has been deferred. The estimated total project cost is \$72,000,000.

**Local cooperation.** None required.

**Operations during FY.** New Work: Finalized plans and specifications for the permanent fish trap and haul facility below Cougar Dam.

#### **49. LOWER COLUMBIA RIVER ECOSYSTEM RESTORATION**

**Location.** The Lower Columbia River extends from the mouth of the Columbia River to river mile (RM) 145 at Bonneville Lock and Dam. The study areas include the estuary of the Columbia River and all of the tributaries of the Columbia River that are tidally influenced, which include the Willamette River up to Willamette Falls. The river divides the states of Oregon and Washington throughout this area.

**Project description.** Section 536 of the Water Resources Development Act of 2000, Public Law 106-541. This program provides the authority to the Secretary to conduct studies and implement ecosystem restoration projects for the lower Columbia River and Tillamook Bay estuaries in Oregon and Washington. The projects will be for the protection, monitoring, and restoration of fish and wildlife habitat and are to have no adverse effect on specified water related needs or private property rights. Actions include protection and enhancement of 10,000 acres of tidal wetlands and other key habitats in the Columbia River estuary over 10 years, beginning in 2001, to rebuild productivity for listed salmon and steelhead populations. Operation and maintenance of projects is a non-Federal responsibility. Implementation costs of projects on Federal lands will be 100% Federal expense and the operations and maintenance will be the responsibility of the Federal agency that manages the lands.

Current year costs are shown in Table 28-A.

**Local cooperation.** Studies under Section 536 are subject to the cost sharing requirements of Section 105 of WRDA 1986, including studies on Federal lands. Projects implemented under Section 536 will be cost shared 35% Non-Federal and 65% Federal, and up to 50% of the non-Federal share of project implementation costs can be in-kind services.

**Operations during FY.** New Work: Activities included ecosystem restoration site identification, plan formulation, monitoring and coordination with local sponsors. Construction was completed on the Crims Island site and initiated on the Julia Butler Hansen site. Construction continued on the Columbia River Riparian site.

#### **50. ENVIRONMENTAL ACTIVITIES UNDER SPECIAL AUTHORIZATION**

**Modifications to Structures and Operations of Constructed Corps Projects to Improve the Quality of the Environment, Pursuant to Section 1135 of the 1986 Water Resources Development Act, Public Law 662, 99th Congress, as Amended.** This program provides the authority to modify existing civil works projects to restore the environment. A non-federal entity is required to sponsor the project. The project must accomplish restoration by modifying a Corps project or operation of a Corps project, or be located on Corps project lands. The project must be feasible and consistent with the authorized purpose. The non-federal sponsor generally must assume responsibility of the operation and maintenance associated with the project.

Planning studies, detailed design, and construction costs are shared by the Corps 75 percent and non-federal sponsor 25 percent. Total project costs cannot exceed \$6.7 million with the federal share limited to \$5,000,000 without specific congressional authorization.

See Table 28-L for expenditures under Section 1135 during the FY.

Four projects were under construction during FY 2008.

##### **Lower Columbia Slough, OR**

**Location:** The project modification is located in the City of Portland, Oregon along the Columbia Slough

**Project description:** Columbia Slough represents a portion of the historic flood plain of the Columbia River extending about 20 miles eastward from the Willamette River to the Sandy River. In its natural state, the flood plain was unstable and the Columbia River seasonally inundated this area. A network of lakes, waterways and wetlands spread over the entire area. It was thickly forested along shorelines and low areas, and was also made up of wetland prairie and oak savannah, bordered by riparian forest. It supported vast populations of waterfowl and other birds, elk, deer, river otter and other smaller mammals. In the 150 years since the first settlers began to adapt the flood plain to their own uses, the area has been transformed from a natural system of lakes, sloughs, and wetlands into a highly managed water system of levees and pumps to provide drainage and flood damage reduction. The project modifies channel and culvert conditions in the Columbia Slough, creates wetlands and restores portions of the riparian buffer/wildlife corridor along the slough. Specific actions include creation of

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wetland benches/islands along 7.5 miles of the slough replacement of 5 culverts within the slough system, and restoration of approximately 14 acres of riparian and open water habitat.

**Local cooperation:** The City of Portland signed a Project Cooperation Agreement (PCA) for the project on 28 September 2001.

**Operations during FY:** Wetland bench construction was completed this FY.

### **Fern Ridge Marsh, OR**

**Location:** This project modification is located at the Fern Ridge Lake project on the Long Tom River, a Tributary of the Willamette River approximately 6 miles west of Eugene, Oregon.

**Project description:** The Fern Ridge Marsh Restoration Project entails marsh restoration and management actions on 347 acres in the western portion of the Fisher Butte Management Unit (West Fisher Butte sub-unit) at Fern Ridge Lake Project. The restoration will restore and provide for management of 347 acres of marsh habitat via construction of 7 water control structures, 15,900 lineal feet of dikes and rock dikes (carp excluders) within the drawdown zone of Fern Ridge Lake Project. The general intent of the proposed action is the restoration of a more diverse and productive marsh plant and wildlife community in areas currently dominated by reed canary grass. This species is an exotic plant found in extensive stands in shallow water areas around the reservoir perimeter. The total project cost, including lands, is estimated at approximately \$540,000.

**Local cooperation:** The Oregon Department of Fish and Wildlife signed a local cooperation agreement for the project on July 19, 1999.

**Operations during FY:** The project was completed and closed out this FY.

### **Fox Creek, OR**

**Location:** This project is located in the city Rainier, Oregon at the mouth of Fox Creek. Fox Creek enters the Columbia River at river mile 67+20.

**Project description:** The Fox Creek project modifies a dredged material disposal site associated with the Federal Navigation Channel. Flows from Fox Creek were routed through a 72-inch culvert during routine O&M maintenance dredge material disposal actions in 1985. Dredged material was then placed over the culvert. The project modification consists of excavating the dredged material from the former streambed (approximately 535 feet) and restoration of the creek to its approximate former course and gradient. Additionally, reed canary grass was removed over approximately 200 feet of the existing stream channel upstream of the dredged

material disposal site. Native riparian trees will be planted along the entire length of the project.

**Local cooperation:** The City of Rainier signed a Project Cooperation Agreement on 16 August 2001.

**Operations during FY:** The project was completed and closed out this FY.

### **Amazon Creek Wetlands Restoration, OR**

**Location:** This project modification is located along Amazon Creek at the western edge of the city of Eugene, Oregon. Amazon Creek is a major drainage channel for Eugene, conveying flows into the Long Tom River, a tributary of the Willamette River.

**Project description:** Prior to settlement in the 1850's, seasonal wet prairie habitat dominated the landscape of the lower Amazon Creek basin and much of the Willamette Valley. Since then, nearly all of this wetland type has been lost to agriculture and urban uses. The Amazon Creek Flood control Project built by the Corps in the 1950's further degraded the wetland hydrology when the creek and connecting drainages were canalized and lined with levees. It is estimated that less than one percent of the Willamette Valley's historic wet prairies remains today. The lower Amazon Creek Wetlands Project will restore the historic hydrology and vegetation community to almost 400 acres of wet prairie. All of the land within the project area is owned by the City of Eugene and BLM, having been acquired for wetland protection and restoration purposes. The total project cost, including lands and recreation facilities, is estimated at approximately \$6.2 million.

Phase I involved removing existing levees along Amazon Creek and associated drainages and restoring the channels more natural meandering stream configurations. New levees were set back around the margin of the wetland restoration area to maintain the flood control function of the project. Interior wetland areas will now be subject to the high frequency flooding that occurred prior the flood control project. The new levees were seeded with a combination of native upland grass species. A slotted weir was constructed to maintain the complex flow relationship between the connected channels. Culverts, some gated, will also be installed to maintain drainage and to allow manipulation of surface hydrology for wetland management purposes. Disturbed areas along the stream channels and the old levee footprints will be seeded and planted with native wet prairie, emergent marsh and vernal pool species. The total cost for this completed in 1999 was \$2.0 million.

Phase II involves removal of non-native plant materials on about 120 acres of wetlands and replacement with native wet prairie plants. A major

portion of this effort has been the collection and propagation of native plants and seeds. Phase II also includes modification of surface hydrology through filling and restoration of old agricultural drainage channels draining into Amazon Creek. Phase II was initiated in 2000 and completed in 2003.

Phase III construction of recreation facilities was initiated in summer 2002 and completed in March 2003. Facilities included access points, viewing structures, interpretive displays and trails.

**Local cooperation:** The City of Eugene signed a Project Cooperation Agreement (PCA) for the project on October 26, 1998. The Bureau of Land Management under its West Eugene Wetlands Project also supports the project. In 1999 the City of Eugene requested that the agreement be modified to include the addition of recreation facilities in accordance with recent Corps guidance. The modified PCA was signed in spring 2001

**Operations during FY:** Activity consisted of developing the Operations Manual.

**Restoration and Protection of Aquatic Ecosystems to Improve the Quality of the Environment, Pursuant to Section 206 of the Water Resources Development Act of 1996, Public Law 303, 104<sup>th</sup> Congress, as Amended.** This program provides the authority to perform aquatic ecosystem restoration. A non-federal entity is required to sponsor the project. The non-federal sponsor generally must assume responsibility of the operation and maintenance associated with the project.

Planning studies, detailed design, and construction costs are shared by the Corps 65 percent and non-federal sponsor 35 percent. Total project costs cannot exceed \$6.7 million with the federal share limited to \$5,000,000 without specific congressional authorization. Two projects were under construction during the FY

See Table 28-L for expenditures under Section 206 during the FY.

### **Eugene Delta Ponds, OR**

**Location:** This project is located in the City of Eugene, Oregon adjacent to the Willamette River.

**Project description:** This project is to improve access, connectivity, and water quality within the Delta Ponds by reestablishing a hydrologic connection to the Willamette River and within the pond complex. Further objectives include grading the margins of the ponds to establish flat slopes to restore emergent wetland, forested riparian and other habitats indigenous to this reach of the Willamette River and to control and manage non-native weedy vegetation. Benefits to wildlife and fish habitat

would accompany improved water quality, the restoration and enhancement of vegetation, and the establishment of structure such as boulders, large woody debris in the ponds.

**Local cooperation:** The City of Eugene, Oregon signed a Project Cooperation Agreement (PCA) for the project on 22 December 2003.

**Operations during FY:** Portions of the wetland bench component of the project was constructed.

### **East Birch Creek, OR**

**Location:** This project modification is located along an approximately 1-mile reach of East Birch Creek between river miles 8.0 and 9.5 (river km 12.9 and river km 15.2) in Umatilla County, Oregon approximately 8 miles (12.9 km) south of the town of Pilot Rock. East Birch Creek is a fork of Birch Creek, a headwater tributary of the Umatilla River, which empties into the Columbia River.

**Project description:** Historically, this reach was an important spawning and rearing area for summer run steelhead trout. The Umatilla stock of summer steelhead was designated part of the Mid-Columbia Evolutionarily Significant Unit (ESU) by National Marine Fisheries Service (NMFS) when it listed that stock as "Threatened" under the Endangered Species Act. Land use practices and channel modifications have resulted in physical changes that have degraded habitat quality to a considerable extent. Habitat degradation has resulted primarily from removal of riparian vegetation, disruption of natural geomorphic processes, alteration of stream flows and increased sediment input. Bioengineering techniques are being utilized to the extent practicable to restore salmonid habitat quality, reduce unnatural bank erosion, restore natural channel function, and associated aquatic and riparian biological processes in East Birch Creek. This approach involved development of plans for erosion resistant stream restoration treatments using primarily natural fluvial processes and natural materials. The riparian zone, essential for aquatic ecosystem restoration, has been re-vegetated with native species.

The other primary goal of the environmental restoration work is to restore geomorphic function of the channel, which will generally mean a narrower, deeper, more meandering channel with more stable, vegetated banks and more diverse in stream habitat. This will result in a self-maintaining system that meets specific habitat needs of ESA listed summer steelhead. Summer steelhead uses the proposed project reach for spawning and rearing, therefore, our restoration plan will be based largely on habitat requirements for these life stages.

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**Local cooperation:** Oregon Department of Fish and Wildlife signed a Project Cooperation Agreement (PCA) for the project on 16 August 2001.

**Operations during FY:** Project was completed and closed out this year.

### **51. INSPECTION OF ECOSYSTEM RESTORATION FEATURES AT COMPLETED PROJECTS OPERATED BY OTHERS**

Funds appropriated for inspection of Federally constructed, locally operated and maintained projects are used to ensure local interests properly maintain those works in compliance with Project Cooperative Agreements. This includes inspection of ecosystem restoration features, observations regarding compliance with any access or easement restrictions, and minimal documentation of the condition of the ecosystem. FY costs were \$2,567.

## **General Investigations**

### **52. SURVEYS**

FY costs were \$1,362,337 of which \$790,162 was for Ecosystem Restoration Studies, \$218,415 for Watershed/Comprehensive Studies, \$193,574 for Miscellaneous Activities and \$160,186 for Coordination with Other Agencies. Contributed funds in the amount of \$170,443 were expended for: \$74,801 Planning Assistance to States Program, \$19,833 Floodplain Management Special Study, \$4,653 Willamette R. Floodplain Restoration Study and \$71,156 Amazon Creek Study.

### **53. COLLECTIONS AND STUDY OF BASIC DATA**

**Flood Plain Management Services.** Flood Plain Management Services Program comes under Section 206 of the 1960 Flood Control Act, PL 86-645, as amended. Through technical services and planning guidance, the program encourages comprehensive flood plain management planning at all levels to reduce the potential for losses to life and property from floods. Federal and non-Federal agencies and the private sector are assisted with planning and development information for flood hazard areas. This assistance is in the form of local flood plain regulations, Federal Insurance Program requirements, and Executive Order 11988 guidelines. Such assistance may include factual flood information (available or determined) and interpretation on flood

frequencies, extent of flooding, floodwater velocity, duration of flooding and floodway limits.

FY costs totaling \$44,714 were associated with the following tasks under the Flood Plain Management Services Program: FPMS Unit \$19,843; Technical Services \$9,938 Quick Responses \$5,236; and special studies \$9,697. Limited funding for FY08 resulted in a reduction in normal FPMS activities. Efforts were focused to assist FEMA, local communities and the State on issues related to regional flooding in December 2007. FPMS staff also provided assistance to private citizens, consultants and agency representatives on quick response questions. A flood insurance study on Ochoco Creek in Prineville, Oregon was completed in FY08.

Maintenance of crest stage gages were completed on key streams in an ongoing program to record data from flood events. The Crest stage gage program now has approximately 214 gages located in the Portland District

**Hydrologic Studies:** The methodology and approach for development of the Willamette Regulated and Unregulated flood frequency curves was modified based on an Independent Technical Review completed by the USACE, Hydrologic Engineering Center. FPMS staff also attended Tillamook Oregon Solutions meetings to provide hydrologic expertise on the flooding issues in Tillamook County. FY costs were \$18,172.

## **Other**

### **54. FLOOD CONTROL AND COASTAL EMERGENCIES**

**Disaster Preparedness Program:** This program authorizes Portland District to plan for all hazards, natural and human caused. Primary focus is responding to major flood events and rehabilitating flood damage reduction systems active in Portland District's Rehabilitation and Inspection Program. It is also used to prepare an Emergency Support Function #3, Public Works and Engineering, Debris Management Planning and Response Team (Debris PRT) to provide assistance to the Federal Emergency Management Agency (FEMA) following Presidentially Declared Disasters. Activities include: maintaining an Emergency Operation Center (EOC) with 24/7 activation capability, publishing plans and procedures, establishing and training response personnel/teams, exercising plans, drilling teams, and coordinating plans with Federal, Tribal, state and local agencies. This program maintains response

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supplies and equipment used to supplement state and local requests for flood damage reduction assistance.

Significant activities during FY 2008:

1. Hired a Readiness Manager (20% FC&CE funded) March 2008 to develop readiness programs for NWP's Operating Projects and supervise NWP's EOC Program, PL 84-99 Programs, Catastrophic Disaster Preparedness Program, Continuity of Operations Program and Global War on Terrorism Program.
2. Played in the Department of Homeland Security Top Officials #4 exercise in October 2007. After Action Report developed and corrective actions assigned.
3. All Hazard Plans, Training and Exercise Program Manager deployed to Afghanistan for one year in August 2007. Extended for a second year to August 2009. A back fill was hired in September 2007 and another in July 2008.
4. Maintained NWP's Debris Management PRT in a "green" status.
5. Revised the EOC Plan to operate under the Incident Command System as directed by the National Incident Management System, and trained the EOC Team and Crisis Management Team.
6. Recruited four new State and Local Liaisons, trained the entire cadre at Multnomah County Drainage District #1 (MCDD#1). There are two Liaisons each for MCDD#1, City of Portland, Multnomah County, State of Oregon and three Liaisons in each of the four Sectors for a total of 20 members.
7. Coordinated flood response plans with Umatilla, Morrow, Tillamook, Clatsop and Columbia Counties, Confederated Tribes of the Umatilla Indian Reservation, City of Portland and MCDD#1. Coordination was accomplished through a table top exercise initiated by NWP, designed with them and National Weather Service and conducted in their EOC for elected officials and heads of government agencies.
8. Conducted Crisafuli Pump drills with State and local government agencies at the town of The Dalles, Fern Ridge Lake and MCDD#1. Developed new dispatch SOP and assembly instructions, and compiled a list of items to be included in a Deployment Kit through feedback from state and local government participants.
9. Revised Flood Response Operation Order to include Regulatory Staff assigned to all counties within NWP's AO, added 24/7

contact information for NWP's Operating Projects, and modified to reflect ACE-IT and ULO organizations. Trained CMT, EOC Team and Liaison Cadre.

10. Initiated investigation of Portland District's capability to support local government's search and rescue efforts during a major flood event in the Willamette River Valley. Decision paper to be prepared in FY09 to determine if preparedness of boats and operators is warranted and funding pursued to develop and maintain the capability.

### **Public Law 84-99 Emergency Operations:**

During and immediately following the December 2007 Flood, Portland District provided 5,000 sandbags each to Tillamook and Yamhill County, one 12" Crisafuli Pump to John Drainage District, Columbia County, Oregon, was on standby to deploy all 9 Crisafuli Pumps to Seattle District and technical assistance to Yamhill, Tillamook, Clatsop and Columbia counties in Oregon and Lewis, Cowlitz, Clark and Skamania counties in SW Washington. We expended \$49,992.92 on this effort. We expended an additional \$11,002.05 marking and recording high water marks along the Nehalem River since this was a record setting event.

### **Public Law 84-99 Advance Measures:**

Tillamook County, Oregon requested Advance Measure assistance in December 2007 for the construction of gated spillways on levees along the Trask River. Our investigation found the spillways did not reduce the height of flooding, but did reduce the length of time the area flooded. As a result, there were not sufficient benefits to justify Corps construction of the spillways. The hydraulic and hydrologic data provided to Tillamook County did provide sufficient benefits to justify state and community funding of the spillways; \$18,818.75 expended on PIR development and modeling.

### **Public Law 93-288 Assistance to FEMA:**

Portland District deployed one Construction Representative to Rock Island District to assist with their levee rehabilitation effort. We also deployed 9 persons to support Hurricane Gustav's and 7 to Hurricane Ike's recovery operations; primarily in support of the Temporary Roofing Mission for both events. H. Gustav expenditures were \$253,546.33 and H. Ike's were \$307,515.63.

**Public Law 84-99 Recovery:** Following the December 2007 flood Portland District received two requests for assistance. Magruder Drainage Improvement Company, Columbia County, Oregon

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request was denied because the structure damaged was not part of the authorized flood damage reduction system; \$11,286.77 expended on Project Information Report. Sunset Drainage District, Tillamook County, Oregon was denied assistance because the system's level of protection did not provide sufficient benefits; \$10,470.17 expended on PIR development.

**Continuing Eligibility Inspections:** Program Management of the Inspection of Completed Works was transferred to Portland District's Levee Safety Program Manager from Readiness Branch in May 2008. Program Management of Non-Federal Inspections and the Rehabilitation and Inspection Program were retained in Readiness Branch. All five Non-Federal CEIs were completed as scheduled.

**Initial Eligibility Inspections:** No IEIs requested in FY08.

### **55. GENERAL REGULATORY FUNCTIONS**

Regulatory Program regulates activities in all waters of the United States, including wetlands, pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act.

The Corps of Engineers regulatory program is accomplished through a Department of the Army permit program. During FY 2008, the Portland District completed 600 permit actions during the year and 400 other non-permit regulatory actions, i.e. no permit required, jurisdictional calls, etc. Of the permit actions, only 2 were denied. At the request of permit applicants, another 45 pending actions were withdrawn.

In addition to these permit actions; the district conducted 220 inspections of issued permits. These inspections identified 20 situations of non-compliance that were subsequently evaluated, resulting in 10 new compliance violation cases. During the reporting period 15 compliance violations were resolved by modification of the issued permit, voluntary restoration, administrative action or other means. Additionally, 40 alleged unauthorized activities/violations with no associated permit were reported to the district. Investigations of these activities resulted in 6 new enforcement actions being opened. Issuance of a permit, voluntary restoration, administrative action or other means resolved 14 other pending cases. At the end of the reporting period, a total of 25 enforcement and non-compliance actions remained unresolved.

See Table 28S for expenditures during FY.

PORTLAND, OR, DISTRICT

**TABLE 28-A COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY05	FY06	FY07	FY08	Total Cost to Sep 30, 2008
1.	Chetco River, OR	<b>New Work</b>					
		Approp.	---	---	---	---	2,043,713 <sup>1</sup>
		Cost	---	---	---	---	2,043,713 <sup>1</sup>
		<b>Maint.</b>					
		Approp.	300,000	409,000	440,000	409,000	13,827,738
		Cost	300,001	387,751	435,240	435,010	13,827,737
2.	Columbia and Lower Willamette Rivers Below Vancouver, WA and Portland, OR (Federal Funds)	<b>New Work</b>					
		Approp.	---	---	---	---	28,349,304 <sup>2</sup>
		Cost	---	---	---	---	28,349,304 <sup>2</sup>
		<b>Maint.</b>					
		Approp.	16,448,000	17,137,000	17,236,000	22,357,000	565,241,259 <sup>3</sup>
		Cost	16,203,670	16,533,687	15,459,357	18,412,829	558,668,321 <sup>3</sup>
	(Contributed Funds)	<b>New Work</b>					
		Contrib.	---	---	---	---	665,954 <sup>4</sup>
		Cost	---	---	---	---	665,954 <sup>4</sup>
3.	Columbia River at Baker Bay, WA	<b>New Work</b>					
		Approp.	---	---	---	---	941,252
		Cost	---	---	---	---	941,252
		<b>Maint.</b>					
		Approp.	---	887,000	38,000	748,000	8,243,081
		Cost	---	50,467	875,504	637,318	8,133,369
4.	Columbia River Between Chinook, WA, and Head of Sand Island	<b>New Work</b>					
		Approp.	---	---	---	---	220,283 <sup>5</sup>
		Cost	---	---	---	---	220,283 <sup>5</sup>
		<b>Maint</b>					
		Approp.	96,000	297,000	31,000	1,729,000	12,355,864 <sup>52</sup>
		Cost	96,267	45,260	282,733	9,000	10,635,852 <sup>52</sup>
5.	Columbia River at The Mouth, OR and WA	<b>New Work</b>					
		Approp.	---	---	---	---	24,913,661 <sup>6</sup>
		Cost	---	---	---	---	24,913,661 <sup>6</sup>
		<b>Maint.</b>					
		Approp.	16,227,000	27,004,000	17,347,000	14,583,000	283,719,434 <sup>7</sup>
		Cost	13,677,197	26,204,833	19,017,391	11,195,098	278,647,113 <sup>7</sup>
		<b>Major Rehab.</b>					
		Approp	---	---	---	---	7,322,878
		Cost	---	---	---	---	7,322,878
6.	Columbia River Between Vancouver, WA and The Dalles, OR	<b>New Work</b>					
		Approp.	---	---	---	---	5,989,509 <sup>8</sup>
		Cost	---	---	---	---	5,989,509 <sup>8</sup>
		<b>Maint</b>					
		Approp.	301,000	211,000	413,000	448,000	18,701,591 <sup>9</sup>
		Cost	300,988	211,013	412,993	448,007	18,701,591 <sup>9</sup>
7.	Columbia River Channel Improvements, OR (Federal Funds) (Contributed Funds)	<b>New Work</b>					
		Approp.	7,435,000	14,850,000	30,500,000	14,760,000	72,683,800
		Cost	7,361,715	7,264,970	11,168,368	34,239,966	65,156,324
		<b>New Work</b>					
		Contrib	3,293,462	9,517,229	12,131,400	(544,578)	32,609,113
		Cost	1,219,471	4,071,285	6,485,004	13,047,908	26,439,939

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 28-A (Cont'd) COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY05	FY06	FY07	FY08	Total Cost to Sep 30, 2008
8.	Coos Bay, OR (Federal Funds)	<b>New Work</b>					
		Approp.	---	---	---	---	37,866,092 <sup>10</sup>
		Cost	---	---	---	---	37,866,092 <sup>10</sup>
		<b>Maint</b>					
		Approp.	4,961,000	3,076,000	5,330,000	7,532,000	154,927,007 <sup>11</sup>
	(Contributed Funds)	Cost	4,954,307	3,078,030	5,055,441	4,205,885	151,321,382 <sup>11</sup>
		<b>Major Rehab</b>					
		Approp.	---	---	---	---	2,335,966
		Cost	---	---	---	---	2,335,966
		<b>New Work</b>					
9.	Coquille River, OR	Contrib	---	---	---	---	3,986,680
		Cost	---	---	---	---	3,917,729
		<b>New Work</b>					
		Approp.	---	---	---	---	693,366 <sup>12</sup>
		Cost	---	---	---	---	693,366 <sup>12</sup>
	(Contributed Funds)	<b>Maint.</b>					
		Approp.	150,000	309,000	274,000	255,000	11,177,307 <sup>13</sup>
		Cost	149,997	309,003	273,205	255,795	11,177,306 <sup>13</sup>
		<b>New Work</b>					
		Approp.	---	---	---	---	367,364
10.	Depoe Bay, OR	Cost	---	---	---	---	367,364
		<b>Maint.</b>					
		Approp.	512,000	385,000	43,000	10,000	5,273,936
		Cost	392,937	209,789	292,761	13,383	5,230,324
		<b>New Work</b>					
	(Contributed Funds)	Approp.	---	---	---	---	758,692 <sup>14</sup>
		Cost	---	---	---	---	758,692 <sup>14</sup>
		<b>Maint.</b>					
		Approp.	164,000	642,000	407,000	658,000	11,437,707 <sup>51</sup>
		Cost	164,001	288,299	753,791	34,671	10,807,468 <sup>51</sup>
11.	Port Orford, OR	<b>New Work</b>					
		Approp.	---	---	---	---	4,156,252 <sup>15</sup>
		Cost	---	---	---	---	4,156,252 <sup>15</sup>
		<b>Maint.</b>					
		Approp.	332,000	317,000	481,000	427,000	23,687,016 <sup>16</sup>
	(Contributed Funds)	Cost	331,998	317,003	454,609	453,391	23,687,016 <sup>16</sup>
		<b>Major Rehab</b>					
		Approp.	---	---	---	---	635,783
		Cost	---	---	---	---	635,783
		<b>New Work</b>					
12.	Rogue River Harbor At Gold Beach, OR	Approp.	---	---	---	---	29,502,212 <sup>17</sup>
		Cost	---	---	---	---	29,502,212 <sup>17</sup>
		<b>Maint.</b>					
		Approp.	301,000	398,000	484,000	691,000	21,225,616 <sup>18</sup>
		Cost	301,001	398,005	480,061	620,023	21,150,655 <sup>18</sup>
	(Contributed Funds)	<b>Major Rehab</b>					
		Approp.	---	---	---	---	879,285
		Cost	---	---	---	---	879,285
		<b>New Work</b>					
		Contrib.	---	---	---	---	493,611
13.	Siuslaw River, OR (Federal Funds)	Cost	---	---	---	---	493,611
		<b>New Work</b>					
		Approp.	---	---	---	---	280,854
		Cost	---	---	---	---	280,854
		<b>Maint.</b>					
	(Contributed Funds)	Approp.	---	---	---	---	5,649,686
		Cost	---	---	---	---	5,649,686
		<b>New Work</b>					
		Approp.	---	---	---	---	280,854
		Cost	---	---	---	---	280,854
14.	Skipanon Channel, OR	<b>Maint.</b>					
		Approp.	---	---	---	---	5,649,686
		Cost	---	---	---	---	5,649,686
		<b>New Work</b>					
		Approp.	---	---	---	---	280,854

PORTLAND, OR, DISTRICT

TABLE 28-A (Cont'd)

COST AND FINANCIAL STATEMENT

See Section In Text	Project	Funding	FY05	FY06	FY07	FY08	Total Cost to Sep 30, 2008
15.	Tillamook Bay and Bar, OR	<b>New Work</b>					
		Approp.	---	---	---	---	22,434,827 <sup>19</sup>
		Cost	---	---	---	---	22,434,827 <sup>19</sup>
		<b>Maint.</b>					
		Approp.	180,000	1,332,000	50,000	1,850,000	12,043,764 <sup>20</sup>
		Cost	188,637	21,932	129,183	254,492	9,217,317 <sup>20</sup>
16.	Umpqua River, OR	<b>Major Rehab.</b>					
		Approp	---	---	---	---	2,839,799
		Cost	---	---	---	---	2,839,799
		<b>New Work</b>					
		Approp.	---	---	---	---	17,718,877 <sup>21</sup>
		Cost	---	---	---	---	17,718,877 <sup>21</sup>
17.	Willamette River at Willamette Falls, OR  (Contributed Funds)	<b>Maint.</b>					
		Approp.	---	603,000	920,000	1,370,000	40,712,037
		Cost	---	370,104	1,074,901	805,719	40,069,760
		<b>Major Rehab.</b>					
		Approp.	---	---	---	---	2,500,677
		Cost	---	---	---	---	2,500,677
		<b>New Work</b>					
		Approp.	---	---	---	---	520,005 <sup>22</sup>
		Cost	---	---	---	---	520,005 <sup>22</sup>
		<b>Maint</b>					
Approp.	191,000	64,000	72,000	591,000	27,846,364 <sup>23</sup>		
Cost	191,014	60,983	72,070	108,532	27,330,537 <sup>23</sup>		
18.	Yaquina Bay and Harbor, OR	<b>Minor Rehab</b>					
		Approp	---	---	---	---	234,794
		Cost	---	---	---	---	234,794
		<b>Maint</b>					
		Contrib.	---	156,800	---	---	156,800 <sup>50</sup>
		Cost	---	89,909	---	---	89,909 <sup>50</sup>
19.	Yaquina River, OR	<b>New Work</b>					
		Approp.	---	---	---	---	19,242,046 <sup>24</sup>
		Cost	---	---	---	---	19,242,046 <sup>24</sup>
		<b>Maint</b>					
		Approp.	1,677,000	1,286,000	1,410,000	1,247,000	69,375,331 <sup>25</sup>
		Cost	1,677,346	1,286,000	1,226,633	1,430,367	69,375,331 <sup>25</sup>
23.	Applegate Lake, Rogue River Basin OR	<b>Major Rehab.</b>					
		Approp.	---	---	---	---	12,005
		Cost	---	---	---	---	12,005
		<b>New Work</b>					
		Approp.	---	---	---	580,000	2,138,694
		Cost	61	---	---	---	1,558,691
24.	Blue River Lake, OR	<b>New Work</b>					
		Approp.	---	---	---	---	32,038,225 <sup>26</sup>
		Cost	---	---	---	---	32,038,225 <sup>26</sup>
		<b>Maint.</b>					
		Approp.	354,000	339,000	287,783	520,000	7,373,692
		Cost	347,884	288,840	332,990	312,257	7,145,467

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 28-A (Cont'd) COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY05	FY06	FY07	FY08	Total Cost to Sep 30, 2008
25.	Cottage Grove Lake, OR	<b>New Work</b>					
		Approp.	---	---	---	---	4,013,123 <sup>27</sup>
		Cost	---	---	---	---	4,013,123 <sup>27</sup>
		<b>Maint.</b>					
26.	Dorena Lake, OR	Approp.	877,000	806,000	884,149	898,000	25,056,739 <sup>28</sup>
		Cost	813,114	815,338	884,872	920,218	25,013,335 <sup>28</sup>
		<b>New Work</b>					
		Approp.	---	---	---	---	14,568,262 <sup>29</sup>
27.	Elk Creek Lake, Rogue River Basin, OR	Cost	---	---	---	---	14,568,262 <sup>29</sup>
		<b>Maint.</b>					
		Approp.	557,000	586,000	730,832	884,000	17,212,684
		Cost	529,649	578,343	658,455	858,093	17,073,975
28.	Fall Creek Lake, OR	<b>New Work</b>					
		Approp.	254,000	297,000	720,000	---	113,163,779
		Cost	255,971	286,058	354,059	---	112,771,290
		<b>New Work</b>					
29.	Fern Ridge Lake, OR (Federal Funds)	Approp.	---	---	---	---	8,685,635 <sup>31</sup>
		Cost	---	---	---	---	8,685,635 <sup>31</sup>
		<b>Maint.</b>					
		Approp.	23,503,066	1,063,000	1,511,257	1,275,000	57,550,508 <sup>32</sup>
30.	Lower Columbia River Basin Bank Protection, OR & WA (Federal Funds)	Cost	19,769,547	4,537,389	1,439,439	1,280,925	57,207,968 <sup>32</sup>
		<b>New Work</b>					
		Contrib.	---	---	---	---	52,666
		Cost	---	---	---	---	52,666
31.	Mt. St. Helens Sediment Control, WA (Federal Funds)	<b>New Work</b>					
		Approp.	---	---	---	---	21,649,745
		Cost	---	---	---	---	21,648,784
		<b>New Work</b>					
32.	Willamette River Basin Bank Protection, OR	Contrib.	---	---	---	---	114,634
		Cost	---	---	---	---	114,634
		<b>New Work</b>					
		Approp.	301,000	590,000	632,000	9,247,000	125,133,900
33.	Willamette River Basin Bank Protection, OR	Cost	297,069	289,947	674,664	7,832,362	123,451,560
		<b>New Work</b>					
		Contrib.	---	---	---	667,500	4,370,612
		Cost	---	---	---	606,821	4,309,933
34.	Willamette River Basin Bank Protection, OR	<b>Maint.</b>					
		Approp.	245,000	205,000	278,000	243,000	6,407,429
		Cost	242,086	212,119	202,453	313,892	6,400,509
		<b>New Work</b>					
35.	Willamette River Basin Bank Protection, OR	Approp.	---	---	(1,300)	---	24,987,516 <sup>33</sup>
		Cost	---	---	---	---	24,987,516 <sup>33</sup>
		<b>Maint.</b>					
		Approp.	57,000	45,000	94,000	57,000	6,388,096
36.	Willamette River Basin Bank Protection, OR	Cost	56,714	15,853	62,636	61,207	6,331,202

PORTLAND, OR, DISTRICT

TABLE 28-A (Cont'd)

COST AND FINANCIAL STATEMENT

See Section In Text	Project	Funding	FY05	FY06	FY07	FY08	Total Cost to Sep 30, 2008
33.	Willow Creek Lake, OR	<b>New Work</b>					
		Approp.	---	---	---	---	37,260,114
		Cost	---	---	---	---	37,260,114
		<b>Maint.</b>					
		Approp.	546,000	485,000	598,538	571,000	12,733,200
		Cost	511,788	516,513	546,849	597,785	12,673,892
37.	Bonneville Lock and Dam - Lake Bonneville OR and WA	<b>New Work</b>					
		Approp.	---	---	---	---	789,836,341 <sup>34</sup>
		Cost	---	---	---	---	789,836,341 <sup>34</sup>
		<b>Maint.</b>					
		Approp.	14,025,000	13,959,300	18,334,000	21,565,000	483,702,618 <sup>35</sup>
		Cost	14,662,775	14,407,292	14,768,007	20,662,318	478,411,281 <sup>35</sup>
		<b>Major Rehab.</b>					
		Approp.	4,164,893	4,297,000	---	---	116,340,330
		Cost	4,165,550	4,305,995	---	---	116,340,330
38.	Columbia River Treaty Fishing Access Sites, OR & WA	<b>New Work</b>					
		Approp.	4,042,000	3,539,805	14,002,381	1,666,000	70,503,005
		Cost	3,674,413	3,281,814	6,605,426	7,967,219	68,758,379
39.	Cougar Lake, OR	<b>New Work</b>					
		Approp.	---	---	---	---	58,636,393 <sup>36</sup>
		Cost	---	---	---	---	58,636,393 <sup>36</sup>
		<b>Maint</b>					
		Approp.	1,215,000	1,149,000	1,317,508	1,393,000	36,915,752 <sup>49</sup>
		Cost	1,219,153	946,658	1,497,319	1,305,979	36,744,180 <sup>49</sup>
40.	Detroit Lake - Big Cliff, OR	<b>New Work</b>					
		Approp.	---	---	---	---	62,729,698
		Cost	---	---	---	---	62,729,698
		<b>Maint.</b>					
		Approp.	2,055,000	2,204,000	1,696,005	2,702,600	70,783,916 <sup>47</sup>
		Cost	1,902,122	1,917,118	2,006,808	1,994,794	69,920,976 <sup>47</sup>
		<b>Minor Rehab</b>					
		Approp	---	---	---	---	363,086
		Cost	---	---	---	---	363,086
41.	Green Peter-Foster Lakes, OR	<b>New Work</b>					
		Approp.	---	---	---	---	84,005,788 <sup>37</sup>
		Cost	---	---	---	---	84,005,788 <sup>37</sup>
		<b>Maint.</b>					
		Approp.	2,328,000	1,911,000	2,405,414	6,475,500	79,025,814 <sup>38</sup>
		Cost	2,130,576	2,097,704	2,527,270	3,082,021	75,700,707 <sup>38</sup>
42.	Hills Creek Lake, OR	<b>New Work</b>					
		Approp.	---	---	---	---	45,700,619
		Cost	---	---	---	---	45,700,619
		<b>Maint.</b>					
		Approp.	715,000	902,000	834,827	955,000	23,397,894 <sup>39</sup>
		Cost	701,470	712,169	926,524	702,053	23,029,836 <sup>39</sup>
43.	John Day Lock and Dam - Lake Umatilla, OR and WA	<b>New Work</b>					
		Approp.	---	---	---	1,000,000	513,400,246 <sup>40</sup>
		Cost	---	---	---	384,805	512,785,051 <sup>40</sup>
		<b>Maint.</b>					
		Approp.	12,021,000	11,775,300	12,629,000	20,214,400	397,322,081 <sup>41</sup>
		Cost	11,194,803	11,489,735	13,083,038	17,007,808	392,408,622 <sup>41</sup>
		<b>Major Rehab.</b>					
		Approp.	---	---	---	---	44,005,128
		Cost	---	---	---	---	44,005,128

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 28-A (Cont'd) COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY05	FY06	FY07	FY08	Total Cost to Sep 30, 2008
44.	Lookout Point - Dexter Lakes, OR	<b>New Work</b>					
		Approp.	---	---	---	---	88,238,395 <sup>42</sup>
		Cost	---	---	---	---	88,238,395 <sup>42</sup>
		<b>Maint.</b>					
		Approp.	3,724,000	3,481,000	4,683,090	4,227,500	130,618,984 <sup>43</sup>
		Cost	3,408,648	3,451,059	3,994,160	4,875,650	130,199,920 <sup>43</sup>
45.	Lost Creek Lake, Rogue River Basin, OR	<b>New Work</b>					
		Approp.	---	---	---	---	136,408,150
		Cost	---	---	---	---	136,408,150
		<b>Maint</b>					
		Approp.	2,957,000	3,097,000	3,418,527	3,290,000	92,707,268 <sup>44</sup>
		Cost	2,947,788	2,905,027	3,256,240	3,235,433	92,231,943 <sup>44</sup>
46.	The Dalles Lock and Dam - Lake Celilo, WA and OR	<b>New Work</b>					
		Approp.	---	---	---	---	303,260,288 <sup>45</sup>
		Cost	---	---	---	---	303,260,288 <sup>45</sup>
		<b>Maint.</b>					
		Approp.	7,544,000	8,126,000	7,782,000	7,992,000	313,113,921 <sup>46</sup>
		Cost	7,709,508	7,414,971	7,715,124	8,273,884	312,067,796 <sup>46</sup>
	<b>Major Rehab.</b>						
	Approp.	459,108	---	---	---	32,946,008	
	Cost	466,518	---	---	---	32,946,006	
47.	Columbia River Fish Mitigation OR and WA	<b>New Work</b>					
		Approp.	36,276,000	39,044,116	50,000,000	47,944,000	612,145,003
	Cost	34,447,681	39,155,086	38,146,021	43,758,504	594,279,542	
48.	Willamette River Temperature Control, OR	<b>New Work</b>					
		Approp.	3,277,000	925,000	2,310,000	6,919,000	56,249,400
	Cost	3,053,048	1,146,016	2,172,041	1,446,215	50,609,469	
49.	Lower Columbia River Ecosystem Restoration	<b>New Work</b>					
		Approp.	1,452,000	1,978,000	2,200,000	1,688,000	8,905,000
	Cost	1,571,424	813,761	1,159,149	1,172,717	6,184,404	

**Footnotes:**

1. Excludes \$17,742 contributed funds for new work.
2. Includes \$1,529,413 for previous project.
3. Includes \$150,955 allotted from deferred maintenance funds, Code 700, \$62,296 for public works accelerated program repair, and \$1,214,865 for previous project. Excludes \$24,320 expended from contributed funds prior to 1964.
4. Excludes \$31,636 contributed by city of Astoria and Bumble Bee Sea Foods, Astoria, OR (not part of regular project). Includes \$223,026 expended from contributed funds prior to 1964 and \$428,136 contributed by Port of Portland and \$14,792 by Port of Vancouver.
5. Includes \$84,930 rehabilitation funds.
6. Includes \$1,986,253 for previous project and \$608,111 allotted and expended under Code 710, recreation facilities at completed project. Excludes \$500,000 contributed funds.
7. Includes \$2,186,000 for previous project and \$1,188,625 under deferred maintenance, Code 700.
8. Includes funds under Code 721 (small authorized projects) \$30,393. Entrance to Oregon slough; \$161,897. Camas-Washougal Turning Basin; \$227,908, Hood River Small Boat Basin; \$157,470, Bingen, WA, Barge Channel; and \$140,619, The Dalles Small Boat Basin.
9. Includes \$2,033,408 under code 700 (Deferred Maintenance).
10. Includes \$802,096 for previous project. Excludes contributed funds.
11. Includes \$178,801 for previous project and \$1,444,640 under Code 700, Deferred Maintenance. Excludes \$8,387 contributed funds. Includes \$2,800,00 under Code 70B, Storm Damage.
12. Includes \$340,726 for previous project. Excludes \$72,891 contributed funds. Includes \$36,000 under Code 711.

