PITTSBURGH, PA DISTRICT

This District comprises part of eastern Ohio, western Pennsylvania, southwestern New York, northern West Virginia, and northwestern Maryland embraced in drainage basin of Ohio River and Tributaries above mile 127 (below Pittsburgh, PA), immediately upstream from New Martinsville, WV.

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Navigation

1. ALLEGHENY RIVER, PA

Location. The Allegheny River is 321 miles long. It rises in northern Pennsylvania, flows northwestward into New York, thence generally southwestward to Pittsburgh, PA, where it joins with Monongahela River to form the Ohio. (See Geological Survey Charts for western Pennsylvania and southwestern New York.)

Existing Project. The project consists of eight locks and dams to afford slack-water navigation for a length of 72 miles from Pittsburgh, PA to above East Brady, PA. Controlling depth through canalized portion is 9' at normal pool level. Channel width varies from a minimum of 200' to full width of river at mouth. Existing project is complete, the last lock, No. 9, was placed in service in 1938. Navigation channel has been widened at certain points and, in general, maintained to project depth, thus affording adequate depth for passage of commercial tows. During FY03 the river wall filling valve at Lock 2 was replaced by government labor at a cost of $468,004.

Local Cooperation. Fully complied with.

Terminal Facilities. City of Pittsburgh constructed a modern wharf for river freight. There are numerous privately maintained terminals and docks, consisting of tipples, various types of hoists, chutes, and pipelines for use in loading and unloading coal, stone, sand, gravel, petroleum products, steel products and other commodities. Transshipment of freight between river and railroads is handled at privately owned river-to-rail terminals. Existing private terminals are adequate for shipments and receipt in Pittsburgh District of type of commerce now in existence.

Licenses. The Federal Energy Regulatory Commission granted license for construction on non-federal hydropower facilities on the abutment side of the dam at the following locations: Lock 5, Allegheny - FERC license 3671, generating capacity 9.3 megawatt, start of operation October 1988; Lock 6, Allegheny - FERC license 3494, generating capacity 8.6 megawatt, start of operation December 1988; Lock 8, Allegheny - FERC license 3021, generating capacity 13.6 megawatts, start of operation November 1990; Lock 9, Allegheny - FERC license 3021, generating capacity 18.0 megawatts, start of operation November 1990.

Operations & Maintenance, General. During FY 2004 there was no major contract work on the Allegheny River.

2. CONSTRUCTION OF LOCKS & DAMS, OHIO RIVER

See this heading under Ohio River portion.

3. MONONGAHELA RIVER, PA & WV

Location. Formed by junction of Tygart and West Fork Rivers about one mile south of Fairmont, WV, and flows northerly for 128.7 miles to its junction with Allegheny River, forming Ohio River at Pittsburgh, PA. (See Geological Survey Charts for southwestern Pennsylvania and northern West Virginia.)

Previous Project. For details see Annual Report for 1963, page 1070.

Existing Project. Provides for improvement of river by nine locks and dams to afford slack-water navigation for its entire length from Pittsburgh to above Fairmont, WV. Original Locks and Dams 7, 8 and 9 were replaced by new Locks and Dams 7 and 8 in 1925. Increased traffic necessitated enlargement and improvement of Locks and Dams 1 to 6 between Pittsburgh and Rices Landing, PA, by building two parallel chambers and fixed concrete dams during 1905 and 1932. Locks and Dam 1 were eliminated in 1938 by raising Emsworth Dam, Ohio River. Reconstruction of Lock 2 was completed in 1953 to provide two modern navigation chambers. The existing Locks and Dam 2 were originally completed in 1907; major modifications were made in 1923 and 1924, and in 1926 the upper guard and guide walls were extended. Construction of Maxwell Locks and Dam and the reconstruction of Dam 4 have allowed for removal of obsolete Locks and Dams 5 and 6. Small and antiquated original Locks and Dams 10 to 15, inclusive, have been replaced by three modern structures. Morgantown Lock and Dam, initial step in replacement program, was completed in 1950 replacing Locks and Dams 10 and 11. Hildebrand Lock and Dam, next upstream, was completed in 1959 replacing Locks and Dams 12 and 13. Raising crest of Dam 8 was also completed in 1959 as part of upper river improvement and eliminates restricted depth in upper reach of pool. Opekiska Lock and Dam was completed in 1967 replacing Locks and Dams 14 and 15. Completion of this link in upper river replacement program provides for entire river length of minimum channel depth of 9', varying in width from a minimum of 250' to practically full width at mouth.

Locks and Dam 3 showed advanced stages of deterioration and, because of its strategic location and its importance to industry throughout the greater Pittsburgh area and the nation, emergency remedial work had to be done in 1977. Major rehabilitation of Locks and Dam 3 was completed on October 27, 1980.

The Water Resources Development Act of 1986 authorized the replacement of Lock and Dam 7 with Grays Landing Lock and Dam and the construction of a new lock landward of the existing lock at Lock and Dam 8 (renamed Point Marion Lock and Dam). In accordance with the provisions of this act, 50% of the total cost of construction for the Grays Landing and Point Marion projects was derived from the Inland Waterways Trust Fund. Construction of a new lock at Point Marion was completed and put into service in December 1993. Construction of a new lock at Grays Landing was completed and put into service in May 1993. Construction of the dam at Grays Landing was completed in December 1995.

Local Cooperation. None required.

Terminal Facilities. City of Pittsburgh constructed a modern wharf for freight. Boat landings are maintained by some municipalities along the river. A large number of tipples at mines and various types of hoists at manufacturing plants and sand and gravel supply companies are maintained for private use in

loading and unloading coal, coke, billets, steel products, sand, gravel, and other commodities. These terminals and docks are not available for general commerce. A number of docks and pipelines are also privately maintained for petroleum and acid products. Marine ways are maintained by some of the larger industries. These are also several terminals for rail-to-river and river-to-rail transfer. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. New Work: Work continues on cultural resources and finalizing real estate actions for the remainder of the Grays Landing and Point Marion projects. The present projects consist of 84 acres of fee land and 403.3 acres of easement. The Water Resources Development Act of 1992 authorized the District to proceed with navigation improvements on the Lower Monongahela River. Locks and Dams (L/D) 2, 3 and 4 are located within 50 miles of the "Point" in Pittsburgh. The authorized Lower Mon Project is a two-for-three improvement that will replace the 100-year old fixed-crest dam at L/D 2 with a gated dam (Braddock Dam) and replace the 70-year old, undersized Locks 4 with new twin 84' x 720' locks. The 100-year old L/D 3 will be removed and a new navigation pool will be established that will be 5' higher between Braddock and Elizabeth and 3.2' lower between Elizabeth and Charleroi. The project will adjust all municipally owned facilities adversely affected by these river level changes and dredge existing Pool 3. In addition, the Port Perry Railroad Bridge crossing at river mile 11.7 will be adjusted to accommodate the higher pool level under a cost sharing contract with Norfolk Southern Railroad. The new Braddock Dam is fully operational, dedicated on 27 May 2004, with contract completion in July 2004. Focus is now shifting to construction of the new locks at the Charleroi L/D. Approximately $260 million of project construction contract work has been undertaken through FY 2004, including the new Braddock Dam; approach dikes for the new Charleroi Locks; initial Pool 3 dredging; relocations for West Elizabeth, Elizabeth, Dravosburg, Glassport, Charleroi and Mon Valley sewage; site development for the new Charleroi Locks, and the demolition of the existing river chamber at the Charleroi Locks. An additional contract for the construction of the new River Wall was awarded in September 04 for $96.5M.

Operations & Maintenance, General. Major contract work on the Monongahela River during FY 2003 included the start of fabrication of tow haulage equipment for Lock 2, total contract $437,288 and the start of dredging the Monongahela River, total contract $683,828. In FY 2003 government hired labor replaced the land wall emptying valve and middle wall filling valve at Lock 2 for $719,804. Also, the lock chamber was

dewatered to renovate the downstream gate sill at Lock 4 for $ 1,251,904.

4. OPEN-CHANNEL WORK, OHIO RIVER

See this heading under Ohio River portion.

5. TYGART LAKE, WV

Location. Tygart Lake is located on the Tygart River in Taylor and Barbour Counties, north central WV. The lake is approximately 26 road miles due east of Clarksburg, WV and 30 road miles south of Morgantown. The dam is situated 22.7 river miles above the mouth of the Tygart River at Fairmont, or 2.25 miles upstream from Grafton, WV, and about 78 miles south of Pittsburgh, PA. (See Geological Survey Charts for Fairmont, Thornton, and Belington, WV.)

Existing Project. A reservoir for low water regulation and flood control. Dam is concrete gravity type with an uncontrolled center spillway flanked by abutment sections joining valley sides. Project was authorized by Public Works Administration January 11, 1934, and adopted by 1935 River and Harbor Act. For further project description see Annual Report for 1962. Authorized project is complete. Reservoir is in operation for low water control in Monongahela River and for purpose of flood protection in Monongahela and Ohio Valleys. Construction of dam was started in 1935 and placed in operation in 1938. Present project lands consist of 2,662.9 acres in fee, flowage easements over 1,216.9 acres and 1,731.9 acres of other easements. The project includes a Class C Visitor Center at the dam site and a day use picnic area outside the office, although no significant recreation exists on Corps managed land.

Local Cooperation. The State of West Virginia has assumed responsibility for the development and operation of hunting and fishing areas as well as the Tygart Lake State Park. Controlled releases for downstream navigation and recreation are also coordinated with others to the extent feasible. No local cooperation is required at completed project; however, future recreational developments are subject to certain conditions of non-federal cost-sharing under Federal Water Project Recreation Act of 1965. A cost-sharing agreement was executed with the West Virginia Department of Recreation in May 1981.

Licenses. The Federal Energy Regulatory Commission granted a license to the City of Grafton for construction of a non-federal hydropower facility at this project (FERC license 11851). Details of the design and other issues are still being finalized. The deadline for the start of project construction expired on April 15, 1995. The developer was granted an extension which expired on March 1, 2004; the City of Grafton submitted an application for a preliminary permit on 26 March 2004.

Operations During Fiscal Year. Operations & Maintenance, General: Reservoir was operated for benefit of flood control and low water regulation, as required, and project structures were operated and maintained in a serviceable condition throughout the year. Estimated flood control benefits achieved by this project for FY 2004 were $23,020,000 and, revised to reflect damages prevented in downstream districts as well as Pittsburgh District, were $1,121,017,000. Activities under reservoir management program comprising sanitation measures, conservation, land management, and operation and maintenance of public use facilities continued. This work was limited in scope as the State of West Virginia has jurisdiction over most of the recreation in the reservoir area.

Tygart Dam was selected as a Dam Safety

Assurance Project in March 1996. The Evaluation Report was initiated in March 1994 to address spillway capacity and structural stability in relation to the probable maximum flood event. Findings of the report concluded that under present conditions, the probable maximum flood would overtop the dam and cause failure. The report recommends protecting the dam from failure to include downstream erosion protection and stilling basin modifications. The Design Memorandum was completed in September 1998 and Plans and Specifications were completed in July 1999. The construction contract was advertised in August 1999 and awarded to Joseph B. Fay Co. on September 28, 1999 for $5,628,929. The Notice to Proceed was issued in October 1999 and work was completed in November 2002. The project features included construction of a new road to provide access to the left bank abutment of the dam, new concrete channels consisting of a concrete wall (end sill) and concrete slope paving on the downstream side of the dam, new concrete lagging retaining walls on the left and right banks of the dam, modification of the existing parapet wall, and minor repairs to the roadway decking. The project is now in compliance with current Dam Safety requirements. A construction contract for the replacement of the bulkhead hoist and side gate rehab was advertised in April 2003 and awarded to OCCI, Inc. in June 2003 for $2,579,800. Work was completed in 2004 for a cost of $4,500,000.

An additional construction contract to upgrade the electrical and mechanical systems was advertised in September 2003, awarded and started in 2004. Work is expected to be completed by June 2005.

A Section 1135 Streambank Protection Project with the State Park has been initiated for a final cost of approximately $700,000.

6. OTHER AUTHORIZED NAVIGATION PROJECTS

See Table 18-C on other authorized navigation projects.

Flood Control - Local Protection

7. ELKINS, WV

Location. On Tygart River in north central Randolph County, WV, about 155 miles south of Pittsburgh, PA. It is at downstream end of a long, broad reach of upper Tygart Valley, about 75 miles above mouth of river. (See Geological Survey Chart for Elkins, WV.)

Existing Project. Provides flood protection by diverting flood discharges from upstream arm of loop of natural river channel into an artificial cutoff channel, thereby bypassing City of Elkins. Improvement is designed to accommodate discharges equivalent to maximum flood of reasonable expectancy. Project construction was started in May 1946 and completed in May 1949. Completed work, except that portion of channel maintained by federal government, has been operated and maintained by City of Elkins since March 31, 1949. Present project lands consist of 32.04 acres in fee and 526.01 acres in easements. Project was authorized by 1938 Flood Control Act. For further project description see Annual Report for 1962, page 1222. Federal cost of completed project was $1,772,627; estimated non-federal cost for lands, easements, and rights-of-way was $40,000.

Local Cooperation. Fully complied with.

Operations During Fiscal Year. Operation & Maintenance, General: routine investigations and inspections were made. Project was last inspected in September 2004. Estimated flood control benefits achieved in FY 2004 were $4,267,000; total benefits through September 2004, revised to reflect damages prevented in downstream districts as well as Pittsburgh District, were $23,936,000.

8. JOHNSTOWN, PA

Location. Project is located in southwestern Cambria County, PA, about 58 miles east of Pittsburgh, PA. It is in a deep and comparatively narrow valley at junction of Stoney Creek and Little Conemaugh River, which unite to form Conemaugh River. (See Geological Survey Chart for Johnstown, PA.)

Existing Project. Provides for increased channel capacity by enlarging and realigning channels and protecting banks with concrete pavement. Improvement designed to accommodate discharges equivalent to those of March 1936 flood, maximum natural flow of record, minimum of over-bank flow and to practically eliminate damages there from. Project construction began in August 1938 and was completed in November 1943. Footer protection for Unit 4 was completed in November 1949. Present project lands consist of easements over 199 acres. Project was authorized by Flood Control Acts of 1936 and 1937. For further project description see Annual Report for 1962, page 1215.

Local Cooperation. The rules of local cooperation for the rehabilitation of the existing project are governed by the FY 1991 Energy and Water Resources Appropriations Act. Pursuant to this act, the City of Johnstown will have a limited role in securing the needed rights of access to non-federal structures included in the line of protection and will hold and save the United States from damages due to construction or operation and maintenance of the work on the non-federal structures, except for damages due to the fault or negligence of the United States or its contractors.

Operations During Fiscal Year. Operations & Maintenance, General: The FY 1991 Energy and Water Resources Development Appropriations Act authorized and directed the Corps to undertake a major rehabilitation of the existing project. The Project Design Memorandum was approved in June 1995. The major rehabilitation work is to be accomplished under the Construction, General (CG) appropriation at an estimate cost of $32,500,000. Contract plans and specifications were initiated in July 1995. Seven of eight construction contracts were awarded through September 2004. The eighth contract is dependant on Operations & Maintenance funds availability. The CG project was physically complete in September 2004.

The Construction, General work consisted of the repair of 54 existing wall sections, slope paving and replacement of balustrade (safety) wall. Also included in the major rehabilitation is all the necessary Operation and Maintenance (O&M) funded work. The O&M work estimated to cost $7,500,000 consists of concrete spall repairs, slope paving joint repairs, sediment removal and miscellaneous repairs. Through FY 2004 $30,000,000 CG and $4,361,058 O&M have been expended. Flood damages prevented by the project through September 30, 2004 were estimated to be $804,894,000.

9. PUNXSUTAWNEY, PA

Location. Borough of Punxsutawney is on Mahoning Creek in Jefferson County, PA, about 85 miles northeast of Pittsburgh, PA. It is on a comparatively wide, alluvial flood plain about 52 miles above mouth of stream and 30 miles above Mahoning Creek flood control dam. (See Geological Survey Charts for Punxsutawney and Smicksburg, PA.)

Existing Project. Provides flood protection by channel enlargement, dikes, and walls. Improvement is designed to accommodate discharges 20% greater than that of maximum flood of record. Construction was accomplished by construction of four units. Construction started in May 1946 and was completed in June 1950. Present project lands consist of perpetual easements over 72.6 acres. Completed works, except that portion of channel maintained by the federal government, have been operated and maintained by Borough of Punxsutawney since July 31, 1950. Project was authorized by 1938 Flood Control Act. For further project description see Annual Report for 1962, page 1209.

Local Cooperation. Fully complied with.

Operations During Fiscal Year. Operations & Maintenance, General: operation activities continued and routine investigations and inspections were made. Project was last inspected in October 2002**.** Total flood damages prevented through FY 2004 were estimated to be $97,579,000.

10. SAW MILL RUN, PITTSBURGH, PA

Location: The project is located within the City of Pittsburgh, Allegheny County, at Ohio River mile 0.7 and traverses upstream from the mouth of Saw Mill Run approximately 4,700 L.F.

Existing Project: The proposed project was authorized in the 1986 WRDA in accordance with the Chief of Engineers report dated January 30, 1978. The 1996 WRDA increased the project estimate to $12,780,000 and increased to $22,000,000 in the FY04 Appropriations Act. This project was included in the FY97 appropriations as a new construction start.

Local Cooperation: The City of Pittsburgh is the local sponsor for this project and is responsible for real estate acquisition and relocation design and construction. The project will be cost shared 75% federal and 25% non-federal in accordance with the requirements of the 1986 WRDA.

Operations During Fiscal Year: In October 1997, a Project Cooperation Agreement was executed with the City of Pittsburgh. In June 1998, the District executed a Memorandum of Agreement (MOA) for the purpose of allowing the District to acquire the real estate and complete relocation work on behalf of the city. With the MOA executed and the funds for this effort transferred to the District in July 1998, real estate acquisition was initiated, and was completed in November 2000. Plans and specifications for the project were completed in March 2000 and the construction contract was advertised in November 2000. The contract was awarded to Carmen Paliotta Contracting in April 2001 for $12,881,875. The current construction contract was completed in May 2004 and turned over to the City of Pittsburgh for operation and maintenance responsibilities in June 2004. Due to contract overruns and unforeseen conditions certain project features were deleted from the existing construction contract in order to maintain project cost within funding constraints. When funding becomes available, an additional construction contract will be awarded to complete the items deleted from the previous contract.

11. WEST VIRGINIA & PENNSYLVANIA FLOOD CONTROL

Location. Projects under this program in the Pittsburgh District are located in the Tygart River Basin in West Virginia and the lower Allegheny River in Pennsylvania. The priority (named in the legislation) communities located in West Virginia are Phillipi, Belington, Parsons and Rowlesburg. The priority communities in Pennsylvania are New Bethlehem, Clymer, Benson, Hooversville, Meyersdale, Connellsville and Dubois. Section 581 of the Water Resources Development Act of 1996 authorizes the Secretary of the Army to design and construct flood control measures for these priority communities at a level of protection sufficient to prevent future losses from flooding equivalent to that which occurred in January 1996, but at least no less than a 100 year level of protection. Project development will consist of developing a least cost plan including structural and/or non-structural elements, to provide the authorized level of protection without guard to a benefit/cost ratio.

Local Cooperation. The reconnaissance phase is 100% federally funded. The Detailed Project Report (DPR), Plans and Specifications and Construction phases are cost shared at 65% federal funds and 35% non-federal funds. A Design Agreement is required to design efforts and a Project Cooperation Agreement is required prior to the project construction. In September 1998, Director of Civil Works, HQUSACE, approved the District's request for a waiver of the up-front cost sharing for the design portion of the West Virginia projects. The basis for the approval of the waiver was that the priority communities in West Virginia qualified for a reduced cost share (5%) based on the ability to pay provisions of Section 103(m) of the Water Resources Development Act of 1986.

Operation During Fiscal Year. In Pennsylvania, the General Management Plans for the seven communities were completed in January 1999. Project Study Plans (PSP) for the seven communities were completed in July 2000. Design Agreements are being prepared and current plans call for the execution of

these agreements pending the local sponsors' ability to obtain the non-federal cost share. Design Agreements were executed for the Meyersdale and Hooversville projects in FY 2001.

In West Virginia, the PSPs for the two communities were completed in September 1998 and approved in November 1998. Since no Design Agreement is required for these communities, work on the DPRs started in December 1998. Least cost plans and locally preferred plans for both communities have been developed. A decision to implement a Flood Warning System for the two communities as the first phase of the projects was made in September 1999. An interim DPR for the Flood Warning System was submitted in November 2001. Installation of the Flood Warning System was completed. The Philippi DPR was completed in FY 2004.

Flood Control - Reservoirs

12. BERLIN LAKE, OH

Location. Dam is on Mahoning River about 73 miles above its confluence with Shenango River. It is about 10 miles above existing Milton Reservoir Dam and 35 miles upstream from Warren, Ohio. Reservoir is in Portage, Mahoning and Stark Counties, OH. (See Geological Survey charts for Warren, Ravenna, and Alliance, OH.)

Existing Project. A reservoir for flood control and water supply. Dam consists of a partially controlled, concrete gravity, center spillway flanked by rolled-earthfill abutment sections joining valley sides. Authorized project is complete and in operation for flood control and low water regulation purposes in industrialized Mahoning Valley below. Construction of dam was started in January 1942 and completed in June 1943. Present project lands consist of 6,885.3 acres in fee and 1,098.7 acres in easements. For further project description, see Annual Report for 1962, page 1233.

Local Cooperation. None required at completed project; however, future recreational developments are subject to certain conditions of non-Federal cost-sharing under Federal Water Project Recreation Act of 1965.

Operations During Fiscal Year. Operations & Maintenance, General: Reservoir was operated as required and necessary repairs were made to structures and appurtenances. A National Public Lands Day event was held at the project in September 2004 with 110 NPLD volunteers and other project volunteers providing $29,500 in services during FY 2004. Two additional security gates and 700 feet of guard rail were installed at the Dam and Dam Maintenance complex to complement existing security features. Estimated flood control benefits achieved in FY 2004 were $410,042,000; total benefits through September 2004, revised to reflect damages prevented in downstream districts as well as Pittsburgh District, were $959,714,000.

13. CONEMAUGH RIVER LAKE, PA

Location. Dam is on Conemaugh River in Indiana and Westmoreland Counties, PA, 7.5 miles above junction of Conemaugh River and Loyalhanna Creek, which form the head of the Kiskiminetas River. It is about 2 miles northeast of Tunnelton, PA, and about 42 miles east of Pittsburgh, PA. Reservoir is in Westmoreland and Indiana Counties, PA. (See Geological Survey Charts for Latrobe, New Florence and Elders Ridge, PA.)

Existing Project. A flood control reservoir dam of concrete gravity type with a gate-controlled center spillway flanked by abutment sections joining valley sides and an earth embankment ending in right abutment. Authorized project is complete. Reservoir system is designed for protection of Pittsburgh and reduction of flood heights in upper Ohio Valley, generally. Present project lands consist of 7608.7 acres in fee and 522.8 acres in easements. Project authorized by Flood Control Acts of 1936 and 1938. For further project description see Annual Report for 1962, page 1217.

Local Cooperation. None required by law.

Licenses. A non-federal hydropower project utilizing Conemaugh Lake was constructed downstream of the dam under FERC Licenses 3207. The 15-megawatt project began commercial operation on February 6, 1989. It is owned by National Renewable Resources, Inc.

Operations During Fiscal Year. Operation & Maintenance, General: Reservoir was operated for benefit of flood control as required, and necessary repairs were made to structures and appurtenances. At the request of the Borough of Saltsburg, PA, the U.S. Congress added $50,000 for the Pittsburgh District to conduct a 3-year study/test of special weekend water releases from Conemaugh Dam for downstream recreation. A real estate license and cooperating association agreement with the Conemaugh Valley Conservancy (CVC) for the construction of a 3.5 mile section of hiking/biking trail named the West Penn Trail were signed in FY00, and construction was completed in June 2002**.** In 2003 the lease was amended to include a switchback trail over the Bow Ridge Recreation Area and through the Dam Site Recreation Area to the western border of federal property. Construction of that section is currently ongoing. The CVC and other trail organizations are planning future expansion of the West Penn Trail to the eastern border of Conemaugh River Lake with a northern spur connection to the Hootlebug Trail. Estimated flood control benefits achieved by this reservoir for FY 2004 were $419,231,000; total flood control benefits through September 2004, revised to reflect damages prevented in downstream districts as well as Pittsburgh District, were $1,950,584,000. Activities under reservoir management program comprising sanitation measures, conservation, land management and operation and maintenance of public use facilities were continued.

14. CROOKED CREEK LAKE, PA

Location. Dam is on Crooked Creek 6.7 miles above junction of creek with Allegheny River near Ford City, PA, and about 32 miles northeast of Pittsburgh, PA. (See Geological Survey Charts for Freeport and

Elders Ridge, PA.)

Existing Project. A flood control reservoir dam of earth-fill type with separate uncontrolled saddle spillway and tunnel outlet works. Authorized project is complete. Reservoir is in operation as a unit of a coordinated reservoir system designed for protection of Pittsburgh and reduction of flood heights in upper Ohio Valley, generally. Construction of dam was started in March 1938 and completed in October 1940. Present project lands consist of 2,561.7 acres in fee and 100.22 acres in easements. Project was authorized by Flood Control Acts of 1936 and 1938. For further project description see Annual Report for 1962, page 1213.

Local Cooperation. None required by law

Operations During Fiscal Year. Operations & Maintenance, General: Reservoir was operated for benefit of flood control, as required, and necessary repairs were made to structures and appurtenances. In 2004 non-working Gate Valve dials were replaced with digital Actuators by the District Repair Party; the jib crane was serviced and repaired and the overhead crane received new brake shoes by private contract; contract labor continued to remove woody vegetation at the emergency spillway, 20% complete; contract labor removed 1,000 cubic yards of drift and debris from operational areas; a new base radio and antenna were installed in the tower; Hurricane Ivan produced a near record pol coming within two inches of the record set by Hurricane Agnes. The lease with Manor Township for the Armstrong Horse Park remained in effect. Congress has mandated the transfer of 97.48 acres of free land to Manor Township for operation of the Armstrong Horse Park.; the lease has not yet been transferred. Estimated flood control benefits achieved by this reservoir for FY 2004 were $198,967,000; total benefits achieved through September 30, 2004, revised to reflect damages prevented in down stream districts as well as Pittsburgh District, were estimated at $488,088,000. Activities under reservoir management program comprising sanitation measures, conservation, land management, and operation and maintenance of public-use facilities continued.

15. EAST BRANCH, CLARION RIVER LAKE, PA

Location. Dam is in Elk County, PA on East Branch of Clarion River above Middle Fork, 7.3 miles above junction of East and West branches of Clarion River at Johnsonburg, PA, and about 105 miles northeast of Pittsburgh, PA. Reservoir is in Elk County, PA. (See Geological Survey Chart for Mount Jewett, PA.)

Existing Project. A reservoir for flood control and low-water regulation. Dam is rolled-earthfill type with gate-controlled concrete tunnel under right abutment and a paved uncontrolled spillway on left abutment slope. Authorized project is complete. Reservoir is in operation for low-water regulation purposes in Clarion River Valley below and for flood control as a unit of a coordinated reservoir system for protection of Pittsburgh and upper Ohio Valley, generally. Construction of dam was started in June 1947 and completed in July 1952. Present project lands consist of 287.2 acres in fee and 1,296.7 acres in easements. Project was selected for construction under general authorization for Ohio River Basin in Flood Control Acts of 1938 and 1944. For further project description.

See Annual Report for 1962, page 1206.

Local Cooperation. None required by law.

Operations During Fiscal Year. Operations & Maintenance, General: reservoir was operated for flood control and low-water regulation, as required; and necessary repairs were made to structures and appurtenances. Volunteers continued to apply limestone sand to tributary streams in an effort to neutralize acid mine drainage into the lake. For the past 5 years, the Elk County Fishermen and Watershed Group have installed fish habitat structures in the lake under the guidance of the Pennsylvania Fish and Boat Commission's Adopt-A-Lake Program. In FY 2000 under a Cost Share Agreement between the District, US Forest Service, Willamette Industries, now known as Weyerhaeuser, Inc. and utilizing labor from the Federal Bureau of Prisons, the District began a modernization program in the campground. Twenty two of thirty-two camp sites have been redesigned and enlarged with sixteen of the sites having 20/30/50 amp electrical service installed. Rehabilitation of non-electric sites will continue in FY 2005. Nine "walk-in" tent sites are planned when funding becomes available which will bring the total campsites available to the authorized forty-one campsites. Congressman John Peterson, PA 5th Congressional District, secured funds to purchase a restroom/shower facility that is scheduled to be constructed in FY 2005 in the East Branch Campground. Congressman John Peterson, PA 5th Congressional District secured funds to improve the boat launching ramp. East Branch Lake was not successful in securing a LECA agreement with the Elk County Sheriff's Office for 2004 or 2005 and they co-hosted the 8th Annual Elk County Rescue Weekend for emergency, rescue and other emergency services from local, regional, and other state agencies. Intake Gates 1,2,3 and 4 trash racks as well as the low flow bulkhead were rehabilitated by the district repair party. Some reservoir management activity was performed throughout the year comprising sanitation measures, conservation, land management and operation of public-use facilities. Estimated flood control benefits achieved by this reservoir for FY 2004 were $144,869,000. Total flood control benefits for this reservoir through September 30, 2004 were $1,094,704,000.

16. KINZUA DAM & ALLEGHENY RESERVOIR, PA & NY

Location. Dam site is on Allegheny River 7 miles above Warren, PA, and 198 miles above mouth of river at Pittsburgh, PA. Reservoir is in Warren and McKean Counties, PA, and Cattaraugus County, NY. (See Geological Survey Charts for Warren and Kinzua, PA-NY, and Randolph and Salamanca, NY.)

Existing Project. Reservoir provides flood control, low water regulation and recreation. Dam consists of a combination concrete gravity structure and rolled earth

embankment with gate-controlled spillway and discharge conduits controlled by slide-gates in gravity section. Construction of project, initiated in February 1960, is complete. Construction of dam was started in September 1960 and completed in December 1965. Development of recreation area at Onoville under a cost-sharing agreement with Cattaraugus County was completed in June 1978. Present project lands consist of 2,646 acres in fee and easements over 22,420.0 acres. For further details see Annual Report for 1962, page 1202. Project was authorized by Flood Control Acts of 1936, 1938 and 1941.

Local Cooperation. None required by law.

Licenses. The Federal Power Commission granted a license to Pennsylvania Electric Company and Cleveland Electric Illuminating Company on December 28, 1965, for the joint construction, operation and maintenance of a 435-megawatt pumped-storage installation (FPC Project No. 2280). The project is complete. Present ownership is with First Energy Corporation.

Operations During Fiscal Year. Operations and Maintenance, General: Reservoir was operated for benefit of flood control, hydropower, fish and wildlife, recreation and low water regulation, as required and necessary repairs were made to structures and appurtenances. Visitor Center was successfully operated through the summer/fall recreation season and dam tours conducted October through June in FY 2004. The Warren County Sheriff's Department provided LECA services in FY 2004. Staff at Kinzua Dam hosted the Allegheny River Pennsylvania Canoe Race and the reservoir hosted the American Power Boat Association Divisional Race in FY 2004. Facility staff provided oversight and review of numerous fishing tournament permits. A $20,000 O&M-funded Initial Appraisal was conducted in FY 2004 and recommended a reconnaissance study under the Section 216 authority to review the Kinzua Dam/Allegheny Reservoir project operations with an eye toward improving conditions that would accommodate increased recreational development in the area, along with opportunities to obtain ecosystem improvements on the reservoir and downstream. In addition, Congress authorized funds to modernize and improve facilities at the Visitors Center and provide ADA angler access to the river below the dam. Estimated flood control benefits achieved by this reservoir for FY04 were $144,869,000. Total flood control benefits for this reservoir through September 30, 2004 were $1,094,709,000.

17. LOWER GIRARD DAM, OH

Location. Lower Girard Lake (formerly called Liberty Lake) is located in the northeast section of Ohio in Trumbull County in the City of Girard which lies just northwest of the City of Youngstown, OH. Lower Girard Lake Dam is located on Squaw Creek approximately 5,000' downstream of Girard Lake and approximately 2 miles upstream from Squaw Creek's confluence with the Mahoning River.

Existing Project. Lower Girard Lake together with Girard Lake, located immediately upstream, is a system of water supply reservoirs that was constructed in 1917 and operated by the Ohio Water Service Company to provide process water to local steel mills and industry. The Lower and Upper Girard Dams were purchased by the City of Girard from the Consumer Ohio Water Company in 1995. The dam is an Ambersen type buttress dam. It has been determined that the dam requires rehabilitation to meet modern dam safety standards.

Local Cooperation. The City of Girard, OH is the non-federal sponsor for this project. The city owns the dam and the lake impounded by it. A Design Agreement was executed in July 1998 with cost-sharing for the design portion set at 75% federal and 25% by the city.

Operations During Fiscal Year. In WRDA 1998 Congress added $2,500,000 for the Corps to investigate the safety of, and rehabilitate the Lower Girard Dam. The "Special Report and Environmental Assessment" recommended a rehabilitation plan to bring the dam up to present safety standards. Total cost for design and rehabilitation is estimated at $12,600,000. However, the economic analysis for the plan did not result in a favorable B/C ratio. Subsequently, in March 2002 the ASA(CW) determined that the least cost plan to render the dam safe would be to breach and decommission it at a cost of $1,100,000. During FY 2004 the City of Girard administration worked with the City Council and the Corps to propose alternatives to a full-breach which would leave the dam safe, but still retained. Presently, a $3,500,000 proposal is to lower the crest of the dam twelve feet which will result in a smaller but safe dam.

18. LOYALHANNA LAKE, PA

Location. Dam is on Loyalhanna Creek, 4.5 miles above junction of creek with Conemaugh River at Saltsburg, PA, and about 29 miles east of Pittsburgh,

PA. Reservoir is in Westmoreland County PA. (See Geological Survey Chart for Latrobe, PA).

Existing Project. A flood control reservoir dam of concrete gravity type with a gate-controlled center spillway flanked by abutment sections joining valley sides, and an earth embankment section ending in left abutment. Authorized project is complete. Reservoir is in operation as a unit of a coordinated reservoir system designed for protection of Pittsburgh and reduction of flood heights in upper Ohio Valley, generally. Construction of dam was started in October 1939 and completed in June 1942. Present project lands consist of 3,330.8 acres in fee and easements over 86.7 acres. Project was authorized by Flood Control Acts of 1936 and 1938. For further project description see Annual Report for 1962, page 1219.

Local Cooperation. None required by law.

Operations During Fiscal Year. Operations & Maintenance, General: Reservoir was operated for benefit of flood control, as required and necessary

repairs were made to structures and appurtenances. At the request of the Borough of Saltsburg, PA, the U.S. Congress added $50,000 for the Pittsburgh District to conduct a 3-year study/test of special weekend water releases from Loyalhanna Dam for downstream recreation. Estimated flood control benefits achieved by this project for FY 2004 were $134,412,000. Total benefits for this reservoir through September 30, 2004 were $458,357,000. Activities under reservoir management program comprising sanitation measures, conservation, land management and operation and maintenance of public use facilities continued.

19. MAHONING CREEK LAKE, PA

Location. Dam is on Mahoning Creek in Armstrong County, PA, 22.9 miles above junction of creek with Allegheny River. It is about 6.50 miles southeast of New Bethlehem, PA, and about 51 miles northeast of Pittsburgh, PA. Reservoir is in Armstrong, Indiana and Jefferson Counties, PA. (See Geological Survey Charts for Rural Valley and Smicksburg, PA).

Existing Project. A flood control reservoir dam of concrete gravity type with a gate-controlled center spillway flanked by abutment sections joining valley sides. Authorized project is complete. Reservoir is in operation as a unit of a coordinated reservoir system designed for protection of Pittsburgh and reduction of flood heights in upper Ohio Valley, generally. Construction of dam started in February 1939 and was completed in June 1941. Present project lands consist of 2,519.36 acres in fee and easements over 83.5 acres. Project was authorized by Flood Control Acts of 1936 and 1938. For further project description see Annual Report for 1962, page 1210.

Operations During Fiscal Year. Operations & Maintenance, general: reservoir was operated for benefit of flood control, as required and necessary repairs were made to structures and appurtenances. Estimated flood damages prevented by this project for FY 2004 were $191,484,000; total benefits through September 30, 2004, revised to reflect damages prevented in downstream districts as well as Pittsburgh District, were $622,073,000. Activities under reservoir management program comprising sanitation measures, conservation, land management and operation and maintenance for public-use facilities continued.

20. MICHAEL J. KIRWAN DAM & RESERVOIR, OH

Location. Dam site is on West Branch of Mahoning River which joins Mahoning River at Newton Falls, OH. It is 11 miles above mouth of branch and about 15 miles upstream from Warren, OH. Reservoir is in Portage County, OH. (See Geological Survey Charts for Ravenna, Garrettsville, Chagrin Falls, and Kent, OH.)

Existing Project. Reservoir provides flood control, low-water regulation and recreation. Dam consists of a rolled-earth embankment structure with gate-controlled outlet works and an uncontrolled side-hill spillway through left abutment. Authorized project is completed and in operation for flood control and low water regulation purposes. Present project lands consist of 6,298.9 acres fee and easements over 27.9 acres. For further description see Annual Report for 1962, page 1231 (West Branch Reservoir, Mahoning River, Ohio). Project was authorized by 1958 Flood Control Act (H. Doc. 191, 85th Cong. 1st sess.), with local contribution requirements modified by Flood Control Act of 1960. Federal costs of completed project are $17,370,000. Local interests contributed $3,230,000 during period of construction bringing initial project cost to $20,600,000. The State of Ohio has a lease from the Secretary of the Army for development and operation of recreation facilities in the reservoir area.

Local Cooperation. Local interests must contribute $5,200,000 for water pollution abatement and for municipal and industrial water supply purposes, of which $3,230,000 was paid in cash during construction. Unpaid balance at time project is placed in operation, $1,970,000, will be paid in cash at that time or on an annual basis. Of the unpaid balance of contributed funds due and payable, payment in full of Trumbull County's share in the amount of $663,040 has been received. Mahoning County elected to pay their share ($1,306,960) in 50 annual installments of $50,323.32, including interest.

Operations During Fiscal Year. Operations & Maintenance, General: reservoir was operated for benefit of flood control and low-flow augmentation, as required and necessary repairs were made to structures and appurtenances. Estimated flood control benefits achieved by this project for FY 2004 were $168,787,000. Total benefits for this reservoir through September 30, 2004 were $456,547,000. Activities under reservoir management program comprising sanitation measures, conservation, land management, and operation and maintenance of public-use facilities continued. This work was limited in scope as state of Ohio has jurisdiction over most of the recreation in reservoir area.

21. MOSQUITO CREEK LAKE, OH

Location. Dam is on Mosquito Creek, 12.6 miles above junction of creek with Mahoning River at Niles, OH, and about 18 miles northwest of Youngstown, OH. (See Geological Survey Charts for Bristolville and Kinsman, OH, and PA.)

Existing Project. A reservoir for flood control, low-water regulation and water supply storage. Dam is rolled-earthfill type with outlet facilities through dam, and an uncontrolled natural wasteway to discharge overflow from reservoir. Authorized project is complete and in operation for flood control and low-water regulation purposes in industrialized Mahoning and Beaver Valleys below. Construction of dam was started in July 1943 and was ready for beneficial use in January 1944. Present project lands consist of 11,180.4 acres in fees and easements over 276.0 acres. State of Ohio has a license from Secretary of the Army for development and operation of recreation facilities in reservoir area. Project was selected for construction under general authorization for Ohio River Basin in 1938 Flood Control Act. For further project description see Annual Report for 1962, page 1228.

Local Cooperation. There is a water supply agreement with the City of Warren for municipal and

industrial water storage in an amount equal to 11.1% of total reservoir storage. The City makes annual payments for this storage. No other local cooperation is required at completed project; however, future recreational developments are subject to certain conditions of non-Federal cost-sharing under Federal Water Project Recreation Act of 1965.

Operations During Fiscal Year. Operation & Maintenance, General: Reservoir was operated for benefit of flood control and low-flow regulation as required and necessary repairs were made to structures and appurtenances. Estimated flood control benefits achieved by this reservoir for FY04 were $50,844,000. Total flood control benefits for this reservoir through September 30, 2004 were $189,676,000. Activities under reservoir management program comprising sanitation measures, conservation, land management and operation and maintenance of certain public-use facilities continued. This work was limited in scope as State of Ohio has jurisdiction over most of the recreation in reservoir area. In FY 2002 the District initiated a Dam Safety Assurance Study to determine the best alternative in bringing the dam up to current dam safety standards.

22. OHIO RIVER BASIN (PITTSBURGH DISTRICT)

Location. A series of dikes, floodwalls, channel improvements, and reservoirs/lakes in Ohio River Basin within Pittsburgh District.

Existing Project. Individual projects considered in comprehensive plan within Pittsburgh District. (See Tables 18-B, 18-E and 18-K on Acts authorizing existing projects, local protection projects and reservoirs.)

Operations During Fiscal Year. New Work: none by the United States except as stated in individual projects. Completed local protection projects operated and maintained by local interests, including those

projects for which individual reports have been included.

23. SHENANGO RIVER LAKE, PA & OH

Location. Dam is on Shenango River about 0.8 mile above Sharpsville, PA, and about 33 miles above junction of river with Mahoning River, which unite near New Castle, PA, to form Beaver River. Reservoir is in Mercer County, PA and Trumbull County, OH. (See Geological Survey Chart for Kinsman, OH, and Shenango, PA.)

Existing Project. A reservoir for flood control, low-flow augmentation and recreation. Dam consists of a concrete gravity structure with gate-controlled outlet works and an uncontrolled center spillway section. Authorized project is complete. Reservoir is in operation for low-water regulation purposes in Shenango River valley below and for flood control as a unit of a coordinated reservoir system for protection of Shenango River valley and the Beaver and upper Ohio River Valley, generally. Construction of dam was started in March 1963 and completed in May 1965. Present project lands consists of 14,485.94 acres in fee and easements over 198 acres. Approximately 65.94 acres in abandoned railroad right-of-way were acquired for project use. Future work consists of completion of project lands of any additional recreation facilities as required to serve the public needs. For further project description, see Annual Report for 1962, page 1230. Project was authorized by 1938 Flood Control Act.

Local Cooperation. None required by law.

Operations During Fiscal Year. Operations and Maintenance, General: Reservoir was operated for benefit of flood control and low-flow augmentation, as required and necessary repairs were made to structures and appurtenances. Four comfort station roofs and one picnic shelter roof were replaced with a SeaBees Reserve unit providing the labor. Preparation work was done for the replacement of the standby generator unit. Estimated flood control benefits achieved by this reservoir for FY 2004 were $19,128,000. Total flood control benefits for this reservoir through September 30, 2004 were $122,092,000. Estimated flood control benefits revised to reflect damages prevented in downstream districts as well as Pittsburgh District, were $102,964,000. Continuing activities under the reservoir management program are comprised of sanitation measures, conservation, land management and operation and maintenance.

24. STONEWALL JACKSON LAKE, WV

Location. In Lewis County, North Central West Virginia, on the West Fork River, which joins the Tygart River at Fairmont, WV to form the Monongahela River. Dam site is located on Route 30 at Brownsville, WV, about 4 miles south of Weston and 72 miles above mouth of West Fork River at Fairmont, WV. (See Geological Survey Charts for Weston and Crawford, WV.)

Existing Project. Provides for construction of a reservoir for flood control, water supply, water quality control, area redevelopment and recreation. Dam is concrete gravity type, 95’ high and 620’ long. Outlet works consist of two multi-level sluices and three fixed-level sluices, spillway is uncontrolled. Storage capacity is 74,650 acre-feet controlling an area of 102 square miles. A station hydropower plant completed in 1995 supplies power to the dam, with excess power being sold to an electric utility company. Project was authorized by 1966 Flood Control Act. Estimated initial federal cost for new work (1991) is $231,000,000 (includes an estimated $24,900,000 reimbursement by non-federal interests.) Present project lands consist of 20,451 acres in fee and easements over 398 acres.

Local Cooperation. The reservoir contains 2,200 acre feet of storage designated for the purpose of municipal and industrial water storage. The storage is not under contract and there are no prospects of near-term water supply agreements. In accordance with the Federal Water Project Recreation Act local interests are required to administer project land and water areas for recreation and fish and wildlife enhancement to make arrangements for repayment, under the provisions of the Water Supply Act of 1958, as amended, of that part of the construction cost and annual operation, maintenance

and replacement costs allocated to municipal and industrial water supply, an amount presently estimated at $4,350,000 for construction; and $15,000 annually for operations, maintenance and replacements. Also, in accordance with Federal Water Project Recreation Act, local interests are required to administer project land and water areas for recreation and fish and wildlife enhancement, pay, contribute in kind or repay (which may be through user fees) with interest, one-half of the separable first costs of the reservoir project allocated to recreation and fish and wildlife enhancement, an amount presently estimated at $24,810,000, bear all costs of operation, maintenance and replacement of recreation and fish and wildlife land and facilities, the amount involved being currently estimated on an average annual basis to be $457,000, exercise to the full extent of their legal capability, control against removal of stream flow made available for water quality control; and contribute to the control of pollution of streams subject to low-flow augmentation by adequate treatment or other methods of controlling wastes at their source. The requirements of Section 221 were amended in 1971 to exempt assurances for future demands for water supply pursuant to the Water Supply Act of 1958 from the contractual requirements of the Act. Accordingly, the city of Weston, WV has provided assurances that it will enter into a water supply contract with the Department of the Army within a period of time which will permit paying out the costs allocated to the water supply storage within the life of the project. A recreation cost-sharing contract, in accordance with the requirements of the Federal Water Project Recreation Act, PL 89-72, was executed by the State of West Virginia on March 27, 1977. Local cooperation assurances for recreation cost-sharing were executed by the Governor and Attorney General of West Virginia on May 29, 1973. In this connection, Section 8 of PL 92-222 deleted the requirement that the State of West Virginia "hold and save the United States free from damages resulting from water rights claims due to construction and operation of the project." Legislation relieving Stonewall Jackson Lake, WV, project of the requirements of Section 221, PL 96-611 was contained in Water Resources Development Act of 1974 signed by the President on March 7, 1974.