PORTLAND, OR, DISTRICT

**TABLE 28-A (Cont'd) COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY04	FY05	FY06	FY07	Total Cost to Sep 30, 2008
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**Footnotes (Cont'd)**

13. Includes \$41,467 for previous project and \$78,500 under Code 700, Deferred Maintenance.
14. Excludes \$9,900 contributed funds.
15. Excludes \$13,779 (other funds) contributed for additional landfill and extension of drainage lines.
16. Includes \$21,000, Wedderburn Study Funds.
17. Includes \$1,159,357 for previous project.
18. Includes \$10,611 for previous project and \$188,000 under code 700, Deferred Maintenance.
19. Includes \$77,209 for previous project and \$57,767 under Code 720 (Small Authorized Projects) Garibaldi Boat Basin. Excludes \$592,622 contributed funds and \$300,000 channel dredging by local interest.
20. Includes \$71,498 for previous project. Excludes \$6,450 expended from contributed funds.
21. Includes \$39,242 for previous project. Excludes \$6,450 expended from contributed funds.
22. Excludes \$300,000 contributed funds.
23. Includes \$452,110 on operation and care from permanent indefinite appropriation and \$150,000 under maintenance and operation of dams and other improvements of navigable waters.
24. Includes \$707,313 for previous project and \$170,000 appropriated from public works acceleration program for North Jetty rehabilitation.
25. Includes \$6,026 for previous project.
26. Includes \$96,000 pro rata share of site selection costs in lieu of Quartz Creek Lake.
27. Includes \$1,639,828 allotted and expended under Code 710, recreation facilities at completed project.
28. Includes \$167,878 special recreation use fees. Includes \$201,262 under maint. and operation of dams and other improvements to navigable waters.
29. Includes \$1,038,790 allotted and expended under Code 710, recreation facilities at completed project.
30. Includes \$1,026,264 allotted and expended under Code 710, recreation facilities at completed project.
31. Includes \$3,894,673 allotted and expended under Code 710, recreation facilities at completed project and \$136,482 allotted under 721 (small authorized project) reservoir modifications. Excludes \$2,100 (other funds contributed).
32. Includes \$9,750 allotted under Code 700, deferred maintenance. Includes \$241,678 under maintenance and operation of dams and other improvements to navigable waters.
33. Excludes \$93,733 contributed funds.
34. Includes \$12,200,000 Public Works Administration funds, \$20,240,700 National Recover Act Funds, \$27,195,400 modification for peaking funds, \$136,457 Code 710, recreation facilities at completed project funds and \$6,000 power unit's funds.
35. Includes \$540,000 deferred maintenance funds, Code 700 and \$1,692,148 maintenance and operation of dams and other improvements of navigable waters. Excludes 96-89X4045 funds.
36. Includes \$96,000 pro rata share of site selection costs in lieu of Quartz Creek Lake. Includes \$1,789,988 allotted and \$1,789,954 expended for Strube Lake and Cougar Additional Unit.
37. Includes \$113,000 pro rata share of site selection costs in lieu of Quartz Creek Lake.
38. Includes \$983,934 under maintenance and operation of dams and other improvements of navigable waters and \$3,500,000 under Code 70B, Storm Damage. Excludes 96-89X4045 funds
39. Includes \$82,408 under maintenance and operation of dams and other improvements of navigable waters. Excludes 96-89X4045 funds.
40. Includes \$25,984 allotted and expended under 710, recreation facilities at completed projects. Includes \$1,000,000 allotted and expended under 801, Seepage/Instability Correction Study.
41. Includes \$1,361,900 for O&M and fish evaluation of Spring Creek Hatchery (funds revoked and paid to USFWS at OCE level, but a cost to project); includes \$423,800 special recreation use fees. Includes \$933,438 under maintenance and operation of dams and other improvements of navigable waters. Includes \$4,500,000 under Licenses under Fed Power Act, Improve Navigable Waters, App 5125. Includes \$200,000 allocated under Code 70B, Storm Damage. Excludes 96-89X4045 funds.
42. Includes \$457,611 allotted and expended under 710, recreation facilities at completed projects.
43. Includes \$991,562 under maintenance and operation of dams and other improvements of navigable waters. Excludes 96-89X4045 funds.
44. Includes \$978,478 under maintenance and operation of dams and other improvements of navigable waters. Excludes 96-89X4045 funds.
45. Includes \$1,140,747 allotted and expended under 710, recreation facilities at completed projects, and \$52,997,220 allotted and expended additional units 15 - 22 funds.
46. Includes \$721,490 under maintenance and operation of dams and other improvements of navigable waters. Excludes 96-89X4045 funds.
47. Includes \$936,376 under maintenance and operation of dams and other improvements of navigable waters. Excludes 96-89X4045 funds.
48. Includes \$66,678 under maintenance and operation of dams and other improvements of navigable waters.
49. Includes \$861,852 under maintenance and operation of dams and other improvements of navigable waters. Excludes 96-89X4045 funds.
50. Contributed funds initiated w/State of Oregon ODOT Challenge Partnership Agreement 2006.
51. Includes \$350,000 under Code 70B, Storm Damage.
52. Includes \$1,500,000 under Code 70B, Storm Damage.

**TABLE 28-B AUTHORIZING LEGISLATION**

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
<b>1</b>		<b>CHETCO RIVER, OR</b>	
	Mar 02, 1945	To provide for the stabilization of the channel, by constructing jetties and dredging .	Rivers and Harbors Act of 1945, H. Doc. 817,77th Cong., 2d Sess
	Oct 27, 1965	Modification of channel entrance and channel improvements.	S. Doc. 21, 89th Cong., 1st Sess.
	Dec 04, 1981	Deepen channel 2 feet to 16 feet, extend the existing jetty S. system 750 feet for the North, and 1,250 feet for the South jetty.	Doc. 10, 96th Cong., 1st Sess.
	Oct 31, 1992	Assume responsibility for O&M of the approximately 200-foot-long access channel to the south commercial boat basin consistent with authorized project depths.	PL 102-580, 102nd Cong.
<b>2.</b>		<b>COLUMBIA AND LOWER WILLAMETTE RIVERS BELOW VANCOUVER, WA AND PORTLAND, OR</b>	
	Feb 27, 1911	2 pipeline dredges and accessories.	Rivers and Harbors Act of 1911, H. Doc. 1278, 61st Cong., 3d Sess. <sup>1</sup>
	Jul 25, 1912	Increasing main channel to 30 feet.	H. Doc. 1278, 61st Cong., 3d Sess. <sup>1</sup>
	Jul 27, 1916	Consolidating improvement below Portland, OR and between Vancouver, WA and mouth of Willamette.	No Prior Report
	Aug 08, 1917	For the Cathlamet channel.	H. Doc. 120, 63d Cong., 1st Sess. <sup>1</sup>
	Sep 22, 1922	Construct an additional dredge (dredge was not built) and accessories for better maintenance, and construct contraction works.	H. Doc. 1009, 66th Cong., 3d Sess.
	Mar 04, 1923 <sup>2</sup>	Channel from deep water in Willamette Slough to deep water in Columbia River.	H. Doc. 156, 67th Cong., 2d Sess.
	Mar 03, 1925	Depth of 25 feet and width of 300 feet from mouth of Willamette River to Vancouver, WA.	H. Doc 126, 68th Cong., 1st Sess.
	Mar 03, 1927	Closing east channel at Swan Island in Willamette River on condition that main channel to be opened to project dimensions on west side of island by Port of Portland.	Rivers and Harbors Committee, Doc. 10, 69th Cong., 2d Sess.
	Jul 03, 1930	For a 35-foot channel 500 feet wide from Portland to the sea.	H. Doc. 195, 70th Cong., 1st Sess. Rivers and Harbors Committee, Doc. 8, 71st Cong., 1st Sess. <sup>1</sup>
	Sep 06, 1933 <sup>3</sup>	A channel 28 feet deep and 300 feet wide from mouth of Willamette River to Vancouver, with 2 turning basins, each generally 28 feet deep by 800 feet wide by 2,000 feet long.	H. Doc. 249, 72d Cong., 2d Sess. <sup>1</sup>
	Aug 30, 1935	A channel in Columbia River from mouth of Willamette to interstate highway bridge at Vancouver, WA, 30 feet deep and 300 feet wide, with 2 turning basins at Vancouver.	Rivers and Harbors Committee, Doc. 1, 74th Cong., 1st Sess.
	Aug 30, 1935	Maintenance of not to exceed 35 foot depth at low water in Portland Harbor and Willamette River between its mouth and Broadway Bridge at Portland.	Rivers and Harbors Committee, Doc. 6, 73d Cong., 1st Sess. <sup>1</sup>

PORTLAND, OR, DISTRICT

**TABLE 28-B (Cont'd) AUTHORIZING LEGISLATION**

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
	Aug 30, 1935	Auxiliary channels, 30 feet deep, 300 feet and 500 feet at St. Helens.	H. Doc. 235, 72d Cong., 1st Sess. <sup>1</sup>
	Aug 26, 1937	Extension of lower turning basin at Vancouver, WA, 1,000 feet downstream.	Rivers and Harbors Committee, Doc. 81, 74th Cong., 2d Sess.
	Aug 26, 1937	An auxiliary channel 24 feet deep and 200 feet wide along waterfront at Rainier, OR.	H. Doc. 203, 75th Cong., 1st Sess. <sup>1</sup>
	Mar 02, 1945	Improvement of old mouth of Cowlitz River.	H. Doc. 341, 77th Cong., 1st. Sess. <sup>1</sup>
	Mar 02, 1945	An auxiliary channel in vicinity of Longview, WA.	H. Doc. 630, 77th Cong., 2d Sess. <sup>1</sup>
	Jul 24, 1946	A small-boat mooring basin at Astoria, OR.	H. Doc. 692, 79th Cong., 2d Sess. <sup>1</sup>
	Oct 23, 1962	A channel 35 feet deep and 500 feet wide from mouth of Willamette River to interstate highway bridge at Vancouver, WA, with 2 turning basins of same depth.	H. Doc. 203, 87th Cong., 1st Sess.
	Oct 23, 1962	A channel 40 feet deep and 600 feet wide from at Vancouver, WA, to mouth of Columbia River; a turning basin Vancouver, WA, a turning basin at Longview, WA, and a channel 40 feet deep in Willamette River from mouth to Broadway Bridge which encompasses Portland Harbor area.	H. Doc. 452, 87th Cong., 2d Sess. <sup>1</sup> 76 Stat. 1173
<b>3.</b>		<b>COLUMBIA RIVER AT BAKER BAY, WA</b>	
	Dec 11, 1933	East Channel	Public Works Administration
	Aug 30, 1935	Main channel	H. Doc. 44, 73d Cong., 1st Sess.
	Mar 02, 1945	West channel 8 feet deep.	H. Doc. 443, 76th Cong., 1st Sess.
	May 17, 1950	West channel 10 feet deep and mooring basin with protecting breakwaters.	S. Doc. 95, 81st Cong., 1st Sess.
<b>4.</b>		<b>COLUMBIA RIVER BETWEEN CHINOOK, WA AND HEAD OF SAND ISLAND</b>	
	Jun 20, 1938	Channel 8 feet deep.	Rivers and Harbors Committee Doc. 50, 75th Cong., 2d Sess.
	Sep 03, 1954	Channel 10 feet deep and mooring basin.	S. Doc. 8, 83d Cong., 1st Sess. <sup>1</sup>
<b>5.</b>		<b>COLUMBIA RIVER AT THE MOUTH, OR AND WA</b>	
	Mar 03, 1905	Extend South Jetty and construct North Jetty and dredging.	Rivers and Harbors Act of 1905, H. Doc. 94, 56th Cong., 1st Sess.
	Dec 22, 1944	Construction, operation, and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944, As amended
	Sep 03, 1954	Bar channel of 48-foot depth and spur jetty on north shore.	H. Doc. 249, 83d Cong., 2d Sess. <sup>1</sup>
	Jul 30, 1983	Deepening the northernmost 2,000 feet of the channel Cross-section to 55 feet.	PL 98-63, 97 Stat. 313
	May 24, 1995	Lower a 500' section of south jetty at river mile 7.	Sec. 1135, PL 99-662, As amended

**TABLE 28-B (Cont'd) AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
<b>6.</b>		<b>COLUMBIA RIVER BETWEEN VANCOUVER, WA, AND THE DALLES, OR</b>	
	Aug 26, 1937	Construct a channel 27 feet deep by 300 feet from Vancouver, WA, to Bonneville, OR.	Rivers and Harbors Act of 1937, <sup>1</sup> H. Doc. 94, 74th Cong., 2d Sess.
	Mar 02, 1945	Construct Camas-Washougal turning basin.	H. Doc. 218, 76th Cong., 1st Sess.
	Jul 24, 1946	Construct a channel 27 feet deep by 300 feet wide from Bonneville, OR, to The Dalles, OR.	H. Doc. 704, 79th Cong., 2d Sess.
	Jul 24, 1946	Construct a boat basin at Hood River, OR, 10 feet deep, 500 feet wide, by 1,300 feet long.	H. Doc. 704, 79th Cong., 2d Sess.
	Jul 24, 1946	Construct a barge channel at Bingen, WA, 10 feet deep, 200 feet wide, by 1 mile long, and an access channel 7 feet deep, 100 feet wide, by 1,000 feet long to natural Mooring basin.	H. Doc. 704, 79th Cong., 2d Sess.
	Jul 24, 1946	Construct The Dalles Harbor 8 feet deep, 400 feet wide by 800 feet long.	S. Doc. 89, 79th Cong., 1st Sess. <sup>1</sup>
	Aug, 17, 1999	Maintenance of commercial dock facilities navigation Access (part of John Day drawdown study program).	PL 102-104, 102d Cong., 1st Sess., 105 Stat. 507
	Aug 17, 1999	Alternate Barge Channel at Interstate Bridge, Portland-Vancouver, Ore-Wash.	Water Resources Development Act of 1999, PL 106-53, 113 Stat. 312
<b>7.</b>		<b>COLUMBIA RIVER CHANNEL IMPROVEMENTS, OR</b>	
	Aug 17, 1999	Deepen the existing navigation channel to 43 feet.	Water Resources Development Act of 1999, PL 106-53, 113 Stat. 280
<b>8.</b>		<b>COOS BAY, OR</b>	
	Jun 25, 1910	Dredging the Ocean Bar Channel.	Rivers and Harbors Act of 1910, H. Doc. 958, 60th Cong., 1st Sess.
	Mar 02, 1919	A channel 22 feet deep to Smith's Mill.	H. Doc. 325, 65th Cong., 1st Sess.
	Sep 22, 1922	Restore North Jetty 9,600 feet long, constructs a South Jetty about 3,900 feet long, extend 22-foot bay channel from Smith's Mill to Millington.	H. Doc. 150, 67th Cong., 2d Sess.
	Jan 21, 1927	Extend jetties to such lengths as may be practicable within estimate of total cost of jetties, \$3,250,000 given in H. Doc. 150, 67th Cong.	H. Doc. 320, 69th Cong., 1st Sess.
	Jul 03, 1930	A channel 24 feet deep and 300 feet wide, through Pigeon Point Reef, following a location along westerly side of bay.	H. Doc. 110, 70th Cong., 1st Sess. <sup>1</sup>
	Aug 30, 1935	For 24-foot channel from Pigeon Point Reef to Smith's Mill and a turning basin above Marshfield.	S. Committee Print, 73d Cong., 2d Sess. <sup>1</sup>
	Jul 24, 1946	Increased dimensions of channel across bar and to Isthmus Slough and turning basin opposite Coalbank Slough and at city of North Bend; anchorage basins at mile 3.5 and near mile 7.	S. Doc. 253, 79th Cong., 2d Sess.
	Jun 30, 1948	A mooring basin and connecting channel at Charleston.	H. Doc 646, 80th Cong., 2nd Sess.
	Dec 31, 1970	Increase dimensions to provide for bar channel 45 feet deep, inner channel 35 feet deep to mile 15, and deepening and widening existing turning basins and anchorage area.	H. Doc. 151, 91st Cong., 2d Sess.
	Nov 13, 1995	Deepening the authorized channel by 2 feet and expanding one turning basin. The entrance would be 47 feet deep to River Mile (RM) 1 and the inner channel 37 feet between RM 1 and 15.	PL 104-46, 109 Stat. 409

PORTLAND, OR, DISTRICT

**TABLE 28-B (Cont'd) AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
<b>9.</b>		<b>COQUILLE RIVER, OR</b>	
	Jun 25, 1910	Dredging shoals between mouth and Riverton, and removing obstruction between mouth of North Fork and Bandon.	Rivers and Harbors Act of 1910, H. Doc. 673, 61st Cong., 2d Sess.
	Mar 02, 1919	For a 13-foot channel from ocean to Bandon.	H. Doc. 207, 65th Cong., 1st Sess. <sup>1</sup>
	Jul 03, 1930	Deepen channel to 16 feet between sea and eastern end of North Jetty.	H. Doc. 186, 70th Cong., 1st Sess. <sup>1</sup>
	Aug 30, 1935	Present project depth between sea and eastern end of North Jetty.	S. Committee Print, 74th Cong., 1st Sess.
	Dec 22, 1944	Construction, operation, and maintenance of recreation facilities.	Sec. 4, Food Control Act of 1944, As amended
	Mar 02, 1945	For 13-foot depth from sea to a point 1 mile above Coquille River Lighthouse and snagging to State Highway Bridge.	H. Doc. 672, 76th Cong., 2d Sess. <sup>1</sup>
<b>10.</b>		<b>DEPOE BAY, OR</b>	
	Aug 26, 1937	Construction of an inner basin 375 feet long, 125 feet wide and 5 feet deep, with entrance channel of same depth and 30 feet wide.	Rivers and Harbors Act of 1937, H. Doc. 202, 75th Cong. 1st Sess.
	Mar 02, 1945	Construction of an inner basin 750 feet long, 390 feet wide and 8 feet deep, with entrance channel of same depth and 30 feet wide.	H. Doc. 350, 77th Cong. 1st Sess.
	July 14, 1960	Construction of entrance channel 8 feet deep and approved 50 feet wide, concrete breakwater and stone spending beach.	Sec. 107, Rivers and Harbors Act of 1960, PL 86-645, 74 Stat. 486
<b>11.</b>		<b>PORT ORFORD, OR</b>	
	Oct 27, 1965	Extension of existing breakwater by 550 feet.	Rivers and Harbors Act of 1965, S. Doc. 62, 88th Cong., 2d Sess. PL 89-298, 79 Stat. 1073
	Dec 31, 1970	Dredging of turning basin 340 feet long, 100 feet wide, 16 feet deep.	H. Doc 151, 91st Cong., 2d Sess.
	Oct 31, 1992	Maintain the authorized navigation channel including those portions of the channel within 50 feet of the port facility.	Water Resources and Development Act of 1992, PL 102-580, 102nd Cong.
<b>12.</b>		<b>ROGUE RIVER HARBOR AT GOLD BEACH, OR</b>	
	Sep 03, 1954	Two jetties at entrance and improvement of channel.	Rivers and Harbors Act of 1954, S. Doc. 83, 83d Cong. 2d Sess., PL 780

**TABLE 28-B (Cont'd) AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
<b>13.</b>		<b>SIUSLAW RIVER, OR</b>	
	Sep 19, 1890	Build two high-tide stone jetties.	Rivers and Harbors Act of 1890 H. Doc. 71, 51st Cong., 1st Sess.
	Jun 25, 1910	Extends North Jetty 3,700 feet from old work constructed under previous project and provides for 4,200 foot south jetty.	H. Doc. 648, 61st Cong., 2d Sess.
	Mar 03, 1925	12-foot deep channel.	S. Committee Print, Serial, 68th Cong., 1st Sess.
	Jul 03, 1958	18-foot bar channel and 16-foot river channel and a 600-foot extension of North Jetty. (600-foot extension classified deferred.)	H. Doc. 204, 85th Cong., 1st Sess. <sup>1</sup>
	Oct 22, 1976	Phase I advance engineering and design for north and south jetty extensions.	Final Report of Chief of Engineers
	Oct 01, 1980	Extending north and south jetties about 2,000 and 2,500 feet, respectively.	PL 96-367
<b>14.</b>		<b>SKIPANON CHANNEL, OR</b>	
	Jul 03, 1930	Channel from deep water in Columbia River to railroad bridge, 30 feet deep.	Rivers and Harbors Act of 1930, H. Doc. 278, 70th Cong., 1st Sess. <sup>1</sup>
	Aug 26, 1937	Channel extending upstream from railroad bridge a distance of 4,500 feet.	H. Doc. 201, 75th Cong., 1st Sess.
	Jun 30, 1948	Mooring basin 12 feet deep at Warrenton.	S. Doc. 93, 80th Cong., 1st Sess. <sup>1</sup>
<b>15.</b>		<b>TILLAMOOK BAY AND BAR, OR</b>	
	Jul 26, 1912	Construct North Jetty 5,700 feet long and dredging channel 16 feet deep, 200 feet wide, to Bay City.	Rivers and Harbors Act of 1912, H. Doc. 349, 62d Cong., 2d Sess.
	Mar 02, 1919	Abandon that portion of project above Bay City.	H. Doc. 760, 65th Cong., 2d Sess.
	Mar 03, 1925	Abandon Bay City Channel and present project x (600-foot extension classified of channels and turning basins with regulating works as needed.	H. Doc. 562, 68th Cong., 2d Sess.
	Mar 02, 1945	Repair damage and check erosion on Bayocean Peninsula caused by storm Jan. 1939.	S. Doc. 35, 79th Cong., 1st Sess. <sup>4</sup>
	Jun 30, 1948	Dredging small-boat basin and approach at Garibaldi, OR , to depth of 12 feet.	H. Doc. 650, 80th Cong., 1st Sess.
	Sep 03, 1954 Oct 27, 1965	Closure of breach in Bayocean Peninsula. Construct South Jetty, 8,000 feet long.	S. Doc. 128, 83d Cong., 2d Sess. <sup>1</sup> S. Doc. 43, 89th Cong., 1st Sess. <sup>1</sup>

PORTLAND, OR, DISTRICT

**TABLE 28-B (Cont'd) AUTHORIZING LEGISLATION**

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
<b>16.</b>		<b>UMPQUA RIVER, OR</b>	
	Sep 22, 1922	Construct jetties, bar channel, river channel, and mooring and turning basins. North Jetty, 7,500 feet long.	Rivers and Harbors Act of 1922, H. Doc. 913, 65th Cong., 2d Sess.
	Jan 21, 1927	Present project dimensions of North Jetty and dredging ocean bar.	H. Doc. 320, 69th Cong., 1st Sess.
	Jul 03, 1930	A short south jetty	H. Doc. 317, 70th Cong., 1st Sess. <sup>1</sup>
	Aug 30, 1935	A full length south jetty and maintenance dredging to a 26-foot depth.	Rivers and Harbors Committee Doc. 9,72d Cong., 1st Sess.
	Jun 20, 1938	Channel 22 feet deep and 200 feet wide from mouth to Reedsport.	S. Doc. 158, 75th Cong., 3d Sess. <sup>1</sup>
	Mar 02, 1945	Channel 22 feet deep and 200 feet wide from river channel to Gardiner, and turning basin 22 feet deep, 500 feet wide and 800 feet long.	S. Doc. 86,76th Cong., 1st Sess. <sup>1</sup>
	Mar 02, 1945	Channel 10 feet deep and 100 feet wide from river channel to dock in Winchester Bay with mooring and turning basin 10 feet deep, 175 feet wide, and 300 feet long at inner end.	S. Doc. 191, 77th Cong., 2d Sess. <sup>1</sup>
	Jun 30, 1948	Channel 12 feet deep and 100 feet wide from river channel to dock in Winchester Bay with mooring and turning basin 12 feet deep, 175 feet wide, and 300 feet long at inner end.	S. Doc. 154, 80th Cong., 2d Sess. <sup>1</sup>
	Sep 03, 1954	Channel 12 feet deep, Scholfield River. <sup>5</sup>	S. Doc. 133, 81st Cong., 2d Sess. <sup>1</sup>
<b>17.</b>		<b>WILLAMETTE RIVER AT WILLAMETTE FALLS, OR</b>	
	Jun 25, 1910	For purchase and rehabilitation of system and construction of concrete division wall.	Act of June 25, 1910, H. Doc. 202, 56th Cong., 1st Sess., and Annual Report, 1900, P. 4374
	Aug 08, 1917	Deepening of locks.	H. Doc. 1060, 62d Cong., 3d Sess. <sup>1</sup>
	Jun 26, 1934 <sup>6</sup>	Operation and care of canal and locks provided for with funds from War Department appropriations for Rivers and Harbors.	
	Mar 02, 1945 <sup>8</sup>	Construction of New Willamette Falls Locks.	Rivers and Harbors Act of 1945 H. Doc. 544, 75th Cong., 3d Sess.
<b>18.</b>		<b>YAQUINA BAY AND HARBOR, OR</b>	
	Mar 02, 1919	Restoration and extension of jetties and mooring basin constructed under previous projects, rock removal at entrance and dredging in bay up to railroad terminus at Yaquina.	Rivers and Harbors Act of 1919 H. Doc. 109, 65th Cong., 1st Sess.
	Aug 26, 1937	Extension of North Jetty seaward 1,000 feet.	S. Committee Print, 75th Cong., 1st Sess.
	Mar 02, 1945	26-foot channel of suitable width across entrance bar, as far as rock bottom will allow, a 20-foot channel 300 feet wide along south side of bay to and including a turning basin 22 feet deep, 1,000 feet wide and 1,200 feet long.	S. Doc. 119, 77th Cong., 1st Sess. <sup>1</sup>
	Jul 24, 1946	Construct a small-boat mooring basin at Newport, OR.	S. Doc. 246, 79th Cong., 2d Sess.
	Jul 03, 1958	40-foot bar channel and 30-foot river channel extension of jetties at entrance.	S. Doc. 8, 85th Cong., 1st Sess. <sup>1</sup>
	Jul 14, 1960	A small boat basin, south shore.	Section 107, PL 86-645 Authorized by Chief of Engineers, Mar. 4, 1977

**TABLE 28-B (Cont'd) AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
<b>19.</b>		<b>YAQUINA RIVER, OR</b>	
	Mar 04, 1913	Construction of channel to Toledo, OR 10 feet deep and generally 150 feet wide on Yaquina River and 200 feet wide in Depot Creek.	Rivers and Harbors Act of 1913 H. Doc. 579, 62d Cong., 2d Sess.
<b>23.</b>		<b>APPLEGATE LAKE, ROGUE RIVER BASIN, OR</b>	
	Oct 23, 1962	Authorizes a rock fill embankment dam. Authorization Act modified Chief's Report on water priorities.	Flood Control Act of 1962, H. Doc. 566, 87th Cong., 2d Sess. PL 87-874, 76 Stat. 1173
	Mar 07, 1974	Authorizes construction of project but no operation for irrigation until local interests agree to repay cost allocated.	PL 93-251
<b>24.</b>		<b>BLUE RIVER LAKE, OR</b>	
	May 17, 1950	Willamette Valley Project authorized as Subbasin system. Authorizes gravel fill embankment dam.	Flood Control Act of 1950, H. Doc. 531, 81st Cong., 2d Sess., PL 81-516
	Nov 17, 1986	Authorizes Construction of hydroelectric power facilities.	Sec 402, Water Resources Development Act, PL 99-662, 33 USC 701b-12, 100 Stat. 4133
<b>25.</b>		<b>COTTAGE GROVE LAKE, OR</b>	
	Jun 28, 1938	Authorizes earth fill embankment dam.	Flood Control Act of 1938, H. Doc. 544, 75th Cong., 3d Sess., PL 75-685
	Dec 22, 1944	Construction, operation, and maintenance of recreation facilities.	Sec 4, Flood Control Act of 1944, as amended 25.
<b>26.</b>		<b>DORENA LAKE, OR</b>	
	Jun 28, 1938	Authorizes earth fill embankment dam.	Flood Control Act of 1938, H. Doc. 544, 75th Cong., 3d Sess., PL 75-685
	Dec 22, 1944	Construction, operation, and maintenance of recreation facilities.	Sec 4, Flood Control Act of 1944, as amended
<b>27.</b>		<b>ELK CREEK LAKE, ROGUE RIVER BASIN, OR</b>	
	Oct 23, 1962	Authorizes roller compacted concrete dam.	Flood Control Act of 1962, H. Doc. 566, 87th Cong., 2d Sess. PL 87-874, 76 Stat. 1173
	Oct 07, 1970	Authorized construction but not operation for irrigation until local interests agree to repay cost allocated.	PL 91-439
<b>28.</b>		<b>FALL CREEK LAKE, OR</b>	
	May 17, 1950	Willamette Valley Project authorized as Subbasin System. Authorizes earth and gravel fill embankment dam.	Flood Control Act of 1950, H. Doc. 531, 81st Cong., 2d Sess., PL 81-516
	Dec 22, 1944	Construction, operation, and maintenance of recreation facilities.	Sec 4, Flood Control Act of 1944, As amended

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**TABLE 28-B (Cont'd)**

**AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
<b>29.</b>		<b>FERN RIDGE LAKE, OR</b>	
	Jun 28, 1938	Authorizes earth fill embankment dam	Flood Control Act of 1938, H. Doc. 544, 75th Cong., 3d Sess., PL 75-685
	Dec 22, 1944	Construction, operation, and maintenance of recreation facilities.	Sec 4, Flood Control Act of 1944, As amended
	Oct 23, 1962	Raise height of dam to obtain additional storage.	H. Doc 403, 87th Cong. 2d Sess.
	Jun 04, 1993	Construction of waterfowl impoundments.	Sec 1135, PL99-662 as amended
<b>30.</b>		<b>LOWER COLUMBIA RIVER BASIN BANK PROTECTION, OR AND WA</b>	
	May 17, 1950	Provides bank protection on Columbia River below river mile 125 and along principal tributaries.	Flood Control Act of 1950, H. Doc. 531, 81st Cong., 2d Sess., PL 81-516
<b>31.</b>		<b>MT. ST. HELENS SEDIMENT CONTROL, WA</b>	
	Jul 30, 1983	Maintain 100 year Flood Protection in Cowlitz River.	PL 98-63
	Aug 15, 1985	Authorized construction of sediment and retention structures.	PL 99-88
<b>32.</b>		<b>WILLAMETTE RIVER BASIN BANK PROTECTION, OR</b>	
	Jun 22, 1936	Bank protection works, with channel clearing.	Flood Control Act of 1936, PL 75-685
	Jun 28, 1938	Provide additional protection against flooding.	Flood Control Act of 1938, H. Doc. 544, 75th Cong., 3d Sess.
	May 17, 1950	Addition of 77 locations to scope of projects.	Flood Control Act of 1950, H. Doc. 531, 81st Cong., 2d Sess., PL 81-516
<b>33.</b>		<b>WILLOW CREEK LAKE, HEPPNER, OR</b>	
	Oct 27, 1965	Storage project for flood control, recreation, and fish and wildlife.	Flood Control Act of 1965, H. Doc. 233, 89th Cong., 1st Sess., PL 89-298

**TABLE 28-B (Cont'd) AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
<b>34.</b>		<b>BONNEVILLE LOCK AND DAM -- LAKE BONNEVILLE, OR AND WA</b>	
		Existing project was originally authorized Sep. 30, 1933, by Federal Emergency Administration of Public Works.	
	Aug 30, 1935	Existing project authorized by Congress.	Act of 1935, S. Committee Print, 73d Cong., 2d Sess., (Report of Chief of Engineers Dated Aug 21, 1933), PL 409
	Aug 20, 1937	Completion, maintenance, and operation of Bonneville project under direction of Secretary of War and supervision of Chief of Engineers, subject to certain provisions herein relating to powers and duties of Bonneville Power Administrator.	Bonneville Project Act of 1937, 16 USC 832, 50 Stat. 731
	Dec 22, 1944	Construction, operation, and maintenance of recreation facilities.	Sec 4, Flood Control Act of 1944, as amended
	May 17, 1950	Columbia River basin master authorization act (Federal Columbia River Power System; Basin Flood Control System; Fish Mitigation for Portland District dams; Subbasin plans including Willamette River Subbasin; etc.)	Flood Control Act of 1950, H. Doc. 531, 81st Cong., 2d Sess., PL 81-516
	Mar 07, 1974	Authorizes relocation of town of North Bonneville to new town site.	PL 93-251
	Aug 22, 1984	Acquisition of Steigerwald Lake wetland area.	PL 98-396
	Aug 15, 1985	Construction of new navigation lock just south of existing lock	P.L. 99-88
	Nov 17, 1986	Construction of a new navigation lock to be funded 50% From fuel taxes paid into Inland Waterway Trust Funds	P.L. 99-662
	Nov 17, 1986	Direct Funding for Fish and Wildlife from BPA and others in support of Northwest Power Planning Act, 16 USC 839.	Sec. 1146 Water Resources Development Act of 1986, PL 99-662, 33 USC 2286
	Oct 1992	Authorizes transfer of lands to town of North Bonneville.	PL 102-396, Sec. 9147
	Oct 24, 1992	Authorizes direct funding from Secretary of Interior to operate and maintain power facilities in the Pacific Northwest and improvements and replacements to the power generation facilities.	PL 102-486, Sec. 2406, 16 USC 839d-1, 106 Stat. 3099
<b>38.</b>		<b>COLUMBIA RIVER TREATY FISHING ACCESS SITES, OR &amp; WA</b>	
	Nov 01, 1988	Authorizes project for mitigation of lost treaty fishing access resulting from construction of Bonneville Dam.	Title IV of PL 100-581, 102 Stat.2944
	Feb 12, 1996	Authorizes transfer of funds to Dept of Interior to be used for purposes of the continued operation and maintenance of improved sites	Sec 15 Native American Technical Corrections Act of 1996, PL 104-109
	Oct 12, 1996	Permits minor boundary adjustments to the 20 recommended treaty fishing access sites set forth in the Post Authorization Change Report dated April 1995.	Sec 512 Water Resources Development Act of 1996, PL 104-303
	Dec 11, 2000	Increases acquisition limit from \$2,000,000 to \$4,000,000	Sec 555 Water Resources Development Act of 2000, PL 106-541
	Mar 02, 2004	Amends the project authorization to include rehabilitation of Celilo Indian Village, Oregon	Sec 108 Native American Technical Corrections Act of 2004, PL 108-204

**TABLE 28-B (Cont'd) AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
<b>39.</b>		<b>COUGAR LAKE, OR</b>	
	May 17, 1950	Willamette Valley Project authorized as Subbasin System. Authorizes rock fill embankment dam.	Flood Control Act of 1950, H. Doc. 531, 81st Cong., 2d Sess., PL 81-516
	Sep 03, 1954	Addition of power.	PL 83-780.
	Oct 23, 1962	Strube Lake re-regulating dam.	PL 87-874
	Oct 24, 1992	Authorizes direct funding from Secretary of Interior to operate and maintain power facilities in the Pacific Northwest and improvements and replacements to the power generation facilities.	PL 102-486, Sec. 2406, 16 USC 839d-1, 106 Stat. 3099
<b>40.</b>		<b>DETROIT LAKE - BIG CLIFF, OR</b>	
	Jun 28, 1938	Authorizes concrete gravity structure.	Flood Control Act of 1938, H. Doc. 544, 75th Cong., 3d Sess., PL 75-685
	Jun 30, 1948	Addition of power and regulating Big Cliff Dam. with power	PL 858, 80th Cong.2d Sess.
	Oct 24, 1992	Authorizes direct funding from Secretary of Interior to operate and maintain power facilities in the Pacific Northwest and improvements and replacements to the power generation facilities.	PL 102-486, Sec. 2406, 16 USC 839d-1, 106 Stat. 3099
<b>41.</b>		<b>GREEN PETER-FOSTER LAKES, OR</b>	
	May 17, 1950	Willamette Valley Project authorized as Subbasin System. Authorized Green Peter Dam in lieu of originally authorized Sweet Home Lake (1938).	Flood Control Act of 1950, H. Doc. 531, 81st Cong., 2d Sess., PL 81-516
	Sep 03, 1954	Addition of power at Green Peter and White Bridge re-regulating dams.	PL 83-780, F. C. Act 1954
	Jul 14, 1960	Changes location of re-regulating dam from White Bridge location to Foster.	Flood Control Act of 1960, S. Doc. 104, 86th Cong., 2d Sess., 74 Stat. 480
	Oct 24, 1992	Authorizes direct funding from Secretary of Interior to operate and maintain power facilities in the Pacific Northwest and improvements and replacements to the power generation facilities.	PL 102-486, Sec. 2406, 16 USC 839d-1, 106 Stat. 3099
<b>42.</b>		<b>HILLS CREEK LAKE, OR</b>	
	May 17, 1950	Willamette Valley Project authorized as Subbasin System. Authorizes earth and gravel fill dam.	Flood Control Act of 1950, H. Doc. 531, 81st Cong., 2d Sess., PL 81-516
	Oct 24, 1992	Authorizes direct funding from Secretary of Interior to operate and maintain power facilities in the Pacific Northwest and improvements and replacements to the power generation facilities.	PL 102-486, Sec. 2406, 16 USC 839d-1, 106 Stat. 3099

**TABLE 28-B (Cont'd) AUTHORIZING LEGISLATION**

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
<b>43.</b>		<b>JOHN DAY LOCK AND DAM - LAKE UMATILLA, OR AND WA</b>	
	May 17, 1950	Columbia River basin master authorization act (Federal Columbia River Power System; Basin Flood Control System; Fish Mitigation for Portland District dams; Subbasin plans including Willamette River Subbasin; etc.)	Flood Control Act of 1950, H. Doc. 531, 81st Cong., 2d Sess., PL 81-516
	Dec 22, 1944	Construction, operation, and maintenance of recreation facilities.	Sec 4, Flood Control Act of 1944, as amended
	Mar 24, 1965	John Day waterfowl management area.	S. Doc. 28, 89th Cong., 1st Sess.
	Oct 24, 1992	Authorizes direct funding from Secretary of Interior to operate and maintain power facilities in the Pacific Northwest and improvements and replacements to the power generation facilities.	PL 102-486, Sec. 2406, 16 USC 839d-1, 106 Stat. 3099
<b>44.</b>		<b>LOOKOUT POINT - DEXTER LAKES, OR</b>	
	Jun 28, 1938	Authorizes earth and gravel filled dam.	Flood Control Act of 1938, H. Doc. 544, 75th Cong., 3d Sess., PL 75-685
	Dec 22, 1944	Construction, operation, and maintenance of recreation facilities.	Sec 4, Flood Control Act of 1944, as amended
	May 17, 1950	Addition of power and authorization of Dexter Lake as re-regulating dam.	Flood Control Act of 1950, H. Doc. 531, 81st Cong., 2d Sess., PL 81-516
	Oct 24, 1992	Authorizes direct funding from Secretary of Interior to operate and maintain power facilities in the Pacific Northwest and improvements and replacements to the power generation facilities.	PL 102-486, Sec. 2406, 16 USC 839d-1, 106 Stat. 3099
<b>45.</b>		<b>LOST CREEK LAKE, ROGUE RIVER BASIN, OR</b>	
	Oct 23, 1962	Authorizes rock and gravel fill embankment dam, including power.	Flood Control Act of 1962, H. Doc. 566, 87th Cong., 2d Sess.
	Oct 15, 1966	Authorizes construction of project but not operation for irrigation until local interests agree to repay cost allocated.	PL 89-689, Public Works Approp. Act, 1967
	Oct 24, 1992	Authorizes direct funding from Secretary of Interior to operate and maintain power facilities in the Pacific Northwest and improvements and replacements to the power generation facilities.	PL 102-486, Sec. 2406, 16 USC 839d-1, 106 Stat. 3099
<b>46.</b>		<b>THE DALLES LOCK AND DAM -- LAKE CELILO, WA AND OR</b>	
	May 17, 1950	Columbia River basin master authorization act (Federal Columbia River Power System; Basin Flood Control System; Fish Mitigation for Portland District dams; Subbasin plans including Willamette River Subbasin; etc.)	Flood Control Act of 1950, H. Doc. 531, 81st Cong., 2d Sess., PL 81-516
	Dec 22, 1944	Construction, operation, and maintenance of recreation facilities.	Sec 4, Flood Control Act of 1944, as amended
	Oct 24, 1992	Authorizes direct funding from Secretary of Interior to operate and maintain power facilities in the Pacific Northwest and improvements and replacements to the power generation facilities.	PL 102-486, Sec. 2406, 16 USC 839d-1, 106 Stat. 3099

**TABLE 28-B (Cont'd) AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
<b>47.</b>		<b>COLUMBIA RIVER FISH MITIGATION, OR and WA</b>	
	Jul 19, 1988	Design, test, and construct fish bypass facilities.	PL 100-371
	Oct 12, 1996	Develop innovative methods and technologies for improving the survival of salmon. \$10 million is authorized to carry out activities under paragraph 511 (a)(3).	Sec. 511, Water Resources Development Act of 1996 as amended, P.L. 104-303
	Aug 17, 1999	Sec. 582(a): Replaces Sec 511(a) of WRDA 96. Sec. 582(c): Carry out methods to reduce nesting populations of avian predators on dredge spoil islands in the Columbia River. \$1 million is authorized.	Sec. 582 Water Resources Development Act of 1999 as amended, P.L. 106-53
	Nov 8, 2007	Sec 582(a)(6) of WRDA 1999 (estuary survival) is amended to increase authorized amount to \$25 million. Sec 582(c)(2) of WRDA 99 (avian predation) is amended to increase authorized amount to \$10 million.	Sec. 5025, Water Resources Development Act of 2007 as amended, P.L. 110-114
<b>48.</b>		<b>WILLAMETE RIVER TEMPERATURE CONTROL, OR</b>	
	Oct 12, 1996	Authorized modifications to Blue River and Cougar intake towers to benefit fish habitat.	Sec. 101(a)(2s), 1996, Water Resources Development Act, PL 104-303
	Aug 17, 1999	Increased authorized cost.	PL 106-53, Water Resources Development Act of 1996
<b>49.</b>		<b>LOWER COLUMBIA RIVER ECOSYSTEM RESTORATION</b>	
	Dec 11, 2000	Environmental Restoration of fish and wildlife habitat Sec 536 of Water Resource Development Act of 2000.	Sec. 536, Water Resources Development Act of 2000, PL 106-541, 114 Stat. 2661

**Footnotes:**

- |  |   |
|--|---|
| 1. Contains latest published maps.   | 5. Inactive.                            |
| 2. Public Resolution 105, 67th Cong.   | 6. Permanent appropriations Repeal Act. |
| 3. Public Works Administration.  | 7. Flood Control Act                    |
| 4. Includes following work, classified inactive. A channel to Hobsonville 200 feet wide and 16 feet deep, with a turning | 8. Classified Deferred.                 |
|  | 9. Spur Jetty "B" classified inactive   |

**TABLE 28-C OTHER AUTHORIZED NAVIGATION PROJECTS**

Project	Status	For Last Full Report See Annual Report for	Cost to Sep. 30, 2008	
			Construction	Operation and Maintenance
Alsea River, OR	Completed		2,000	26,237
Astoria Turning Basin, OR <sup>1</sup>	Completed	1977	870,139	
Bandon Small Boat Basin, Coquille, OR <sup>1</sup>	Completed	1985	1,173,524	
Bonneville Navigation Lock OR & WA <sup>20</sup>	Completed	2002	175,442,306	
Bridges, Columbia River, Cascade Locks and Hood River, OR (Alteration)	Completed	1944	1,081,806	16,648
Cathlamet, WA <sup>1</sup>	Completed	1971	171,467	
Charleston Channel, Coos Bay, OR <sup>1</sup>	Completed	1985	1,197,300	
Clatskanie River, OR <sup>2</sup>	Completed	1969	192,400 <sup>3</sup>	194,896 <sup>4</sup>
Columbia River, Illwaco, WA <sup>1</sup>		1986	1,589,231	
Coos & Millicoma Rivers, OR	Completed	1991	350,238 <sup>18</sup>	2,152,914
Cowlitz River, WA	Completed	1985	277,436 <sup>6</sup>	1,474,036
Cushman-Mapleton Channels (Siuslaw River), OR <sup>1</sup>	Completed	1975	329,423	
Deep River, WA <sup>2</sup>	Completed	1963	15,384	32,768
Depoe Bay, OR <sup>1</sup>	Completed	1971	145,588 <sup>5</sup>	
Elochoman Slough, WA <sup>2</sup>	Completed	1990	18,641 <sup>17</sup>	196,864
Grays River, WA <sup>2</sup>	Completed	1941	2,500	35,670
Hammond Small Boat Basin, OR <sup>1</sup>	Completed	1977	519,090 <sup>7</sup>	
Interstate Bridge, Columbia River, Portland, OR to Vancouver WA (Alteration)	Completed	1961	1,154,162 <sup>8</sup>	
Interstate Highway Bridge (Barge Channel), OR <sup>1</sup>	Completed	1963	15,281	
Kalama Turning Basin, Kalama, WA <sup>1</sup>	Completed	1986	302,000	
Lake River, WA	Completed	1983	2,700	58,127
Lewis River, WA	Completed	1985	58,132	685,677
Long Tom River, OR	Completed			4,000
Mooring for Battleship Oregon, OR	Completed			25,000
Multnomah Channel, OR <sup>2</sup>	Completed	1982	437,6699	
Nehalem Bay, OR	Completed	1987	302,006 <sup>10</sup>	55,195
Nestucca River, OR	Completed			6,000
Oregon Slough, (North Portland Harbor), OR <sup>2</sup>	Completed	1963	16,881	90,514
Salmon River, OR <sup>2</sup>	Completed	1949	2,145	
Smith River, OR <sup>2</sup>	Completed	1974	143,120	205,130
Skamokawa Creek, WA	Completed	1991	2,400	436,185
South Channel, Government Island, OR <sup>1</sup>	Completed	1985	119,800 <sup>11</sup>	
South Slough (Charleston), OR <sup>1</sup>	Completed	1970	26,821	
The Cascades Canal, Columbia River, OR <sup>12</sup>	Abandoned	1939	3,903,780	559,858
The Dalles-Celilo Canal, OR and WA <sup>13</sup>	Abandoned	1957	4,716,205	2,833,888
Tongue Point, OR <sup>1</sup>	Completed	1992	2,807,876 <sup>19</sup>	
Umatilla Harbor, OR <sup>14</sup>	Abandoned	1952		
Westport Slough, OR <sup>2</sup>	Completed	1966	16,276	171,909
Willamette River above Portland and Yamhill River, OR	Completed	1985	862,918	17,900,293
Winchester Bay, Umpqua River, OR	Completed	1985	1,616,369	
Yaquina Bay and Harbor Small Boat Basin, OR <sup>1</sup>	Completed	1979	891,695 <sup>15</sup>	
Yaquina River, OR <sup>1</sup>	Completed	1971	195,313 <sup>16</sup>	
Youngs and Clatskanie River, OR	Completed		2,000	
Youngs Bay and Youngs River, OR <sup>2</sup>	Completed	1979	9,348	34,449
7.5 MCY Standby Time	Completed	1996		4,314,000

PORTLAND, OR, DISTRICT

**TABLE 28-C (Cont'd) OTHER AUTHORIZED NAVIGATION PROJECTS**

Project	Status	For Last Full Report See Annual Report for	Cost to Sep. 30, 2008	
			Construction	Operation and Maintenance
<b>Footnotes:</b>				
1. Authorized by Chief of Engineers (sec. 107).			11. Excludes \$102,000 contributed funds.	
2. Channel adequate for present commerce.			12. Project abandoned due to flooding by Bonneville Dam pool.	
3. Includes \$15,537 for previous project			13. Project abandoned due to flooding by The Dalles Dam pool.	
4. Includes \$23,489 for previous project.			14. Project transferred to Portland District from Walla Walla District	
5. Excludes \$42,000 contributed funds.			FY 1974 and abandoned due to flooding by the John Day Dam pool.	
6. Includes \$239,529 for Sec. 107 project.			15. Excludes \$969,342 contributed funds.	
7. Excludes \$75,000 contributed funds.			16. Excludes \$50,565 contributed funds	
8. Non-Federal funds, \$1,204,100.			17. Excludes \$86,586 contributed funds.	
9. Includes \$419,557 for Sec. 107 project.			18. Excludes \$80,000 contributed funds; includes \$8,000 for previous	
project.				
10. Excludes \$304,826 contributed funds.			19. Excludes \$1,776,008 contributed funds.	
			20. Excludes \$180,132,885 contributed funds.	

**TABLE 28-E OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Project	Status	For Last Full Report See Annual Report for	Cost to Sep. 30, 2008	
			Construction	Operation and Maintenance
<b>COLUMBIA RIVER BASIN</b>				
Blind Slough Diking District, Clatsop County, OR	Completed	1939	163,397	
Consolidated Diking and Improvement District 1, Cowlitz County, WA	Completed	1941	163,291	
Deep River Area, Wahkiakum County, WA	Completed	1942	69,724	
Deer Island Area, Columbia County, OR	Completed	1943	574,123	
Diking District 2, Clatsop County, OR	Completed	1940	25,609	
Diking District 5, Clatsop County, OR	Completed	1940	25,609	
Diking and Improvement District 5, Cowlitz County, WA	Completed	1940	161,381	
Diking District 1 and 3 (Puget Island) and Little Island, Wahkiakum County, WA	Completed	1941	258,795	
Diking Improvement District 1, Pacific County WA	Completed	1941	26,810	
Diking and Improvement District 4, Wahkiakum County, OR	Completed	1951	169,542	
Drainage District 1, Clatsop County, OR	Completed	1939	240,939	
John Day River Area, Clatsop County, OR	Completed	1942	33,080	
Karlson Island, Clatsop County, OR	Completed	1941	25,773	
Knappa Area, Clatsop County, OR	Completed	1942	18,789	
Lewis and Clark River Area, Clatsop County, OR	Completed	1942	158,419	
Lower Cowlitz River Area, Clatsop County, OR	Completed	1961	91,652	
Magruder Drainage District, Columbia County, OR	Completed	1940	61,186	

**TABLE 28-E (Cont'd) OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Project	Status	For Last Full Report See Annual Report for	Cost to Sep. 30, 2008	
			Construction	Operation and Maintenance
<b>COLUMBIA RIVER BASIN (Cont'd)</b>				
Marshland Drainage District, Columbia County, OR	Completed	1940	39,475	
Midland Drainage District, Columbia County, OR	Completed	1939	77,774 <sup>3</sup>	
Multnomah Drainage District 1, OR	Completed	1951	593,034 <sup>4</sup>	
Peninsula Drainage District 1, Multnomah County, OR	Completed	1942	241,148	
Port of Kalama, WA <sup>1</sup>	Completed		99,844	
Rainier Drainage District, Columbia County, OR	Completed	1942	47,662	
Sauvie Island Areas A and B, Multnomah County, OR	Completed	1951	1,623,505	
Scappoose Drainage District, OR	Completed	2000	4,121,487	
Skamokawa Creek Area, Wahkiakum County, WA	Completed	1946	178,885	
Wahkiakum County Consolidated Diking District No. 1, WA	Completed	1985	5,289,833	
Tenasillahe Island, Clatsop County, OR	Completed	1939	133,778	
Upper Grays River Area, WA	Completed	1947	61,263	
State Hwy 101 & 401, Columbia River, WA <sup>1</sup>	Completed	1985	504,642 <sup>11</sup>	
Walluski River, Clatsop County, OR	Completed	1942	66,932	
Warrenton Diking District, 1, Clatsop County, OR	Completed	1940	69,503	
Warrenton Diking District 2, Clatsop County, OR	Completed	1940	74,596	
Webb District Improvement Co., Columbia County, OR	Completed	1940	84,592	
Westland District Improvement Co., Columbia County, OR	Completed	1940	205,531	
Westport District Columbia and Clatsop Counties, OR	Completed	1943	40,658	
Woodson Drainage District, Columbia County, OR	Completed	1940	22,797	
Youngs River Dikes, Clatsop County, OR	Completed	1942	248,802	
<b>LEWIS RIVER BASIN</b>				
Diking and Improvement District 11, Cowlitz County, WA	Completed	1943	172,521	
<b>COWLITZ RIVER BASIN</b>				
Cowlitz County Drainage Improvement District 1, WA	Completed	1939	42,978	
Diking Improvement District 13, Cowlitz County, WA	Completed	1939	28,592	
Huntington Avenue, Castle Rock, WA <sup>1</sup>	Completed	1985	250,000	
Mt. St. Helens and Vicinity, WA	Completed	1995	42,036,000	

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**TABLE 28-E (Cont'd) OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Project	Status	For Last Full Report See Annual Report for	Cost to Sep. 30, 2008	
			Construction	Operation and Maintenance
<b>LOWER COLUMBIA RIVER BASIN</b>				
Beaver Drainage District, OR	Completed	1984	3,131,944	
Cowlitz County Consolidated Diking Improvement District No. 2, WA	Completed	1977	1,661,367	
Cowlitz County Diking Improvement District 2, WA	Completed	1967	363,000	
Cowlitz County Diking Improvement District 13, WA	Completed	1967	65,345	
Cowlitz County Diking Improvement District 15, WA	Completed	1967	304,794	
Cowlitz River, Hopkins Creek, WA <sup>1</sup>	Completed		236,860	
Hayden Island, OR	Inactive			
Midland Drainage District, OR	Completed	1971	304,511	
Multnomah County Drainage District 1, OR	Completed	1964	1,499,186	
Peninsula Drainage District 2, OR	Inactive	1961	35,265	
Rainier Drainage District, OR	Completed	1967	593,945	
Sandy Drainage District, OR	Completed	1954	154,012 <sup>5</sup>	
Sauvie Island Drainage District, OR	Completed	1966	674,137	
Vancouver Lake Area, WA	Deferred	1981	889,391	
Wahkiakum Co. Diking District 4, WA	Inactive	1971	48,619	
Washougal Area Levees, Clark County, OR	Completed	1973	1,803,488	
Woodson Drainage District, OR	Completed	1964	162,500	
<b>WILLAMETTE RIVER BASIN</b>				
Amazon Creek, OR	Completed	1960	1,214,300 <sup>6</sup>	
Mill Creek, Salem, OR	Completed	1993	175,800 <sup>14</sup>	
Sandy River and Sleepy Hollow, OR <sup>1</sup>	Completed		276,700	
Whelton Ditch, OR	Inactive	1967	39,624	
<b>ALL OTHER FLOOD CONTROL</b>				
Arlington, Alkali Canyon, OR <sup>7</sup>	Abandoned	1950	23,439	
Bear Creek, Medford, OR <sup>1</sup>	Completed		23,050	
Beaver Creek near Tillamook, OR <sup>2</sup>	Completed	1967	106,198	
Castle Rock, Cowlitz River, WA	Completed	1957	104,921	
Catching Inlet Drainage District Coos River, OR <sup>2</sup>	Completed	1959	182,655	
Chewaucan River, Paisley, OR <sup>1</sup>	Completed		42,761	
Clackamas River at Dixon Farm Location, OR	Completed	1952	70,845 <sup>8</sup>	
Days Creek Lake, OR (Phase I)	Deferred	1982	1,307,216	
Depoe Bay, Lincoln County, OR <sup>1</sup>	Completed		22,963	
Deschutes River, Bend, OR <sup>2</sup>	Completed	1988	106,250 <sup>13</sup>	
John Day River (West), OR <sup>1</sup>	Completed	1986	127,800	
Johnson Creek, OR	Inactive	1981	170,245	
McDonald Dike Road, Nehalem River, OR <sup>1</sup>	Completed	1985	29,500	

**TABLE 28-E (Cont'd) OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Project	Status	For Last Full Report See Annual Report for	Cost to Sep. 30, 2008	
			Construction	Operation and Maintenance
<b>ALL OTHER FLOOD CONTROL (Cont'd)</b>				
McKenzie River near Waterville, OR <sup>2</sup>	Completed	1966	148,358	
Miami River, OR <sup>1</sup>	Completed		15,321	
Yaquina River, OR	Completed	1948	118,433	
Molalla River at Milk Creek Location, OR <sup>2</sup>	Completed	1955	55,007	
Molalla River at Ressel Location, OR <sup>2</sup>	Completed	1952	55,189	
Nestucca River, Condor Road, OR <sup>1</sup>	Completed		11,690	
Nestucca River, Vicinity Pacific City, OR <sup>1</sup>	Completed		16,000	
Pendleton Levees, Umatilla River, OR <sup>9</sup>				
(a) Riverside Area Units	Deferred	1960	9,100	
(b) State Hospital and City Areas (Zone 1)	Completed	1959	267,748	
(c) State Hospital and City Areas (Zone 2) <sup>2</sup>	Completed	1960	161,540	
Pendleton, Umatilla River, OR <sup>9</sup>	Completed	1939	143,263	
Reedsport Levees, Umpqua River, OR <sup>2</sup>	Completed	1971	968,716 <sup>10</sup>	
Rogue River, OR <sup>1</sup>	Completed		86,230	
Salmon Creek at Oakridge, OR <sup>2</sup>	Completed	1960	288,447	
Salmon Creek near Vancouver, WA <sup>1</sup>	Completed	1985	435,000 <sup>12</sup>	
Sandy River, City of Troutdale, OR <sup>1</sup>	Completed	1994	365,000 <sup>15</sup>	
Siuslaw River, Lane County, OR <sup>1</sup>	Completed		215,939	
Stillwell Drainage District, Tillamook Bay, OR <sup>2</sup>	Completed	1961	176,351	
Sumner Parker Airport, OR <sup>1</sup>	Completed		92,500	
Trask River, Tillamook County, OR <sup>1</sup>	Completed	1984	121,273	
Tualatin, OR	Completed	1985	1,803,094	
Umatilla River, Stanfield, OR <sup>1</sup>	Completed		33,835	
Umatilla River, Thorn Hollow, OR <sup>1</sup>	Completed	1985	154,600	
Umpqua River and Tributaries, OR	Completed	1952	428,881	
Vicinity of Nehalem, Nehalem River, OR	Completed	1952	45,677	
West Makinster Rd., Wilson River, OR <sup>1</sup>	Completed	1986	176,000	
Wilson River, Vicinity Highway 101, OR <sup>1</sup>	Completed		30,000	

**Footnotes:**

1. Authorized by Chief of Engineers (Sec. 14).
2. Authorized by Chief of Engineers (Sec. 205).
3. Includes \$26,241, Emergency Relief Act Funds.
4. Excludes \$25,000 contributed funds.
5. Previous completed project, \$138,956; \$15,056 engineering costs project constructed by local interests.
6. Excludes \$154,751 contributed funds.
7. Project transferred from Walla Walla District FY 1974 and abandoned due to flooding by the John Day Dam pool. Includes \$3,328 FY 1960 preauthorization costs, Sec. 205, P.L. 80-85. See FY 1960 Annual Report, page 1887.
8. Excludes \$2,520 contributed funds.
9. Reported by Walla Walla District prior to 1974.
10. Excludes \$230,070 contributed funds for new work and \$31,284 Government furnished sheet steel pile.
11. Includes \$254,642 contributed funds.
12. Includes \$185,000 contributed funds.
13. Excludes \$5,822 contributed funds.
14. Excludes \$31,031 contributed funds.
15. Excludes \$98,313 contributed funds.

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**TABLE 28-F OTHER AUTHORIZED MULTIPLE PURPOSE PROJECTS, INCLUDING POWER**

Project	Status	For Last Full Report See Annual Report for	Cost to Sep. 30, 2008	
			Construction	Operation and Maintenance
Restoration of Indian Fishing Grounds Bonneville, OR	Completed	1969	185,000	
Columbia and Snake Rivers Ports Dredging, OR & WA	Inactive	1994		5,799,926

**TABLE 28-G DEAUTHORIZED PROJECTS**

Project	For Last Full Report See Annual Report for	Date Deauthorized	Federal Funds Expended	Contributed Funds Expended
Area East of Albany, OR		1977		
Bachelor Island, WA		1977		
Bear Creek, Long Tom River, OR	1966	1971	4,559	
Calapooya River, OR	1959	1965	11,595	
Cascadia Lake, OR		1987	954,114 <sup>1</sup>	
Chetco River, OR		1997	235,353	
Clatskanie River Area, Columbia County, OR	1960	1965	268	
Clatskanie Drainage Dist. 1, OR	1964	1978	18,543	
Clatsop County Drainage District 1, OR	1960	1974	4,472	
Clatsop County Diking District 3, OR	1938	1961	258	
Clatsop County Diking District 4, OR		1978		
Clatsop County Diking District 6, OR	1961	1978	8,824	
Columbia Drainage District No. 1, OR		1987		
Columbia River, Seafarers Memorial	2000	2007	52,024	
Columbia Slough, OR	1953	1978	21,352	
Coquille River, OR	1948	1953	908	
Cowlitz County Consolidate Diking Improvement District 1, OR		1977		
Cowlitz River at Randle, WA	1962	1977	11,095	
Coyote and Spencer Creek, Long Tom River, OR	1960	1970	6,819	
Deer Island Drainage District, OR		1987		
East Muddy and Lake Creek, OR	1959	1970	6,465	
Ferguson Creek Long Tom River, Or		1978		
Flat Creek, Long Tom River, OR		1977		
Floodwall and Levees at Portland, OR		1977		
Gate Creek Lake, OR		1987	745,001 <sup>2</sup>	
Holley Lake, OR	1963	1987	241,992 <sup>3</sup>	

**TABLE 28-G (Cont'd) DEAUTHORIZED PROJECTS**

<b>Project</b>	<b>For Last Full Report See Annual Report for</b>	<b>Date Deauthorized</b>	<b>Federal Funds Expended</b>	<b>Contributed Funds Expended</b>
John Drainage District, OR	1961	1979	23,754	
John Day River, OR	1974	1974	210,220	
Kalama River (South Area) Levee, Cowlitz County, WA	1969	1978	55,594	
Lake River Delta Area, WA		1977		
Lewis River Area, WA		1978		
Magruder Drainage District, OR	1940	1974	774	
Mud and Basket Slough				
Rickreall Creek, OR		1977		
Pendleton Levees, Riverside Area, OR		1987	9,000	
Peninsula Drainage District 1, OR	1942	1977	43,292	
Pilot Rock, Birch Creek, OR	1963	1968	4,558	
Prescott Area, Columbia County, OR	1941	1978	125	
Prineville Area, Crooked River and Ochoco Creek, OR	1962	1977	11,318	
Pudding River, OR	1950	1979	5,000	
Shelton Ditch, Marion County, OR	1967	1987	39,624	
Skamokawa (Steamboat Slough), WA	1939	1979		
Soap Creek, WA		1977		
Turner Prairie, Mill Creek, OR		1978		
Umatilla River (Echo), OR	1960	1964	24,145	
Umpqua River-Scholfield River, OR		1987	4,000	
Waldo Lake Tunnel, OR		1958		
West Muddy Creek and Mary's River, OR	1962	1970	4,056	
Westport Slough, OR (Modification for 32-foot channel)	1966	1977		
Wiley Creek Lake, OR	1960		112,000	
Willamette River above Portland and Yamhill River, OR (uncompleted portions)		1987		
Willamette Falls Fish ladder, OR	1961			
Willamette River at Willamette Falls, OR	1948	1987	142,883	

**Footnotes:**

1. Excludes Pro-rata share of \$112,000 for Sweet Home Reservoir.
2. Excludes Pro-rata share of \$95,000 for Quartz Creek Reservoir.
3. Excludes \$100,000 preauthorization study costs.

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**TABLE 28-H** **COLUMBIA AND LOWER WILLAMETTE RIVER**  
**BELOW VANCOUVER, WA, AND PORTLAND, OR**  
**TOTAL COST OF EXISTING PROJECT TO SEP. 30, 2008**  
(SEE SECTION 2 OF TEXT)

<b>Funds</b>	<b>New Work</b>	<b>Maintenance</b>	<b>Total</b>
Regular	28,349,304	558,668,320	587,017,624
Public Works	446,296	14,414	460,710
Emergency Relief Administration	138,449	98,668	237,117
Total U.S.	28,934,049	558,781,402	587,715,451
Contributed Prior to 1964	223,026	24,320	247,346
Contributed (1975) 35 to 40-foot Channel	442,928		442,928
Total Contributed	665,954	24,320	690,274
Total All Funds	29,600,003	558,805,722	588,405,725

**TABLE 28-I** **PROJECT CONDITION SURVEYS**  
(SEE SECTION 20 OF TEXT)

<b>Project</b>	<b>Date Survey Conducted</b>
Umpqua River, OR	10, 16-17, 22 Oct 2007 22, 29 Sep 2008
Tillamook Bay, OR	10 Mar 2008
Depoe Bay, OR	12 Mar 2008
Port Orford, OR	5 Nov 2007 14 Jan 2008 1 Apr 2008, 5 May 2008, 23 Jul 2008
Yaquina Bay, OR	3, 26-27 Nov 2007 30 Sep 2008
Yaquina River, OR	7-8 Nov 2007
Coos Bay, OR	11,14,20,21,25 Aug 2008 2-4,8-11,15,16,23 Sep 2008
Rogue River Harbor @ Gold Beach, OR	24 Sep 2008
Columbia River between Chinook, WA and Head of Sand Island	28 Jan 2008

**TABLE 28-J WILLAMETTE RIVER AT WILLAMETTE FALLS, OR  
PRINCIPAL FEATURES OF EXISTING CANAL AND LOCKS  
(SEE SECTION 17 OF TEXT)**

Usable Lock Dimensions .....	Series of 4 locks, each 175 feet by 37 feet <sup>1</sup>
Lift of each lock .....	Lock 1 (Lower), 22.5 feet; Lock 2, 8.7 feet; Lock 3, 10.9 feet and Lock 4 (Upper), 8.1 feet <sup>2</sup>
Depth of Miter Sills at Lower Water .....	Lower Lock, 8.4 feet; Upper Lock, 6 feet
Character of foundation.....	Rock
Kind of Dam .....	Fixed <sup>3</sup>
Type of Construction .....	Concrete
Year of Completion.....	1873; Purchased by United States Apr. 26, 1915
Cost.....	Unknown; purchase price \$375,000

**Footnotes:**

1. A guard lock 210 by 40 feet, which is used only at higher states of water, is at upper end of canal basin.
2. A concrete division wall, 1,227 feet long, extending from Lock 4 to Guard Lock, separates upper basin of canal from head race, which formerly led directly from basin and supplied water for power plants operated by Crown Zellerbach Corp., and Portland Ry., Light & Power Co., which is now being operated by Portland General Electric Co.
3. The dam is owned by private parties.

**TABLE 28-K FLOOD CONTROL RESERVOIR OPERATIONS**

See Section in Text	Project	Date of Peak Inflow	Peak Inflow Cu. Ft./Sec.	Storage Used 1000 Acre/feet
23.	Applegate Lake, OR	December 3, 2007	2,810	3.2
24.	Blue River Lake, OR	December 24, 2007	5,430	4.8
25.	Cottage Grove Lake, OR	January 8, 2008	2,680	1.6
39.	Cougar Lake, OR	May 17, 2008	5,260	2.5
40.	Detroit Lake, OR	December 4, 2007	20,800	67.1
26.	Dorena Lake, OR	December 24, 2007	9,180	9.1
28.	Fall Creek Lake, OR	December 24, 2007	7,390	6.4
29.	Fern Ridge Lake, OR	February 1, 2008	5,700	15.3
41.	Foster Lake, OR	December 23, 2007	11,400	3.5
41.	Green Peter Lake, OR	December 23, 2007	17,200	19.9
42.	Hills Creek Lake, OR	May 17, 2008	5,950	13.0
44.	Lookout Point Lake, OR	May 17, 2008	12,800	30.9
45.	Lost Creek Lake, OR	May 18, 2008	7,980	9.6

PORTLAND, OR, DISTRICT

**TABLE 28-L**

**WORK UNDER SPECIAL AUTHORITIES  
PROJECTS NOT SPECIFICALLY AUTHORIZED**

Project	Status <sup>1</sup>	Fiscal Year Costs		Total
		Federal	Non-Federal	
<b>Hurricane and Storm Damage Reduction Projects Pursuant to Section 103 of the 1962 Rivers and Harbors Act, Public Law 874, 87th Congress, As Amended (See Section 22 of text)</b>				
Seaside, OR	F	81,974	---	81,974
Coordination		24,598	---	24,598
		---	---	---
<b>Total Section 103</b>		<b>106,572</b>	<b>---</b>	<b>106,572</b>
<b>Navigation Activities Pursuant to Section 107 of the 1960 Rivers and Harbors Act, Public Law 645, 86th Congress, as Amended (See Section 21 of text)</b>				
Columbia River Navigation Improvements	F	1,851	---	1,851
Port Orford Dredging	F	---	---	---
Coos Bay Turning Basin	F	---	---	---
Coordination		5,890	---	5,890
<b>Total Section 107</b>		<b>7,741</b>	<b>---</b>	<b>7,741</b>
<b>Mitigation of Shore Damages Attributable to Navigation Works, Pursuant to Section 111 of the 1968 Rivers and Harbors Act, Public Law 483, 90th Congress, as Amended (See Section 21 of text)</b>				
Puget Island Shoreline, WA and OR	F	---	---	---
		---	---	---
<b>Total Section 111</b>		<b>0</b>	<b>0</b>	<b>0</b>
<b>Flood Control Activities Pursuant to Section 205 of the Flood Control Act of 1948, Public Law 858, 80th Congress, as Amended (See Section 36 of text)</b>				
Coordination		9,731	---	9,731
<b>Total Section 205</b>		<b>9,731</b>	<b>---</b>	<b>9,731</b>
<b>Emergency Streambank Protection Activities Pursuant to Section 14 of the 1946 Flood Control Act, Public Law 526, 79th Congress as amended (See Section 36 of text)</b>				
St Johns Landfill, OR	D	82,335	---	82,335
Coordination		4,007	---	4,007
<b>Total Section 14</b>		<b>86,342</b>	<b>---</b>	<b>86,342</b>

**TABLE 28-L (Cont'd)**

**WORK UNDER SPECIAL AUTHORITIES  
PROJECTS NOT SPECIFICALLY AUTHORIZED**

Project	Status	Fiscal Year Costs		Total
		Federal	Non-Federal	
<b>Project Modifications for Improvement of the Environment Pursuant to Section 1135 of the 1986 Water Resources Development Act, Public Law 662, 99th Congress, as Amended (See Section 50 of text)</b>				
Amazon Creek Wetlands, OR	C	20,777	---	20,777
Fox Creek, OR	C	---	---	---
Lower Columbia Slough, OR	C	(23,615)	---	(23,615)
Fern Ridge Marsh Restoration, OR	C	---	---	---
Coordination		10,685	---	10,685
<b>Total Section 1135</b>		<b>7,847</b>	<b>0</b>	<b>7,847</b>
<b>Aquatic Ecosystem Restoration Pursuant to Section 206 of the 1996 Water Resources Development Act, Public Law 303, 104th Congress, as Amended (See Section 50 of text)</b>				
Arrowhead Creek, OR	F	37,046	---	37,046
East Birch Creek Restoration, OR	C	925	---	925
Eugene Delta Ponds, OR	C	493,345	---	493,345
Johnson Creek / Springwater, OR	F	83,556	---	83,556
Kellogg Creek, OR	F	---	---	---
Oaks Bottom, OR	F	---	---	---
Springfield Millrace, OR	P	290,772	---	290,772
Westmoreland Park, OR	F	832	---	832
Coordination		9,156	---	9,156
<b>Total Section 206</b>		<b>915,632</b>	<b>---</b>	<b>915,632</b>
<b>Snagging and Clearing for Flood Control Pursuant to Section 208 of the 1954 Flood Control Act, Public Law 780, 83rd Congress, as Amended (See Section 36 of text)</b>				
Coordination		5,299	---	5,299
<b>Total Section 208</b>		<b>5,299</b>	<b>---</b>	<b>5,299</b>

1/ Status: C = Construction; D = Planning and Design Analysis; F = Feasibility; P = Plans and Specifications; R = Preliminary Restoration Plan; X=Fiscal Close Out

**TABLE 28-M**

**FLOOD CONTROL ACTIVITIES  
WORK UNDER SPECIAL AUTHORITIES  
DISASTER PREPAREDNESS PROGRAM  
(SEE SECTION 53 OF TEXT)**

	<b>Federal Funds Expended</b>	<b>Contributed Funds Expended</b>
<b>Disaster Preparedness Program (Category 100)</b>		
Planning	465,204	0
Training and Exercise	0	0
Equipment, Facilities and Supplies	2,588	0
National Center for Expertise	0	0
	<hr/>	<hr/>
Total Disaster Preparedness Program	467,792	0
<b>Emergency Operations (Category 200)</b>		
Response Operations	62,466	0
Post Flood Response	0	0
Acquisition of Supplies/Equip	13,360	0
Operational Deployment	0	0
	<hr/>	<hr/>
Total Emergency Operations	75,826	0
<b>Rehabilitation (Category 300)</b>		
Federal Flood Control Works	21,757	0
Non-Federal Flood Control Works	0	0
Field Investigations	0	0
Initial Eligibility Inspections	0	0
Continuing Eligibility Inspections	19,238	0
	<hr/>	<hr/>
Total Rehabilitation	40,995	0
<b>Advance Measures (Category 500)</b>		
Field Investigations	18,819	0
	<hr/>	<hr/>
Total Advance Measures	18,819	0
<b>Reimbursement Activity</b>		
Other Agencies	142,885	0
Other Corps Offices	508,338	0
	<hr/>	<hr/>
Total Reimbursement Activity	651,223	0

**TABLE 28-N**

**PRINCIPAL DATA CONCERNING COLUMBIA RIVER  
NAVIGATION LOCK, SPILLWAY DAM, AND POWERPLANT**

**Project**

Bonneville Lock and Dam OR and WA - Lake Bonneville (See Section 37 of Text)	<b>NAVIGATION LOCK (NEW)</b>	
	Dimensions:	
	Clear Width of Chamber	86 Feet
	Greatest Length Available for Full Width	675 Feet
	Lift (Vertical):	
	At Extreme Low Water and Normal Pool Level	66 Feet
	At Normal River Stage	59 Feet
	At Extreme High Water	About 30 Feet
	Depth Over Miter Sills at Adopted Low Water	19 Feet
	Character of Foundation	Andesite
	Open to Navigation	March 1993
	<b>SPILLWAY DAM</b>	
	Type of Construction	Concrete Gravity
	Completed	1938
	Capacity	1,600,000 CFS
	Elevation of Gate Sills on Crest of Spillway	23.3 Feet
	Height above Lowest Foundation	About 170 Feet
	Length of Dam Proper	1,090 Feet
	Length of Dam Overall	1,230 Feet
	Width at Base	200 Feet
	Gate Openings	18
	Crest Overflow (Above Mean Sea Level)	24 Feet Pool
	Elevation (Normal)(Above Mean Sea Level)	72 Feet
	<b>POWERPLANT</b>	
	Length (First Powerhouse)	1,027 Feet
	Length (Second Powerhouse)	953 Feet
	Width (First Powerhouse)	190 Feet
	Width (Second Powerhouse)	235 Feet
	Height (Roof to Bedrock) (First Powerhouse)	190 Feet
	Height (Roof to Bedrock) (Second Powerhouse)	200 Feet
	Generator (Station Unit)	1 @ 5,000 kW
	Generators (First Powerhouse)	1 @ 48,000 kW
		1 @ 59,500 kW
	8 @ 60,000 kW each	
Generators (Second Powerhouse)	8 @ 66,500 kW each	
Fish water Supply Units (Second Powerhouse)	2 @ 13,100 kW each	
Total Rated Capacity	1,145,700 kW	
Speed	75 Revolutions per Minute	
John Day Lock and Dam, OR and WA - Lake Umatilla (See Section 43 of Text)	<b>NAVIGATION LOCK</b>	
	Clear Width	86 Feet
	Clear Length	669 feet
	Lift:	
	Minimum	97 Feet
	Average	105 Feet
	Maximum	113 Feet
	Minimum Water Depth Over Sills	15 Feet
	Opened to Navigation	April 1968
	<b>SPILLWAY DAM</b>	
	Type of Construction	Concrete Gravity
	Completed	March 1968
	Maximum Capacity	2,250,000 cfs
	Crest Elevation	210 Feet
	Control Gates:	
Type	Tainter	
Size, Width by Height	50 ft. by 58.5 Ft.	
Number	20	

**TABLE 28-N  
(Cont'd)**

**PRINCIPAL DATA CONCERNING COLUMBIA RIVER  
NAVIGATION LOCK, SPILLWAY DAM, AND POWERPLANT**

**Project**

	<b>POWERPLANT</b>	
	Length	1,975 Feet
	Width	243 Feet
	Generating Units:	
	Number Installed	16
	Space for Additional	4
	Rating, Each	135,000 kW
	Total Installed Capacity	2,160,000 kW
	Total Potential Capacity	2,700,000 kW
	Maximum Structural Height	235 Feet
	First Power-On-Line	July 1968
	<b>IMPOUNDMENT</b>	
	Elevations: Normal Operating Range	268-257 Feet
	Maximum	276 Feet
	Flood Control Storage	500,000 Ac.-ft.
	Lake Length	76.4 Miles
	Lake Water Surface Area at Elevation 268	55,000 Acres
	Navigation Channel, Depth by Width	15 Ft. by 250 Ft.
	Length of Shoreline	200 miles
	<b>NAVIGATION LOCK</b>	
The Dalles Lock and Dam, OR and WA - Lake Celilo (See Section 46 of Text)	Type	Single Lift
	Lift Normal	87.5 Feet
	Net Clear Length	675 Feet
	Net clear Width	86 Feet
	Normal Depth Over Upper Sill	20 Feet
	Minimum Depth Over Lower Sill	15 Feet
	Opened To Navigation	March 17, 1957
	<b>SPILLWAY DAM</b>	
	Type	Controlled
	Elevation of Crest	121 Ft. msl
	Top of Crest Gates	162 Ft. msl
	Number of Gates	23
	Size of Gates	50 by 43 Feet
	Height (Foundation to Crest)	120 Feet
	Design Flood	2,290,000 cfs
	<b>POWERPLANT</b>	
	Powerhouse Dimensions	240 by 2,150 feet
	Generators Main Units	14 @ 78,000 kW each
		8 @ 86,000 kW each
	Fish water Supply Units	2 @ 13,500 kW each
	Total Rated Capacity	1,807,000 kW
	Station Service Units	2 @ 3,000 kW each

**TABLE 28-O**

**96-89X4045 Appropriation**

**BONNEVILLE POWER ADMINISTRATION**

Project	Total Cost To 30-Sep-07	Expenditures					Total Cost To 30-Sep-08
		FY04	FY05	FY06	FY07	FY08	
Bonneville	95,458,930	17,611,602	17,791,948	18,569,766	18,677,008	17,368,008	112,826,938
Bonneville Rehab	26,719,999	1,560,038	7,205,554	5,276,293	12,678,114	10,755,395	37,475,394
Columbia River Fish Mitigation	6,000,000	0	0	0	0	0	6,000,000
Cougar	15,159,187	5,449,994	3,684,089	1,536,615	2,259,192	870,289	16,029,476
Detroit/Big Cliff	27,819,487	5,469,233	4,469,904	4,157,995	12,251,586	13,584,595	41,404,082
Green Peter/Foster	12,598,741	1,821,494	1,763,478	1,860,380	2,403,765	2,455,043	15,053,784
Hills Creek	4,621,711	674,111	612,840	1,324,956	1,117,451	991,922	5,613,633
John Day	63,899,058	12,261,495	12,913,395	15,698,251	12,889,001	11,963,772	75,862,830
John Day Rehab	3,857,532	0	0	0	0	0	3,857,532
Lookout/Dexter	15,317,616	4,033,770	2,868,657	3,540,383	3,538,237	7,810,100	23,127,716
Lost Creek	7,168,803	1,547,548	2,406,311	1,689,537	1,523,084	1,629,938	8,798,741
The Dalles Rehab	6,946,202	2,226,081	2,119,327	1,799,799	800,995	704,888	7,651,090
The Dalles	<u>99,507,702</u>	<u>16,915,004</u>	<u>19,720,695</u>	<u>25,127,978</u>	<u>19,580,636</u>	<u>18,815,896</u>	<u>118,323,598</u>
Total	385,074,968	69,570,370	75,556,198	80,581,953	87,719,069	86,949,846	472,024,814

**TABLE 28-P**

**HYDROPOWER GENERATION**

Project	FY08 Generation of Electricity in Megawatt-Hours (MWH)
	Bonneville
The Dalles	6,422,142
John Day	8,760,711
Cougar	164,003
Detroit/Big Cliff	256,551
Green Peter/Foster	385,750
Hills Creek	168,808
Lookout Point/Dexter	423,981
Lost Creek	304,824
Total	21,382,367

PORTLAND, OR, DISTRICT

**TABLE 28-Q INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS**  
(SEE SECTION 34 OF TEXT)

State/County/Location	Sponsor	River	Date of Last Inspection	Rating * (1)
<b><u>State of Oregon</u></b>				
<b>Clackamas County</b>				
Dixon Farm	Lower Clackamas Water Control District	Clackamas	11/9/07	MA
Sleepy Hollow Location	Clackamas County	Sandy	8/28/07	MA
<b>Clatsop County</b>				
Clatsop #15 Dr. Improv. Co.	Clatsop No. 15, Drainage Improvement Co.	Columbia	7/16/07	MA
Clatsop Co. Dr. Imp. Co. #1	Clatsop Co Drainage, Improvement Co No. 1	Columbia	9/27/07	MA
Clatsop Co. Dk. Dist. #5	Clatsop County Diking	Columbia	10/12/07	MA
Clatsop Co. Dk. Dist. #7	Clatsop County Diking, District No. 7	Blind Slough	9/27/07	MA
Youngs River	Clatsop Co Diking, Improvement Co No. 9	Youngs	8/7/07	MA
Tucker/Battle Creek	Clatsop Co Diking Improvement Co No. 9	Youngs	8/7/07	MA
Grant	Clatsop Co Diking Improvement Co No. 9	Youngs	8/7/07	U
Tansy Point Location	Port of Astoria	Columbia	10/24/08	MA
Warrenton Dr. Dist. #1	City of Warrenton	Columbia	10/24/08	MA
Warrenton Dr. Dist. #2	City of Warrenton	Skipanon	10/24/08	MA
Warrenton Dr. Dist. #3	City of Warrenton	Columbia	10/24/07	MA
Svensen Is Dist. Imprv. Co	Svensen Island District Improvement Company	Columbia	10/25/07	FD **
John Day River Road Location	Clatsop County	John Day	9/13/07	MA
Tansy R.R. Location	City of Warrenton	Columbia	10/24/07	A
<b>Columbia/Multnomah County</b>				
Sauvie Island	Sauvie Island Drainage Improvement Company	Columbia	10/14/08	MA
<b>Columbia County</b>				
Scappoose Dr. Imp. Company	Scappoose Drainage Improvement Company	Columbia	9/15/07	MA
Deer Island D. I. Company	Deer Island Drainage District	Columbia	10/27/07	MA
Rainier Water Imp District	Rainier Water Improvement District	Columbia	8/21/07	MA
Beaver Drainage Improv. Co.	Beaver Drainage Improvement Co., Inc.	Columbia	9/22/08	MA
Magruder Dr. Improv. Co.	Magruder Drainage Improvement Co., Inc.	Columbia	10/23/07	MA
Midland Dr. Improv. Co.	Midland Drainage Improvement Co., Inc	Columbia	6/26/07	MA
Marshland Dr. Improv. Co.	Marshland Drainage Improvement Co., Inc	Columbia	10/22/07	MA
Webb District Improv. Co.	Webb District Improvement Company	Columbia	10/23/07	MA
Woodson Drainage District	Woodson Drainage District	Columbia	8/9/07	MA
Westland Dist. Improv. Co.	Westland District Improvement Company	Columbia	10/22/07	MA
<b>Coos County</b>				
Catching Inlet Dr Dist	Catching Inlet Drainage District	Catching Slough	8/2/07	MA
<b>Deschutes County</b>				
Bend Ice Boom	City of Bend	Deschutes	8/16/07	A
<b>Douglas County</b>				
Reedsport Levee	City of Reedsport	Umpqua	9/28/08	MA
<b>Jackson County</b>				
Bear Creek	City of Medford	Bear Cr	9/12/06	VG

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 28-Q INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS**  
(Cont'd) (SEE SECTION 34 OF TEXT)

State/County/Location	Sponsor	River	Date of Last Inspection	Rating * (1)
<b>Josephine County</b>				
Pierce Riffle	Grants Pass Irrigation District	Rogue	9/12/06	G
Pierce Riffle U/S Ext.	Grants Pass Irrigation District	Rogue	9/12/06	G
Rogue River at Grants Pass	City of Grants Pass	Rogue	9/12/06	E
<b>Lake County</b>				
Paisley Revetment	City of Paisley	Chewaucan	4/25/06	VG
<b>Lane County</b>				
Rhododendron Drive	Lane County Public Works	Siuslaw	8/1/07	MA
Amazon Creek	City of Eugene Public Works Department	Amazon	9/19/07	MA
<b>Lincoln County</b>				
Depoe Bay	City of Depoe Bay	S. Depoe Bay Cr	7/31/07	MA
Mill Four	Mill Four Drainage District	Yaquina	7/31/07	MA
Depoe Creek	Lincoln County Drainage District No. 1	Depoe Cr	7/31/07	MA
<b>Linn County</b>				
Landfill Location	City of Albany	Calapooia	8/20/07	MA
<b>Marion County</b>				
Mill Creek (Salem)	City of Salem Public Works Department	Mill Creek	8/20/07	A
Keizer River Wall	City of Keizer	Willamette	9/11/07	MA
<b>Multnomah County</b>				
Sandy Dr. Improvement Co	Sandy Drainage Improvement Company	Columbia	9/4/07	A
Multnomah Co. Dr. Dist. #1	Multnomah County Drainage District No. 1	Columbia	9/5/07	A
Peninsula Dr. Dist. No. 2	Peninsula Drainage District No.2	Columbia	9/16/08	MA
Peninsula Dr. Dist. No. 1	Peninsula Drainage District No. 1	Columbia	9/4/07	A
<b>Tillamook County</b>				
Sunset Drainage District	Sunset Drainage District	Nehalem	10/10/07	MA
McDonald Road Location	Tillamook County Department of Emergency Services	Nehalem	8/31/06	G
Wilson River (Hwy 101)	Tillamook County Department of Emergency Services	Wilson	9/18/07	MA
West Makinster Road Location	Tillamook County Department of Emergency Services	Wilson	7/18/07	MA
Stillwell Drainage District	Stillwell Drainage District	Tillamook/Trask	7/18/07	MA
Tone Road	Tillamook County Department of Emergency Services	Trask	7/18/07	MA
Beaver Creek	Tillamook County Department of Emergency Services	Beaver Cr	7/18/07	MA
Pacific City	State of Oregon Aeronautics Division	Nestucca	8/04/04	G
Miami River	Tillamook County	Miami R	8/30/06	VG
<b>Umatilla County</b>				
Pendleton Zone 2 Levees	Umatilla River Water Control District No	Umatilla	6/19/06	E
Pendleton Levee Zone 1	City of Pendleton	Umatilla	7/23/08	MA
Simon Springs	City of Pendleton	Umatilla	7/23/08	MA
Rattlesnake	City of Pendleton	Umatilla	7/23/08	MA

PORTLAND, OR, DISTRICT

**TABLE 28-Q INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS**  
(Cont'd) (SEE SECTION 34 OF TEXT)

State/County/Location	Sponsor	River	Date of Last Inspection	Rating * (1)
<b><u>State of Washington</u></b>				
<b>Clark County</b>				
Salmon Creek Location	Clark County	Salmon Cr	9/6/07	MA
Washougal Area Levees	Port of Camas/Washougal	Columbia	7/8/08	MA
<b>Cowlitz County</b>				
Port of Kalama	Port of Kalama	Columbia	8/21/07	MA
Cowlitz Co Cons Dk Imp # 1	Cowlitz County Consolidated Diking Improv District No. 1	Cowlitz	9/17/08	A
Cowlitz Co Dr Imp # 1	Cowlitz County Drainage Improvement District No. 1	Columbia	7/12/07	A
Cowlitz Co Cons Dk Imp # 2	Cowlitz County Consolidated Diking Improv District No. 2	Lewis	7/13/07	A
Cowlitz Co Cons Dk Imp # 3	Cowlitz County Consolidated Diking Improv District No. 3	Cowlitz	7/13/07	A
Cowlitz Co Dk Imp # 15	Diking Improvement District No. 15 of Cowlitz County	Columbia	7/12/07	A
Castle Rock	City of Castle Rock	Cowlitz	10/7/08	A
Huntington Avenue Location	City of Castle Rock	Cowlitz	7/10/07	A
<b>Lewis County</b>				
Fulton Location	Lewis County Public Works Department	Cowlitz	7/23/07	A
Holder Location	Lewis County Public Works Department	Cowlitz	7/23/07	A
Kirkendoll Location	Lewis County Public Works Department	Cowlitz	7/23/07	A
Hopkins Creek Location	Lewis County Public Works Department	Cowlitz	8/2/07	A
<b>Pacific County</b>				
Megler Location	Washington State Department of Transportation	Columbia	9/13/07	MA
<b>Wahkiakum County</b>				
Wahkiakum Co Cons Dk # 1	Consolidated Diking District No. 1 of Wahkiakum County	Columbia	8/19/08	MA

**Rating:**

(1) A = Acceptable MA = Minimally Acceptable U = Unacceptable FD = Flood Damage

\* Project rating system changed in 2008 in accordance with current guidance for the Inspection of Flood Damage Reduction Systems.