Operations During Fiscal Year. New Work: The Corps worked with the State of West Virginia to revise the Master Plan to incorporate higher revenue producing recreation facilities, including a lodge, golf course, cabins and camping. The revised Master Plan was approved by the Corps in 1992. The FY92 Energy and Water Development Appropriations Act allows the state cost-sharing credits for all of these facilities except the golf course. In March 1994, the State and the Assistant Secretary of the Army for Civil Works executed an amendment to the 1977 Stonewall Jackson Lake Recreation Cost-Sharing Contract to reflect these credits. The state must design and build the approved remaining recreation facilities by March 2006, in accordance with the schedule and conditions set forth in the amended contract. The state broke ground in July 2001 for the $50,000,000 Stonewall Resort, which includes a 200-room lodge, conference center, spa, cabins and more camping areas, in addition to a championship 18-hole golf course that is not eligible for cost share credit. By the end of FY 2002, the state had essentially completed and opened to the public all facilities except additional camping. The District is currently completing miscellaneous real estate actions related to the original construction with the project.

Activities under reservoir management program comprising sanitation measures, conservation, land management, and operation and maintenance of public-use facilities continued. This work was limited in scope as State of West Virginia has jurisdiction over most of the recreation in reservoir area.

Estimated flood control benefits achieved for this project for FY 2004 were $24,291,000; total flood control benefits through September 30, 2004, were $152,248,000.

25. TIONESTA LAKE, PA

Location. Dam is on Tionesta Creek, 1.25 miles above junction of creek with Allegheny River at Tionesta, PA, and about 78 miles northeast of Pittsburgh, PA. Reservoir is entirely in Forest County, PA. (See Geological Survey Charts for Tionesta, Tidioute and Sheffield, PA.)

Existing Project. A flood control reservoir dam of earthfill type with separate uncontrolled saddle spillway and tunnel outlet works. Authorized project is complete. Reservoir is in operation as a unit of a coordinated reservoir system designed for protection of Pittsburgh and reduction of flood heights in upper Ohio Valley, generally. Construction of dam was started in May 1938 and completed in January 1941. Present project lands consists of 2,794.77 acres in fee and easement over 13.1 acres. Approximately 2.53 acres of fee were disposed at the project. Future work consists of provision on project lands of additional recreational facilities as required to serve public needs. Project was authorized by Flood Control Acts of 1936 and 1938. For further project description see Annual Report for 1962, page 1203.

Local Cooperation. None required by law.

Operations During Fiscal Year. Operation & Maintenance, General: reservoir was operated for benefit of flood control, as required and necessary repairs were made to structures and appurtenances. Reservations in the Tionesta Recreation Area Campground using the National Recreation Reservation Service (NRRS) were suspended in FY02 due to renovations in this campground. These renovations were funded by a Congressional add of $1,218,000 and included restroom renovations, additional electrical service and new electric, water and sewage service to selected campsites. The first Law Enforcement Cooperative Agreement (LECA) in nearly 20 years was initiated during FY02. This was a welcome service addition to the visitor assistance program. Total flood control benefits through September 30, 2004 were $91,281,000, revised to include downstream districts, were $511,631,000. Activities under reservoir management program comprising sanitation measures, conservation, land management and operation and maintenance of public-use facilities continued.

26. UNION CITY DAM, PA

Location. In Erie County, northwestern PA, on French Creek, a tributary of Allegheny River. Dam site is 24 miles upstream from Cambridge Springs, PA, and 41 miles upstream from Meadville, PA. (See Geological Survey Chart for Union City, PA - NY.)

Existing Project. A flood control reservoir dam of earth embankment non-gated type with uncontrolled side-channel spillway. Outlet works consist of a lower outlet located in valley floor constructed of reinforced concrete conduit 8' by 4.5' and an upper outlet consisting of an uncontrolled slot 9.5' wide through the north end of the ogee weir in the spillway. Dam is 1,420' long at top rising 88' above streambed and provides gross capacity of 47,640 acre-feet from a drainage area of 222 square miles. Project authorization was modified to provide for a conservation pool and addition of recreation facilities. On November 5, 1974, a referendum proposal was defeated by the constituents of Erie County in regard to the cost-sharing for construction of recreation facilities. In view of the foregoing, all action toward implementation of the authorized project modification was discontinued. Reservoir is operated as one of a two-reservoir system for reduction of flood stages in French Creek Basin between dam site and mouth, Allegheny River from Franklin, PA, to Pittsburgh, PA, inclusive, and upper Ohio River Valley. Initial highway relocations were completed in October 1968 and remaining highway relocations were completed in May 1972. Construction of the dam was started in July 1968 and completed in September 1971. Present project lands consist of 161.4 acres in fee and easements over 2,410.29 acres. Existing project was authorized by 1962 Flood Control Act.

Local Cooperation. Local interests are required to inform affected interests in French Creek Basin at least annually, that the system of reservoirs of which Union City Dam is a part, will not provide protection against maximum floods. On November 10, 1964 the Department of Forests and Waters of the Commonwealth of Pennsylvania furnished formal assurances of local cooperation in respect to notifying local interests at least annually that the system of reservoirs will not provide protection against maximum floods. A referendum on the ballot during the November 1974 election regarding the approval to cost-share the maintenance of a summer pool was defeated by the local voters.

Operations During Fiscal Year. Operation & Maintenance, General: maintenance of the structure and appurtenances was performed as required. This dam acted as an uncontrolled detention type dam during the fiscal year. Estimated flood control benefits achieved for this project for FY 2004 were $5,391,000. Total flood control benefits for this reservoir through September 30, 2004, revised to include downstream districts, were $53,583,000.

27. WOODCOCK CREEK LAKE, PA

Location. In Crawford County, northwestern PA, on Woodcock Creek, a tributary of French Creek. Dam site is about 4.1 miles above mouth of Woodcock Creek and about 5 miles northeast of Meadville, PA. (See Geological Survey Chart for Meadville, PA.)

Existing Project. A flood-control reservoir dam of rolled-earth embankment type, gate-controlled outlet works with a 6 foot-wide by 7.75 foot-high conduit and uncontrolled saddle spillway on the left abutment. Dam is 4,650' long at top rising 90' above streambed and provides for gross capacity of 20,000 acre-feet from a drainage area of 46 square miles. Reservoir is operated as one of a two-reservoir system for reduction of flood stages in French Creek Basin between dam site and mouth. Allegheny River from Franklin, PA, to Pittsburgh, PA, inclusive, and upper Ohio River Valley. Authorized project is complete. Construction of dam was started in July 1970 and completed in July 1973. Land acquired for project consists of 1,731.5 acres in fee and easements over .56 acres. Project was authorized for flood control and recreation by 1962 Flood Control Act. Storage for water quality control was added to the project during the preconstruction planning stage.

Local Cooperation. Local interests must inform affected interests in French Creek Basin at least annually, in a manner satisfactory to District Engineer, that a system of reservoirs of which Woodcock Creek is a part, will not provide protection against maximum floods. Pennsylvania Department of Forests and Waters assumed responsibility of local cooperation for project.

Operations During Fiscal Year. Operation & Maintenance, General: maintenance of the structure and appurtenances was performed as required. Estimated flood control benefits achieved by this project for FY 2004 were $918,000. Total flood control benefits achieved by this project through September 30, 2004, revised to include downstream districts were $27,975,000. Activities under reservoir management program comprising sanitation measures, conservation, land management and operation and maintenance of public use facilities continued.

28. YOUGHIOGHENY RIVER LAKE, PA & MD

Location. Dam is on Youghiogheny River about 74.2 miles above its junction with Monongahela River at McKeesport, PA. It is 1.2 miles upstream from Confluence, PA, and about 57 miles southeast of Pittsburgh, PA. Reservoir is in Fayette and Somerset Counties, PA, and Garrett County, MD. (See Geological Survey Charts for Confluence, PA, Accident, MD, West Virginia and Pennsylvania.)

Existing Project. Reservoir for flood control, low-flow augmentation, pollution abatement, and recreation purposes. Dam is rolled-earthfill type with separate uncontrolled side channel spillway and tunnel outlet works. Authorized project is complete. For flood control, reservoir is operated as a unit of a coordinated reservoir system designed for protection of Pittsburgh and reduction of flood heights in upper Ohio Valley, generally. Construction of dam was started in June 1940 and completed in May 1944. Present project lands consist of 3,914.9 acres in fee and easements over 0.62 acres.

Project was selected for construction under general authorization for Ohio River Basin in 1938 Flood

Control Act. For further project description see Annual Report for 1962, page 1223.

Local Cooperation. None required.

Licenses. A non-federal hydropower project utilizing releases from Youghiogheny River Lake was constructed in accordance with FERC License 3623. D/R Hydro Company is the authorized representative of the Licensee, Youghiogheny Hydroelectric Authority, and is responsible for operation of the plant. It has a 10-megawatt capacity. The plant began commercial operation on December 7, 1989.

Operations During Fiscal Year. Operations & Maintenance, General: Reservoir was operated for benefit of flood control and low flow augmentation, as required and necessary repairs were made to structures and appurtenances. In-house labor rehabilitated 15 campsites at the Outflow Recreation Area to make them high impact. The Outflow and Tub Run campgrounds operated on-line with the National Recreation Reservation Service (NRRS) for the FY 2004 recreation season. Youghiogheny Lake is designated as one of 13 Corps lakes in the country participating in the National Lake pilot program. Total flood control benefits achieved by this project through September 30, 2004 were $35,855,000; revised to include damages prevented in downstream districts, were $486,984,000. Total recreation benefits for FY 2003 were $10.200,000. Activities under reservoir management program comprising sanitation measures, conservation, land management and operation and maintenance of public use facilities continued.

29. INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS

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 boundaries of their respective districts. Inspections were made of completed units transferred to local interests for maintenance and operation and local interests were advised, as necessary, of measures required to maintain these projects in accordance with standards prescribed by regulations. (See Table 18-L for dates of inspections.)

Costs for FY 2004 were $125,000; total cost to September 30, 2003 was $2,525,208.

30. OTHER AUTHORIZED FLOOD CONTROL PROJECTS

See Table 18-E on other authorized flood control projects.

31. FLOOD CONTROL WORK UNDER SPECIAL AUTHORIZATIONS

For emergency bank protection pursuant to Section 14, 1946 Flood Control Act, PL 79-526, as amended

See Table 18-M.

For flood control activities pursuant to Section 205, 1948 Flood Control Act, PL 80-858, as amended

See Table 18-M.

For aquatic ecosystem restoration pursuant to Section 206, 1996 WRDA, PL 104-303, as amended

See Table 18-M.

For modification for improvement of the environment pursuant to Section 1135, 1986 WRDA, PL 99-662, as amended

See Table 18-M.

For flood control and coastal emergencies pursuant to 1955 Emergency Flood Control Funds Act, PL 84-99 and antecedent legislation

See Table 18-M.

Environmental

32. CONEMAUGH RIVER BASIN, NANTY GLO, PA ENVIRONMENTAL RESTORATION

Location. Conemaugh River Basin is an area of 1,372 square miles located in southwestern Pennsylvania in Cambria and Indiana Counties. The Nanty Glo project is located in the headwaters of South Branch Blacklick Creek in the Borough of Nanty Glo, Cambria County.

Existing Projects. Authorized by WRDA 1992 (PL 102-580), Section 331, the Conemaugh River Basin Reconnaissance Report completed in February 1994 identified seven sites as candidates for ecosystem restoration studies. Remediation of a site at Nanty Glo, PA was identified as highest priority. The project involves restoration of environmental damage caused by the abandoned Webster Coal Mine. Its discharge accounts for much of the acid load in the creek and approximately 5% of the acid load downstream at the Corps' Conemaugh River Lake. Water from the mine is discharged into Pergrin Run, approximately 1,300' upstream from its confluence with South Branch Blacklick Creek. The project will involve a passive treatment system consisting of dual vertical flow ponds and a wetland. The project will treat the Webster Mine discharge, design flow of 450 gallons per minute with a PH of 3.0. The vertical flow ponds provide 3.9 acres of surface treatment area and the wetland provides 2.3 acres of surface treatment area. A pipe will carry water from Webster Mine to the vertical flow ponds. The PH of the treated design flow discharged from the wetland to Pergrin Run will be 6.5 Project implementation will restore the lower seven miles of the creek and promote return of a viable fishery to the waters.

Local Cooperation. The non-federal cost-sharing sponsor is the Cambria County Conservation and Recreation Authority (CCCRA). CCCRA has been the cost-sharing partner on this project since inception in l994. The CCCRA will cost share 25% of total project costs.

Operations During Fiscal Year. Notice to Proceed issued September 20, 2002. Amount of contract was $4,200,000. Contractor was Charles J. Merlo Construction Incorporated. Contract was completed in October 2004.

33. SOUTH CENTRAL, PA ENVIRONMENTAL IMPROVEMENT WORK

Location. Projects under this program in the Pittsburgh District are located in the South Central, PA counties of Allegheny, Armstrong, Cambria, Fayette, Greene, Indiana, Somerset Washington and Westmoreland.

Existing Projects. Section 313 authorizes the Secretary of the Army to establish a program to provide design and construction assistance to non-federal interests in south central Pennsylvania including projects for waste water treatment and related facilities, water supply, storage, treatment, and distribution facilities, and surface water resource protection and development. A total of 30 projects are physically complete. The largest project was a regional wastewater treatment plant and interceptor system for the Forest Hills Municipal Authority located in the suburbs of Johnstown, PA. Additional projects identified for FY 2004 funding include Puketa Creek, Pine Township, Derry Township, Jefferson Township, Northmoreland Park, Unity Township, Paint Township, Menallen Township, Graysville Municipality, Mount Pleasant and Franklin Business Park.

Local Cooperation. Legislation requires the project to be cost shared at no more than 75% federal funds and a minimum of 25% non-federal funds. Project Cooperation Agreements are executed between the Corps of Engineers and the non-federal sponsors. Operation and maintenance of the projects will be at 100% non-federal costs.

Operations during Fiscal Year. Design/ construction PCAs were executed for Northmoreland Park, Graysville Municipality and Franklin Business Park. Construction is continuing for Quemahoning pipeline, Patton, Jefferson Township and Blacklick.

34. THREE RIVERS WET WEATHER DEMONSTRATION PROJECT

Location. The Three Rivers Wet Weather Demonstration Program administers grants to Allegheny County communities for innovative, cost-effective, watershed-based methods of wet weather sewer overflow elimination and management.

Existing Project. The District is working with the Three Rivers Wet Weather Demonstration Program under Section 219 of the 1992 WRDA, as amended. Under this program, the District is authorized to provide assistance to non-federal interests for carrying out water-related environmental infrastructure and resource protection and development project in Allegheny County. These projects include wastewater treatment and related facilities and water supply, storage, treatment and distribution facilities.

Local Cooperation. For the current study phase the Three Rivers Wet Weather Demonstration Program identified the Allegheny County Sanitary Authority (ALCOSAN) as the cost sharing partner for the Sheraden Park effort. The project is cost shared 75% federal and 25% non-federal.

Operations During Fiscal Year. The District is currently working through the Three Rivers Wet Weather Demonstration Program to identify potential projects in Allegheny County. The 1st project identified is Sheraden Park. A study was completed in Sep 2003 which identified the most cost effective manner to remove storm water from the existing combined sanitary sewer system. In addition to separating storm water from the sanitary sewer, the study of a stream day lighting project is to be completed under Sec 206 Authority. Stream day-lighting is a process where streams that are currently piped underground are restored to the surface, and reintegrated into the natural systems and communities. The 60% plans and specifications were completed for Sheraden Park Project in FY 2004. A new Letter Report and PCA are being prepared to change the local sponsor for the completion of the new plans and specifications. A second project Homestead Run has been identified. A letter report is being prepared with a design agreement to prepare plans and specifications to follow. Other projects will be identified as funds become available.

35. FORMERLY USED SITES REMEDIAL ACTION PROGRAM (FUSRAP)

Location. Shallow Land Disposal Area (SLDA) is a 44-acre site in Armstrong County, Pennsylvania, about 23 miles east-northeast of Pittsburgh.

Existing Project. The site includes ten trenches containing estimated 23,500-36,000 cubic yards of potentially contaminated waste and soil. The total trench surface-area is 1.2 acres. The trenches are separated into two general areas; one area containing trenches 1 through 9 and a second area containing trench 10. Uranium and thorium contaminated wastes consisting of process wastes, equipment, scrap and trash from the nearby Apollo nuclear fuel fabrication facility were disposed of in the SLDA between 1961 and 1970. The uranium in the trenches is present at various levels of enrichment from highly depleted to highly enriched. Americium and plutonium, whose presence is attributed to storage of equipment used in Parks Facility, have been detected in surface soils in trench 10 area. Nuclear Materials and Equipment Corporation (predecessor of current owner BWX Technologies) conducted the disposals according to the Atomic Energy Commission regulations. The NRC license requires BWXT to properly maintain the site to ensure the protection of workers and the public.

PL 107-117, Section 8143 directs the Corps of

Engineers to clean up radioactive waste at the SLDA site, consistent with the Memorandum of Understanding between the United States Nuclear Regulatory Commission and United States Army Corps of Engineers dated July 5, 2001 for the coordination of cleanup and decommissioning of FUSRAP sites with NRC-licensed facilities and in accordance with Section 611 of PL 106-60. The SLDA site will be remediated following the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process.

Local Cooperation. The project is currently conducted with congressionally authorized FUSRAP funds.

Operations During Fiscal Year. The site designation and preliminary assessment stages of the CERCLA process are completed and the project is currently at the remedial investigation stage. The remedial investigation stage is scheduled for completion in FY 2005. The feasibility study has been initiated and the draft feasibility report is scheduled to be completed in FY 2005. The proposed plan, record of decision, remedial design, remedial action and project closeout are forthcoming.

General Investigations

36. SURVEYS

Navigation Studies	$835,112
Flood Damage Prevention Studies	540
Special Studies	672,534
Review of Authorized Projects	461
Miscellaneous Activities	44,064
Coordination with other Federal Agencies	17,956.91
Total Federal Cost for Fiscal Year	$1,570,668

37. COLLECTION & STUDY OF BASIC DATA

Federal costs this fiscal year were $99,984 for flood plain management services.

38. PRECONSTRUCTION, ENGINEERING & DESIGN

Mon River, WV	$122
Weirton Port, WV	9,605
Total Federal Cost for Fiscal Year	$9,727

TABLE 18-A **COST & FINANCIAL STATEMENT**

Section in Text	Project	Funding	FY01	FY02	FY03	FY04	Total Cost to Sep. 30, 2004
Navigation							
1.	Allegheny River, PA	New Work					
		Approp.	---	---	---	---	18,157,860[1]
		Cost	---	---	---	---	18,157,860[1]
		Maint.					
		Approp.	13,132,152	6,119,429	5,727,000	5,533,000	213,998,324[2]
		Cost	13,126,688	5,996,649	5,843,525	5,548,222	213,985,677[2]
3.	Monongahela River, PA & WV	New Work					
		Approp.	57,402,000	37,379,000	36,590,000	31,490,000	6,80,815,835[3]
		Cost	58,365,732	38,246,302	36,688,840	31,357,032	671,139,323[4]
		Maint.					
		Approp.	14,599,264	13,029,101	12,947,000	12,756,000	379,439,222[5]
		Cost	14,610,760	12,883,205	12,961,717	12,838,109	379,379,945[6]
		Major Rehab.					
		Approp.	---	---	---	---	15,857,000
		Cost	---	---	---	---	15,857,000
5.	Tygart Lake, WV	New Work					
		Approp.	3,948,000	546,000	(5,000)	(37,398)	28,022,534[7]
		Cost	4,005,181	474,252	41,181	---	28,022,533[7]
		Maint.					
		Approp.	1,012,327	1,102,915	1,447,000	5,075,085	32,765,568[8]
		Cost	1,012,981	1,098,994	1,425,202	5,052,989	32,714,614[8]
		Major Rehab.					
		Approp.	---	---	---	---	89,000
		Cost	---	---	---	---	88,999
Flood Control – Local Protection							
	Chartiers Creek, PA	New Work					
		Approp.	---	---	---	---	30,818,153[41]
		Cost	---	---	---	---	30,818,513[41]
7.	Elkins, WV	New Work					
		Approp.	---	---	---	---	1,772,627
		Cost	---	---	---	---	1,772,627
		Maint.					
		Approp.	15,966	18,000	16,000	16000	454,158
		Cost	11,766	19,479	18,933	15937	454,075
8.	Johnstown, PA	New Work					
		Approp.	---	---	---	---	8,865,388[9]
		Cost	---	---	---	---	8,865,388[9]
		Maint.					
		Approp.	262,972	113,500	1,633,000	761,000	11,722,662
		Cost	265,309	113,415	1,625,223	761,058	11,726,913
		Major Rehab.					
		Approp.	6,591,000	989,000	1,322,000	282,000	36,690,000[43]
		Cost	6,695,566	944,566	1,088,784	358,343	36,426,176[44]
9.	Punxsutawney, PA	New Work					
		Approp.	---	---	---	---	3,586,107[10]
		Cost	---	---	---	---	3,586,107[10]
		Maint.					
		Approp.	2,537,972	15,000	13,000	14,000	1,735,569[11]
		Cost	317,657	14,710	12,968	14,121	1,735,341[11]
10.	Saw Mill Run, Pittsburgh, PA	New Work					
		Approp.	2,754,000	6,127,000	4,470,435	1,348,000	15,503,435[6]
		Cost	554,329	7,031,897	4,854,114	1,351,214	14,546,193[6]
	Turtle Creek, PA	New Work					
		Approp.	---	---	---	---	26,681[38]
		Cost	---	---	---	---	26,681[38]
11.	West Virginia & Pennsylvania Flood	New Work					
		Approp.	1,801,313	289,000	650,000	(12,602)	6,781,711[47]

TABLE 18-A **COST & FINANCIAL STATEMENT**

Section in Text	Project	Funding	FY01	FY02	FY03	FY04	Total Cost to Sep. 30, 2004
Flood Control – Reservoirs							
12.	Berlin Lake, OH	New Work					
		Approp.	---	---	---	---	8,739,987[12]
		Cost	---	---	---	---	8,739,987[12]
		Maint.					
		Approp.	4,640,968	2,806,238	2,083,000	2,014,435	56,703,746[13]
		Cost	4,682,432	2,719,205	2,135,608	2,040,799	56,692,297[13]
13.	Conemaugh River Lake, PA	New Work					
		Approp.	---	---	---	---	46,012,411[14]
		Cost	---	---	---	---	46,012,411[14]
		Maint.					
		Approp.	909,293	1,034,200	988,000	883,018	28,866,397[39]
		Cost	907,349	1,018,457	972,753	908,671	28,858,408[39]
14.	Crooked Creek Lake, PA	New Work					
		Approp.	---	---	---	---	4,482,933[15]
		Cost	---	---	---	---	4,482,933[15]
		Maint.					
		Approp.	1,227,749	1,576,733	1,509,000	1,333,327	40,196,428[16]
		Cost	1,241,922	1,492,454	1,579,249	1,345,217	40,193,076[16]
15.	East Branch, Clarion River Lake, PA	New Work					
		Approp.	---	---	---	---	9,539,586[17]
		Cost	---	---	---	---	9,539,586[17]
		Maint.					
		Approp.	809,058	1,082,866	1,164,000	918,156	24,458,304[18]
		Cost	822,686	1,063,336	1,165,359	933,744	24,454,195[18]
16.	Kinzua Dam & Allegheny Reservoir, PA & NY	New Work					
		Approp.	---	---	---	---	109,305,076[19]
		Cost	---	---	---	---	109,305,076[19]
		Maint.					
		Approp.	1,245,835	1,308,954	1,471,000	1,392,000	38,323,546[39]
		Cost	1,261,543	1,299,938	1,467,316	1,393,246	38,309,083[39]
		Major Rehab.					
		Approp.	---	---	---	---	2,921,000
		Cost	---	---	---	---	2,921,000
17.	Lower Girard Dam, OH	New Work					
		Approp.	688,060	80,000	0	0	1,939,560[48]
		Cost	747,757	39,502	78,522	7,260	1,891,909[48]
18.	Loyalhanna Lake, PA	New Work					
		Approp.	---	---	---	---	5,727,531[20]
		Cost	---	---	---	---	5,727,531[20]
		Maint.					
		Approp.	964,177	942,153	1,002,000	876,677	29,101,560[21]
		Cost	961,873	937,561	985,572	883,259	29,082,603[21]
19.	Mahoning Creek Lake, PA	New Work					
		Approp.	---	---	---	---	7,144,973[22]
		Cost	---	---	---	---	7,144,973[23]
		Maint.					
		Approp.	768,907	874,907	818,000	775,000	25,504,376[40]
		Cost	783,453	847,040	845,350	775,174	25,501,779[40]
		Minor Rehab.					
		Approp.	---	---	---	---	47,033
		Cost	---	---	---	---	47,033
20.	Michael J. Kirwan Dam & Reservoir, OH	New Work					
		Approp.	---	---	---	---	17,376,097[24]
		Cost	---	---	---	---	17,376,097[24]
		Maint.					
		Approp.	777,779	828,325	748,000	731,000	21,029,918[25]
		Cost	775,590	813,843	757,174	736,318	21,026,249[25]

TABLE 18-A **COST & FINANCIAL STATEMENT**

Section in Text	Project	Funding	FY01	FY02	FY03	FY04	Total Cost to Sep. 30, 2004
21.	Mosquito Creek Lake, OH	New Work					
		Approp.	---	---	---	---	4,253,029[26]
		Cost	---	---	---	---	4,253,029[26]
		Maint.					
		Approp.	974,142	1,193,238	1,057,000	974,000	23,966,281[45]
		Cost	977,429	1,157,153	1,089,449	975,280	23,959,297[45]
22.	Ohio River Basin, PA (Pittsburgh District)	New Work					
		Approp.	---	---	---	---	985,197[27]
		Cost	---	---	---	---	985,197[27]
23.	Shenango River Lake, PA & OH	New Work					
		Approp.	---	---	---	---	40,217,201[28]
		Cost	---	---	---	---	40,217,201[28]
		Maint.					
		Approp.	2,244,914	2,243,359	2,333,000	2,165,908	55,657,738[29]
		Cost	2,226,516	2,185,615	2,383,195	2,172,522	55,627,294[29]
24.	Stonewall Jackson Lake, WV	New Work					
		Approp.	150,000	0	5,000	0	211,529,741
		Cost	73,147	43,120	39,772	3,205	211,525,664
		Maint.					
		Approp.	848,385	871,056	934,000	917,000	14,462,584
		Cost	844,650	867,957	930,896	923,035	14,634,912
25.	Tionesta Lake, PA	New Work					
		Approp.	---	---	---	---	7,792,378[30]
		Cost	---	---	---	---	7,792,378[31]
		Maint.					
		Approp.	1,353,155	2,405,752	2,309,000	2,474,000	38,929,705[32]
		Cost	1,358,705	2,326,174	2,351,420	2,510,502	38,897,138[32]
26.	Union City Dam, PA	New Work					
		Approp.	---	---	---	---	14,559,800
		Cost	---	---	---	---	14,559,800
		Maint.					
		Approp.	186,445	216,365	214,000	202,000	7,606,508
		Cost	188,472	214,722	215,518	201,770	7,605,384
27.	Woodcock Creek Lake, PA	New Work					
		Approp.	---	---	---	---	20,545,065[33]
		Cost	---	---	---	---	20,545,065[34]
		Maint.					
		Approp.	681,243	742,333	769,000	737,000	19,116,043[35]
		Cost	680,486	735,362	776,540	734,957	19,110,792[35]
28.	Youghiogheny River Lake, PA & MD	New Work					
		Approp.	---	---	---	---	12,521,167[36]
		Cost	---	---	---	---	12,521,167[36]
		Maint.					
		Approp.	1,998,176	1,840,394	1,815,000	1,686,245	50,172,685[37]
		Cost	2,043,075	1,804,618	1,865,773	1,690,919	50,161,739[37]
Environmental							
	Central West Virginia Environmental Infrastructure, WV	New Work					
		Approp.	25,000	0	0	25,000	50,000
		Cost	4,154	1,654	812	25,127	31,747
32.	Nanty Glo, PA Environmental Restoration	New Work					
		Approp.	67,000	140,000	2,386,337	1,623,000	4,216,337[49]
		Cost	3,615	150,591	2,246,765	1,576,311	3,977,282[49]
	Ohio Environmental Infrastructure, OH	New Work					
		Approp.	40,000	310,000	0	43,000	393,000
		Cost	22,894	288,361	4,733	11,896	327,884

TABLE 18-A **COST & FINANCIAL STATEMENT**

Section in Text		Funding	FY01	FY02	FY03	FY04	Total Cost to Sep. 30, 2004
33.	South Central, PA	New Work					
	Environmental	Approp.	8,380,000	1,233,000	5,261,000	158,925	51,834,925[42]
	Improvement Program	Cost	3,426,574	9,686,132	9,085,540	282,533	48,732,571[42]
34.	Three Rivers Wet	New Work					
	Weather Demo	Approp.	---	400,000	71,000	46,000	517,000[50]
		Cost	---	38,667	378,738	58,668	476,073[50]
35.	Formerly Used Sites	New Work					
	Remedial Action Program	Approp.	185,000	695,000	2,150,000	3,180,000	6,210,000
		Cost	132,861	429,041	2,326,626	3,221,682	6,110,210

[1] Includes $2,453,737 from emergency relief funds and $1,250,049 from public works funds.
[2] Includes $64,365 public works acceleration, executive funds (1963) and $191,400 provided from the Productive Employment Appropriations Act (PL 98-8) 1983 funds. Also includes $995,000 appropriated and expended for major maintenance at L&D 2, 3 & 4.
[3]Includes amounts appropriated to date for: Point Marion, L&D 8, PA - $113,013,400 for CG and IWTF, $3,322,057 for raising crest of dam in 1958-9, $2,086,438 for original reconstruction years 1923-26 and $618,758 for AE&D. Grays Landing, L&D 7, PA - $172,793,200 for CG and IWTF, and $803,000 for AE&D. L&D 2, 3 & 4 - $237,481,700 for CG and IWTF.
[4] Includes amounts expended to date on: Point Marion, L&D 9, PA - $112,667,403 for CG and IWTF, $3,322,057 for raising crest of dam in 1958-9, $2,086,438 for original reconstruction years 1923-6 and $618,758 for AE&D. Grays Landing, L&D 7, PA - $172,751,744 for CG and IWTF, and $803,000 for AE&D. L&D 2, 3 & 4 - $237,123,612 for CG and IWTF.
[5] Includes $22,549 public works acceleration, executive funds (1963), $742 for maintenance for previous project and $582,000 provided from the Productive Employment Appropriations Act (PL 98-8) 1983 funds.
[6] Includes $22,549 public works acceleration, executive funds (1963), $742 for maintenance for previous project and $464,508 provided from the Productive Employment Appropriations Act (PL 98-8) 1983 funds.
[7] Includes $1,999,995 emergency relief funds, $10,000,000 public work funds, $234,000 Code 711 funds and $412,088 Code 713 funds, $462,000 appropriated to and $218,374 expended on the Dam Safety Assurance Program - CG; excludes $409,622 contributed by local interest.
[8] Includes $89,000 provided from the Productive Employment Appropriations, Act (PL 98-8) 1983 funds. Also includes $425,000 appropriated to and $424,493 expended on the Dam Safety Assurance Program O&M.
[9] Includes $33,423 from emergency relief funds.
[10] Excludes $180,485 for new work expended from contributed funds.
[11] Includes $283,988 provided from the Productive Employment Appropriations Act (PL 98-8) 1983 funds.
[12] Includes $1,542,500 Code 711 funds, $809,700 Code 712 funds and $99,111 Code 713 funds; excludes $100,000 contributed by local interest.
[13] Includes $40,000 provided from the Productive Employment Appropriations Act (PL 98-8) 1983 funds. Includes $7,679 appropriated to and expended from M&O of dams in FY97 and $703,407 expended to date on M&O of dams.
[14] Includes $5,351 from emergency relief funds and $328,000 Code 711 funds.
[15] Includes $63,788 from emergency relief funds. Also includes $278,044 Code 711 funds.
[16] Includes $45,000 provided from the Productive Employment Appropriations Act (PL 98-8) 1983 funds. Includes $1,918 appropriated to and expended from M&O of dams in FY97 and $697,646 expended to date on M&O of dams.
[17] Includes $156,812 Code 711 funds.
[18] Includes $322,000 provided from the Protective Employment Appropriations Act (PL 98-8) 1983 funds. Also includes $12,674 appropriated to and $12,674 expended to date on M&O of dams.
[19] Includes $2,791 emergency relief funds, $14,622 Code 711 funds, $568,265 Code 713 funds; excludes $389,370 contributed by local interest.
[20] Includes $7,339 from emergency relief funds and $274,669 Code 711 funds.
[21] Includes $256,000 provided from the Protective Employment Appropriations Act (PL 98-8) 1983 funds. Also includes $104,866 appropriated to and $104,864 expended to date on M&O of dams.
[22] Includes $25,671 emergency relief funds, $162,381 Code 711 funds, $561,247 Code 713 funds; excludes $500,086 contributed by local interests.
[23] Includes $25,671 emergency relief funds, $162,381 Code 711 funds, $561,247 Code 713 funds; excludes $456,611 contributed by local interests.
[24] Includes $74,900 Code 711 funds; excludes $4,585,627.29 for new work contributed by local interest.
[25] Includes $315,500 provided from the Protective Employment Appropriations Act (PL 98-8) 1983 funds. Also includes $3,174 appropriated to and $3,713 expended to date on M&O of dams.
[26] Includes $122,729 Code 711 funds and $94,900 Code 713 funds.
[27] Includes $8,914 from emergency relief funds.
28 Includes $1,730,100 Code 711 funds and $1,618,300 Code 713 funds.
[29] Includes $152,000 provided from the Protective Employment Appropriations Act (PL 98-8) 1983 funds. Also includes $11,896 appropriated to and $11,891 expended to date on M&O of dams.
[30] Includes $2,303,076 Code 711 funds ($256,760 provided from the Productive Employment Appropriations Act PL 98-8, 1983 funds), $275,900 Code 712 funds, and $24,201 emergency relief funds.
[31] Includes $2,303,077 Code 711 funds, ($256,531 provided from the Productive Employment Appropriations Act PL 98-8, 1983 funds), $275,900 Code 712 funds, and $24,201 emergency relief funds.
[32] Includes $203,000 provided from the Protective Employment Appropriations Act (PL 98-8) 1983 funds. Also includes $9,362 appropriated to

and $9,360 expended to date on M&O of dams.
[33] Includes $1,671,366 Code 711 funds.
[34] Includes $1,671,366 Code 711 funds.
[35] Includes $85,000 provided from the Productive Employment Appropriations Act (PL 98-8) 1983 funds).
[36] Includes $2,846,263 Code 711 funds ($293,000 provided from the Productive Employment Appropriations Act. (PL 98-8) 1983 funds).
[37] Includes $591,000 provided from the Protective Employment Appropriations Act (PL 98-8) 1983 funds. Also includes $22,240 appropriated to and $22,236 expended to date on M&O of Dams.
[38] Includes $1,840,000 (non-federal) original construction cost and an additional $4,205,000 (non-federal) contributed and $4,159,759 (non-federal) expended to date.
[39] Includes $701,504 appropriated to and $701,504 expended to date on M&O of dams.
[40] Includes $104,684 appropriated to and $104,683 expended to date on M&O of dams.
[41] Includes $4,225,188 (non-federal) contributed and expended to date.
[42] Includes $285,000 (non-federal) contributed funds and $282,914 (non-federal) expended to date.
[43] Includes $4,894,000 appropriated to date for Rehab O&M and $2,925,000 appropriated to date for Rehab Construction, General. Also includes $222,000 (non-federal) contributed funds to date.
[44] Includes $4,880,202 expended to date for Rehab O&M and $2,824,695 expended to date for Rehab Construction, General. Also includes $205,323
(non-federal) expended to date.
[45] Includes $701,504 appropriated to and $701,504 expended to date on M&O of dams.
[46] Includes $3,244,435 (non-federal) contributed funds and $2,565,808 (non-federal) expended to date.
[47] Includes $131,618 (non-federal) contributed funds and $102,016 (non-federal) expended to date.
[48] Includes $480,560 (non-federal) contributed funds and $440,103 (non-federal) expended to date.
[49] Includes $867,703 (non-federal) contributed funds and $852,806 (non-federal) expended to date.
[50] Includes $125,000 (non-federal) contributed funds and $99,511 (non-federal) expended to date.

TABLE 18-B **AUTHORIZATION LEGISLATION**

Section in Text	Authorizing Act Date	Project and Work Authorized	Documents
1.		**Allegheny River, PA**	
	Aug 5, 1886	For lock and dam 1. (Fixed dam contemplated. Sep 29, 1891 Secretary of War authorized change to a moveable dam.)	Annual Report, 1886, p. 1545 Annual Report, 1891, p. 2366
	Jun 3, 1896	For locks and dams 2 and 3.	H. Doc. 204, 54th Cong., 1st Sess. Annual Report 1896, p. 2212
	Jul 25, 1912	For locks and dam 4 to 8 inclusive.	H. Doc. 540, 62nd Cong., 2nd Sess.
	Jul 3, 1930	For a depth of 9' in the lower 61 miles.	H. Doc. 356, 71st Cong., 2nd Sess.
	Aug 30, 1935[1]	Replace lock and dam 1 by a dredged channel, 9' deep and 200' wide up to lock 2, and construct new locks and dams 2 and 3, to replace existing locks and dams 2 and 3.	Rivers and Harbors Committee, Doc. 16, 72nd Cong., 1st Sess.
	Aug 30, 1935[1]	Construct locks and dam 9, raising crest of dam 8, and dredging a navigable channel to head of pool 8.	H. Doc. 721, 71st Cong., 3rd Sess. Rivers and Harbors Committee, Doc. 27, 73rd Cong., 2nd Sess.
	Jun 26, 1934[2]	Operation and care of locks and dams provided for with funds from War Department appropriation for rivers and harbors.	
3.		**Monongahela River, PA & WV**	
	Mar 3, 1899	Enlarge and improve lock and dam 6, additional work at lock 3; new repair steamer and new dredge boat with equipment; all at an estimated cost of $185,556.	Annual Report, 1897, p. 2423
	Jun 13, 1902	Rebuild lock and dam 2 at estimated cost of $655,961. (Estimate increased in 1910 to $698,961.)	Annual Report, 1909, p. 1756
	Mar 3, 1905	Acquisition of land and additional improvements at 5 and 6 at a cost of $7,850.	Annual Report, 1904, p. 460
	Mar 3, 1905	Rebuild lock and dam 3 at estimated cost of $589,196.	H. Doc. 209, 58th Cong., 2nd Sess.
	Mar 2, 1907	Reconstruct lock and dam 5 at estimated cost of $756,042.	H. Doc. 209, 58th Cong., 2nd Sess.
	Mar 4, 1913	Reconstruct lock and dam 6 at estimated cost of $356,400. (Estimate increased in 1916 to $418,860.)	H. Doc. 1217, 62nd Cong., 3rd Sess.
	Sep 22, 1922	Additional improvements at estimated cost as follow: Guide walls and guard walls, 1 to 6, $1,255,130; lengthen land chamber of lock 3 to 720', $787,722; new chamber (360' $1,161, 24 long), lock 4, $699,786; lock and dam 7, Lock and dam 8, $1,165,758; lock and dam 7 second chamber, $419,126; Lock and dam 8 second chamber, $504,465; reconstruction dam 4, $397,211; marine ways, repair plant, office and warehouse, $250,000 for a total of $6,640,439.	H. Doc. 288, 67th Cong., 2nd Sess.
	Jul 3, 1930	Construct new locks and dam 2.5 miles below existing structure, at estimated cost of $2,175,000 in lieu of work authorized at old lock and dam 4.	Rivers and Harbors Committee, Doc. 22, 70th Cong., 2nd Sess.
	Jan 31, 1931[3]	Chief of Engineers authorized to locate new locks and dam 4 above existing structure and on such site as they may deem most desirable.	
	Jun 26, 1934[2]	Operation and care of locks and dams provided for with funds from War Department appropriations for rivers and harbors.	
	May 17, 1950	Modification of existing project as follows: Provide 2 new locks and dams similar to Morgantown lock and dam to replace existing locks and dams 12 to 15 inclusive. Provide a movable crest on existing dam 8 to raise existing pool full elevation 4'. Provide a navigation channel of 300' minimum bottom width and a 9' project depth above lock and dam 8. Provide an extension of navigable channel of upper Monongahela River, into lower Tygart River for 2.1 miles at a maximum bottom width of 200' and a 9' project depth.	S. Doc. 100, 81st Cong., 1st Sess.

TABLE 18-B **AUTHORIZATION LEGISLATION**

Section in Text	Authorizing Act Date	Project and Work Authorized	Documents
	Nov 17, 1986	Construct new lock and dam 7 (Grays Landing Lock and Dam) as follows: The Grays Landing Lock and Dam will be located 3.0 miles downriver from existing Lock and Dam 7. It will consist of a single lock chamber, 84' wide by 720' long, with a fixed crest dam 576' in length. The existing Maxwell Pool at elevation 763.0 will be shortened 3 miles and the existing Pool 7 at elevation 778.0 will be extended downriver to the new dam. There will be no change in pool elevation above existing Dam 7. Upon completion of the new replacement lock and dam, existing Lock and Dam 7 will be removed. Total authorized cost is $181,000,000.	Supplemental Appropriations Act of 1985 for Engineering and Design and Land Acquisition and Water Resources Development Act of 1986; PL 99-662, Sec. 301(a)
	Nov 17, 1986	Replace existing 56' by 360' lock chamber at Point Marion Lock and Dam (Lock and Dam 8) with new 84' x 720' chamber. Existing movable crest dam to remain; no change in pool elevations. Total authorized cost is $53,600,000.	Supplemental Appropriations Act of 1985 for Engineering and Design and Land Acquisition and Water Resources Development Act of 1986; PL 99-662, Sec. 301 (a)
	Oct 31, 1992	Navigation improvements as follows: The project replaces the fixed crest dam at Locks and Dam 2 with a gated dam; raises the existing pool 2 by 5', constructs twin 84' x 720' locks at Locks and Dam 4, and eliminates Locks and Dam 3; lowering the existing pool 3 by 3.2'. Authorized cost is $705,000,000. Cost of construction is to be paid equally from the general fund of the Treasury and the Inland Waterways Trust Fund.	Water Resources Development Act of 1992; PL 102-580, Sec. 101
5.		**Tygart Lake, WV**	
	Jan 11, 1934	Construction of a dam and reservoir for low water regulation and flood control.	H. Doc. 1792, 64th Cong., 2nd Sess.
	Aug 30, 1935		H. Doc 106, 76th Cong., 1st Sess.
7.		**Elkins, WV**	
	Jun 28, 1938	For construction of local flood protection projects.	H. Doc 306, 74th Cong., 1st Sess. FCC Doc. 1, 75th Cong., 1st Sess.
8.		**Johnstown, PA**	
	Jun 28, 1938	For construction of local flood protection projects.	H. Doc. 306, 74th Cong., 1st Sess. FCC Doc. 1, 75th Cong., 1st Sess.
9.		**Punxsutawney, PA**	
	Jun 28, 1938	For construction of local flood protection projects.	H. Doc. 306, 74th Cong., 1st Sess. FCC Doc. 1, 75th Cong., 1st Sess.
10.		**Saw Mill Run, Pittsburgh, PA**	
	Nov 17, 1986	For construction of local flood protection projects.	Water Resources Development Act of 1986
	Oct 12, 1996		Water Resources Development Act of 1996
11.		**West Virginia & Pennsylvania Flood Control**	
	Oct 12, 1996	For construction of local flood protection projects.	Water Resources Development Act of 1996, PL 102-580, Sec 313
12.		**Berlin Lake, OH**	
	Jun 28, 1938	Construction of a dam and reservoir for flood control and low water regulation.	H. Doc. 306, 74th Cong., 1st Sess.
	Dec 22, 1944 as amended	Construction, operation and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944
13.		**Conemaugh River Lake, PA**	
	Jun 22, 1936 amended by Jun 28, 1938	Construction of a dam and reservoir for flood control.	H. Doc, 306, 74th Cong., 1st Sess. FCC Doc. 1, 75th Cong., 1st Sess.
	Dec 22, 1944 as amended	Construction, operation and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944

Section in Text	Authorizing Act Date	Project and Work Authorized	Documents
14.		**Crooked Creek Lake, PA**	
	Jun 22, 1936 amended by Jun 28, 1938	Construction of a dam and reservoir for flood control.	H. Doc. 306, 74th Cong., 1st Sess. FCC Doc. 1, 75th Cong., 1st Sess.
	Dec 22, 1944 as amended	Construction, operation and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944
15.		**East Branch, Clarion River Lake, PA**	
	Jun 28, 1938	Construction of a dam and reservoir for flood control and low water regulation.	H. Doc. 306, 74th Cong., 1st Sess.
	Dec 22, 1944 as amended	Construction, operation and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944
16.		**Kinzua Dam & Allegheny Reservoir, PA & NY**	
	Jun 22, 1936 amended by Jun 28, 1938 modified by Aug 18, 1941	Construction of a dam and reservoir for flood control and low Water regulation and recreation.	H. Doc. 306, 74th Cong., 1st Sess. FCC Doc. 1, 75th Cong., 1st Sess.
		Construction of a dam and reservoir for flood control, pollution Abatement, low water regulation and recreation.	H. Doc. 300, 76th Cong., 1st Sess.
	Dec 22, 1944	Construction, operation and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944
17.		**Lower Girard Dam, OH**	
		Design and construction assistance to non-federal interests for repair and rehabilitation of the Lower Girard Dam	Sec 507, WRDA 1996 PL 104-303
18.		**Loyalhanna Lake, PA**	
	Jun 22, 1936 amended by Jun 28, 1938	Construction of a dam and reservoir for flood control.	H. Doc. 306, 74th Cong., 1st Sess. FCC Doc. 1, 75th Cong., 1st Sess.
	Dec 22, 1944 as amended	Construction, operation and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944
19.		**Mahoning Creek Lake, PA**	
	Jun 22, 1936 amended by Jun 28, 1938	Construction of a dam and reservoir for flood control.	H. Doc. 306, 74th Cong., 1st Sess. FCC Doc. 1, 75th Cong., 1st Sess.
	Dec 22, 1944 as amended	Construction, operation and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944
20.		**Michael J. Kirwan Dam & Reservoir, OH**	
	Jul 3, 1958	Construction of a dam and reservoir for flood control, water Supply, low water regulation and recreation.	H. Doc. 191, 85th Cong., 1st Sess.
	Jul 14, 1960	To define cost-sharing arrangement for municipal and industrial water supply and water for pollution abatement purposes.	PL 86-645
21.		**Mosquito Creek Lake, OH**	
	Jun 28, 1938	Construction of a dam and reservoir for flood control and low water regulation.	H. Doc. 306, 74th Cong., 1st Sess.
	Dec 22, 1944 as amended	Construction, operation and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944
22.		**Ohio River Basin (Pittsburgh District)**	
	Aug 28, 1937	Construct levees, floodwalls and drainage structures for protection of cities and towns in Ohio River Basin. Projects to be selected by Chief of Engineers with approval of Secretary of War at a cost not to exceed $24,877,000 for construction.	Flood Control Committee, Doc. 1, 75th Cong., 1st Sess.
	Jun 28, 1938	Approved general comprehensive plan for flood control and other purposes in Ohio River Basin as may be advisable at discretion of Secretary of War and Chief of Engineers, and for initiation and partial accomplishment of plan, authorized $75,000,000 for reservoirs and $50,300,000 for local flood protection works.	Flood Control Committee, Doc. 1, 75th Cong., 1st Sess.
	Aug 18, 1941	Additional $45 million for prosecution of comprehensive plan for Ohio River Basin.	H. Doc. 300, 76th Cong., 1st Sess.

Section in Text	Authorizing Act Date	Project and Work Authorized	Documents
	Dec 22, 1944	Additional $70 million for further prosecution of comprehensive plan for Ohio River Basin, including additional projects in tributary basins.	H. Doc. 762, 77th Cong., 2nd Sess.
	Jul 24, 1946	Additional $125 million for further prosecution of comprehensive plan including additional projects in tributary basins.	H. Doc. 506, 78th Cong., 1st Sess.
	May 17, 1950	Additional $100 million for prosecution of comprehensive plan for Ohio River Basin	S. Doc. 20, 81stCong., 1st Sess.
	Dec 30, 1963	Additional $150 million for further prosecution of comprehensive plan for flood control and other purposes in Ohio River Basin.	PL 88-253, 88th Cong., 1st Sess.
	Jun 18, 1965	Additional $89 million for further prosecution of comprehensive plan for Ohio River Basin.	H. Doc. 6755, 89th Cong., 1st Sess.
	May 12, 1967	Additional $38 million for further prosecution of comprehensive plan for Ohio River Basin.	PL 90-17, 90th Cong., 1st Sess.
	Aug 13, 1968	Additional $35 million for further prosecution of comprehensive plan for Ohio River Basin.	PL 90-483, 90th Cong., 2nd Sess.
	Jun 19, 1970	Additional $69 million for further prosecution of comprehensive plan for Ohio River Basin.	H. Doc. 15166, 91st Cong., 2nd Sess.
	Mar 7, 1974	Additional $120 million for further prosecution of comprehensive plan for Ohio River Basin.	H. Doc. 10203, 93rd Cong. River Basin Monetary Authorization Act of 1974
	Oct 22, 1976	Authorized Phase I design memorandum stage of advanced engineering and design of the project for abatement of acid mine drainage in the Clarion River Basin, PA.	Water Resources Development Act of 1976; PL 94-587, Sec. 101 (a)
23.		**Shenango River Lake, PA & OH**	
	Jun 28, 1938	Construction of a dam and reservoir for flood control and low water regulation and recreation.	H. Doc. 306, 74th Cong., 1st Sess. FCC Doc. 1, 75th Cong., 1st Sess.
	Dec 22, 1944 as amended	Construction, operation and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944
24.		**Stonewall Jackson Lake, WV**	
	Nov 7, 1966	Construction of a dam and reservoir for flood control, water supply, water quality control, area redevelopment and recreation.	S. Doc. 109, 89th Cong., 2nd Sess.
25.		**Tionesta Lake, PA**	
	Jun 22, 1936 amended by Jun 28, 1938	Construction of a dam and reservoir for flood control and low water regulation.	H. Doc. 306, 74th Cong., 1st Sess. FCC Doc. 1, 75th Cong., 1st Sess.
	Dec 22, 1944 as amended	Construction, operation and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944
26.		**Union City Dam, PA**	
	Oct 23, 1962	Construction of a dam and reservoir for flood control.	S. Doc. 95, 87th Cong., 2nd Sess.
27.		**Woodcock Creek Lake, PA**	
	Oct 23, 1962	Construction of a dam and reservoir for flood control, recreation and storage for water quality control.	S. Doc. 95, 87th Cong., 2nd Sess.
28.		**Youghiogheny River Lake, PA & MD**	
	Jun 28, 1938	Construction of a dam and reservoir for flood control, low-flow Augmentation and pollution abatement purposes.	H. Doc. 306, 74th Cong., 1st Sess. FCC Doc. 1, 75th Cong., 1st Sess.
	Dec 22, 1944 as amended	Construction, operation and maintenance of recreation facilities.	Sec. 4, Flood Control Act of 1944
33.		**South Central, PA Environmental Improvement Program**	
	Oct 31, 1992	Construction of local flood protection projects.	Water Resources Development Act of 1992; PL 102-580, Sec 313
34.		**Three Rivers Wet Weather Demonstration Project**	
	Oct 31,1992	Environmental infrastructure	Water Resources Development Act Of 1992, PL 102-850, Sec 219
35.		**Formerly Used Sites Remedial Action Program (FUSRAP)**	
	Jul 5, 2001	Coordination on cleanup and decommissioning of the FUSRAP sites.	PL 107-117, Sec 8143

[1] Included in the Emergency Relief Program, April 8, 1935.
[2] Permanent Appropriations Repeal Act.
[3] Public Res. 117, 71st Cong., 3rd Sess.

OTHER AUTHORIZED NAVIGATION PROJECTS
(See Section 6 of Text)

TABLE 18-C

Project	Status	For Last Full Report See Annual Report	Construction	Cost to September 30, 2004 Operations and Maintenance
Allegheny River, PA Open-Channel Work	Completed	1934	197,000	133,940
Buckhannon River, WV[1,2]	Completed	1893	5,500	
Cheat River, WV[1,2]	Completed	1895	12,997	
Pittsburgh Harbor, PA	Completed	1922	110,663	81,613

[1] Abandonment recommended in H. Doc. 467, 69th Cong., 1st Sess.
[2] No commerce reported.

TABLE 18-E **OTHER AUTHORIZED FLOOD CONTROL PROJECTS**
(All Projects Not Specifically Identified in Text)

Project and Status	For Last Full Report See Annual Report For	Construction (Federal Cost)	Non-Federal Cost	Cost to September 30, 2004 Operations and Maintenance
Flood Protection				
Specifically Authorized Projects Completed:				
Bradford, PA	1962	7,601,763	1,895,000	
Brookville, PA	1963	964,976	289,000	
Buckhannon, WV	1972	1,568,661	75,000	
Butler, PA	1970	1,556,181	534,000	
DuBois, PA	1979	4,464,607	910,000	
Johnsonburg, PA	1958	674,664	130,000	
Kittanning, PA, Part 1	1949	130,317	2,000	
Latrobe, PA	1951	207,659	44,400	
Latrobe, PA	1970	2,556,652	698,000	
Olean, NY	1954	3,217,531	597,000	
Portage, PA	1965	150,386	14,900	
Portville, NY	1954	2,070,484	353,000	
Reynoldsville, PA	1959	385,494	26,000	
Ridgeway, PA (Elk Creek)	1964	628,888	465,000	
Salamanca, NY	1972	2,880,535	4,180,720	
Turtle Creek, PA	1998	22,500,079	323,000	
Washington, PA	1964	789,093	113,000	
Wellsville, OR Section 1	1965	483,910		
Wellsville, OR Section 11	1956	157,633	152,200	
Youngstown, OH	1976	3,621,134		
Specifically Authorized Projects Deferred:				
Benwood, WV	1954	81,028		
Chartiers Creek, PA	1998	26,592,965		
Authorized by Chief of Engineers Completed:				
Amsterdam, OH	1964	183,072	22,500	
Big Run, PA	1965	364,208	35,900	
Burgettstown, PA		83,129		
Friendsville, MD		41,529	2,200	
Girty's Run, Millvale, PA	1986	2,655,934	701,722	
Grantville, PA	--	75,908	3,000	
Leetonia, OH	--	89,299	17,200	
Oil City, PA	--	43,595		
Oil City Ice Control Structures	1987	3,927,792	25,000	
Root Creek, Bolivar, NY	1986	1,591,436		
Slovan, PA	--	57,811		
Sykesville, PA	--	184,246	9,000	
Tarentum, PA	1964	136,591	24,600	
Tenmile Creek at Marianna, PA	1981	1,554,428		
West Little Pine Creek, Etna, PA	--	2,021,852	86,200	
Wilmore, PA	--	96,853	1,300	
Authorized by Chief of Engineers Active:				
Ridgeway & Vicinity (Clarion River)[2]	1979	132,464		
Authorized by Chief of Engineers Inactive:				
Black Fork at Hendricks, WV	1972	6,800		
Oakdale, PA	--	14,127		
Rouseville, PA	--	1,642		
Wallace, WV[1]	--	11,035		
Weston Mills, Olean, NY	--	50,100		
Weston Mills, Portville, NY	--	52,100		
Reservoirs				
Rowlesburg Lake, WV	1977	2,873,799		

[1] Lacks local support.
[2] No longer economically justified.

TABLE 18-G **DEAUTHORIZED PROJECTS**

Project	For Last Full Report See Annual Report for	Date Deauthorized	Federal Funds Expended	Contributed Funds Expended
Adena, OH (Short Creek)		Aug 5, 1977	13,452	
Allegany, NY Unit I (Allegheny River)[1]		Nov 17, 1986	4,100	
Allegany, NY Unit II (Five Mile Creek Area)[1]	1975	Nov 17, 1986	64,851	
Bellaire, OH		May 6, 1981	76,487	
Brackenridge, Tarentum and Natrona, PA[1]		Nov 17, 1986		
Brilliant, OH		Aug 5, 1977		
Brockway, PA (Allegheny River Basin)		Aug 5, 1977	194	
Clarington, OH		Aug 5, 1977		
Coraopolis, PA		Aug 5, 1977		
Dillonvale, OH (Short Creek)		Aug 5, 1977	16,884	
Eagle Creek Reservoir, OH		Jan 1, 1990	100,000	
Empire-Stratton, OH[1]		Nov 17, 1986	33,031	
Follansbee, WV		Aug 5, 1977		
Freeport, PA (Allegheny River)		Aug 5, 1977		
Industry, PA		Aug 5, 1977		
Kittannng, PA, Part 11 (Allegheny River)		Nov 6, 1977		
Lake Chautauqua and Chadakoin River, NY[2]	1965	Mar 2, 1970	190,722	
Lake Erie-OW Canal, OH and PA - 1935 Act	1972	May 6, 1981	1,342,000	
Leetsdale, PA		Nov 17, 1986		
Martins Ferry, OH[1]	1941	Nov 17, 1986	25,164	
McKees Rocks, PA		Oct 3, 1978		
Mingo Junction, QH		Aug 5, 1977		
Moundsville, WV[1]		Nov 17, 1986		
Muddy Creek Dam, PA[1]	1977	Nov 17, 1986	402,459	
Neville Island, PA[1]		Nov 17, 1986		
New Cumberland, WV		Aug 5, 1977		
New Kensington and Parnassus, PA[1]		Nov 17, 1986		
Pittsburgh, PA (Golden Triangle)		Oct 3, 1978		
Pittsburgh, PA (North Side)		Oct 3, 1978		
Pittsburgh, PA (The Strip)		Oct 3, 1978		
Powhaten Point, OH[1]		Nov 17, 1986		
Proctor, WV[1]		Nov 17, 1986		
Redbank Creek Lake, PA		Aug 5, 1977	156,377	
Rochester, PA[1]		Nov 17, 1986		
St. Marys, PA (Allegheny River Basin)		Aug 5, 1977	13,529	
Smith Ferry, PA		Aug 5, 1977		
Uniontown, PA	1956	Jan 1, 1990		
Warwood, WV[1]		Nov 17, 1986		
Wellsburg, WV		Aug 5, 1977	6,387	
West Bridgewater, PA		Aug 5, 1977		
Wheeling, WV[1]	1954	Nov 17, 1986	189,067	
Wheeling, WV (North Wheeling)[1]		Nov 17, 1986		
Wheeling, WV (Wheeling Island)[1]		Nov 17, 1986	21,700	
Wilcox, PA[3]		Mar 5, 1955	16,761	
Woodlands, WV[1]		Nov 17, 1986		
Youghiogheny River, PA and MD (Canalization)[1, 4]	1971	Nov 17, 1986	232,863	

[1] Deauthorized under Water Resource Act of 1986 (PL 99-662).
[2] Local interests failed to meet requirements of cooperation, authority for project expired Mar 2, 1970.
[3] Local interests failed to meet requirements of cooperation, authority for project expired Mar 5, 1955.
[4] Includes $47,195 construction costs expended under previous project and $1,700 O&M costs expended under previous project.

TABLE 18-H — ALLEGHENY RIVER, PA, LOCKS AND DAMS (See Section 1 of Text)

No.	Miles Above Mouth	Nearest Town	Dimensions: Width of Chamber (feet)	Dimensions: Available Length to Full Width (feet)	Dimensions: Upper Lift at Normal Pool Level (feet)	Dimensions: Normal Pool Elevation (feet, mean sea level)	Depth on Miter Sills at Normal Pool Level[1]: Lower (feet)	Depth on Miter Sills at Normal Pool Level[1]: Upper (feet)	Character of Foundation: Lock	Character of Foundation: Dam	Kind of Dam	Type of Construction: Lock	Type of Construction: Dam	Percent Complete	Year Open to Nav	Actual Cost
2	6.7	Aspinwall, PA	56	360	11.0	721.0	12.0	10.9	Rock	Rock	Fixed	Concrete	Concrete	100	1934[2]	1,763,485
3	14.5	Cheswick, PA	56	360	13.8	734.8	10.8	11.8	Rock	Pile-Rock	Fixed	Concrete	Concrete	100	1934[2]	1,875.665
4	24.2	Natrona, PA	56	360	10.6	745.4	10.0	8.5	Rock	Rock	Fixed	Concrete	Concrete	100	1927	1,707.690
5	30.4	Freeport, PA	56	360	11.6	757.0	10.5	10.3	Piling	Crib-Pile	Fixed	Concrete	Concrete	100	1927	1,940,537
6	36.3	Clinton, PA	56	360	12.4	769.4	10.6	10.8	Rock	Crib-Pile	Fixed	Concrete	Concrete	100	1928	1,523,959
7	45.7	Kittanning, PA	56	360	13.0	782.4	9.8	10.9	Piling	Steel Sheet Piling	Fixed	Concrete	Concrete	100	1930	1,460,008
8	52.6	Templeton, PA	56	360	17.8	800.2	10.4	13.8	Rock	Rock	Fixed	Concrete	Concrete	100	1931	2,848,920
9	62.2	Rimer, PA	56	360	22.0	822.2	10.5	11.3	Rock	Rock	Fixed	Concrete	Concrete	100	1938	2,510,373
Abandoned lock and dam 1																591,187
Abandoned lock and dam 2																544,929
Abandoned lock and dam 3																310,103
Demolishing old dam 1																26,001
Dredging channel																1,055,003
Total																18,157,860

[1] All depths as shown are on guard sills and are controlling depth.
[2] Dates shown represent replacement structures.

TABLE 18-I — MONONGAHELA RIVER, PA, LOCKS AND DAMS (See Section 3 of Text)

No.	Miles Above Mouth	Nearest Town	Dimensions: Width of Chamber (feet)	Dimensions: Available Length to Full Width (feet)	Dimensions: Upper Lift at Normal Pool Level (feet)	Dimensions: Normal Pool Elevation (feet, mean sea level)	Depth on Miter Sills at Normal Pool Level[1]: Lower (feet)	Depth on Miter Sills at Normal Pool Level[1]: Upper (feet)	Character of Foundation: Lock	Character of Foundation: Dam	Kind Of Dam	Type of Construction: Lock	Type of Construction: Dam	Percent Complete	Year Open to Nav	Actual Cost
2	11.2	Braddock, PA	56 110	360 720	8.7	718.7	16.0	16.0	Rock	Crib-Pile	Fixed	Concrete	Concrete	100	1953[2]	145,057,068[5,7]
3	23.8	Elizabeth, PA	56[3]	360 720	8.2	726.9	11.6	11.9	Rock	Crib-Pile	Fixed	Concrete	Concrete	100	1907	58,132,804[5,8]
4	41.5	Charleroi, PA	56[3]	360 720	16.6	743.5	10.7	20.0	Piles	Piles	Gated	Concrete	Concrete	100	1932[2]	106,155,062[5,6]
- -	61.2	Maxwell Locks and Dam - Maxwell, PA	84[3]	720	19.5	763.0	15.0	20.5	Rock	Rock	Gated	Concrete	Concrete	100	1964[2]	30,110,889[5]

TABLE 18-I

MONONGAHELA RIVER, PA, LOCKS AND DAMS
(See Section 3 of Text)

No.	Miles Above Mouth	Nearest Town	Dimensions: Width of Chamber (feet)	Dimensions: Available Length to Full Width (feet)	Dimensions: Upper Lift at Normal Pool Level (feet)	Dimensions: Normal Pool Elevation (feet, mean sea level)	Depth on Miter Sills at Normal Pool Level[1]: Lower (feet)	Depth on Miter Sills at Normal Pool Level[1]: Upper (feet)	Character of Foundation: Lock	Character of Foundation: Dam	Kind Of Dam	Type of Construction: Lock	Type of Construction: Dam	Percent Complete	Year Open to Nav	Actual Cost
-	82.2	Grays Landing	84	720	15.0	778.0	18.0	26.0	Rock	Rock	Fixed	Concrete	Concrete	100	1994	173,573,586[9]
-		Locks and Dam, PA														
-	90.8	Point Marion	84	720	19.0	797.0	16.2	16.2	Rock	Rock	Gated	Concrete	Concrete	100	1993[2]	118,694,656[10]
-		Locks and Dam, PA														
-	102.0	Morgantown	84	600	17.0	814.0	14.5	17.8	Rock	Rock	Gated	Concrete	Concrete	100	1950	8,778,000[5]
-		Locks and Dam, PA														
-	108.0	Hildebrand Locks	84	600	21.0	835.0	15.0	14.0	Rock	Rock	Gated	Concrete	Concrete	100	1959	12,506,829[5]
-		and Dam, 6 miles														
		Morgantown, WV														
-	115.4	Opekiska Locks	84	600	22.0	857.0	14.0	17.8	Rock	Rock	Gated	Concrete	Concrete	100	1964	25,179,622[5]
-		And Dam, 13.4 miles														
		Morgantown, WV														
Marine Ways, etc.																250,000
Abandoned lock and dam 1																1,019,907[5]
Abandoned lock and dam 4																780,816[5]
Abandoned lock and dam 5																1,074,812[5]
Abandoned lock and dam 6																770,449[5]
Abandoned lock and dam 7																2,853,580[5]
Abandoned lock and dam 8																245,900[10]
Abandoned lock and dam 9																191,000[5]
Abandoned lock and dam 10																210,445[5]
Abandoned lock and dam 11																227,668[5]
Abandoned lock and dam 12																200,550[5]
Abandoned lock and dam 13																190,691[5]
Abandoned lock and dam 14																210,127[5]
Abandoned lock and dam 15																175,829[5]
Dredging channel																587,899[5]
		Total														655,658,133[5]

[1] All depths as shown are on guard sills and controlling depth.
[2] Dates shown for locks and dams number 2 to 8 inclusive represent reconstruction.
[3] 2 chamber.
[4] Includes $3,322,057 for raising crest of dam (1958-9), $2,086,438 for original reconstruction (1923-6), $618,758 AE&D costs for replacement of lock, and $112,667,403 for replacement of lock ($56,215,160 CG funds; $56,452,243 from Inland Waterways Trust Fund).
[5] Actual cost may include estimated costs which have been footnoted as necessary.
[6] Includes $2,173,767 for original reconstruction (1931-2) and $15,080,304 for reconstruction of dam (1963-7).
[7] Includes $16,967,114 for reconstruction of locks.
[8] Includes $15,857,000 for major rehabilitation.
[9] Includes AE&D costs for proposed lock ($803,000) as well as $172,692,644 expended in CG and IWTF.
[10] Includes $213,776 original project and $2,639,804 for reconstruction (1925).

TABLE 18-J **MONONGAHELA RIVER, PA & WV**
TOTAL COSTS OF EXISTING PROJECT TO END OF FISCAL YEAR
(See Section 3 of Text)

Funds	New Work	Operations & Maintenance, General	Total
Regular	$661,059,832[1, 3]	$386,988,432[2]	$1,048,048,264[1, 2, 3]
Maintenance and Operation			452,623
Public Works Acceleration Exec			22,549
Total	$661,059,832[1, 3]	$386,988,432[2]	$1,048,523,436[1, 2, 3]

[1] Includes $5,420,541 for new work for previous projects.
[2] Includes $20,446,587 expended between July 7, 1897 and June 30, 1937 on operation and care of works of improvement under revisions of permanent appropriation for such purposes and excludes $742 for maintenance of previous projects.
[3] Includes $15,857,000 for major rehabilitation of L/D 3.

TABLE 18-K **OHIO RIVER BASIN (PITTSBURGH DISTRICT)**
RESERVOIRS (See Section 22 of Text)

Tributary Basin and Reservoir	Stream	Total Cost
Allegheny:		
Conemaugh River, PA	Conemaugh River	$ 46,012,411
Crooked Creek, PA	Crooked Creek	4,482,933
East Branch, Clarion River, PA	Clarion River	9,539,586
Kinzua Dam and Allegheny Reservoir, PA and NY	Allegheny River	112,226,076[1]
Loyalhanna, PA	Loyalhanna Creek	5,727,531
Mahoning Creek, PA	Mahoning Creek	7,144,973
Tionesta, PA	Tionesta Creek	7,792,378
Union City, PA	French Creek	14,559,800
Woodcock Creek, PA	Woodcock Creek	20,545,065
Beaver:		
Berlin, OH	Mahoning River	8,739,987
Michael J. Kirwan, OH	Mahoning River	17,376,097
Mosquito Creek, OH	Mosquito Creek	4,253,029
Shenango River, PA and OH	Shenango River	40,217,201
Monongahela:		
Stonewall Jackson Lake, WV	West Fork River	212,439,459
Youghiogheny River, PA and MD	Youghiogheny River	12,521,167

[1] Includes $2,921,000 for dam rehabilitation.

TABLE 18-L **INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS**
(See Section 29 of Text)

Project	Date of Inspection	Project	Date of Inspection	Project	Date of Inspection
Baldwin Colewood Creek, PA	Sep 2004	Granville	May 2004	Reynoldsville	Oct 2004
Bethel Park	Apr 2004	Greensburg Jacks Run, PA	Oct 2003	Reynoldsville, Soldier Run	Jun 2004
Boynton Village, Casselman River, Big Piney Run, PA	Jul 2004	Jeannette, Brush Creek, PA	Feb 2004	Somerset, Coxes Creek, PA	Jul 2004
Buckhannon, WV	Sep 2004	Johnsonburg	Apr 2004	Tionesta, Council Run, PA	Aug 2004
Burgettstown-Slovan, PA	May 2004	Johnstown, Griffith Run, PA	Jul 2004	Turtle Creek, Sawmill Run, PA	Apr 2004
Butler, PA	Jun 2004	Johnstown, St. Clair Run, PA	Jul 2004	Warren, Glade Run, PA	Sep 2004
Coudersport, Allegheny River & Mill Creek	Aug 2004	Johnstown, Sam's Run, PA	Jul 2004	Warren, Indian Hollow, PA	Jul 2004
Charters Crek, PA	May 2004	Latrobe, PA	Sep 2004	Washington-Canton	May 2004
Canonsburg-Houston Reach					
Carnegie-Bridgeville	May 2004	Leetonia, OH	Jun 2004	Wellsville, WV	May 2004
DuBois, PA	Oct 2003	Millvale, PA	Jun 2004	Wilmore	Oct 2003
Elkins, WV	Sep 2003	Portage	Oct 2004	Windber, Paint Creek, PA	Jul 2004
Friendsville, MD	Jun 2004	Punxsutawney, PA	Oct 2003	Youngstown, OH	Apr 2004

TABLE 18-M **FLOOD CONTROL WORK UNDER SPECIAL AUTHORIZATION (See Section 31 of Text)**

Project/Study Identification	Federal Fiscal Year Costs
Emergency Bank Protection - Section 14, 1946 Flood Control Act, PL 79-526	
Allenport, PA	$19,389
Avonmore (Kiskiminetas River, STP), PA	79,550
Bear Creek, Walnut St., Friendsville, MD	6,850
Beaver, PA, Walnut Bottom Run	17,178
Blackville, PA, Dunkard Creek	60,397
Conway, Crows Run	38,369
Coordination Account	30,217
East Liverpool, Ohio	13,816
Ford City, AR, First Street	22,363
Lincoln Borough, PA	17,121
Little Plum Creek, Municipal Building, PA	9,797
McCandless, PA	13,570
Moon Treatment Plant, Elkhorn Run, PA	67,873
Nickleplate Rd., French Creek, Fairfield	5,115
Salamanca, NY	67,498
West Elizabeth, PA	16,937
Weston, WV	50,842
Total Federal Cost for Current Fiscal Year	$536,882
Flood Control Activities - Section 205, 1948 Flood Control Act, PL 80-858, as amended	
Coordination Account	$14,432
Dawson, PA	28,772
Weirton, WV (Harmon Creek)	23,704
West Elizabeth, Mon River, PA	22,420
Total Federal Cost for Current Fiscal Year	$89,333
Aquatic Ecosystem Restoration - Section 206, 1996 WRDA, PL 104-303, as amended	
Buhl Park Lake, Sharon, PA	$121,310
Coordination Account	5,045
East Palestine, OH	53,896
Falls Run/Wheeling Creek, Belmont, OH	188,445
Lick Run, WV	79,490
Nine Mile Run, Allegheny County, PA	440,403
North Fork Yellow Creek, OH	4,044
North Park Lake, PA	217,192
North Shore, Riverfront Park, Pittsburgh, PA	16,180
Saxman Run, Westmoreland County, PA	161,083
Total Federal Cost for Current Fiscal Year	$1,287,088
Modifications for Improvement of the Environment – Section 1135, 1986 WRDA, PL 99-662, as amended	
Bone Run, Kinzua	$5,375
Coordination Account	3,624
Shenango River Lake, PA (Shorebird Habitat)	4,975
Tygart Lake, WV (Scab Run)	48,507
Total Cost for Current Fiscal Year	$62,482
Flood Control and Coastal Emergencies - PL 99, 84th Congress and antecedent legislation	
Disaster Preparedness	$270,673
Emergency Operations	25,416
Rehabilitation	88,354
Total Federal Cost for Current Fiscal Year	$384,443

OHIO RIVER

For actual construction of locks and dams, and operation and care of completed structures, the Ohio River is divided into three sections under immediate supervision and direction of District Engineers at Pittsburgh, Huntington, and Louisville. Pittsburgh section extends 127 miles from head of river at Pittsburgh, PA, to a point immediately upstream from New Martinsville, WV, and includes Emsworth, Dashields, Montgomery, New Cumberland, Pike Island, and Hannibal Locks and Dams. Huntington section extends 311 miles from mile 127 to 438 immediately upstream from Foster, KY, and includes Willow Island, Belleville, Racine, Robert C. Byrd, Greenup, and Captain Anthony Meldahl Locks and Dams. Louisville section extends 543 miles from mile 438 to mouth of river, and includes Markland and McAlpine Locks and Dams (with Louisville and Portland Canal), Cannelton, Newburgh, John T. Myers, and Smithland Locks and Dams, and Locks and Dams 52 and 53.

Improvements

Navigation

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Navigation

1. CONSTRUCTION OF LOCKS AND DAMS ON OHIO RIVER

Location. Ohio River is formed by junction of Allegheny and Monongahela Rivers at Pittsburgh, PA, and flows generally southwesterly for 981 miles to join Mississippi River near Cairo, IL. For description of river see page 1227, 1932 Annual Report.

Previous Projects. For details see page 1907 of Annual Report for 1915.

Existing project. Provides for improvement of entire river by construction of locks and dams to provide channel depth of 9 feet and for widening Louisville and Portland Canal at Louisville, KY. Project provides for two locks (110 feet by 600 feet and 56 feet by 360 feet) at Emsworth, Dashields and Montgomery. The dams at Emsworth and Montgomery are movable crests while at Dashields it is a fixed crest. Below Montgomery Locks and Dam, the existing project consists of fixed dams with movable crests with two locks (110 by 1,200 feet and 110 by 600 feet) at New Cumberland, Pike Island, Hannibal, Willow Island, Belleville, Racine, Robert C. Byrd, Greenup, Captain Anthony Meldahl, Markland, Cannelton, Newburgh, and John T. Myers; two locks 110 by 1,200 feet at Smithland; 110- by 1,200-foot temporary locks in addition to the existing locks at Locks and Dams 52 and 53, and reconstruction to provide a 110- by 1,200-foot lock in addition to existing locks and a fixed dam with two sections of movable crest at McAlpine Locks and Dam; widening Louisville and Portland Canal to 500 feet. Auxiliary lock 56 by 360 feet at McAlpine Locks and Dam has been inoperative since failure of downstream lock gates in December 1972. Rehabilitation of existing Locks and Dams 52 and 53 was started in September 1979 under the purview of Section 6, March 1909 Act. Mound City was also considered authorized under purview of 1909 Act, and preconstruction planning was performed in the period 1965 to 1972. The ruling of the U.S. District Court, District of Columbia, on September 6, 1974, with reference to Lock and Dam 26, Mississippi River, would also apply to this project. Consequently, it is no longer considered authorized. Operation and care of locks and

dams were included in project July 1, 1935, under provisions of Permanent Appropriations Repeal Act of June 26, 1934. Estimated Federal cost of new work, is $3,600,490,636. Foregoing estimate does not include expenditures on previous projects. Various items previously included in this project are considered inactive or unnecessary and are excluded from foregoing cost estimate. See page 693, Annual Report, 1968, for items and estimated cost. Under authority of 1910 River and Harbor Act, Louisville and Portland Canal was widened to 200 feet; Locks and Dams 40 and 42 eliminated; Locks and Dams 1 and 2 replaced by Emsworth Locks and Dam; Lock and Dam 3 replaced by Dashields Locks and Dam; and Locks and Dams 4, 5, and 6 replaced by Montgomery Locks and Dam. Locks and Dams 24, 25, and 26 were replaced by Robert C. Byrd Locks and Dam authorized by August 30, 1935, Act, and constructed under project for improving lower Kanawha River. Locks and Dams 7, 8, and 9 were replaced by New Cumberland Locks and Dam; Locks and Dams 10 and 11 were replaced by Pike Island Locks and Dam; Locks and Dams 12, 13, and 14 were replaced by Hannibal Locks and Dam; Locks and Dams 15, 16, and 17 were replaced by Willow Island Locks and Dam; Locks and Dams 18, 19, and 20 were replaced by Belleville Locks and Dam; Locks and Dams 21, 22, and 23 were replaced by Racine Locks and Dam; Locks and Dams 27, 28, 29, and 30 were replaced by Greenup Locks and Dam; Locks and Dams 31, 32, 33, and 34 were replaced by Captain Anthony Meldahl Locks and Dam; Locks and Dams 35, 36, 37, 38, and 39 were replaced by Markland Locks and Dam; the Louisville and Portland Canal at McAlpine Locks and Dam was widened to 500 feet. Locks and Dams 43, 44, and 45 were replaced by Cannelton Locks and Dam; Locks and Dams 46 and 47 were replaced by Newburgh Locks and Dam; Locks and Dams 48 and 49 were replaced by John T. Myers Locks and Dam, and Locks and Dams 50 and 51 were replaced by Smithland Locks and Dam, as modifications to existing project under purview of Section 6, March 3, 1909 Act, reducing total number of structures to 20. The Water Resources Development Act of 1974 combined the Newburgh Bank Protection Works project with the Newburgh Locks and Dam project. A December 1981 Act established the Falls of the Ohio National Wildlife Conservation Area near McAlpine Locks and Dam to protect and preserve existing fossilized coral and a diversity of wildlife. A November 17, 1988 Act authorized a replacement structure for Locks & Dams 52 & 53 at Olmsted, IL. A November 28, 1990 Act authorized an interpretive center at the Falls of the Ohio National Wildlife Conservation Area near McAlpine Locks & Dam and a replacement of the existing 110 foot x 600 foot lock at McAlpine Locks & Dam, IN & KY. Table 19-J contains data relative to various features of locks and dams included in existing project. For list of principal towns and cities along Ohio River with their mileage below Pittsburgh, PA, see page 1060, 1962 Annual Report. See Table 19-I for licenses.

Navigation system of 20 locks and dams is in operation and 9-foot navigation throughout length of river is generally available at all times. At certain unstable bars project depth is maintained by dredging, supplemented by contraction works. (See "Open Channel Work, Ohio River.") Table 19-J shows cost and year completion of locks and dams now in operation. New Cumberland, Pike Island, Hannibal, Willow Island, Belleville, Racine, Greenup, Captain Anthony Meldahl, Markland, McAlpine, Cannelton, Newburgh, John T. Myers, and Smithland replacement locks and dams are in operation, replacing 39 old low-lift locks and dams. For total cost of existing project, see Table 19-H.

Terminal facilities. Modern public terminals, with warehouses, equipped with operating machinery for transferring materials, have been constructed by private interests at some of the larger cities and towns. A list of terminals on Ohio River is revised annually and can be obtained from Division Engineer, U.S. Army Engineer Division, Great Lakes & Ohio River, Cincinnati, Ohio.

Operations during fiscal year. New work by contract and hired labor:

Emsworth Locks and Dam: Funding in the amount of $5,000 was provided through the Dam Safety program in FY 2004 to initate a $78.2 million major rehabiliation of the Emsworth Dams. The major rehabilitation will consist of providing two sets of emergency bulkheads, providing permanent erosion protection downstream of the dams, and replacing 13 lift gates and associated electrical and mechanical systems.

Greenup Locks and Dam: WRDA 2000 authorized improvements to Greenup L&D, KY. A Preconstruction Engineering and Design study is underway consisting of preparation of plans and specifications for a mooring facility, geotechnical investigations, design report for the lock extension, mitigation model studies, and archaeological, historical, cultural, and biological work. Studies are scheduled for completion in 2006.

Robert C. Byrd Locks and Dam: The existing project, constructed under project for improving lower Kanawha River, was placed in operation in August 1937. The dimensions of the existing locks chambers and poor approach conditions, particularly to downstream traffic, have created a higher than normal accident rate to the structure with corresponding hazards and delays to traffic. The Water Resources Development Act of 1976 authorized Phase I studies for 1,200-foot locks in a bypass canal. These studies are complete.

Initial Construction, General funds for the continuation of Engineering activities were received in

September 1985. Real estate acquisition is complete. The contract for the Locks was awarded in October 1987 and is complete. The contract for the Dam Rehabilitation was awarded in June 1993 and is 99 percent complete. The total estimated cost of the project is $383.2 million, which is 50 percent federal cost and 50 percent Inland Waterways Trust Fund cost.

Falls of the Ohio National Wildlife Conversation Area Was authorized by 97-137 on December 29,1981 and modified by Public Law 101-640 on November 28, 1990 to design and construct an interpretive center. The Conservation Area protects 1,000 acres, which consists of birdlife and other wildlife. Planning consisted of efforts to define facilities to be cost shared with local interests. All Real Estate tracts have been acquired and one tract remains in a condemnation trial. A construction contract to construct the cost-shared recreation facilities was awarded on 30 September 1993, and completed in February 1995. The Indiana Department of Natural Resources manages the area under a Public Park and Recreation Lease granted on 1 January 1992. A portion of the Ohio River Shoreline within the Conservation Area abutting the location of Emery Crossing Road in the vicinity of the historic town of Clarksville, Indiana, collapsed into the river in the spring of 2004, exposing remnants of a prehistoric village and one human burial site. A cultural resource investigation and recovery preceded initiation of bank restoration construction, which is scheduled for completion in FY 2005.

John T. Myers Locks and Dam: Construction was initiated in June 1965. All work is complete. An extension of the existing 600-foot x 110-foot auxiliary lock chamber to a 1,200-foot x110-foot chamber was authorized by the WRDA of 2000 in Public Law 106-541 on 11 December 2000. This effort will give the J.T. Myers project twin 1,200-foot locks for inland navigation tow traffic. Preconstruction and Design efforts are underway consisting of the preparation of geotechnical investigations, design reports for the lock extension and aquatic mitigation, hydraulic model studies, and economic and archeological, historical, cultural and biological work. A construction contract for site preparation was awarded in September 2004 for $392,000. Ongoing Preconstruction and Design efforts are scheduled for completion in 2004.

McAlpine Locks and Dam: A replacement of the existing 110 foot x 600 foot lock with a new 100 foot x 1,200 foot lock was authorized by WRDA of 1990 in Public Law 101-640. Construction has been initiated. A contract to construct a cofferdam and demolish the 360 foot and 600 foot locks was awarded in May 2000 and was completed March 2003. A contract to construct a boat mooring facility was awarded 4 April 2002 for $2,680,000 and was completed in April 2004. A contract to construct the new 1,200 foot lock and an access bridge to Shippingport Island was awarded on 24 September 2002 for $221,441,468. Notice to proceed was issued 30 October 2002. $166,575,000 has been allocated for the lock replacement and ancillary efforts.

Olmsted Locks & Dam: A replacement structure for Locks and Dams 52 & 53 was authorized by the WRDA of 1988 in Public Law 100-676 on 17 November 1988. Planning Engineering and Design continued. A contract to construct the approach wall was awarded 26 August 1999 for $98,980,610 and has advanced to 97 percent completion. A contract for the Operating and Maintenance Bulkheads was awarded on September 27, 2001, for $24,156,000 and advanced to 90% completion. The design-build contract for the Gate Storage contract was awarded 8 March 2002 and advanced to 85% completion. The Mooring Cells were awarded 4 June 2002 and were completed in December 2003. The Dam construction contract was awarded on 28 January 2004 for $504,148,484. The contract is cost reimbursable with a base dollar award fee. Notice to proceed was issued on 18 February 2004. Progress was lerss than 1% due to limited funds. In FY04, $32,513,500 was expended on the Olmsted project.

Emsworth Locks and Dam: FY03 effort included starting repairs on filling valves for the land chamber by hired labor, cost $1,238,210.

Montgomery Locks and Dam: In FY03 a security fence was installed, contract cost of $133,646.

New Cumberland Locks and Dam: In FY03 hired labor efforts included dewatering the river chamber and installing miter gates, cost $2,763,409.

Pike Island Locks and Dam: FY03 efforts included renovation of the river wall emptying valve by hired labor, cost $955,027.

Hannibal Locks and Dam: Hired labor efforts in FY03 replaced the middle wall filling valve, cost $860,649.

Dashields Locks and Dam: FY03 efforts included replacement of land wall filling and emptying valves at a hired labor cost of $952,754. A security fence was installed at a contract cost of $94,258.

Operation and maintenance, general. Locks and dams operated as required and necessary repairs and improvements made thereto and to operator's quarters, grounds and esplanades. Costs were $26,091,579 for Huntington District, $30,807,991 for Louisville District and $20,398,457 for Pittsburgh District.

2. OPEN CHANNEL WORK, OHIO RIVER

Location. Under jurisdiction of district engineer in whose district work is located. Portion of river included in project extends 974.7 miles from head of river at Pittsburgh, PA, to mouth of Cache River (Mound City, IL). Open channel improvement from mouth of Cache River to mouth of Ohio River is under jurisdiction of Mississippi River Commission.

Existing Projects. Before completion of canalization project, no project depth had been fixed by Congress under project for open channel work; but, in order to properly aid packet and barge navigation, it was necessary to secure a low-water channel with a minimum depth of 4 to 6 feet, and a width, depending upon difficulty of running channel, of 400-600 feet; also, to permit movement of large coal tows, which movement occurred at stages of water exceeding 10 feet, it was necessary to remove points of projecting bars which formed at various locations along river. Accomplishment of this purpose involved concentration of current by closing back channels at islands with low dams, contraction and straightening wide open channels by low dikes, dredging bars and shoals, and removal of snags and wrecks. Incidental to direct improvement of Ohio River is construction and maintenance of ice piers as required for protection of river craft. Stage of extreme high water on Ohio River varies from 46 feet at Pittsburgh, PA, to 80 feet at Cincinnati, OH, with 57.2 feet at Louisville, KY (head of falls, 53.8 feet at Evansville, IN, and 59.5 feet at Cairo, IL (mouth of river). Estimated cost of new work is $16.16 million, exclusive of following items which are considered inactive: Ice piers authorized by 1927 River and Harbor Act; reforestation of sloughs of Kentucky Peninsula near Evansville, IN, authorized by 1930 River and Harbor Act; dredging to widen channel at certain points; and placing revetment at various points. Estimated cost of these items is $6,565,000. Operation of snag boats on Ohio River below Pennsylvania State line was included in project July 1, 1935, under provisions of Permanent Appropriations Repeal Act of June 26, 1934. See Table 19-B for authorizing legislation.

New work under this project is substantially complete, since it is not anticipated that work on inactive portion of project will be accomplished. In addition to dredging, local stabilization of channel has been effected at various points by construction of dikes and revetment. Work, which remains, consists of dredging to widen channels at certain points to project depth.

Local cooperation. River and Harbor Act of January 21, 1927, authorizing construction of ice piers for general open channel work, imposes condition that before work is begun on any pier, local interests convey to the United States free of cost such riparian rights as may be deemed necessary in connection with the improvements at locality (H. Doc. 187, 67th Congr., 2nd Sess.). Existing ice piers are adequate for present purposes and local cooperation is not needed since no additional construction is under consideration. River and Harbor Act of July 3, 1930, provides for reforestation of sloughs of Kentucky Peninsula and bank protection and that no expense shall be incurred by the United States for acquiring lands required for purpose of this improvement (H. Doc. 409, 69th Congr., 1st Sess.). However, since no serious overbank erosion has occurred since bank revetment in 1933-34, reforestation is not considered justifiable at this time and no local cooperation is required.

Operations during fiscal year. Operation and maintenance, general: Dredging was done where required to provide an adequate and dependable channel of project depth at minimum pool conditions. Dikes and revetments were maintained and routine work of maintaining navigation aids, removing snags, making channel studies, hydrographic surveys and mapping was performed as required. Channel soundings, hydrographic surveys, steam gauging operations, channel inspections and aids to navigation, and miscellaneous inspections and reports cost $2,313,495. In FY 2004 dredging by contract in the Huntington District was 439,906 cubic yards at $1,641,237, Louisville District 574,287 cubic yards at $1,976,796, and Pittsburgh District 26,000 cubic yards at $585,000.

TABLE 19-A COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sep 30, 2003	(footnotes)
1.	Construction of Locks & Dams on OH River	New Work						
		Approp.	$103,603,000	$87,527,000	$80,991,000	$57,341,500	$2,468,067,261	1 3 5 10 17 21
		Cost	104,909,063	87,242,902	80,736,124	58,015,792	2,467,742,907	1 3 6 11 12 15 16 18 22 23
		Maint.						
		Approp.	71,813,499	70,560,691	79,741,066	81,693,494	1,471,079,299	2 4 19
		Cost	71,541,494	70,809,500	73,159,376	68,733,288	1,451,202,973	2 13 14 19 20
		Rehab.						
		Approp.	0	0	0	0	82,972,138	
		Cost	0	0	0	0	82,972,138	
		Rehab.(O&M)						
		Approp.	0	0	0	0	33,914,252	
		Cost	0	0	0	0	33,914,252	
2.	Open Channel Work, Ohio River	New Work						
		Approp.	-	-	-	-	15,962,260	8
		Cost	-	-	-	-	15,962,260	8
		Maint.						
		Approp.	6,861,375	5,395,023	4,571,723	6,227,494	196,602,234	7 9
		Cost	6,837,404	5,148,194	4,835,993	5,899,144	195,953,913	7 9
		Rehab.						
		Approp.	-	-	-	-	944,649	
		Cost	-	-	-	-	944,649	

1 Includes $17,003,761 for previous 6-foot canalization project.

2 Includes $36,943,217 expended from 1885 to 1937 on operation and care of work of improvement under provisions of permanent indefinite appropriations for such purposes.

3 Includes $215,812 public works acceleration, executive 1963.

4 Includes $38,766 public works acceleration, executive 1963.

5 Excludes $251,769 contributed funds for new work.

6 Excludes $250,102 contributed funds for new work.

7 Excludes $1,621,349 expended in operation of snag boats under provisions of permanent indefinite appropriation for such purposes, and $267 transferred to project without reimbursement.

8 Includes $1,040,236 Public Works funds.

9 Includes $1,000 for removal of obstructions in Licking River under authority of Section 3, R&H Act of 1930.

10 Includes $100,000 placed in FY 1971 Budget Reserve.

11 Excludes $3,899 transferred from project without reimbursement.

12 Surplus property valued at $3,553 transferred to project without reimbursement.

13 Excludes $2,140 transferred to project without reimbursement.

14 Excludes surplus property valued at $73,832 transferred to project without reimbursement.

15 Includes $87,724,158 prior construction cost.

16 Excludes surplus property valued at $297,385 transferred to project without reimbursement.

17 Includes $549,392 Code 710 Funds, $572,162 Code 711 Funds, $532,677 Code 712 Funds and $1,759,812 Code 713 Funds.

18 Includes $549,392 Code 710 Funds, $342,162 Code 711 Funds, $532,677 Code 712 Funds and $1,989,812 Code 713 Funds.

19 Includes $2,158,073 Funds provided from The Productive Employment Appropriations Act of 1983 (PL 98-8).

20 Includes $920,945 cost for operations & care of previous projects.

21 Includes **$ 542,561,750** Inland Waterways Trust Funds.

22 Includes **$ 542,414,927** Inland Waterways Trust Funds.

23 Excludes $9,525,437 settlement from the U S Treasury Dept. Judgment Fund.

Table 19-B **Authorizing Legislation**

See Section in Text	Date of Authorizing Act	Project and Work Authorized	Documents
2.		**Open Channel Work, Ohio River**	
March 3, 1827		Project adopted by this act originally covered entire length of Ohio River from its mouth near Cairo to Pittsburgh, a distance of 981 miles. It provided for removal of all obstructions, which tend to endanger steamboat navigation.	
January 21, 1927		Construct ice piers as a part of allotted from appropriations for general open channel work.	H. Doc. 187, 67th Cong., 2nd Sess.
July 3, 1930		Reforestation of sloughs on Kentucky Peninsula near Evansville, IN, and a 200-foot strip along bank and for bank protection at an estimated cost of $200,000.	H. Doc. 409, 69th Cong., 1st Sess.
July 3, 1958		Act of March 3, 1827, modified to include maintenance of existing Licking River Channel within lower 3-mile limit of river slack water, at an estimated increase of $1,000 in cost of average annual maintenance.	H. Doc. 434, 84th Cong., 2nd Sess.
		Locks and Dams, Ohio River	
December 29, 1981		Act of December 29, 1981, established the 1,000-acre Falls of the Ohio National Wildlife Conservation Area, at a cost not to exceed $300,000.	H.R. 2241, PL97-137, Title II, 95 Stat. 1710
November 17, 1988		Act of November 17, 1988 authorized a replacement structure for Locks and Dams 52 and 53 at Olmsted, Illinois.	PL 100-676, 100th Cong., 2nd Sess.
November 28, 1990		Act of November 28, 1990, modified PL 97-137 by authorizing an interpretive center at Falls of the Ohio National Wildlife Conservation Area, at an estimated total cost of $3,200,000.	PL 101-640, 101st Cong., 2nd Sess.
November 28, 1990		Act of November 28, 1990 authorized a modernization of the existing 110 foot x 600 foot lock at McAlpine Locks and Dam, Indiana and Kentucky at a total cost of $219,600,000 with one-half appropriated from the Treasury and one-half from the Inland Waterways Trust Fund.	PL 101-640, 101st Cong., 2nd Sess.
October 31, 1992		Act of October 31, 1992 renamed the Gallipolis Locks and Dam to the Robert C. Byrd Locks and Dam.	PL 102-580, 102nd Cong., 2nd Sess.
October 1, 1996		Act of October 1, 1996 renamed the Uniontown Locks and Dam to the John T. Myers Locks and Dam.	PL 104-303, 104th Cong.
October 31, 2000		Act of October 31, 2000 authorized a modernization of the existing 110’ x 600’ lock at John T. Myers Locks and Dam, Indiana and Kentucky at a total cost of $181,700,000 with one-half appropriated from the Treasury and one-half from the Inland Waterways Trust Fund.	PL 106-541, 106th Cong.
October 31, 2000		Act of October 31, 2000 authorized a modernization of the existing 110’ x 600’ lock at Greenup Locks and Dam, Kentucky and Ohio, at a total cost of $175,500,000 with one-half appropriated from the Treasury and one-half from the Inland Waterway Trust Fund.	PL 106-541, 106th Cong.
October 31, 2000		Act of October 31, 2000 authorized projects for ecosystem restoration on Ohio River Mainstem, Kentucky, Illinois, Indiana, Ohio, West Virginia and Pennsylvania at a total cost of $307,700,000 with an estimated Federal cost of $200,000,000 and an estimated non-Federal cost of $107,700,000.	PL 106-541, 106th Cong.