\*\* Svensen Is Dist. Imprv. Co in Clatsop County remains Flood Damaged from a Dec. 2003 breach. Sponsor has been unable to make required repairs.

**TABLE 28-R DREDGING OPERATIONS**

<b>See Section In Text</b>	<b>Project</b>	<b>Cubic Yards of Material</b>
1.	Chetco River, OR	18,501
2.	Columbia River and Lower Willamette Rivers below Vancouver, WA and Portland, OR	3,624,857
3.	Baker Bay West Channel	59,742
4.	Chinook Channel	0
5.	Columbia River at the Mouth, OR and WA	3,588,071
6.	Columbia River between Vancouver, WA and The Dalles, OR	72,850
8.	Coos Bay, OR	774,447
9.	Coquille River, OR	20,948
11.	Port Orford, OR	0
12.	Rogue River Harbor at Gold Beach, OR	21,450
13.	Siuslaw River, OR	69,903
16.	Umpqua River, OR	93,832
18.	Yaquina Bay and Harbor, OR	175,031

**TABLE 28-S GENERAL REGULATORY FUNCTIONS  
(SEE SECTION 55 OF TEXT)**

	<b>FY08 Funds Expended</b>
Permit Evaluation (Category 100)	2,649,924
Enforcement (Category 200)	337,108
Studies (Category 300)	---
Environmental Impact Statement (Category 500)	24
Administrative Appeals (Category 600)	20
Compliance – Authorized Activities (Category 800)	404,363
Reimbursable Activities	184,730
Total General Regulatory	<u>3,576,169</u>

# SEATTLE, WASHINGTON DISTRICT

This District comprises Washington State except southern and southeastern portions, northern Idaho, and northwestern Montana, embraced in drainage basins tributary to Pacific Ocean south of

international boundary to Cape Disappointment, and to the Columbia River above Yakima River, inclusively.

## IMPROVEMENTS

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## Navigation

### 1. EDIZ HOOK, WA

**Location.** Ediz Hook and city of Port Angeles are on the Strait of Juan de Fuca in Clallam County, WA, about 100 miles northwest of Seattle. (See NOAA Survey Chart 18468.)

**Existing project.** Provides approximately 16,400 linear feet of rock revetment, together with initial beach replenishment and periodic renourishment. Project was completed in October 1978. (For further details, see Annual Report for 1979.)

**Local cooperation.** Fully complied with.

**Terminal facilities.** See Port Series No. 37. Surveys are displayed at U.S. Army Corps of Engineers, Water Resources Support Center and Navigation Data Center.

**Operations During FY.** Maintenance, erosion control, hired labor: Nearshore hydrographic survey was conducted. Preliminary planning activities in support of the navigation project were performed by the Project Manager.

**Maintenance contract.** None

### 2. EVERETT HARBOR AND SNOHOMISH RIVER, WA

**Location.** From Port Gardner Bay, at northern end of Possession Sound, an arm of Puget Sound at Everett, in northwestern Washington; and Snohomish River for 6.3 miles upstream of mouth. (See NOAA Survey Chart 18444.)

**Existing project.** Training dike extending from a point opposite 23rd Street northward 12,550 feet to outlet of Snohomish River, with spur dike extending 400 feet to pier-head line from north end of main dike; spur dike extending 1,410 feet westward from Preston Point; removal of a section of training dike north of Snohomish River outlet; channel 150 to 425 feet wide and 15 feet deep from deep water in Port Gardner Bay to 14th Street dock; thence a settling basin 700 feet wide, 1,200 feet long, and 20 feet deep, thence a channel 150 feet wide and 8 feet deep upriver to head of Steamboat Slough, a total distance of about 6.3 miles; settling basin within upper channel reach about one mile long with a capacity of one million cubic yards and maintaining East Waterway to 30 feet deep. Plane of reference is

mean lower low water. Range between mean lower low water and mean higher high water is 11.1 feet. Extreme tidal range is an estimated 19 feet. Project was completed in April 1963. (For further details, see page 1683 of Annual Report for 1963. For details relating to previous projects, see page 704 of Annual Report for 1905, page 2005 of Annual Report for 1915, and page 1883 of Annual Report for 1938.)

**Local cooperation.** Fully complied with. Requirements are described in full on page 38-3 of Annual Report for FY 1981.

**Terminal facilities.** See Port Series No. 37. Surveys are displayed at U.S. Army Corps of Engineers, Water Resources Support Center, and Navigation Data Center.

**Operations During FY.** Maintenance, hired labor: hydrographic condition surveys and coordination for hydraulic pipeline maintenance dredging in FY09.

**Maintenance contract.** Hydraulic pipeline dredging of 87,835 cy at the upstream settling basin and river channel was completed February 14, 2008 at a cost of \$730,051. All material was placed at the Port-sponsored upland disposal area owned by the City of Everett. Dredged material was promptly re-handled for beneficial use at a city redevelopment site making the City upland re-handling area available for FY09 dredged material disposal use.

### 3. FRIDAY HARBOR, WA

**Location.** Friday Harbor is located on the eastern shore of San Juan Island on the inland waters of northwestern Washington, about 28 nautical miles east of Victoria, British Columbia, and 60 nautical miles north of Seattle, Washington. San Juan Island is one of over 170 islands in the San Juan Archipelago. Friday Harbor is the San Juan Island county seat and a United States Customs Port of Entry. (See NOAA Survey Chart 18425.)

**Existing project.** Concrete floating breakwater (1,600 feet) to protect the existing port facilities and to allow the Port of Friday Harbor to provide 294 additional permanent moorage spaces and 44 additional transient spaces. Construction was completed in March 1984.

**Local cooperation.** Fully complied with requirements which are described in full on page 38-4 of Annual Report for 1981.

## SEATTLE, WA DISTRICT

**Terminal facilities.** None, project provides floating breakwaters to protect marina.

**Operations During FY.** Maintenance, hired labor: Routine coordination with the Port of Friday Harbor, U.S. Coast Guard, and navigation users. Port continues to maintain, electrical utilities, bullrails and moorage cleat hardware to best accommodate moorage demands and public access on the Federal breakwater.

**Maintenance contract.** None.

#### 4. GRAYS HARBOR AND CHEHALIS RIVER, WA

**Location.** Grays Harbor is a coastal inlet at mouth of Chehalis River, in southwestern Washington, 45 miles north of entrance to the Columbia River. Chehalis River rises in southwestern part of Washington about 40 miles east of Pacific Ocean, flows generally northwesterly and empties into eastern part of Grays Harbor. (See NOAA Survey Chart 18502.)

**Existing project:** (including navigation improvements to date). Provides an entrance channel across the bar and through the entrance 600 to 1,000 feet wide and 38 to 46 feet deep, secured by a south jetty 13,734 feet long and a north jetty 17,200 feet long, and by annual maintenance dredging; maintenance of channel 36 feet deep and 350 feet wide from deep water in Grays Harbor 14 miles upstream to Port of Grays Harbor terminals at Cow Point; thence 32 feet deep and 200 feet wide, suitably widened at bends, to the head of deep draft navigation at Cosmopolis, a distance of 4.1 miles; a turning basin 36 feet deep, 900 feet wide, and 1,000 feet long opposite the Port of Grays Harbor terminals at Cow Point; a turning basin 30 feet deep, 550 feet wide, and 1,000 feet long near upstream end of 32-foot channel at Junction City; three breakwaters at, and maintenance of entrance channel to Westhaven Cove; protection of Point Chehalis for an exposed length of about 7,500 feet; and removal of 350-foot southwestern extension of the breakwater, replacing it with an 865-foot northeastern extension, and adding a 200-foot spur breakwater along the southerly entrance, constructed under authority of Section 107, P.L. 86-645. Construction cost for this feature is recorded in Table 29-C. Plane of reference is mean lower low water. Tidal range between mean lower low water and mean higher high water is 8.9 feet at Point Chehalis, 10.1 feet at Aberdeen, and 8.1 feet at Montesano. Extreme range is 17.5 feet at Point Chehalis, 17.8 feet at Aberdeen, and 23.8 feet

at Montesano (river flood of 1935). (For details relating to previous projects, see pages 2002-03 of Annual Report for 1915 and page 1863 of Annual Report for 1938.)

**Improved project.** Authorized by Section 202 of the Water Resources Development Act of 1986. Phase I of project construction was started in 1990 and completed in 2000. Final fiscal requirements remain for Phase I, and coordination with Port of Grays Harbor continues. A second project phase to deepen the improved downstream channel to the 38-foot fully authorized depth is possible in the future if project economics and environmental considerations warrant and funding is available.

**Local cooperation.** Fully complied with. Requirements for improved project are described in full on page 29-4 of Annual Report for 2001.

**Terminal facilities.** See Port Series No. 35. Surveys are displayed at U.S. Army Corps of Engineers, Water Resources Support Center, and Navigation Data Center. The Port of Grays Harbor continues to improve operations at their new bulk agricultural commodity loading facility and market their other facilities for redevelopment including a biodeisel refinery.

**Operations During FY.** New work, hired labor: Coordinated with Port of Grays Harbor (local sponsor), resource agencies, Grays Harbor pilots and interested parties. Maintenance, hired labor: Channel condition surveys were conducted throughout the year. The Corps hopper dredge Essayons was in dry dock for major repairs so a regional hopper dredge contract with Great Lakes Dredge & Dock was used to remove 493,297 cy of dredged material from the Point Chehalis channel and approximately 7,500 cy from the Crossover Channel at a cost of \$1,433,238. The Corps hopper dredge Yaquina dredged the Entrance channel reach, removing 306,961 cy at a cost of \$1,580,613 with 171,352 cy of dredged materials being placed in Half Moon Bay and 135,609 cy at the Point Chehalis disposal site. Supervised contract work.

**Maintenance contract.** The FY 2008 (base year) clamshell-dredging contract for the maintenance of the Inner Harbor was completed at a cost of \$6,169,682 to dredge a total 1,101,346 cy disposed into the Point Chehalis open water disposal sites.

**5. LAKE CROCKETT, WA**

**Location.** The basin (and harbor of refuge) is on the western shores of Whidbey Island, Island County about 35 nautical miles north of Seattle, Washington. The lake lies parallel to Admiralty Bay and is separated from it by a narrow strip of gravel beach. (See NOAA Survey chart 18441.)

**Existing project.** Provides for a mooring basin (and harbor of refuge) next to Lake Crockett with an area of about six acres and 25 feet deep at mean lower low water, connected with Admiralty Bay by a channel of the same depth and 200 feet wide, protected by a breakwater; and navigation improvement by dredging, constructed under authority of Section 107, P.L. 86-645. Construction cost for this feature is recorded in Table 29-C (Keystone Harbor, Admiralty Inlet). The diurnal tidal range in Admiralty Bay is 8.4 feet, and the extreme range is about 16.0 feet. Project deepening and widening was completed in March 1993. For further details, see Annual Report for 1993. The project is located next to a state park and with the bounds of the Ebey's Landing National Historical Reserve.

**Local cooperation.** None required.

**Terminal facilities.** The Washington State Ferry System operates one publicly owned passenger and automobile ferry landing within the dredged basin is open for public use. The basin contains two publicly owned boat ramps open for public use. The ramps are adequate for recreational craft. The Washington State Ferry system is considering a Keystone-Port Townsend Terminus Improvement Project. The state is currently reviewing the feasibility of modifications to the existing ferry facilities. The improvement project addresses a need to accommodate larger ferries, with drafts 4-feet deeper than existing vessels, at the Keystone terminal when the current ferry is retired. Construction for ferry terminal improvements is scheduled to start in 2008.

**Operations During FY.** Maintenance, hired labor: Channel condition surveys were conducted during the year. Real Estate activities were also performed in support of the navigation project.

**Maintenance contract.** None

**6. LAKE WASHINGTON SHIP CANAL, WA**

**Location.** Entirely within city of Seattle and extends from Puget Sound through Shilshole Bay, Salmon Bay, Lake Union, Portage Bay, and Union Bay to deep water in Lake Washington. (See NOAA Survey Chart 18447.)

**Existing project.** Provides for a double lock and fixed dam from gated spillway and necessary accessory works, including fish ladder, at the Narrows at entrance to Salmon Bay, about 1.25 miles from deep water in Puget Sound; for a channel 34 feet deep and 300 feet wide from Puget Sound to Burlington Northern Railway bridge, about 5,500 feet, with a passing basin 34 feet deep and log basin 8 feet deep at turn below railway bridge; then 34 feet deep and 150 feet to 200 feet wide to locks, about 900 feet; and a guide pier 600 feet long; for revetment of canal banks between locks and Lake Union and between Lakes Union and Washington; and for a channel 30 feet deep with a width of 100 feet from locks to Lake Union, 200 feet thence to Portage Cut, 100 feet through Portage Cut, and thence 200 feet wide through Union Bay to Lake Washington. Section included in project is about 10 miles long. Plane of reference is mean lower low water. Extreme tidal range is 19.3 feet. Range between mean lower low water and mean higher high water is 11.3 feet, and between mean lower low water and extreme low water is 4.6 feet. Ordinary fluctuation in upper pool is 24 inches; extreme fluctuation has been 3.6 feet. Principal features of double lock and dam are set forth in Table 29-K. Project was completed in 1934. (For further details, see Annual Report for 1935. For details relating to previous projects, see page 2003 of Annual Report for 1915, and page 1880 of Annual Report for 1938.)

**Local cooperation.** Fully complied with.

**Terminal facilities.** See Port Series No. 36. Surveys are displayed at U.S. Army Corps of Engineers, Water Resources Support Center, and Navigation Data Center.

**Operations During FY.** Maintenance, hired labor: Locks were operated and maintained all year, conducting 11,257 lockings, passing 7,906 commercial vessels, 36,529 pleasure vessels, and 1.4 million tons of commerce. The lower number of lockings this year is due to greater use of the large lock during the summer and during replacement of the small lock pintle bearings. Adult salmon returning to spawn reported 33,702 sockeye 20,592

## SEATTLE, WA DISTRICT

Coho and 10,846 Chinook passing through the locks and fish ladder. Project visitation exceeded 1.2 million visitors.

**Maintenance Contracts.** Adult Salmon Exclusion Structure construction was completed in June 2008 to prevent adult salmon entrainment in the saltwater drain. Small lock pintle bearing replacement completed in October 2008. A design project was initiated in FY08 for rehab of the pumping plant. Design will continue through FY09 with construction planned for FY10.

### 7. NEAH BAY, WA

**Location.** On south side of the mouth of the Strait of Juan de Fuca, about six miles east of Cape Flattery and about 80 miles west of Port Angeles, Washington. (See NOAA Survey Charts 18480, 18484 and 18485.) The project is located at the Makah Indian Reservation in Clallam County.

**Existing project.** Provides for a rubble-mound breakwater about 8,000 feet long between Waadah Island and the westerly shore of the bay; reinforcement of existing rock revetment extending approximately 2,200 feet west from Baada Point, and about an 800-foot extension of the revetment westward. Tidal range between mean lower low water and mean higher high water is 8.0 feet (Epoch 1983-2001). Project was completed in July 1956. (For further details, see Annual Report for 1957.) Also provides for marina breakwater, fish gap and adjacent clamming beach, construction completed in 1997 under authority of Section 107, Public Law 86-645.

**Local cooperation.** Fully complied with.

**Terminal facilities.** There are six wharves at Neah Bay, including two owned by the United States which are used by the Coast Guard, and four privately owned wharves, three of which are open to general public use to accommodate small commercial fishing vessels. In addition to the wharves, there is a public commercial fishing marina for 200 boats and a facility for dumping and rafting logs. The marina serves a seasonal mooring for Washington Spill Response tug. Facilities are considered adequate for existing commerce.

**Operations During FY.** Maintenance, hired labor: Hydrographic surveys were conducted in the vicinity of the fish gap. An ERDC study was concluded based on a review the design

memorandum of 1979 and determined the stability of the existing 8,000-foot breakwater.

**Maintenance contract.** None.

### 8. OLYMPIA HARBOR, WA

**Location.** Near southern end of Puget Sound at head of Budd Inlet, about 45 miles southwest of Tacoma, Washington. (See NOAA Survey Chart 18456.)

**Existing project.** Channel 30 feet deep in Budd Inlet to Port of Olympia marine terminal, 30 feet deep at mean lower low water and 500 feet wide, with a bend and channel to the turning basin adjacent to the marine terminal 30 feet deep, 3,350 feet long and 500 to 800 feet wide including the Port's Marine Terminal Berth width of 110 feet and 42 foot depth. Plane of reference is mean lower low water. Range between mean lower low water and mean higher high water is 14.4 feet. Extreme range is about 22.5 feet. (For further details see the Annual Reports for 1973 and 1981.)

**Local cooperation.** Fully complied with.

**Terminal facilities.** See Port Series No. 35. Surveys are displayed at U.S. Army Corps of Engineers, Water Resources Support Center, and Navigation Data Center.

**Operations During FY.** Maintenance, hired labor: Channel condition surveys were conducted in the federal channels and footprint of the East Bay (Swantown) Marina floating breakwater. Maintained coordination with Port of Olympia and, interested parties on Port and Ecology proposed clamshell maintenance dredging in the Port berth area.

**Maintenance contract.** None.

### 9. PROJECT CONDITION SURVEYS

Hydrographic surveys and inspections to determine navigation conditions at boat basins, small navigation projects, and channels not funded on a project basis for the current fiscal year. Soundings and visual inspections in subject areas are conducted in order to evaluate shoaling conditions. Hydrographic charts are prepared and distributed. Other work performed includes preparation and updating of base maps, channel alignments, and other computations needed to accommodate changes in vertical or horizontal datums. Fiscal year 2008 costs were \$362,000.

**SURVEYS CONDUCTED**

Bellingham Harbor	Apr 2008
Ediz Hook	Apr, May 2008
Lake Crockett	Jun 2008
Swinomish Ch	May 2008
Tacoma Harbor	Jun 2008

**10. PUGET SOUND AND ITS TRIBUTARY WATERS, WA**

**Location.** Puget Sound is in the western part of Washington. Cities of Seattle, Tacoma, Olympia, Everett, Bellingham, and many small towns are on its bays and inlets. (See NOAA Survey Charts 18440, 18441, and 18448).

**Existing project.** Maintenance of Puget Sound and its tributary waters by snagging and dredging; and removal, in cooperation with the U.S. Coast Guard and city of Seattle, of floating debris from the Seattle Harbor area. Work consists of collecting large pieces of drift, waterlogged pilings, logs and other debris considered hazardous to navigation from Puget Sound and federally authorized channels. (For details relating to previous projects, see page 2003 of Annual Report for 1915 and page 1869 of Annual Report for 1938).

**Local cooperation.** None required. Cities of Seattle, Tacoma, Olympia, Everett and Bellingham and the State of Washington are cooperating in a program for control of floating debris in their harbors and setting up collection sites for the debris vessel.

**Terminal facilities.** Terminal facilities at numerous localities on Puget Sound and its tributary waters are, in general, considered adequate for existing commerce.

**Operations during FY.** Maintenance, hired labor: The debris vessel Puget operated continuously throughout Puget Sound and its tributary waters and removed approximately 4,840 tons of floating debris and hazards to navigation. Debris was off-loaded aboard barges at Lake Washington Ship Canal and disposed of by contract and some woody debris was given to cities, ports and counties for bank restoration and fish enhancement work. Snagging operations were accomplished at Anacortes, Blaine Harbor, Bellingham Harbor, Swinomish Channel/LaConner, Skagit Bay, Everett Harbor, Lake Washington Ship Canal, Lake Washington, Tacoma Harbor, Olympia Harbor, Seattle Harbor/Duwamish River and Elliott Bay. Puget participated with the Coast Guard and

Navy in a spill clean-up response exercise in Everett Harbor in Aug 08. Puget also, provided assistance to local Harbor Police and Fire Departments in response to cars in the water, boating accidents and boat fires on numerous occasions.

**Maintenance contract.** Over 4,840 tons of harbor debris was disposed of at a cost of \$136,204.22 with 590 tons that went to the land fill, 118 ton to a chip recycler. The remaining 4,132 tons were given to local cities, ports and counties for bank restoration and fish enhancement work at a cost savings for disposal of approximately of \$256,000.00 to our debris program. Contractor continues to recycle much of the debris, reducing the cost of disposal by contract.

**11. QUILLAYUTE RIVER, WA**

**Location.** The river is formed by the confluence of the Soleduc and Bogachiel rivers, in northwestern Washington and flows westerly five miles to the Pacific Ocean at La Push, about 30 miles south of Cape Flattery. (See NOAA Survey Chart 18480.)

**Existing project.** Provides for: jetty 15 feet high on easterly side of river mouth and a dike eight feet high on westerly side, to stabilize entrance; channel 10 feet deep and 100 to 275 feet wide extending 2,800 feet upstream from deep water; basin 10 feet deep, 300 to 425 feet wide and 2,400 feet long; and maintenance of an ocean spit and training walls. Plane of reference is mean lower low water. Range between mean lower low water and mean higher high water at La Push is 8.7 feet (Epoch 1983-2001). Extreme tide range is about 15 feet. The spit is nourished with dredged material in conjunction with channel dredging. The spit was rehabilitated with quarry rock in 1974, 1979-1980 and in 1982. Also in 1982, armor rock was used to extend the spit 500-feet parallel to the channel. In 1995, the revetment on the downstream end of the ocean spit was extended 200 feet. In 1996, after the river breached the natural spit, the revetment on the ocean spit was extended approximately 1,700 feet to the north, and the boat basin training wall was raised from elevation +9.0 feet to elevation +16.0 feet, all under O&M authority and completed in February 1997. The channel and boat basin were last dredged in 2003.

**Local cooperation.** Fully complied with.

**Terminal facilities.** There is one dock owned by the Quileute Tribe at La Push, near the mouth of

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the Quillayute River. There is also a protected boat basin owned by the Quileute Tribe Port Authority which is used by fishing boats, pleasure craft and the U. S. Coast Guard, which has a separate pier.

**Operations During FY.** Maintenance, hired labor: Hydrographic condition surveys were conducted, additional condition survey conducted to capture any shoaling that may have occurred. Engineering and design for solicitation of an entrance channel dredging contract to be performed during FY 2009. Environmental coordination was also accomplished to provide programmatic coordination for the next 5 years.

**Maintenance contract.**

### 12. SEATTLE HARBOR, WA

**Location.** Harbor at Seattle, WA, includes all waterways within city limits. Chief anchorage basin is Elliott Bay, an arm of Puget Sound. (See NOAA Survey Chart 18450.)

**Existing project.** Maintenance of East and West Waterways, 34 feet deep and 750 feet wide for 6,500 and 5,200 feet, respectively, from pier-head line in Elliott Bay, the 30-foot by 200-foot-wide channel from West Waterway to 1st Avenue South Bridge, and the 20-foot by 150-foot-wide channel from 1st Avenue South Bridge to 8th Avenue; dredging Duwamish Waterway 150 feet by 15 feet from 8th Avenue to a point about 1.4 miles above 14th Avenue South Bridge, and turning basin 500 by 250 feet and 15 feet deep at the upper end of the waterway; maintenance of East Waterway between upper end of 750-foot section and Spokane Street, 34 feet deep, 700 feet long and 400 feet wide, and a turning basin, including head of East Waterway at junction of waterways south of Chicago, Milwaukee, St. Paul & Pacific Railroad bridge, to 30 feet deep, after these sections of waterway are dredged by local interests to full project dimensions. Total length of all waterways included in project is about 7.5 miles. Plane of reference is mean lower low water. Range between mean lower low water and mean higher high water is 11.3 feet. Extreme tidal range is 19.3 feet. Project was completed in 1931, excluding maintenance of East Waterway above the 750-foot section. (For further details, see Annual Report for 1932.)

**Local cooperation.** Fully complied with. Local sponsor has no maintenance responsibility.

**Terminal facilities.** See Port Series No. 36. Surveys are displayed at U.S. Army Corps of Engineers, Water Resources Support Center, Navigation Data Center.

**Operations During FY.** Maintenance, hired labor: Hydrographic condition surveys of the turning basin area and entire Duwamish waterway. Engineering, Design and preparation of Solicitation documents were performed during FY 2008.

**Maintenance contract.** None.

### 13. SWINOMISH CHANNEL, WA

**Location.** An inland passage, 11 miles long, between Saratoga Passage and Padilla Bay, in northwestern part of Washington, about 60 miles north of Seattle. (See NOAA Survey Charts 18400, 18427 and 18421.)

**Existing project.** A channel 100 feet wide and 12 feet deep for 11 miles from deep water in Saratoga Passage to deep water in Padilla Bay, by dredging and dike construction where necessary; and removal of projecting rocky points of McGlinn and Fidalgo Islands obstructing navigation at "Hole-in-the-Wall". Plane of reference is mean lower low water. Range between mean lower low water and mean higher high water is 11.5 feet at south end of channel, 8.4 feet at north end, and 10 feet at La Conner. Extreme tidal range is about 19.5 feet at south end of channel and about 16 feet at north end. Project was completed in March 1965. (For further details, see Annual Report for 1965.)

**Local cooperation.** Fully complied with.

**Terminal facilities.** There are 18 wharves, docks, and piers on Swinomish Channel, all but 3 of which are privately owned. Of these, one is used for handling general cargo; five are used exclusively for moorage, unloading and servicing of fishing vessels; two are used for handling petroleum products; three facilities are used for log dumps; and two for handling non-metallic minerals. Three publicly owned facilities for launching; mooring, and servicing small craft are within the limits of the town of LaConner.

**Operations During FY.** Maintenance, hired labor: Maintained project coordination with Swinomish Tribal Community, Port of Skagit County, Port of Anacortes, U.S. Coast Guard, and navigation users. Channel condition surveys were conducted. A Fiscal Year 2008 O&M clamshell

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dredging bid document was prepared and awarded for channel maintenance dredging.

**Maintenance contract.** The fiscal year 2008-funded clamshell dredging contract was completed in December 2008 with approximately 82,000 cy of dredging accomplished.

### 14. WILLAPA RIVER AND HARBOR AND NASELLE RIVER, WA

**Location.** Willapa Harbor consists of lower reaches of Willapa River and Bay, a coastal inlet of Pacific Ocean about 30 miles north of mouth of Columbia River in Washington. Willapa River rises about 30 miles east of harbor, flows generally westerly, and empties into the bay. Naselle River enters the bay near its southerly end. (See NOAA Survey Chart 18504.)

**Existing project.** Provides for: channel over bar at mouth of Willapa Bay, 26 feet deep and at least 500 feet wide; channel 24 feet deep and 200 feet wide from deep water in Willapa Bay to foot of Ferry Street at South Bend, thence 300 feet wide to westerly end of narrows, thence 250 feet wide to forks of river at Raymond, including a cutoff channel 3,100 feet long at narrows and a closing dike at Mailboat Slough; channel 24 feet deep and 150 feet wide up south fork to deep basin above Cram Lumber Mill, and up north fork to 12th Street, with a turning basin 250 feet wide, 350 feet long, and 24 feet deep at latter point; channel 10 feet deep and 40 feet wide from deep water in Palix River to Bay Center dock, with widening at shoreward end to provide a small mooring basin; mooring basin 15 feet deep, 340 feet wide, and 540 feet long adjacent to port wharf at Tokeland; entrance channel at Nahcotta 10 feet deep and 200 feet wide, and mooring basin 10 feet deep, 500 feet wide, and 1,150 feet long, protected by a rubble-mound breakwater about 1,500 feet long; and removal of snags, piles, and other obstructions in navigable channel of Naselle River between Naselle and mouth. Project includes about 26 miles of channel from entrance through Willapa River forks, 2,800 feet of Palix River-Bay Center channel, and 9 miles of Naselle River upstream of U.S. Highway 101 Bridge. Plane of reference is mean lower low water. Tidal range between mean lower low water and mean higher high water is 8.9 feet at Toke Point, 9.9 feet at Raymond, 8.9 feet at Bay Center, and 10.8 feet near Naselle. Extreme range is 18 feet at Toke Point, 19.3 feet at Raymond, 16 feet at Bay Center, and 18 feet near Naselle. Project was completed in November 1958. (For further details, see Annual Report for 1959. For details relating to previous

projects, see page 968 of Annual Report for 1910, page 2001 of Annual Report for 1915, and page 1861 of Annual Report for 1938.)

**Local cooperation.** Fully complied with.

**Terminal facilities.** There are 24 wharves on Willapa River and Harbor, including five in Willapa Bay, four in Bay Center, 12 in Raymond and South Bend, and one in Tokeland. Two of the wharves at Raymond and South Bend are suitable for use by ocean-going vessels. One of the wharves is publicly owned and operated as a general cargo terminal, and the other is located at a sawmill. Shallow-draft vessels use the other wharves, including three that are publicly owned and operated. These facilities are considered adequate for existing commerce.

**Operations During FY.** Maintenance, hired labor: Continued condition surveys on the Willapa Harbor navigation features to report conditions to users and the U.S. Coast Guard. NWS performed routine coordination with the Port of Willapa Harbor and the Port of Peninsula. The Port of Willapa and Corps performed a joint sediment sample characterization at the Toke Point Marina and entrance channel. Continued to assist the Port of Willapa with coordination of their proposal for hydraulic pipeline dredging at Toke Point with flowlane disposal. Pipeline dredging is expected to significantly reduce O&M costs compared to the clamshell dredging alternative.

**Maintenance contract.** None.

### 15. PORT TOWNSEND, WA

**Location.** Port Townsend is located on Quimper Peninsula, forming the most northeastern portion of the Olympic Peninsula in western Washington. Port Townsend is located on Admiralty Inlet at the junction of Puget Sound and the Strait of Juan de Fuca.

**Existing project.** Mooring basin and breakwater, basin with an area of 12.5 acres and depths of 10 and 12 feet below mean lower low water in inner and outer sections, respectively, and a gravel and backfill breakwater 1,946 feet long. Range between mean lower low water and mean higher high water at Port Townsend is 8.8 feet. Extreme range is about 16.5 feet. Project was completed in 1999. (For further details, see Annual Report for 1999).

**Local cooperation.** Fully complied with.

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**Terminal facilities.** There are twelve waterfront facilities located at Port Townsend along the northerly shore of Port Townsend Bay. Functional uses of the piers, wharves, and docks include cargo handling, fueling small vessels, ferry accommodation, marine repair, dry-docking, and miscellaneous mooring (See Port Series No. 37 – Ports of Port Angeles, Port Townsend, Everett, Anacortes, and Bellingham, WA revised 1987)

**Operations During FY.** Maintenance, hired labor: Dredge boat basin & channel to remove shoals to provide USCG and Port of Port Townsend with safe navigation. A sampling and analysis plan was executed resulting in a suitability determination. The dredge material will be disposed at the Port Townsend open water disposal site. The funding allowed coordination of maintenance dredging to be accomplished in FY08.

**Maintenance contract.** None

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Beach Erosion Control project activities pursuant to Section 103, Public Law 874, 87<sup>th</sup> Congress, as amended (preauthorization).

Coordination Account            \$13,529

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**Shore Protection**

**16. SHOALWATER BAY SHORELINE EROSION, WA**

**Location.** The Shoalwater Bay Indian Reservation is located on the north shore of the mouth of Willapa Bay, Pacific County, Washington, approximately 104 miles southwest of Seattle, Washington, and 28 miles north of the mouth of the Columbia River.

**Existing Project.** In 2001, in response to a severe coastal storm at extreme water levels in March 1999, the Corps constructed a 1,700-foot-long shoreline flood berm on the Shoalwater Bay Indian Reservation under the Corps’ Flood Control & Coastal Emergency authority. In December 2007, an additional 300 feet of emergency shoreline flood berm was constructed by the Corps. A plan of improvement has been formulated to provide a long term solution to coastal storm damage and related flooding affecting the Shoalwater Bay Indian Reservation. Due to erosion of the barrier dune on Graveyard Spit, storm events at extreme water levels have caused the Shoalwater Bay Indian Tribe to lose much of its intertidal shellfish habitat in the North

Cove embayment, and to experience upland flooding and storm damage due to storm-generated ocean waves. Restoration of the eroded barrier dune on Graveyard Spit has been identified as the most appropriate long-term solution to coastal erosion problems affecting the Shoalwater Bay Indian Reservation. The range between mean lower low water and mean higher high water is nine feet.

**Local Cooperation.** The Shoalwater Bay Indian Tribe will provide lands, easements, rights-of-way, and dredged material disposal areas necessary for implementation of the project, in accordance with the project authorization contained in Section 545 of the Water Resources Development Act (WRDA) of 2000, as amended by Section 5153 of WRDA 2007.

**Operations During Fiscal Year.** New work, hired labor: Completed draft final decision document and environmental assessment, and Corps of Engineers headquarters conducted policy compliance review. Policy compliance review comments were addressed by Seattle District, and preparation of final decision document and environmental assessment was initiated. Remaining work is to complete the final decision document and environmental assessment and submit them for approval by the Assistant Secretary of the Army (Civil Works). Continued close consultation with the Shoalwater Indian Bay Indian Tribe and coordination with the local community and local/state/federal agencies.

**New work contract.** None.

**Flood Control**

**17. COEUR D’ALENE RIVER (SOUTH FORK), WALLACE, ID**

**Location.** Project is located along the left bank of the south fork of the Coeur d’Alene River in Wallace, Idaho.

**Existing project.** The retaining wall, which lines the riverbank, was collapsing in stages. Approximately 700 feet of wall was replaced with a mix of concrete and gabion walls. Project is functionally complete, with only closeout activities remaining.

**Local cooperation.** Under current cost sharing requirements, the local sponsor (city of Wallace) will provide 35 percent of project cost. A Project Cooperation Agreement (PCA) was signed on August 02, 2002.

**Operations During FY.** Hired labor: Closeout activities.

**New work contract.** None.

#### 18. HOWARD A. HANSON DAM, WA

**Location.** Green River, in northwestern Washington, flows westerly for 40 miles to Auburn, thence northerly 32 miles to its mouth in Elliott Bay at Seattle. Dam is at river mile 64; 6 miles southeast of Kanaskat, and 1 mile downstream from mouth of north fork. (See Geological Survey topographic sheet, "Cedar Lake Quadrangle, WA".)

**Existing project.** Rock-fill dam about 235 feet high, with gated spillway having a concrete weir at elevation 1,176 feet above mean sea level and top of gates at elevation 1,206, creating a reservoir with capacity of 106,000 acre-feet. Dam along crest is about 675 feet long. Project is designed to control flooding in Green River valley to alleviate agricultural and urban flood damage, and make possible further expansion of Seattle industrial area. Project was completed in June 1963. (For further details, see the Annual Report for 1963.) Under the dam safety assurance program, the reservoir outlet control tower and bridge were strengthened to withstand the maximum, credible earthquake. Work was completed in FY 1998. Year 2007 was the first year HHD stored additional water in the conservation pool elevation to supplement Tacoma water supply, which was included as betterment. Additional staffing was brought on in 2008 to handle the increased workload due to AWS.

**Local cooperation.** Fully complied with.

**Operations During FY.** Recording daily hydrological data, regulating the river, dam inspections, and right bank monitoring, coordinating with other concerned agencies, for daily activities. Maintenance, hired labor: Operation continued all year. Routine maintenance was accomplished on roads, gages, debris booms, ditches, power line, hydrological equipment, ground water monitoring equipment, rolling support equipment, and other project features. Stilling basin inspection was not accomplished. Work continued on water quality and sediment surveys. Project provided flood damage reduction benefits during the FY. By storing flood waters, the river stages of the Green River are lowered. This in turn reduces damages. No Significant Flood event occurred during the FY.

**Maintenance contract:** None

#### 19. INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS

Inspections are made of Federally constructed local flood protection projects which are maintained by local interests and agencies responsible for their operation and maintenance are advised of any needed repairs. During the fiscal year, inspections were made on Chehalis River at Aberdeen, Dungeness River at Dungeness, Green River at Tukwila and Kent, Lummi Shore at Bellingham, Sammamish River at Redmond, Shelton Creek at Shelton, Skykomish and Wallace Rivers at Startup, Swinomish Channel at LaConner, American Lake, and Yakima River at Yakima in Washington State; Lightning Creek at Clark Fork, Coeur d'Alene River at Coeur d'Alene and St. Joe River at St. Maries in Idaho. Ongoing efforts to implement the National Levee Safety plan continue.

#### 20. MUD MOUNTAIN DAM, WA

**Location.** On White River, principal tributary of Puyallup River, near Mud Mountain, 28 miles above its confluence with Puyallup River, and 38 miles above mouth of Puyallup River. Dam is 6 miles upstream and southeast of Enumclaw, in northwestern Washington, and 38 miles east of Tacoma. (See Geological Survey topographic sheet "Cedar Lake Quadrangle, Washington".)

**Existing project** (including dam safety assurance improvements to date). Rock-fill dam, 810 feet long at crest elevation, rises 432 feet above bedrock. Reservoir has storage capacity of about 106,000 acre-feet. Flood control outlet works are in right abutment and permit an authorized, controlled discharge of 17,600 cubic feet per second through two concrete-lined tunnels, with a maximum capacity discharge of 21,500 cfs. Uncontrolled discharge over the spillway is maximum capacity for 245,000 cubic feet per second. Project affords flood protection to White and Puyallup River valleys and protects Tacoma industrial district, in conjunction with Puyallup River project at Tacoma, against floods about 50 percent greater than maximum discharge of record. Original project was completed in June 1953. To date, the Corps has constructed two vista areas, a picnic area, a wading pool, and playground adjacent to the project office, and a 1,760-foot trail leading to the lower vista area. Installation of an approximately 400-foot-deep concrete cutoff wall in the core of the dam was completed in November 1990 under the major rehabilitation program. Under dam safety assurance, spillway walls were raised, the dam crest was heightened, river diversion facilities required for

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excavation for the new tower were completed, the 9-foot diameter and the 23-foot diameter tunnels were refurbished, and a new reservoir outlet tower was constructed. This construction was completed in 1995. Cylinder maintenance access, 9-foot tunnel entrance armor, and reusable cofferdam and inspection of the 9-foot apron were completed this year.

**Local cooperation.** None required.

**Operations During FY.** Maintenance, hired labor: Project features were operated all year. Maintenance was accomplished on dam facilities, intake structure, gages, debris booms, power lines, roads, ditches, hiking trails, vista observation deck, recreation area, and fish facilities. NWS continued to work jointly with Puget Sound Energy to maintain the Buckley Diversion Dam. Fish were transported from the fish collection facility to the upstream release point. To get an updated fish count by calendar year please access the Mud Mountain Dam website at [http://www.nws.usace.army.mil/PublicMenu/Doc\\_list.cfm?sitename=MM&pagename=FISHCOUNTS](http://www.nws.usace.army.mil/PublicMenu/Doc_list.cfm?sitename=MM&pagename=FISHCOUNTS). There were 84,702 project visitors. Early in November of 2006 Mud Mountain experienced the second highest pool of record at apx 1170'. Large amounts of woody debris were captured and managed by project staff. Two hundred habitat logs were taken by tribal and other government agencies. Seattle District's Emergency Management made repairs to basin access roads. Project provided significant flood damage reduction during November 2006 flood. By storing flood waters, the river stage of the Puyallup River at Puyallup was limited to 28.4 feet. Without the dam, the river stage would have exceeded 32 feet.

**Maintenance contract:** None

**Dam Safety Assurance.** New work, hired labor: Study to identify problem areas with the new dam safety features is complete. New studies include additional tunnel armor, modified gate cylinders, new intake stop logs, and demolition of old intakes. Supervised construction work.

**New work contract.** Replaced spillway joint sealing.

### 21. SCHEDULING FLOOD CONTROL RESERVOIR OPERATIONS

Flood control storage space was available in Hungry Horse Reservoir, MT, Flathead Lake, MT (controlled by Kerr Dam), Grand Coulee project,

WA, Wynoochee Dam, WA, Upper Baker and Ross Reservoirs, WA. Scheduled reservoir operations were conducted with Puget Sound Energy on the Upper Baker project, with Seattle City Light on the Ross project, and with Tacoma Power on the Wynoochee project during the major western Washington flood event in December 2007. Serious flood damages in the lower basins were prevented or reduced through SRO of these reservoirs during this major flood event. Specific project operations prior to, during, and after the flood peak were given to project operators. Monitoring of project operations and river conditions was conducted throughout the year with special emphasis on forecasts at control points, including a spring snowmelt event in the Skagit basin. Reservoir regulation tools were modified and improved. Guidance forecasts were made during the flood control season, as required. Daily and hourly data were collected and tabulated as required to check compliance with operating criteria. Real-time forecast and river stage data were provided to Emergency Management office and the District Crisis Management Team as needed and as requested for use in staging flood teams and equipment. Coordination necessary in preparation or revision of reservoir regulation manuals and/or Emergency Action Plans occurred during the year with agencies responsible for the operation of these projects. Fiscal year costs were \$478,000.

**New work contract.** None.

### 22. STILLAGUAMISH RIVER, WA

**Location.** Formed by confluence of its north and south forks at Arlington, in northwestern Washington, Stillaguamish River flows westerly 22 miles to Puget Sound, entering Port Susan through Hat Slough and South Pass, and Skagit Bay through West Pass. (See NOAA Survey Chart 18441, and Geological Survey Quadrangles Stanwood, Marysville, and Stillaguamish, WA.)