Table 19-H Construction of Locks and Dams on Ohio River Total Cost of Existing Project to September 30, 2003

(See Section 1 of Text)

Funds	New Work	Operations and Maintenance General	Rehabilitation	Total
Regular	$2,375,345,732	$1,410,241,256	$116,886,390	$3,902,473,378
Public Works	3,258,368	0	0	3,258,368
Emergency Relief	1,198,837	19,000	0	1,217,837
Maintenance & Operation	0	3,039,789	0	3,039,789
Public Works Acceleration	215,812	38,766	0	354,578
Executive 1963	0	0	0	0
Total	$2,380,018,749 [3]	$1,413,338,811 [1] [2]	$116,886,390 [4]	$3,910,243,950

[1]Excludes $36,943,217 expended from 1885 to 1937 under permanent indefinite appropriation.

[2]Excludes $920,945 cost for operation and care of previous projects.

[3]Excludes $87,724,158 prior construction cost.

[4]Includes $33,914,252 cost for O & M Rehabilitation.
Note: All other cost variations are listed in the Footnotes of Table 19-A.

Table 19-I Federal Energy Regulatory Commission Licenses At Locks and Dams, Ohio River

	Markland Dam	McAlpine Dam	Racine Dam	Greenup Dam	Hannibal Dam
F.E.R.C License	2,211	289:1,000	2,570	2,614	3,206
License	Public Service Co. of Indiana	Louisville Gas and Electric Co.	Ohio Power Co.	City of Vanceburg, Kentucky	City of New Martinsville, WV
Annual Charge	$ 45,950	$ 95,000	$ 64,232	$ 261,103	0
Collections to end of Fiscal Year 2004	$1,744,166.64	$9,765,353.94	$2,293,078	$5,656,986	$197,589.03

Table 19-J

Ohio River Locks and Dams
(See Section 1 of Text)

Lock And Dam	Miles Below Pittsburgh	Distance from Nearest Town	Width of Chamber (feet)	Greatest Length Available for Full Width (feet)	Lift (feet)	Upper Normal Pool Elevation (feet, mean sea level)	Depth on Miter Sills Upper (feet)	Depth on Miter Sills Lower (feet)	Character of Foundation Lock	Character of Foundation Dam	Percent Complete	Year Opened to Navigation	Actual Cost to Date of Each Lock and Dam
1	-	Replaced	-	-	-	-	-	-	-	-	- -		$ 870,034
	6.2	Emsworth Locks	110	600	18.0	710.0	17.0 [1, 4]	12.9 [3]	Rock	Rock	100	1921	43,352,457 [2,13]
		Emsworth, PA	56	360			15.5 [1,5]	12.9 [3]		Piles			
2	-	Replaced	-	-	-	-	-	-	-	-	-	-	976,767
3	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,144,588
	13.3	Dashields Locks	110	600									
		and Dam 1.6 miles below Sewickley, PA	56	360	10.0	692.0	13.4 [1]	17.5 [3]	Rock	Rock	100	1929	37,447,328 [14]
4	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,071,472
5	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,080,132
6	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,123,442
	31.7	Montgomery	110	600									
		Locks and Dam, 1.4 miles above Industry, PA	56	360	17.5	682.0	16.0 [1]	14.6 [3]	Rock and Piles	Rock and Piles	100	1936	37,754,307 [15]
7	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,075,000
8	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,167,456
	54.4	New Cumberland	110	1,200									
		Locks and Dam, Stratton, OH	110	600	20.5	664.5	7.0 [1]	14.8 [3]	Rock	Rock	100	1959	39,099,688
9	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,177,100
10	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,138,000
11	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,162,165
	84.3	Pike Island Locks	110	1,200									
		and Dam, 2 miles upstream from Warwood, WV	110	600	21.0	644.0	17.0 [1]	18.0 [1]	Rock	Rock	100	1968	56,623,946
12	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,166,104
13	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,222,389
14	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,133,371
	126.4	Hannibal Locks	110	1,200									
		and Dam, 1.6 miles upstream from New Martinsville, WV	110	600	21.0	623.0	38.0	17.0	Rock	Rock	99	1972	87,902,000
15	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,180,478

Table 19-J (continued)

Ohio River Locks and Dams (See Section 1 of Text)

Lock And Dam	Miles Below Pittsburgh	Distance from Nearest Town	Width of Chamber (feet)	Greatest Length Available for Full Width (feet)	Lift (feet)	Upper Normal Pool Elevation (feet, mean sea level)	Depth on Miter Sills Upper (feet)	Depth on Miter Sills Lower (feet)	Character of Foundation Lock	Character of Foundation Dam	Percent Complete	Year Opened to Navigation	Actual Cost to Date of Each Lock and Dam
16	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,275,532
	161.7	Willow Island	110	1,200									
		Locks and Dam, 2.7 miles above Waverly, WV	110	600	20.0	602.0	35.0	15.0	Rock and Piles	Rock	100	1972	78,173,881
17	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,362,591
18	-	Replaced	-	-	-	-	-	-	-	-	-	-	927,091
19	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,213,848
20	-	Replaced	-	-	-	-	-	-	-	-	-	-	936,696
	103.9	Belleville	110	1,200									
		Locks and Dam, 0.3 mile below Reedsville, OH	110	600	22.0	582.0	37.0	15.0 [3]	Rock and Piles	Rock	100	1968	62,591,255
21	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,484,562
22	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,218,798
23	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,851,488
	237.5	Racine Locks	110	1,200									
		and Dam, 1.5 miles below Letart Falls, OH	110	600	22.0	560.0	18.0	15.0	Rock and Piles	Rock	100	1971	64,922,680
24	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,187,542
25	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,925,205
26	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,307,241
	279.2	Robert C. Byrd Locks and Dam, 0.7 mile below 6 Hogsett, WV											
		Robert C. Byrd Modernization	110	1,200	-	-	-	-	-	-	-	-	3,452,066
27	Rehab	Dam and New Lock	110	1,200	23.0	538.0	18.0	15.0	Rock	Rock	100	1992	366,639,499 [16]
27	-	Replaced	110	600	-	-	-	-	-	-	-	-	
28	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,063,133
29	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,088,802
30	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,579,618
	341.0	Greenup Locks	110	1,200									
		and Dam, 4.9 miles below Greenup, KY	110	600	30.0	515.0	18.0[1]	13.0	Rock	Rock	100	1959	57,464,191
31	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,359,231
32	-	Replaced	-	-	-	-	-	-	-	-	-	-	2,951,216
33	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,937,166

Table 19-J (continued)

Ohio River Locks and Dams (See Section 1 of Text)

Lock And Dam	Miles Below Pittsburgh	Distance from Nearest Town	Width of Chamber (feet)	Greatest Length Available for Full Width (feet)	Lift (feet)	Upper Normal Pool Elevation (feet, mean sea level)	Depth on Miter Sills Upper (feet)	Depth on Miter Sills Lower (feet)	Character of Foundation Lock	Character of Foundation Dam	Percent Complete	Year Opened to Navigation	Actual Cost to Date of Each Lock and Dam
34	-	Replaced	-	-	-	-	-	-	-	-	-	-	3,437,057
	436.2	Captain Anthony	110	1,200									
		Meldahl Locks and Dam, 2.2 miles above Foster, KY	110	600	30.0	485.0	18.0 [1]	15.0	Rock	Rock	100	1962	74,188,216
35	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,894,942
36	-	Replaced	-	-	-	-	-	-	-	-	-	-	3,704,535
37	-	Replaced	-	-	-	-	-	-	-	-	-	-	1,297,924
38	-	Replaced	-	-	-	-	-	-	-	-	-	-	2,857,040
	531.5	Markland Locks	110	1,200									
		and Dam, 1 mile above Markland, IN	110	600	35.0	455.0	50.0	15.0	Rock	Piles	100	1963	63,019,403
39	-	Replaced	-	-	-	-	-	-	-	-	-	-	2,222,448
40	-	Eliminated	-	-	-	-	-	-	-	-	-	-	
41	-	-	-	-	-	-	-	-	-	-	-	-	7,658,134 [6]
		Falls of the Ohio, 1 mile above McAlpine	N/A	N/A					N/A	N/A	0	N/A	2,367,918
	604.0	McAlpine Locks	110	1,200		49.0	12.0						
		and Dam			37.0	420.0		11.0	Rock	Rock	100	1961	212,291399 [6,7,18]
42	-	Eliminated	-	-	-	-	-	-	-	-	-	-	
43	-	Replaced	-	-	-	-	-	-	-	-	-	-	2,592,242
44	-	Replaced	-	-	-	-	-	-	-	-	-	-	2,819,930
45	-	Replaced	-	-	-	-	-	-	-	-	-	-	3,202,890
	720.7	Cannelton Locks	110	1,200	25.0	383.0	38.0	13.0	Rock	Rock	100	1972	99,032,866 [9]
		and Dam, 3 miles above Cannelton, IN	110	600									
46	-	Replaced	-	-	-	-	-	-	-	-	-	-	3,129,028
	776.1	Newburgh Locks	110	1,200									
		and Dam, 16 miles above Evansville, IN	110	600	16.0	358.0	32.0	16.0	Rock	Pile	99	1975	104,496,840
47	-	Replaced	-	-	-	-	-	-	-	-	-	-	4,415,526
48	-	Replaced	-	-	-	-	-	-	-	-	-	-	3,062,710

Table 19-J (continued)

Ohio River Locks and Dams (See Section 1 of Text)

Lock And Dam	Miles Below Pittsburgh	Distance from Nearest Town	Width of Chamber (feet)	Greatest Length Available for Full Width (feet)	Lift (feet)	Upper Normal Pool Elevation (feet, mean sea level)	Depth on Miter Sills Upper (feet)	Depth on Miter Sills Lower (feet)	Character of Foundation Lock	Character of Foundation Dam	Percent Complete	Year Opened to Navigation	Actual Cost to Date of Each Lock and Dam
49	-	Replaced	-	-	-	-	-	-	-	-	-	-	3,325,964
	846.0	John T. Myers	110	1,200									
		Locks and Dam, 3.5 miles below Uniontown, KY	110	600	22.0	342.0	34.0	12.0	Rock	Rock	99	1975	102,190,120
50	-	Replaced	-	-	-	-	-	-	-	-	-	-	3,571,762
51	-	Replaced	-	-	-	-	-	-	-	-	-	-	4,370,566
	918.5	Smithland Locks	110	1,200									
		and Dam, 2 miles above Smithland, KY	110	1,200	22.0	324.0	34.0	12.0	Rock	Rock	99	1980	273,725,470
52	938.9	1.4 miles below Brookport, IL	110	600	12.0	302.0	15.4	11.0	Pile	Pile	100	1928	13,337,747 [10]
	938.9	1.4 miles below Brookport, IL (New lock)	110	1,200	12.0	302.0	15.4	11.0	Pile	Pile	100	1969	10,197,516
53	962.6	10.8 miles above Mound City, IL	110	600	13.4	290.0	15.4	9.6 [8]	Pile	Pile	100	1929	10,004,240 [11]
	962.6	10.8 miles above Mound City, IL (New lock)	110	1,200	13.4	290.0	15.4	9.6	Pile	-	100	1982	38,570,920
	964.4	Olmsted Locks & Dam at Olmsted, IL	110	1,200	21.0	300.0	18.0	18.0	Pile	Pile	52	2008	632,634,310 [17]
	974.2	Mound City Lock and Dam, 1 mile below Mound City, IL	-	-	-	-	-	-	-	-	-	-	1,539,470 [12]
		TOTAL											$2,577,615,892 [19]

Table 19-J Ohio River Locks and Dams (Continued)

Footnotes

[1] Depths are on emergency dam foundation and re-controlling depths.

[2] Change from fixed dam to lift-gate dam completed in 1938.

[3] Depths are on poiree dam foundation and are controlling depths.

[4] Land chamber.

[5] River chamber.

[6] Lock and Dam 41 completed with 110- by 600-foot lock in 1921. Completed with new dam and raised canal and lock wall in 1928. Auxiliary 56- by 360-foot lock constructed in 1929-30. Reconstruction and modernization began 1956, renamed McAlpine Locks and Dam in 1960. Operation of auxiliary lock suspended in 1971.

[7] Existing structures are complete except for deferred alteration of railroad bridge. Construction of the new 110 foot x 1,200 foot lock began in September 2002.

[8] Dam below not yet constructed. Depth on lower miter sill at lower water.

[9] Excludes $2,219,975 payment for settlement of damage to dam caused by barge accident in April 1978.

[10] Major rehabilitation ($8,876,000) initiated in FY 79 is complete.

[11] Major rehabilitation ($4,593,572) initiated in FY 79 is complete.

[12] For preconstruction planning 1965 to 1972. No longer considered authorized. (See Section 1 of Text.)

[13] Includes $37,485,870 for major rehabilitation completed in FY 84

[14] Includes $33,914,252 for major rehabilitation completed in FY 90 (O&M funds).

[15] Includes $33,016,696 for major rehabilitation completed in FY 89.

[16] Includes $188,072,098 Inland Waterways Trust Funds.

[17] Includes $316,314,279 Inland Waterways Trust Funds.

[18] Includes $83,281,572 Inland Waterways Trust Funds.

[19] Exclusive of $7,013,405 details below.

Additional Features Entering into Cost of Project	
Louisville and Portland Canal and Indiana chute (under previous project).	$5,359,203
Examinations, survey contingencies, plants, and miscellaneous	966,232
Waterfront Development at Huntington, WV (Greenup Pool)	19,170
Recreation facilities, pool area, Gallipolis Locks and Dam.	668,800
Total	7,013,405
Grand Total	$2,584,629,297

BUFFALO, NY DISTRICT

The District comprises northern OH, northwestern PA and western and northern NY, embracing U.S. waters of Lake Erie exclusive of a small portion of the western end, Lake Ontario, and St. Lawrence River, with their tributary drainage basins from boundaries between the states of OH and MI to international boundary line east of Frontier, NY.

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NAVIGATION

1. ASHTABULA HARBOR, OH

Location. On the south shore of Lake Erie, at mouth of Ashtabula River, 59 miles easterly from Cleveland, OH. (See NOAA Nautical Chart 14836.)

Previous projects. For details see pg. 1963 of Annual Report for 1915, and pg. 1593 of Annual Report for 1938.

Existing project. For description see pgs. 1297-1299 of the 1966 Annual Report. Federal cost of completed project is $12,240,147. Non-Federal costs of $5,743,000, including contribution of $47,000, were for construction of access roads, docks, storage and handling facilities and dockside dredging. (See Table 20-B for authorizing legislation.)

Local cooperation. Fully complied with. Local interests contributed $47,000 for work authorized by 1936 and 1970 Acts.

Terminal facilities. There are sixteen piers and wharves. Coast Guard owns one facility. Ten facilities are along banks of Ashtabula River and six are on south side of outer harbor. Eleven terminals have railroad connections and six have mechanical handling facilities. Facilities are considered adequate for existing commerce. (See Port Series No. 42, revised 1972, Corps of Engineers.)

Operations and results during fiscal year.
Operations: Federal funds for Project Condition Surveys cost $30,000 and Real Estate Management Activities cost $5,000. Maintenance: A total of $971,970 was expended to rebuild 590 feet of East breakwater to Station 19+90, repair 590 feet of rubble mound on East breakwater, plus one day of snagging and clearing. The derrick boat *McCauley* and the tugboat *Koziol* were utilized for these structure repairs. Preconstruction, Engineering and Design costs for the Ashtabula River Partnership Project for removal of contaminated sediments from the Ashtabula River totaled $317,085. This amount includes $159,862 expended for coordination with partnering agencies and $157,223 expended for continuation of Preconstruction Engineering and Design.

2. BLACK ROCK CHANNEL AND TONAWANDA HARBOR, NY

Location. Improvement is essentially that of upper 13.5 miles of Niagara River from its head at Lake Erie, Buffalo, NY, to and including Tonawanda Harbor, NY. It comprises improvements formerly designated by three titles; Lake Erie entrance to Black Rock Harbor and Erie Basin, NY, Black Rock Harbor and Channel, NY and Tonawanda Harbor and Niagara River, NY. (See NOAA Nautical Chart 14832.)

Previous projects. For details, see items 5 and 7, pg. 1970 of Annual Report for 1915, and pg. 1612 of Annual Report for 1938.

Existing project. For description of existing project and Federally owned Black Rock ship lock, see pg. 1548 of Annual Report for 1962. Improvement of guide pier at Black Rock Lock, as authorized by 1935 Act was de-authorized by Congress in Aug 1977. Cost for completed portion of new work is $10,457,093. Enlarging of existing 21-foot turning basin and deepening lower 1,500 feet of Tonawanda Inner Harbor from 16 to 21 feet, authorized by the 1954 Act, was de-authorized by Congress in May 1981, and is excluded from foregoing cost. Non-Federal costs are estimated at $1,540,000 for costs incurred by NY State for construction of Erie Basin and protecting breakwater, and construction and extension of Bird Island Pier, and by other local interest for relocation of utilities. (See Table 20-B for authorizing legislation.)

Local cooperation. Fully complied with for existing project. Contract for cost-shared recreation development at completed projects (Code 713 program) was executed by the NY State Department of Environmental Conservation, Albany, NY on Apr 16, 1985, and was approved by the Assistant Secretary of the Army and Chief of Engineers on May 3, 1985.

Terminal facilities. Two facilities are along the upstream end of the channel. Below Black Rock Lock and at Tonawanda Harbor there are 13 privately owned terminals. There are two state-owned barge canal terminals at Tonawanda, NY, and several marine service and supply docks for recreational and other small craft. The Corps owns a wharf adjacent to Black Rock Lock that is private. Ten terminals have railroad connections and six mechanical-handling facilities. Facilities considered adequate for existing commerce. (Port Series No. 41, revised 1971, Corps of Engineers.)

Operations and results during fiscal year
The lock was dewatered during the 2004 fiscal year for maintenance of valves and cylinder arms. Repairs were made to four of the gate-mounted butterfly valves for a total cost of $233,566. The valves were failing or had failed, causing an increase in the cycle times for the lock. $286,242 was expended for rehabilitation of the Upper West Wall and $1,223,011 for the rehabilitation of the Upper West Transition Wall. All maintenance required during FY 2004 was accomplished with minimal impact on commercial and recreational navigation interests. Costs in

addition to the aforementioned work were distributed as follows: Operation and Care of Lock and ordinary Maintenance and Repair cost $1,001,351; Project Condition Surveys cost $30,500; Water Control Management cost $34,377; Snagging and Clearing cost $20,000; Stream Gaging cost $10,721; Boundary Monumentation cost $9,932; Real Estate Management Activities cost $10,000; and Soil Sampling cost $32,152. $5,772 was expended to continue work on resolving historic preservation issues affecting ability to correct problem of deteriorated Middle Gates at the Black Rock Lock posing a potential safety problem to traffic transiting the lock and/or failing leading to a closure of the lock. $41,336 was expended to complete structural evaluation and interim repairs of the Bird Island Pier.

3. BUFFALO HARBOR, NY

Location. At eastern end of Lake Erie, at head of Niagara River, 176 miles easterly from Cleveland, OH. (See NOAA Nautical Charts 14820 and 14833.)

Previous projects. For details see pg. 1967 of Annual Report for 1915 and pg. 1606 of Annual Report for 1938.

Existing project. For description see pg. 1368 of Annual Report for 1963. In addition, on Dec 15, 1980, OCE authorized the removal of bridge abutments of South Michigan Avenue Bridge. New work for completed project cost $18,837,601. Estimated non-Federal costs were $9,188,000 for deepening, widening, and improving Buffalo River and ship canal, constructing piers, retaining walls, and dikes and performing dockside dredging. (See Table 20-B for authorizing legislation.)

Local cooperation. Fully complied with.

Terminal facilities. There are 27 piers, wharves, and docks of which five are on the outer harbor, nine are on the Lackawanna, Union, and Buffalo Ship Canals, and thirteen are located along the deep-draft section of the Buffalo River. Gateway Metroport, Division of Gateway Trade Center, Inc., owns and operates, for the former Bethlehem Steel Corp., wharves at Lackawanna for the receipt and shipment of general cargo and bulk commodities. Buildings of the former steel plant are utilized for transit and long-term storage of cargo as required. The Niagara Frontier Transportation Authority owns Terminals A and B in the outer harbor used for handling general cargo. Twenty terminals have railroad connections. The city of Buffalo owns a slip on the right bank of Buffalo River just north of Michigan Avenue Bridge for mooring the city fireboat. Coast Guard facilities are at the mouth of Buffalo River along the left bank. (See Port Series No. 41, revised 1991, U.S. Army Corps of Engineers.)

Operations and results during fiscal year. Operations: Federal funds for Project Condition Surveys cost $50,000; Water Control Management cost $32,404; Economic Evaluation cost $28,968 and Environmental Compliance Management Activities for an audit of the confined disposal facilities (CDF) cost $10,054. Maintenance: Dredging cost $962,939 to remove approximately 153,000 cubic yards from the entire river channel, the ship canal and the Black Rock Lock. [River Channel: Depth -21' and -22' LWD, Length Sta 456+00 to 765+00 (30,900'), Width 100'+. Black Rock Lock: Depth -21' LWD, Length Sta 1+00 to 213+00 (21,200'), Width 200'+. Ship Canal: Depth -22' LWD, Length Sta 799+00 to 854+00 (5,500'), Width 100'+.] Cost for Coastal Mapping total $2,974. Cost for Environmental Compliance Activities of drafting Contaminant Monitoring Assessments of the harbor CDF(s) total $54,983. Cost for completing design and initiating preparation of plans and specifications for the North Breakwater total $112,691. A total of $48,370 was expended to repair 96 linear feet of Bird Island Pier (placed armor stone) and replace core stone on part of South Breakwater. The derrick boat *McCauley* and the tugboat *Koziol* were utilized for these structure repairs.

4. CLEVELAND HARBOR, OH

Location. On south shore of Lake Erie, at mouth of Cuyahoga River, 176 miles westerly from Buffalo, NY. (See NOAA Nautical Chart 14839.)

Previous projects. For details see pg. 1962, Annual Report for 1915, and pg. 1585, Annual Report for 1938.

Existing project. For description of existing project, as authorized through the 1966 modification, see pg. 1269 of Annual Report for 1967. Further improvements in the interest of commercial navigation and recreational navigation were authorized in the 1985 Supplemental Appropriations Act (PL 99-88). For details of the commercial navigation portion of the project, see pg. 20-4 of the Annual Report for 1995. For details of the recreational navigation portion of the project, see pg. 20-3 of Annual Report for 1994. The Water Resources Development Act of 1986 (PL 99-662) and the FY 88 Energy and Water Appropriations Act (PL 100-202) authorized the recreational navigation project. These acts authorized additional undefined improvements to Cleveland Harbor. A portion of the project was de-authorized by the Inter-model Surface Transportation Efficiency Act of 1991. Estimated total Federal cost of the existing project is $33,852,100 (Oct 1991) exclusive of undefined, inactive and deferred portions of the project. The

amount of $29,315,100 is for completed work and the balance of $4,537,000 is for new work. Estimated non-Federal cost is $13,740,000 (Oct 1991) of which $9,203,000 is actual cost for completed work and the balance of $4,537,000 is required for work authorized by PL 99-88, PL 99-662, and PL 100-202. Remaining work authorized by 1946 River and Harbor Act, consisting of widening and deepening the right bank of Cuyahoga River at the downstream end of Cut 4, is considered inactive and excluded from foregoing cost estimate. Estimated Federal cost (1966) of this portion is $85,600 and non-Federal cost (1966) $5,000,000. Remaining work authorized by 1958 R&H Act, consisting of planning and replacement of bridges number 19 (E.L.R.R.) and 32 (B. & O.R.R.) and widening Cuyahoga and Old River channels, and remaining work authorized by the 1960 R&H Act, consisting of deepening the remainder of the Cuyahoga River from bridge number 1 to and including the Old River to a depth of 27 feet, has been classified as deferred and is also excluded from foregoing estimate. Estimated Federal cost (Oct 1976) of this portion is $18,033,300 and estimated non-Federal cost (Oct 1976) is $21,251,000. The 1989 Energy and Water Development Appropriations Act (PL 101-101) authorized the Corps to begin a Reconnaissance study of the Cuyahoga River, to address the concerns of boat traffic congestion and related risks, accidents and safety of the public. Preliminary plans were studied to alleviate the commercial navigation problem and inadequate width and depth, in the Old and Cuyahoga Rivers. The cost of this Reconnaissance study was $250,000. The Reconnaissance Report recommended a feasibility study for one plan, which has three structural features, and the potential for yielding commercial (priority) outputs. The non-Federal sponsor did not commit to provide its total share of the cost of the feasibility phase of the study. Therefore, the study was reclassified as "inactive". (See Table 32-B for authorizing legislation.) A confined disposal facility (CDF) (Dike 10B) was constructed adjacent to the Burke Lakefront Airport for containment of dredged material from Cleveland Harbor. The rubble mound structure was designed to hold material unsuitable for open-lake disposal. The sixty-eight (68) acre site should provide sufficient CDF capacity for approximately twenty years. The project was constructed with Federal O&M funds at a cost of $17,500,000 and was completed in 1998.

Terminal facilities. Fifty-one piers, wharves, and docks are situated in the Port of Cleveland. Eleven are located in the east and west basins of the outer harbor; 7 along the banks of the Old River and 17 and 16 along the right and left banks of the Cuyahoga River, respectively. Twenty-two terminals have both railroad connections and mechanical-handling facilities. The Corps owns a wharf at the foot of East 9th Street. The city of Cleveland owns and operates a wharf for mooring the city fireboat. U.S. Coast Guard vessels are moored east of the foot of 9th Street in the east basin. (See Port Series No. 43, revised 1989, U.S. Army Corps of Engineers.)

Operations and results during fiscal year. Operations: Federal funds for Project Condition Surveys cost $55,000; Environmental Compliance Management Activities for an audit of the confined disposal facilities (CDF) cost $9,896; and Phase I of the Dredged Material Management Plan (DMMP), which included the Preliminary Assessment and the Scope of Work was completed at a cost of $93,368. The Letter of Intent was received from the Cleveland-Cuyahoga County Port Authority in March 2004. Extensive DMMP coordination with the Cleveland area Federal and non-Federal municipal and regulatory agencies continued in 2004. Maintenance: Dredging cost $2,207,734 to remove approximately 292,583 cubic yards of shoaled material from the Cuyahoga River. Contract will be finalized in FY 05. [River Channel: Depth -26' and -24' LWD, Length Sta 499+00 to 799+00 (30,000'), Width 100'+. Harbor: Depth -28" LWD, Length Sta 4+00 to 78+00 (7,400'), Width 1500'+. Lake Approach: Depth -29' LWD, Length 2,000', Width 150'+]. Costs for the Confined Disposal Facility (CDF) Site 10B totaled $81,562. Costs to initiate preparation of plans and specifications for the East Breakwater Repair totaled $29,489. Costs for the final closeout of the contract on the Dock 20 project totaled $373. Costs for the East Pierhead Repair totaled $173,020. Costs for engineering and design of the Interim CDF totaled $164,576. Cost for Environmental Compliance Activities of drafting Contaminant Monitoring Assessments of the harbor CDF(s) totaled $54,983. A total of $1,099,895 was expended to rebuild 320 LF (160 LF both sides) of the West Arrowhead Breakwater, repair 140 LF of rubble-mound wall on the lakeside of the East Breakwater, removed hazards to navigation from inside Cleveland Harbor and the Cuyahoga River Federal navigation channel, assisted U.S. Coast Guard with lift and installation of bubbler system on the Neah Bay, unloaded sheet piling onto Cleveland Reservation Finger Pier for Cleveland East Pierhead Repair Project, and repaired rubblemound sections of Cleveland East Breakwater. The derrick boat *Simonsen* and the tugboat *Cheraw* were utilized for these structure repairs.

5. CONNEAUT HARBOR, OH

Location. On the south shore of Lake Erie, at mouth of Conneaut River, 73 miles easterly from Cleveland, OH. (See NOAA Nautical Chart 14824.)

Previous projects. For details see pg. 1964, Annual Report for 1915.

Existing project. For description see pg. 1274 of Annual Report for 1967. Actual costs for new work for completed portion of the project were $7,541,369. For completed work, non-Federal costs were $200,000 for dockside dredging and removal of existing dolphins. The most southerly 300 feet of the 1,670-foot long shore arm, authorized by the R&H Act of 1910, was de-authorized Oct. 96. (See Table 20-B for authorizing legislation.)

Local cooperation. Fully complied with for completed portion of project.

Terminal facilities. There are seven piers and wharves. Six are privately owned and operated and located in inner harbor. Remaining facility is city owned on the south side of outer harbor. Six terminals have railroad connections and four mechanical-handling facilities. (See Port Series No. 42, revised 1972, Corps of Engineers.)

Operations and results during fiscal year.
Operations: Federal funds for Project Condition Surveys cost $45,000. Maintenance: Dredging cost $505,649 to remove approximately 109,514 cubic yards from the commercial and recreational portions of the Federal channel. [Outer and Inner Harbor: Depth -29' and -28' LWD, Length Sta 7+00 to 73+00 (6,600'), Width 250'+. Access Channel: Depth 8' LWD, Length 2300', Width 100'+]. A total of $180,882 was expended to repair 75 feet of East breakwater next to Navigation light; repair 125 feet of West breakwater with new core stone; and rebuild 30 feet of West breakwater Station 9+50 to 9+80. The derrick boat *McCauley* and the tugboat *Koziol* were utilized for these structure repairs. Costs for a site investigation for East and West Pier Repairs totaled $2,966.

6. DUNKIRK HARBOR, NY

Location. On south shore of Lake Erie, 37 miles southwesterly from Buffalo, NY. (See NOAA Nautical Chart 14823.)

Previous projects. For details see pg. 1966 of Annual Report for 1915, and pg. 1604 of Annual Report for 1938.

Existing project. For description of completed portion of existing project see pg. 32-8 of Annual Report for 1976. For description of small boat harbor project as authorized under Section 201 of Flood Control Act of 1965, see pg. 32-8 of Annual Report for 1978. Actual costs for completed work are $3,010,024. Actual non-Federal costs are $1,961,000. (See Table 20-B for authorizing legislation.)

Local cooperation. Fully complied with.

Terminal facilities. Facilities consist of private docks for recreational craft and privately owned servicing and storage handling facilities for recreational and other small craft.

Operations and results during fiscal year.
Operations: Federal funds for Project Condition Surveys cost $30,000. Maintenance: Dredging cost $239,270 to remove approximately 13,018 cubic yards from the west side of Federal Channel. This included removal of 8,761 cubic yards by contractor in the fall of 2003 and removal of 4,257 cubic yards by the Buffalo District floating plant in the summer of 2004. [Outer Channel: Depth -17' LWD, Length Sta 39+00 to 45+00 (600'), Width 100'+].

7. ERIE HARBOR, PA

Location. On southerly side of bay formed by Presque Isle Peninsula, on south shore of Lake Erie, 78 miles westerly from Buffalo, NY. (See NOAA Nautical Chart 14835.)

Previous projects. For details see pg. 1965 of Annual Report for 1915 and pg. 1600 of Annual Report for 1938.

Existing projects. For description see pgs. 1363-64 of the Annual Report for 1963. The FY 93 Appropriations Act (PL102-377) authorized the planning, design and dredging of an access channel and berthing area. Entire project modification authorized by 1945 River and Harbor Act, providing for deepening channel and basin, both 23 feet deep, to Penn Central Company coal docks at westerly end of harbor, was de-authorized by Congress in Aug 1977. Actual costs for new work for completed portion of project were $2,860,906. Extension of north pier portion, authorized by 1899 Act was de-authorized in Nov 1981. A portion of work authorized by 1960 Act, deepening strips adjacent to north and south piers, was de-authorized in Aug 1982. Non-Federal costs for completed work were $51,000 for providing ore dock and dredging slip adjacent thereto. (See Table 20-B for authorizing legislation.)

Local cooperation. Fully complied with.

Terminal facilities. Sixteen piers and wharves, of which twelve are privately owned and operated. Erie International Marine Terminal No. 1 owned by Port Commission, city of Erie, is along main waterfront on south side of Presque Isle Bay and Coast Guard facilities are on north side. Two offshore oil docks are on Lake Erie. Eight terminals have railroad connections and six mechanical-handling facilities.

Facilities are considered adequate for existing commerce. (See port Series No. 42, revised 1972, Corps of Engineers.)

Operations and results during fiscal year. Operations: Federal funds for Project Condition Surveys cost $33,776; Real Estate Activities cost $10,000; Environmental Compliance Management Activities for an audit of the confined disposal facilities (CDF) cost $9,893; and Economic Evaluation cost $27,975. Maintenance: Cost for Environmental Compliance Activities of drafting Contaminant Monitoring Assessments of the harbor CDF(s) cost $54,975.

8. FAIRPORT HARBOR, OH

Location. On south shore of Lake Erie at mouth of Grand River, 33 miles easterly from Cleveland, OH. (See NOAA Nautical Chart 14837.)

Previous projects. For details see pg. 1963 of Annual Report for 1915, and pg. 1590 of Annual Report for 1938.

Existing project. For description of existing project, see pg. 1526 of Annual Report for 1962. Total Federal cost of $2,591,000 is actual cost for completed portion of project. Total non-Federal cost is $101,000 for bulkheads and dockside dredging for completed portion of project. (See Table 20-B for authorizing legislation.)

Local cooperation. See pg. 32-11 of 1976 Annual Report regarding assurances of local cooperation for work authorized by R&H Act of 1927.

Terminal facilities. Sixteen piers and wharves, all along banks of Grand River. Coast Guard owns one facility. Nine terminals have railroad connections and ten mechanical-handling facilities. Facilities considered adequate for existing commerce. (See Port Series No. 42, revised 1972, Corps of Engineers.)

Operations and results during fiscal year. Operations: Federal funds for Project Condition Surveys cost $35,000; and Economic Evaluation cost $1,755. Maintenance**:** Dredging cost $174,848 to pay for a contractor claim on the FY03 dredging project. A total of $890,458 was expended to rebuild 200 feet harbor side and 175 feet lake side to station 9+25 on East Breakwater, fortify bases for navigation lights A and B on East breakwater and two days snagging and clearing the Federal Channel. The derrick boat *McCauley* and the tugboat *Koziol* were utilized for these structure repairs.

9. GREAT SODUS BAY HARBOR, NY

Location. On Sodus Bay, which is a nearly land-locked indentation on south shore of Lake Ontario, 29 miles westerly from Oswego, NY. (See NOAA Nautical Chart 14814.)

Previous project. For details, see pg. 1972 of Annual Report for 1915, and pg. 1526 of Annual Report for 1938.

Existing project. For description, see pg. 1380 of Annual Report for 1963. Improvements authorized by 1962 Act, consisting of deepening lake approach channel, entrance channel and inner approach channel were deauthorized by Congress in Aug 1977. Actual costs of new work for completed portion of project were $249,187. Costs incurred by local interests are not available. (See Table 20-B for authorization legislation.)

Local cooperation. Fully complied with.

Terminal facilities. Facilities consist of private docks for recreational craft and privately owned servicing and storage handling facilities for recreational and other small craft.

Operations and results during fiscal year. Maintenance: Federal funds for Coastal Mapping cost $2,965. Dredging cost $344,936 to remove approximately 42,497 cubic yards from the Federal channel. [Depth -11' LWD, Length Sta 7+00 to 29+00 (2,200'), Width 200'].

10. HURON HARBOR, OH

Location. On south shore of Lake Erie at mouth of Huron River, 47 miles westerly from Cleveland, OH. (See NOAA Nautical Chart 14843.)

Previous project. For details, see pg. 1961 of Annual Report for 1915, and pg. 1576 of Annual Report for 1938.

Existing project. For description, see pg. 1347 of Annual Report for 1963 and pg. 32-12 of Annual Report for 1978. Cost of completed portion of existing project was $4,834,006. Construction of detached breakwater as authorized by 1962 R&H Act was de-authorized Jan 1, 1990. Non-Federal costs of $163,000 were incurred by local interests in 1963 for dockside dredging of areas between Federal improvement and terminal facilities. (See Table 20-B for authorizing legislation.)

Local cooperation. Fully complied with.

Terminal facilities. Six privately owned wharves and docks, one along left bank of Huron River and remainder along right bank. Four terminals have railroad connections and four mechanical-handling facilities. Facilities are regarded as adequate for existing commerce. (See Port Series No. 42, revised 1972, Corps of Engineers.)

Operations and results during fiscal year. Operations: Federal funds for Project Condition Surveys cost $30,000; Real Estate Management Activities cost $3,000; and Environmental

Compliance Management Activities for an audit of the confined disposal facilities (CDF) cost $9,533. Maintenance: Cost for the Pier Evaluation totaled $3,688. Funds were expended for site investigations and coordination with the locals. Cost for Environmental Compliance Activities of drafting Contaminant Monitoring Assessments of the harbor CDF(s) totaled $44,970.

11. LITTLE SODUS BAY HARBOR, NY

Location. Little Sodus Bay, on south shore of Lake Ontario, 15 miles west of Oswego, NY. (See NOAA Nautical Chart 14803.)

Previous projects. For details see page 1973 of Annual Report for 1915, and page 1628 of Annual Report for 1938.

Existing project. For description see page 1378 of Annual Report for 1958. New work for completed project cost $69,066. Non-Federal costs of $6,000 were incurred for channel dredging. (See Table 20-B for authorizing legislation.)

Local cooperation. Not required.

Terminal facilities. Facilities consist of private docks for recreational craft and privately owned servicing and storage handling facilities for recreational and other small craft.

Operations and results during fiscal year. Maintenance: Federal funds for Coastal Mapping totaled $2,976.

12. LORAIN HARBOR, OH

Location. On south shore of Lake Erie at mouth of Black River, 25 miles westerly from Cleveland, OH. (See NOAA Nautical Chart 14841.)

Previous projects. For details, see pg. 1961 of Annual Report for 1915, and pg. 1580 of Annual Report for 1938.

Existing project. For description see pgs. 1319-22 of the Annual Report for 1966. Federal cost of new work is $20,475,000. Deepening and widening remainder of Black River Channel at Cut 1 and construction of bank stabilization, authorized by 1960 Act and modified by 1965 Act was de-authorized Jan 1, 1990. A portion of work authorized by 1960 Act, dredging of 15-to-25 foot wide strips adjacent to the U.S. East and West Piers were also de-authorized Jan 1, 1990. Total non-Federal cost is $3,000 contributed by local interests towards construction of west shore arm. (See Table 20-B for authorizing legislation.) The Water Resources Development Act (WRDA) of 1986 (PL 99-662) authorized construction of commercial navigation improvements consisting of two bend cuts on the Black River to widen and straighten the channel between the Norfolk and Western Railroad Bridge and the 21st Street Bridge. These cuts are to be excavated to the existing channel depth of 27 feet. The authorized plan also includes widening the Upper Turning Basin at the existing depth of 21 feet. Estimated costs for this work are $2,290,000 Federal and $1,510,000 non-Federal (Oct 1989). This portion of the project has been classified deferred. On Mar 12, 1986, the Chief of Engineers under authority of Section 107 of the 1960 River and Harbors Act, as amended, authorized construction of a small boat harbor that was completed in Jul 1987. The project consists of a 225-foot detached rubble mound breakwater and an 800-foot long rubble mound breakwater attached to the east breakwater shorearm in the east basin of the outer harbor. Construction costs for this project, including supervision and administration, were $775,025 Federal and $775,025 non-Federal.

Local cooperation. For completed work, local interests contributed $3,000. Work authorized by 1960 Act (and modified by 1965 Act) is de-authorized. All other conditions fully complied with. On Mar 25, 1986, the city of Lorain, OH signed the Local Cooperation Agreement (LCA), for the Section 107 project. For details see pg. 32-7 of Annual Report for 1986. For details of LCA for deferred project authorized by the 1986 WRDA, see pgs. 32-9 of the Annual Report for FY 87.

Terminal facilities. There are 23 piers and wharves, of which three are on the outer harbor and the remainder is along banks of Black River. Two are owned by the city. Eight terminals have railroad connections and 15 mechanical-handling facilities. Facilities are considered adequate for existing commerce. (See Port Series No. 42, revised 1972, Corps of Engineers.)

Operations and results during fiscal year. Operations: Federal funds for Project Condition Surveys cost $40,000; Environmental Compliance Management Activities for an audit of the confined disposal facilities (CDF) cost $9,384; and costs for continuing Phase II of the Dredged Material Management Plan (DMMP) were $294,583. These costs included plan formulation and identification of alternatives including beneficial use of sediments. Extensive DMMP coordination with the Lorain area Federal and non-Federal municipal and regulatory agencies continued in 2004. Maintenance: Cost for the East Pier construction totaled $900,384. Costs for the West Pier construction totaled $1,271,494. Cost for Environmental Compliance Activities of drafting Contaminant Monitoring Assessments of the harbor CDF(s) totaled $44,968. A total of $780,025 was expended to rebuild 240 LF (120 LF both sides) of wall adjacent to the lighthouse, repair 420 LF of rubble-mound wall on the lakeside and repair 420 LF

of wall on the harbor side that had collapsed crown and slope stone – all part of the West Breakwater Repairs. Also, rebuild 30 LF of wall around foundation of entrance light and access stairs, rebuild 115 LF of wall on the harbor side and repair 245 LF of wall on the harbor side that had collapsed crown and slope stone – all part of the East Breakwater Repairs. In addition, removed hazards to navigation from inside Lorain Harbor and the Black River Federal navigation channel, reinforced toe of Lorain Lighthouse sheeting wall and foundation with stone and repaired metal guard around Lorain CDF weir. The derrick boat *Simonsen* and the tugboat *Cheraw* were utilized for these structure repairs.

13. OAK ORCHARD, NY

Location. On south shore of Lake Ontario, at mouth of Oak Orchard Creek, 33 miles westerly of Rochester, NY. (See NOAA Nautical Chart 14805.)

Previous project. For details see pg. 628 of Annual Report for 1905.

Existing project. For description of completed existing project see pg. 32-14 of 1975 Annual Report. Actual Federal cost for completed project was $1,613,500. Estimated non-Federal cost is $270,000 (Jul 1971) including cash contribution of $170,700 and $54,002 for recreational facilities and remainder for lands and construction of wharf. Existing project was authorized by the 1945 River and Harbor Act (H. Doc. 446, 78th Cong., 2nd sess.).

Local cooperation. Fully complied with. Local interests contributed $224,702.

Terminal facilities. There is no commercial navigation at Oak Orchard Harbor. Terminal facilities consist of private docks for recreational craft.

Operations and results during fiscal year.
Maintenance: Dredging cost $151,081 to remove approximately 11,000 cubic yards from the Federal channel. [Entire Channel: -10' LWD, Length 2500', Width 90'].

14. OLCOTT HARBOR, NY

Location. On south shore of Lake Ontario at mouth of Eighteen Mile Creek about 18 miles east of mouth of Niagara River and 63 miles by water west of Rochester, N.Y. (See NOAA Nautical Chart 14806.)

Previous project. For details see page 1971 of Annual Report for 1915 and page 1621 of Annual Report for 1938.

Existing project. For description see page 1555 of Annual Report for 1962. Cost of new work for completed project was $1,500 exclusive of amount expended on previous projects, all of which was contributed by local interests. (See Table 20-B for authorizing legislation.) The authorized modification to the existing project consists of breakwaters to provide optimum harbor protection a stone jetty and recreational fishing facilities including a footbridge, walkways and guardrails, access facilities, sanitary facilities and parking areas. The estimated cost of the authorized modification is $17,000,000 (Oct. 1990) of which $8,500,000 is Federal and $8,500,000 is non-Federal. Modification of the existing project was authorized by the 1986 Water Resources Development Act (WRDA) (PL 99-662).

Local cooperation. Fully complied with for completed project. Local interests contributed $1,500. Modifications authorized by the 1986 WRDA will require local interests to pay 50% of project cost including lands easements, right-of-way and dredge disposal areas. They are also responsible for construction of necessary docks and berthing spaces, construction of launching ramp, parking areas, sanitary facilities, and necessary access roads. After construction, non-Federal responsibilities would include fishing facility maintenance, except for the aids to navigation.

Terminal facilities. Facilities consist of private docks for recreational craft and privately owned servicing and storage handling facilities for recreational and other small craft.

Operations and results during fiscal year.
Operations: Federal funds for Real Estate Management Activities cost $5,000.

15. OSWEGO HARBOR, NY

Locations. On South shore of Lake Ontario, at mouth of Oswego River, 59 miles easterly from Rochester, NY. (See NOAA Nautical Chart 14813.)

Previous projects. For details see pg. 1973 of Annual Report for 1915, and pg. 1630 of Annual Report for 1938.

Existing project. For description see pgs. 1383-84 of the Annual Report for 1963. Completed portion of project cost $7,242,039 and non-Federal costs for completed work were $4,440,000 for lands, dockside dredging, construction of terminal wharves, and cargo handling facilities. Deepening a 200-foot wide strip along harbor line east of mouth of Oswego River, remaining feature of work authorized by the 1930 Act, was de-authorized Jan 1, 1990. Deepening to 22 feet a 150-foot wide strip along harbor line in west outer harbor, remaining feature of work authorized by 1940 Act, was de-authorized in May 1981. The portion of the Federal Channel from the southernmost alignment of the Route 68 Bridge upstream to the northernmost alignment of Lake

Street Bridge authorized by the 1910 R&H Act as amended by the 1935 R&H Act was de-authorized Oct 96. (See Table 20-B for authorizing legislation.)

Local cooperation. Fully complied with.

Terminal facilities. There are seven piers and wharves in the harbor and along the river channel. The Port of Oswego owns and operates a general cargo terminal at the mouth of the Oswego River. The Port Authority also operates a grain elevator west of the mouth of the river. The U.S. Coast Guard moors patrol and environmental research vessels west of the mouth of the river.

Operations and results during fiscal year. Maintenance: Federal funds for Coastal Mapping cost $2,992. Dredging cost $159,695 to remove approximately 23,394 cubic yards from the Federal channel. [Entire Channel: Depth -21' to -27' LWD, Length 12,000', Width 250'+]. Cost for Structural Assessment of the Breakwater totaled $41,952.

16. OTTAWA RIVER HARBOR, MI & OH

Location. At westerly end of Lake Erie, at Toledo, OH 99 miles westerly from Cleveland, OH (See NOAA Nautical Chart 14847).

Existing project. A re-evaluation study was conducted and a draft report was produced which investigated the authorized project as described in the 1976 Phase I General Design Memo (GDM). The report was distributed for public comment in February 2004. Ongoing work included coordination of the CZM compliance with the states of Michigan and Ohio and application for the 401 certification from the state of Ohio. The project, originally authorized under provisions of Section 201 of the Rivers & Harbors Act, (PL 89-298) by the House and Senate Committees on Public Works Resolutions, dated December 15 and 17, 1970, respectively, was continued by the 1990 Water Resources Development Act (PL 101-640).

Local cooperation. The potential local sponsor is the city of Toledo, OH. The local sponsor must provide 50% of the total project cost that includes lands, easements, rights-of-way, and relocations.

Operations and results during fiscal year. New Work: FY04 cost was $145,656 to conduct a new re-evaluation study and write the Reevaluation Report. Extensive coordination with the Toledo area Federal and non-Federal municipal and regulatory agencies continued in 2004.

17. PORT CLINTON HARBOR, OH

Location. Comprises lower half-mile of Portage River. River empties into Lake Erie 72 miles westerly from Cleveland, OH. (See NOAA Nautical Chart 14820.)

Existing project. Provides for parallel jetties at river mouth and a channel in Lake Erie and Portage River with a project depth of 10 feet. For additional details, see pg. 1899 of Annual Report for 1951. (See Table 20-B for authorizing legislation.)

Terminal facilities. A total of 11 docks exist; one public fish dock, one private sand dock, one private fuel dock, one lumber dock, one coal dock and five private docks. The village of Port Clinton owns a dock at the foot of Madison Avenue that is open to the public. A shipyard builds small boats. Terminal facilities are adequate for existing commerce.

Operations and results during fiscal year. Operations: Federal funds for Real Estate Management Activities cost $10,000. Maintenance: Cost for site investigation and coordination with the locals about Jetties/West Shore Repair totaled $9,827.

18. ROCHESTER HARBOR, NY

Location. On south shore of Lake Ontario, at mouth of Genesee River, 59 miles westerly from Oswego, NY. (See NOAA Nautical Chart 14815.)

Previous project. For details see pg. 1471 of Annual Report for 1915, and pg. 1623 of Annual Report for 1938.

Existing project. For description see pg. 1556 of Annual Report for 1962. Actual cost for new work for completed project is $2,191,514. Non-Federal costs are estimated at $2,260,000, all for 1960 Act, for lands, relocation of submarine cable crossing, relocations of small docks and boathouses, dockside dredging, structure modifications, and replacement of Baltimore & OH coal loader. (See Table 20-B for authorizing legislation.)

Local cooperation. Complied with except provision for replacement of coal loading facility as required by River and Harbor Act of Jul 14, 1960.

Terminal facilities. There are 3 docks at Rochester Harbor. The city of Rochester owns an 830-foot long wharf at the entrance to the Genesee River. Three storage buildings at the terminal, formerly used as transit sheds, have approximately 100,000 square feet of storage space. Approximately 3 acres of open storage area is located at the upper end of the facility. The facility has not been used for handling cargo for over 10 years. The U.S. Coast Guard moors search and rescue vessels at the mouth of the Genesee River. Another private facility is located 1.6 miles above the Stutson Street Bridge.

Operations and results during fiscal year. Operations: Federal funds for Real Estate Management Activities cost $5,000; Project

Condition Surveys cost $35,000; Economic Evaluation cost $16,247; and Environmental Stewardship cost $2,691. Maintenance: Dredging cost $561,605 to remove approximately 109,318 cubic yards from the Federal Channel. [Entire Channel: Depth -21' and -22' LWD, Length Sta 48+00 to 201+00 (15,300'), Width 150'+]. Cost for Coastal Mapping totaled $2,975.

19. ROCKY RIVER, OH

Location. At mouth the of the Rocky River which empties into Lake Erie seven miles westerly from Cleveland, OH. (See NOAA Nautical Chart 14826.)

Existing project. For description see pg. 1329 of Annual Report for 1966. Federal cost for completed project was $343.494 and non-Federal cost was a cash contribution of $249,346. (See Table 20-B for authorizing legislation.)

Local cooperation. Fully complied with. Local interests contributed $249,346 for new work.

Terminal facilities. Facilities consist of private docks for recreational craft and privately owned servicing and storage handling facilities for recreational and other small craft.

Operations and results during fiscal year. Operations: Federal funds for Real Estate Management Activities cost $3,000. Maintenance: Dredging cost $286,340 to remove approximately 18,000 cubic yards from the Federal channel. [Entire Channel: Depth -10' to -6' LWD, Length Sta 63+00 to 8+00 (5,500'), Width 100']. Cost for Environmental Activities total $650.

20. SANDUSKY HARBOR, OH

Location. On south shore of Lake Erie, in southeastern portion of Sandusky Bay, 50 miles westerly from Cleveland, OH. (See NOAA Nautical Chart 14845.)

Previous project. For description see pgs. 1511-12 of Annual Report for 1962. Actual costs for new work for completed project were $6,250,121, excluding $325,000 contributed by local interests. Non-Federal costs for completed project are estimated at $675,000, including $325,000 cash contribution and the remaining $350,000 is for dockside dredging adjacent to deepening channels authorized by 1960 Act. (See Table 20-B for authorizing legislation.)

Local cooperation. Fully complied with. Local interests contributed $325,000 for new work.

Terminal facilities. Fourteen piers and wharves, three at west end of harbor and remainder along dock channel. One is a base for state-owned fish research and patrol boats. One publicly owned and six privately owned used for mooring fishing boats and recreational craft and for ferry service. Five terminals have railroad connections and five mechanical-handling facilities. Facilities are considered adequate for existing commerce. (See Port Series No. 42, revised 1972, Corps of Engineers.)

Operations and results during fiscal year. Operations: Federal funds for Project Condition Surveys cost $34,239. Maintenance: Dredging cost $9,060 to finalize FY03 contract.

21. STURGEON POINT, EVANS, NY

Location. On south shore of Lake Erie, 17 miles southwest of Buffalo, NY and 22 miles northeast of Dunkirk, NY. (See Geological Survey map of Angola, NY.)

Existing project. For description of existing project, see pg. 20-11 of Annual Report for 1991. Federal project cost is $ 1,460,000. Non-Federal project cost is $1,475,000. In addition, the local sponsor provided associated costs for upland development of $1,000,000.

Local cooperation. The Buffalo District has a properly executed Local Cooperation Agreement with the Town of Evans, NY, signed Oct 26, 1987.

Operations and results during fiscal year. Maintenance: Federal funds for sand by-pass reimbursement cost $12,487.

22. TOLEDO HARBOR, OH

Location. Comprises lower seven miles of Maumee River and channel through Maumee Bay to Lake Erie. Maumee River has its source in northern Indiana and empties into Lake Erie. Harbor is at the westerly end of Lake Erie, 99 miles westerly from Cleveland, OH. (See NOAA Nautical Chart 14847.)

Previous projects. For details see pg. 1959 of Annual Report for 1915, and pg. 1565 of Annual Report for 1938.

Existing project. For description of existing project see pgs. 32-18 and 32-19 of the Annual Report for 1978. Cost of completed existing project was $15,567,147. (See Table 20-B for authorizing legislation.)

Local cooperation. Fully complied with.

Terminal facilities. Thirty-five piers, wharves and docks are located in the Port of Toledo. Seven are located on Maumee River; and 28 are equally divided along the right and left banks of the lower seven miles of the Maumee River. The Toledo-Lucas County Port Authority Facility No. 1 Wharf handles conventional and containerized general cargo as well as an increasing amount of miscellaneous bulk

materials. Fifteen of the terminals have railroad connections and mechanical handling facilities. (See Port Series No. 44, revised 1989, U.S. Army Corps of Engineers.)

Operations and results during fiscal year. Operations: Federal funds for Project Condition Surveys cost $104,560; Environmental Compliance Management Activities for an audit of the confined disposal facilities (CDF) cost $8,917; Sediment Sampling and Analysis cost $99,669; Costs for continuing Phase II of the Dredged Material Management Plan (DMMP) totaled $230,323. These costs included plan formulation and identification of alternatives including beneficial use of sediments. Extensive DMMP coordination with the Toledo area Federal and non-Federal municipal and regulatory agencies continued in 2004. Maintenance: Dredging cost $1,654,886 to remove 430,000 cubic yards of shoaled material from the Maumee Bay. [Lake Channel: Depth -29' LWD, Length Sta 506+00 to 860+00 (35,400'), Width 500']. $1,122,894 was expended to remove 298,520 cubic yards of shoaled material from the Maumee River. [River Channel: Depth -29' LWD, Length Sta 350+00 to 506+00 (15,600'), Width 500']. Cost for Environmental Compliance Activities of drafting Contaminant Monitoring Assessments of the harbor CDF(s) totaled $44,985. Cost for CDF Maintenance totaled $80,618. Cost for Island 18 Reutilzation Construction totaled $50,000 including completed engineering and design, plans and specifications, awarded construction contract, and contractor mobilization to site. Cost for completing dewatering of Cell 2 by cleaning out 8 feet of material down to the weir invert, lowering ground water level in the confined disposal area approximately 5 feet totaled $48,837.

23. TOUSSAINT RIVER, OH

Location. At westerly end of Lake Erie, 8 miles west of Port Clinton and 22 miles east of Toledo, Ohio. (See NOAA Nautical Chart 14847.)

Existing project. For description of existing project, pg 20-12 of Annual Report for 1991. (See Table 20-B for authorizing legislation.) Project is deferred due to discovery of unexploded ordnance in the dredging area.

Local cooperation. The Buffalo District has a properly executed Local Cooperation Agreement with Carroll Township, OH, signed Apr 3, 1991.

Operations and results during fiscal year. Operations: Federal funds for Project Condition Surveys cost $20,000. Maintenance: Dredging cost $188,189 to remove approximately 23,989 cubic yards from the Federal channel. [Entire Channel: Depth 21' and 22' LWD, Length Sta 30+00 to 11+00 (1,900'), Width 100'+]. Non-Federal coast share portion totaled $64,557.

24. VERMILION HARBOR, OH

Location. On south shore of Lake Erie at mouth of Vermilion River, 37 miles westerly from Cleveland, OH. (See NOAA Nautical Chart 14826.)

Existing project. For description of existing project see pgs. 32-17 and 32-18 of the Annual Report for 1975. Actual Federal cost for the completed existing project was $1,156,118. Estimated non-Federal cost for new work is $754,679 including cash contribution of $740,679 and remainder for relocation of submarine cable and construction of public wharf. (See Table 20-B for authorizing legislation.)

Local cooperation. Fully complied with. Local interests contributed $740,679.

Terminal facilities. Facilities consist of private docks for recreational craft and privately owned servicing and storage handling facilities for recreational and other small craft. A reconnaissance study to alleviate the ice-jam and free-flow flooding of the river was completed in 1986 at a cost of $180,000. The proposed project was an ice-retention structure. The non-Federal sponsor did not commit to provide its total share of the cost of the feasibility study; the project was therefore reclassified as "inactive".

Operations and results during fiscal year. Operations: Federal funds Project Condition Surveys cost $25,000; Real Estate Management Activities cost $3,000. Maintenance**:** Dredging cost $270,251 to remove approximately 32,200 cubic yards from the Federal channel. [Entire Channel: Depth -12' LWD, Length Sta 20+00 to 58+00 (3,800'), Width 100'].

25. WEST HARBOR, OH

Location. On the southwest shore of Lake Erie, 13 miles northeast of Port Clinton, OH. (See NOAA Nautical Chart 14847.)

Existing project. For description of existing project, see pg. 32-10 of Annual Report for 1983. Total Federal cost for new work was $3,303,898. Total non-Federal cost for new work was $3,922,000 including cash contribution of $3,795,000. Existing project was authorized by 1965 River and Harbor Act (H. Doc. 245, 88th Cong., 2nd sess.).

Local cooperation. See pg. 32-20 of 1978 Annual Report for requirements of local cooperation. By letter dated Jan 31, 1978, state of OH stated its intent to furnish assurances of local cooperation, and executed LCA was received on Mar 9, 1981.

Terminal facilities. Commerce at the harbor presently consists of recreational boating and affiliated activities.

Operations and results during fiscal year. Operations: Federal funds for Real Estate Management Activities cost $3,000. Maintenance: Dredging cost $316,664 to remove 48,000 cubic yards from the Federal channel. [Entrance Channel: Depth 10' LWD, Length Sta 70+00 to 100+00 (3,000'), Width 100'].

26. WILSON HARBOR, NY

Location. At mouth of east branch of Twelve-Mile Creek, which enters Lake Ontario 12 miles easterly of mouth of Niagara River, and 67 miles westerly of Rochester Harbor, NY. (See NOAA Nautical Chart 14806.)

Previous projects. For details see pg. 2395 of Annual Report for 1889, and pg. 628 of Annual Report for 1905.

Existing project. For description of existing project see pg. 32-18 of Annual Report for 1975. Actual Federal cost for completed existing project was $477,904. Estimated non-Federal costs are $774,000 that includes cost of $16,000 for previously completed work. Remainder of non-Federal costs is for work required for 1968 R&H Act including cash contribution of $166,988. (See Table 20-B for authorizing legislation.)

Local cooperation. Fully complied with.

Terminal facilities. Facilities consist of private docks for recreational craft and privately owned servicing and storage handling facilities for recreational and other small craft. Facilities are considered adequate for existing commerce.

Operations and results during fiscal year. Operations: Federal funds for Real Estate Management Activities cost $3,000.

27. PROJECT CONDITION SURVEYS: NY, OH & PA

Condition surveys performed in FY04 by the Buffalo District cost $315,091.

Project	Date of Survey
Barcelona, NY	**Aug 2004**
Cooley Canal, OH	**May 2004**
Great Sodus Bay, NY	**May 2004**
Irondequoit Bay, NY	**Mar, Jun 2004**
Little Sodus, NY	**Apr 2004**
Oak Orchard, NY	**May, Jun 2004**
Ogdensburg, NY	**Oct 2003**
Olcott Harbor, NY	**Jun 2004**
Oswego, NY	**Apr 2004**
Rocky River, NY	**Mar, Apr 2004**
West Harbor, NY	**May 2004**
Wilson, NY	**Jun 2004**

NAVIGATION WORK UNDER SPECIAL AUTHORIZATION

28. NEW YORK STATE CANAL SYSTEM

Location. The New York State Canal System runs primarily east-west through New York State. It consists of four components: Erie Canal, Oswego Canal, Cayuga/Seneca Canal, and Champlain Canal.

Existing Project. Reimburse the state of New York 50% of non-Federal operation, maintenance and rehabilitation costs as well as make capital improvements. Sec. 1105, WRDA 1986 and Sec. 553, WRDA 1996 and Sec 341, WRDA 1999 authorized the existing project.

Local Cooperation. Fully complied with.

Terminal Facilities. Numerous piers, wharves and locks used for recreational craft.

Operations and Results during fiscal year. New work Funds in the amount of $560,516 were expended to prepare a Decision Document and reimburse the state of New York for a completed project.

SHORE PROTECTION

29. PRESQUE ISLE PENINSULA, ERIE, PA

Location. At Erie, PA, on south shore of Lake Erie, 78 miles southwest of Buffalo, NY and 102 miles east-northeast of Cleveland, OH. (See NOAA Nautical Charts 14824 and 14835.)

Existing Project. For description of completed portion of existing project see pg. 1393 of Annual Report for 1963. For details of project authorized by the 1974 Water Resources Development Act (WRDA), 1976 WRDA and 1986 WRDA, see pg. 32-14 of Annual Report for FY 87. Actual Federal cost for the authorized beach nourishment project modifications through FY 92 is $16,879,000 which includes $5,646,000 for completed work authorized by the 1954 and 1960 R&H Acts and 1974 WRDA Act and $11,233,000 for completed work authorized by the 1976 WRDA Act. Actual non-Federal cost for the authorized project and modifications through FY 92 is $8,798,000 which includes $3,983,000 for completed work authorized by 1954 and 1960 R&H Acts and 1974 WRDA Act and $4,815,000 for completed work authorized by the 1976 WRDA Act. Beach nourishment as authorized by the 1976 WRDA was completed in FY 91. The estimated Federal cost

(Oct 1999) for the 55 breakwaters project is $66,335,000. This estimate includes $13,435,000 for the initial construction and $52,900,000 for 50 years of post-construction beach nourishment. The estimated non-Federal cost for the breakwater project is also $66,335,000. The estimated Federal cost (June 2003) for the 55 breakwaters project is $56,310,000. This estimate includes $13,435,000 for the initial construction and $42,875,000 for 50 years of post-construction beach nourishment. The estimated non-Federal cost for the breakwater project is also $56,310,000. (See Table 20-B for authorizing legislation.)

Local Cooperation. Fully complied with for completed project as authorized by 1954 and 1960 R&H Acts and 1974 WRDA Act. An agreement between the United States of America and the Commonwealth of Pennsylvania, acting through the Department of Environmental Resources was entered into on Feb 21, 1979 for the annual nourishment which was extended by the 1976 WRDA Act.

Operations and Results during fiscal year. New work: Annual nourishment for a 50 year period, beginning in FY 93, continued in FY 04 for the twelfth year of this 50-year period. Federal cost for Presque Isle totaled $494,445, which included $437,430 for the nourishment contract, and $57,015 for engineering, contract supervision and administration. Non-Federal costs totaled $549,396, which included $410,000 for the nourishment contract and $139,396 for engineering, contract supervision and administration.

FLOOD CONTROL

30. MORRIS LAKE, GENESEE RIVER, NY

Location. Dam is on Genesee River 66.9 miles above river mouth and about 32 miles southwesterly of Rochester, NY. Reservoir is in Livingston and Wyoming Counties, NY. (See Ecological Survey maps of Nunda and Portage, NY).

Existing Project. For description of existing project, as authorized by 1944 Flood Control Act, see pg. 1575 of Annual Report for 1962. New work for completed project cost $23,365,559. In addition, $5,000 contributed funds were expended for new work.

Local Cooperation. None required. Local interests contributed $5,000 for new work.

Operations and results during fiscal year. Federal funds for the Operation of the Dam, Reservoir, and Service Facilities, Real Estate Management Activities and miscellaneous reports were accomplished by hired labor resulting in a cost of $864,547. Cost for Flood Emergency Plans totaled $112,894. Cost for Water Control Management totaled $360,260. Cost for Dam Safety totaled $56,244. Cost for Operation and Maintenance of the Visitor Center and Recreation Facilities totaled $262,005. Cost for Environmental Stewardship and Compliance totaled $57,268. Cost for Debris Removal totaled $192,539 at the face of the Mt. Morris Dam to insure that debris would not block the culverts in the dam and/or prevent culvert gate closing to continue to provide flood damage reduction. Costs for Road Repairs totaled $17,142. Cost for design for the Training Wall Cleaning and Stabilization totaled $50,961 including engineering study and initial design work performed in order to analyze erosion problem affecting the training wall of the Mt. Morris Dam. Design and construction of corrective measures to take place in future years. Cost for construction of Training Wall Stairs totaled $307,558 for installation in the Mt. Morris Dam in order to replace 50+ year old stairs that had become corroded and unsafe. These stairs provide an emergency means of access to the dam in the event of elevator failure insuring that the dam can be operated in the event of failure of the elevator. Cost for updating the O&M manual totaled $39,880. Cost for hydraulic steel structure and gate automation studies totaled $13,307. Through the Dam Safety Program the $13,307 was utilized to (1) establish a charter for the Information and Communication Technology Work Group, and (2) prepare, review, and edit a contract Scope of Work to perform non-destructive testing of the slide gates in the dam. Contract was awarded in September 2004.

ENVIRONMENTAL RESTORATION

31. OHIO ENVIRONMENTAL INFRASTRUCTURE

Location. The program is applicable to the entire state of Ohio and falls within the Buffalo District boundary, and includes the city of Toledo, the townships of Madison and Lafayette and the villages of Fremont and Chardon.

Existing Project. The Ohio Environmental Infrastructure Program was authorized under Section 594 of Water Resources Development Act of 1999 (PL 106-53) for the purpose of providing Federal assistance for design and/or construction of water related environmental infrastructure, resource protection and development projects. Projects implemented as part of this program typically address combined sewer overflows (CSOs), sewer treatment plants and sewer line extensions. In FY04, the Federal cost was approximately $1,448,000 (75%)

and the non-Federal share was approximately $483,000 (25%).

Local Cooperation. The projects are cost-shared 75% Federal and 25% non-Federal. The current authorized Federal appropriation limit is $60 million.

Operations and results during fiscal year. Ongoing: project management for three design and design/construction projects. (The city of Toledo and the township of Madison were completed). New work: five new design & design/construction projects (city of Toledo, villages of Perry and Jenera, townships of Perry and Concord).

32. ONONDAGA LAKE, NY

Location. The project area is located in the Onondaga Lake watershed in Onondaga County, NY and includes the city of Syracuse. Onondaga Lake is part of the Oswego River basin, which is tributary to Lake Ontario. It is also part of the New York State Canal System.

Existing Project. The Onondaga Lake Partnership (OLP) and associated projects are authorized under Section 573 of Water Resources Development Act of 1999 (PL 106-53) for the purpose of development and implementation of lake improvement projects. Projects implemented as part of this program typically address combined sewer overflows (CSOs), hydrogeology, habitat restoration, non-point source pollution, and related water resource impairments. The Federal cost is anticipated to be $130 million (70%) and the non-Federal share is estimated to be $55.7 million (30%).

Local Cooperation. The projects are cost-shared 70% Federal and 30% non-Federal. The current authorized Federal appropriation limit is $10 million.

Operations and results during fiscal year. On going: project management for five planning and design projects and four grant agreements cost-shared with Onondaga County. New work: one new grant agreement to construct additional urban catch basin improvements within the city of Syracuse totaling $975,000 ($682,500 Federal & $292,500 non-Federal). Total Federal expenditures were $1,707,187. Total non-Federal expenditures were $296,754.

MISCELLANEOUS

33. NATIONAL EMERGENCY PREPAREDNESS PROGRAM (NEPP)

Local Preparedness.....$30,820
National Emergency Facilities.....23,826
Total NEPP.....$54,646

34. ANTI-TERROISM/FORCE PROTECTION

Anti-Terrorism/Force Protection…….$67,648

35. REGULATORY FUNCTIONS PROGRAM

Permit Evaluation.....$2,888,867
Enforcement.....341,551
Administrative Appeals.....381
Compliance……609,846
Total Regulatory.....$3,840,645

36. FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM (FUSRAP)

Buffalo District began work in FUSRAP in October 1997 when Congress transferred this Program from the Department of Energy (DOE) to the Corps. Total FUSRAP expenditures for FY 2004 were $41,051,707. The FY 2004 accomplishments for these sites are briefly stated in the following paragraphs:

Niagara Falls Storage Site, Lewiston, NY – FY 2004 accomplishments include continued progress on the Remedial Investigation (RI) report, initiation and progress on the Potentially Responsible Party (PRP) study, completion of a site security review, and continuation of yearly site maintenance, monitoring and surveillance activities. Also continued was community outreach through interaction with the Restoration Advisory Board. Total FY 2004 expenditures were $4,610,316.

Ashland 1, Tonawanda, NY – Through FY 2004 the Corps excavated, transported and disposed of 173,000 tons of material out of state. Backfill of the site was completed in December 2003. Also in FY 2004, the Ashland 1 Construction Report was distributed to the stakeholders, and an Explanation of Significant Differences (ESD) was prepared to explain the cleanup to be conducted at the last remaining piece of the Ashland Site to be remediated, Rattlesnake Creek. Total FY 2004 expenditures were $3,097,290.

Ashland 2, Tonawanda, NY – The remediation of this site was completed in 1999 and the only work accomplished in FY 2004 was some additions to cost recovery records. Total FY 2004 expenditures were $4,636.

Praxair (Linde Air Products, Tonawanda, NY) – FY 2004 funds were used to continue the Linde Soils remedial action, initiate demolition activities for the Building 14 operable unit, and prepare a draft Remedial Investigation/Feasibility Study on the

Groundwater operable unit. Total FY 2004 expenditures were $29,187,336.

Seaway Industrial Park, Tonawanda, NY – In FY 2004, the Corps continued work on a Feasibility Study Addendum, which included additional characterization of the Areas A, B and C, and incorporates additional soil volume left from the Ashland 1 remedial action in the vicinity of Seaway Area D. FY 2004 expenditures were $324,769.

Luckey Site, Luckey, OH – FY 2004 funds were used to draft the Record of Decision (ROD) and conduct annual groundwater sampling and testing. Total FY 2004 expenditures were $355,040.

Painesville Site, Painesville, OH – FY 2004 funds were used to develop a Feasibility Study Addendum and draft the Proposed Plan for remediation. Total FY 2004 expenditures were $587,184.

Former Harshaw Chemical Co., Cleveland, OH – FY 2004 funds were used to initiate the second phase of the Remedial Investigation (RI). Total FY 2004 expenditures were $2,430,618.

Scioto Laboratory Complex, Marion, OH– The draft Preliminary Assessment was completed and coordinated internally. FY 2004 expenditures were $39,215.

Dayton Unit 1, Dayton OH – The Preliminary Assessment/Site Inspection was completed and coordinated with stakeholders. FY 2004 expenditures were $27,689.

Old Warehouse, Dayton, OH – The Site Inspection fieldwork was completed. FY 2004 expenditures were $262,478.

Former Guterl Specialty Steel Corp., Lockport, NY – The coordination continued to determine whether or not to add this site into the Program. Total FY 2004 expenditures were $25,719.

Dayton Unit III, Dayton, OH – The draft Site Inspection Report was completed and coordinated with stakeholders. Total FY 2004 expenditures were $56,478.

Dayton Unit IV, Oakwood, OH – The draft Site Inspection Report was completed and coordinated with stakeholders. Total FY 2004 expenditures were $42,939.

37. MAINTENANCE OPERATIONS OF DAMS AND IMPROVEMENTS OF NAVIGABLE WATERS

Total FY 2004 expenditures for Mt. Morris Lake, Mt. Morris, NY were $351.

TABLE 20-A COST AND FINANCIAL STATEMENT

See Sect. In Text	Project	Funding	FY 01	FY 02	FY03	FY04	Total Cost to Sep 30, 2004
NAVIGATION							
	1. Ashtabula Harbor, OH	New Work Approp.					12,805,339 [1]
		New Work Cost					12,805,339 [1]
		Maint. Approp.	1,643,341	2,637,676	1,804,884	1,263,980	25,687,440
		Maint. Cost	1,635,336	2,599,191	1,858,631	1,245,165	25,668,628
		Rehab. Approp.					6,077,000
		Rehab. Cost					6,077,000
	(Contributed Funds)	New Work Contrib.		175,000			175,000
		New Work Cost		128,349			128,349
	2. Black Rock Channel Tonawanda Harbor, NY	New Work Approp.					11,135,120 [2]
		New Work Cost					11,135,120 [2]
		Maint. Approp.	1,780,439	3,538,316	1,931,314	3,102,369	76,275,886 [3]
		Maint. Cost	1,783,978	3,534,834	1,950,390	2,938,959	76,107,403 [3]
	(Contributed Funds)	New Work Contrib.					620,000
		New Work Cost					620,000
	3. Buffalo Harbor, NY	New Work Approp.					23,115,187 [4]
		New Work Cost					23,115,187 [4]
		Maint. Approp.	312,938	111,730	1,048,040	1,303,382	69,717,428 [5]
		Maint. Cost	320,444	112,451	1,048,058	1,303,382	68,669,371 [5]
		Rehab. Approp.					295,457
		Rehab. Cost.					295,457
	4. Cleveland Harbor, OH	New Work Approp.					36,550,299 [6]
		New Work Cost					36,550,299 [6]
		Maint. Approp.	7,974,969	4,337,409	3,437,174	3,939,294	234,696,793 [7]
		Maint. Cost	7,966,353	4,361,881	3,434,931	3,932,911	234,685,331 [7]

[1] Includes $565 for previous projects. Excludes $47,000 contributed funds.
[2] Includes $58,027 for previous projects.
[3] Includes $4,922 emergency relief authority administrative costs transferred for new work to maintenance upon conversion to programming & budgeting system Jul 1, 1953 by direction of Office, Chief of Engineers. Also includes appropriations & cost under appropriation titles 96X3123 Operations and Maintenance & 96X5125 Maintenance and Operation of Dams and Other Improvements of Navigable Waters.
[4] Includes $4,277,586 for previous projects. Excludes expenditures of $239,305 for work authorized by Sec. 107.
[5] Includes $1,883,647 for previous projects. Excludes $446,805 contributed funds.
[6] Includes $1,564,154 for previous projects. & appropriation & cost of $16,596 for modification authorized for construction under authority of Sec. 107, 1960 R&H Act.
[7] Includes appropriations & cost under appropriation titles 96X3123 Operations and Maintenance & 96X5125 Maintenance and Operations of Dams and Other Improvements of Navigable Waters. Excludes $201,960 contributed funds.

TABLE 20-A COST AND FINANCIAL STATEMENT

See Sect. In Text	Project	Funding	FY 01	FY 02	FY03	FY04	Total Cost to Sep 30, 2004
		Rehab. Approp.					16,404,903
		Rehab. Cost					16,404,903
	(Contributed Funds)	New Work Contrib.					1,083,178
		New Work Cost					1,083,178
		Maint. Contrib.					7,750,725
		Maint. Cost	1,414	6,725			7,660,723
	5. Conneaut Harbor, OH	New Work Approp.					8,346,641 [8]
		New Work Cost					8,346,641 [8]
		Maint. Approp.	25,500	24,563	524,100	734,497	17,045,540 [9]
		Maint. Cost	25,595	24,511	524,152	734,497	17,045,542 [9]
		Rehab. Approp.					651,850
		Rehab. Cost					651,850
	6. Dunkirk Harbor, NY	New Work Approp.					3,010,024 [10]
		New Work Cost					3,010,024 [10]
		Maint. Approp.	257,226	332,493	335,392	269,586	6,648,072
		Maint. Cost	257,788	328,361	339,524	269,270	6,647,755
		Rehab. Approp.					1,950,000 [11]
		Rehab. Cost					1,950,000 [11]
	7. Erie Harbor, PA	New Work Approp.					3,597,873 [12]
		New Work Cost					3,597,873 [12]
		Maint. Approp.	145,377	43,907	131,016	136,620	24,205,579 [13]
		Maint. Cost	146,524	43,965	131,110	136,620	24,205,578 [13]
		Rehab. Approp.					1,154
		Rehab. Cost					1,154
	8. Fairport Harbor, NY	New Work Approp.					2,959,611 [14]
		New Work Cost					2,959,611 [14]
		Maint. Approp.	1,651,213	1,685,743	1,477,466	1,112,346	28,869,183
		Maint. Cost	1,659,137	1,685,739	1,478,384	1,102,060	28,858,897
	9. Great Sodus Bay Harbor, NY	New Work Approp.					
		New Work Cost					

[8] Includes $805,272 for previous projects.
[9] Includes $39,784 for previous projects.
[10] Includes $811,250 for previous projects. Excludes $11,000 contributed funds.
[11] Includes $176,520 for previous projects.
[12] Includes $736,967 for previous projects.
[13] Includes $104,900 for previous projects. Excludes $154,500 contributed funds.
[14] Includes $368,940 for previous projects.

TABLE 20-A COST AND FINANCIAL STATEMENT

See Sect. In Text	Project	Funding	FY 01	FY 02	FY03	FY04	Total Cost to Sep 30, 2004
		Maint. Approp.	7,235	32,282	64,704	347,901	3,624,193
		Maint. Cost	7,320	32,251	64,735	347,901	3,624,193
		Rehab. Approp.					
		Rehab. Cost					
	10. Huron Harbor, OH	New Work Approp.					5,103,795 [15]
		New Work Cost					5,103,795 [15]
		Maint. Approp.	57,723	918,922	920,870	91,191	25,479,268
		Maint. Cost	62,804	918,895	920,898	91,191	25,479,268
		Rehab. Approp.					247,030
		Rehab. Cost					247,030
	(Contributed Funds)	New Work Approp.					63,079
		New Work Cost					63,079
	11. Little Sodus Bay Harbor, NY	New Work Approp.					301,394 [16]
		New Work Cost					301,394 [16]
		Maint. Approp.		35,488	64,080	2,976	5,692,987
		Maint. Cost		34,672	64,895	2,976	5,692,986
		Rehab. Approp.					742,822
		Rehab. Cost					742,822
	12. Lorain Harbor, OH	New Work Approp.					22,240,670 [17]
		New Work Cost					22,240,670 [17]
		Maint. Approp.	1,261,238	1,404,953	3,793,549	3,082,831	49,177,326
		Maint. Cost	1,261,644	1,411,601	3,790,948	3,084,709	49,176,576
	(Contributed Funds)	New Work Contrib.					845,551
		New Work Cost					845,551
	13. Oak Orchard, NY	New Work Approp.					1,586,996 [18]
		New Work Cost					1,586,996 [18]
		Maint. Approp.	60,861	1,000	29,807	151,081	976,578
		Maint. Cost	62,012	1,000	29,807	151,081	976,579
	14. Olcott Harbor, NY	New Work Approp.					2,025,210 [19]

[15] Includes $269,789 for previous projects.
[16] Includes $232,328 for previous projects.
[17] Includes $292,203 for new work for previous projects. Excludes $3,000 contributed funds. Also excludes appropriation and cost of 29,570 under authority of Sec. 197, 1960 R&H Act.
[18] Excludes $224,702 contributed funds.
[19] Includes $140,210 for previous projects. Excludes $1,500 contributed funds.

TABLE 20-A COST AND FINANCIAL STATEMENT

See Sect. In Text	Project	Funding	FY 01	FY 02	FY03	FY04	Total Cost to Sep 30, 2004
		New Work Cost					1,754,694 [19]
		Maint. Approp.		5	4,957	5,000	696,604 [20]
		Maint. Cost		5	4,957	5,000	704,735 [20]
		Rehab. Approp.					14,447 [21]
		Rehab. Cost					14,477 [21]
	15. Oswego Harbor, NY	New Work Approp.					8,430,016 [22]
		New Work Cost					8,430,016 [22]
		Maint. Approp.	969,387	33,980	145,910	204,639	11,389,409 [23]
		Maint. Cost	972,172	34,092	145,926	204,639	11,389,408 [23]
		Rehab. Approp.					307,590
		Rehab. Cost					307,590
	16. Ottawa River Harbor, MI & OH	New Work Approp.			148,000	158,000	648,000
		New Work Cost			116,691	145,656	536,304
	17. Port Clinton, OH	New Work Approp.					[24]
		New Work Cost					[22]
		Maint. Approp.	27,828	84,416	9,878	19,827	1,213,903 [25]
		Maint. Cost	27,828	84,542	9,899	19,877	1,214,100 [23]
		Rehab. Approp.					
		Rehab. Cost					
	18. Rochester Harbor, NY	New Work Approp.					2,439,308 [26]
		New Work Cost					2,439,308 [25]
		Maint. Approp.	698,445	38,847	198,900	623,509	26,065,918
		Maint. Cost	698,436	38,302	199,672	623,509	26,065,897
		Rehab. Approp.					-
		Rehab. Cost					-
	19. Rocky River, OH	New Work Approp.					343,494
		New Work Cost					343,494
		Maint. Approp.	1,250,731	(3,847)	76,207	289,322	5,494,282
		Maint. Cost	1,241,236	11,033	75,540	289,990	5,479,403

[20] Includes $38,959 for previous projects. Excludes $5,000 contributed funds.
[21] Excludes $186,000 Public Works Acceleration Act.
[22] Includes $1,187,977 for previous projects.
[23] Includes $945,684 for previous projects.
[24] Includes $1,187,977 for previous projects.
[25] Includes $945,684 for previous projects.
[26] Includes $247,794 for previous projects.

TABLE 20-A COST AND FINANCIAL STATEMENT

See Sect. In Text	Project	Funding	FY 01	FY 02	FY03	FY04	Total Cost to Sep 30, 2004
20.	**Sandusky Harbor, OH**	New Work Approp.					6,727,270 [27]
		New Work Cost					6,727,270 [27]
		Maint. Approp.	641,476	102,049	1,040,998	43,299	26,327,806
		Maint. Cost	691,909	101,317	1,041,183	43,299	26,327,198
		Rehab. Approp.					675,606
		Rehab. Cost					675,606
	(Contributed Funds)	Maint. Contrib.					15,445
		Maint. Cost					15,445
21.	**Sturgeon Point, NY**	New Work Approp.					1,718,700 [28]
		New Work Cost					1,718,140 [28]
		Maint. Approp.	21,284	8,072	14,898	12,487	165,905
		Maint. Cost	21,284	8,072	14,898	12,487	165,903
	(Contributed Funds)	New Work Contrib.					1,299,008
		New Work Cost					1,299,008
22.	**Toledo Harbor, OH**	New Work Approp.					17,191,842 [29]
		New Work Cost					17,191,842 [29]
		Maint. Approp.	2,819,520	3,230,052	2,847,709	3,445,688	138,212,398
		Maint. Cost	2,829,309	3,259,950	2,849,841	3,445,688	135,212,397
23.	**Toussaint River, OH**	Maint. Approp.	254,149	14,993	125,549	208,189	1,148,531
		Maint. Cost	226,245	42,897	125,549	208,189	1,175,529
	(Contributed Funds)	Maint. Contrib.	49,811			64,557	254,368
		Maint. Cost	59,413			64,557	254,367
24.	**Vermilion Harbor, OH**	New Work Approp.					1,156,118 [30]
		New Work Cost					1,156,118 [30]
		Maint. Approp.	384,267	22,120	182,440	298,251	4,164,192
		Maint. Cost	385,404	21,723	182,837	298,251	4,164,192
		Rehab. Approp.					139,775
		Rehab. Cost					139,775
25.	**West Harbor, OH**	New Work Approp.					3,303,898
		New Work Cost		(35)			3,303,863

[27] Includes $477,149 for previous projects. Excludes $325,000 contributed funds.
[28] Excludes $5,000 contributed funds.
[29] Includes $1,624,695 for previous projects
[30] Excludes $740,679 contributed funds.

TABLE 20-A COST AND FINANCIAL STATEMENT

See Sect. In Text	Project	Funding	FY 01	FY 02	FY03	FY04	Total Cost to Sep 30, 2004
		Maint. Approp.	51,311	5,374	27,422	319,664	2,389,648
		Maint. Cost	51,311	5,296	27,500	319,664	2,389,648
	(Contributed Funds)	New Work Contrib.					3,795,000
		New Work Cost					3,795,000
	26. Wilson Harbor, NY	New Work Approp.					535,246 [31]
		New Work Cost					535,246 [31]
		Maint. Approp.	17,593	10,000	8,898	3,000	1,196,651
		Maint. Cost	18,283	10,000	8,898	3,000	1,196,651
	28. New York State Canal System, NY	New Work Approp			408,000	580,000	8,143,000
		New Work Cost			408,208	560,516	8,123,456
	SHORE PROTECTION						
	29. Presque Isle Peninsula, Erie, PA	New Work Approp.	486,000	612,000	717,000	463,000	36,522,049
		New Work Cost	513,790	622,366	681,147	494,445	36,515,417
		Maint. Approp.					4,978
		Maint. Cost					4,978
	(Contributed Funds)	New Work Contrib.	580,000	290,500	830,000	500,000	27,410,369
		New Work Cost	518,659	573,394	670,189	549,396	26,628,436
	FLOOD CONTROL						
	30. Mount Morris Lake, Genesee River, NY	New Work Approp.					23,365,559 [32]
		New Work Cost					23,365,559 [32]
		Maint. Approp.	1,776,256	1,943,573	2,452,977	2,337,818	43,037,684
		Maint Cost	1,754,897	2,010,926	2,428,324	2,334,606	42,978,401
	ENVIRONMENTAL RESTORATION						
	31. Ohio Environmental Infrastructure	New Work Approp.	440,000	78,000	1,897,000	1,530,000	3,945,000
		New Work Cost	160,840	336,524	1,916,943	1,447,558	3,861,865

[31] Includes $57,342 for previous projects. Excludes $166,998 contributed funds.
[32] Includes study cost of $117,000 under authority Sec 205, 1948 Flood Control Act. Excludes $17,493 in contributed cost.

TABLE 20-A COST AND FINANCIAL STATEMENT

See Sect. In Text	Project	Funding	FY 01	FY 02	FY03	FY04	Total Cost to Sep 30, 2004
32.	**Onondaga Lake, NY**	New Work Approp.	4,190,000	801,000	1,903,500	2,979,200	13,284,762
		New Work Cost	560,600	623,108	1,998,932	1,707,179	8,499,218
	(Contributed Funds)	New Work Contrib.	(54,023)	641,050	725,945	(47,187)	5,007,285
		New Work Cost	129,876	37,437	433,259	296,754	4,407,810

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
1		**ASHTABULA HARBOR, OH**	
	Jun 3, 1896	Construction of breakwater.	Annual Report, 1895, p. 2132
	Mar 3, 1905 Jun 25, 1910	Enlarge outer harbor by extending west breakwater and constructing new east breakwater pier heads on lakeward ends of breakwaters; remove part of old east breakwater.	H. Doc. 654. 61st Cong., 2nd sess.
	Mar 2, 1919	Extend west breakwater to shore; dredge outer harbor to a depth of 20 feet.	H. Doc. 997, 64th Cong., 1st sess.
	Aug 30, 1935	Remove portion of east breakwater to extend breakwaters to present dimensions and dredging restrictions in portion of west basin.	H. Doc. 43, 73rd Cong., 1st sess.
	Aug 26, 1937	Dredge channel through outer harbor, channel of approach to Penn Central Co. slip, channel Ashtabula River, to and in turning basin all to present project dimensions; remove portion of old east inner breakwater and Maintenance to 24-foot depth of portion of outer harbor.	Rivers and Harbors Committee Doc. 78, 74th Cong., 2nd sess.
	Mar 2, 1945	Extend river channel to present project limit.	H. Doc. 321, 77th Cong., 1st sess. River & Harbor Act of 1945, PL 79-14
	Sep 3, 1954	Dredging approach channel and turning basin in east outer harbor to 25-foot depth.	H. Doc. 486, 83rd Cong., 2nd sess. River & Harbor Act of 1954, PL 83-780
	Jul 14, 1960	A depth of 29 feet in soft and 30 feet in hard material in entrance channel to just inside outer ends of Breakwaters, thence 28 feet in soft and 29 feet in hard material in a channel to inner breakwater, thence 27 feet in soft and 28 feet in hard materials in a channel extending to Penn Central Co. slip and extending 2000 feet up Ashtabula River, 22 feet in hard material in turning area; and 28 feet in soft and 29 feet in hard material in areas adjacent to 250-foot section of inner breakwater when that section is removed as now authorized.	H. Doc. 148, 86th Cong., 1st sess. River & Harbor Act of 1960, PL 86-645
	Oct 27, 1965	Dredging approach channel and turning basin in east outer harbor to 28 feet in soft material and 29 feet in hard material.	H. Doc. 269, 89th Cong., 1st sess.[33] River & Harbor Act of 1965, PL 87-874
		ASHTABULA RIVER, OH ENVIRONMENTAL DREDGING	
	Nov 28, 1990 as amended, Aug 17, 1999, Dec 11, 2000	The Secretary may remove and remediate, as part of operation and maintenance of a navigation project, contaminated sediments outside the boundaries of and adjacent to the navigation channel. The Secretary may remove and remediate contaminated sediments from the waters of the United States, in general, for the purpose of environmental enhancement and water quality improvement if such removal is requested by a non-Federal sponsor and the sponsor agrees to pay 65% of the cost of the removal and remediation.	PL 101-640; PL 106–53; PL 106–541

[33] Contains latest published map.