**Existing project.** Works to reduce bank erosion and channel changes on Stillaguamish River 15 miles between Arlington and head of Hat Slough, and on Cook Slough, 3 miles long, as follows: revetment at 26 places on river and Cook Slough; concrete weir (including a fishway) 275 feet long between steel sheet-pile piers at head of Cook Slough to limit flow through Slough; and two cutoff channels, each about 900 feet long, to eliminate sharp bends in Cook Slough. Tidal influence extends about 3 miles into improved section. Flood stages of 16 feet above low water at Cook Slough weir have been

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observed. Project was completed in July 1939. (For further details, see Annual Report for 1940.)

**Local cooperation.** None required.

**Operations During FY.** Maintenance, hired labor: Utilized in-house labor to supervise removal of brush from approximately half of the Segments along bank slopes.

Ongoing effort to repair the damaged weir on Cook Slough. Findings indicate work is needed to prevent the possible failure of control weir which will impact flows in the mainstem and Cook slough. Funding has been requested for construction for FY09. Current repair design is at 75%. A full PDT has been formed to complete the design, Real Estate and Environmental coordination.

**23. TACOMA, PUYALLUP RIVER, WA**

**Location.** Puyallup River has its source in glaciers on western slopes of Mount Rainier, flows northwesterly 50 miles, and empties into Commencement Bay, an arm of Puget Sound at Tacoma, WA. Work covered by this project is on Puyallup River, within city limits of Tacoma. (See NOAA Survey Chart 18453)

**Existing project.** A channel with a capacity of 50,000 cubic feet per second between East 11th Street Bridge and lower end of inter-county improvement, a distance of about 2.2 miles, by straightening channel, building levees, revetting channel and levees, and making necessary bridge changes. The 11th Street Bridge at lower end of project is 0.75 mile above mouth of Puyallup River. Diurnal tidal range at mouth of river is 11.8 feet and extreme range is 20 feet. Project was planned in conjunction with Mud Mountain Dam and affords protection against floods about 50 percent greater than maximum discharge of record. Project was completed in May 1950. (For further details, see Annual Report for 1950) A real estate design memorandum, approved by Office of the Chief of Engineers on October 2, 1985, changed the project boundary to allow the City of Tacoma to create a wetland adjacent to the project. This action resulted in the Corps acquiring approximately 2,450 linear feet of setback levee in fee simple. Maintenance funds to cover the increased length of the project have been provided by the Port of Tacoma for the project life. The Project Boundary was modified again on September 17, 2004 to include more wetland habitat on the left bank. The easement for the setback levee was conveyed to the Corps on

November 28, 2005. Construction of an additional wetland by the Port of Tacoma on the right bank adjacent to Gog-Li-Hi-Ti 1 was initiated in the spring of 2007. This action resulted in the Corps acquiring approximately 2000 linear feet of setback levee.

**Local cooperation.** Fully complied with.

**Operations During FY.** Maintenance, hired labor: Utilized in-house labor to supervise removal of brush from the project along top and slopes of levee. Removed trash and garbage from all project areas.

**Maintenance contract:** Awarded equipment rental contract to remove brush.

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Flood Damage Reduction activities pursuant to Section 205, Public Law 858, 80th Congress, as amended (preauthorization).

See Table 29-L

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Emergency Streambank & Shoreline Erosion activities pursuant to Section 14, Public Law 526, 79th Congress, as amended (preauthorization).

Coordination Account	\$3,578
Total FY Costs	\$3,578

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Emergency flood control activities - repair, flood fighting, and rescue work (Public Law 99, 84th Congress, and antecedent legislation).

Disaster Preparedness Program	\$ 539,898
Emergency Operations	\$ 958,910
Rehabilitation & Inspection Program	\$ 23,101,210
Rehab & Insp Prog Contributed funds	\$ 2,144,426
Advance Measures	\$ 194,302
Misc Reimbursable Work	\$ 589,803
Total FY Costs	\$ 27,528,549

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**Multiple-Purpose Projects Including Power**

**24. ALBENI FALLS DAM, ID**

**Location.** On Pend Oreille River about 25 miles west of Sandpoint, in northern Idaho, and 50 miles northeast of Spokane, Washington. Dam is 838 and 90 miles upstream from mouths of Columbia and Pend Oreille Rivers, respectively. (See Geological Survey topographic sheets, Sandpoint, ID, and Newport, WA.)

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**Existing project.** Provides flood control, hydroelectric power, and related water uses on Pend Oreille River as a part of the multiple-purpose plan for development of Columbia River Basin, including recreation development. At the dam, an island and a low waterfall of about 7 feet formerly divided the river channel. Dam is a gated, gravity-structure spillway in left channel and a powerhouse having an installation of 42,600 kilowatts in right channel, creating a reservoir with a usable storage capacity of 1,153,000 acre-feet. Project was operational and essentially complete in December 1955, with miscellaneous contracts completing by June 1957. (For further details, see Annual Report for 1957) Recreational facilities for public use have been provided at Albeni Cove, Priest River, Riley Creek, Johnson Creek, Trestle Creek, Strongs Island, and Springy Point. (Strongs Island was closed in FY82 to reduce O&M costs.) (Refer to Albeni Falls Master Plan dated June 1981 for further planned development)

**Local cooperation.** None required.

**Operations During FY.** Maintenance, hired labor: Reservoir was operated through its annual cycle of storage and release. Routine structural, mechanical, and electrical maintenance was performed on spillway, dam, powerhouse, and equipment. New equipment and instrumentation included auto start/stop generator controls, oil containment bulkhead, and hydraulic gate hoists. Existing analog generator protective relays were replaced with digital multi-function protective relays.

**Maintenance contract.** Contracts awarded and continuing include update project master plan, hazardous water signage, park maintenance and grounds maintenance.

### 25. CHIEF JOSEPH DAM - RUFUS WOODS LAKE, WA

**Location.** On Columbia River in north central Washington, at river mile 545, just upstream from mouth of Foster Creek, 1.5 miles upstream from town of Bridgeport Washington. (Geological Survey topographic sheet, Okanogan, WA, shows general locality.)

**Existing project.** A concrete gravity structure, which consists of a 19-gate spillway and a 27-unit powerhouse. The powerhouse has sixteen 88,274 kilowatt and eleven 95,000 kilowatt generators with nameplate capacity of 2,457,384 kilowatts. The original 16 units were completed in 1962. Additional

construction work was completed in 1994 and included a 10' pool raise and 11 additional units which went online 1977-1979. Recreation facilities were completed in 1972.

**Local cooperation.** None required.

**Operations During FY.** Total Project electrical generation for FY08 was 10,694 megawatt-hours (10,694,000 kilowatt-hours). This energy was marketed for approximately \$641M in revenues (based on the Bonneville Power Administration's daily net market price for electrical energy). About \$641 million in revenue produced on an annual operating budget of about \$19 million for a return of over \$33 for each \$1 of operations and maintenance (O&M) cost. Scheduled heavy load hour availability (HLH) was 99.7% and scheduled outage factor was 5.77%. Overall Unit availability was 87.7% and forced outage rate was 6.52%. Availability was lower, and forced outage rate were higher than recent years primarily because of two Main Unit failures. Unit 21 has been forced out of service since a May 2007 synchronization problem. Completed 2 of 4 task orders for Unit 21 repairs including detailed assessment of overall damage and stator re-wedge. Task order for stator foundation repairs is underway. Unit 2 was forced out of service from Feb 2008 to Nov 2008 due to a wicket gate linkage failure. Unit 2 repair time and costs were drastically reduced by using cutting-edge repair techniques and a highly efficient joint effort of contract and in-house work. O&M activities utilized hired labor and contract work to perform: routine structural, mechanical, and electrical maintenance on powerhouse, spillway, dam, power equipment, auxiliary systems, recreation grounds, and wildlife mitigation areas. The CJD maintenance program was again a top performer in an independent performance benchmarking study. Maintenance crews continued to improve the PM completion rate, executing 98.5% of the scheduled PM work. Schedule incompliance was reduced in half and only 2.5% of PM's were overdue greater than 30 days. Non-routine maintenance activities included completion of injection grout joint seal repairs on all spillway monolith joints and the secondary surface joint seal was completed on over half the bays. Log Boom rehab was completed by contract work, with replacement of the main boom cables and buoy hardware. Capital improvement work included: completion of construction work on all 19 Gas Abatement spillway flow deflectors and second successful flow deflector spill test; contract for Units 1-16 turbine runner replacement (Alstom Hydro US Inc, \$165M total including optional Units 1-4,15,16

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and all optional work) fell behind schedule due to contractor problems meeting required turbine runner efficiency in their model test phase. Aggressive efforts are underway to bring the contractor back on schedule for on-site turbine replacement work to begin 4<sup>th</sup> quarter FY09. Completed replacement/upgrade of the Powerhouse Erection Bay door. CJD continued to provide vital support to the GWOT and hurricane relief through multiple deployments.

**Maintenance Contract.** None

### 26. LIBBY DAM - LAKE KOOCANUSA, MT

**Location.** On Kootenai River in Lincoln County, Montana, about 17 miles upstream from Libby, and 219 miles upstream from confluence of Kootenai and Columbia Rivers. (See Geological Survey topographic sheet, Thompson Lakes, MT).

**Existing project.** Provides storage for local flood control protection in Montana and Idaho, main stem flood control in Lower Columbia River, and hydroelectric power generation at site and at downstream plants through storage release. Project is operated as a unit of a comprehensive system for improvement of Columbia River basin for flood control, navigation, hydroelectric power, and other purposes. Lake Koocanusa is 90 miles long, backing water 42 miles into Canada and has a usable storage capacity of 4,965,000 acre-feet at 50 percent drawdown. Construction of dam was in accordance with a treaty between United States and Canada relating to international cooperation in water resource development of the Columbia River basin. Dam is a straight-axis concrete gravity overflow type, 420 feet high, 3,055 feet long, with normal full pool at elevation 2,459 feet above mean sea level. Powerhouse has an initial installed capacity of 480,000 kilowatts from four hydroelectric generating units; first power went on-line in 1975. A fifth generating unit (Libby Additional Units Project) was completed in 1984 with an additional capacity of 120,000 kilowatts. Fabrication of generators for units six through eight is completed and parts have been stored at the site. Project is completed with units one through five operational. Units six through eight have been reclassified inactive. The Libby Re-regulating Dam Project provided for construction of a re-regulating dam about 10 miles downstream of Libby Dam. Funds were allocated for a construction start in 1977; however, courts have found that Congress did not authorize construction of the dam. In FY 1982, all work was terminated due to court direction. The Libby Re-regulating Dam Power

Units Project provided for installation of three hydroelectric generating units at the re-regulating dam with 78,900 kilowatt installed capacity. (For further details, see Annual Report for 1995)

**Local cooperation.** Fully complied with.

**Operations During FY.** Maintenance, hired labor: Reservoir was operated through its annual cycle of storage and release, with concurrent power production. April through August runoff was 5.48 MAF in 2008, representing a slightly below average water year. Routine structural, mechanical, and electrical maintenance was performed on spillway, dam, powerhouse and equipment. Fish hatchery operation continued under contract with the State of Montana. In 2008 Seattle District settled a lingering lawsuit regarding operation of the dam for endangered sturgeon. The NWS/NWD team negotiated a quality settlement; much of it based upon a preponderance of knowledge and experience of the team members. The settlement will include some efforts on the Selective Withdrawal crane and habitat improvement in the Bonners Ferry reach. 2008 spring release operations supported environmental goals for sturgeon recovery efforts.

A troubling problem with the S/W crane was solved inexpensively via the work of LD's new mechanical engineer. He designed a modification for the picking beam which solved the problems.

**Maintenance contract.** Exciter replacements are currently scheduled to begin in fall of 2009. Also plan to let a contract for transformer leakage on Main Transformer #2. Buffer zone litigation at Murray Springs Fish Hatchery was tried, won, appealed and sent back to District court based on the appeal by plaintiff. Efforts continue on upgrades to O&M manuals. Northrup Grumman is in the process of giving LD a proposal to upgrade the manuals. This is expected to lead the way for the rest of NWD to also get manuals upgraded.

Extra BPA funds will likely lead to numerous upgrades in many areas needing work such as elevators, radios and S/W crane work.

## Environmental

### 27. CHIEF JOSEPH DAM DISSOLVED GAS ABATEMENT, WA

**Location.** On Columbia River in north central Washington, at river mile 545, just upstream from mouth of Foster Creek, 1.5 miles upstream from town of Bridgeport.

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**Existing project.** The ecosystem restoration project constructed flow deflectors on all 19 bays of the spillway at Chief Joseph Dam to abate total dissolved gas levels in the Columbia River downstream of the dam during spill. Construction of the deflectors was completed in September 2008. Work will continue until FY2010 to address associated dam safety concerns and to conduct a full-scale deflector performance spill test in Spring 2009.

**Local cooperation.** None required.

**Operations During FY.** New work, hired labor: Construction phase activities included dam safety joint repair above the newly installed deflectors and a full-spillway spill test to optimize TDG reduction performance of the deflectors. Construction of the deflectors is complete. Work remaining into FY2010 is to associated dam safety concerns and develop operational plan for the deflectors.

**New work contract.** None.

### 28. CODIGA FARMS, TUKWILA, WA

**Location.** Project is located in Tukwila, Washington, in King County, approximately 10 miles south of Seattle along the Duwamish River.

**Existing project.** Restores tidal and riverine hydrology to the site in the form of an off-channel slough, estuarine marsh and riparian buffer. Construction was initiated in August 2003.

**Local cooperation.** Under current cost sharing requirements, the local sponsor (city of Tukwila and Washington Department of Natural Resources) will provide 25 percent of project restoration, 50 percent of associated recreation, and 100 percent of hazardous waste issues. A Project Cooperation Agreement (PCA) was signed on December 17, 2002.

**Operations During FY.** Project close-out. Finalizing the accounts to include RE.

### 29. DUWAMISH/GREEN RIVER ECOSYSTEM RESTORATION, WA

**Location.** The Green Duwamish River Basin encompasses over 450 square miles in northwest Washington State. This river starts high in the Cascade Mountains and ends in enters Elliott bay in Seattle.

**Existing project.** This program provides for ecosystem restoration in the Green Duwamish River Basin and includes 45 restoration projects throughout the entire river basin. The program was estimated to take 10 years to complete.

**Local cooperation.** King County was the primary sponsor for the Feasibility Study. This effort includes the financial support of 17 cities throughout the basin and King County and as well as help from the state and federal resource agencies and tribes.

**Operations During FY.** New work, hired labor. During FY 08 Construction of Lake Meridian Outlet Phase I was complete and Preparation of design for the Site 1 tidal marsh project the Riverview Park habitat project continued and Phase 2 and 3 of Lake Meridian Outlet.

**New work contract.** Construction was completed on Phase I of Lake Meridian Outlet, with construction of a new lake outlet and 400 feet of stream restoration.

### 30. HOWARD A. HANSON DAM, WA

**Location.** Howard A. Hanson Dam is located on the Green River, in King County, about 35 miles southeast of Seattle in Western Washington State.

**Existing project.** The project will add ecosystem restoration and municipal and industrial (M&I) water supply to the existing flood control project and will meet Endangered Species Act (ESA) requirements necessitated by the listing of the Puget Sound Chinook Salmon. Phase I construction will raise the existing flood control reservoir pool 20 feet (from elevation 1,147 feet to elevation 1,167 feet) to increase storage by 20,000 ac-ft for water supply use. Water will be stored in the spring for M&I use in the summer and fall with no changes to flood control capacity. The additional storage will not require structural changes to the existing dam. Minor right abutment seepage remedies were installed in the dam prior to initial M&I storage. Phase I will also include construction of a new full height fish passage facility and miscellaneous ESA and environmental restoration features (pool area creation using large woody debris jams, side channel reconnection, gravel and large woody debris nourishment, and elk forage and pasture creation at multiple locations). Phase II construction will commence only with the concurrence of the resource agencies, the sponsor, and the Muckleshoot Indian Tribe. Phase II will raise the pool another 10 feet (to elevation 1,177 feet) to store an additional 2,400 ac-ft of M&I water, plus

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9,600 ac-ft for low flow augmentation, for a combined project total of 32,000 additional ac-ft of storage. Scheduled construction completion date of the fish passage facility is 2016.

**Local cooperation.** Under current cost sharing requirements, the local sponsor (city of Tacoma) will provide a cost share based on separable project purpose estimated to be 15 percent of total project cost. A Project Cooperation Agreement (PCA) was signed on July 19, 2003.

**Operations During FY.** New work, hired labor: Continued S&A of the various current fish passage facility and dam safety construction contracts. Continued development of design of future Fish Passage construction contracts. Prepared plans and specifications for fish habitat restoration and several miscellaneous site improvements.

**New work contract.** Awarded one contract for additional earthwork for the fish passage facility and performed S&A of the contract after award.

### 31. PUGET SOUND AND ADJACENT WATERS, WA

**Location.** The Puget Sound and adjacent waters region encompasses over 15,000 square miles in northwest Washington State and incorporates all waters in the Puget Sound drainage basin and the Strait of Juan de Fuca.

**Existing project.** This program provides for ecosystem restoration in the Puget Sound area and to expedite construction of critical restoration projects by developing an identification and prioritization process using existing locally provided information, conducting project implementation studies, and constructing specific projects. The program will require approximately 15 years.

**Local cooperation.** The program includes authorization to consult on restoration priorities with a variety of state, federal, local and non-profit organizations. In addition, each project implemented under the program authority will be cost shared with a local sponsor providing 50 percent of study costs and 35 percent of project cost after respective Cooperation Agreements are signed.

**Operations During FY.** New work, hired labor. The Assistant Secretary of the Army for Civil Works and the Office of Management and Budget determined that a feasibility report documenting the priority projects for the full authorization should be

submitted for their approval to confirm consistency with Administration policies. Decision documents are being prepared for additional projects with Cities of Bellingham and Burien; and the Tulalip Indian Tribe to aid recovery of endangered species, including bull trout and Chinook salmon.

The State of Washington enacted legislation authorizing a new state agency, The Puget Sound Partnership. A federal caucus, currently comprised of 10 federal agencies, is working with the new state agency to advance restoration actions within the basin. The program is consulting with the federal caucus to coordinate activities.

**New work contract.** none.

### 32. RURAL IDAHO

These projects are a joint effort of Walla Walla and Seattle Districts. The Seattle District projects follow:

#### Bonnors Ferry, ID

**Location.** Bonnors Ferry is located on US 95, at the intersection with the Kootenai River, approximately 30 miles north of Sandpoint, in northern Idaho.

**Existing project.** The purpose of this project is to purchase and install water meters and incidental piping for City of Bonnors Ferry service area in order to decrease the demand for a limited water supply.

**Local cooperation.** Under current cost-sharing requirements, the local sponsor (City of Bonnors Ferry) will provide 25 percent of design and construction cost.

**Operations During FY.** Purchasing of water meters was completed and partial installation has been complete. Project close out is underway.

#### Smeltonville, ID

**Location.** Smeltonville is located on I-90 approximately 70- miles east of Spokane, WA.

**Existing project.** The purpose of this project is to provide engineering and design services in preparation for construction activities to repair the 50 year old treatment and waste water system to bring it up to state and federal standards while also protecting the cities water supply.

**Local cooperation.** Under current cost-sharing requirements, the local sponsor (City of Smeltonville) will provide 25 percent of design and construction cost.

**Operations During FY.** Engineering, design and construction is complete for the Wastewater Project. Engineering and design efforts are underway for the Stormwater portion of the overall

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improvement project. Design is expected to be completed in July 2009.

### 33. RURAL MONTANA

These projects are a joint effort of Omaha and Seattle Districts. The Seattle District projects follow:

#### Butte, MT

**Location.** Butte is located in southwestern Montana.

**Existing project.** The purpose of this project is to design and construct a system upgrade to the current wastewater treatment plant for the City and County of Butte-Silver Bow (BSB) that will meet state and federal standards. The upgrade improves the biological nutrient removal capability to 8 mgd.

**Local cooperation.** Under current cost-sharing requirements, the local sponsor City and County of Butte-Silver Bow (BSB) will provide 25 percent of design and construction cost.

**Operations During FY.** Engineering and design was completed in FY 2007. Design efforts will continue thru 2009.

#### Big Fork, MT

**Location.** The City of Bigfork is located approximately 18 miles southeast of Kalispell, Montana on Hwy 35. The Ranch County Water/Sewer District is located a half mile east of Highway 35, one mile south of Bigfork in Flathead County. The homes in the area are located in the foothills alongside the lake.

**Existing project.** The purpose of this project is to design and construct a water system for the Ranch Water District located in Bigfork, Montana which will allow them to supply the city with a clean, safe water system and also provide fire protection.

**Local cooperation.** Under current cost-sharing requirements, the local sponsor (Ranch Water District) will provide 25 percent of design cost. A Project Cooperation Agreement (PCA) was signed for design and construction during 2006.

**Operations During FY.** Engineering and design work was completed and project construction was initiated in FY07. All construction efforts have been completed in FY 2008.

#### Greater Woods Bay, MT

**Location.** Greater Woods Bay is located in north western Montana along the Flathead Lake.

**Existing project.** Project consists of Design of a wastewater collection system.

**Local cooperation.** The local sponsor (Greater Woods Bay) will provide 25 percent of design cost.

A Project Cooperation Agreement (PCA) was signed on October 6, 2008.

**Operations During FY.** Engineering and design was initiated and work scheduled to be completed in FY09. Project is waiting funding for construction.

#### Dayton, MT

**Location.** Dayton is located in north western Montana along the Flathead Lake.

**Existing project.** Project consists of design of a new sanitary sewer and treatment system.

**Local cooperation.** The local sponsor (Community of Dayton) will provide 25 percent of design cost. A Project Cooperation Agreement (PCA) was signed on October 23, 2008.

**Operations During FY.** Engineering and design was initiated and work scheduled to be completed in FY09. Project is waiting funding for construction

#### Seeley Lake, MT

**Location.** Seeley Lake is located in north western Montana, north of Missoula.

**Existing project.** Project consists of design of a new water storage tank and pump station.

**Local cooperation.** The local sponsor (Seeley lake) will provide 25 percent of design cost. A Project Cooperation Agreement (PCA) was signed on October 17, 2008.

**Operations During FY.** Engineering and design was initiated and work scheduled to be completed in FY09. Project is waiting funding for construction.

#### Hamilton, MT

**Location.** Hamilton is located in north western Montana, south of Missoula.

**Existing project.** Project consists of design of improvements to existing wastewater collection system and treatment plant.

**Local cooperation.** The local sponsor (Town of Hamilton) will provide 25 percent of design cost. A Project Cooperation Agreement (PCA) was signed on October 23, 2008.

**Operations During FY.** Engineering and design was initiated and work scheduled to be completed in FY09.

#### Philipsburg, MT

**Location.** Seeley Lake is located in north western Montana, north of Missoula.

**Existing project.** Project consists of design and Construction of a water supply system including installation of water meters.

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**Local cooperation.** The local sponsor (Philipsburg) will provide 25 percent of design cost. A Project Cooperation Agreement (PCA) was signed on September 19, 2008.

**Operations During FY.** Engineering and design has been initiated and installation work is scheduled to be completed in FY09.

### Whitehall, MT

**Location.** Seeley Lake is located in north western Montana, north of Missoula.

**Existing project.** Project consists of design of a wastewater collection system.

**Local cooperation.** The local sponsor (Whitehall) will provide 25 percent of design cost. A Project Cooperation Agreement (PCA) was signed on November 26, 2008.

**Operations During FY.** Engineering and design has been initiated and work scheduled to be completed in FY09.

### Cabinet Heights, MT

**Location.** Cabinet Heights is located in north western Montana, near Libby.

**Existing project.** Project consists of design of a new sewer system including sewer main and lift station.

**Local cooperation.** The local sponsor (Whitehall) will provide 25 percent of design cost. A Project Cooperation Agreement (PCA) was signed on October 6, 2008.

**Operations During FY.** Engineering and design has been initiated and work scheduled to be completed in FY09.

### 34. UNION SLOUGH, WA

**Location.** The proposed project is located on the left bank of Union Slough, Snohomish River, near Everett, WA.

**Existing project.** The restoration project has restored fish and wildlife habitat, which has been adversely affected by the past construction of the Everett Harbor and Snohomish River Navigation Project. It included the construction of a new 6,800-foot setback levee around the entire 93-acre site, construction of about 2,800 feet of fish access channels to interior locations, filling the borrow ditches behind the abandoned levee, and construction of three breaches and a 180-foot long bridge across each breach. The project is essentially complete, with some scour repair to be completed in 2010.

**Local cooperation.** Under current cost sharing requirements, the local sponsor (city of Everett) will

provide 25 percent of project cost. A Project Cooperation Agreement (PCA) was signed on May 16, 2003.

**Operations During FY.** Inspection of scour damage .

**New work contract.** None.

### 35. PORT OF SUNNYSIDE, WA

**Location.** The proposed project is located on the left bank of the Yakima River, near Sunnyside, WA.

**Existing project.** The proposed restoration project would utilize agricultural wastewater to create wetland and upland wildlife habitat. The project would create 71 acres of wetland, 53 acres of riparian area and 96 acres of upland, all planted with native vegetation. The Port of Sunnyside has acquired over 200 acres adjacent to the Yakima River for this project.

**Local cooperation.** Under applicable cost sharing requirements, the local sponsor (Port of Sunnyside) will provide 35 percent of project cost.

**Operations During FY.** The project manager reactivated the Agency Technical Review (ATR) team and developed a Scope of Work for the contractor to revise the feasibility report, resolving DrChecks comments created previously by the ATR.

### 36. WHITCOMB FLATS, WESTPORT, WA

**Location.** Whitcomb Flats is located in the Grays Harbor Estuary which is in Grays Harbor County in southwest Washington. The estuary is approximately 45 miles north of the Columbia River entrance and 110 miles south of the Strait of Juan de Fuca.

**Existing project.** Whitcomb Flats Natural Area Preserve (NAP) has been steadily moving eastward for 37 years, at approximately 31 meters per year. The result of this erosion is accretion; sediment from Whitcomb Flats NAP and has been smothering the WA Department of Natural Resources managed oyster lands located in the immediate vicinity of the Whitcomb Flats NAP. It is believed that the federal navigation project has exacerbated the problem.

**Local cooperation.** Under applicable cost sharing requirements, the local sponsor (Washington Department of Natural Resources) will be required to

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cost share at the same ratio that was required by the federal navigation project that is determined to have caused the problem. If the problem is determined to have multiple causes, the Sponsor will be responsible for any costs to address damages not tied to the federal navigation project. The sponsor owns lands in question.

**Operations During FY.** Planner and PM attended on-site meeting with Sponsor. Initial recon funds received in late September, 2008.

**New work contract.** None.

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Environmental activities (Section 1135, Public Law 99-662, as amended; Section 206 Public Law 104-303).

See Table 29-M.

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### **Aquatic Plant Control**

#### **37. Aquatic Plant Control**

**Location.** Pend Oreille River near the town of Cusack, Washington

**Existing project.** The only work for this FY was to get a monitoring report from ERDC. We are waiting on the results of monitoring done in this FY.

**Local cooperation.** The local cooperation on this project is complete.

**Operations During FY.** New work, hired labor: none.

**New work contract.** None

### **General Investigations**

#### **38. SURVEYS**

Fiscal year costs were \$42,245 navigation studies, \$515,003 for flood damage prevention studies, \$276,569 for shoreline protection studies, \$2,123,471 for special studies, \$59,857 for review of authorized projects, \$113,419 for miscellaneous activities, and \$217,435 for coordination with other agencies and non-Federal interests, a total of \$3,348,000. In addition, contributed funds were expended for the following: \$128,773 for special studies, \$4,166 for detailed economical studies

\$92,176 for coordination with other agencies and non-Federal interests, a total of \$255,115.

#### **39. COLLECTION AND STUDY OF BASIC DATA**

The work programmed for collection and study of basic data covers international water studies, flood plain management services, and hydrologic studies. Work on international water studies included checking Kootenay Lake storage computations to determine compliance of Fortis BC with orders of International Joint Commission, and coordination with International Kootenay Lake and Osoyoos Lake Boards of Control in enforcement of International Joint Commission orders. Technical assistance was provided other Federal and non-Federal agencies and Indian tribes in flood hazard evaluation, flood reduction methods, and related services as requested. Fiscal year costs were \$32,097 for international water studies and \$72,190 for flood plain management services, a total of \$104,287.

#### **40. PRECONSTRUCTION ENGINEERING AND DESIGN**

##### **Centralia, WA**

The city of Centralia lies in west central Washington at the confluence of the Chehalis and Skookumchuck Rivers, about midway along the Chehalis River from its source in the Willapa Hills to its mouth at Aberdeen in Grays Harbor. Floods of record on Skookumchuck, Newaukum, and Chehalis Rivers occurred in February 1996.

The plan of improvement authorized in P.L. 99-662 would substantially reduce flooding in the Skookumchuck River valley for the 22 miles between Skookumchuck Dam and the river mouth, including a major portion of Centralia, and provide minor reductions along the Chehalis River downstream from Centralia for about 20 miles to Oakville. The improvement, as recommended in the feasibility report, consisted of structural modifications (flood control outlet tunnel and spillway gate), which would enable the existing, private water supply dam to provide flood control storage during winter months.

Preconstruction Engineering and Design (PED) was started in FY 1988 to refine the project design recommended in the feasibility report. In FY 1990, refinement of project design to a less costly, gated spillway sluice and reevaluation of hydrology, existing local levees and embankments, estimated flood damages, and potential flood reduction benefits were completed. Studies determined the Skookumchuck Dam modification no longer appeared economically justifiable and further work

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was suspended. In FY 1992 a wrap-up report presenting results of the technical analyses completed to date was provided to local governments.

Following the severe flooding in the Centralia-Chehalis area in 1996, there was a renewed public interest in flood damage reduction. Using state and local funding sources, Lewis County reviewed past study efforts and developed a revised flood damage reduction plan that would combine the authorized dam modification with over bank excavation and flow bypass measures. The revised project would provide substantial benefits to both Centralia and Chehalis and appeared to be economically justified. In July 1998, Lewis County requested resumption of the PED for the project with a view toward preparing a General Reevaluation Report and Environmental Impact Statement for an expanded project. Work resumed soon thereafter. A General Reevaluation Report (GRR) Final Environmental Impact Statement (FEIS) and Chiefs Report for the project were completed with the Chief's Report was signed on September 27, 2004. Pre-construction, Engineering and Design (PED) was initiated and the development of a Project Management Plan (PMP) and Design agreement was started in FY05 and due to lack of

funding and identification of a non-federal sponsor it has extended into FY 07.

In late 2007 severe flooding occurred again, causing damages to the local communities and the closure of I-5 for 4 days, the main route between Seattle and Portland. The closure caused rerouting of traffic and loss of commerce. The State of Washington in cooperation with the local governments is currently working with the Corps to re-initiate the study, develop a current PMP and Design Agreement. Fiscal year FY08 costs were \$115,653.39. Total cost to date is \$8,200,680.09.

**41. GENERAL REGULATORY FUNCTIONS**

Permit Evaluation	\$4,540,648
Enforcement	256,375
Environmental Impact Statement	16,536
Appeals	0
Compliance	314,494
TOTAL	\$5,128,053

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**TABLE 29-A COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY 05	FY 06	FY 07	FY 08	Total To Sep. 30, 2008	
1	Ediz Hook, WA							
	(Federal Funds)	New Work						
		Approp.	0	0	0	0	5,878,740	
		Cost	0	0	0	0	5,878,740	
		Maint.						
		Approp.	0	0	10,000	0	2,693,564	
		Cost	0	0	9,922	0	2,693,564	
	(Contrib. Funds)	New Work						
		Contrib.	0	0	0	0	385,850	
		Cost	0	0	0	0	385,850	
		Maint.						
		Contrib.	0	0	0	0	323,554	
		Cost	0	0	0	0	284,477	
2	Everett Harbor and Snohomish River, WA							
	(Federal Funds)	New Work						
		Approp.	0	0	0	0	1,723,745	
		Cost	0	0	0	0	1,723,745	1
		Maint.						
		Approp.	3,065,000	1,338,000	1,066,000	1,439,000	28,396,412	
		Cost	3,055,965	1,267,226	1,131,888	1,409,883	28,313,374	2
	(Contrib. Funds)	New Work						
		Contrib.	0	0	0	0	116,618	
		Cost	0	0	0	0	116,618	
		Maint.						
		Contrib.	0	0	0	0	548,090	
		Cost	0	0	0	0	548,090	
3	Friday Harbor, WA							
	(Federal Funds)	New Work						
		Approp.	0	0	0	0	1,575,500	
		Cost	0	0	0	0	1,575,500	3
		Maint.						
		Approp.	(7,984)	0	0	0	794,310	
		Cost	(7,984)	(1,530)	1,511	0	798,882	
	(Contrib. Funds)	New Work						
		Contrib.	0	0	0	0	1,267,881	
		Cost	0	0	0	0	1,267,881	
4	Grays Harbor and Chehalis River, WA							
	(Federal Funds)	New Work						
		Approp.	20,000	0	0	0	23,247,248	4
		Cost	0	12,191	563	0	23,269,950	5
		Maint.						
		Approp.	8,166,841	8,875,000	6,605,000	11,256,000	256,886,512	
		Cost	8,237,155	8,736,119	6,069,463	11,057,736	256,066,588	6
		Minor Rehab.						
		Approp.	0	0	0	0	9,592	
		Cost	0	0	0	0	9,592	7
		Major Rehab.						
		Approp.	0	0	0	0	4,606,145	
		Cost	0	0	0	0	4,606,145	
	(Contrib. Funds)	New Work						
		Contrib.	1,068	0	0	0	6,417,900	
		Cost	0	0	0	0	6,406,934	8
		Maint.						
		Contrib.	0	0	0	0	55,889	
		Cost	0	0	0	0	55,889	
5	Lake Crockett, WA							
	(Federal Funds)	New Work						
		Approp.	0	0	0	0	377,990	
		Cost	0	0	0	0	377,990	9
		Maint.						
		Approp.	64,000	428,000	0	0	1,686,626	
		Cost	52,942	39,989	391,041	7,961	1,686,562	

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 29-A COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY 05	FY 06	FY 07	FY 08	Total To Sep. 30, 2008	
6	Lake Washington Ship Canal, WA							
	(Federal Funds)	New Work						
		Approp.	0	0	0	0	4,611,436	
		Cost	0	0	0	0	4,611,436	10
		Maint.						
		Approp.	7,320,000	6,761,900	6,806,000	5,786,000	198,417,406	
		Cost	6,911,581	6,126,917	6,269,114	6,893,041	197,883,843	11
		Major Rehab.						
		Approp.	0	0	0	0	7,465,230	
		Cost	0	0	0	0	7,465,230	
	(Contrib. Funds)	New Work						
		Contrib.	52,982	0	0	0	488,481	
		Cost	37,453	0	0	0	421,298	12
		Maint.						
		Contrib.	0	0	0	0	40,000	
		Cost	0	0	0	0	39,964	
7	Neah Bay, WA							
		New Work						
		Approp.	0	0	0	0	2,057,266	
		Cost	0	0	0	0	2,057,266	
		Maint.						
		Approp.	32,000	888,000	0	31,000	5,103,136	
		Cost	29,542	59,725	113,220	35,778	4,387,401	
8	Olympia Harbor, WA							
	(Federal Funds)	New Work						
		Approp.	0	0	0	0	337,709	
		Cost	0	0	0	0	337,709	
		Maint.						
		Approp.	0	276,000	938,000	0	2,285,162	
		Cost	0	198,135	239,628	740,755	2,249,680	
	(Contrib. Funds)	New Work						
		Contrib.	0	0	0	0	0	
		Cost	0	0	0	0	0	
10	Puget Sound and its Tributary Waters, WA							
		New Work						
		Approp.	0	0	0	0	43,337	
		Cost	0	0	0	0	43,337	
		Maint.						
		Approp.	992,000	772,000	1,127,000	868,335	33,188,696	
		Cost	968,733	745,057	881,115	1,056,410	33,075,578	13
11	Quillayute River, WA							
	(Federal Funds)	New Work						
		Approp.	0	0	0	0	521,850	
		Cost	0	0	0	0	521,850	14
		Maint.						
		Approp.	90,000	51,000	1,913,000	61,000	31,493,361	
		Cost	89,971	53,707	662,017	1,220,945	31,397,196	
	(Contrib. Funds)	New Work						
		Contrib.	0	0	0	0	20,000	
		Cost	0	0	0	0	20,000	
12	Seattle Harbor, WA							
	(Federal Funds)	New Work						
		Approp.	-	0	0	0	170,335	
		Cost	0	0	0	0	170,335	
		Maint.						
		Approp.	90,000	493,000	592,000	51,000	20,588,993	
		Cost	89,839	82,343	99,697	856,239	20,492,921	15
	(Contrib. Funds)	New Work						
		Contrib.	0	0	0	0	69,333	
		Cost	0	0	0	0	69,333	
		Maint.						
		Contrib.	0	0	0	0	2,357,450	16
		Cost	0	0	0	0	2,283,011	17

SEATTLE, WA DISTRICT

**TABLE 29-A COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY 05	FY 06	FY 07	FY 08	Total To Sep. 30, 2008	
13	Swinomish Channel, WA (Federal Funds)	New Work						
		Approp.	0	0	0	0	808,332	
		Cost	0	0	0	0	808,332	18
		Maint.						
		Approp.	30,728	0	0	467,000	10,333,024	
		Cost	30,728	0	0	81,718	9,947,741	
	(Contrib. Funds)	New Work						
		Contrib.	0	0	0	0	32,000	
		Cost	0	0	0	0	32,000	
		Maint.						
		Contrib.	0	0	0	0	379,248	
		Cost	0	0	0	0	379,248	
14	Willapa River and Harbor and Naselle River, WA (Federal Funds)	New Work						
		Approp.	0	0	0	0	1,386,955	
		Cost	0	0	0	0	1,386,955	19
		Maint.						
		Approp.	25,000	140,000	53,000	31,000	24,639,150	
		Cost	24,513	93,173	58,450	26,013	24,592,296	20
	(Contrib. Funds)	New Work						
		Contrib.	0	0	0	0	78,372	
		Cost	0	0	0	0	78,372	21
15	Port Townsend, WA (Federal Funds)	New Work						
		Approp.	0	0	0	0	480,899	
		Cost	0	0	0	0	480,899	
		Maint.						
		Approp.	0	0	0	405,000	523,656	
		Cost	0	0	0	48,563	523,656	
	(Contrib. Funds)	New Work						
		Contrib.	0	0	0	0	92,423	
		Cost	0	0	0	0	92,423	
16	Shoalwater Bay, Tokeland, WA	New Work						
		Approp.	367,000	1,390,000	328,000	0	3,891,600	
		Cost	350,151	323,417	412,718	550,357	4,890,378	
17	Coeur d'Alene River (South Fork), Wallace, ID (Federal Funds)	New Work						
		Approp.	28,000	19,500	0	0	860,883	
		Cost	30,118	14,939	20,439	0	861,445	
	(Contrib. Funds)	New Work						
		Contrib.	54,987	13,871	3,100	0	543,222	
		Cost	77,208	4,657	27,061	0	405,526	
18	Howard A. Hanson Dam, WA (Federal Funds)	New Work						
		Approp.	0	0	0	0	38,311,834	
		Cost	0	0	0	0	38,311,834	22
		Maint.						
		Approp.	1,779,000	1,949,500	2,314,000	3,185,000	39,191,653	
		Cost	1,647,143	1,722,727	2,352,857	2,134,293	37,811,230	23
	(Contrib. Funds)	New Work						
		Contrib.	0	0	0	0	2,009,742	
		Cost	0	0	0	0	2,009,742	24
20	Mud Mountain Dam, WA (Federal Funds)	New Work						
		Approp.	2,836,000	4,346,000	3,470,000	2,340,000	110,759,075	25
		Cost	2,031,386	2,970,103	3,574,205	2,071,706	108,361,635	26
		Maint.						
		Approp.	3,360,000	3,364,000	4,176,000	3,769,000	65,012,843	
		Cost	3,192,066	3,050,567	3,229,824	4,300,666	64,108,100	27

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 29-A COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY 05	FY 06	FY 07	FY 08	Total To Sep. 30, 2008	
	Mud Mountain Dam WA Cont'd	Minor Rehab.						
		Approp.	0	0	0	0	285,908	
		Cost	0	0	0	0	285,908	
		Major Rehab.						
		Approp.	0	0	0	0	30,437,500	
		Cost	0	0	0	0	30,437,500	
	(Contrib. Funds)	Maint.						
		Contrib.	0	0	0	0	3,928	
		Cost	0	0	0	0	3,928	
22	Stillaguamish River, WA (Federal Funds)	New Work						
		Approp.	0	(187)	0	0	134,408	
		Cost	0	0	0	0	134,595	28
		Maint.						
		Approp.	379,000	201,000	278,000	168,000	5,342,190	
		Cost	372,434	207,604	249,063	195,416	5,347,190	
	(Contrib. Funds)	New Work						
		Contrib.	0	0	0	0	28,104	
		Cost	0	0	0	0	16,022	
23	Tacoma, Puyallup River, WA (Federal Funds)	New Work						
		Approp.	0	0	0	0	3,947,853	
		Cost	0	0	0	0	3,947,853	29
		Maint.						
		Approp.	212,000	100,000	140,000	0	2,093,221	
		Cost	212,007	92,327	142,645	0	2,086,690	
	(Contrib. Funds)	Maint.						
		Contrib.	0	0	0	0	57,832	
		Cost	0	0	0	0	54,371	
24	Albeni Falls Dam, ID	New Work						
		Approp.	0	0	0	0	34,053,561	30
		Cost	41,243	0	0	0	34,053,481	31
		Maint.						
		Approp.	2,233,465	1,525,164	3,973,700	4,353,324	125,684,753	32
		Cost	2,221,510	1,423,852	3,657,678	4,349,146	123,512,730	33
25	Chief Joseph Dam - Rufus Woods Lake, WA	New Work						
		Approp.	0	0	0	0	540,341,235	
		Cost	0	0	0	0	540,341,235	34
		Maint.						
		Approp.	1,521,000	830,000	7,023,300	6,401,640	319,802,902	35
		Cost	2,991,540	840,958	5,992,764	7,981,004	313,829,856	36
		Major Rehab.						
		Approp.	0	0	0	0	297,630	
		Cost	0	0	0	0	297,630	
26	Libby Dam – Lake Koocanusa, MT (Federal Funds)	New Work						
		Approp.	0	0	0	0	543,726,140	
		Cost	0	0	0	0	543,726,140	37
		Maint.						
		Approp.	2,271,571	1,661,048	4,794,000	5,398,216	152,392,682	38
		Cost	522,166	3,257,122	5,032,415	5,262,268	149,540,178	39
	(Contrib. Funds)	New Work						
		Contrib.	0	0	0	0	1,458,252	
		Cost	0	0	0	0	1,458,252	40
27	Chief Joseph Dam Dissolved Gas Abatement, WA	New Work						
		Approp.	1,708,000	7,914,000	8,163,000	4,952,000	24,048,020	
		Cost	1,620,359	3,981,366	8,779,287	7,980,138	23,654,036	

SEATTLE, WA DISTRICT

**TABLE 29-A COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY 05	FY 06	FY 07	FY 08	Total To Sep. 30, 2008	
28	Codiga Farms, Tukwila, WA (Federal Funds)	New Work Approp.	55,000	22,000	0	0	1,375,000	
		Cost	7,231	888	0	6,593	1,296,631	
	(Contrib. Funds)	New Work Contrib.	0	0	0	0	82,232	
		Cost	9,213	0	0	1,056	78,766	
29	Duwamish\Green River Basin, WA (Federal Funds)	New Work Approp.	1,110,000	1,769,000	950,000	1,626,000	5,841,000	
		Cost	709,829	687,147	413,802	1,176,700	3,350,253	
	(Contrib. Funds)	New Work Contrib.	0	337,000	289,750	1,271,875	2,121,625	
		Cost	0	127,050	135,845	412,183	678,078	
30	Howard A. Hanson Dam, WA (Sec. 101(b)(15)) (Federal Funds)	New Work Approp.	9,519,000	13,957,000	15,128,000	12,504,000	77,168,952	41
		Cost	8,912,550	13,363,785	14,752,833	5,596,197	68,567,706	42
	(Contrib. Funds)	New Work Contrib.	3,875,569	0	(1,898,872)	0	8,096,340	43
		Cost	1,939,686	1,299,509	(1,058,452)	541,199	7,157,036	44
31	Puget Sound and Adjacent Waters, WA (Federal Funds)	New Work Approp.	974,000	709,000	1,178,000	2,952,000	6,107,000	
		Cost	965,925	313,356	209,172	438,989	2,205,574	
	(Contrib. Funds)	New Work Contrib.	0	0	69,100	7,097	76,197	
		Cost	0	0	11,175	338	11,813	
32	Rural Idaho Program, ID	New Work Approp.	974,000	932,000	0	250,000	2,910,000	
		Cost	818,960	865,776	218,423	203,224	2,594,193	
33	Rural Montana Program, MT	New Work Approp.	494,000	816,000	40,000	2,600,000	4,326,000	
		Cost	143,135	658,384	495,625	353,029	2,012,723	
34	Union Slough, WA (Federal Funds)	New Work Approp.	280,000	439,000	1,423,000	1,000,000	4,378,000	
		Cost	329,811	128,725	941,554	831,081	3,377,544	
	(Contrib. Funds)	New Work Contrib.	0	96,000	381,000	23,000	970,446	
		Cost	87,565	128,408	341,915	125,668	942,456	
35	Port of Sunnyside, WA (Federal Funds)	New Work Approp.	164,000	99,000	68,000	0	635,000	
		Cost	155,765	66,147	54,128	12,237	590,330	
	(Contrib. Funds)	New Work Contrib.						
		Cost						
36	Whitcomb Flats, WA (Federal Funds)	New Work Approp.	0	0	0	0	12,000	
		Cost	0	0	0	0	12,000	
	(Contrib. Funds)	New Work Contrib.						
		Cost						

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**TABLE 29-A COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY 05	FY 06	FY 07	FY 08	Total To Sep. 30, 2008
37	Aquatic Plant Control						
	(Federal Funds)	New Work			35,000	0	35,000
		Approp. Cost			30,146	4,801	34,947
	(Contrib. Funds)	New Work					
		Contrib. Cost			0	0	0
					0	0	0
1.	Includes \$418,209 appropriated and expended for previous projects. Excludes \$43,000 Coast Guard funds expended.						
2.	Includes \$5,869 for previous project and \$120,000 for Maintenance and Operation of Dams and Other Improvements of Navigable Waters, appropriated and expended.						
3.	Includes \$1,180,500 expended under Productive Employment Appropriation Act of 1983 (P.L.98-8).						
4.	Includes \$4,881,882 appropriated for former project, \$18,128,287 for current project which includes \$3,530,000 PED, \$124,945 for recreation facilities at completed project (Code 710), and \$113,134 for previous project. Excludes \$161,909 Navy funds and \$6,000 Coast Guard funds.						
5.	Includes \$4,881,882 expended for former project, \$18,119,430 for current project which includes \$3,530,000 PED, \$124,945 for recreation facilities at completed project (Code 710), and \$113,134 for previous project. Excludes \$161,909 Navy funds and \$6,000 Coast Guard funds.						
6.	Includes \$37,415 for previous projects and \$3,923,511 for Maintenance and Operation of Dams and Other Improvements of Navigable Waters, appropriated and expended. Excludes \$409,660 Emergency Relief funds and \$57,000 Public Works Administration funds expended.						
7.	Excludes \$111,000 Public Works Acceleration Act funds expended.						
8.	Excludes \$3,418,000 contributed by Port of Grays Harbor in fulfilling requirements of local cooperation.						
9.	Includes \$117,750 appropriated and expended for recreation facilities at completed project (Code 710).						
10.	Includes \$779,655 for recreation facilities at completed project (Code 710) and \$485,002 for previous projects, appropriated and expended. Excludes \$246,567 expended by State of Washington and \$742,071 expended by King County. Excludes \$192,516 Public Works Administration funds expended.						
11.	Includes \$1,631,195 (1916 to 1936) and \$338,163 subsequently appropriated and expended under Maintenance and Operation of Dams and Other Improvements of Navigable Waters.						
12.	Previous project.						
13.	Includes \$64,996 appropriated and expended for previous project.						
14.	Excludes Navy funds expended on dredging river channel in 1944 and Coast Guard funds expended for channel dredging in 1948 and 1949.						
15.	Includes \$3,349,600 appropriated and expended for East Waterway.						
16.	Includes \$2,262,975 contributed for East Waterway.						
17.	Includes \$2,188,536 expended for East Waterway.						
18.	Excludes \$1,000 Coast Guard funds expended.						
19.	Includes \$228,084 appropriated and expended for previous projects. Excludes \$40,000 Coast Guard funds and \$192,314 Emergency Relief funds expended.						
20.	Includes \$309,177 appropriated and expended for previous projects. Excludes \$78,532 Public Works Administration funds expended.						
21.	Includes \$6,597 expended for previous projects.						
22.	Includes \$37,048,061 appropriated and expended for original project.						
23.	Includes \$66,678 appropriated and expended under Maintenance and Operation of Dams and Other Improvements of Navigable Waters.						
24.	Includes \$2,000,000 contributed for original project.						
25.	Includes \$13,182,063 appropriated for original project, \$87,785 appropriated for recreation facilities at completed project (Code 710). Excludes \$26,000 Emergency Relief funds.						
26.	Includes \$13,182,063 expended for original project, \$87,785 expended for recreation facilities at completed project (Code 710). Excludes \$26,000 Emergency Relief funds expended.						
27.	Includes \$198,578 appropriated and expended under Maintenance and Operation of Dams and Other Improvements of Navigable Waters.						
28.	Excludes \$281,000 Works Progress Administration funds and \$85,999 Emergency Relief funds expended.						
29.	Includes \$5,035 appropriated and expended for recreation facilities at completed project (Code 710).						
30.	Includes \$370,000 appropriated for current project (Riley Creek Recreation Area), \$30,769,614 for original project, and \$971,947 for recreation facilities at completed project (Code 710). Excludes \$136,736 Public Works Acceleration Act funds for recreation facilities at completed project (Code 710).						
31.	Includes \$207,799 expended for current project (Riley Creek Recreation Area), \$30,769,614 for original project, and \$971,947 for recreation facilities at completed project (Code 710). Excludes \$136,736 Public Works Acceleration Act funds expended for recreation facilities at completed project (Code 710).						
32.	Includes funds appropriated for project O&M (\$85,922,261), Special Recreation Use Fees (\$174,776), Maintenance and Operation of Dams and Other Improvements of Navigable Waters (\$1,875,446), BPA/COE Merged, CAT 390 (\$20,064,224) and BPA-4045 Large Capital Sub agreements, CAT 300 (\$2,633,164).						
33.	Includes funds expended for project O&M (\$85,896,005), Special Recreation Use Fees (\$174,776), Maintenance and Operation of Dams and Other Improvements of Navigable Waters (\$1,875,446), BPA/COE Merged, CAT 390 (\$18,485,286) and BPA-4045 Large Capital Sub agreements, CAT 300 (\$2,163,052).						
34.	Includes \$144,338,252 appropriated and expended for original project, \$395,855,000 for additional units, and \$147,983 for recreation facilities at completed project (Code 710). Excludes \$58,000 Public Works Acceleration Act funds for recreation facilities at completed project (Code 710).						
35.	Includes funds appropriated for project O&M (\$203,476,357), Maintenance and Operation of Dams and Other Improvements of Navigable Waters (\$774,561), BPA/COE Merged, CAT 390 (\$73,117,551), and BPA-4045 Large Capital Sub agreements, CAT 300 (\$22,419,992).						

SEATTLE, WA DISTRICT

**TABLE 29-A Continued**

- |   |   |
|---|---|
| 36. Includes funds expended for project O&M (\$200,320,554), Maintenance and Operation of Dams and Other Improvements of Navigable Waters (\$774,561), BPA/COE Merged, CAT 390 (\$70,508,655), and BPA-4045 Large Capital Sub agreements, CAT 300 (\$17,849,490).   | 40. Excludes \$161,849 expended by Federal Aviation Agency, \$32,000 expended by Lincoln County- City of Libby Joint Airport Board, \$8,000 expended by Bonneville Power Administration, and \$379,555 expended by U.S. Forest Service. |
| 37. Includes \$484,753,143 appropriated and expended for original project, \$42,221,634 for additional units, \$16,276,363 for re-regulating dam, and \$475,000 for power planning.   | 41. Includes \$5,735,572 appropriated under Preconstruction Engineering and Design.   |
| 38. Includes funds appropriated for project O&M (\$93,484,278), Maintenance and Operation of Dams and Other Improvements of Navigable Waters (\$774,561), BPA/COE Merged, CAT 390 (\$35,962,264), and BPA-4045 Large Capital Sub agreements, CAT 300 (\$3,273,690). | 42. Includes \$5,733,801 expended under Preconstruction Engineering and Design.   |
| 39. Includes funds expended for project O&M (\$93,154,571), Maintenance and Operation of Dams and Other Improvements of Navigable Waters (\$774,561), BPA/COE Merged, CAT 390 (\$33,981,169), and BPA-4045 Large Capital Sub agreements, CAT 300 (\$2,980,592).     | 43. Includes \$2,010,000 contributed under Preconstruction Engineering and Design.  |
|   | 44. Includes \$1,835,774 expended under Preconstruction Engineering and Design.   |

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 29-B**

**AUTHORIZING LEGISLATION**

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
1		<b>EDIZ HOOK, WA</b>	
	Mar. 7, 1974	Construction of 10,000 linear feet of rock revetment, together with initial beach replenishment and annual nourishment. Emergency interim measures necessary to prevent breaching of Ediz Hook prior to construction of authorized project.	H. Doc. 101, 93d cong., 1st Sess. P.L. 93-251
2		<b>EVERETT HARBOR AND SNOHOMISH RIVER, WA</b>	
	June 25, 1910	Training dike 10,500 feet long extending across bar at outlet of old river channel.	H. Doc. 1108, 60th Cong., 2d Sess.
	July 3, 1930	Raise 6,000 feet of training dike, extend spur dike, widen gap in dike as required, maintain East Waterway and channel to gap.	H. Doc. 377, 71st Cong., 2d Sess.
	June 20, 1938	Abandon project for Snohomish River and re-designate as Everett Harbor and Snohomish River. Provide settling basin near 14th Street.	H. Doc. 546, 75th Cong., 3d Sess.
	Sep. 3, 1954	Construct spur dike at Preston Point, remove training dike north of river outlet, enlarge channel to 14th Street, and deepen settling basin.	H. Doc. 569, 81st Cong., 2d Sess.
	July 14, 1960	Widen channel from settling basin to gap; extend channel to head of Steamboat Slough; and a settling basin within upper channel reach.	H. Doc. 348, 86th Cong., 2d Sess.
3		<b>FRIDAY HARBOR, WA</b>	
	7/14/1960 as amended	Construction of 1,600 feet of concrete floating breakwater.	Sec. 107, P.L. 86-645 Authorized by Chief of Engineers July 9, 1981
4		<b>GRAYS HARBOR AND CHEHALIS RIVER, WA</b>	
	June 3, 1896	South jetty.	Annual Report, 1895, pp. 3517-3533
	Mar. 2, 1907	A north jetty 9,000 feet long.	Rivers and Harbors Committee Doc. 2, 59th Cong., 2d Sess.
	Mar. 2, 1907	The 18-foot channel.	H. Doc. 507, 59th Cong., 1st Sess.
	June 25, 1910	Extend north jetty 7,000 feet; length of south jetty fixed at 13,734 feet	Rivers and Harbors Committee Doc. 29, 61st Cong., 2d Sess.
	June 25, 1910	A 6-foot channel above Cosmopolis.	H. Doc. 1125, 60th Cong., 2d Sess.
	Aug. 8, 1917	Dredging in bar channel.	H. Doc. 1729, 64th Cong., 2d Sess.
	Jan. 21, 1927	Dredging in bar channel.	H. Doc. 582, 69th Cong., 2d Sess.
	Aug. 30, 1935	Reconstruct north and south jetties to an elevation of 16 feet above mean lower low water.	Rivers and Harbors Committee Doc. 2, 74th Cong., 1st Sess.
	Aug. 30, 1935	Maintain 26-foot channel below Aberdeen (as authorized by Public Works Administration Dec. 11, 1933) and combining projects for Grays Harbor and bar entrance and Grays Harbor, inner portion, and Chehalis River under a modified project for Grays Harbor and Chehalis River	H. Doc. 53, 73rd Cong., 1st Sess. Rivers and Harbors Committee Doc. 2, 74th Cong., 1st Sess.
	Dec. 22, 1944 as amended	Construction, operation, and maintenance of recreation facilities.	P.L. 78-534

SEATTLE, WA DISTRICT

TABLE 29-B

AUTHORIZING LEGISLATION

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
	Mar. 2, 1945	Maintain 30-foot depth in channel from deep water in Grays Harbor to Port of Grays Harbor Commission terminal, which was deepened from 26 to 30 feet with Navy funds.	Report in Office, Chief of Engineers
	June 30, 1948	14-foot channel to Bay City; breakwater at Westhaven; and maintenance of Westhaven entrance channel.	H. Doc. 635, 80th Cong., 2d Sess.
	Sep. 3, 1954	Dredging and maintenance of a 30-foot channel and turning basin from Aberdeen to Cosmopolis.	H. Doc. 412, 83d Cong., 2d Sess.
	Sep. 3, 1954	Additional breakwater, 1,400 feet long, at Westhaven Cove.	H.Doc. 30, 84th Cong., 1st Sess.
	July 14, 1960 as amended	Westhaven Cove small boat basin.	Sec. 107, P.L. 86-645. Authorized by Chief of Engineers Feb. 7, 1979
	Nov. 17, 1986	Improve project features with accompanying fish mitigation.	P.L. 99-662
5		LAKE CROCKETT, WA	
	Mar. 2, 1945	Small-boat basin.	H. Doc. 303, 77th Cong., 1st Sess.
	Dec. 22, 1944 as amended	Construction, operation, and maintenance of recreation facilities.	P.L. 78-534
	July 14, 1960 as amended	Change authorized channel depth from -18 mean lower low water to -25 mean lower low water by dredging.	Sec. 197, P.L. 86-645 Authorized by Chief of Engineers Nov. 7, 1988
6		LAKE WASHINGTON SHIP CANAL, WA	
	June 25, 1910 Mar. 4, 1913	Provides for a double lock and fixed dam with gated spillway and necessary accessory works at entrance to Salmon Bay, dredging a channel from locks to deep water in Puget Sound, and excavation by local interests of a channel from locks into Lake Washington.	H. Doc. 953, 60th Cong., 1st Sess.
	Aug. 8, 1917	Dredging below locks and revetting canal banks.	H. Doc. 800, 64th Cong., 1st Sess.
	Sep. 22, 1922	Increased dimensions of channel between Puget Sound and locks and a 600-foot extension of lower guide pier.	H. Doc. 324, 67th Cong., 2d Sess.
	June 26, 1934 1	Operating and care of locks and dam provided for with funds from War Department appropriations for Rivers and Harbors.	
	Aug. 30, 1935 2	Enlarge channel between locks and Lake Washington.	H. Doc. 140, 72d Cong., 1st Sess.
	Dec. 22, 1944 as amended	Construction, operation, and maintenance of recreation facilities.	P.L. 78-534
	July 24, 1956	Government Locks to be known as Hiram M. Chittenden Locks.	P.L. 84-779
7		NEAH BAY, WA	
	June 20, 1938	Rubble stone breakwater.	Rivers and Harbors Committee Doc. 51, 75th Cong., 2d Sess.
	Sep. 3, 1954	Reinforcement of existing revetment.	H. Doc. 404, 83d Cong., 2d Sess.
8		OLYMPIA HARBOR, WA	
	Jan. 21, 1927	Channel 22 feet deep and 150 feet wide	H. Doc 244, 69 <sup>th</sup> Cong. 1 <sup>st</sup> Sess.
	July 3, 1930	Channels of 26-foot depth on east side of harbor.	Rivers and Harbor Committee Doc 5, 71 <sup>st</sup> Cong., 1 <sup>st</sup> Sess.
	Aug. 30, 1935	Elimination from project of 12-foot channel on east and west sides of harbor, and for a channel 30 feet deep and 300 feet wide between Budd Inlet and port terminal, with turning basin of same depth. Widen entrance to turning basin.	Rivers and Harbors Committee Doc. 21, 73 <sup>rd</sup> Cong., 2 <sup>nd</sup> Sess. Doc 75, 74th Cong., 2d Sess.

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

TABLE 29-B

AUTHORIZING LEGISLATION

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
	Mar. 2, 1945	Entrance channel 500 feet wide to and including a turning basin 3,350 feet long and generally 960 feet wide, all at a depth of 30 feet at mean lower water	H.Doc 699, 76 <sup>th</sup> Con., 3d Sess
10		PUGET SOUND AND ITS TRIBUTARY WATERS, WA	
	July 13, 1892	Maintenance of the rivers tributary to Puget Sound by snagging and dredging, and removal of floating debris from Seattle Harbor.	Annual Report for 1893, page 3425
11		QUILLAYUTE RIVER, WA	
	July 3, 1930	Jetty (5 feet high) on easterly side of mouth, and a dike on westerly side, to stabilize entrance.	H. Doc. 125, 71st Cong., 1st Sess.
	Mar. 2, 1945	Maintenance dredging to provide a channel 6 feet deep and of suitable width from ocean to within river mouth.	H. Doc. 218, 78th Cong., 1st Sess.
	Sep. 3, 1954	3 Raising jetty to 15 feet; channel 10 by 100 feet, 2,000 feet long; moorage basin.	H. Doc. 579, 81st Cong., 2d Sess.
12		SEATTLE HARBOR, WA	
	Mar. 2, 1919	Maintenance of East and West Waterways 750 feet wide and 34 feet deep, and of Duwamish Waterway 20 feet deep and 150 feet wide as far south as Eighth Avenue South Bridge.	S. Doc. 313, 65th Cong., 3d Sess.
	Mar. 3, 1925 July 3, 1930	Enlargement of Duwamish Waterway.	H. Doc. 108, 68th Cong., 1st Sess. H. Doc. 126, 71st Cong., 2d Sess.
	Aug. 30, 1935	Maintenance of East Waterway between 750-foot section and Spokane Street, and turning basin at junction of East and Duwamish Waterways.	H. Doc. 211, 72d Cong., 1st Sess.
	Oct. 12, 1996	East Waterway channel deepening.	P.L. 104-303
13		SWINOMISH CHANNEL, WA	
	July 13, 1892	Channel 4 feet deep and 100 feet wide, and dike construction.	H. Doc. 31, 52d Cong., 1st Sess., and Annual Report for 1892, p. 2752
	Aug. 30, 1935	Enlargement of channel to present project dimensions.	S. Committee Print, 73d Cong., 1st Sess.
	Oct. 23, 1962	Removal of navigation hazards at "Hole-in-the-Wall".	H. Doc. 499, 87th Cong., 2d Sess.
14		WILLAPA RIVER AND HARBOR AND NASELLE RIVER, WA	
	27-Jul-16	Channel 24 feet deep, 200 feet wide in Willapa River, and 150 feet wide in the forks.	H. Doc. 706, 63d Cong., 2d Sess.
	Aug. 30, 1935	Maintenance of channel over bar to a depth of 26 feet and minimum width of 500 feet.	Rivers and Harbors Committee Doc. 41, 72d Cong., 1st Sess.
	Aug. 30, 1935	For cutoff channel at Narrows.	Rivers and Harbors Committee Doc. 37, 73d Cong., 2d Sess.
	Mar. 2, 1945	Channel from deep water in Palix River to Bay Center dock.	H. Doc. 481, 76th Cong., 2d Sess.
	Sep. 3, 1954	Widen Willapa River channel to 360 and 250 feet between South Bend and the forks; Tokeland and Nahcotta basins; and Naselle River clearance. Willapa River and Harbor re-designated as Willapa River and Harbor and Naselle River.	H. Doc. 425, 83d Cong., 2d Sess.

SEATTLE, WA DISTRICT

TABLE 29-B

AUTHORIZING LEGISLATION

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
15		PORT TOWNSEND, WA	
16		SHOALWATER BAY, TOKELAND, WA	
	Dec. 11, 2000	Flood and coastal storm damage reduction.	Sec. 545, WRDA 2000, P.L. 106-541, as amended by Sec. 5133, WRDA 2007, P.L. 110-114.
17		COEUR D'ALENE RIVER (SOUTH FORK), WALLACE, ID	
	Jul. 24, 1946	Replace approximately 700 feet of retaining wall.	Sec. 14, P.L. 79-526 Authorized by Chief of Engineers 5/8/2003
18		HOWARD A. HANSON DAM, WA	
	17-May-50	Eagle Gorge flood control dam on Green River.	H. Doc. 271, 81st Cong., 1st Sess.
	Aug. 6, 1958	Re-designation of project as Howard A. Hanson Dam.	P.L. 85-592
20		MUD MOUNTAIN DAM, WA	
	22-Jun-36	Flood control dam on White River.	S. Committee Print, Puyallup River, WA, 74th Cong., 2d Sess.
	Dec. 22, 1944 as amended	Construction, operation, and maintenance of recreation facilities.	P.L. 78-534
22		STILLAGUAMISH RIVER, WA	
	22-Jun-36	Improvement of flood channel by clearing and bank revetment at 26 sites; concrete weir at head of Cook Slough; and 2 cutoff channels in Cook Slough.	H. Doc. 657, 71st Cong., 3d Sess.
	28-Jun-38	Maintenance of improvements.	P.L. 75-761
23		TACOMA, PUYALLUP RIVER, WA	
	22-Jun-36	Channel improvement to protect people and industrial section of city of Tacoma.	S. Committee Print, Puyallup River, WA, 74th Cong., 2d Sess.
24		ALBENI FALLS DAM, ID	
	17-May-50	Multi-purpose dam with powerhouse.	S. Doc. 9, 81st Cong., 1st Sess.
	Dec. 22, 1944 as amended	Construction, operation, and maintenance of recreation facilities.	P.L. 78-534
	Dec. 22, 1944 as amended	Modernize recreation area at Riley Creek.	P.L. 78-534
25		CHIEF JOSEPH DAM - RUFUS WOODS LAKE, WA	
	24-Jul-46	Multi-purpose dam and powerhouse on Columbia River at Foster Creek.	H. Doc. 693, 79th Cong., 2d Sess.
	30-Jun-48	Re-designation of the project as Chief Joseph Dam.	P.L. 858, 80th Cong., 2d Sess.
	9-Jul-52	Designation of reservoir as Rufus Woods Lake.	P.L. 469, 82d Cong., 2d Sess.

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

TABLE 29-B

AUTHORIZING LEGISLATION

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
	Dec. 22, 1944 as amended	Construction, operation, and maintenance of recreation facilities.	P.L. 78-534
	Oct. 22, 1976 as amended	School facilities for education of dependents of construction personnel.	P.L. 94-587
	4-May-77		P.L. 95-26
26		LIBBY DAM - LAKE KOOCANUSA, MT	
	17-May-50	Multi-purpose dam and powerhouse, and re-regulating facilities.	H. Doc. 531, 81st Cong., 2d Sess.
	Nov. 7, 1966	School facilities for education of dependents of construction personnel, Libby projects.	P.L. 89-789
	Jan. 2, 1968	Airport facility at Kelley Flats, MT.	P.L. 90-239 5
	Aug. 13, 1968	Design standards for relocation of Montana State Highway 37 to be those adopted by State of Montana pursuant to provisions of Highway Safety Act of 1966	P.L. 90-483 6
	19-Jun-70	Participation with State of Montana in construction, operation and maintenance of fish hatchery facilities.	P.L. 91-282 7
	Dec. 31, 1970	Designation of lake formed by the waters impounded by Libby Dam as Lake Koocanusa.	P.L. 91-625
	Dec. 31, 1970	Design and construction of sewage collection and sewage treatment facility as part of relocation of municipal facilities of Rexford, MT; and compensation for railroad employees suffering long-term economic injury through reduction of income as result of the relocation of rail transportation facilities due to the construction of Libby Dam	P.L. 91-611
	Mar. 7, 1974	Phase I design memorandum stage for installation of power generating facilities at Libby Re-regulating Dam.	S.Doc. 29, 93d Cong., 1st Sess. P.L. 93-251
	Mar. 7, 1974	Construction of fish production measures to compensate for fish losses attributed to the project, and for acquisition of necessary real estate, construction of access roads and utilities (amends P.L. 91-282 by increasing limitation from \$750,000 to \$4,000,000).	P.L. 93-251
	Mar. 7, 1974	Acquisition of land (not to exceed \$2,000,000) for prevention of wildlife grazing losses caused by the project.	P.L. 93-251
	Mar. 7, 1974	Reimbursement (not to exceed \$350,000) to Boundary County, ID, for reconstruction of Deep Creek Bridge made necessary by duration of high flows during drawdown operations at Libby Dam.	P.L. 93-251
	Mar. 7, 1974	Compensation (not to exceed \$1,500,000) to Drainage Districts and owners of levied and unlevied lands in Kootenai Flats, Boundary County, ID, for damages caused by duration of higher flows during drawdown operations at Libby Dam.	P.L. 93-251
	Oct. 22, 1976	Amends P.L. 93-251 by increasing limitation from \$350,000 to \$380,000 for reimbursement to Boundary County, ID, for reconstruction of Deep Creek Bridge.	P.L. 94-587
	Nov. 17, 1988	Alleviate low water impact on existing facilities and protect Indian archeological sites exposed during course of operations, at an estimated cost of \$750,000.	H. Doc. 1098, 100th Cong., 2d Sess. P.L. 100-676

SEATTLE, WA DISTRICT

TABLE 29-B

AUTHORIZING LEGISLATION

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
27		CHIEF JOSEPH DAM DISSOLVED GAS ABATEMENT, WA	
	Jul 24, 1946	In conjunction with Fish and Wildlife Services, investigate operational and structural gas abatement measures.	H. Doc. 693, 79th Cong., 2d Sess.
28		CODIGA FARMS, WA	
	Nov. 17, 1986 as amended	Environmental restoration.	Sec. 1135, P.L. 99-662 Authorized by Chief of Engineers June 23, 2003
29		DUWAMISH and GREEN RIVER BASIN, WA	
	Dec. 11, 2000	45 Habitat restoration projects throughout the Duwamish Green River Basin. The mouth of the river empties into Elliot Bay in Seattle.	Section 101(b) WRDA 2000 PL 106-541. Chief of Engineers Report dated 29 December 2000.
30		HOWARD A. HANSON DAM, WA	
	Aug. 17, 1999	Environmental mitigation, restoration, and protection.	Sec. 101(b) (15) WRDA 1999 P.L. 106-53
31		PUGET SOUND AND ADJACENT WATERS RESTORATION, WA	
	Dec. 11, 2000	Environmental mitigation, restoration, and protection.	Sec. 544 WRDA 2000 P.L. 106-541
32		RURAL IDAHO, ID	
	Aug. 17, 1999	Environmental infrastructure.	Sec. 595 WRDA 1999 P.L. 106-53
33		RURAL MONTANA, MT	
	Aug. 17, 1999	Environmental infrastructure.	Sec. 595 WRDA 1999 P.L. 106-53
34		UNION SLOUGH, WA	
	Nov. 17, 1986 as amended	Environmental restoration.	Sec. 1135, P.L. 99-662 Authorized by Chief of Engineers 7/30/2003
35		PORT OF SUNNYSIDE, WA	
			Section 206 of WRDA 1996, as amended
36		WHITCOMB FLATS, WA	
	1968	Shore Damage Prevention or Mitigation Caused by Federal Navigation Projects	Section 111, River and Harbor Act of 1968, as amended
37		AQUATIC PLANT CONTROL	
	Aug. 17, 1999		Aquatic Plant Control Research and Development program. The Authority for this program is section 104 of the Rivers and Harbors Act of 1958, (P.L. 85-500), as amended, ( 33 U.S.C. § 610); sections 103, 105, and 712 of

**TABLE 29-B**

**AUTHORIZING LEGISLATION**

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
			Water Resource Development Act of 1986, (P.L. 99-662, 33 U.S.C. §§ 2213, 2215, 2289); sections 225 and 540 of the Water Resource Development Act of 1996, (P.L. 104-303, (33 U.S.C. § 610); and section 205 of the Water Resource Development Act of 1999, (P.L. 106-53, 33 U.S.C. § 610).
1.	Permanent Appropriations Repeal Act.		
2.	Included in Public Works Administration program.		
3.	Maintenance of these items, as well as sand spit north of James Island, is included in this modification.		
4.	Included in Emergency Relief program, May 28, 1935.		

SEATTLE, WA DISTRICT

**TABLE 29-C OTHER AUTHORIZED NAVIGATION PROJECTS**

		Cost to Sep. 30, 2008						
Projects	Project	Status	For Last Full Report See Annual Report For	Construction		Operation And Maintenance		
	Anacortes Navigation Channel, WA	1	Completed	1977	825,263	7	\$1,279,687	
	Bellingham Harbor, WA (I&J Street Waterway)	1	Completed	1966	125,634	8	6,264,435	
	Blaine Harbor, WA		Completed	1958	346,650		0	
	Blair Waterway, Tacoma, WA	1	Completed	2002	1,942,054	9	0	
	Columbia River, Wenatchee to Kettle Falls, WA		Completed	1923	274,391	10	7,693	
	East Bay Small Boat Basin, Olympia, WA	1	Completed	1985	1,619,956	11	0	
	Edmonds Harbor, WA	2	Completed	1987	0		224,756	
	Flathead River, MT		Completed	1901	9,811		0	
	Grays Harbor, Point Chehalis, WA	3	Completed	1998	1,421,000		0	
	Hammersley Inlet, WA		Completed	1950	9,000		10,683	
	Hoquiam River, WA		Completed	1950	18,921	12	5,316	
	Kenmore Navigation Channel, WA	1	Completed	2002	946,000		925,996	
	Kingston Harbor, WA		Completed	1967	262,570	13	5,000	14
	Kootenai River, ID and MT		Completed	1933	9,255		5,643	
	Mats Mats Bay, WA	1	Completed	1970	137,679	15	0	
	Olympia Harbor, WA		Completed	2000	337,709	16	1,269,297	17
	Okanogan and Pend Oreille Rivers, WA		Abandoned	1913	63,879		7,634	
	Polson Bay, Flathead Lake, MT		Completed	1918	4,491		259	
	Port Angeles Harbor, WA	4	Completed	1960	470,873		0	
	Port Gamble Harbor, WA		Completed	1953	11,911	20	13,337	
	Port Orchard Bay, WA	5	Completed	1928	42,804		0	
	Port Townsend, WA		Completed	1999	480,899	21	118,656	
	Prototype Breakwater Test Program, WA	1	Completed	1985	1,461,590		0	
	Shilshole Bay, Seattle, WA	6	Completed	1962	2,575,091	22	0	
	Skagit River, WA		Completed	1950	102,330	23	36,258	
	Squalicum Small Boat Harbor, Bellingham, WA	1	Completed	1981	1,744,025	24	0	
	Tacoma Harbor, WA		Completed	2001	2,383,891	25	1,557,020	26
	Waterway Connecting Port Townsend and Oak Bay, WA		Completed	1987	73,322		378,753	
	Westhaven Cove Small Boat Basin, WA	1	Completed	1981	2,000,000	27	0	

1. Authorized by Chief of Engineers under authority of Section 107, Public Law 86-645
2. Constructed by local interests at a cost of \$415,000. Excludes \$1,000 Coast Guard funds expended for new work. Corps of Engineers is responsible for maintenance.
3. Authorized by Chief of Engineers under authority of Section 111, Public Law 90-483.
4. Maintenance by Port of Port Angeles.
5. No maintenance required.
6. Maintenance by Port of Seattle.
7. Excludes \$457,200 contributed funds expended.
8. Excludes \$2,500 Coast Guard funds expended.
9. Excludes \$1,883,278 contributed funds expended. Includes \$8,005 appropriated and expended for previous project.
10. Excludes \$2,184,766 contributed funds expended.
11. Excludes \$32,373 Emergency Relief funds expended.
12. Excludes \$390,753 contributed funds and \$3,000 Coast Guard funds expended.
13. Mitigation of shore damages study.
14. Excludes \$28,288 contributed funds and \$9,000 Coast Guard funds expended.
15. Excludes \$528,188 contributed funds expended.
16. Includes \$14,418 appropriated and expended for previous project.
17. Excludes \$21,260 contributed funds expended.
18. Excludes \$92,423 contributed funds expended.
19. Excludes \$15,000 Coast Guard funds expended.
20. Includes \$2,500 appropriated and expended for previous project.
21. Excludes \$1,570,886 contributed funds expended.
22. Includes \$159,585 appropriated and expended for previous project. Excludes \$51,609 Public Works Administration funds and \$1,147,208 contributed funds expended.
23. Includes \$5,347 appropriated and expended for previous projects. Excludes \$222,500 contributed funds expended.
24. Excludes \$1,230,035 contributed funds expended.

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 29-D OTHER AUTHORIZED SHORE PROTECTION PROJECTS**

Projects Project		For Last Full Report See Annual Report For		Cost to Sep. 30, 2008 Contributed Funds
Lincoln Park Beach, Seattle, WA	Completed	2002	1,039,500	446,345
Lummi Shore Road, WA	Completed	1999	1,980,391	924,195

**TABLE 29-E OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Projects Project	Status	For Last Full Report See Annual Report For	Construction	Cost to Sep. 30, 2008 Contributed Funds
American Lake, Vicinity of Fort Lewis, WA	1 Completed	1957	59,582	10,000
Bear Creek, Flathead County Bridge, near Essex, MT	2 Completed	1971	1,424	7,000
Bitterroot River, Florence, MT	2 Completed	1990	180,950	49,759
Blackfoot River, Matt Little Road, MT	2 Completed	1964	17,836	0
Bogachiel River, Highway 101, near Forks, WA	2 Completed	1981	156,000	0
Bogachiel River, Undie Road, Forks, WA	2 Completed	1981	57,000	0
Cedar River, King County, WA	3 Completed	1953	3,229	0
Cedar River, Renton, WA	1 Completed	2001	5,292,186	3,198,738
Cedar River, Renton, WA	2 Completed	1949	32,264	0
Chehalis River, City of Chehalis Raw Water Pumphouse, WA	2 Completed	1966	35,454	0
Chehalis River, Independence Road, Thurston County, WA	2 Completed	1965	47,916	0
Chehalis River, Montesano, WA	2 Completed	1977	140,080	0
Chehalis River at South Aberdeen and Cosmopolis, WA	Completed	1998	8,301,833	5 1,538,784
Clallam Bay, Sekiu, WA	2 Completed	1977	48,698	0
Clallam Bay at Sekiu, Clallam County, WA	2 Completed	1994	178,800	39,818
Clallam River, Highway 112, WA	2 Completed	1981	43,500	0
Clark Fork River, near Garrison, MT	2 Completed	1993	80,611	16,973
Clark Fork River, Drummond, MT	2 Completed	1978	18,660	0
Clark Fork River, Missoula, MT	2 Completed	1978	31,548	0
Clark Fork River, Superior, MT	2 Completed	1971	28,357	0
Clark Fork River, Vicinity of Plains, MT	2 Completed	1950	27,947	0
Clearwater River, Jefferson County Road, WA	2 Completed	1968	50,000	24,728
Clearwater River, Queets River Bridge, WA	2 Completed	1950	49,165	0
Coeur d'Alene, Spokane River, ID	Completed	1941	152,872	0
Coeur d'Alene River, Springston, ID 2	2 Completed	1950	25,452	0
Coffee Creek, WA	3 Completed	1966	15,000	0
Columbia River Basin, Local Protection Projects, ID, MT, and WA				
Clark Fork River, Missoula, MT	Completed	1983	384,862	6 13,500
Lightning Creek, Clark Fork, ID	Completed	1959	42,726	0
Deschutes River, Gleason Road Bridge near Tumwater, WA	2 Completed	1965	26,292	0

SEATTLE, WA DISTRICT

**TABLE 29-E OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Projects Project	Status	For Last Full Report See Annual Report For	Construction	Cost to Sep. 30, 2008 Contributed Funds
Deschutes River, Rich Road Bridge, near East Olympia, WA	2 Completed	1967	22,956	0
Dungeness River, Area 5, WA	2 Completed	1950	2,155	2,155
Dungeness River, Area 8, WA	2 Completed	1950	2,895	2,895
Dungeness River, Clallam County, WA	1 Completed	1964	52,040	7 0
Dungeness River, Sequim, WA	2 Completed	1981	99,000	0
Dungeness River, Clallam County, WA	2 Completed	1986	47,500	0
Dungeness River, Taylor Cut-off Road, WA	2 Completed	1961	14,093	3,314
Elwha Klallam Reservation, Elwha River, WA	1 Completed	1991	1,455,023	119,449
Elwha River, Clallam County, WA	2 Completed	1951	17,303	0
Entiat River, WA	3 Completed	1971	49,300	0
Entiat River, Chelan County, WA	2 Completed	1978	38,000	0
Flathead River, MT	2 Completed	1972	20,940	0
Flathead River, Bradley Channel Area, MT	2 Completed	1955	26,265	0
Flathead River, near Kalispell, MT	1 Completed	1995	81,500	13,467
Flathead River, near Kalispell, MT	2 Completed	1948	33,347	0
Flathead River, Old Steel Bridge, near Kalispell, MT	2 Completed	1964	13,438	0
Flathead River (North Fork), MT	Completed	1999	79,105	0
Flower and Parmenter Creeks, MT	3 Completed	1950	2,320	0
Foster Creek (West Fork), WA	2 Completed	1958	19,513	0
Foster Creek Road, Douglas County, WA	2 Completed	1962	50,000	0
Green River between Kent and Auburn, WA and Allentown, WA	2 Completed	1972	24,605	0
Green River, State Highway 181, WA	2 Completed	1976	27,001	0
Henderson Bay, Purdy, WA	2 Completed	1977	37,359	0
Hoh River, County Road 216, WA	2 Completed	1980	143,000	0
Hoh River, U.S. Highway 101, WA	2 Completed	1980	194,000	0
Hoh River Road, Jefferson County, WA (HO 1360)	2 Completed	1956	22,082	21,807
Hoh River Road, Jefferson County, WA (HO 1361)	2 Completed	1961	11,916	0
Hoh River Road, Jefferson County, WA (HO 1362)	2 Completed	1964	41,622	0
Hoh River, near Forks, WA	2 Completed	1983	173,000	8 0
Hoko River, Sekiu, WA	2 Completed	1977	21,083	0
Hood Canal, Hoodspport, WA	2 Completed	1977	59,812	0
Hoquiam River, WA	2 Completed	1977	52,600	0
Horseshoe Bend, WA	1 Completed	1997	204,989	9,146
Jackman Creek, Skagit River, WA	3 Completed	1962	24,000	0
Kootenai River, Bonners Ferry, ID	2 Completed	1950	42,325	0
Kootenai River, Kootenai Flats Area, District #1, ID	2 Completed	1965	14,885	0
La Conner, WA	Completed	1996	955,000	9 246,889
La Conner, Swinomish Channel, WA	2 Completed	1979	40,525	0
Long Road, Chehalis River, WA	1 Completed	2001	413,817	140,015
Lower Green River, King County, WA	1 Completed	1993	912,000	120,518
Lummi Shore Road, Whatcom County, WA	2 Completed	1995	482,000	134,772
Methow River, WA (MET 1-74)	2 Completed	1974	15,700	0
Methow River, WA (MET 2-74 )	2 Completed	1974	11,200	0
Methow River, WA (MET 3-74)	2 Completed	1974	13,450	0

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 29-E OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Projects Project	Status	For Last Full Report See Annual Report For	Construction	Cost to Sep. 30, 2008 Contributed Funds
Methow River, Barclay Canal, WA	2 Completed	1976	19,810	0
Methow River, State Highway No. 16 Bridge, Twisp, WA	2 Completed	1949	31,783	0
Methow River, Twisp-Carlton Highway, Vicinity of Twisp, WA	2 Completed	1951	33,300	6,786
Methow River, Vicinity of Pateros, WA	2 Completed	1951	11,726	11,726
Milo Creek, Kellogg, ID	Completed	2001	1,000,000	0
Mineral Creek, Lewis County, WA	2 Completed	1972	11,836	0
Missoula, MT (Sewage Treatment Plant)	2 Completed	1965	50,000	0
Moclips River, Moclips, WA	2 Completed	1977	17,608	0
Naches River, Naches, WA	2 Completed	1982	59,000	0
Neah Bay, Clallam County, WA	2 Completed	1991	253,995	78,433
Newaukum River, Lewis County, Hamilton, WA	2 Completed	1972	24,792	0
Nisqually River, near Elbe, WA	2 Completed	1948	37,636	0
Nisqually River, Thurston County, WA	2 Completed	1960	26,790	0
Nisqually River, Vicinity of Elbe, WA	2 Completed	1952	19,345	0
Nooksack River, WA	3 Completed	1948	24,006	0
Nooksack River, Acme, WA	2 Completed	1985	77,300	0
Nooksack River, Guide Bridge Location, WA	2 Completed	1950	6,075	6,075
Nooksack River, Middle Fork, Deming, WA	2 Completed	1986	79,000	0
Nooksack River, above Highway 12 Bridge, WA	2 Completed	1960	10,807	0
Okanogan River, WA	2 Completed	1974	10,100	0
Okanogan River at Outlet of Osoyoos Lake, WA	3 Completed	1949	52,100	0
Okanogan River, Tonasket Creek and Osoyoos Lake, WA	3 Completed	1953	7,987	0
Okanogan River, Omak, WA	1 Completed	1981	2,231,030	0
Okanogan River, Oroville, WA	1 Completed	1982	1,787,630	0
Pilchuck River, WA	3 Completed	1948	25,401	0
Pilchuck River, WA	2 Completed	1985	81,000	0
Pilchuck River, WA	2 Completed	1971	10,713	0
Pilchuck River, Everett, WA	2 Completed	1980	54,000	0
Pilchuck River, State Highway 92, Granite Falls, WA	2 Completed	1971	30,973	0
Placer Creek, ID	Completed	1986	5,865,000	0
Powell County High School, Deer Lodge, MT 2	2 Completed	1964	11,291	0
Puyallup River, WA	Completed	1937	50,000	10 0
Pysht River, Sekiu, WA	2 Completed	1977	86,160	0
Queets River, Jefferson County Sewage Lagoon, WA	2 Completed	1981	125,000	0
Quillayute River, Quileute Tribal Float and Bridge, WA	2 Completed	1972	39,300	0
Quinalt River, Grays Harbor, WA	2 Completed	1981	208,000	0
Quinalt River Road, Jefferson County, WA	2 Completed	1961	15,928	4,943
Rock Creek, Granite County, MT	2 Completed	1974	49,657	0
Rock Creek, Missoula County, MT	2 Completed	1973	31,565	0
Rock Creek Road, MT	2 Completed	1980	50,000	0
Rye Creek, MT	2 Completed	1973	22,819	0
St. Maries, St. Joe River, ID	2 Completed	1942	357,698	0

SEATTLE, WA DISTRICT

**TABLE 29-E OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Projects Project	Status	For Last Full Report See Annual Report For	Construction	Cost to Sep. 30, 2008 Contributed Funds
St. Maries, ID	1 Completed	2006	938,005	0
St. Regis River, MT	3 Completed	1942	7,234	11 0
St. Regis River at St. Regis, MT	3 Completed	1951	2,983	0
Sammamish River, WA	Completed	1967	2,582,536	12 696,959
Sauk River, WA	2 Completed	1974	20,860	0
Sauk River, Skagit County, WA	2 Completed	1989	119,600	32,778
Shelton Creek, WA	1 Completed	1979	872,021	0
Skagit River at Burlington Bend, WA	2 Completed	1949	50,000	0
Skagit River, Cape Horn Road, WA	2 Completed	1966	46,489	0
Skagit River, Deadman's Slough, WA	2 Completed	1980	93,000	0
Skagit River, Pressentin Creek, WA	2 Completed	1980	137,000	0
Skagit River, South Skagit Highway, WA	2 Completed	1963	40,753	0
Skagit River, South Skagit Highway, WA (Job 66-1)	2 Completed	1966	17,719	0
Skagit River, South Skagit Highway, WA (Job 67-1)	2 Completed	1967	50,000	24,488
Skykomish River, North Fork, Index, WA	2 Completed	1981	222,500	0
Snohomish River, Lowell-Snohomish River Road, WA	2 Completed	1969	44,227	0
Snohomish River, Snohomish, WA	2 Completed	1970	60,900	14,307
Snoqualmie River, West Snoqualmie, WA	2 Completed	1977	15,565	0
Soleduck River Bridge, WA	2 Completed	1961	16,437	1,960
Soleduck River, near Mora Road Bridge, WA	2 Completed	1963	11,433	0
Spokane River, Spokane, WA	2 Completed	1989	122,138	79,311
Startup, Skykomish and Wallace Rivers, WA	1 Completed	1970	271,713	0
Stillaguamish River, South Fork, Mountain Loop Highway near Robe, WA	2 Completed	1964	50,000	46,182
Stillwater River, MT	2 Completed	1973	17,457	0
Stillwater and Whitefish Rivers, MT	2 Completed	1977	34,513	0
Strong Creek, Hope, ID	2 Completed	1970	8,442	0
Tahola, WA	2 Completed	1979	223,893	0
Upper Puyallup River, WA	4 Completed	1938	71,495	13 13,704
Willapa River, Raymond, WA	2 Completed	2000	88,504	32,101
Wynoochee Lake, WA	Completed	1994	23,494,445	14 0
Wynoochee River, County Road 141, WA	2 Completed	1976	111,072	0
Wynoochee River, near Montesano, WA	2 Completed	1969	50,000	21,311
Wynoochee River, near Montesano, WA (WR-1-72)	2 Completed	1972	50,000	15 0
Yakima, Yakima River, WA	Completed	1948	381,961	0
Yakima River, Cle Elum, WA	2 Completed	1949	8,047	0
Yakima River, below mouth of Teanaway River near Cle Elum, WA	2 Completed	1947	48,272	0
Yakima River, West Richland, WA	2 Completed	1977	36,768	0
Yakima River, Yakima WA	2 Completed	1983	125,500	16 0

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

1. Authorized by Chief of Engineers under authority of Section 205, Public Law 858, 80th Congress, as amended.
2. Authorized by Chief of Engineers under authority of Section 14, Public Law 526, 79th Congress, as amended.
3. Authorized by Chief of Engineers under authority of Section 2, Public Law 406, 75th Congress, as amended.
4. Authorized by Works Progress Administration Project No. OP 65-93-917.
5. Includes \$2,212,000 for Preconstruction Engineering and Design, appropriated and expended.
6. Includes \$7,850 appropriated and expended for recreation facilities at completed project (Code 710).
7. Excludes \$340,066 Public Works Acceleration Act funds expended.
8. Productive Employment Appropriation Act of 1983 (P.L. 98-8). Excludes \$189,000 Federal Highway Administration funds expended.
9. Includes \$183,000 for Preconstruction Engineering and Design, appropriated and expended.
10. Emergency Relief funds, Works Progress Administration.
11. Excludes amount expended by Works Progress Administration, which is not available.
12. Excludes \$1,000 Coast Guard funds expended.
13. Emergency Relief funds, Works Progress Administration.
14. Includes \$102,200 appropriated and expended for recreation facilities at completed project (Code 710). Excludes \$17,070,670 for project maintenance and \$66,678 for Maintenance and Operation of Dams and Other Improvements of Navigable Waters, appropriated and expended.
15. Excludes \$17,988 Office of Emergency Planning funds expended.
16. Includes \$118,000 expended under Productive Employment Appropriation Act of 1983 (P.L. 98-8).