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
	Oct 12, 1996	Amended PL 101-640 to include Ashtabula River, OH as priority work.	PL 104-303
2		**BLACK ROCK CHANNEL AND TONAWANDA HARBOR, NY**	
	Aug 11, 1888 Jun 3, 1896	Dredging channel through horseshoe reef at outlet of Lake Erie and Tonawanda Inner Harbor to 16 feet.	H. Ex. Doc. 83, 50th Cong., 1st sess., Annual Report. 1888, p. 206 and Annual Report, 1897., pp.3116-3120
	Jun 13, 1902	Deepening Tonawanda Creek to 16 feet.	H. Doc. 143, 56th Cong., 1st sess. and Annual Report, 1900 p. 4152
	Jun 13, 1902 Aug 8, 1917	Dredging channel from Buffalo outer harbor to foot of Maryland St., Buffalo, to 21 feet.	H. Doc. 125, 56th Cong., 2nd sess., and Annual Report 1901, p. 3343
	Mar 3, 1905	Dredging channel from foot of Maryland St., Buffalo, to natural deep water pool upstream from Tonawanda Harbor to 21 feet; construction of ship lock and bridge; and repair of Bird Island pier towpath wall.	H. Doc. 428, 58th Cong., 2nd sess.
	Jul 27, 1916	Dredging channel along Tonawanda Island, with turning basin at its downstream end at the foot of the Island, to 21 feet.	H. Doc. 658, 63rd Cong., 2nd sess.
	Mar 2, 1919 Mar 2, 1945	Dredging triangular area at junction with Buffalo north Entrance channel.	H. Doc. 1004, 65th Cong., 2nd sess. & H. Doc. 92, 79th Cong., 1st sess. H. Doc. 981, 66th Cong., 2nd sess. River & Harbor Act of 1945, PL 79-14
	Sep 22, 1922	Widening channel at foot of Maryland St., Buffalo.	H. Doc. 289, 68th Cong., 1st sess.
	Mar 3, 1925	Widening canal south of International Bridge and removal of westerly end of Rattlesnake Island shoal.	H. Doc. 981, 66th Cong., 3d sess.
	Jun 26, 1934[34]	Operation and care of improvements provided for with funds from War Department appropriations for rivers and harbors.	H Doc. 28, 73d Cong., 1st sess.
	Aug 30, 1935[35]	Removal of rock shoals in Lake Erie entrance to canal, and in canal south of Ferry Street Bridge, to 22 feet; enlargement of North Tonawanda turning basin; extension of Bird Island Pier; improvement of guide pier at the lock; and elimination of upper 150 feet of Tonawanda Creek channel from the project.[36]	H. Doc. 28, 73rd Cong., 1st sess.
	Mar 2, 1945	Widening Lake Erie entrance to canal.	H. Doc. 92, 79th Cong., 1st sess. River & Harbor Act of 1945, PL 79-14

[34] Permanent Appropriations Repeal Act.
[35] Authorized May 28, 1935 by Emergency Relief Administration Act of 1935.
[36] Improvement of guide pier at Black Rock Lock was de-authorized by Congress in Aug 1977.

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
	Sep 3, 1954	Deepen lower 1,500 feet of Tonawanda inner harbor and enlarge turning basin.	H. Doc. 423, 83rd Cong., 2nd sess. [37] River & Harbor Act of 1954, PL 83-780
3		**BUFFALO HARBOR, NY**	
	May 20, 1826	Construction of south pier (extended in 1868).[38]	Annual Report, 1868, pp. 222 –232
	Jun 23, 1866	Construction of old breakwater.	Annual Report, 1868, pp. 232 –236
	Jun 23, 1874	Extension of old breakwater.	Annual Report, 1876, pt. 2, pp. 569 and 573
	Jun 3, 1896	Stony Point and south breakwater	Annual Report, 1895, p. 3153. H. Doc. 72, 55th Cong., 1st sess., and Annual Report, 1897, p. 3245
	Mar 3, 1899 Mar 3, 1909	North breakwater.	
	Jun 6, 1900 Jun 18, 1902	Deepening entrance channel to inner harbor and removing rock shoal therein.	Specified in acts.
	Mar 2, 1907[39]	Dredging at entrance to canals at South Buffalo in outer harbor.	Specified in act.
	Mar 2, 1907	South entrance breakwater.	H. Doc. 240, 59th Cong., 1st sess.
	Jun 25, 1910	Extension of Federal project to Commercial St. and removal of Watson elevator site.	H. Doc. 298, Rivers and Harbors Committee Doc. 2, 61st Cong., 2nd sess.
	Jul 25, 1912	Deepening areas A, B, D, in outer harbor to 21 feet, C in North entrance to 23 feet.	H. Doc. 550, 62nd Cong., 2nd sess.
	Mar 2, 1919	Deepening areas F and G in outer harbor to 21 feet.	H. Doc. 1139, 64th Cong., 1st sess.
	Jan 21, 1927	Removal of shoal between entrance channel to Buffalo River and Erie Basin to 21 feet.	H.Doc. 481, 68th Cong., 2nd sess.
	Jul 3, 1930	Deepening areas H, I, and K in outer harbor 21 feet.	Rivers and Harbors Committee Doc. 1, 71st Cong., 1st sess.
	Aug 30, 1935[40]	Extension of south entrance and south breakwaters, deepening outer harbor to present project dimensions, and removal of shoals on approach to south entrance.	H. Doc. 46, 73rd Cong., 1st sess.

[37] Classified deferred.
[38] Completed under previous projects.
[39] Also Sundry Civil Act of Mar 3, 1905

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
	Aug 30, 1935 Mar 2, 1945	Maintenance of channels in Buffalo River and Buffalo Ship Canal to 21 feet in cooperation with city of Buffalo.	Rivers and Harbors Committee Doc. 54, 74th Cong., 1st sess.
	Jul 14, 1960	Deepening North and Buffalo River entrance channels, and deepening and maintaining Buffalo River and Buffalo Ship Canal to present project dimensions.	H. Doc. 352, 78th Cong., 1st sess. River & Harbor Act of 1960, PL 86-645
	Oct 23, 1962	Deepening approach to south entrance channels, and deepen to 30 feet in outer area and 29 feet in inner area of southerly part of outer harbor.	H. Doc. 151, 86th Cong., 1st sess. River & Harbor Act of 1962, PL 87-874
	1962	Deepening portion of outer harbor to 27 feet over a width of 500 feet for 2,500 feet northward from 28-foot project area, widening within 1,700 feet to limits within 150 feet of breakwater axis and 75 feet from harbor line and continuing within these limits for 7,000 feet. Elimination of 25-foot wide strip between presently authorized and proposed easterly dredging limits easterly 50 foot wide undredged strip in existing 23-foot depth project area, extending northerly from 27-foot depth to Buffalo River entrance channel. Previously authorized but uncompleted portions or work authorized by 1935 Act, combined within this act as a single improvement.	H. Doc. 451, 87th Cong., 2nd sess.
	Jul 14, 1960 as amended	Removal of abandoned abutments of South Michigan Bridge.	Sec. 107 of River & Harbors Act of 1960, PL 86-645. Authorized Chief of Engineers Dec 15, 1980
		BUFFALO HARBOR and RIVER, NY ENVIRONMENTAL DREDGING	
	Nov 28, 1990 as amended, Aug 17, 1999, Dec 11, 2000	The Secretary may remove and remediate, as part of operation and maintenance of a navigation project, contaminated sediments outside the boundaries of and adjacent to the navigation channel. The Secretary may remove and remediate contaminated sediments from the waters of the United States, in general, for the purpose of environmental enhancement and water quality improvement if such removal is requested by a non-Federal sponsor and the sponsor agrees to pay 65% of the cost of the removal and remediation.	PL 101-640; PL 106–53; PL 106–541
	Oct 12, 1996	Amended PL 101-640 to include Buffalo Harbor and River, NY as priority work.	PL 104-303
4		**CLEVELAND HARBOR, OH**	
	Mar 3, 1875	West breakwater.	Annual Report, 1876, p. 558
	Aug 5, 1886	Part of east breakwater.	H. Ex. Doc. 116, 48th Cong., 2nd Sess., and Annual Report, 1886, p. 1865
	Aug 11, 1888	Extension of east breakwater.	H. Ex. Doc. 189, 50th Cong., 2nd sess., and Annual Report, 1888, p. 2005

[40] Authorized in part by Public Works Administration, Sep 6, 1933.

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
	Jun 3, 1896	Reconstruction of piers.	H. Doc. 326, 54th Cong., 1st sess., and Annual Report, 1896, p. 2949
	Mar 3, 1899	Dredging channel between piers and outer harbor to depth of 19 feet; dredging to depth of 23 feet in any portion of harbor is discretion of Secretary of War.	H. Doc. 156, 55th Cong., 2nd sess., and Annual Report, 1899, pp. 3075 and 3078
	Jun 13, 1902	Arrowhead breakwater and extension of east breakwater.	H. Doc 118, 56th Cong., 2nd sess.
	Mar 2, 1907 Jun 25, 1910	Removal of deflecting arm of old east breakwater and closure of gap between old and new east breakwaters.	No printed report.
	Jul 27, 1916	Pierhead at easterly end of east breakwater.	H. Doc 891, 63rd Cong., 2nd sess.
	Aug 8, 1917 Aug 29, 1937	Maintenance and improvement of channels in Cuyahoga and Old Rivers to a depth of 21 feet to a point 2,000 feet upstream from Clark Ave. viaduct and 18-foot turning basin.	H. Doc. 707, 63rd Cong., 2nd sess., & Rivers and Harbors Committee Doc. 84, 74th Cong., 2nd sess.
	Aug 30, 1935[41]	Deepening outer harbor and channel between piers to present project dimensions, construction of 400-foot spur breakwater at gap in shore arm of west breakwater, removal of easterly 150 feet of west breakwater, elimination from project of a 298-foot southerly extension on west pier, and abandonment of inner 932 feet of shore arm of west breakwater.	H. Doc. 477, 72nd Cong., 2nd sess.
	Aug 30, 1935	Maintenance dredging in Cuyahoga and Old Rivers for one year as an emergency measure.	Rivers and Harbors Committee Doc. 39, 74th Cong., 1st sess.
	Mar 2, 1945[42]	Maintenance extension of Cuyahoga River channel. Extension, maintenance, and improvement to a depth of 21 feet of Cuyahoga River channel to present project limit.[43] [44]	Specified in act. H. Doc. 95, 79th Cong., 1st sess. River & Harbor Act of 1945, PL 79-14
	Jul 24, 1946	Improvement of Cuyahoga and Old Rivers to a depth of 23 feet and replacement or pier construction of 7 railroad bridges.[45]	H. Doc. 629, 79th Cong., 2nd sess. River & Harbor Act of 1946, PL 79-525

[41] Authorized by Public Works Administration, Sep 6, 1933.
[42] First Deficiency Appropriations Act approved Apr 1, 1944.
[43] Deepening left half of channel extension was eliminated from project by 1962 R&H Act.
[44] Authorized by Defense Plant Corp. May 19, 1942.
[45] Widening Cuyahoga River downstream at end of Cut 4 classified inactive.

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
	Jul 3, 1958	Deepening channel 25 feet through east basin of outer harbor; replacement of Erie-Lackawanna Railroad bridge over Cuyahoga River at mile 4.1 and widening of channel at that point, with elimination of reconstruction of east pier of bridge as previously authorized; and replacement of Baltimore and Ohio Railroad Bridge over Old River near its mouth and Willow Avenue Highway Bridge about 800 feet above mouth and widening channel at four locations along lower, 2,000 feet of river.[46]	H. Doc. 107, 85th Cong., 1st sess. River & Harbor Act of 1958, PL 85-500
	Jul 14, 1960	Depth of 29 feet in lake approach to main entrance; 28 feet in entrance channel to lakeward ends of piers at mouth of Cuyahoga River; 27 feet in river to a point just above its junction with Old River, and in Old River to upstream limit of present 23-foot project; 28 feet in west basin within existing project limits as modified to eliminate a triangular area at west end and to extend limits to a line parallel to and 75 feet from harbor line; and 28 feet in westerly 800 feet of east basin.[47]	H. Doc. 152, 86th Cong., 1st sess. River & Harbor Act of 1960, PL 86-645
	Oct 23, 1962	An area in east basin 27 feet deep extending 3,800 feet easterly of 28-foot area with project limits 380 feet from east breakwater and on landward side generally by a line 75 feet lakeward of and parallel to harbor line. A dock channel to Nicholson Cleveland easterly end of east basin, from 25-foot contour to a limit Terminal Co. pier, at 75 feet north of pierhead line, 400 feet wide at shoreward end and flared toward the lake.	H. Doc. 527, 87th Cong., 2nd sess. River & Harbor Act of 1962, PL 87-874
	Jul 14, 1960 as amended	Deepening upper end of Old River channel from 21 to 27 feet.	Sec. 107 of the River & Harbor Act of 1960, PL 86-645. Authorized by Chief of Engineers Dec 6, 1966
	Oct 22, 1976	Preparation of Phase I design memorandum for improvements consisting of removal of portions of entrance breakwater; construction of breakwater; construction of breakwater extension of east entrance; deepening approach and entrance channels; construction of diked disposal area; and installation of recreational fishing facilities on west breakwater.	Sec. 175 of the Water Resources Development Act of 1976, PL 94-587
	Aug 15, 1985	Deepening and widening east entrance and approach channels, deepening the east basin channel and disposing of dredge material in an existing disposal site, as described in the Report to the Board of Engineers for Rivers and Harbors Jan 22, 1985, including bulk heading and other necessary repairs at Pier 34 and approach channels and necessary protective structures for mooring basins for transient vessels in the area south of Pier 34 and including such modifications as may be recommended by the Chief of Engineers at a cost not to exceed $36,000,000.	PL 99-88
	Nov 17, 1986	Bulk heading and other necessary repairs at Pier 34 and approach channels and necessary protective structures for mooring basins for transient wells in the area south of Pier 34.	Sec. 202 of Water Resources Development Act of 1986, PL 99-662; and PL 100-202
	Dec 21, 1987	Appropriates and directs the Secretary of the Army to use the sum of	Doc. 653, 61st Cong., 2nd

[46] Replacement of bridges 19 and 32, widening Cuyahoga and Old River Channels, classified deferred.
[47] Deepening remainder of Cuyahoga River from Bridge 1 to and including Old River, classified deferred.

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
		$11,000,000 which is to remain available until expended to carry out the provisions for the harbor modifications contained in PL 99-662.	sess.
5		**CONNEAUT HARBOR, OH**	
	Jun 25, 1910	Extension of east breakwater, construction of new west breakwater, removal of portion of old west breakwater, and dredging of outer harbor to 19 feet.	H. Doc. 653, 61st Cong., 2d sess.
	Aug 8, 1917[48]	Realignment of west breakwater, removal of remainder of old west breakwater, and deepening outer harbor to 20 feet. Removal of Bessemer & Lake Erie R.R. Co. of inner 635 feet of west pier.	H. Doc. 983, 64th Cong., 1st sess.
	Aug 30, 1935	Removal of portion of west breakwater, extension of breakwaters to present project dimensions, construction of pierheads on outer ends of breakwaters, deepening outer harbor to present project dimensions; removal of portions of river pier, and elimination from project of a 255-foot shoreward extension of west breakwater.	H. Doc. 48, 73rd Cong., 1st sess.
	Oct 23, 1962	Deepening easterly part of outer harbor to 28 feet in soft material and 29 feet in hard material; deepening remaining triangular area of outer harbor to 22 feet in soft material and 23 feet in hard material; deepening inner harbor for 2,450 feet upstream of outer end of west pier to 27 feet in soft material and 28 feet in hard material; removal of east pier, extension of east breakwater to shore; and an access channel 8 feet deep in outer harbor to city dock. Previously authorized, but uncompleted portion of work authorized by 1917 and 1935 Acts combined with this act for accomplishment as a single improvement.	H. Doc. 415, 87th Cong., 2nd sess. River & Harbor Act of 1962, PL 87-874
	Oct 12, 1996	De-authorized the most southerly 300 feet of the 1,670 foot long shore arm, authorized by the R&H Act of 1910.	Water Resources Development Act of PL 104-303
6		**DUNKIRK HARBOR, NY**	
	Mar 2, 1827	Construction of west pier.,[49]	S. Ex. Doc. 42, 35th Cong., 1st sess. and Annual Report 1866 pt. IV, p. 155
	Mar 2, 1867	Breakwater and evacuation of entrance channel to 13 feet.	Annual Report, 1871, p. 214
	Jun 3, 1896	Deepening of entrance channel and harbor basin to a depth of suitable for vessels of 16-foot draft.	H. Doc. 63, 54th Cong., 1st sess.
	Jun 25, 1910	Removal of rock reef bordering the inner entrance channel.	H. Doc. 720, 61st Cong., 2nd sess.
	Jun 30, 1948	Deepening outer entrance channel to present project depths; removal of rock shoal on the west side of the entrance channel to a depth of 17 feet, and changed limits of the inner entrance channel and basin to present project dimensions.	H. Doc. 632, 80th Cong., 2nd sess. River & Harbor Act of 1948, PL 80-858

[48] Permit of Secretary of War, Aug 5, 1927.
[49] Modified 1828 and 1852.

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
	Dec 15, 1970 Jun 22, 1971	Construction of small-boat harbor.	H. Doc. 91-423, 91st Cong., 2nd sess. (House Public Works Committee), (Senate Public Works Committee), Sec. 201 of Flood Control Act of 1965;River & Harbor Act of 1970 PL 91-611
7		**ERIE HARBOR, PA**	
	May 26, 1824	Breakwaters and piers; dredging entrance channel and brushwood protection of beach of Presque Isle peninsula.	Annual Report, 1915, p. 1965
	Mar 3, 1899	Deepening channel and harbor basin 18 feet, repair and extension of piers; and plant growth and emergency protection of work on peninsula.	H.Doc.70, 55th Cong., 1st sess. and Annual Report, 1896, p. 3237[50]
	Jun 15, 1910	Deepening channel and part of harbor to 20 feet.	Rivers and Harbors Committee Doc. 26, 61st Cong., 2nd sess.
	Nov 28, 1920[51]	Re-conveyed Presque Isle peninsula to the state of Pennsylvania for park purposes.	
	Aug 30, 1935	Deepening, widening, and straightening entrance channel; dredging channel at easterly end of harbor basin, all to present project dimensions; elimination of north breakwater from project; and limitation of south breakwater to a length of 1,200 feet.	H. Doc. 52, 73rd Cong., 1st sess.
	Mar 2, 1945	Protection of the peninsula south of the waterworks settling basin.	River & Harbor Act of 1945, PL 79-14
	Sep 3, 1954	Widen 25-foot deep approach channel to ore dock.	H. Doc. 345, 83rd Cong., 2nd sess. River & Harbor Act of 1954, PL 83-780
	Jul 14, 1960	Depth of 29 feet in the entrance channel to a point opposite the inner end of the north pier, thence 28 feet in soft material and 29 feet in hard material in the remainder of the entrance channel, within the general limits of the 25-foot basin and inner channel opposite the ore dock except as modified to eliminate from the project a triangular area along the easterly side; and a depth of 28 feet over 300-foot westward extension of the 25-foot basin.[52]	H. Doc. 199, 86th Cong., 1st sess. River & Harbor Act of 1960, PL 86-645
	Oct 23, 1962	Depth of 27 feet in soft material and 28 feet in hard material in approach area to Duquesne Marine Terminal. Previously authorized but uncompleted portion of work authorized by 1935 Act is combined with this act as a single improvement.	H. Doc. 340, 87th Cong., 2nd sess. River & Harbor Act of 1962, PL 87-874

[50] Extension of north pier portion of this modification was deauthorized Nov 1981.
[51] Public Law 366.
[52] Deepening strips adjacent to north and south piers was deauthorized Aug 1982.

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
8		**FAIRPORT HARBOR, OH**	
	Mar 3, 1825[53]	Construction of piers.	Annual Report, 1889, pp. 2147-2153
	Jun 3, 1896 Mar 3, 1905	Breakwaters and dredging outer harbor to a depth of 18 feet.	H. Doc. 347, 54th Cong., 1st sess. and Annual Reports, 1896, p. 2956; 1903, p. 2084. 1905, p. 2349
	Mar 2, 1919	1,400-foot extension of east breakwater, present project dimension of east pier, and deepening to 19 feet.	H. Doc. 206, 63rd Cong., 1st sess.
	Jan 21, 1927 Jul 3, 1930	4,000-foot extension of east breakwater at limit of cost to the United States of $715,000.	H. Doc. 592, 69th Cong., 2nd sess. Rivers and Harbors Committee Doc 13, 70th Cong., 1st sess.
	Aug 30, 1935[54]	Deepening of outer harbor and entrance channel to present dimensions; extending the west breakwater to present project dimensions with pierhead at its outer end; removal of west pier, and construction of bulkhead on west side of river channel.	H. Doc. 472, 72nd Cong., 2nd sess.
	Aug 26, 1937	Dredging of 21 and 24-foot river channels and turning basin in Grand River to present project dimensions.	Rivers and Harbors Committee Doc. 79, 74th Cong., 2nd sess.
	Jul 24, 1946	Dredging of 8-foot river channel.	H. Doc. 706, 79th Cong., 2nd sess. River & Harbor Act of 1946, PL 79-525
9		**GREAT SODUS BAY HARBOR, NY**	
	Mar 2, 1829	Construction of piers and breakwater.[9]	Annual Report, 1876 pt. II p. 589
	Aug 2, 1882	Extension of piers to 15-foot contour in the lake.	Annual Report, 1881, p. 2442
	Mar 3, 1925	Deepening and widening of channel to 180 foot depth and 150 foot width.	H. Doc. 192, 68th Cong., 1st sess.
	Jul 3, 1930	Widening channel lakeward of piers to 250 feet.	Rivers and Harbors Committee Doc. 17, 70th Cong., 1st sess.
	Aug 30, 1935	Dredging channel to present project dimensions.	Rivers and Harbors Committee Doc. 23, 72nd Cong., 1st sess.
10		**HURON HARBOR, OH**	
	Mar 2, 1905	Extension of west pier, construction of east breakwater, removal of	H. Doc. 122, 58th Cong., 2nd

[53] Modified 1830, 1881, and 1890. New work completed under previous projects.
[54] Partly included in Public Works Administration Program, Nov 15, 1933.

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
		part of old east pier; deepening of channel to 19 feet; and dredging of sheltered area.	sess.
	Mar 2, 1919	Widening river to 200 feet; removal of remainder of old east pier, construction of new spur pier, enlargement of sheltered area; and closure of beach at shore end of west pier.	H. Doc. 5, 63rd Cong., 1st sess.
	Aug 30, 1935	Extension of west pierhead at its outer end; removal of outer end of east breakwater and construction pierhead on new outer end; widening and deepening channel to present project dimensions; enlargement of turning basin at head of channel; shore protection west of west pier, and elimination from project construction of spur pier and dredging sheltered area outside channel limits.	H. Doc. 478, 72nd Cong., 2nd sess.
	Oct 23, 1962	Depths of 29 feet in approach channel, 28 feet in entrance channel, 27 feet in river channel, 21 feet in turning basin and abandonment of lakeward end of existing approach channel.	H. Doc. 165, 87th Cong., 1st sess. River & Harbor Act of 1962, PL 87-874
11		**LITTLE SODUS BAY HARBOR, NY**	
	Aug 30, 1852	West entrance pier.	Annual Report, 1874, p. 256
	Jun 23, 1866	Extension of west pier and construction of west breakwater, and dredging channel to 12 feet deep, 400 feet wide.	Annual Report, 1874, p. 256
	Mar 3, 1871	East pier and east breakwater.	Annual Report, 1871, p. 234
	Mar 3, 1881	Extension of piers lakeward to 15.5-foot contour, and dredging channel to 15.5 feet.	Annual Report, 1881, pp. 2444 and 2446
	Jun 13, 1902	Extension of east pier 300 feet lakeward.	Annual Report, 1901, p. 3364
12		**LORAIN HARBOR, OH**	
	Mar 3, 1899	Breakwaters and extension of piers to present dimensions.	H. Doc. 131, 55th Cong., 2nd sess., and Annual Report 1898, p. 2718.
	Mar 2, 1907	Extend 18-foot channel from inner end of piers to Erie Avenue Bridge.	H. Doc. 560, 60th Cong., 1st sess.
	Jun 25, 1910	Extend breakwaters and dredge to depth of 19 feet in outer harbor.	H. Doc. 644, 61st Cong., 2nd sess.
	Aug 8, 1917	Extend breakwaters to present dimensions.	H. Doc. 980, 64th Cong., 1st sess.
	Aug 8, 1917	Deepen outer harbor and river channel of Erie Avenue Bridge to 20 feet.	H. Doc. 985, 64th Cong., 1st sess.
	Jul 3, 1930	Extend 20-foot channel to American Shipbuilding Co. Drydock.	H. Doc. 587, 69th Cong., 2nd sess.
	Aug 30, 1935	Widen 2 bends in river and enlarge turning basin opposite National Tube Co. dock.	H. Doc. 469, 72nd Cong., 2nd sess.

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
	Aug 30, 1935	Approach channel to municipal pier.	Senate Committee print, 73rd Cong., 2nd sess.
	Aug 30, 1935	Deepen outer harbor and river channel to American Shipbuilding Co. Drydock 2 present project dimensions and extension of river channel to upper end of National Tube Co. dock with turning basin opposite that dock. Maintenance dredging in Black River from American Shipbuilding Co. Drydock 2. Upper end of National Tube Co. dock was authorized Apr 7, 1934, by Public Works Administration.	Doc. 51, 74th Cong., 1st sess. Rivers and Harbors Committee
	Aug 30, 1935	Enlarging turning basin opposite National Tube Co. Dock to present project dimensions.	Specified in act.
	Mar 2, 1945	Turning basin in bend of Black River immediately upstream from Baltimore & Ohio RR coal dock.	H. Doc. 161, 77th Cong., 1st sess. River & Harbor Act of 1945, PL 79-14
	Jul 14, 1960	Replace Norfolk and Western Railway swing bridge with a vertical lift bridge; construct two detached arrowhead breakwaters lakeward of existing breakwaters; construct extension of east breakwater, to shore; remove 300 feet of lakeward end of west breakwater; remove outer 1,100 feet east pier; deepen lake approach to 29 feet, 800-foot wide outer harbor channel to 27 feet; widen river channel at bends; and construct a new turning basin 21 feet deep near upstream limit of existing project.[55]	H. Doc. 166, 86th Cong., 1st. sess. River and Harbor Act of 1960, PL 86-645.
	Jul 14, 1960 As amended	Construction of a 225 foot detached rubble mound breakwater and an 800 foot long rubble mound breakwater attached to the east breakwater shore arm I in the east basin of the outer harbor.	River and Harbor Act of 1960, PL 86-645. Authorized Chief of Engineers Mar 12, 1986
	Nov 17, 1986	Two bed cuts on Black River between the Norfolk and Western Railroad Bridge and 21st Street Bridge, excavated to existing channel depth of 27 feet. Widening Upper Turning Basin at existing authorized depth of 21 feet.	H. Doc. 124, 99th Cong., 1st sess. Water Resources Development Act of 1986, PL 99-662
30		**MT. MORRIS LAKE, GENESEE RIVER, NY**	
	Dec 22, 1944	Construction of a concrete gravity dam and reservoir.	H. Doc. 615, 78th Cong., 2nd sess. Flood Control Act of 1944, PL 78-534
	Jan 3, 1992	Construct a visitor center at Mt. Morris Dam to be known as the "William B. Hoyt II Visitor Center."	Sec. 103 of the Water Resources Development Act of 1992, PL 102-580
28		**NEW YORK STATE BARGE CANAL, NY**	
	Nov 17, 1986	Authorizes the Secretary to reimburse the state of New York for 50% of the cost of operating, maintaining and rehabilitating the New York State Barge Canal. The Federal contribution shall be limited in any fiscal year to $5,000,000, or 50% of the expenditures in that fiscal year, whichever is the lesser.	Sec. 1105 of the Water Resources Development Act of 1996, PL 99-662

[55] Deepening and widening remainder of Black River Channel at Cut 1 has been de-authorized.

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
	Oct 12, 1996	The Secretary may make capital improvements to the New York State Canal System for the purposes of rehabilitation, renovation, preservation, and maintenance of the New York State Canal System and its related facilities. The Federal share of the cost of capital improvements shall be 50%, up to a limit of $8,000,000.	Sec. 553, Water Resources Development Act of 1996, PL 104-303 as amended by Sec 341 of the Water Resources Development Act of 1996, PL 104-303
31		**OHIO ENVIRONMENTAL INFRASTRUCTURE, OH**	
	Aug 17, 1999	Multiple projects for providing Federal assistance for design and/or construction of water related environmental infrastructure, resource protection and development projects often by reimbursement to non-Federal sponsor.	Section 594 of Water Resources Development Act of 1999, PL 106-53
14		**OLCOTT HARBOR, NY**	
	Mar 2, 1867	Dredging a channel 11 feet deep between parallel piers.	Annual Report, 1866, pt. III, p. 15 pt. IV, p. 158
	Mar 4, 1913	Deepening channel to 12 feet and maintenance of west pier.	H. Doc. 780, 62nd Cong., 2d sess.
	Nov 17, 1986	Construct the project for Navigation, Report of the Chief of Engineers	Sec. 601 of Water Resources Development Act of 1986, PL 99-662
32		**ONONDAGA LAKE, NY**	
	Nov 16, 1990	The Assistant Secretary of the Army for Civil Works, the administrator of the Environmental Protection Agency, and the Governor of the State of New York, acting jointly, shall convene a management conference for the restoration and management of Onondaga Lake and develop a management plan. Repealed by Section 573 of Water Resources Development Act of 1999, PL 106-53.	Title IV of the Great Lakes Critical Programs Act of 1990, PL 101-596
	Nov 28, 1990	The Assistant Secretary of the Army for Civil Works, the administrator of the Environmental Protection Agency, and the Governor of the State of New York, acting jointly, shall convene a management conference for the restoration and management of Onondaga Lake and develop a management plan. This is a Reaffirmation of PL 101-596. Repealed by Section 573 of Water Resources Development Act of 1999, PL 106-53.	Sec. 411 of the Water Resources Development Act of 1990, PL 101-640
	Oct 31, 1992	The Secretary is authorized to design and construct projects to address water quality problems associated with storm water discharges from large storm events for the watershed areas of Onondaga County and Syracuse, New York, from which waters discharge into Onondaga Lake, New York. The design of projects shall ensure the development of effective Federal and non-Federal actions, which will contribute toward compliance with the Federal Water Pollution Control Act. Total project cost shall be shared at 75% Federal and 25% non-Federal. Operation and maintenance cost shall be 100% non-Federal. Project physically complete in FY03, financially complete in FY04.	Water Resources Development Act of 1992, PL 102-580

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
	Aug 17, 1999	Secretary of the Army to lead Partnership for the development and implementation of Onondaga Lake improvement projects. Repeals Title IV of the Great Lakes Critical Programs Act of 1990 and section 411 of the Water Resources Development Act of 1990.	Section 573 of Water Resources Development Act of 1999, PL 106-53
15		**OSWEGO HARBOR, NY**	
	Jul 11, 1870	Construction of outer west breakwater.	Annual Report, 1870, pp. 54, 220 and 221
	Mar 2, 1907	Repair of outer west breakwater under Plan (A).	H. Doc. 55, 58th Cong., 2nd sess.
	Jul 3, 1930	Construction of arrowhead breakwaters; deepening outer harbor between arrowhead breakwaters; west outer harbor east of Erie-Lackawanna coal dock, and Oswego River north of Seneca St., to 21 feet; and deepening west outer harbor, west of Erie-Lackawanna coal dock, to 16 feet.[56]	Rivers and Harbors Committee Doc. 24, 71st Cong., 2nd sess.
	Aug 30, 1935	Widening channel to harbor line in Oswego River north of Seneca Street.	Rivers and Harbors Committee Doc. 7, 74th Cong., 1st sess.
	Oct 17, 1940	Closing gap in west breakwater; deepening west outer harbor, west of east line of Erie-Lackawanna coal dock, to project depth.[57]	H. Doc. 96, 76th Cong., 1st sess.
	Jun 30, 1948	Construction of east outer breakwater; removal of the inner end of east arrowhead breakwater; and dredging channel and basin in east outer harbor.[58]	H. Doc. 722, 80th Cong., 2nd sess. River & Harbor Act of 1948, PL 80-858
	Sep 3, 1954	Construction of detached breakwater at harbor entrance and removal of shoals in approach to harbor entrance to 25 feet deep.	H. Doc. 487, 81st Cong., 2nd sess. River & Harbor Act of 1948, PL 83-780
	Oct 23, 1962	Depth of 27 feet in lake approach channel; 25 feet deep in outer harbor channel 800 feet wide from entrance gap to a turning basin 25 feet deep about 750 by 1,100 feet, at mouth of Oswego River; depth of 24 feet in earth and 25 feet in hard material in river channel from turning basin to upstream end of Port of Oswego Authority's east side terminal, a distance of about 1,600 feet; relocation of Federal project limits in Oswego River upstream of 24-foot channel to Federal project limit at north line of West Seneca St., on lines parallel to 50 feet channel ward of established harbor lines; elimination of maintenance of inner west breakwater and elimination of modification authorized by River and Harbor Act of 1948.	H. Doc. 471, 87th Cong., 2nd sess. River & Harbor Act of 1962, PL 87-874
	Oct 12, 1996	De-authorized the portion of the Federal Channel authorized by the R&H Act of 1910 as amended by the R&H Act of 1935, from the southernmost alignment of the Route 68 Bridge upstream to the northernmost alignment of the Lake St. Bridge.	Water Resources Development Act of 1996, PL 104-303
16		**OTTAWA RIVER HARBOR, MI, OH**	
	Dec 17, 1970	6-foot deep, 16,500 foot long channel in Ottawa River and 8-foot deep, 15,000-foot channel in Maumee Bay.	H. Doc. 396, 91st Cong., 2d sess. House and Senate

[56] Deepening a 200-foot strip along harbor line east of mouth of Oswego River is de-authorized.
[57] Deepening to 22 feet a 150-foot wide strip in west outer harbor de-authorized in May 1981.
[58] Modification eliminated by River and Harbor Act of Oct 26, 1962.

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
			Committees on Public Works Resolutions
	Nov. 28, 1990	Continuation of authorization	Sec. 107 of Water Resources Development Act of 1990, PL 101-640.
17		**PORT CLINTON HARBOR, OH**	
	Jun 10, 1872	Parallel stone and pile jetties at mouth of river, east jetty 2,200 feet long and west jetty 1,980 feet long extending to 10-foot contour in lake channel 10 feet deep and 100 feet wide for outer 4,200 foot length and 200 feet wide for inner 800 foot length to Highway Bridge.	Annual Report, 1875, p. 295
		PORT ONTARIO, NY	
	Mar 2, 1945	Construct harbor of refuge.	H. Doc. 446, 78th Cong., 2d sess. River & Harbor Act of 1945, PL 79-14
	Nov 17, 1986	Maintain harbor of refuge.	Sec. 615 of Water Resources Development Act of 1986, PL 99-662
29		**PRESQUE ISLE PENINSULA, ERIE, PA**	
	Sep 3, 1954	Construction of groin system, seawall, bulkhead, placement of beach material at waterworks reservation and along remainder of peninsula; removal of portions of existing structures.	H. Doc. 231, 81st Cong., 1st sess. Flood Control Act of 1954, PL 83-780
	Jul 14, 1960	Periodic nourishment of shores for a 10-year period.	H. Doc. 397, 86th Cong., 2nd sess. Flood Control Act of 1960, PL 86-645
	Mar 7, 1974	Periodic nourishment of shore for a 5-year period.	H. Doc. 796, 93rd Cong., 2nd sess. Water Resources Development Act of 1974, PL 93-251
	Oct 22, 1976	Preparation of Phase I design memorandum for improvements consisting of construction of five sections of spaced offshore breakwaters and replenishment of beach area with sand fill.	Sec. 101 of Water Resources Development Act of 1976, PL 94-587
	Nov 17, 1986	Construct offshore breakwaters and restore beaches.	Sec. 501 of Water Resources Development Act of 1986, PL 99-662
18		**ROCHESTER, HARBOR, NY**	
	Mar 2, 1829	Construction of piers.	Annual Report, 1874, p. 247
	Aug 2, 1882	Extension of piers to 15 foot contour in the lake. Concrete superstructure on piers.	Annual Report, 1881, p. 2437; Annual Report, 1905, p. 2383
	Jun 25, 1910	Deepening channel to 20 feet.	H. Doc. 342, 61st Cong., 2nd sess.

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
	Aug 30, 1935	Dredging of the entrance channel and turning basin, and the elimination of the inner ends of the east and west piers, all to present project dimensions.	H.Doc. 484, 72nd Cong., 2nd sess.
	Mar 2, 1945	Maintenance of existing channel upstream of the Penn Central Co. Bridge.	H. Doc. 139, 76th Cong., 1st sess. River & Harbor Act of 1945, PL 79-14
	Jul 14, 1960	Depth of 24 feet in the channel from the lake to the west pier, depth of 23 feet between the piers and in the lower river to the Penn Central Co. Bridge, including the existing turning basin; depth of 21 feet from the bridge to the upstream project limit, with suitable widening at the bends; and turning basin 21 feet deep and 650 feet wide adjacent to the improved channel, with two mooring dolphins.	H. Doc. 409, 86th Cong., 2nd sess. River & Harbor Act of 1960, PL 86-645
	Jul 14, 1960 Nov 28, 1990	A navigation project for the mouth of the Genesee River in Rochester, New York, by development and implementation of wave surge control measures.	Sec. 107 River & Harbor Act of 1960, PL 86-645; Water Resources Development Act of 1990, PL 101-640
19		**ROCKY RIVER HARBOR, OH**	
	Jun 10, 1872	East pier and dredging of channel.	Annual Report 1871, p. 211
	Aug 26, 1937	Extension of east pier and deepening channel to present project dimensions.	H. Doc. 70, 75th Cong., 1st sess.
	Oct 27, 1965	Realign and extend channel and construct an anchorage basin.	H. Doc. 352, 88th Cong., 2nd sess. River & Harbor Act of 1965, PL 89-298
		SACKETS HARBOR, NY	
	Aug 2 1882	Deepening harbor area to 12 feet.	Sen. Ex. Doc. 29, 47th Cong., 1st sess.
	Aug 13, 1888	Construct timber crib mooring place, and brush and stone jetty.	Annual Report, 1888 pt. III, p. 2086
		Build 2 stone groins (OCE-June 8, 1896)	Annual Report, 1896, pt. III, p. 3160
	Mar 2, 1945	Deepening to project dimensions.	H. Doc. 732, 79th Cong., 2d sess. River & Harbor Act of 1945, PL 79-14
20		**SANDUSKY HARBOR, OH**	
	Mar 3, 1899	Construction of channel protection works.	H. Doc. 362, 55th Cong., 2nd sess. and Annual Report 1898, p. 2708
	Jun 13, 1902	Widening of Straight and Dock channels and deepening to 19 feet.	H. Doc. 120, 56th Cong., 2nd sess.
	Mar 2, 1919	Extension of east jetty to total length of 6,000 feet, with pierhead on outer end; deepening of the outer, straight, and easterly portion of dock channel to 20 feet.	H. Doc. 982, 64th Cong., 1st sess.

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
	Jan 21, 1927	Deepening of dock channel to 22 feet.	H. Doc. 584, 69th Cong., 2nd sess.
	Aug 30, 1935	Enlargement of turning basin and construction rock dike.	Rivers and Harbors Committee Doc. 2, 73rd Cong., 1st sess.
	Mar 2, 1945	Maintenance of bay channel to 22 feet; and elimination from project of portion of turning basin and rock dike.	H. Doc. 328, 76th Cong., 1st sess. River & Harbor Act of 1945, PL 79-14
	Jul 14, 1960	Extending Moseley channel and deepening that channel and the outer end of Straight channel to 26 feet, from deep water in the lake to the vicinity of Cedar Point dock; widening the bend at the junction of the Moseley and Straight channels to 25 feet from the vicinity of Cedar Point dock to Junction Bay channel; deepening the Bay channel from the junction with the Straight channel to the outer end of the Pennsylvania Coal dock no. 3 to 24 feet, thence from outer end of the coal dock to the turning basin to 24 feet in removal of approximately 300 feet of the rock dike, and deepening to 24 feet in soft material and 25 feet in hard.	H. Doc. 144, 85th Cong., 1st Sess. River & Harbor Act of 1960, PL 86-645
21		**STURGEON POINT, EVANS, NY**	
	Jul 14, 1960	Rehabilitate existing breakwater, construct rubble mound, west breakwater extension, construct rubble mound east breakwater, a shore revetment and dredging.	Sec. 107 River & Harbor Act of 1960, PL 86-645. Authorized by Chief of Engineers Oct 21, 1987.
22		**TOLEDO HARBOR, OH**	
	Mar 3, 1899	A channel 400 feet wide and 21 feet deep from 25-foot contour in Maumee Bay to Fassett Street Bridge, 200 feet wide and 19 feet deep above that point and a 500-foot turning basin at upper end. A stone re-vetted earth dike in Maumee Bay channel.	H. Doc. 198, 55th Cong., 2nd sess. and Annual Report 1898, p. 2693
	Jun 25, 1910	Act 1899 modified to insure a navigable channel to 21 feet from Fassett Street Bridge to lake.	H. Doc. 865, 60th Cong., 1st sess.
	Aug 30, 1935	Channel 25 feet deep and 500 feet wide from 25-foot contour to mouth of Maumee River (300 feet wide on each side of center dike in bay channel), thence 400 feet wide to Fassett Street Bridge, 200 feet wide above that point and a turning basin at upper end 18 feet deep.	River and Harbors Committee Doc. 21, 72nd Cong., 1st sess.
	May 17, 1950	Widening at bend of mouth of River opposite Chesapeake and Ohio Railway Dock.	H. Doc. 189, 81st Cong., 1st sess. River & Harbor Act of 1950, PL 81-516
	Sep 3, 1954	Removal of center dike in Maumee Bay channel.	H. Doc. 620, 81st Cong., 2nd sess. River & Harbor Act of 1954, PL 83-780
	Jul 3, 1958	Enlarge widening at bend opposite Chesapeake and Ohio dock and turning basin opposite American Shipbuilding Co. dock.	H. Doc. 436, 84th Cong., 2nd sess. River & Harbor Act of 1958, PL 85-500

Table 20-B AUTHORIZING LEGISLATION

See Section	Acts	Work Authorized	Documents
	Jul 14, 1960	Deepening Bay channel including widening to 28 feet, deepen river channels to NY Central Railroad bridge to 27 feet and construct new turning basin below Anthony Wayne Bridge.	H. Doc. 153, 86th Cong., 1st sess. River & Harbor Act of 1960, PL 86-645
23		**TOUSSAINT RIVER, CARROLL TOWNSHIP, OH**	
	Jul 14, 1960	Dredged channel from the mouth of the Toussaint River, 2,100 feet into Lake Erie, 4 feet below LWD, 150 feet wide in Lake Erie and tapered to 100 feet at the river mouth.	Sec. 107 of the River & Harbor Act of 1960, PL 86-645. Authorized by Chief of Engineers Sep 29, 1990.
24		**VERMILION HARBOR, OH**	
	Jul 4, 1836	Parallel piers and dredging channel to 8 feet deep.	Annual Report, 1880
	Mar 3, 1875	Deepening of channel to 12 feet.	Annual Report, 1874, p. 219
	Mar 3, 1905	Reconstruction of piers.	H. Doc. 252, 58th Cong., 2nd sess.
	Jul 3, 1958	New entrance formed by two overlapping arrowhead breakwaters and extension of existing river channel upstream to Liberty St. Bridge.	H. Doc. 231, 85th Cong., 1st sess. River & Harbor Act of 1958, PL 85-500.
25		**WEST HARBOR, OH**	
	Oct 27, 1965	Construction of arrowhead breakwaters, entrance channel and access channel.	H. Doc. 245, 88th Cong., 2nd sess. River & Harbor Act of 1965, PL 89-298.
26		**WILSON HARBOR, NY**	
	Mar 2, 1945	Entrance channel 80 feet wide and 8 feet deep; and restore east and west piers.	H. Doc. 679, 76th Cong., 2nd sess. River & Harbor Act of 1945, PL 79-14.
	Aug 13, 1968	Extend existing channel 300 feet; and construct new channel 3,800 feet long through Tuscarora Bay.	H. Doc. 112, 90th Cong., 1st sess.
		Rehabilitate existing breakwater, construct rubble mound west breakwater extension, construct rubble mound east Breakwater, a shore revetment and dredging.	Sec. 107 of River & Harbor Act of 1960, PL 86-645. Authorized by Chief of Engineers Oct 21, 1987.

TABLE 20-C OTHER AUTHORIZED NAVIGATION PROJECTS

Project	Status	For Last Full Report See annual Report For	Construction	Cost to Sep 30, 2004 Operations & Maintenance
Barcelona Harbor, NY	Completed	2001	$1,185,853	$2,465,775
Big (Cunningham) Creek, OH	Completed	-[1]	19,763 [2]	-
Black River Harbor, NY	-	-[1]	42,401	-
Buffalo Small Boat Harbor, NY	Completed	1994	602,016 [3]	-
Cattaraugus Harbor, NY	Completed	2000	4,804,060 [4]	378,578
Cattaraugus Creek, NY	-	-[2]	57,410	-
Cooley Canal, OH	Completed	-	2,311,289	264,687
Geneva-on-the Lake, OH	Completed	1990	3,145,176 [5]	10,168
Grasse River Massena, NY	-	1891	9,000 [2]	-
Kelleys Island, OH	Active	1974[5]	129,874	-
Little River at Cayuga Island, NY	Completed	1969	46,804 [6]	6,580
Morristown Harbor, NY	Completed	1949	6,221	13,218
Niagara Remedial Works, NY[7]	Completed	1966	6,069,395	510,819
Niagara River, NY[8]	Completed	1964	559,457 [9]	311,840
Ogdensburg Harbor, NY	Completed	1987	1,720,466 [10]	1,436,688 [11]
Pultneyville Harbor, NY[13]	-	1934	68,219	20,087
Rochester Harbor Wave Surge, NY	Completed	2001	1,800,769	1,713,189
Sandusky River, OH[14]	-	1894	58,000 [2]	557

[1] Only information available is in index to reports of Chief of Engineers.
[2] Amount includes maintenance; not separable.
[3] Excludes $593,216 contributed funds.
[4] Excludes $2,566,529 contributed funds.
[6] Annual Report for Detroit District.
[7] Includes local interests contribution of $25,742.
[8] Cost of operation and maintenance of this project will be settled directly by concerned power agencies. No further appropriations will be made to this project.
[9] Construction of compensating works as authorized by 1930 R&H Act was authorized by Congress in Aug 1977.
[10] Includes local interest contribution of $27,563.
[11] Includes $271,380 for previous projects. Excludes $57,000 contributed funds.
[12] Includes $130,512 for previous projects.
[13] Abandonment recommended in H. Doc. 275, 64th Cong., 1st sess.
[14] Abandonment recommended in Ex. Doc. 16, 35th Cong., 1st sess.

Table 20-D OTHER AUTHORIZED SHORE PROTECTION PROJECTS

Project	Status	For Last Full Report See Annual Report For	Construction	Cost to Sep 30, 2004 Operations & Maintenance
Hamlin Beach State Park, NY	Completed	1976	$1,769,600	-
Lakeview Park, Lorain, OH	Completed	1987	1,741,125 [1]	-
Maumee Bay State Park, OH	Completed	1995	2,780,975 [2]	-
Selkirk Shore State Park, Lake Ontario, NY[3]	Completed	1963	58,978	$307

[1] Federal participation was limited to one-third of first cost when project was authorized by 1954 River and Harbor Act. Federal participation was changed from one-third to 70 percent of remaining work under Public Law 87-874.
[2] Does not include $739,700 contributed funds.
[3] Does not include $199,845 contributed funds.