**TABLE 29-F OTHER AUTHORIZED MULTIPLE-PURPOSE POWER PROJECTS**

Project	For Last Full Report See Annual Report For		Cost Sep 30, 2008	
	Construction	Operation and Maintenance		
Priest Rapids Dam, Columbia River, WA	1954	\$350,000	1	-

1. For partnership planning. Excludes funds expended for acquisition of lands under partnership arrangement for Priest Rapids and Wapnum Dams, in accordance with Public Law 544, 83d Congress. Project constructed by Grant County Public Utility District.

**TABLE 29-G OTHER AUTHORIZED ENVIRONMENTAL PROJECTS**

Projects Project	Status	For Last Full Report See Annual Report For		Cost to Sep. 30, 2008	
		Report For	Construction	Contributed Funds	
Cherry Creek, ID	2 Completed	2006	125,644		5,735
Deepwater Slough, WA	1 Completed	2001	1,999,006		254,583
Goldsborough Creek, WA	2 Completed	2002	3,405,965		3,443,337
Howard A. Hanson Dam, WA	1 Completed	2002	355,900		354,605
Lake Washington Ship Canal, WA	1 Completed	2001	1,715,186		584,162
Loomis Lake, WA	2 Completed	2002	62,453		0
Porter Levee, WA	1 Completed	2000	158,471		23,901
Puget Creek, WA	1 Completed	2000	111,894		0
Sammamish River Restoration, WA	1 Completed	1995	326,900		64,333
Sammamish River Weir Restoration, WA	1 Completed	2000	185,246		38,244
Sweeney Creek	2 Completed	1006	323,000		0
Thornton Creek, WA	1 Completed	2000	286,364		28,500
Turning Basin #3, Seattle, WA	1 Completed	2001	1,907,458		0

1. Section 1135, Public Law 99-662, as amended
2. Section 206, Public Law 104-302.

SEATTLE, WA DISTRICT

**TABLE 29-I OTHER AUTHORIZED PROJECTS**

Projects	Status	For Last Full Report See Annual Report For	Construction	Cost to Sep. 30, 2008 Contributed Funds
Aquatic Plant Control	Completed	1997	6,023,906	
Green River, King County, WA	Completed	1985	498,320	
Oak Harbor, WA	Completed	1983	519,000	

**TABLE 29-J DEAUTHORIZED PROJECTS**

Project		For Last Full Report See Annual Report For	Date Deauthorized	Federal Funds Expended	Contributed Funds Expended	
Blair and Sitcum Waterways, Tacoma Harbor, WA	6		2002	1,310,000	14,19	0
Calispell Creek, WA	1	1968	1968	25,000	14	0
Columbia River Basin, Local Protection Projects, ID, MT, and WA						0
Crab and Wilson Creeks, WA	2	1958	1964	9,000	14	0
Entiat River, WA	3	1958	1986	0		0
Methow River, WA	3	1958	1986	0		0
Okanogan River, WA	3	1958	1986	1,100	14	0
St. Regis River, MT	4	1958	1978	1,400	14	0
Wenatchee River, WA	4	1958	1978	0		0
Yakima River at Ellensburg, WA	3	1980	1986	44,300	14, 15	0
East, West and Duwamish Waterways, Seattle Harbor, WA	6		2002	663,000	14	0
Everett Harbor and Snohomish River, WA (RH 68)	7	1973	1990	52,000	14	0
Flathead River at Kalispell, MT	7	1981	1995	300,000	14	0
Grays Harbor and Chehalis River, WA(RH 48) (Un-constructed Portion)	7, 8	1962	1990	0		0
Grays Harbor and Chehalis River, WA (RH 30)	7, 9	1933	1990	35,834		35,834
Hammersley Inlet, WA (RH 30) (Un-constructed Portion)	4, 10	1950	1978	0		0
Hoquiam, Aberdeen, and Cosmopolis, Chehalis River, WA	5	1948	1952	83,631	14	0
Olympia Harbor, WA (RH 45)	7	1973	1990	21,606	14,16	0
Port Angeles Harbor, WA (RH 35)	4	1960	1977	0		0
Port Gamble Harbor, WA) (RH 35)	4	1953	1977	0		0
Quillayute River, WA(RH 30) (Un-constructed Portion)	3, 11	1986	1986	0		0
Seattle Harbor, WA (RH 30) (Un-constructed Portion)	3, 12	1986	1986	0		0
Skagit River, WA (RH 10) (Un-constructed Portion)	4, 13	1950	1978	0		0
Skagit River, WA (RH19)	4	1950	1978	0		0
Skagit River, WA (Avon Pass)	7	1968	1990	54,468	14	0
Skagit River, WA (Levee and Channel Improvements)	7	1982	1995	1,934,792		0
Spokane River, Spokane, WA	3	1939	1986	2,944	14	0
Stillaguamish River, WA (RH 45)	3	1946	1986	4,234	17	0
Wenatchee, Canyons 1 and 2, WA	7	1978	1990	544,331	14	0
Willapa River at Raymond, WA	7	1982	1995	508,130	14, 18	0
Yakima River at Union Gap, WA	6		2002	502,000	14	0

- |  |  |
|--|--|
| 1. Authority for project expired October 27, 1968.   | 8. 2200 linear feet of revetment at Point Chehalis.  |
| 2. Authority for project expired July 1964.  | 9. 16-foot channel from Cosmopolis to Montesano.   |
| 3. De-authorized under authority of Section 1002, P.L. 99-662 dated November 17, 1986.                     | 10. Deepening shoal area near Cannery Point from 10 to 13 feet.  |
| 4. De-authorized under authority of Section 12, P.L. 93-251 dated March 7, 1974.                           | 11. Groin feature of the project.  |
| 5. Authority for project expired in October 1952.  | 12. Settling basin at upper end of existing Duwamish Waterway, about 1.4 miles above 14th Avenue South Bridge. |
| 6. De-authorized under authority of Section 1001 (b) (2), P.L. 99-662 dated November 17, 1986, as amended. | 13. 5500-foot extension of training dike.  |
| 7. De-authorized under authority of Section 1001 (b) (1), P.L. 99-662 dated November 17, 1986.             | 14. Preconstruction planning only.   |
|  | 15. Includes \$14,300 expended for restudy, FY 1970.   |
|  | 16. Includes \$18,700 expended for restudy, FY 1968-1973   |

**TABLE 29-K LAKE WASHINGTON SHIP CANAL, WA, PRINCIPAL FEATURES OF DOUBLE LOCK AND DAM (SEE SECTION 8)**

Section		Large Lock	Small Lock
Miles above mouth		1 ¼	1 ¼
Clear width of chamber	Feet	80	28
Maximum available length	Feet	760	123
Lift	Feet	26	26
Depth on upper miter sill	1	33 ½	16
Depth on intermediate miter sill	2	29	—
Depth on lower miter sill	2	29	16
Character of foundation		Clay	Clay
Kind of dam		Fixed dam with gated spillway	Fixed dam with gated spillway
Type of construction		Concrete	Concrete
Year completed		1916	1916
Cost		3	3

1. Low water in upper pool.
2. Mean lower low water in Puget Sound.
3. Cost of double lock and dam was \$2,382,200 and the emergency gates, completed in 1923, \$262,300.

**TABLE 29-L FLOOD CONTROL ACTIVITIES PURSUANT TO SECTION 205, PUBLIC LAW 858, 80th CONGRESS, AS AMENDED (PREAUTHORIZATION)**

Study Identification	Fiscal Year Costs (2008)
Section 205 Coordination	4,661
Goose Creek, Wilbur, WA	11,191
<b>TOTAL</b>	<b>\$15,852</b>

**TABLE 29-M ENVIRONMENTAL ACTIVITIES UNDER SPECIAL AUTHORIZATION**

Study Identification	Fiscal Year Costs (2008)	
Carpenter Creek, WA (Sec. 206)	60,926	2
Coordination Section 206	5,700	2
Mapes Creek, WA (Sec 1135)	60,674	1
Port of Sunnyside, WA (Sec 206)	12,237	2
Section 1135 Coordination	7,892	1
<b>TOTAL</b>	<b>\$147,429</b>	

1. Section 1135, Public Law 99-662, as amended.
2. Section 206, Public Law 104-303.

# WALLA WALLA, WA, DISTRICT

The U.S. Army Corps of Engineers (Corps), Walla Walla District (District) consists of all Corps activities in the Columbia River drainage and tributaries thereto between the head of McNary Reservoir (Lake Wallula) (river mile 345.4) and Umatilla Bridge (river mile 290.5) below McNary Lock and Dam, except the Yakima River Basin

above Van Giesen Street Bridge (river mile 8.4) near Richland, WA. The primary tributary drainage area is the Snake River, which includes more than 107,000 square miles in six states: Washington, Oregon, Idaho, Wyoming, and small portions of Nevada and Utah.

## IMPROVEMENTS

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## **Flood Control**

### **1. COLUMBIA RIVER BASIN, LOCAL FLOOD PROTECTION PROJECTS**

**Location.** Improvements included in this project are along the Columbia River and its tributaries.

**Existing project.** The Flood Control Act of 1950 approved a general comprehensive plan for the Columbia River Basin for flood control and other purposes based on plans in H. Doc. 531, 81st Congress, 2nd Session, and authorized \$75 million to be appropriated for partial accomplishment of certain projects. From that authorization, an amount (not to exceed \$15 million) was allotted for construction of local flood protection works throughout the Columbia River Basin, subject to conditions that all work undertaken pursuant to authorization would be economically justified prior to construction, and local cooperation specified in the Flood Control Act of 1936, as amended, should be required.

**Local cooperation.** Section 3, Flood Control Act of June 22, 1936, applies.

**Operations during fiscal year (FY).** No projects were de-authorized.

### **2. INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS**

Federal law requires local interests to maintain and operate completed local protection projects in accordance with regulations prescribed by the Secretary of the Army. Inspections were made to determine the extent of compliance and advise local interests, as necessary, of measures required to correct deficiencies.

The FY costs were \$152,413. Total costs through September 30, 2008, were \$3,592,066.

### **3. JACKSON HOLE, WY**

**Location.** This project is located on the banks of the Snake River, Teton County, west of Jackson, WY.

**Existing project.** On the Snake River, there are approximately 23.5 miles of Federally-constructed levees consisting of the following: (1) On the right bank: a series of levees, off-set levees, and bank protection structures, all with full riprap

protection from 10 miles upstream of the Jackson-Wilson Bridge to 3.5 miles below the bridge for a total of 13.5 miles; and (2) On the left bank: a series of Federally-constructed levees and bank protection structures, all with full riprap protection, extending from 10 miles upstream of the Jackson-Wilson Bridge to 5 miles upstream. The project resumes 1.5 miles immediately upstream of the same bridge and continues to 3.5 miles below the bridge, for a total of 10 miles. In addition, a series of Federally and non-Federally constructed levees, with a total length of approximately 5 miles, most having some or full riprap protection, are interspersed along both banks of the Snake River from Highway 26 Bridge to 4 miles downstream of the Jackson-Wilson Bridge.

The project also includes riprap-protected levees on the left and right banks of the Gros Ventre River. The left bank levee begins 1.5 miles west of Cattlemen's Bridge and extends 0.5 mile east of the same bridge. The right bank levee begins 0.5 mile west of Cattlemen's Bridge and extends 0.3 mile east of the same bridge.

The project is authorized by Public Law (PL) 81-516, Flood Control Act of 1950, for flood control protection by channel improvements consisting of channel rectification, levees, and revetments along the Snake River in the vicinity of Wilson, WY. The Water Resources Development Act of 1986, PL 99-662, authorized the Secretary of the Army to assume responsibility for operation and maintenance of the "Federal Levees" and additions and modifications thereto. It states, "the project for Jackson Hole . . . is modified to provide that the operation and maintenance of the project. . . shall be the responsibility of the Secretary: Provided, that the . . . sponsors shall pay the initial \$35,000 in cash or materials . . . plus inflation . . ."

The Water Resources Development Act of 1996 (PL 104-303) amended PL 99-662 by including in-kind services and adding ". . . the Secretary may enter into agreements with the non-Federal sponsor permitting the non-Federal sponsor to perform operation and maintenance for the project on a cost-reimbursable basis."

Since 1978, \$219,000,000 (cumulative nominal \$) in potential flood damages has been prevented by the levees.

**Operations during FY.** Teton County, under their Local Cooperative Agreement, worked with the Corps performing assessing levee maintenance requirements. Hydrologic and Geotechnical surveys are ongoing for the Channel Capacity Study. Mitigation site plans are being developed for the

## WALLA WALLA, WA, DISTRICT

Imeson Road. Station markers were installed on all levee segments. The FY costs were \$765,429. (See table 30-A, Cost and Financial Statement.)

The Water Resources Development Act of 2000 (PL 106-541) authorized the Upper Snake River Restoration Project. Congress added new start funding to the FY 03 budget and also in FY 04. The project is located in and along a 22-mile stretch of the upper Snake River near Jackson, WY, in Teton County. It is partially in and adjacent to Grand Teton National Park, the National Elk Refuge, and in close proximity to Yellowstone National Park.

The project will restore fish and wildlife habitat that was lost as a result of construction, operation, and maintenance of levees constructed by Federal and non-Federal interests. Restoration measures include eco-fences, channel capacity excavation, spur dikes, anchored rootwads, rock grade control, secondary channels, off-channel, and channel stabilization pools. The project has a 14-year phased construction schedule and includes continuing construction, adaptive management, and monitoring to provide implementation flexibility. The rock grade structure, a separable element of site 9 completed in FY 05, continues to perform as designed by protecting the island habitat during the spring 2008 runoff conditions.

The FY 08 Construction costs were \$34,560. (See table 30-A, Cost and Financial Statement.)

#### 4. LUCKY PEAK LAKE, ID

**Location.** This project is located on the Boise River in southwestern Idaho about 10 miles southeast of the city of Boise, ID. (See table 30-B for Authorizing Legislation of projects in the District.)

**Existing project.** The project includes a rolled earthfill dam about 250 feet above the streambed and 1,700 feet long at the crest, with a lake providing a total storage at an upper operating lake level of 306,000 acre-feet. The project provides flood control, irrigation, and recreation.

Construction of the existing project was initiated in November 1949 and completed in June 1961. Since 1961, \$1,224,571,000 (cumulative nominal \$) in potential flood damages has been prevented by the project.

During a detailed study of outlet capacity and potential for adding hydropower to the existing project, a need for an auxiliary outlet became apparent. Construction of an auxiliary outlet was authorized in the Water Resource Development Act of 1976. In FY 78, an *Interim Feasibility Report on Modification of Lucky Peak Dam and Lake* (power

facilities) was submitted to the Board of Engineers for Rivers and Harbors and approved. States, agencies, and the Chief of Engineers commented on the report to the Secretary of the Army. The report was forwarded to the Office of Management and Budget in February 1982.

A license to construct and operate power facilities at the project was issued by the Federal Energy Regulatory Commission (FERC) (Project #2832) to the Boise Project Board of Control on June 10, 1980, and modified on October 9, 1980, and in 1982. Construction of the auxiliary outlet facility began in May 1984 and was completed in August 1986. Construction of modifications to the existing outlet tunnel and powerhouse excavation began in August 1986 and were completed in January 1987. Powerhouse general contract construction began in April 1986. The project was completed and dedicated on October 7, 1988. Power on-line for all units was initiated on August 18, 1988. A Federally authorized second outlet was de-authorized in FY 90.

Recreation facilities at Lucky Peak Lake consist of 20 picnic/day-use areas, 4 boat launch ramps, and 3 swimming areas. The FY visitation to Lucky Peak Lake was 871,120.

**Local cooperation.** None required.

**Operations during FY.** Operation and Maintenance: Normal operation and maintenance of the dam structures and recreation areas continued. The FY costs were \$1,618,050. (See table 30-A, Cost and Financial Statement.)

#### 5. MILL CREEK, BENNINGTON LAKE, WA

**Location.** This project is located in and upstream from Walla Walla, WA, on Mill Creek, a tributary of the Walla Walla River. (See table 30-B for Authorizing Legislation of projects in the District.)

**Existing project.** The project includes an off-stream earthfill storage dam, about 125 feet above the streambed and 3,200 feet long at the crest, two concrete-lined outlet channels, an earthfill diversion dam, and diversion structures. The project provides for flood control and recreation. Authorizing legislation to provide a channel through the city of Walla Walla was added to the project in 1941. Recreation was added to the project purposes through the Federal Water Project Recreation Act of 1965.

Construction of the dam and appurtenant works was completed in 1942. Paving of the channel through the city of Walla Walla was completed in

## REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

1966. Since 1942, \$62,913,000 (cumulative nominal \$) in potential flood damages has been prevented by the combined storage and channel operation.

Rehabilitation of the existing project was initiated in FY 78 and completed in FY 79. The plan of rehabilitation included action to correct the seepage and internal erosion that has occurred during each subsequent filling of the reservoir. A cutoff wall was constructed but did not alleviate the seepage problem, thus requiring limited flood control use of the project. The seepage and internal erosion create a high vulnerability for dam failure.

Mill Creek/Bennington Lake offers visitors three day-use/picnic areas and one boat launch ramp. Visitation to Mill Creek/Bennington Lake for the FY was 256,103.

**Local cooperation.** None required.

**Operations during FY.** Operation and Maintenance: Normal operation and maintenance continued, which included regulation of water control structures and care of recreation areas. The FY costs were \$1,327,221. (See table 30-A, Cost and Financial Statement.)

**Mill Creek Interim Risk Reduction Measures (IRRM).** In May 2008 a Dam Safety Screening for Portfolio Risk Assessment was performed for the Mill Creek Project. On May 31, 2007, the Corps released Engineer Circular (EC) 1110-2-6064, IRRM for Dam Safety. This circular includes a Dam Safety Action Classification (DSAC) table. Under the DSAC rating system, the District developed, prepared, and implemented IRRMs to reduce the probability of unacceptable risk of Corps dams. IRRMs are short-term efforts to reduce dam safety risks while we pursue long-term solutions.

On August 18, 2008, Mill Creek Dam received a DSAC rating of 1. The DSAC rating means the risk to public safety is unacceptable when Bennington Lake is more than 17 percent full for an extended period of time. The findings create an urgent and compelling requirement for interim risk reduction measures and system modifications.

**Mill Creek (IRRM) Operations during FY:** The following improvements were accomplished during FY08:

- Began development of an IRRM plan for Mill Creek Dam. This included a communications plan, milestones, and implementation priorities prior to flood season.

- Completed an ongoing Probable Maximum Flood Study in September 2008.

The FY 08 Construction costs were \$45,746. Total project costs are \$45,746. (See table 30-A, Cost and Financial Statement.)

### 6. SCHEDULING FLOOD CONTROL RESERVOIR OPERATIONS

Functional regulation of non-Corps projects is accomplished as authorized under Section 7, Flood Control Act of 1944, and coordinated with the Bureau of Reclamation for Jackson, Palisades, Ririe, Little Wood, Arrowrock, Anderson Ranch, and Malheur River Basin.

Flood control operations at Jackson Lake, Palisades, Ririe, Little Wood, Boise River Reservoirs, and the Malheur River Reservoirs are in accordance with formal agreements with the Bureau of Reclamation. Flood control regulation for Brownlee Reservoir was accomplished under flood control regulation provisions in the Federal Power Commission license to Idaho Power Company.

The FY costs associated with flood control operation of non-Corps and Corps-owned projects was \$418,709.

### 7. TRIBAL PARTNERSHIP PROGRAM

**Location.** The Shoshone Bannock Tribes of Fort Hall Reservation and the study area are located just northwest of Pocatello, ID, in the southeastern corner of Idaho.

**Existing project.** Section 203 of the Water Resources Development Act of 2000, Tribal Partnership Program, authorized the Corps to undertake a reconnaissance phase study to determine if there is a Federal (Corps) interest in participating in a cost-shared feasibility phase study with the Shoshone Bannock Tribes of Fort Hall. This study is to determine if there is Federal interest in providing, collecting, and evaluating critical data and information relevant to protecting ecologically and culturally sensitive areas in the Fort Hall "Bottoms" and adjacent lands. It would evaluate alternatives that would restore lost environmental qualities of the original ecosystems, and develop and analyze key risk reduction actions that would reduce the impacts of floods and flood damage in both developed tribal lands and culturally sensitive lands. The study would assess methods and alternatives that would improve water quality and quantity; identify areas on and

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directly adjacent to the reservation where erosion control would improve, protect, and enhance riparian/wetlands areas, total maximum daily loads, etc.; and develop comprehensive environmental and floodplain solutions for "natural" river corridor improvements to the Fort Hall "Bottoms" watershed and adjacent lands.

**Local cooperation.** The 905b study is 100 percent Federally funded. The Shoshone Bannock Tribes of Fort Hall have been participating in the development of this study.

**Operations during FY.** A draft report of the 905b study was submitted to the Shoshone Bannock Tribes of Fort Hall. The FY costs were \$11,137. Total costs through September 30, 2008, were \$99,662.

### 8. FLOOD CONTROL ACTIVITIES UNDER SPECIAL AUTHORIZATION

**Flood control activities pursuant to Section 205, PL 858, 80th Congress, as amended:** The FY costs were \$9,840 for Section 205 coordination. There were no new flood control activities.

**Emergency flood control activities – repair, flood fighting, and rescue work (PL 99, 84th Congress, and antecedent legislation):** There were no Federal costs this FY.

**Emergency bank protection (Section 14, Flood Control Act of 1946, PL 526, 70th Congress):** The FY costs were \$2,000 for Section 14 Coordination.

**Snagging and clearing of navigable streams and tributaries in interest of flood control (Section 208, Flood Control Act of 1954, PL 780, 83rd Congress):** The FY costs were \$1,000 for Section 208 coordination.

### Multiple-Purpose Projects, Including Power

#### 9. COLUMBIA RIVER FISH MITIGATION PROGRAM (WALLA WALLA PROJECTS), OR, WA, AND ID

**Location.** This project is located at Ice Harbor, Lower Monumental, Little Goose, and Lower Granite

Locks and Dams on the lower Snake River in the state of Washington, and McNary Lock and Dam on the Columbia River in the states of Oregon and Washington. (See table 30-B for Authorizing Legislation of projects in the District.)

**Existing project.** The eight Corps hydroelectric projects on the Columbia and lower Snake Rivers have been identified as a major contributing factor in causing mortality to downstream migrating juvenile salmon and steelhead. Without adequate bypass facilities to guide these juvenile fish away from the power turbines at the dams, mortalities incurred through project passage severely impact the commercial, recreational, and Tribal fisheries. The Corps has recognized the need to reduce juvenile fish mortality and has undertaken bypass measures that include mechanized fish bypass systems with barge and truck transportation. Spill as an additional bypass route over the spillways has been used to divert fish from entering turbine units, but it is a significant adverse economic factor due to lost power revenues. Congress passed, and the President signed, the FY 89 Energy and Water Development Appropriation Act (PL 100-371), which mandated the expenditure of funds for the design, testing, and construction of new or improved fish bypass facilities for the Columbia River fish mitigation projects. Completion of bypass and transportation facilities will significantly increase the survival of migrating downstream juvenile fish. The mitigation study will determine the overall scope of the fish mitigation facilities for these Columbia and lower Snake River dams. The mitigation study project was added to the President's FY 91 budget.

The plan of improvement includes the following facilities: (1) Ice Harbor Lock and Dam (Ice Harbor): screens, new gantry crane, collection bypass facility, intake gate raise, spillway deflectors, surface bypass, and fish ladder temperature control; (2) Lower Monumental Lock and Dam (Lower Monumental): hold/load and collection bypass facility, screens, passive integrated transponder tag (PIT-Tag) facility, barge load facility modifications, barges, gate raise modifications, gantry crane, fish ladder temperature control, and surface bypass; (3) Little Goose Lock and Dam (Little Goose): screens, gantry crane modification, collection bypass facility, outfall pipe, fish ladder temperature control, fallout fences, gate raise, deck screen modifications, PIT-Tag facility, and surface bypass; (4) Lower Granite Lock and Dam (Lower Granite): juvenile fish facility, gantry crane, gate raise, outfall pipe, fish barges, screens, additional moorage facility, fish slot closures, juvenile fish facility improvements, barge

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exit modifications, deck screen modifications, fish ladder temperature control, surface bypass, PIT-Tag facility, and fallout fences; and (5) McNary Lock and Dam (McNary): gantry crane, screens, hold/load facility, gate raise modifications, maintenance facility, fish ladder exits, hold/load facility, adult/juvenile collection channel stoplogs, juvenile fish facility, surface bypass, and gantry crane modifications.

In response to the 1995 Endangered Species Act, Section 7, Consultation Biological Opinion, issued by the National Marine Fisheries Service, the District conducted a feasibility study (Lower Snake River Juvenile Salmon Migration Feasibility Study) to evaluate salmon migration problems on the lower Snake River. The objective of the study was to improve salmon migration conditions through the four Corps-operated dams and reservoirs on the lower Snake River. The study focused on how these dams could be changed to improve survival and recovery prospects for Snake River salmon stocks under the Endangered Species Act. The total completed cost of the study was \$31.1 million.

The District is currently managing a surface bypass and collection technology development effort that focuses on improving juvenile fish passage for endangered and threatened salmon migration past all Corps hydroelectric projects on the Columbia and lower Snake Rivers. It is an aggressive, nontraditional approach to prototype development that involves fast-track design, construction, testing, and evaluation.

The fully funded Federal project cost is estimated at \$682,700,000 for District projects.

**Local cooperation.** None required.

**Operations during FY.** The following studies and improvements were accomplished during FY 08:

- Continued studies to evaluate the effect of temporary spillway weirs (TSW) on approach, passage, and survival of juvenile salmon (run-of-river spring Chinook, steelhead, and fall Chinook) at McNary. Two spill operations in the spring and two spill levels in the summer were evaluated. Spill patterns were developed to optimize passage through the TSWs and provide a surface passage route to reduce migration delay through the forebay. The research methodology used during both the spring and summer spill season was acoustic telemetry.

- Continued preliminary design and hydraulic modeling of surface passage alternatives for McNary. Alternatives being considered include surface passage outlets at the spillway, north concrete non-overflow, powerhouse, and south earthen non-overflow. Behavioral guidance structure alternatives to guide fish to these surface passage outlets are also being considered.
- Completed the McNary forebay temperature evaluation to alleviate or minimize water temperature gradients that develop in the forebay during the summer months.
- Fourth year, post-construction biological testing was conducted at Ice Harbor to evaluate efficiency of the removable spillway weir (RSW) during both spring and summer operations.
- Completed construction of the Lower Monumental RSW. The RSW was operating and available to aid the passage of juvenile salmon by April 2008.
- Post RSW installation, biological testing to determine fish behavior, spill efficiencies, and relative project and route-specific survival were estimated under two spill treatments (during spring and summer) for juvenile salmon at Lower Monumental.
- Completed design and awarded a Little Goose construction contract. The contract incorporated juvenile PIT-Tag monitoring facilities on the main transportation flume, dewatering structure modifications, and juvenile outfall relocation. The new system will be installed prior to the 2009 fish passage season and will improve detection of migrating PIT-Tagged juveniles; mitigate for excessive vibrational forces causing stress in dewatering structure members; and improve survival at the outfall location.
- Completed engineering design and hydraulic modeling for a variable crest surface passage alternative at Little Goose. The construction contract was awarded in September 2008 and the new structure will

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be in place for the 2009 juvenile passage season.

- Performed studies to understand the impact of spill operations on adult passage at Little Goose in order to prevent conditions that block adult upstream migration.
- Continued preliminary design for improvements to the Lower Granite juvenile bypass/holding and loading facilities. The existing facilities were the first to be constructed on the Snake River and have many features that do not meet current criteria for the passage of juvenile salmon. Completed a value engineering study of the proposed facility.
- Several mitigation analysis studies continued throughout FY 08, including the Turbine Survival Program Study. In 2008, turbine passage studies continued to investigate the contribution of high levels of dissolved gas (typically found in the river); and the effects of rapid pressure changes on fish survival and increased injury rates.
- Continued the system-wide spillway evaluation study to determine impacts of increased spill frequency and duration on Columbia and lower Snake River dams. These impacts are a result of voluntary spill operations that aid juvenile fish passage. In 2008, the study's focus shifted to reliability and risk of failure of spillway appurtenances due to increased spill operations.
- Continued studies evaluating impacts of avian predation on salmon smolts from the Columbia and Snake Rivers. This included monitoring the Caspian tern colony on Crescent Island, determining stock-specific predation rates on juvenile salmonids, surveying and monitoring for new or existing tern and cormorant colonies in the mid-Columbia River, and PIT-Tag recovery from avian islands. Research provided an estimate of relative magnitude of impacts among multiple avian predators in the mid-Columbia River.
- Conducted research on estuarine detection of juvenile salmon using paired PIT

detection trawls. This research was to estimate salmon hydrosystem survival for determining annual performance of the hydrosystem. Late season monitoring was increased to determine if sufficient PIT-Tagged fall Chinook were present to warrant future monitoring in the fall.

- Continued studies to answer key uncertainties regarding delayed mortality of juvenile salmon with different migration histories. This included effects of disease load, disease susceptibility, changes in physiological dysfunctions, size selective predation, and alternate barge release locations.
- Researchers evaluated Pacific adult lamprey passage success through the adult fish ladders at McNary and Ice Harbor.
- Continued efforts to develop a separator for juvenile lamprey. These efforts included work identifying behavioral reactions to light, current direction, and vertical/horizontal passage preference.
- Initiated a study to estimate the survival of fall Chinook salmon in the Snake Columbia River system. This research will assist in developing system-wide operations that will maximize survival of fall Chinook salmon throughout the fish passage season.

The FY costs were \$32,643,221. Total project costs are \$633,402,547. (See table 30-A, Cost and Financial Statement.)

### 10. DWORSHAK DAM AND RESERVOIR, ID

**Location.** The dam is on the North Fork of the Clearwater River, 1.9 miles above its junction with the Clearwater River, near Orofino, ID, and about 35 miles east of Lewiston, ID. (See table 30-B for Authorizing Legislation of projects in the District.)

**Existing project.** The project includes a dam, powerplant, public parks, and appurtenant facilities. The project provides for flood control, navigation, hydroelectric power generation, recreation, and area redevelopment. The reservoir has a normal operating range between the elevations of 1,600 and 1,445 mean sea level (msl). The reservoir has a gross storage capacity of 3,468,000 acre-feet (2 million acre-feet are effective for both local and regional

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flood control and for at-site and downstream power generation). In addition, the reservoir, which extends 59 miles into rugged and relatively inaccessible timberland, provides cost-effective transportation for moving marketable logs. The reservoir provides habitat for elk, deer, and other wildlife. The dam structure is about 3,287 feet long and about 717 feet above the streambed. Fish passage is not feasible due to the height of the dam. A hatchery has been built below the dam to assure continuance of anadromous fish runs. The powerhouse has two 90,000-kW and one 220,000 kW generating units in operation for a capacity of 400,000 kW.

Provisions had been made for three additional 220,000-kW generating units for an ultimate installed capacity of 1,060,000 kW. A reconnaissance report justifying the feasibility and cost benefits for the addition of a fourth 200,000-kW generating unit was completed in FY 78. However, environmental and economic studies on additional generating units were curtailed due to public opposition. Unit 4 is undeveloped. Units 5 and 6 were de-authorized in FY 90, and Unit 4 was de-authorized in FY 95. Principal project data are set forth in table 30-C.

Construction of the project began in July 1966. It was placed in operation in 1972 and completed in 1986. Since the project became operational in June 1972, it has prevented about \$2,836,000 (cumulative nominal \$) in potential flood damages. Power generation through September 2008 was 62.52 billion kW hours.

At Dworshak Reservoir, recreation facilities consist of 12 day-use/picnic areas, six camp areas, six boats launches, and two swim areas. The Dworshak Information Center provides a regional overview of the Corps' efforts in the Clearwater River Basin. Total visitation to Dworshak Reservoir for the FY was 141,271.

**Local cooperation.** None required.

**Operations during FY.** Operation and Maintenance: Management of wildlife habitat continued on project lands to provide winter browse for elk and deer. During the FY, 1.9 billion kW hours of electrical power was generated by the three generating units. The FY costs were \$11,529,632. (See table 30-A, Cost and Financial Statement.)

**Dworshak Interim Risk Reduction Measures (IRRM).** In October 2008, the District received a Dam Safety Action Classification (DSAC) rating of 2, a classification of "unsafe," for Dworshak Dam and Reservoir on the North Fork of the Clearwater River above Lewiston, Idaho. An IRRM Plan was

created and approved. The IRRM plan is being implemented.

The IRRM plan implementation requires additional hard engineering data to make a determination on the actual causes of structural movement and resulting water flow through the structure. The primary IRRMs investigate structural cracking, foundation instability, and resultant waterstop failure, and observed unacceptable volumes of high pressure water in the foundation currently running into the galleries. In order to control water flowing through the dam and foundation, as well as to validate the probable failure modes and assign risk to those modes, additional instrumentation, internal and external and foundation analysis studies are required. The outcomes of these efforts will provide the hard engineering data that will enable informed decisions on when and if major structural modifications are needed. Each of these studies will produce a report that will support a decision document for the Major Modification Report in early FY 11.

**Dworshak IRRM Operations during FY.** The following improvements were accomplished during FY 08:

- Completed and implemented an IRRM plan, including approval. Met with Congressional, State, and local officials; held public meetings with stakeholders; and held tours for the media.
- The facility and the IRRM plan was reviewed and evaluated by the University of Idaho.
- The Emergency Action Plans (EAP) were updated. The EAP is a functional test of the Clearwater County Flood Emergency Response Plan related to Dworshak Dam failure for Orofino, Ahsahka, and Lewiston ID, and Clarkston, WA.
- Planned a large number of studies to enable dam safety decisions and clarify the level of risk to the public. Study types include: Probable Failure Mode Analysis; monitoring and modeling of monolith and foundation leakage; updating dam failure inundation maps; spillway gate trunnion bearings; usage of water stop seals for high head dams (Technology Demonstration and Evaluation, Finite Element Analysis) to

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determine internal stresses in critical areas; and an External Stability Analysis to determine overall structural stability. General instrumentation evaluation was planned with replacement and installation of updated instrumentation over a two-year period.

The FY 08 Construction costs were \$140,690. Total project costs are \$140,690. (See table 30-A, Cost and Financial Statement.)

### 11. ICE HARBOR LOCK AND DAM, LAKE SACAJAWEA, WA

**Location.** This dam is located on the Snake River, 9.7 miles above the river mouth at the head of Lake Wallula (McNary Reservoir) and 12 miles east of Pasco, WA. (See table 30-B for Authorizing Legislation of projects in the District.)

**Existing project.** The project includes a dam, powerplant, navigation lock, two fish ladders, recreation areas, and appurtenant facilities. The project provides navigation, hydroelectric power generation, recreation, and incidental irrigation. The reservoir has a normal operating range between elevations 440 and 435 msl. Lake Sacajawea extends upstream about 31.9 miles and provides slack water to Lower Monumental. The dam structure is approximately 2,822 feet long and approximately 130 feet above the streambed. The fish passage facilities include two fish ladders. The powerhouse has three 90,000-kW units and three 111,000-kW generating units in operation for a capacity of 603,000 kW.

The spillway dam is 590 feet long, and the overflow crest at elevation 391 msl is surmounted by 10 tainter gates, 50 feet wide and 52.9 feet high, that provide the capacity to pass a design flood of 850,000 cubic feet per second (cfs). The deck is at elevation 453 msl and provides a service road and track for a gantry crane. The navigation lock is a single-lift type with clear plan dimensions of 86 by 675 feet and a 16-foot minimum depth over the sills. A navigation channel 250 feet wide, 14 feet deep, and 41.6 miles long is provided from the mouth of the Snake River to the dam, and from the dam to Lower Monumental. Principal data are set forth in table 30-C.

Construction of the original project began in December 1955. It was placed in operation in 1961 and completed in 1971. Construction of the additional generating units was started in 1971 and

completed in 1981. Power generation through September 2008 was 95.99 billion kW hours.

Recreation areas on Lake Sacajawea include 11 picnic/day-use sites, 4 camping areas, 7 areas with boat launching, and 4 swimming areas. There are 32 miles of the Northwest Discovery Water Trail. The Ice Harbor Information Center provides a regional overview of the Corps' efforts in the Snake River Basin. Total visitation on Lake Sacajawea for the FY was 336,111.

**Local cooperation.** None required.

**Operations during FY.** Operation and Maintenance: During the FY, 1.7 billion kW hours of electrical power was generated by the six generating units. Traffic through the navigation lock consisted of grains, petroleum products, fertilizer, wood products, and miscellaneous cargo that amounted to 2,160,600 tons during calendar year 2008. The FY costs were \$9,071,540. (See table 30-A, Cost and Financial Statement.)

### 12. LITTLE GOOSE LOCK AND DAM, LAKE BRYAN, WA

**Location.** The dam is 70.3 miles above the mouth of the Snake River and at the head of Lake Herbert G. West (Lower Monumental Reservoir), about 40 miles northerly of Walla Walla, WA, and 50 miles westerly of Lewiston, ID. (See table 30-B for Authorizing Legislation of projects in the District.)

**Existing project.** The project includes a dam, powerplant, navigation lock, fish ladder, and appurtenant facilities. The project provides for navigation, hydroelectric power generation, recreation, and incidental irrigation. The reservoir has a normal operating range between elevations 638 and 633 msl. Lake Bryan extends upstream about 37.2 miles and provides slack water to Lower Granite. The dam structure is 2,655 feet long and approximately 165 feet above the streambed. Fish passage facilities include one ladder with entrances on both shores and a fish channel through the spillway, which connects to the powerhouse fish collection system and south shore ladder. The powerhouse has six 135,000-kW generating units in operation for a capacity of 810,000 kW. The spillway dam is 512 feet long, and the overflow crest at elevation 581 msl is surmounted by eight tainter gates, 50 feet wide and 60 feet high, that provide the capacity to pass a design flood of 850,000 cfs. The navigation lock is a single-lift type with clear plan

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dimensions of 86 by 668 feet and a 15-foot minimum depth over the sills. A navigation channel 250 feet wide, 14 feet deep, and 37.2 miles long is provided from the dam to Lower Granite. Relocations along the lake included 32 miles of Camas Prairie Railroad, 6.8 miles of county roads, 2.2 miles of state highways, and the Central Ferry Bridge. Principal project data are set forth in table 30-C.