Table 20-E OTHER AUTHORIZED FLOOD CONTROL PROJECTS

Project	Status	For Last Full Report See Annual Report For	Construction	Cost To Sep 30, 2004 Operations & Maintenance
Auburn, NY, Owasco Outlet	Completed	1962	$ 371,985 [1]	-
Batavia and Vicinity, Tonawanda Creek, NY	Completed	1957	335,385	-
Camp Perry, OH	Completed	1967[2]	275,000 [3]	
Cayuga Creek, Cheektowaga, NY[4]	Completed	1984	1,404,500	-
Cuyahoga River Basin, OH	Active	1985	1,117,000	-
Dansville and Vicinity, Canaserga Creek, NY	Active	1985	490,300	-
Fremont, OH, Sandusky River	Completed	1976	8,589,824 [5]	-
Ithaca, Cayuga Inlet, NY	Completed	1978	3,929,300 [6]	-
Lackawanna, NY, Smokes Creek	Completed	1971	3,542,068 [7]	-
Lancaster, Cayuga Creek, NY	Completed	1954	79,730	-
Marsh Creek, Geneva, NY	Completed	-	226,429	-
Montour Falls, Oswego River Basin, NY	Completed	1954	1,681,785	-
Onondaga Creek, Nedrow, NY	Completed	1964	330,231	-
Ottawa, OH	Deferred	1989	374,000	-
Owasco Inlet and Outlet, Montiville And Dry Creek, State Ditch and Crane Brook, NY[8]	Deferred	1950	281,559	-
Point Place, Toledo, OH	Completed	1990	9,885,733 [9]	-
Reno Beach-Howard Farms, OH	Completed	1997	5,483,192 [10]	-
Scajaquada Creek, NY	Completed	1985	4,944,852	-
Syracuse, Oswego River Basin, NY	Completed	1954	3,349,248	-
Warsaw, NY Oatka Creek	Completed	1969	558,317 [11]	
Wellsville, NY, Genesee River	Completed	1978	3,145,303 [12]	-

[1] Excludes cost of $188,732 under Public Law 88-99, Flood Control and Coastal Emergencies Appropriation, incurred for project rehabilitation as a result of damages due to storm Agnes, Jun 1972.
[2] Annual Report for Detroit District.
[3] Includes local interest contribution of $125,000.
[4] Project authorized by Chief of Engineers.
[5] Includes local interest contribution of $6,944. Excludes cost of $383,786 under Public Law 84-99. Flood Control and Coastal Emergencies Appropriation, for emergency restoration of levees damaged during 1973.
[6] Includes local interest contribution of $99,999. Excludes cost of $104,005 under Public Law 84-99. Flood Control and Coastal Emergencies Appropriation, incurred for project rehabilitation as a result of damages due to storm Agnes, Jun 1972.
[7] Includes local interest contribution of $50,000.
[8] In-active portion of work for State Ditch has been done by local interest and work on Crane Brooks has been deferred at the request of local interests.
[9] Excludes $1,871,631 in contributed funds.
[10] Excludes $475,994 in contributed funds.
[11] Excludes cost of $26, 807 under Public Law 84-99, Flood Control and Coastal Emergencies Appropriation, incurred for project rehabilitation as a result of damages due to storm Agnes, Jun 1972.
[12] Includes local interest contribution of $50,000. Excludes cost of $374,042 under Public Law 84-99, Flood Control and Coastal Emergency Appropriation, incurred for project rehabilitation as a result of damages due to storms.

TABLE 20-G DEAUTHORIZED PROJECTS

Project	For Last Full Report See Annual Report For	Date Deauthorized	Federal Funds Expended	Contributed Funds Expended
Black Rock Channel and Tonawanda Harbor, NY 1935 R&H Act[1]	1962	Aug-77	-	-
Black Rock Channel and Tonawanda Harbor, NY 1954 R&H Act	1962	May-81	-	
Buffalo Harbor Drift Removal, NY	-	Dec-92	-	-
Buffalo Ship Canal, Buffalo, NY	-	Dec-92	-	-
Caledonia, Genesee River, NY 1950 FC Act	1950	Jan-90	-	-
Cape Vincent Harbor, NY 1945 R&H Act	1962	Nov-86	-	
Chittenango Creek and Tributaries, NY 1944 FC Act	1948	Jan-90	12,464	-
Conneaut Harbor, OH R&H Act, 1910 (southerly 300 feet of shorearm)	1997	Oct-96	-	-
Conneaut Harbor, OH 1966 R&H Act, 1990 WRDA	1995	Nov-95	-	-
Crane Creek State Park, OH 1962 R&H Act	1968[2]	Nov-79	-	-
Cuyahoga River Basin 1970 FC Act	-	Apr-99	-	-
Dansville & Vicinity 1948 FC Act	-	Apr 98	-	
Dunkirk Harbor, NY WRDA 1986	-	Dec-92	-	-
Eastlake, Chagrin River, OH 1965 FC Act	1976	Jan-90	506,344	-
Edgewater Park, OH 1954 R&H Act	-	Jan-90	-	-
Elk Creek Harbor, PA 1966 R&H Act	1978	Dec-92	101,500	-
Erie Harbor, PA 1899 R&H Act	1963	Nov-81	-	-
Erie Harbor, PA 1945 R&H Act	1963	Aug-77	-	-
Erie Harbor, PA 1960 R&H Act	1963	Aug-82	-	-
Fairhaven Beach State Park, NY 1958 R&H Act	-	Jan-90	-	-
Fairport Harbor, OH 1960 R&H Act	1995	Nov-95	67,000	-
Fairport Harbor, OH Sec. 201 1965 FC Act	1995	Nov-95	-	-
Fort Niagara State Park, NY Sec. 201 1965 FC Act	-	Jan-90	-	-
Grandview Bay Harbor, NY 1945 R&H Act	1948	Aug-77	1,524	-
Great Sodus Bay Harbor, NY 1941 R&H Act	1963	Aug-77	-	-
Hamlin Beach Harbor, NY 1968 R&H Act	1973	Jan-90	72,052	-
Hammondsport, Oswego River Basin, NY 1941 FC Act	1951	Nov-83	29,000	-
Huron Harbor, NY 1962 R&H Act[3]	1963	Jan-90	-	-
Ithaca, NY – Cascadilla Creek 1941 FC Act	1950	Aug-77	8,159	-
Ithaca, NY – Fall Creek 1941 FC Act	1950	Aug-77	12,300	
Lorain Harbor, OH – Sec. 107, R&H Act 1960 (Portion of small boat basin)	1998	Oct-96	-	-
Lorain Harbor, OH 1960 R&H Act, modified by 1965 R&H Act[4]	1966	Jan-90	-	
Maumee River, above Toledo, OH 1872 Act	1971	Nov-77	12,000	-
Ottawa River, OH (Blanchard)	-	Apr –02		

[1] Extension of guide pier only: other improvements completed.
[2] Annual Report For Detroit District.
[3] Breakwater.
[4] Uncompleted portion.

TABLE 20-G DEAUTHORIZED PROJECTS

Project	For Last Full Report See Annual Report For	Date Deauthorized	Federal Funds Expended	Contributed Funds Expended
Morristown Harbor, NY 1927 R&H Act (Portion north of northern boundary of Morris St. extended.	1949	Oct-96	-	-
Niagara River, Compensating Works, 1930 R&H Act	1964	Aug-77	-	-
Ogdensburg Harbor, NY 1935 R&H Act	1986	Nov-86	-	
Ogdensburg Harbor, NY R&H Acts 1910, 1935 (Portion from southernmost alignment of Rte 68 Bridge upstream to northern alignment of Lake St. Bridge)	1987	Oct-96	-	-
Oswego Harbor, NY 1930 R&H Act	1963	Jan-90	-	-
Oswego Harbor, NY 1940 R&H Act[5]	1963	May-81	-	
Port Bay, NY 1950 R&H Act	-	Jan-90	-	
Red Creek, NY 1966 FC Act	1975	Nov-86	361,241	
Sackets Harbor, NY 1945 R&H Act	1948	May-81	19,010	
Selkirk Shores State Park, OH 1954 R&H Act	1963	Jan-90	-	-
Sheffield Lake Community Park, Oh 1962 R&H Act	-	Aug-77	-	-
Watkins Glenn, NY 1941 FC Act	1958	Aug-77	43,182	-
White City Park, OH 1954 R&H Act	-	Jan-90	-	-

[5] Deepening of west outer harbor, other improvements completed.

TABLE 20 – H FLOOD CONTROL AND COASTAL EMERGENCIES

ACTIVITY	FEDERAL COST	CONTRIBUTED COST
Disaster Preparedness	$268,496	
Emergency Operations	10,601	
Inspection of non-Federal Flood Control Works	1,084	
Advance Measures	1,694	
Total FCCE	281,875	

TABLE 20-I GENERAL INVESTIGATIONS

SURVEYS

	GENERAL INVESTIGATIONS	OPERATIONS & MAINTENANCE	NON-FEDERAL
FLOOD DAMAGE PREVENTION STUDIES			
Gulley Brook	33,709		
Tonawanda Creek Watershed, NY	24,241		
Western Lake Erie Basin, OH	114,181		
SHORELINE PROTECTION			
Geneva State Park – Ashtabula County, OH	308		(308)
SPECIAL STUDIES			
Arcola Creek	23,515		
Buffalo River Environmental Dredging, NY	83,805		
Gateway Point, North Tonawanda, NY	43,011		
Onondaga Lake NY PL 101-596	617,089		
Woodtick Peninsula and Toledo Harbor, OH	46,004		
MISCELLANEOUS ACTIVITIES			
N. American Waterfowl Mgmt Plan	1,488		
Natural Estuary Studies	3,527		
Interagency Water Resource	8,980		
Review of FERC Licenses	3,001		
Special Investigations	23,364		
COORDINATION WITH OTHER GOVERNMENT AGENCIES AND NON-FEDERAL INTERESTS			
COOP with Other Water Agencies	1,139		
Great Lakes Remedial Action	301,371		
Great Lakes Remedial Action Program (Sec. 104)	26,048		
PAS Negotiation Funds	17,701		
PAS – NY – Amherst Soil Study	158,681		102,345
PAS – NY – Barge Canal Embank Analysis	921		953
PAS – NY – Eighteen Mile Creek, Niagara County	48,796		
PAS – NY – Oak Orchard Creek	37,411		30,132
PAS - NY- Union Ship Canal Structural Analysis	3,971		3,865
COLLECTION AND STUDY OF BASIC DATA			
INTERNATIONAL WATER STUDIES			
International Water Studies	136,842	640,832	
FLOOD PLAIN MANAGEMENT SERVICES			
Flood Plain Management Services	37,119		

TABLE 20-I GENERAL INVESTIGATIONS (Cont'd)

	GENERAL INVESTIGATIONS	OPERATIONS & MAINTENANCE	NON-FEDERAL
Quick Responses	3,907		
SS – Oatka Creek, Town & Village of Warsaw, NY	34,547		
SS – Smokes Creek, Lackawanna, NY	118		
SS – Village of Edon, OH	395		
Technical Services	$4,877		
PRE-CONSTRUCTION, ENGINEERING AND DESIGN			
ENVIRONMENTAL RESTORATION PROJECTS			
Ashtabula River Environmental Dredging	302,980		130,118

TABLE 20-J WORK UNDER SPECIAL AUTHORITIES

Navigation Work Pursuant to Sec. 107, PL 86-645, as amended

Study Identification	Federal Cost	Non-Federal Cost
Buffalo Inner Harbor, NY	$ 179,031	
Lake Erie – Cooley Canal, OH	(41,462)	41,462
Lake Erie Sturgeon Point, Evans, NY	25,179	
Mentor-on-the-Lake, OH	2,860	
Olcott Harbor, Newfane, NY	23,193	
Section 107 Coordination Account	9,926	
Syracuse Inner Harbor and Onondaga Creek, NY	14,011	
Walnut Creek Access Area – Erie Co., PA	50,350	

Navigation Work Pursuant to Sec. 111, PL 86-645 as amended of the 1968 River & Harbor Act, as amended

Study Identification	Federal Cost	Non-Federal Cost
Lorain Harbor, OH	531	

Shore Protection Activities Pursuant to Sec. 103 of the 1962 River and Harbor Act, as amended

Study Identification	Federal Cost	Non-Federal Cost
Krull Park, NY	22,174	
Lake Erie, Athol Springs, Hamburg, NY	2,169	26
Lake Erie, Old Lakeshore Road, Hamburg, NY	38,896	
Lake Erie, Painesville, OH	11,046	
Lake Ontario, NYS Rt. 425, Wilson, NY	29	
LaSalle Park, Buffalo NY	3,169	
Sandusky Beach, Sandusky, OH	6,325	
Section 103 Coordination Account	4,908	
Sylvan Beach Breakwater, Oneida Lake, NY	10,829	5,182

Projects Specifically Authorized by Congress

Study Identification	Federal Cost	Non-Federal Cost
West Harbor, OH	50	

Flood Control Projects Pursuant to Sec. 205 of the 1954 Flood Control Act, as amended

Study Identification	Federal Cost	Non-Federal Cost
Baldwin Creek, North Royalton, OH	32,351	
Butternut Creek, Onondaga County, NY	20,979	
Cazenovia Creek, NY	52,534	
Coordination Account Funds	7,950	
Great Gulley Creek, OH	23,050	

TABLE 20-J WORK UNDER SPECIAL AUTHORITIES (Cont'd)

Flood Control Work Pursuant to Sec. 14 of the 1946 Flood Control Act, as amended

Study Identification	Federal Cost	Non-Federal Cost
Cuyahoga River, Bath Road, Akron, OH	9,793	
Hospice of Western Reserve, OH	428,569	742,093
Lake Ontario, Albion Water, NY	9,684	
Lake Ontario, Sodus Point – Wayne Co., NY	1,359	
Linwood Park, Vermilion, OH		29
Minnick Road, Tonawanda Creek, NY	36,178	
Niagara River, Tonawanda, NY		18,250
Ottawa River, Shoreland Drive, Toledo, OH	139,089	
Ransom Creek, Hopkins Rd., Amherst, NY	104,626	
Section 14 Coordination Account	20,439	
Sewerline, Canadaway Creek, Fredonia, NY	12,042	(1,251)
Tonawanda Creek, Niagara Co, NY	399,634	174,005

Project Modification to Improve Environment Pursuant to Sec. 1135, PL 99-662

Study Identification	Federal Cost	Non-Federal Cost
Buffalo River Habitat, NY	4,993	
CDF #3, Oregon, OH	321	
Conneaut Creek, Sea Lamprey, OH	15,805	
Conneaut Harbor, East State Park, OH	15,065	
Coordination Account Funds	9,517	
East Harbor State Park, OH	42,018	
Gull Point, Presque Isle, Erie, PA	401	
Preliminary Restoration Plan	58	
Rochester Navigation Channel, NY	22,178	
Sheldon's Marsh, Lake Erie, OH	4,916	
Smokes Creek, Erie County, NY	2,169	
Times Beach Environmental Improvement, NY	34,439	

TABLE 20-J WORK UNDER SPECIAL AUTHORITIES (Cont'd)

Aquatic Ecosystem Restoration Pursuant to Sec. 206, PL 104-303

Study Identification	Federal Cost	Non-Federal Cost
Arcola Creek, Madison, OH	3,858	
Conewango Valley, NY	$50,116	
Cuyahoga River Stream Project, Akron, OH	5,045	
Jamestown Reservoir, NY	2,095	
Johnson Pond, Lyndonville, NY	315	
Lake Neatahwanta, Fulton, NY	3,835	
Little Cuyahoga River, Akron, OH	5,421	
Middle Cuyahoga River, Monroe Falls, Cuyahoga, OH	77	
Middle Cuyahoga River, Portage County, OH	77	
Sec 206 Coordination Account Funds	7,711	
South Park Lake, Buffalo, NY	65,044	
Springville Dam, NY	2,044	
Syracuse Lakefront, Onondaga Lake, NY	3,545	

Shoreline Erosion Control Development and Demo Pursuant to PL 104-303

Study Identification	Federal Cost	Non-Federal Cost
Shoreline Erosion Control Development and Demo Program	209,193	

Beneficial Use of Dredged Materials Section 204 Pursuant to PL 102-560

Study Identification	Federal Cost	Non-Federal Cost
Wynn Road, Oregon, OH	10,568	

TABLE 20-K INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS

NAME OF PROJECT	DATE INSPECTED
NEW YORK	
Bird Island Pier, Rehabilitation Project, Buffalo, NY	Aug 2004
Blasdell Creek, Advance Measures Program, Local Flood Protection Project, Hamburg, NY	June 2004
Canadaway Creek, Streambank Erosion Project, Dunkirk, NY	Sept 2004
Canadea Sewage Treatment Plant, Beach Protection Project, Houghton, NY	Apr 2004
Catherine Creek, Local Flood Protection Project, Montour Falls, NY	Apr 2004
Cattaraugus Creek, Flood Protection Project, Arcade, NY	Apr 2004
Cattaraugus Creek Harbor, Flood Protection Project, Irving, NY	Jul 2004
Cayuga Creek, Flood Control Project, Cheektowaga, NY	May 2004
Cayuga Creek, Flood Control Project, Lancaster, NY	May 2004
Cayuga Inlet, Flood Protection Project, Ithaca, NY	Apr 2004
Cazenovia Creek, Flood Protection Project, West Seneca, NY	Jun 2004
Cold Spring, Putnam Brook, Clearing and Snagging, Weedsport, NY	Apr 2004
Conesus Lake, Flood Protection Project, Livonia, NY	Apr 2004
Dry Creek, Flood Protection Project, Moravia, NY	Apr 2004
Dunkirk Fishing Pier, Navigation and Recreation, Dunkirk NY	Jul 2004
Ellicott Creek, Clearing and Snagging, Amherst, NY	May 2004
Ellicott Creek, Flood Control Project, Tonawanda, NY	May 2004
Fredonia Sewage Treatment Plant, Shoreline Protection Project, NY	Sept 2004
Genesee River, Local Flood Protection Project, Wellsville, NY	Jun 2004
Genesee River, Rogers Cemetery, Emergency Bank Protection Project, Amity, NY	Apr 2004
Genesee River, Rogers Cemetery, Flood Protection Project, Amity, NY	Apr 2004
Glenn Brook, Clearing and Snagging, Hammondsport, NY	Apr 2004
Irondequoit Small Boat Harbor, Navigation and Recreation, Irondequoit, NY	May 2004
Kashequa Creek, Emergency Streambank Protection, Nunda, NY	May 2004
Kashong Creek, Emergency Bank Protection Project, Geneva, NY	Mar 2004
Keshequa Creek, Emergency Bank Protection and Clearing and Snagging Projects, Nunda, NY	Apr 2004
Keuka Lake Outlet, Flood Control Project, Penn-Yan, NY	Apr 2004
Lake Erie Shoreline, Emergency Shore Protection Project, St. Columbans On-the-Lake, Silver Creek, NY	Sept 2004
Lake Erie Shore Protection Project, Fredonia, NY	Sept 2004
Lake Erie State Park, Shore Protection Project, NY	July 2004
Marsh Creek, Flood Protection Project, Geneva, NY	Mar 2004
Mill Creek, Flood Protection Project, Moravia, NY	Apr 2004
NFTA Small Boat Harbor, Navigation and Recreation, Buffalo, NY	Nov 2003
Niagara River Retaining Wall - New Project, Buffalo, NY	Scheduled for 1st Inspection 2005
Nine Mile Creek, Clearing and Snagging, NY	Not Inspected 2004
Nine Mile Creek, Local Flood Protection Project, Camillus, NY	Jun 2004
North Branch of Van Campen Creek, Flood Protection Project, Friendship, NY	Apr 2004
Oak Orchard Beach, Shore Protection, Lake Ontario, Kendall, NY	May 2004
Oatka Creek, Flood Protection Project, NY	Jun 2004
Onondaga Creek, Flood Control, Nedrow, NY	Jun 2004
Onondaga Creek, Flood Control, Syracuse, NY	Jun 2004
Onondaga Dam, Flood Control, Syracuse, NY	Jun 2004
Owasco Inlet, Flood Protection Project, Moravia, NY	Jun 2004
Owasco Outlet, Clearing and Snagging Project, Auburn, NY	Jul 2004
Owasco Outlet, Flood Protection Project, Port Byron, NY	Jun 2004
Rochester Harbor, Wave Surge Reduction, Rochester, NY	Jun 2004
Route 20A Bridge, Emergency Bank Protection Project, Geneseo, NY	Sept 2004
Salmon River, Flood Protection Project, Malone, NY	May 2004
Scajaquada Creek, Flood Protection Project, Cheektowaga, NY	May 2004
Seneca and Cayuga Canal Village, Stream Bank Erosion Control Project, Seneca Falls, NY	Mar 2004

TABLE 20-K INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS (Cont'd)

NAME OF PROJECT	DATE INSPECTED
NEW YORK	
Seneca Lake, Beach Protection, Wakins Glenn, NY	Apr 2004
Shequaga Creek, Local Flood Protection Project, Montour Falls, NY	Apr 2004
Shequaga Falls, Local Flood Protection Project, Montour Falls, NY	Apr 2004
Skaneateles Creek, Flood Control Project, Jordan, NY	Apr 2004
Smokes Creek, Flood Control Project, Lackawanna, NY	Jun 2004
Sturgeon Point Marina, Navigation and Recreation, Evans, NY	Nov 2003
Tonawanda Creek, Local Flood Protection Project, Batavia, NY	Apr 2004
Trinity Church, Stream Bank Erosion Control Project, Village of Seneca Falls, NY	Mar 2004
Van Buren Point, Advanced Measures Project, Portland, NY	Sept 2004
Wendt Beach Park, Emergency Shore Protection Project, Evans, NY	Sept 2004
OHIO	
Baldwin Road, Streambank Erosion Control Project, Kirtland Hills, OH	2004
Blanchard River, Emergency Streambank Protection, State Route 15, Ottawa, OH	Dec 2003
Century Park, Bank Erosion Protection, Lorraine, OH	Jan 2004
Chagrin River, Solon Road, Bank Protection Project, Chagrin Falls, OH	Jan 2004
Chagrin River, Sperry Road, Bank Protection, Chagrin Falls, OH	Jan 2004
Chillicothe Road, Flood Control Project, Kirtland, OH	Apr 2004
Confined Disposal Facility #12, Cleveland, OH	Dec 2003
Cuyahoga River, Emergency Streambank Protection Project, Akron, OH	Apr 2004
Cuyahoga River, Riverview Road, Bank Protection, Cuyahoga Falls, OH	Feb 2004
Deist Road, Shore Protection Project, Middle Bass Island, OH	May 2004
Domonkas Library, Shore Protection, Sheffield Lake, OH	Jan 2004
Eastlake, Emergency Flood Protection Advance Project, Eastlake, OH	Not Inspected 04
Euclid Creek, Emergency Stream Bank Rehabilitation, Cleveland, OH	Mar 2004
Euclid General Hospital, Emergency Shoreline Protection, Euclid, OH	2004
Euclid Hospital, Shore Protection Project, Euclid, OH	Apr 2004
Geneva On the Lake, Flood Protection Project, Geneva OH	Apr 2004
Hemlock Creek, Bank Protection Project, Independence, OH	Jan 2004
Hospice of the Western Reserve, Emergency Shoreline Protection, Cleveland, OH	Apr 2004
Kelly's Island, Shore Protection, Kelly's Island, OH	May 2004
Lake Erie Shore Protection, Oregon, OH	Jan 2004
Lakeshore Park, Lake Erie, Shore Protection Project, Ashtabula, OH	Apr 2004
Lakeshore Protection Oregon, Flood Control Project, Oregon, OH	Mar 2004
Lakeview Park, Shore Protection, Lorraine, OH	Jan 2004
Linwood Park, Shore Protection, Vermillion, OH	Apr 2004
Lorain Small Boat Harbor, Navigation and Recreation, Lorain, OH	Jan 2004
Main Sanitary Sewer Line, Emergency Streambank Protection Project, Akron, OH	Apr 2004
Maumee Bay State Park, Cooperative Beach Erosion Control, Lucas County, OH	Dec 2004
Mayfield Road, Streambank Protection, Village of Gates Mills, OH	Nov 2003
Mentor Beach Park, Shore Protection, Mentor, OH	Apr 2004
Municipal Water Supply, Emergency Protection Project, Oregon, OH	Jan 2004
North Coast Harbor/Pier 34 Harbor-of-Refuge Project, Cleveland, OH	Dec 2003
North Portage Path Road, Emergency Streambank Protection Project, Akron, OH	Apr 2004
Oak Harbor, Flood Protection Project, OH	Dec 2003
Point Place, Flood Control, Toledo, OH	Jul 2004
Reno Beach, Flood Protection, Howard Farms, OH	Mar 2004
Sand Road, Emergency Shore Protection, Catawba Island Township, Ottawa County, OH	Dec 2003
Sandusky Bay, Flood Protection Project, Bayview, OH	Jan 2004
Sandusky River, Flood Control, Fremont, OH	Dec 2003
Sims Park, Shore Protection, Euclid, OH	Apr 2004
State Route 163, Lake Erie, Shore Protection, Marblehead, OH	Jan 2004
State Route 531, Shore Protection, Geneva-Saybrook, OH	Apr 2004

TABLE 20-K INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS (Cont'd)

St. Joseph's Life Center, Shore Protection, Cleveland, OH	Apr 2004
Swan Creek, Advanced Measures Flood Protection, Toledo, OH	Jul 2004
Twilight Drive, Shore Protection, Mentor, OH	Apr 2004
Whites Landing Dike, Advanced Measures Flood Protection, Whites Landing, OH	Mar 2004
PENNSYLVANIA	
Flagship Niagara, Navigation and Recreation Project, Lake Erie, Erie, PA	Sep 2004
Little Elk Creek, Beach Protection Project, Girard, PA	Sep 2004
Presque Isle, Flood Protection Project, Presque Isle, PA	Aug 2004

Inspections of completed flood control works for compliance with Federal requirements were made during the period totaling $275,643. This includes updating the hydraulics and hydrology of various local flood control projects. Total cost to September 30, 2004 is $4,730,729.

DETROIT, MI, DISTRICT

The District is composed of the upper and lower peninsulas of Michigan and portions of Indiana, Wisconsin and Minnesota, which border the lakes. It includes U.S. waters of Lakes Superior, Michigan, Huron, St. Clair and western Lake Erie. Unless otherwise indicated, all depths stated in this report are referred to low water datum as follows: Lake Superior, 601.1 feet; Lake Michigan-Huron, 577.5 feet; Lake Erie, 569.2 feet; and Lake St. Clair, 572.3 feet. These elevations are in feet above the mean water level at Rimouski, Quebec -- International Great Lakes Datum, 1985 (IGLD 1985).

The IGLD 1985 is a datum or reference system used to define water levels within the Great Lakes - St. Lawrence River system. This datum was implemented in January 1992, officially replacing IGLD 1955. At the time IGLD 1955 was established, it was recognized that this datum would have to be periodically revised due to isostatic rebound. Isostatic rebound is the gradual rising or bouncing back of the earth's crust from the weight of the glaciers that covered the Great Lakes region during the last ice age.

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NAVIGATION

1. ALPENA HARBOR, MI

Location. At mouth of Thunder Bay River which empties into Thunder Bay, Lake Huron. Harbor is 100 miles southeast of Cheboygan Harbor, MI. River has its source in Montmorency and Alpena Counties, MI. (See NOAA Nautical Chart 14864.)

Previous Project. For details see page 1957 of Annual Report for 1915 and page 1548 of Annual Report for 1938.

Existing Project. Provides for a bay channel 200 feet wide and 25 feet deep from deep water in Thunder Bay to a point 300 feet lakeward of the Alpena Light; thence an entrance channel 24 feet deep, narrowing to a width of 100 feet at a point 700 feet upstream from the light; a river channel 100 feet wide, 23 feet deep to Second Avenue Bridge; thence 18.5 feet deep and 75 feet wide for 1,600 feet to upper limit of Federal project; a turning basin at upstream end of project, basin at river mouth 19 feet deep, trapezoidal in shape, with a maximum width of 700 feet including the channel width and a maximum length of 900 feet along the channel line, including removal of existing rubble breakwater; and a breakwater about 550 feet long paralleling lakeward side of new turning basin. Work authorized by the 1965 River and Harbor Act, which consists of the proposed turning basin and breakwater reconfiguration, was deauthorized by the Water Resources Development Act (WRDA) OF 1986; Public Law (PL) 99-662, November 17, 1986, 99th Congress, Title X.

Local Cooperation. Fully complied with.

Terminal Facilities. Several commercial docks along Thunder Bay River used primarily for receipt of coal and petroleum products. Also a municipal marina basin about 0.25 mile southwest of river mouth. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition surveys and miscellaneous inspections and reports performed by Government forces cost $1,805. Strike removal was performed using the U.S. Derrickbarge SCHWARTZ at a cost of $49,720.

Existing project was completed in 1939. The modification of existing project at Alpena Harbor, as authorized by the 1965 River and Harbor Act, was reclassified into an inactive status May 22, 1969 based on an unfavorable benefit-cost ratio. In 1975 the modification was recommended and reviewed for

deauthorization, which was withdrawn by Congressional Resolution the same year. Subsequently, the work authorized by the 1965 Act was deauthorized by the WRDA of 1986. Project features are in excellent condition. Total cost of the existing project to end of FY was $2,436,636, of which $337,394 was for new work and $2,099,242 for maintenance.

2. ARCADIA HARBOR, MI

Location. On east shore of Lake Michigan, 193 miles northeasterly from Chicago, IL, and 15 miles northerly from Manistee, MI. (See NOAA Nautical Chart 14907.)

Existing Project. Provided for maintenance dredging of the existing harbor built by private interests, for a period of five years. The five years covered by this project were the calendar years 1905 to 1909, inclusive. Funds were also appropriated and maintenance was performed in calendar years 1911, 1912, 1913 and 1915, inclusive. There is at present no approved project for the improvement of this harbor. (See Table 21-B for authorizing legislation.)

Local Cooperation. None required.

Terminal Facilities. Dock facilities are considered adequate for existing recreational traffic.

Operations During Fiscal Year. Maintenance: Condition surveys and miscellaneous inspections and reports performed by Government forces cost $29,134. A contract for maintenance dredging was awarded and completed this FY, removing 2,919 cubic yards of shoal material at a cost of $39,424. Engineering, design, surveys, and supervision and administration cost $27,931.

Existing project was completed in 1909. Varying depths of 5-12 feet exist in the channel at present. Maintenance of the harbor is based on providing a 9-foot depth. Piers and revetments are in good condition. Total cost of the existing project to end of FY was $5,742,156.

3. ASHLAND HARBOR, WI

Location. At head of Chequamegon Bay, on south shore of Lake Superior, about 65 miles east of Duluth,
MN. (See NOAA Nautical Chart 14974.)

Existing Project. A west channel 20 and 21 feet deep and an east basin 25 and 27 feet deep, both all protected by an 8,000-foot breakwater. For additional details see page 1008 of Annual Report for 1965. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. City of Ashland owns 4,150 feet of waterfront for future public needs. Wharves for handling coal, ore, limestone, logs and pulpwood are served by railroads. Detail on actual port and harbor facilities is in Port Series No. 49 (revised 1999) prepared and published by the Water Resources Support Center. Facilities are considered adequate for existing commerce. Handling of ore and logs has been discontinued for the present.

Operations During Fiscal Year. Maintenance: Condition surveys, environmental studies, and miscellaneous inspections and reports performed by Government forces and contract cost $40,899. Repairs to the Breakwater, Sections B & C1, were performed using the U.S. Derrickbarge SCHWARTZ at a cost of $254,082. Real estate and supervision and administration cost $28,174.

Work authorized prior to 1960 Act was completed in 1950. Work authorized by 1960 Act was completed in November 1962. Navigation structures are in fair condition. Total cost of the existing project to end of FY was $6,602,236, of which $1,695,645 was for new work and $4,906,591 was for maintenance.

4. BLACK RIVER (PORT HURON), MI

Location. This river has its source in the northern part of Sanilac County, MI, is about 60 miles long, and flows in a southeasterly direction into the St. Clair River. (See NOAA Nautical Chart 14852.)

Previous Project. For details see page 1441 of Annual Report for 1916, and page 1554 of Annual Report for 1938.

Existing Project. Provides for a channel 20 feet deep from deep water in St. Clair River to the Grand Trunk Western Railroad Bridge, 160 feet wide at the mouth, decreasing to 100 feet, about 800 feet from the mouth, thence 100 feet wide for 2,600 feet, decreasing to 75 feet for a distance of 4,800 feet; widening two bends to 100 feet, one at the foot of 12th Street, and the other below the Grand Trunk

Western Railroad Bridge; for a settling basin 75 feet wide and 20 feet deep, beginning at the Grand Trunk Western Railroad Bridge in Port Huron and extending upstream a distance of about 2,300 feet; and then for a distance of 2.6 miles as a 100-foot wide river channel, 8 feet deep to the I-94 bridge where it decreases to 6 feet deep and continues to the vicinity of the Black River Drainage Canal with suitable widening where required at bends in the channel. The project modification authorized by the Act of August 30, 1935, is considered to be inactive and is excluded from the foregoing cost for new work. The cost of this modification was last revised in 1954 and was estimated to be $194,000 exclusive of $194,000 to be contributed by local interests. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. There are docks on both sides of Black River near its mouth, and between these docks and the upper limit of improvement there are 5 other docks varying in length from 100 to 500 feet. All docks are privately owned and are restricted to the use of the owners. The facilities are considered adequate for existing commerce. Public recreational boating facilities constructed by the State and local agencies are available, as are privately owned and operated marinas.

Operations During Fiscal Year. Maintenance: Miscellaneous inspections and reports performed by Government forces cost $8,421. The contract awarded last FY for maintenance dredging was completed this FY, removing 17,898 cubic yards of shoal material at a cost of $417,878. Supervision and administration cost $31,502.

All work, except that authorized by Act of August 30, 1935, and the latest modification, has been completed. Total cost of the existing project to end of FY was $3,242,848, of which $830,165 was for new work (includes $349,921 contributed funds) and $2,412,683 for maintenance.

5. BOLLES HARBOR, MI

Location. On west shore of Lake Erie at mouth of La Plaisance Creek 7 miles southwest of Monroe, MI. (See NOAA Nautical Chart 14846.)

Existing project. Provides for an entrance channel in Lake Erie, 8 feet deep and 80 feet wide from deep water to a point opposite the outer end of existing jetty, thence widening to 100 feet at creek mouth; an access channel in La Plaisance Creek, 6 feet deep and 100 feet wide at the mouth widening to 120 feet and extending to the first bend, thence narrowing to 50 feet wide and continuing at that width to the La Plaisance Road bridge; a steel sheet pile revetment, about 200 feet long, located along Michigan State Conservation Department property on west side of channel at creek mouth. Project also provides for inclusion of existing 400-foot long steel sheet pile jetty constructed by Michigan State Waterways Commission at the mouth of La Plaisance Creek. (See Table 21-B for authorizing legislation.)

Local cooperation. Fully complied with.

Terminal facilities. The Monroe Boat Club and three marinas provide facilities adequate for existing recreational boat traffic. There is also a public launching ramp and parking area at the Conservation Department fishing site at creek mouth.

Operations During Fiscal Year. Maintenance: Condition surveys, and miscellaneous inspections and reports performed by Government forces cost $11,432. A contract for maintenance dredging was awarded and completed this FY, removing 20,660 cubic yards of shoal material at a cost of $135,274. Engineering, design, surveys, and supervision and administration cost $63,481.

The existing project was completed in 1970. (Adequate depths exist over the project length except for the upstream 800 feet.) Facilities are in good condition. Total cost of the existing project to end of FY was $4,634,212, of which $472,916 was for new work (includes $255,000 contributed funds) and $4,161,296 for maintenance.

6. CHARLEVOIX HARBOR, MI

Location. On east shore of Lake Michigan, 276 miles northeasterly from Chicago, IL, and 75 miles northerly from Frankfort, MI. (See NOAA Nautical Chart 14942.)

Existing Project. A channel 24 feet deep in Lake Michigan and a river channel 23 feet deep in the lower and upper channels connecting Lake Michigan with Lake Charlevoix via Round Lake. The channels are protected where needed by piers and revetments. For additional details see page 1476 of Annual Report for 1962. (See Table 21-B for authorizing legislation.) Section 25 of the WRDA of 1988 provides authorization pertaining to the South Pier to Charlevoix Harbor. It states, "The Secretary shall take such action as may be necessary to restore

recreational uses established prior to May 1, 1988, or provide comparable recreation uses at the South Pier to Charlevoix Harbor project, Charlevoix, Michigan in order to mitigate any adverse impact on recreational uses resulting from reconstruction of the South Pier..."

Local Cooperation. None required except the latest project modification is subject to the following: Provide without cost to the United States, all lands, easements, and rights-of-ways required for construction and subsequent maintenance of the modified project upon the request of the Chief of Engineers, including suitable areas determined by the Chief of Engineers to be required in the general public interest for initial and subsequent disposal of excavated materials and any necessary retaining dikes, bulkheads, and embankments, therefore, or the cost of such retaining works; hold and save the United States free from damages due to the constructing and maintenance of the modified project, except for damages due to the fault or negligence of the United States or its contractors; provide and maintain without cost to the United States depths in berthing areas and local access channels serving the terminal commensurate with the depths provided in the related project areas; accomplish, without cost to the United States, such alterations of submarine utility crossing as are required by the modified project; establish regulations prohibiting discharge of pollutants into the waters of the harbor by users thereof which regulations shall be in accordance with applicable laws or regulations of Federal, State and local authorities responsible for pollution prevention and control; if acquiring lands, easements and rights-of-ways for construction of the project, local interests will comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1971; PL 91-646, approved January 2, 1971; contribute all costs in excess of $1,000,000 should the total cost of construction of the general navigation facilities exceed that amount, in accordance with provisions of Section 107 of the 1960 River and Harbor Act, as amended. The total first cost of construction (1975) is estimated at $625,000.

Terminal Facilities. Several small landing places in Round Lake at Charlevoix for handling fish and miscellaneous commodities, a wharf for petroleum products at west end of Lake Charlevoix, and coal wharves at Advance and Boyne City. Charlevoix, Boyne City, and East Jordan provide public docks for small craft. Facilities considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition surveys, and miscellaneous inspections and reports performed by Government forces cost $52,559. Safety maintenance performed by hired labor cost $9,242. Location and removal of obstructions was performed using the U.S. MANITOWOC at a cost of $85,806. Supervision and administration cost $49,700.

Existing project was completed in 1939 except for the latest modification. Navigation structures are in good to fair condition with miscellaneous repairs scheduled in future years. Total cost of the existing project to end of FY was $12,394,478, of which $180,623 was for new work, $11,084,459 for maintenance (Bank Stabilization $46,352), and $1,129,396 for rehabilitation.

7. DETROIT RIVER, MI

Location. One of the Great Lakes connecting channels, 31 miles long, flows south from Lake St. Clair to Lake Erie. (See NOAA Nautical Chart 14848.)

Previous Project. For details see page 1958 of Annual Report for 1915, and page 1541 of Annual Report for 1938.

Existing Project. Improving Detroit River main channels to provide 25.5-foot draft navigation; improving certain auxiliary and side channels; and construction of various water level and crosscurrent control structures. Details are in accompanying Table 21-H. Project depths are referred to local low water datum planes which correspond to low water datums for Lakes St. Clair and Erie, 572.3 and 569.2 feet above mean water level at Rimouski, Quebec, IGLD 1985. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with. No local cooperation is required for modifications authorized by Acts of July 1946 and March 1956. The uncompleted portion of the project authorized by the 1946 and the 1956 R & H Acts, construction of the Compensating Works, with the uncompleted portion of the Trenton Channel modification approved Aug. 13, 1968, were deauthorized Dec. 31, 1989, in accordance with Section 1001 of the WRDA of 1986 (PL 99-662).

Terminal Facilities. Numerous commercial installations used for handling coal, iron ore,

limestone, steel products, petroleum products, and other items such as overseas general cargo. Detail on actual port and harbor facilities is in Port Series No. 45 (revised 1996) prepared and published by the Water Resources Support Center. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition surveys, environmental studies, confined disposal facility monitoring, support of water control center, and miscellaneous inspections and reports performed by Government forces and contract cost $1,066,166. Location and removal of obstructions was performed using the U.S. Cranebarge VELER and the U.S. Survey Vessel WHEELER at a cost of $1,668,950. Maintenance of disposal area performed by hired labor cost $82,844. Engineering and design for closure of dikes at Cell #3 at Pointe Mouillee was completed at a cost of $41,823. A contract for this work was awarded and completed in the amount of $791,500. A contract awarded this FY for maintenance dredging in the amount of $507,620. The contract was 89% complete at the end of the FY, removing approximately 160,000 cubic yards of shoal material at a cost of $450,000. Engineering, design, surveys, real estate, and supervision and administration cost $593,171.

Latest modification of connecting channels project in the Detroit River is complete except for compensating works. Pertinent data concerning channels covered by project at end of FY are set forth in Table 21-H. Total cost of the existing project to end of FY was $262,833,004, of which $76,877,357 was for new work ($75,346,669 regular funds and $1,530,688 Public Works Funds), $143,485,062 (includes $361,235 Section 150 contributed funds) for maintenance and $42,470,585 for diked disposal.

8. DULUTH-SUPERIOR HARBOR, MN AND WI

Location. At extreme western end of Lake Superior. Cities of Duluth, MN, and Superior, WI, are on north and south sides, respectively. (See NOAA Nautical Chart 14975.)

Previous Projects. See page 1246 of Annual Report for 1962.

Existing Project. Provides for rebuilding canal piers at Duluth entry, replacement or construction of piers and breakwater at Superior entry and dredging approaches and channels within harbor, St. Louis Bay, and St. Louis River. Channels vary in depth from 32 to 28 feet in entrances, are 27 feet deep in iron-ore route channels, and are from 20 to 23 feet deep in inner channels. (See Table 21-B for authorizing legislation.)

For details of authorized channel dimensions and dimensions of structures, see pages 1246 and 1247 of Annual Report for 1962 and page 1011 of Annual Report for 1965. Portion of project for deepening Twenty-first Avenue West channel was deauthorized Dec. 31, 1989, in accordance with Section 1001 of the WRDA of 1986 (PL 99-662).

The WRDA of 1986 authorized modifications to the project to deepen the western portions of North and South Channels, the entire Upper Channel and the Minnesota Channel to 27 feet LWD; widen the Cross Channel to provide a minimum turning basin of 1,500 feet; widen the bend at the Arrowhead Bascule Bridge to 600 feet; and construct an upland confined disposal facility. The current recommended plan involves only the mechanical dredging of the Cross Channel Turning Basin with disposal at the Erie Pier CDF. The remainder of the project is now unscheduled.

Local Cooperation. Fully complied with for completed portion of project. Local cooperation items for the newly authorized project in the WRDA of 1986 (PL 99-662), are as described in House Document 150, 86th Congress, 1st Session and also includes, as a result of PL 99-662, construction cost sharing.

Terminal Facilities. There are 113 docks or terminals including some 54 major ones; all but one privately owned. Detail on actual port and harbor facilities is in Port Series No. 49 (revised 1999) prepared and published by the Water Resources Support Center. Facilities for handling iron ore, coal, limestone, petroleum, steel and scrap iron, cement, general cargo, and grain are believed adequate for most existing commerce.

Operations During Fiscal Year. Maintenance: Operation and maintenance of the museum performed by Government forces and contract cost $492,521. Operation and maintenance of service facilities and park pier performed by hired labor cost $197,236. Condition surveys, environmental studies, confined disposal facility monitoring, support of water control center, and miscellaneous inspections and reports performed by Government forces and contract cost $450,491. Safety repairs performed by hired labor cost $31,955. Confined disposal facility repairs performed by hired labor cost $24,184.

Duluth and Superior Entry Breakwater repairs were performed using the U.S. Derrickbarge SCHWARTZ at a cost of $470,310. A contract for maintenance dredging was awarded and completed this FY, removing 43,000 cubic yards of shoal material at a cost of $485,000. Engineering, design, surveys, real estate, and supervision and administration cost $413,763.

Work authorized prior to 1960 Act was completed in June 1956. Under the 1960 Act, work on the outer harbor, included in House Document 150, was completed in June 1965. Work in the inner harbor, included in House Document 196, started in May 1963, was completed in November 1968 except for 21st Avenue West channel portion which was deauthorized December 31, 1989. Of the work authorized in WRDA 1986, only the Cross Channel dredging has been completed (September 1994). All other authorized improvements are unscheduled.

The United States owns 34.90 acres of land in fee in Minnesota and Wisconsin of which 2.15 acres are used for a vessel yard. Navigation structures are in poor to excellent condition; repairs are scheduled in the near future. Total cost of the existing project to end of FY was $118,834,577, of which $17,226,343 was for new work (includes $331,685 contributed funds), $88,496,575 for maintenance, $1,556,249 for diked disposal and $11,555,410 for rehabilitation.

9. FOX RIVER, WI

Location. Rises in Columbia County, WI, and flows about 176 miles northerly into Green Bay. Wolf River, physically a main river but by designation a tributary of Fox River, rises in central part of Fort County, WI and flows southerly. (See NOAA Nautical Chart 14916 for Lake Winnebago and lower Fox River.)

Previous Projects. See page 1368 of Annual Report for 1962.

Existing Project. Deepening and widening channel of Fox River from DePere 7 miles above mouth to confluence of Wolf River, a total length of 59 miles, to 6 feet, with 9.6 feet in rock cut below DePere lock and 7 feet in other rock cuts on lower river below Menasha lock; construction and reconstruction of 19 locks and 9 dams; a concrete retaining wall at Kaukauna; construction and maintenance of harbors having depths of 6 feet on Lake Winnebago; widening Neenah Channel to 100 feet, with a 6-foot depth for about 1 mile; and dredging, snagging, and otherwise improving Wolf River 47 miles from its mouth to New London, depth to be 4 feet.

Cost of completed portion of project is $513, 424 for the lower river exclusive of previous projects. The uncompleted portion of the project authorized by the River and Harbor Act of 1925, was deauthorized Dec. 31, 1989, in accordance with Section 1001 of the WRDA of 1986 (PL 99-662). Section 332 of the WRDA of 1992 authorized the transfer of the navigation system to the State of WI subject to agreement; however, water regulation and dam operation will be continued by the Federal government. (See Table 21-B for authorizing legislation.)

Local Cooperation. None required.

Terminal Facilities. Wharf and landing facilities are, in general, adequate for existing needs. (See Table 21-I on locks and dams, Fox River, WI.)