Construction of the original project began in 1963. It was placed in operation in 1970 and completed in 1976. Construction of additional generating units started in 1974 and was completed in 1984. Power generation through September 2008 was 92.9 billion kW hours.

Lake Bryan provides seven day-use sites, five campgrounds, five boat-launching areas, and two swimming areas. There are 39 miles of the Northwest Discovery Water Trail. Total FY visitation to Lake Bryan was 198,838.

**Local cooperation.** None required.

**Operations during FY.** Operation and Maintenance: During the FY, 2.1 billion kW hours of electrical power was generated by the six generating units. Traffic through the navigation lock consisted of grains, petroleum products, fertilizer, wood products, and miscellaneous cargo that amounted to 1,839,500 tons during calendar year 2008. The FY costs were \$7,597,822. (See table 30-A, Cost and Financial Statement.)

### 13. LOWER GRANITE LOCK AND DAM, LOWER GRANITE LAKE, WA

**Location.** This dam is at river mile 107.5 on the Snake River at the head of Lake Bryan (Little Goose Reservoir) and about 33 miles downstream from Lewiston, ID. (See table 30-B for Authorizing Legislation of projects in the District.)

**Existing project.** The project includes a dam, powerplant, navigation lock, fish ladder, appurtenant facilities, and includes approximately 8 miles of slack water levees along the Snake and Clearwater Rivers at Lewiston, ID. The project provides for slack water navigation, hydroelectric power generation, recreation, and incidental irrigation. The reservoir has a normal operating range between elevations 738 and 733 msl in Lewiston, ID, and Clarkston, WA. Lower Granite Lake extends upstream approximately 38 miles and provides slack water to the confluence of the Snake and Clearwater Rivers. The dam structure is approximately 3,200 feet long and approximately 146 feet above the streambed. Fish

passage facilities include one ladder with entrances on both shores with a fish channel through the spillway that connects to the powerhouse fish collection system and south shore ladder. The powerhouse has six 135,000-kW generating units in operation for a capacity of 810,000 kW. The spillway dam is 512 feet long, and the overflow crest at elevation 681 msl is surmounted by eight tainter gates, 50 feet wide and 60 feet high, which provide the capacity to pass a design flood of 850,000 cfs. The navigation lock is single-lift type with clear plan dimensions of 86 by 674 feet and 15-foot minimum depth over the sills. A navigation channel 250 feet wide, 14 feet deep, and 39.3 miles long is provided from the dam to the confluence of the Snake and Clearwater Rivers. Principal data are set forth in table 30-C.

Construction of the original project started in July 1965. It was placed in operation in 1975 and completed in 1984. Construction of additional generating units was started in 1974 and completed in 1979. Power generation through September 2008 was 83.84 billion kW hours. Approximately \$28,600,000 (cumulative nominal \$) in potential flood damages has been prevented since the levees became functional.

Lower Granite Lake offers visitors 16 day-use/picnic sites, 6 sites with camping, 12 boat launch ramps, and 4 swimming areas. There are 45 miles of the Northwest Discovery Water Trail. Total recreation visitation to Lower Granite Lake for the FY was 1,494,507.

**Local cooperation.** None required.

**Operations during FY.** Operation and Maintenance: During the FY, 2.1 billion kW hours of electrical power was generated by the six generating units. Traffic through the navigation lock consisted of grains, petroleum products, fertilizer, wood products, and miscellaneous cargo that amounted to 1,164,100 tons during calendar year 2008. The FY costs were \$11,390,555. (See table 30-A, Cost and Financial Statement.)

**Juvenile Fish Transportation Program.** As the first collector dam on the Snake River, Lower Granite is a primary component of the Juvenile Fish Transportation Program. Transport began in the late 1960s as a research program on how to bypass juvenile salmon and steelhead around dams and reservoirs of the Corps' Columbia and Snake River dams. Transport became an operational program in 1981 with collection and transport from Lower Granite, Little Goose, and McNary. Transport was

expanded in 1993 to include Lower Monumental. Development and improvement of collection and bypass systems continue, with a new collection system completed at McNary in 1994; a new bypass system completed at Ice Harbor in 1996; and extended-length submersible bar screens installed at Lower Granite, Little Goose, and McNary in 1996 and 1997.

In 2003, a new RWS was tested at Lower Granite. A second RSW was tested at Ice Harbor in 2005 (fish were not collected here for transport in 2008). A third RSW was tested at Lower Monumental during the 2008 fish passage season. During the 2007 season, two temporary spillway weirs were tested in spillbay 20 and spillbay 22 at McNary. Testing at McNary continued during the 2008 season after the TSW in spillbay 22 was moved to spillbay 19.

The 2008 juvenile fish transport season was marked by slightly below normal river flows in the Snake River, and below average river flows in the Columbia River. The three Snake River transport projects operated under regionally coordinated, court approved operations, including daily spill from April 3 through August 31, with transportation of juvenile fish collected. Spill at McNary took place from April 10 through August 31. During the court ordered spill period, emphasis was placed on a mix of fish transportation and in-river migration.

The start of juvenile fish transport operations was staggered and commenced at much later dates than usual at Snake River projects in 2008 to allow early season fish to migrate in-river. This resulted in much lower collection and transport numbers than in most years. Although start dates were later than in 2007, collection and transport numbers were higher in 2008 as cool spring weather delayed snow melt and spring runoff. Juvenile fish collection at Lower Granite was 5,082,176, as compared with 3,201,658 in 2007 and 5,797,384 in 2006. A total of 815,565 fish were bypassed back to the river in 2008 and 4,252,195 were transported. At Little Goose, a total of 4,885,642 juvenile salmon and steelhead were collected in 2008, as compared to 2,098,951 collected in 2007 and 7,253,631 in 2006. A total of 1,114,654 fish were bypassed back to the river in 2008 and 3,764,974 were transported. At Lower Monumental, 2,097,408 juvenile salmon and steelhead were collected, as compared to 900,533 in 2007 and 2,314,392 in 2006. A total of 1,330,880 fish were bypassed from Lower Monumental in 2008 and 765,489 were transported.

At McNary, normal operations are to bypass fish in the spring until early to mid-July when collection and transport of summer migrants begin.

This was the case in 2008 as collection for transport operations began as scheduled on July 16. In 2007, TSW operations precluded the transport of fish by barge and no fish were transported until truck operations began on August 18. A total of 2,395,116 juvenile salmon and steelhead were collected in 2008, as compared to 4,303,284 in 2007 and 3,463,338 in 2006. Approximately 1,959,114 of the fish collected were bypassed back to the river to meet fishery agency requirements in 2008. A total of 425,743 juvenile fish were transported from McNary, notably higher than the 35,993 transported in 2007 and lower than the 1,005,373 transported in 2006.

A grand total of 14,460,342 juvenile salmon and steelhead were collected at all projects in 2008, compared to 10,504,426 in 2007 and 18,828,745 in 2006. A total of 9,208,401 fish were transported in 2008, 64 percent of those collected, compared to 51 percent in 2007. Of the fish transported, 9,095,546 were transported by barge (99 percent) and 112,855 were trucked (1 percent).

#### **14. LOWER MONUMENTAL LOCK AND DAM, LAKE HERBERT G. WEST, WA**

**Location.** This dam is on the Snake River at the head of Lake Sacajawea (Ice Harbor Reservoir), about 45 miles northeast of Pasco, WA, and 41.6 miles above the river mouth. (See table 30-B for Authorizing Legislation of projects in the District.)

**Existing project.** The project includes a dam, powerplant, navigation lock, two fish ladders, and appurtenant facilities. The project provides for navigation, hydroelectric power generation, recreation, and incidental irrigation. The reservoir has a normal operating range between elevations 540 and 537 msl. Lake Herbert G. West (Lake West) extends upstream approximately 28.7 miles and provides slack water to Little Goose. The dam structure is approximately 3,791 feet long and approximately 135 feet above the streambed. The fish passage facilities include two fish ladders, one at each end of the dam. The powerhouse has six 135,000-kW generating units in operation for a capacity of 810,000 kW. The spillway dam is 572 feet long, and the overflow crest at elevation 483 msl is surmounted by eight tainter gates, 50 feet wide and 60 feet high, that provide capacity to pass a design flood of 850,000 cfs. The deck is at elevation 553 msl and provides a service road and track for a gantry crane. The navigation lock is a single-lift type with clear plan dimensions of 86 by 666 feet and a 15-foot minimum depth of the sills. A navigation

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channel 250 feet wide, 14 feet deep, and 28.1 miles long is provided from the dam to Little Goose. Relocations along the lake included railroads and highways. Principal data are set forth in table 30-C.

Construction of the original project started in June 1961. It was placed in operation in 1969 and completed in 1976. Construction of the additional generating units started in 1975 and was completed in 1981. Power generation through September 2008 was 107.93 billion kW hours.

Lake West offers seven day-use areas, five areas offering camping, five boat launch areas, and one designated swimming beach. There are 28 miles of the Northwest Discovery Trail. Total visitation on Lake West for the FY was 92,148.

**Local cooperation.** None required.

**Operations during FY.** Operation and Maintenance: During the FY, 2.2 billion kW hours of electrical power was generated by the six generating units. Traffic through the navigation lock consisted of grains, petroleum products, fertilizer, wood products, and miscellaneous cargo that amounted to 2,118,500 tons during calendar year 2008. The FY costs were \$9,863,616. (See table 30-A, Cost and Financial Statement.)

### 15. LOWER SNAKE RIVER FISH AND WILDLIFE COMPENSATION PLAN, WA, OR, AND ID

**Location.** This project is at various locations within the Columbia and Snake River drainages in the states of Idaho, Oregon, and Washington. (See table 30-B for Authorizing Legislation of projects in the District.)

**Existing project.** The project consists of a series of fish hatcheries, wildlife development areas, and purchase of off-site project lands for fishing and hunting access and further habitat development. The project will compensate for loss of wildlife habitat and anadromous and resident fisheries due to impacts from the construction of four multipurpose dams and reservoirs on the lower Snake River (Ice Harbor, Lower Monumental, Little Goose, and Lower Granite).

The real estate design memorandum and feature design memorandums to include hatcheries, satellites, off-project wildlife lands, and site selection have been approved. A final Environmental Impact Statement was filed with the Council on Environmental Quality on November 2, 1977. The Dworshak National Fish Hatchery Expansion and the

Irrigon, Hagerman, Lyons Ferry, Lookingglass, McCall, Sawtooth, Magic Valley, and Clearwater hatcheries (including their respective satellite facilities) are all in operation. Transfer actions were completed in FY 04 for Big Canyon and Pittsburg Landing. Captain John Rapids was completed in FY 08. Transfer actions for Captain John Rapids will begin in FY 09. Fencing is complete at all wildlife development areas. Off-project land acquisition is 100 percent complete. Habitat development continues at many of these sites. The Water Resources Development Act of 2007 amended the plan for woody riparian habitat to include aquatic restoration. The development has been initiated to compensate for habitat losses resulting from the inundation of habitat. This will result in the creation of new riparian and aquatic habitat areas. The compensation project is contingent on appropriations and is currently scheduled for completion in FY 18.

**Local Cooperation.** None required.

**Operations during FY.** Estimated Federal cost for the project is \$261,000,000. The FY costs were \$580,421. Total project costs are \$237,892,528. (See table 30-A, Cost and Financial Statement)

### 16. McNARY LOCK AND DAM, LAKE WALLULA, OR AND WA

**Location.** This dam is on the Columbia River, 292 miles above the mouth, near Umatilla, OR, and 3 miles above the mouth of the Umatilla River. (See table 30-B for Authorizing Legislation of projects in the District.)

**Existing project.** The project includes a dam, powerplant, navigation lock, two fish ladders, appurtenant facilities, and a system of levees and pumping plants. The project provides for slack water navigation, hydroelectric power generation, recreation, and incidental irrigation. The reservoir has a normal operating range between elevations 340 and 335 msl. Lake Wallula extends upstream approximately 64 miles and provides slack water to Ice Harbor. The dam structure is 7,365 feet long and approximately 183 feet above the streambed. Fish passage facilities include two fish ladders. The powerhouse has fourteen 70,000-kW generating units in operation for a capacity of 980,000 kW. The spillway dam is 1,310 feet long, and the overflow crest is at elevation 291 msl and surmounted by 22 vertical lift gates, 50 feet wide and 51 feet high, which provide the capacity to pass a design flood of

2.2 million cfs. The navigation lock is a single-lift type with clear plan dimensions of 86 by 683 feet and a 15-foot minimum depth over the sills. A navigation channel (250 feet wide, 14 feet deep, and 32 miles long) is provided from the dam to the mouth of the Snake River. Relocations along the lake included railroad bridges over the Columbia and Snake Rivers in order to eliminate hazards to navigation. Principal project data are set forth in table 30-C.

Construction began in May 1947. It was placed in operation in 1953 and was completed in 1982. Power generation through September 2008 was 339.31 billion kW hours.

Recreation areas on Lake Wallula include 19 day use/picnic sites, 4 campgrounds, 14 boat launching ramps, and 9 swimming areas. There are 45 miles of the Northwest Discovery Water Trail. The Pacific Salmon Visitor Information Center at McNary, which is staffed by park rangers, provides a regional overview of Corps efforts in salmon recovery issues. Total visitation on Lake Wallula for the FY was 4,029,103.

**Local cooperation.** None required.

**Operations during FY.** Operation and Maintenance: During the FY, 5.2 billion kW hours of electrical power was generated by the 14 generating units. Traffic through the navigation lock consisted of grains, petroleum products, fertilizer, wood products, and miscellaneous cargo that amounted to 5,301,000 tons during calendar year 2008. The FY costs were \$15,580,251. (See table 30-A, Cost and Financial Statement.)

**17. SNAKE RIVER DOWNSTREAM FROM JOHNSON BAR LANDING, OR, WA, AND ID**

**Location.** This project is on the Snake River, downstream from Johnson Bar Landing, at river mile 230. The Snake River, which is the largest tributary of the Columbia River, rises in Yellowstone National Park in western Wyoming, flows generally in a westerly direction for approximately 1,000 miles, and empties into the Columbia River, near Pasco, WA, 324 miles from the Pacific Ocean. (See table 30-B for Authorizing Legislation of projects in the District.)

**Existing project.** The River and Harbor Act of 1945 authorized construction of dams, as necessary, for power, incidental irrigation, and open channel improvements for purposes of providing slack water

navigation and irrigation between the mouth of the Snake River and Lewiston, ID. That authorization modified previous authorizations only for the portion of improvement below Lewiston, ID. Acts of June 13, 1902, and August 30, 1935, as they pertain to open river improvement from Lewiston, ID, to Johnson Bar Landing, remain part of the existing project.

Improvements included in existing projects are Ice Harbor, Lake Sacajawea; Little Goose, Lake Bryan; Lower Granite, Lower Granite Lake; Lower Monumental, Lake Herbert G. West; and open-river improvement, Lewiston to Johnson Bar Landing. Each of the four locks and dams is described in an individual report, and cost and financial data for the entire project are shown on tables 30-A and 30-D.

Ice Harbor, Little Goose, Lower Granite, and Lower Monumental are in full operation.

**Local cooperation.** None required.

**Terminal facilities.** On the Snake River from the mouth to Johnson Bar Landing, there are 18 privately-owned barge terminals in use for shipping grain, petroleum products, fertilizers, wood products, cement, and other general cargo. There are also 5 marinas and 28 small-boat launching ramps, all open to the public. The facilities serve slack water navigation to river mile 140, the site of Lewiston, ID. That slack water reaches the Lewiston, ID, and Clarkston, WA, area since the lake behind Lower Granite was filled in February 1975.

**Operations during FY.** See individual reports for Ice Harbor, Little Goose, Lower Granite, and Lower Monumental. On the Snake River from Lewiston, ID, to Johnson Bar Landing, reconnaissance and condition surveys were conducted and survey markers were maintained.

**18. RURAL IDAHO, ID, ENVIRONMENTAL INFRASTRUCTURE AND RESOURCE PROTECTION AND DEVELOPMENT PROGRAM**

**Location.** Projects are at various locations within the state of Idaho.

**Existing project.** The primary objective of this program is to provide design and construction assistance to non-Federal interests for carrying out water-related environmental infrastructure and resource protection and development projects. Projects may include wastewater treatment and related facilities, water supply and related facilities,

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environmental restoration, and surface water resource protection and development. Projects are authorized under Section 595 of the Water Resources Development Act of 1999, PL 106-53, as amended.

**Local cooperation.** Local sponsors are responsible for 25 percent of costs associated with the projects.

**Operations during FY.** The following improvements were accomplished in FY 08:

- Completed construction for the city of Donnelly, ID: sewer collection system infiltration and inflow repairs and surface water protection.
- For the Eastern Idaho Regional Wastewater Authority, completed design and initiated construction for the Oxbow Wastewater Treatment Plant with the city of Shelley, ID.
- Initiated design of Eastern Interceptor Project with the city of Ammon, ID.
- Initiated construction of the new sanitary sewer system for the city of Smeltonville, ID.
- Initiated design for the city of Smeltonville, ID, stormwater collection system.
- Completed wastewater treatment plant upgrade for the city of Emmett, ID.

The FY 08 costs were \$5,579,516. (See table 30-A, Cost and Financial Statement.)

### 19. ENVIRONMENTAL ACTIVITIES UNDER SPECIAL AUTHORIZATION

**Project modification for the improvement of the environment (Section 1135(b), PL 99-662, as amended):** The FY costs were \$186,060 for continuation of two environmental restoration projects and coordination account, including: (1) Bennington Lake Diversion Dam, WA (\$29,589); (2) Walla Walla River, OR (\$146,522); and (3) Coordination Account (\$9,949). There were no new section 1135 projects.

**Project modification for Aquatic Ecosystem Restoration (Section 206, PL 104-303,**

**as amended):** The FY costs were \$108,456 for continuation of three aquatic ecosystem restoration projects and coordination account, including: (1) Camp Creek, OR (\$57,456); (2) Paradise Creek, ID (\$12,195); (3) Salmon River, ID (\$28,897); and (4) Coordination Account (\$9,908).

### Investigations

#### 20. COLLECTION AND STUDY OF BASIC DATA

During the FY, flood hazard data for a number of locations in the District were collected and analyzed. Flood information was provided to several Federal agencies; the states of Idaho, Oregon, and Washington; various cities and counties in those states; and some private organizations.

Total cost of collection and study of basic data during the FY was \$154,688, which included: Flood Plain Management Services (\$15,938); Technical Services (\$13,975); Quick Responses (\$5,949); and Special Studies (\$118,826).

#### 21. PRECONSTRUCTION, ENGINEERING, AND DESIGN

None.

#### 22. SURVEYS

**Little Wood River.** Lack of sponsor.

The total FY 08 costs for surveys were \$481,289, including Boise River (\$35,021); special studies (Walla Walla River Watershed [\$255,359]); miscellaneous activities (special investigations, FERC licensing activities, North American Waterfowl Management Plan, and Interagency Water Resource Development [\$88,655]); coordination with other Federal agencies (\$7,913); and Planning Assistance to States (\$94,341).

### Other Activities

#### 23. SHORELINE PROTECTION

Beach Erosion Control project activities pursuant to Section 103, Public Law 874, 87<sup>th</sup> Congress, as amended (preauthorization): The FY costs were \$10,959 for Section 103 coordination.

WALLA WALLA, WA, DISTRICT

**24. CATASTROPHIC DISASTER PREPAREDNESS**

PL 93-228

Continuity of Operations (510)	\$0
National Preparedness Planning (520)	0
Emergency Operations Center Support (530)	0
Catastrophic Disaster Training and Exercise (560)	<u>0</u>
Total Catastrophic Disaster Preparedness Program	\$0

**25. FLOOD CONTROL AND COASTAL EMERGENCIES (FCCE)**

Flood Control work under Authorization Emergency Flood Control Activities, Flood Fighting.

PL 84-99

Disaster Preparedness (100)	\$489,765
Emergency Operations (200)	0
Rehabilitation and Inspection Program (300)	80,303
Drought Assistance (400)	0
Advance Measures (500)	0
Hazard Mitigation (600)	<u>0</u>
Total FCCE	\$570,068

**26. GENERAL REGULATORY**

Permit Evaluation (100)	\$1,405,082
Enforcement (200)	86,422
Studies (300)	0
Environmental Impact Statement (500)	0
Administrative Appeals (600)	0
Compliance – Authorized Activities (800)	<u>83,107</u>
Total Regulatory	\$1,574,611

WALLA WALLA, WA, DISTRICT

**TABLE 30-A COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY 05 (\$)	FY 06 (\$)	FY 07 (\$)	FY 08 (\$)	Total Cost to 30-Sep-08 (\$)
3.	Jackson Hole, WY	New Work					
		Approp.	637,000	-	-	445,000	3,716,070
		Cost	638,000	-	-	34,560	,305,630
		Maint.					
		Approp.	255,100	875,000	850,000	307,000	14,374,160
		Cost	330,775	239,206	585,089	765,429	13,877,855
	(Contributed funds)	Maint.					
		Contrib.	-	-	-	-	378,798
		Cost	-	-	-	-	378,798
4.	Lucky Peak Lake, ID	New Work					
		Approp.	-	-	-	-	19,652,081
		Cost	-	-	-	-	19,652,081
		Maint.					
		Approp.	2,700,800	1,543,720	1,744,000	1,551,000	38,639,200
		Cost	2,024,084	2,105,109	1,737,494	1,618,050	38,460,631
5.	Mill Creek, WA	New Work					
		Approp.	-	-	-	100,000	2,358,495
		Cost	-	-	-	45,746	2,304,495
		Maint.					
		Approp.	1,257,000	917,000	1,198,000	1,424,000	28,063,810
		Cost	836,523	1,263,181	1,200,339	1,327,221	27,876,835
		Rehab					
		Approp.	-	-	-	-	17,714,102
		Cost	-	-	-	-	17,714,102
7.	Tribal Partnership Program	New Work					
		Approp.	133,000	-	-	-	133,000
		Cost	27,599	38,402	22,524	11,137	99,662
		Maint.					
		Approp.	-	-	-	-	-
		Cost	-	-	-	-	-
9.	Columbia River Fish Mitigation Program, OR, WA, and ID	New Work					
		Approp.	39,100,000	45,070,000	45,000,000	34,220,000	648,294,000
		Cost	36,080,539	33,419,273	46,370,514	32,643,221	633,402,547
10.	Dworshak Dam and Reservoir, ID	New Work					
		Approp.	-	-	-	200,000	327,682,196
		Cost	-	-	-	140,690	327,622,886
		Maint.					
		Approp.	9,144,089	10,618,201	9,950,147	13,735,876	243,272,971 <sup>1/</sup>
		Cost	8,421,941	8,751,310	10,301,229	11,529,632	238,744,879

<sup>1/</sup> Includes \$2,100,000 under Category-Class-Subclass code 70B, War Supplemental funds.

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**TABLE 30-A COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY 05 (\$)	FY 06 (\$)	FY 07 (\$)	FY 08 (\$)	Total Cost to 30-Sep-08 (\$)
11.	Ice Harbor Lock and Dam, WA	New Work					
		Approp.	-	-	-	-	210,249,757
		Cost	-	-	-	-	210,249,757
		Maint.					
		Approp.	9,208,513	9,562,802	8,351,749	8,524,415	237,860,557
	Cost	8,674,176	7,700,743	9,256,732	9,071,540	236,732,806	
12.	Little Goose Lock and Dam, WA	New Work					
		Approp.	-	-	-	-	262,632,022
		Cost	-	-	-	-	262,632,022
		Maint.					
		Approp.	6,232,405	6,890,289	8,022,390	5,804,387	167,926,155
	Cost	5,792,860	5,839,669	7,136,670	7,597,822	167,157,282	
13.	Lower Granite Lock and Dam, WA	New Work					
		Approp.	-	-	-	-	400,080,315
		Cost	-	-	-	-	400,080,315
		Maint.					
		Approp.	9,601,213	14,012,075	9,898,152	11,579,668	247,203,657
	Cost	9,385,610	13,250,126	8,736,258	11,390,555	244,145,161	
14.	Lower Monumental Lock and Dam, WA	New Work					
		Approp.	-	-	-	-	238,612,732
		Cost	-	-	-	-	238,612,732
		Maint.					
		Approp.	9,177,702	8,546,230	8,950,072	8,776,940	188,826,209
	Cost	8,849,851	7,869,170	8,061,341	9,863,616	187,687,390	
15.	Lower Snake River Fish and Wildlife Compensation Plan WA, OR, and ID (Contributed funds)	New Work					
		Approp.	1,337,000	668,000	850,000	375,000	238,251,000
		Cost	885,524	899,247	534,336	580,421	237,892,528
		New Work					
		Contrib.	-	-	-	-	223,965
	Cost	-	-	-	-	223,965	
16.	McNary Lock and Dam, Lake Wallula, OR and WA (Contributed funds)	New Work					
		Approp.	-	-	-	-	375,214,469
		Cost	-	-	-	-	375,214,469
		Maint.					
		Approp.	16,410,555	17,295,783	15,639,490	13,534,382	418,713,770
		Cost	15,800,378	14,612,871	15,729,025	15,580,251	417,151,544
		Maint.					
Contrib.	-	-	-	-	43,707		
	Cost	-	-	-	-	43,707	

WALLA WALLA, WA, DISTRICT

**TABLE 30-A COST AND FINANCIAL STATEMENT**

<b>See Section In Text</b>	<b>Project</b>	<b>Funding</b>	<b>FY 05 (\$)</b>	<b>FY 06 (\$)</b>	<b>FY 07 (\$)</b>	<b>FY 08 (\$)</b>	<b>Total Cost to 30-Sep-08 (\$)</b>
18.	Rural Idaho, ID, Environmental Infrastructure and Resource Protection and Development Program	New Work Approp. Cost Maint. Approp. Cost	1,565,000 1,463,746   -	4,157,000 875,291   -	3,200,000 1,738,028   -	3,814,000 5,579,516   -	13,545,900 10,434,782   -

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2008

**TABLE 30-B AUTHORIZING LEGISLATION**

<b>See Section In Text</b>	<b>Date Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
4.	Jul 24, 1946	<b>LUCKY PEAK LAKE, ID</b> Dam for flood control, irrigation, and recreation.	PL 79-526, Chief of Engineers Report, dated May 13, 1946.
	Oct 22, 1976	Second outlet for stream flow maintenance. De-authorized in 1990.	PL 94-587
	Dec 22, 1944 as amended	Construction, operation, and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944
5.	Jul 28, 1938 as amended	<b>MILL CREEK, WALLA WALLA, WA</b> Off-stream storage project upstream from Walla Walla.	H. Doc. 578, 75th Cong., 3rd Session
	Aug 18, 1941	Channel improvement through Walla Walla; concrete-lined channel.	H. Doc. 719, 76th Cong.
	Oct 31, 1992	Redesignation of reservoir to the Virgil B. Bennington Lake.	Sec 377, PL 77-228, Cong. 3rd Session Sec. 118 PL 102-580 102nd Cong.
9.	Jul 19, 1988	<b>COLUMBIA RIVER FISH MITIGATION PROGRAM</b> Design, test, and construct fish bypass facilities at Lower Monumental, Ice Harbor, Little Goose, Lower Granite, and McNary Locks and Dams.	PL 100-371
10.	Jul 3, 1958	<b>DWORSHAK DAM AND RESERVOIR, ID</b> Preparation of detailed plans.	S. Doc. 51, 84th Cong., 1st Session
	Aug 15, 1963	Redesignation of project as Dworshak Dam and Reservoir.	PL 88-96
	Oct 23, 1962	Dworshak Dam added Units 4, 5, and 6, Idaho. Units 5 and 6 were de-authorized in FY 1990. Unit 4 was de-authorized in FY 95.	PL 87-874
11.	Mar 2, 1945	<b>ICE HARBOR LOCK AND DAM, LAKE SACAJAWEA, WA</b> Unit 1 of 4, Lower Snake River Project. Lock and dam for navigation, power, recreation, and incidental irrigation.	H. Doc. 704, 75th Cong., 3rd Session
	Dec 22, 1944 as amended	Construction, operation, and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944
12.	Mar 2, 1945	<b>LITTLE GOOSE LOCK AND DAM, LAKE BRYAN, WA</b> Unit 3 of 4, Lower Snake River Project. Lock and dam for navigation, power, recreation, and incidental irrigation.	H. Doc. 704, 75th Cong., 3rd Session
	Dec 31, 1970	Designation of reservoir as Lake Bryan.	PL 91-638
13.	Mar 2, 1945	<b>LOWER GRANITE LOCK AND DAM, LOWER GRANITE LAKE, WA</b> Unit 4 of 4, Lower Snake River Project. Lock and dam for navigation, power, recreation, and incidental irrigation.	H. Doc. 704, 75th Cong., 3rd Session
14.	Mar 2, 1945	<b>LOWER MONUMENTAL LOCK AND DAM, LAKE HERBERT G. WEST, WA</b> Unit 2 of 4, Lower Snake River Project. Lock and dam for navigation, power, recreation, and incidental irrigation.	H. Doc. 704, 75th Cong., 3rd Session
	May 25, 1978	Designation of reservoir as Lake Herbert G. West.	PL 95-285

WALLA WALLA, WA, DISTRICT

<b>TABLE 30-B (Continued)</b>		<b>AUTHORIZING LEGISLATION</b>	
<b>See Section In Text</b>	<b>Date Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
15.		<b>LOWER SNAKE RIVER FISH AND WILDLIFE COMPENSATION PLAN, WA, OR, AND ID</b>	
	Oct 22, 1976 as amended	Fish hatcheries and replacement of wildlife habitat.	PL 94-587
	Nov 17, 1986	Changes to land acquisition authority.	H.R. 6 PL 99-662
16.		<b>McNARY LOCK AND DAM, LAKE WALLULA, OR AND WA</b>	
	Mar 2, 1945	Lock and dam for navigation, power, recreation, and irrigation.	H. Doc. 704, 75th Cong., 3rd Session
	Dec 22, 1944 as amended	Construction, operation, and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944
	Nov 17, 1986	Construction, operation, and maintenance of a second powerhouse. McNary Lock and Dam Second Powerhouse automatically de-authorized on Nov 16, 1991.	H.R. 6, PL 99-662 Sec. 1001, PL 99-362
17.		<b>SNAKE RIVER TO JOHNSON BAR, OR, WA, AND ID</b>	
	Jun 13, 1902	Open-river navigation Riparian to Pittsburg Landing.	H. Doc. 127, 56th Cong, 2nd Session
	Jun 25, 1910	Mouth to Riparian.	H. Doc. 411, 55th Cong, 2nd Session
	Aug 30, 1935	Pittsburg Landing to Johnson Bar.	Rivers and Harbors Committee, Doc. 25, 72nd Cong, 1st Session
	Mar 2, 1945	Supersedes previous legislation, mouth to Lewiston, ID, only. See Ice Harbor, Lower Monumental, Little Goose, and Lower Granite Locks and Dams.	H. Doc. 704, 75th Cong., 2nd Session

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**TABLE 30-C PRINCIPAL DATA CONCERNING NAVIGATION LOCK, SPILLWAY DAM, POWERPLANT, AND IMPOUNDMENT**

<b>Project</b>			
Dworshak Dam and Reservoir, ID (see Section 10 of text)	<b>SPILLWAY DAM</b>		
	Type of Construction	Concrete Gravity	
	Completed	September 1974	
	Maximum Capacity	150,500 cfs <sup>1</sup>	
	Crest Elevation	1,545 ft <sup>2</sup>	
	Control Gates:		
	Type	Tainter	
	Size, Width by Height	50 by 56.4 ft	
	Number	2	
	<b>POWERPLANT</b>		
	Length	428 ft	
	Generating Units:		
	Number Installed	3	
	Rating, Each	2 @ 90,000 kW <sup>3</sup>	
		1 @ 220,000 kW	
	Total Capacity Installed	400,000 kW	
	Space for Additional	3	
	Rating, Each	3 @ 220,000 kW	
	Total Potential Capacity	1,060,000 kW	
	Maximum Structural Height	717 ft	
	First Power-On-Line	March 1973	
	<b>IMPOUNDMENT</b>		
	Elevations:		
	Normal Operating Range	1,600 to 1,445 ft	
	Maximum	1,605 ft	
	Flood Control Storage	2,000,000 ac-ft <sup>4</sup>	
	Lake Length	53.6 mi <sup>5</sup>	
	Lake Water Surface Area at Elevation 1,600	17,090 ac <sup>6</sup>	
	Length of Shoreline	175 mi	
	Ice Harbor Lock and Dam, WA (see Section 11 of Text)	<b>NAVIGATION LOCK</b>	
		Clear Width	86 ft
		Clear Length	675 ft
		Lift:	
		Minimum	97 ft
		Average	100 ft
		Maximum	105 ft
		Minimum Water Depth Over Sills	16 ft
		Open to Navigation	May 1962
		<b>SPILLWAY DAM</b>	
		Type of Construction	Concrete Gravity
		Completed	January 1962
		Maximum Capacity	850,000 cfs
		Crest Elevation	391 ft
		Control Gates:	
	Type	Tainter	
Size, Width by Height	50 by 52.9 ft		
Number	10		

WALLA WALLA, WA, DISTRICT

**PRINCIPAL DATA CONCERNING NAVIGATION LOCK,  
TABLE 30-C (Continued) SPILLWAY DAM, POWERPLANT, AND IMPOUNDMENT**

<b>Project</b>	
	<b>POWERPLANT</b>
	Length 671 ft
	Generating Units:
	Number Installed 6
	Rating, Each 3 @ 90,000 kW
	3 @ 111,000 kW
	Total Capacity Installed 603,000 kW
	Maximum Structural Height 226 ft
	First Power-On-Line December 1961
	<b>IMPOUNDMENT</b>
	Elevations:
	Normal Operating Range 440 to 437 ft
	Maximum 446 ft
	Lake Length 31.9 mi
	Lake Water Surface Area at Elevation 440 8,375 ac
	Navigation Channel, Depth by Width 14 by 250 ft
	Length of Shoreline 80 mi
Little Goose Lock and Dam, WA (see Section 12 of text)	<b>NAVIGATION LOCK</b>
	Clear Width 86 ft
	Clear Length 668 ft
	Lift:
	Minimum 93 ft
	Average 98 ft
	Maximum 101 ft
	Minimum Water Depth Over Sills 15 ft
	Opened to Navigation May 1970
	<b>SPILLWAY DAM</b>
	Type of Construction Concrete Gravity
	Completed January 1970
	Maximum Capacity 850,000 cfs
	Crest Elevation 581 ft
	Control Gates:
	Type Tainter
	Size, Width by Height 50 by 60 ft
	Number 8
	<b>POWERPLANT</b>
	Length 656 ft
	Width 243 ft
	Generating Units:
	Number Installed 6
	Rating, Each 135,000 kW
	Total Capacity Installed 810,000 kW
	Maximum Structural Height 226 ft
	First Power-On-Line March 1970

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**PRINCIPAL DATA CONCERNING NAVIGATION LOCK,  
TABLE 30-C (Continued) SPILLWAY DAM, POWERPLANT, AND IMPOUNDMENT**

<b>Project</b>		
Little Goose Lock and Dam, WA (see Section 12 of text) Cont'd	<b>IMPOUNDMENT</b>	
	Elevations:	
	Normal Operating Range	638 to 633 ft
	Maximum	646.5 ft
	Lake Length	37.2 mi
	Lake Water Surface Area at Elevation 738	10,025 ac
	Navigation Channel, Depth by Width	14 by 250 ft
	Length of Shoreline	92 mi
Lower Granite Lock and Dam, WA (see Section 13 of text)	<b>NAVIGATION LOCK</b>	
	Clear Width	86 ft
	Clear Length	674 ft
	Lift:	
	Minimum	95 ft
	Average	100 ft
	Maximum	105 ft
	Minimum Water Depth Over Sills	15 ft
	Opened to Navigation	May 1975
	<b>SPILLWAY DAM</b>	
	Type of Construction	Concrete Gravity
	Completed	February 1975
	Maximum Capacity	850,000 cfs
	Crest Elevation	681 ft
	Control Gates:	
	Type	Tainter
	Size, Width by Height	50 by 60 ft
	Number	8
	<b>POWERPLANT</b>	
Length	656 ft	
Width	243 ft	
Generating Units:		
Number Installed	6	
Rating, Each	135,000 kW	
Total Capacity Installed	810,000 kW	
Maximum Structural Height	228 ft	
First Power-On-Line	April 1975	
<b>IMPOUNDMENT</b>		
Elevations:		
Normal Operation Range	738 to 733 ft	
Maximum	746.5 ft	
Lake Length	39.3 mi	
Lake Water Surface Area at Elevation 738	8,900 ac	
Navigation Channel, Depth by Width	14 by 250 ft	
Length of Shoreline	91 mi	

WALLA WALLA, WA, DISTRICT

**PRINCIPAL DATA CONCERNING NAVIGATION LOCK,  
TABLE 30-C (Continued) SPILLWAY DAM, POWERPLANT, AND IMPOUNDMENT**

<b>Project</b>	
Lower Monumental Lock and Dam, WA (see Section 14 of text)	<b>NAVIGATION LOCK</b>
	Clear Width 86 ft
	Clear Length 666 ft
	Lift:
	Minimum 97 ft
	Average 98 ft
	Maximum 103 ft
	Minimum Water Depth Over Sills 15 ft
	Opened to Navigation April 1969
	<b>SPILLWAY DAM</b>
	Type of Construction Concrete Gravity
	Completed March 1969
	Maximum Capacity 850,000 cfs
	Crest Elevation 483 ft
	Control Gates:
	Type Tainter
	Size, Width by Height 50 by 60 ft
	Number 8
	<b>POWERPLANT</b>
	Length 656 ft
	Width 243 ft
	Generating Units:
	Number Installed 6
	Rating, Each 135,000 kW
	Total Capacity Installed 810,000 kW
	Maximum Structural Height 242 ft
	First Power-On-Line May 1969
	<b>IMPOUNDMENT</b>
	Elevations:
	Normal Operating Range 540 to 537 ft
	Maximum 548 ft
	Lake Length 28.7 mi
	Lake Water Surface Area at Elevation 540 6,590 ac
	Navigation Channel, Depth by Width 14 by 250 ft
	Length of Shoreline 78 mi
McNary Lock and Dam, OR and WA (see Section 16 of text)	<b>NAVIGATION LOCK</b>
	Clear Width 86 ft
	Clear Length 683 ft
	Lift:
	Minimum 67 ft
	Average 75 ft
	Maximum 83 ft
	Minimum Water Depth Over Sills 15 ft
	Open to Navigation November 1953

**PRINCIPAL DATA CONCERNING NAVIGATION LOCK,  
TABLE 30-C (Continued) SPILLWAY DAM, POWERPLANT, AND IMPOUNDMENT**

**Project**

McNary Lock and Dam, OR and WA (see Section 16 of text) Cont'd	<b>SPILLWAY DAM</b>	
	Type of Construction	Concrete Gravity
	Completed	October 1953
	Maximum Capacity	2,200,000 cfs
	Crest Elevation	291 ft
	Control Gates:	
	Type	Vertical Lift
	Size, Width by Height	50 by 51 ft
	Number	22
	<b>POWERPLANT</b>	
	Length	1,348 ft
	Generating Units:	
	Number Installed	14
	Rating, Each	70,000 kW
	Total Capacity Installed	980,000 kW
	Maximum Structural Height	220 ft
	First Power-On-Line	November 1953
	<b>IMPOUNDMENT</b>	
	Elevations:	
	Normal Operating Range	340 to 335 ft
Maximum	356.5 ft	
Lake Length	64 mi	
Lake Water Surface Area at Elevation 340	38,800 ac	
Navigation Channel, Depth by Width	14 by 250 ft	
Length of Shoreline	242 mi	

<sup>1</sup> cubic feet per second

<sup>2</sup> feet

<sup>3</sup> kilowatt

<sup>4</sup> acre-feet

<sup>5</sup> miles

<sup>6</sup> acres

WALLA WALLA, WA, DISTRICT

**SNAKE RIVER DOWNSTREAM FROM  
JOHNSON BAR LANDING, OR, WA, AND ID  
(SEE SECTION 17 OF TEXT)**

**TABLE 30-D**

<b>Project</b>	<b>Estimated Cost (Corps of Engineers Funds Only)</b>	<b>New Work to September 30, 2008 Approp.</b>	<b>Cost</b>	<b>Maintenance to September 30, 2008 Approp.</b>	<b>Cost</b>	<b>Percent Compl</b>	<b>Constr. Started</b>
<b>Ice Harbor Lock and Dam</b>							
Initial Project	\$374,617,095	\$172,587,480	\$172,587,480	\$237,860,577	\$236,732,806	109	FY 56
Code 710 Rec	914,256	914,256	914,256	0	0		FY 57
Facilities						100	
Power Units 4-6	36,748,021	36,748,021	36,748,021	0	0	100	FY 71
Fish Bypass Program	88,085,000	89,133,034	89,133,034	0	0	101	FY 91
<b>Totals</b>	<b>500,364,372</b>	<b>299,382,791</b>	<b>299,382,791</b>	<b>237,860,577</b>	<b>236,732,806</b>	<b>107</b>	
<b>Little Goose Lock and Dam</b>							
Initial Project	342,480,476	201,690,215	201,690,215	167,926,155	167,157,282	108	FY 63
Power Units 4-6	60,941,807	60,941,807	60,941,807	0	0	100	FY 74
Fish Bypass Program	85,508,000	59,145,007	59,145,007	0	0	69	FY 89
<b>Totals</b>	<b>488,930,283</b>	<b>321,777,029</b>	<b>321,777,029</b>	<b>167,926,155</b>	<b>167,157,282</b>	<b>100</b>	
<b>Lower Granite Lock and Dam</b>							
Initial Project	555,186,593	353,803,981	353,803,981	247,203,657	244,145,161	108	FY 65
Code 710 Rec	63,800	63,800	63,800	0	0		FY 84
Facilities						100	
Power Units 4-6	46,212,534	46,212,534	46,212,534	0	0	100	FY 74
Fish Bypass Program	58,620,000	37,888,040	37,888,040	0	0	65	FY 88
<b>Totals</b>	<b>660,082,927</b>	<b>437,968,355</b>	<b>437,968,355</b>	<b>247,203,657</b>	<b>244,145,161</b>	<b>103</b>	
<b>Lower Monumental Lock and Dam</b>							
Initial Project	339,994,773	186,951,361	186,951,361	188,826,209	187,687,390	110	FY 61
Power Units 4-6	51,661,371	51,661,371	51,661,371	0	0	100	FY 75
Fish Bypass Program	90,134,000	75,974,704	75,974,704	0	0	84	FY 90
<b>Totals</b>	<b>481,790,144</b>	<b>314,587,436</b>	<b>314,587,436</b>	<b>188,826,209</b>	<b>187,687,390</b>	<b>104</b>	
Open River Lewiston to Johnson Bar Landing	34,613	34,613	34,613	401,583	401,583		
Open River Pasco to Lewiston	0	0	0	4,350	4,350		
<b>Totals Existing Project</b>	<b>2,131,202,339</b>	<b>1,373,750,224</b>	<b>1,373,750,224</b>	<b>842,222,511</b>	<b>836,128,572</b>	<b>104</b>	
Previous Projects Pasco to Lewiston	400,150	400,150	400,150	186,570	186,570		
<b>Totals Authorized Project</b>	<b>\$2,131,602,489</b>	<b>\$1,374,150,374</b>	<b>\$1,374,150,374</b>	<b>\$842,409,081</b>	<b>\$836,315,142</b>		