Operations During Fiscal Year. Maintenance: Condition surveys, environmental activities, safety training, miscellaneous inspections and reports, and plans for flood emergencies were performed at a cost of $457,027. Water control studies, monitoring and regulation of water levels were performed at a cost of $200,190. Real Estate activities cost $25,830. The operation and maintenance of nine (9) dams and ten (10) overflow weirs and caretaker status maintenance of seventeen (17) locks and two (2) guard locks totaled $462,437. Federal canal banks at various locations were repaired at a cost of $234,112. Supervision and administration costs were $72,535. Work for Phase II site assessment to support the transfer of the locks to the state of Wisconsin continued at a cost of $291,360. Transfer of the locks to the state of Wisconsin took place this FY at a cost of $11,831,000. Option two of the FY00 contract to renovate the gate hoist and electrical mechanism at the remaining seven (7) dams was completed this FY at a cost of $232,243. Work began on option three (final option) of this contract to renovate machinery at DePere Lock and Dam in the amount of $1,835,146. Engineering and design during construction for this work cost $33,190. Supervision and administration of the contract cost $174,482. Preparation of the O&M Manual cost $8,880. Engineering and design for repair of the right abutment at Upper Appleton Dam was completed at a cost of $104,641. A contract for this work was awarded in the amount of $471,533. The contract was 53% complete at the end of the FY at a cost of $250,361. Supervision and administration cost $21,958. Engineering and design continued for

concrete (crack) repairs at dams in the amount of $2,739.

Existing project is complete except for the inactive portion. Nineteen original locks and nine original dams were rebuilt. (See Table 21-I for year of completion of each). Structures and dredging in pools have increased original depths generally about 2 feet. Work remaining to complete project consists of dredging in upper portion of Wolf River, and rock removal and deepening of Neenah Channel on lower Fox River, which are no longer considered necessary. The dams tainter gates are receiving new hoist mechanisms. Existing dams repairs are underway or programmed in the near future; but many of the locks are in extremely poor condition. Total cost of the existing project to end of FY was $96,925,918, of which $3,753,334 was for new work and $93,172,584 for operation and maintenance. Between July 5, 1884 and June 30, 1935, funds in the amount of $3,706,187 were expended on operation and care of works of improvement under provisions of permanent indefinite appropriation for such purposes.

10. FRANKFORT HARBOR, MI

Location. On east shore of Lake Michigan, 204 miles northeasterly from Chicago, IL, and 28 miles northerly from Manistee, MI. (See NOAA Nautical Chart 14907.)

Existing Project. Provides for constructing an exterior basin in Lake Michigan formed by two breakwaters, 450 feet apart at the outer ends, diverging at an angle of about 90 degrees, the main arm and shore connection on north breakwater are 972 and 1,000 feet long, respectively, and the main arm and shore connection of south breakwater 1,188 and 1,400 feet long, respectively; for removing 801 feet of north pier and 1,172 feet of south pier; dredging basin 20 feet deep and 800 feet wide at entrance, decreasing toward new pier heads to 600 feet wide, dredging approach and entrance channel through outer basin to a depth of 24 feet from deep water in Lake Michigan to a point 500 feet landward of opening between breakwaters, over the entire width outside the breakwaters; thence to maximum width of 500 feet inside the breakwaters and to 23 feet deep through inner portion of outer basin to outer end of north pier, over widths decreasing from 500 to 160 feet; and thence to 22 feet deep between the piers to the inner basin in Lake Betsie; dredging an 18-foot deep interior basin in Lake Betsie from within 50 feet of existing structures on the west and extending eastward about 1,550 feet to easterly boundary and from within 50 feet of existing structures on the north and extending southward 800 feet to the southerly boundary; dredging a recreational craft anchorage area 10 feet deep and 300 feet wide, extending 600 feet eastward of the east limit of the interior basin, with its north side in line with the north limit of the basin. Breakwaters and shore connections are built of concrete caissons and piling capped with concrete. Inner piers and revetments are built of stonefilled timber cribs and piling, all capped with concrete, except for 476 feet of south revetment which consists of steel sheet piling. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. Two car ferry slips on south shore and several docks along north shore of Lake Betsie. The City and State provide a recreational docking facility on north side of Lake Betsie which is open to all on equal terms. There is also a marine railway capable of handling small craft. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition surveys and miscellaneous inspections and reports performed by Government forces cost $86,670. Safety maintenance performed by hired labor cost $1,062. Engineering and design for repairs to the North Breakwater, Sections C and D, continued at a cost of $582. A contract for maintenance dredging was awarded and completed this FY, removing 15,105 cubic yards of shoal material at a cost of $90,905. Engineering, design, surveys, and supervision and administration cost $85,945.

Existing project was completed in 1939, with exception of the latest modification that was completed in 1969. For additional details on completion of existing project see page 1474 of Annual Report for 1962. Navigation structures are in fair to good condition. Total cost of the existing project to end of FY was $14,530,137, of which $1,955,159 (includes $31,709 contributed funds) was for new work, $11,095,702 for maintenance, $1,204,500 for diked disposal and $274,776 for rehabilitation.

11. GRAND HAVEN HARBOR AND GRAND RIVER, MI

Location. Harbor is on east shore of Lake Michigan, 108 miles northeasterly from Chicago, IL, and 23 miles northerly from Holland, MI. River rises in Jackson County, MI, and flows 260 miles westerly into Lake Michigan. (See NOAA Nautical Chart 14933, and Geological Survey Grand Rapids quadrangle.)

Previous Project. For details see page 1949 of Annual Report for 1915, and page 1481 of Annual Report for 1938.

Existing Project. An entrance channel protected by parallel piers and revetments at mouth of Grand River, a deep draft channel in river extending to Spring Lake, a turning basin, and a shallow draft channel in river extending 14.5 miles upstream to Bass River. Project depths are 23 feet in entrance channel, 21 feet in river to turning basin, 18 feet in turning basin and channel to Spring Lake, and 8 feet in upper Grand River channel. For additional details see page 1461 of Annual Report for 1962. Dredging on northerly side of inner channel is considered inactive. Estimated cost of this portion (1954) is $38,600. The WRDA of 1986 authorized modifications to deepen the harbor entrance and river channels to 29 and 27 feet, respectively; and provides for a new and larger turning basin. Estimated cost (Oct 90) is $20,400,000, which includes $11,754,000 Federal and $8,646,000 non-Federal. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with for completed portions of project. Local cooperation items for the newly authorized project in the WRDA of 1986 (PL 99-662), are as described in House Document 661, 76th Congress, 3d Session, and also includes, as a result of PL 99-662, construction cost sharing requirements as follows:

a. Contribute in cash 25 percent of the total cost of construction of general navigation facilities, exclusive of aids to navigation, a contribution presently estimated at $4,246,000. The estimated cash contribution of $4,246,000 to be paid in lump sum, prior to initiation of construction, or in annual installments during the construction period at a rate proportionate to the proposed or scheduled expenditure of Federal funds as required by the Chief of Engineers, or under another arrangement satisfactory to the Secretary of the Army, the final apportionment of cost to be made after actual costs have been determined; and

b. Repay, with interest, over a period of up to 30 years following project completion, 10 percent of the total cost of construction of general navigation facilities, an amount presently estimated at $2,040,000. The Secretary of the Army may count against all or part of the 10 percent repayment, the amount of the local contribution of lands, easements, rights-of-ways, dredged/demolition material disposal sites and relocations. In no case are these costs to count against the cash payment during construction, and in no case would the amount waived exceed 10 percent of project cost.

Terminal Facilities. Several wharves exist for handling coal, limestone, sand and gravel, petroleum products, fish, and miscellaneous commodities. There is also a car-ferry slip, which is inactive. The State and local agencies provide recreational boating facilities, which are open to all on equal terms. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition and structure surveys, confined disposal facility monitoring, environmental studies, and miscellaneous inspections and reports performed by Government forces and contract cost $413,128. Development of dredged material management plans continued at a cost of $16,229. Minor safety repairs performed by hired labor cost $27,960. (An adjustment of -$2,669 was made in contract costs for the basic requirement of the FY02 multi-year contract completed last FY for maintenance dredging the outer harbor.) Option year one was completed this FY in the amount of $49,374. Final option of this contract began this FY, removing approximately 14,393 cubic yards of shoal material at a cost of $94,521. This contract was also for Section 111 beach nourishment. Liquidated damages in the amount of -$1,701 were assessed the maintenance dredging contract. Engineering, design, surveys, real estate, and supervision and administration cost $92,306. Monitoring in connection with Section 111 of P.L. 90-483 was performed at a cost of $54,970. Beach nourishment in conjunction with above maintenance dredging outer harbor contract cost $33,815. Supervision and administration under Section 111 cost $4,015.

Existing project was substantially completed in 1949. For additional details on completion of existing project see page 1463 of Annual Report for 1982. Condition of navigation structures range from good to poor with portions in a general state of deterioration and are scheduled for repairs. Total cost of the existing project to end of FY was $41,763,768; of which $1,458,469 was for new work, $38,711,286 for maintenance (includes $15,585

contributed funds), $780,400 diked disposal and $813,613 for rehabilitation.

12. GRAND MARAIS HARBOR, MI

Location. On south shore of Lake Superior, 93 miles west of Sault Ste. Marie, MI (See NOAA Nautical Chart 14962.)

Existing Project. Provides for a channel protected by parallel piers and for closing natural entrance channel with a pile dike. Project depths are 18 feet between piers and 20 feet in lake approach. For additional details see page 1449 of Annual Report for 1962. (See Table 21-B for authorizing legislation.)

Local Cooperation. None required.

Terminal Facilities. Several small piers, a Coast Guard Station, and a small boat pier and launching ramp built by the State of Michigan provide facilities adequate for present traffic.

Operations During Fiscal Year. Maintenance: Condition surveys performed by Government forces cost $6,791. A major rehabilitation evaluation report was completed at a cost of $56,100. The report will update previous cost estimates and determine if reconstruction of the pile breakwater is warranted.

Existing project is complete except for widening a portion of channel from 250 to 300 feet. Project now being maintained to 19 and 15 feet below I.G.L.D., in lieu of 20 and 18 feet, which is adequate for current usage. The Pile Dike Breakwater is severely deteriorated and no longer maintained; major repair is required to make the Breakwater functional. Total cost of the existing project to end of FY was $4,050,204, of which $1,055,871 was for new work and $2,994,333 for maintenance.

13.GRAND TRAVERSE BAY HARBOR, MI

Location. At mouth of Traverse River on eastern shore of Keweenaw Peninsula about 20 miles northeasterly from Portage entry to Keweenaw Waterway. (See NOAA Nautical Chart 14964.)

Existing Project. Provides two parallel piers, an entrance channel between piers and a harbor basin. Project depths are 12 feet between piers and 10 feet in basin. Project area extended 200 feet upstream in 1966. For additional details see page 1015 of Annual Report for 1965. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with. Local interests furnished easements on 5.1 acres of land.

Terminal Facilities. Several privately owned fishing wharves. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition surveys, environmental studies, and miscellaneous inspections and reports performed by Government forces and contract cost $1,596.

Existing project was completed in 1950 except for extension of north pier completed in 1964. Steel cells and piers are in good condition. Total cost of existing project to end of FY was $3,013,273, of which $329,565 was for new work and $2,683,708 for maintenance.

14. GRAYS REEF PASSAGE, MI

Location. Between Grays Reef and Vienna Shoal, in the northeasterly end of Lake Michigan, lying easterly of Beaver, Fox, and Manitou Islands. (See Lake Survey Chart 79.)

Existing Project. Provides for the improvement of Grays Reef Passage over a width of 3,000 feet and a depth of 25 feet through the east channel. (See Table 21-B for authorizing legislation.)

Local Cooperation. None required.

Terminal Facilities. The passage is a through, unprotected waterway having no terminal facilities.

Operations During Fiscal Year. Maintenance: Strike removal was performed using the U.S. Derrickbarge SCHWARTZ at a cost of $65,676.

Existing project was completed in 1937. For additional details on completion of existing project see page 1259 of Annual Report for 1937. Total cost of existing project to end of FY was $1,124,431, of which $190,521 was for new work and $933,910 for maintenance.

15. GREEN BAY HARBOR, WI

Location. At mouth of Fox River, at head of Green Bay, about 180 miles from Milwaukee, WI, via

Sturgeon Bay Canal, and about 49 miles southwest of Menominee Harbor, MI and WI. (See NOAA Nautical Chart 14918.)

Previous Projects. See page 1366 of Annual Report for 1962.

Existing Project. See Chicago District 1979 Annual Report, Table 30-C, page 30-30.

For more detailed description of project see page 1216 of Annual Report for 1963.

Cost of completed portion of project is $9,335,000 Federal, and non-Federal cost is $490,000 including $100,000 contributed funds. Local interests requested that the inactive portion of the 1962 River and Harbor Act, consisting of dredging the reach from 150 feet downstream of the Chicago & Northwestern Railway Bridge to 1,700 feet upstream of this bridge, be reactivated and the authorization modified to include deepening the adjacent turning basin and modifying the Chicago & Northwestern Railway Bridge to provide increased horizontal clearance. Estimated cost of this portion (1990) is $6,130,000; $4,030,000 Federal and $2,100,000 non-Federal which includes $1,970,000 local contribution. Section 601c of the WRDA of 1986 authorized deepening the Fox River Channel, Green Bay, WI, to 27 feet. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with for existing project.

Terminal Facilities. There are 16 wharves for handling coal, petroleum products, cement, limestone, general overseas cargo and miscellaneous commodities. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition and structure surveys, environmental studies, confined disposal facility monitoring, and miscellaneous inspections and reports performed by Government forces cost $571,042. The contract awarded last FY for maintenance dredging was completed this FY, removing 79,598 cubic yards of shoal material at a cost of $1,280,455. Engineering, design, surveys, and supervision and administration cost $234,764.

Existing project is complete. The 1962 modification was started in November 1966 and completed in September 1973, except for dredging the reach from 150 feet downstream of the Chicago & Northwestern Railway Bridge to 1,700 feet upstream of this bridge. Dredging of the turning basin above C & N.W. Railway Bridge was commenced in August 1938. The turning basin was enlarged under authority of Section 5 of the Rivers and Harbors Act of March 4, 1915, in order to provide sufficient area for the large ships that use it. The work was performed as part of a maintenance dredging contract in September and October 1973. East revetment at Grassy Island was entirely removed in July 1935. Dredging Fox River and entrance channel to Tail Point Light was completed in September 1967. Total cost of the existing project to end of FY was $71,066,217 ($70,125,417 regular funds and $940,800 Public Works Funds), $9,946,395 for new work, $53,215,511 for maintenance and $7,904,311 for diked disposal. The new work cost does not include $100,000 contributed funds.

16. HOLLAND HARBOR, MI

Location. On east shore of Lake Michigan 95 miles northeasterly from Chicago, IL, and 23 miles southerly from Grand Haven, MI. (See NOAA Nautical Chart 14932.)

Previous Project. For details see page 1948 of Annual Report for 1915, and page 1478 of Annual Report for 1938.

Existing Project. An outer breakwater protected approach channel in Lake Michigan, an entrance channel to Lake Macatawa protected by piers and revetments, a channel through Lake Macatawa into Black River, and a turning basin. Project depths are 23 feet in outer portion of approach channel decreasing to 21 feet at outer end of inner piers, 21 feet to upper end of project, and 18 feet in turning basin. For additional details see page 1458 of Annual Report for 1962.

The uncompleted portion of the project, widening bend of entrance channel into Lake Macatawa, was deauthorized Dec, 31, 1989, in accordance with Section 1001 of the WRDA of 1986 (PL 99-662). (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with for completed portions of project.

Terminal Facilities. Wharves are at inner end of Lake Macatawa and used for handling coal, building materials, petroleum products, and miscellaneous commodities. Two shipbuilding yards are on south

shore of the lake. Holland provides a public wharf for small craft. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition and structure surveys, environmental studies, and miscellaneous inspections and reports performed by Government forces and contract cost $289,507. Engineering and design for repair of the North Pier was initiated at a cost of $74,224. Option year one of the FY02 multi-year contract for maintenance dredging the outer harbor was completed this FY, removing 1,245 cubic yards of shoal material at a cost of $51,030. Final option of this contract began this FY, removing approximately 15,152 cubic yards of shoal material at a cost of $123,177. This contract was also for beach nourishment. A contract to relocate the confined disposal facility sewer was awarded and completed this FY in the amount of $240,400. Placement area discharge cost $724. Engineering, design, surveys, and supervision and administration cost $123,432. Monitoring in connection with Section 111 of P.L. 90-483 was performed at a cost of $56,413. Beach nourishment in conjunction with above maintenance dredging outer harbor contract cost $43,542. Supervision and administration under Section 111 cost $2,971.

Existing project, with exception of widening bend in revetted entrance channel authorized by Act of September 3, 1954, was completed in 1957. For additional details on completion of existing project, see page 1460 of Annual Report for 1962. Navigation structures are in good to fair condition with repairs anticipated within the next 5 years. Total cost of the existing project to end of FY was $34,976,614, of which $1,392,827 was for new work ($1,180,502 regular funds, $176,620 for previous project and $35,705 contributed funds), $31,418,035 for maintenance, $1,663,300 for diked disposal and $502,452 for rehabilitation.

17. THE INLAND ROUTE, MI

Location. A series of interconnected lakes and streams stretching across northern tip of Lower Peninsula of Michigan, and extends from Conway near Lake Michigan to Cheboygan on Lake Huron; a distance of 35 miles. Crooked and Indian Rivers are connecting channels in the waterway. (See NOAA Nautical Chart 14886.)

Existing Project. Provides for a channel 30 feet wide and 5 feet deep, with necessary widening at bends, through Crooked and Indian Rivers, and Crooked, Burt, and Mullett Lakes, and from Conway (west end of Crooked Lake) to navigation lock at Cheboygan; in Pickerel Channel from Pickerel Lake to Crooked Lake. It also provides for suitable jetties at head of Indian River. The addition of a lock and dam was approved by the Chief of Engineers on Sep. 2, 1964, to correct a design deficiency. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. None exist for commercial cargo-handling along the Crooked and Indian Rivers. Numerous small privately owned timber piers and wharves, some equipped with covered boat wells for serving and storing recreational craft, have been constructed. Landings maintained by hotel and resort operators are open to the public for transfer of passengers. Public docks are at Conway and Oden on Crooked Lake; the village of Indian River, Topinabee, and Mullett Lake Village on Mullett Lake; and at Cheboygan. About 30 highways dead end at water's edge, permitting public access for various marine activities. Dock facilities are considered adequate for existing traffic.

Operations During Fiscal Year. Maintenance: The navigation lock was operated and maintained by the State of Michigan at no cost to the Government. In FY 04, the lock was operated from 9:00 a.m. to 5:00 p.m. April 24-25, May 1, 2, 8, 9, 15, 16, 22, 23, September 20-30. The lock was operated 8:00 a.m. to 9:00 p.m. May 29–June 30, and 8:00 a.m. to 8:00 p.m. September 7-19. The lock was operated from 8:00 a.m. to 10:00 p.m. July 1–September 6. The lock was operated from 9:00 a.m. to 11:00 a.m. and 3:00 p.m. to 5:00 p.m. October 2, 3, 9, 10. The lock closed for the season on October 10 at 5:00 p.m. Environmental studies, and miscellaneous inspections and reports performed by Government forces cost $28,838.

The existing project was completed in 1958. The lock and dam was completed in FY 1968. For additional details see page 1382 of Annual Report for 1960. Total cost of the existing project to end of FY was $5,000,030, of which $918,222 was for new work (includes $148,000 contributed funds), $3,677,508 for maintenance, and $404,300 for diked disposal.

18. KENOSHA HARBOR, WI

Location. On west shore of Lake Michigan about 35 miles south of Milwaukee and about 54 miles

north of Chicago. (See NOAA Nautical Chart 14904.)

Previous Project. See page 1390 of Annual Report for 1962.

Existing Project. For detailed description see page 1237, Annual Report for 1963. Estimated (1986) Federal cost is $455,000 exclusive of amounts expended on previous projects, and $195,000 non-Federal which includes $155,000 local contribution. (See Table 21-B for authorization legislation.)

The uncompleted portion of the project authorized by the 1962 River and Harbor Act, dredging of 25-foot wide strips adjacent to the north and south piers, was deauthorized Dec. 31, 1989, in accordance with Section 1001 of the WRDA of 1986 (PL 99-662).

Local Cooperation. Fully complied with.

Terminal Facilities. Three wharves used for miscellaneous foreign overseas commodities and autos, and also several fish wharves. While these facilities are considered generally adequate for existing commerce, more efficient use of existing terminals and utilization of available frontage for development of additional terminals should be made.

Operations During Fiscal Year. Maintenance: Condition surveys, and miscellaneous inspections and reports performed by Government forces cost $32,819. Safety maintenance and supervision and administration cost $46,761.

Existing project is complete except for dredging 25-foot strips adjacent to the north and south piers which was deauthorized December 31, 1989. The north and south piers were completed in 1900 and the breakwater in 1909. Navigation structures range from fair to good condition; Detached North Breakwater needs repair. Total cost of the existing project to end of FY was $14,606,999 ($14,579,341 were regular funds and $27,658 Emergency Relief Funds), of which $988,969 was for new work, $7,969,155 for maintenance, $4,378,600 for diked disposal and $1,270,275 for rehabilitation. The new work cost does not include $3,000 contributed funds.

19. KEWAUNEE HARBOR, WI

Location. On west shore of Lake Michigan, about 105 miles north of Milwaukee, WI, and about 78 miles from Green Bay, via Sturgeon Bay Canal. Harbor is at mouth of Kewaunee River. (See NOAA Nautical Chart 14908.)

Previous Projects. See page 1375 of Annual Report for 1962.

Existing Project. See Chicago District 1979 Annual Report, Table 30-C, page 30-31.

Costs of completed project are $603,021 Federal, and $9,000 non-Federal, exclusive of amount expended on previous projects. Uncompleted portion (estimated $200,000, July 1965) of 1935 River and Harbor Act is considered inactive, and excluded from present cost estimate. The portion authorized by the 1960 River and Harbor Act was deauthorized in 1977. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. Two car-ferry slips, a petroleum tank farm, a Corps of Engineers project office, and several fish wharves. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition and structure surveys, environmental studies, and miscellaneous inspections and reports performed by Government forces and contract cost $115,902. Safety repairs, and supervision and administration cost $3,548.

Active portion of existing project is complete. The north pier was completed in 1897 and the remaining portion is in generally good condition. Rehabilitation of the south pier was completed in June 1967. Construction of north breakwater and shore connection, except for a gap of 150 feet about 830 feet from shoreward end, and removal of outer 706.5 linear feet of north pier was commenced in September 1935 and completed in June 1937. Removed 500 linear feet of north pier in April/May 1963 and widened and deepened the adjacent channel in 1965. Outer end of the north pier was struck and severely damaged by car ferry vessel in October 1973 and a 24-foot section at outlet end was subsequently removed, thus reducing the structure to a length of 626 feet. Dredging entrance channel in interior basin to the existing project depth was commenced in April and completed in October 1938. Kewaunee River is navigable to about 6.5 miles above mouth for craft drawing not more than 4 feet. Navigation structures range from fair to good condition. Total cost of the existing project to end of FY was $13,206,279, of which $758,333 was for new work ($338,333 regular and $420,000 Emergency Relief Funds) $8,869,185 for maintenance, $2,961,461 for diked disposal and $617,300 for rehabilitation.

20. KEWEENAW WATERWAY, MI

Location. In Lake Superior across Keweenaw Peninsula in upper peninsula of Michigan. The west entrance is 169 miles east of Duluth, MN. (See NOAA Nautical Chart 14972.)

Existing Project. A navigable channel, minimum width 300 feet, 25 miles long, partially natural and partially artificial, across Keweenaw Peninsula via Portage Lake. For details see page 1121 of Annual Report for 1963. (See Table 21-B for authorizing legislation.)

The uncompleted portion of the project for navigation at Keweenaw Waterway, Houghton County, MI, authorized by the River and Harbor Act of Aug. 30, 1935, PL 409, 73rd Congress, which consists of extending the lower entrance breakwater by 2,000 feet, including the necessary alteration or replacement of structures due to channel deepening, was deauthorized by the WRDA of 1986; PL 99-662, Nov. 17, 1986, 99th Congress, Title X.

Local Cooperation. None required.

Terminal Facilities. Six coal docks, a petroleum dock, and several general merchandise and miscellaneous wharves, all privately owned. Facilities are considered adequate for existing commerce. Also present is a government constructed recreational area with facilities to include a picnic area and small boat landing range.

Operations During Fiscal Year. Maintenance: Condition and structure surveys, environmental studies, and miscellaneous inspections and reports performed by Government forces cost $66,642. Breakwater repairs were performed using the U.S. Derrickbarge SCHWARTZ at a cost of $395,160. Real estate, and supervision and administration cost $61,495.

Active portion of the project is complete. Lower entry piers are in fair condition. It is anticipated repairs will be required within the next ten years. Upper entry breakwaters are in good condition, but require annual stone maintenance due to severity of the wave climate. Total cost of the existing project to end of FY was $36,740,573, of which $5,974,141 was for new work, $29,242,932 for maintenance and $1,523,500 for diked disposal.

21. LAC LA BELLE HARBOR, MI

Location. On the south shore of Lake Superior on the eastern shore of Keweenaw Peninsula, 41 miles northeasterly from Portage entry to Keweenaw Waterway. Lack La Belle, Bete Grise Bay, and Mendota Ship Canal combine to form the harbor. (See NOAA Nautical Chart 14964.)

Existing Project. Provides for construction of two parallel piers at the entrance having lengths of 584 and 682 feet for north and south piers, respectively; for an entrance channel between the piers 50 feet wide and 12 feet deep, about 820 feet long with a flared approach; and for an inner canal 50 feet wide and 10 feet deep, about 730 feet long. For additional details see page 1039, Annual Report for 1964. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. Several small, privately owned wharves are available in the harbor for use of small craft engaged in fishing and recreational activities. A State owned dock for small craft is located at the northwest corner of Lac La Belle Bay.

Operations During Fiscal Year. Maintenance: Condition surveys, and miscellaneous inspections and reports performed by Government forces cost $6,965.

The existing project was completed in 1960. Controlling depths are about 11 feet in the approach channel and 10 feet in the inner channel. Navigation structures range from fair to good condition. Total cost of the existing project to end of FY was $1,132,644, of which $269,270 was for new work and $863,374 for maintenance. The new work does not include $38,190 contributed funds.

22. LAKE ST. CLAIR, MI, CHANNELS MI

Location. Lake St. Clair, a section of Great Lakes connecting channels, is an expansive shallow basin having a vessel track length of about 15 miles from mouth of St. Clair River to head of Detroit River. (See NOAA Nautical Chart 14850.)

Previous Project. For details see page 2882, Annual Report for 1896; pages 1957-58, Annual Report for 1915; and page 1539, Annual Report for 1938.

Existing Project. An improved channel through Lake St. Clair 800 feet wide, 27.5 feet deep, and about 14.5 miles long; extending from mouth of Southeast Bend cutoff channel at lower end of St. Clair River to head of Detroit River Channel. (See Table 21-B for authorizing legislation.)

Local Cooperation. None required.

Terminal Facilities. None.

Operations During Fiscal Year. Maintenance: Condition surveys, environmental studies, support of the water control center, and miscellaneous inspections and reports performed by Government forces and contract cost $110,806. Disposal actions for Gull Island, MI continued at a cost of $4,980.

Total cost of the existing project to end of FY was $22,143,803, of which $7,675,357 was for new work ($6,666,762 regular funds and $1,008,595 Public Works Funds), $9,348,646 for maintenance, and $5,119,800 for diked disposal.

23. LELAND HARBOR, MI

Location. A light-draft harbor on eastern shore of Lake Michigan at mouth of Carp River, about 40 miles north of Frankfort, MI, and 40 miles southwest of Charlevoix, MI. (See NOAA Nautical Chart 14912.)

Existing Project. Provides for a harbor of refuge consisting of a breakwater about 1,200 feet long, a protected anchorage and maneuver area about 3 acres in extent and 10 feet deep, a 12-foot deep flared approach channel decreasing in width to 90 feet, an existing south pier 440 feet long, a 35-foot long cellular extension to south pier, an entrance channel 6 feet deep and 40 feet wide extending to mouth of Carp River, and for elimination of existing north pier. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. Privately owned wharves on each side of river below the dam which is 400 feet above the river mouth. These wharves serve the local fishing interests and recreational craft. Public facilities are operated by the State and local agencies. All available dockage space is utilized.

Operations During Fiscal Year. Maintenance: Condition surveys, and miscellaneous inspections and reports performed by Government forces cost $27,425. A contract for maintenance dredging was awarded and completed this FY, removing 19,948 cubic yards of shoal material at a cost of $83,010. Engineering, design, surveys, and supervision and administration cost $40,049.

The existing project was completed in 1932 except for the 1962 authorization, which was completed in 1967. Navigation structures are in good condition. Total cost of the existing project to end of FY was $5,485,485, of which $1,027,089 was for new work (includes $354,139 contributed funds), $4,387,718 for maintenance and $70,678 for rehabilitation.

24. LEXINGTON HARBOR, MI

Location. On southwest shore of Lake Huron, 20 miles north of Port Huron, MI. (See NOAA Nautical Chart 14862.)

Existing Project. Provides for two offshore breakwaters opening to the southeast and totaling about 2,400 feet long with provisions for recreational fishing on the main breakwater; an anchorage and maneuver area of about 5 acres, 8 feet deep; and a flared approach channel 10 feet deep, decreasing to 160 feet in width through the breakwaters. Project also provides for recreational fishing facilities. Estimated (1979) Federal cost of new work is $1,647,306 excluding $1,088,888 to be contributed by local interests. (See Table 21-B for authorizing legislation.)

Local Cooperation. Assurances of local cooperation were furnished by the Michigan Department of Natural Resources to the Secretary of the Army. The cash contribution was $1,088,888.

Terminal Facilities. An existing public fishing pier of open pile construction is not adequate for existing and prospective commerce. Complete boating facilities are planned by State and local agencies in connection with the harbor construction.

Operations During Fiscal Year. Maintenance: Condition surveys and miscellaneous inspections and reports performed by Government forces cost $5,029. Maintenance dredging awarded last FY was completed with an adjustment of -$5,900 in contract costs and 1,259 cubic yards of shoal material. An adjustment of -$18 was made in supervision and administration costs.

The existing project was completed during FY 1977. Navigation structures are in fair condition.

Total cost of the existing project to end of FY was $6,512,143, of which $3,107,192 (includes $1,088,888 contributed funds) was for new work and $3,404,951 for maintenance.

25. LITTLE LAKE HARBOR, MI

Location. On south shore of Lake Superior 21 miles west of Whitefish Point and 30 miles east of Grand
Marais, MI. (See NOAA Nautical Chart 14962.)

Existing Project. Provides for a small-craft harbor of refuge by dredging an entrance channel 12 feet deep from Lake Superior into Little Lake, suitably protected by breakwaters and revetments. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. Only terminal facility at project consists of a public dock built by the State of Michigan for light-draft craft.

Operations During Fiscal Year. Maintenance: Miscellaneous inspections and reports performed by Government forces cost $512. A contract for maintenance dredging was awarded and completed this FY, removing approximately 19,000 cubic yards of shoal material at a cost of $104,602. Liquidated damages in the amount of -$7,999 were assessed the contract. Engineering, design, surveys, and supervision and administration cost $62,501.

This project is considered complete; however, because of shifting sand, the harbor entrance shoals rapidly with the result that full project depth is not usually available. Navigation structures are in good condition. Total cost of the existing project to end of FY was $6,220,209, of which $600,478 was for new work (includes $57,670 contributed funds) and $5,619,731 for maintenance.

26. LUDINGTON HARBOR, MI

Location. On east shore of Lake Michigan, 156 miles northeasterly from Chicago, IL, and 67 miles northerly from Grand Haven, MI. (See NOAA Nautical Chart 14937.)

Previous Project. For details see page 1951 of Annual Report for 1915, page 1491 of Annual Report for 1938, and page 1307 of Annual Report for 1963.

Existing Project. Provides for an exterior basin in Lake Michigan protected by north and south breakwaters, north breakwater is 1,800 feet long and south breakwater 1,700 feet long, 550 feet apart at outer ends, diverging at an angle of 90 degrees, with shore connections, 1,103 and 2,004 feet long, respectively; for dredging exterior basin to 18 feet deep with a maximum width of 1,500 feet; for a channel with a depth of 29 feet from deep water in Lake Michigan decreasing to 27 feet at the west end of the north pier, over a maximum width of 600 feet; thence a channel with a depth of 27 feet, over a minimum width of 230 feet with necessary widening at Pere Marquette Lake; and for inner piers and revetments, 1,649 feet long on north and sufficiently long on the south for turn at Pere Marquette Lake. The estimated (1977) Federal cost for new work is $8,250,000. Estimated total cost for local interests is $147,000. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. In addition to main terminal of Chesapeake & Ohio Railway Company consisting of three car ferry slips, a wharf, and warehouses, there are several wharves which handle coal, limestone, and miscellaneous commodities. Facilities are adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition surveys, and miscellaneous inspections and reports performed by Government forces cost $117,071. Safety maintenance performed by hired labor cost $8,116. Breakwater repairs were performed using the U.S. Cranebarge MANITOWOC at a cost of $109,091. Supervision and administration cost $55,037.

Existing project was completed in 1918. For additional details on completion of existing project see page 1469 of Annual Report for 1962. Structures are in good condition except for the south breakwater head that needs repair. Total cost of the existing project to end of FY was $31,767,365, of which $8,532,202 was for new work, $22,877,250 for maintenance, and $357,913 for rehabilitation. The maintenance cost does not include $136,286 contributed funds.

27. MANISTEE HARBOR, MI

Location. On east shore of Lake Michigan, 179 miles

northeasterly from Chicago, IL, and 26 miles northerly from Ludington, MI. (See NOAA Nautical Chart 14938.)

Previous Project. For details see page 1952 of Annual Report for 1915, and page 1493 of Annual Report for 1938.

Existing Project. An entrance channel in Lake Michigan protected by a breakwater, piers, and revetment; a channel in Manistee River to Manistee Lake; and Federal participation in cost of replacing Maple Street Bridge. Project depths are 25 feet in entrance channel and 23 feet in river channel. For additional details see page 1470 of Annual Report for 1962. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. Installations are on both sides of river and on Manistee Lake. Commerce handled includes coal, sand, salt, and general cargo. In addition, there is a Government wharf and a State and City owned recreational craft pier which is open to the public. These facilities satisfy current commerce requirements.

Operations During Fiscal Year. Maintenance: Condition surveys, and miscellaneous inspections and reports performed by Government forces cost $49,535. A contract for maintenance dredging was awarded and completed this FY, removing 86,616 cubic yards of shoal material at a cost of $402,408. Engineering, design, surveys, real estate, and supervision and administration cost $104,771.

Existing project was completed in August 1967. For additional details on completion of existing project see page 1470 of Annual Report for 1962. Navigation structures range from generally fair to good condition. Total cost for existing project to end of FY was $17,391,873, of which $2,696,522 was for new work, $13,321,187 for maintenance, and $1,374,164 for rehabilitation.

28. MANITOWOC HARBOR, WI

Location. On west shore of Lake Michigan about 79 miles north of Milwaukee, WI, and about 106 miles from Green Bay Canal. (See NOAA Nautical Chart 14922.)

Previous Projects. See page 1379 of Annual Report for 1962.

Existing Project. The total estimated (Oct. 1981) project cost is $3,080,000; the Federal cost is $1,085,000 and non-Federal cost is $1,995,000, which is a cash contribution. See Chicago District Annual Report for 1979, Table 30-C.

For detailed description see page 1228 of Annual Report for 1963. Estimated costs (1970) of new work for 1968 modification are $81,000 Federal and $30,000 non-Federal which includes a cash contribution of $18,000. Work on the 1968 modification was postponed until 1982. The portion authorized by the 1962 River and Harbor Act was deauthorized Dec. 31, 1989, in accordance with Section 1001 of the WRDA of 1986 (PL 99-662). (See Table 21-B for authorizing legislation.)

Construction of a small boat harbor within the existing harbor was authorized by the Chief of Engineers, June 26, 1979, and 720-foot channel extension affirmed in July 1982, under authority of Section 107, 1960 River and Harbor Act, as amended.

Local Cooperation. Fully complied with for completed modifications. For 1968 modification local interests must make an annual cash contribution equivalent to 50% of the annual costs associated with construction and maintenance of the channel extension until such time that a second user utilizes the channel extension. Such a contribution is presently estimated at $9,206; additional assurances require that the sponsor provide without cost to the United States all lands, easements, and rights-of-way required for construction and subsequent maintenance, including suitable areas determined by the Chief of Engineers to be required in the general public interest for initial and subsequent disposal of dredged materials, and the necessary retaining dikes, bulkheads and embankments therefor or the costs of such retaining works; hold and save the United States free from damages due to the construction works and subsequent use, operation, and maintenance of the project, not including damages due to the fault or negligence of the United States or its contractors; provide and maintain without cost to the United States adequate berthing areas at the docks adjacent to the improvement; accomplish at no cost to the United States all relocations and alterations of utilities necessary for the project; assume full responsibility for all project first costs in excess of the Federal cost limitation of $2,000,000; and comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

Terminal Facilities. Three car-ferry slips, a grain elevator, one shipbuilding yard, and three other wharves used for handling coal, building materials, cement, and miscellaneous commodities. While these facilities are considered adequate for existing commerce, it is believed the city should provide a suitable wharf with warehouse and railway connection open to the general public.

Operations During fiscal year. Maintenance: Condition and structure surveys, and miscellaneous inspections and reports performed by Government forces cost $66,443. Safety repairs performed by hired labor cost $6,211.

Existing project is complete except for the 1962 and 1968 modifications. The 1962 modification was deauthorized December 31, 1990. Work on the 1968 modification was essentially completed in FY 83. The Federal modification, adopted July 15, 1985, included the expansion of the new entrance channel to the Section 107 project and extension of the rubblemound breakwater. Dredging a channel through the outer basin to existing project depth and removal of a portion of old north stub pier at the river entrance were completed in December 1937. Dredging river channel was completed in July 1942. South Breakwater, Section E, is in fair condition and is programmed for repair. Total cost of the existing project to end of FY was $17,234,391, of which $3,960,044 was for new work (includes $1,911,130 contributed funds), $10,192,591 for maintenance (includes $66,735 contributed funds), and $3,081,756 for diked disposal.

29. MARQUETTE HARBOR, MI

Location. In Marquette Bay on south shore of Lake Superior, 160 miles west of Sault Ste. Marie, MI, and 265 miles east from Duluth, MN. (See NOAA Nautical Chart 14970.)

Existing Project. Provides for a breakwater, and a harbor basin 26.5 feet deep, giving a protected area of 350 acres. Project was modified in 1960 to provide a 27-foot depth in harbor area. (See Table 21-B for authorizing legislation.)

Local Cooperation. None required for earlier authorizations. Fully complied with for the 1960 Act.

Terminal Facilities. One ore dock, unused at present; two coal docks; one petroleum dock; and three other unused docks. There are also several small fish wharves without railroad connections. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition surveys, and miscellaneous inspections and reports performed by Government forces cost $9,029. Breakwater repairs were performed using the U.S. Derrickbarge SCHWARTZ at a cost of $210,165. Real estate, and supervision and administration cost $66,349.

Navigation structures are in fair to good condition. Total cost of the existing project to end of FY was $5,937,314, of which $1,282,893 was for new work, $4,188,664 for maintenance and $465,757 for rehabilitation.

30. MENOMINEE HARBOR AND RIVER, MI AND WI

Location. On Lake Michigan at the mouth of Menominee River on the western shore of Green Bay, 16 miles northwest of the mouth of Sturgeon Bay, and 49 miles northeast of Green Bay Harbor, about 155 miles from Milwaukee via Sturgeon Bay Canal. The river forms the boundary between the commercial harbors at Marinette, WI, and Menominee, MI. (See NOAA Nautical Chart 14917.)

Previous Projects. See page 1361 of Annual Report
for 1962.

Existing Project. See Chicago District Annual Report for 1979, Table 30-C, page 30-26.

For detailed description see page 1214, Annual Report for 1963. The portion authorized by 1960 River and Harbor Act is inactive and estimated (1964) at $442,000 Federal, and $105,000 non-Federal. Costs of completed new work, exclusive of inactive work and amount expended on previous projects, are $221,053 Federal and $40,762 non-Federal, which includes a cash contribution of $36,762. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with for completed work.

Terminal Facilities. There are 9 wharves for handling coal, limestone, pulp and miscellaneous commodities. City of Marinette, WI, provided a public wharf. Facilities are considered fairly adequate for existing commerce, except that there is need for a public wharf owned by city of Menominee, with warehouse and railway connection.

Operations During Fiscal Year. Maintenance: Condition surveys, and miscellaneous inspections and reports performed by Government forces cost $26,533. Safety maintenance performed by hired labor cost $3,822.

The project in effect prior to the modification of March 2, 1945, was completed in 1938. No additional work was necessary under the modification of March 2, 1945, to provide a depth of 12 feet in the extension of the channel to the vicinity of the Marinette Yacht Club, as project depth or more was available. The entrance piers were completed in 1884, were rehabilitated (1954-1964) and are in excellent condition. Dredging of the channel below the Marinette municipal wharf, together with enlarging the turning basin to existing project depth, was commenced in May 1938. Modification of the project authorized by the 1960 River and Harbor Act is inactive. Construction for the 1967 modifications was started August 17, 1968, and completed in October 1968. Navigation structures are in good condition. Total cost of the existing project to end of FY was $6,189,398, of which $570,238 was for new work (includes $36,762 contributed funds), $3,673,648 for maintenance, $593,660 for diked disposal and $1,351,852 for rehabilitation.

31. MILWAUKEE HARBOR, WI

Location. On west shore of Lake Michigan about 85 miles north of Chicago, IL, and about 83 miles west of Grand Haven, MI. (See NOAA Nautical Chart 14924.)

Previous Projects. See page 1385 of Annual Report for 1962.

Existing Project. See Chicago District Annual Report for 1979, Table 30-C, page 30-26. For detailed description see page 1232 of Annual Report for 1963.

Completed new work costs are $6,934,804 Federal and $478,000 non-Federal, exclusive of amount expended on previous projects. The uncompleted portion authorized by the 1935 River and Harbor Act was deauthorized Dec. 31, 1989, in accordance with Section 1001 of the WRDA of 1986 (PL 99-662). Uncompleted portion of 1945 River and Harbor Act was deauthorized in 1977. (See Table 21-B for authorizing legislation.)

Local Cooperation. Complied with for Acts of March 2, 1945, October 23, 1962, and July 14, 1960, except deauthorized portion of 1945 Act. Act of Aug. 30, 1935, provided that original dredging of outer harbor area be done by city of Milwaukee and city of Milwaukee be reimbursed at actual cost but not to exceed 10 cents per cubic yard, place measurement, for original dredging done subsequent to authorization of work by Congress. Agreement covering dredging was executed by Secretary of War, Feb. 23, 1934, after this work was originally authorized as part of public works program. City was reimbursed for 10 percent of dredging.

Terminal Facilities. There are 4 car-ferry slips, and 57 other wharves, private and municipal, used for handling coal, grain, building materials, cement, petroleum products, and miscellaneous commodities. As facilities in inner harbor were inadequate for existing commerce, Milwaukee Harbor Commission has constructed nine docks in the outer harbor for handling general cargo. Detail on actual port and harbor facilities is in Port Series No. 48 (revised 1994) prepared and published by the Water Resources Support Center.

Operations During Fiscal Year. Maintenance: Condition and structure surveys, environmental studies, confined disposal facility monitoring, and miscellaneous inspections and reports performed by Government forces and contract cost $271,873. Breakwater inspections and maintenance performed by hired labor cost $30,711.

Existing project is complete except for inactive portions. The 1962 modification was completed in July 1967. North breakwater and shore connection, 9,954 feet long, was completed in August 1925. North pier was completed in 1905 and construction of south pier was completed in November 1910. Construction of south breakwater and shore connection was completed in October 1929. Before modification of August 30, 1935, City of Milwaukee also dredged most of the area in the outer harbor south of inner entrance piers and lakeward of pierhead line to more than 21 feet below datum without cost to the United States. City of Milwaukee also dredged a portion of the area of the outer harbor north of inner entrance piers to provide an approach channel to the passenger and auto pier opposite East

Claybourn Street. Work on the 1945 modification was completed in August 1957, except for the uncompleted portion, which consists of dredging the Milwaukee River from Buffalo Street to upper limit of the project at Humboldt Avenue. The uncompleted portion of the project authorized by the 1945 Rivers and Harbors Act was deauthorized in 1977. Navigation structures range from fair to excellent condition. Total cost of the existing project to end of FY was $76,746,044, of which $8,231,024 was for new work, $49,418,535 for maintenance (includes $322,471 contributed funds), $6,380,925 for diked disposal and $12,715,560 for rehabilitation.

32. MONROE HARBOR, MI

Location. On lower reach of River Raisin, which empties into Lake Erie and is 36 miles south of Detroit, MI. (See NOAA Nautical Chart 14830.)

Existing Project. Provides for a channel in Lake Erie and River Raisin to city of Monroe, for a turning basin, and for riprapping protecting dikes at river mouth. Project depths are 21 feet to turning basin, 18 feet in turning basin, and 9 feet to upstream end of project. For additional details see page 1490 of Annual Report for 1962. Project feature for riprapping protecting dikes is considered inactive. Estimated cost of this feature (1954) is $90,000. (See Table 21-B for authorizing legislation.)

The WRDA of 1986 authorized modifications to deepen the River Raisin portion of the existing 200-foot navigation channel from 21 to 27 feet between existing turning basin and the river's mouth; deepen the lake channel from 21 to 28 feet, and widen the channel from 200 to 500 feet, for a distance of approximately 47,000 feet from the river's mouth to the Maumee Bay Entrance Channel; dredge a new turning basin 24 feet deep, with a diameter of at least 1,600 feet, at the river's mouth; and construct a 190 acre confined disposal area in Plum Creek Bay behind which would enable the creation of a 700 acre marsh. Estimated total cost (Oct. 88) is $150,200,000; $59,000,000 Federal and $91,200,000 non-Federal, which includes a cash contribution of $19,650,000.

Local Cooperation. Fully complied with for completed portion of project. Local cooperation items for the newly authorized project in the WRDA of 1986 (PL 99-662), are as described in the Rivers and Harbors Committee Document 22, 71st Congress, 1st Session; R & H Comm. Doc. 12, 72d Congress, 1st Session, and 45, 75th Congress, 1st Session, and also includes, as a result of PL 99-662, construction cost sharing as follows:

a. Contribute in cash 25 percent of the total cost of construction of general navigation facilities, exclusive of aids to navigation, a contribution presently estimated at $19,650,000. The estimated cash contribution of $19,650,000 to be paid in lump sum prior to initiation of construction, or in annual installments during the construction period at a rate proportionate to the proposed or scheduled expenditure of Federal funds as required by the Chief of Engineers, or under another arrangement satisfactory to the Secretary of the Army, the final apportionment of cost to be made after actual costs have been determined;

b. Repay, with interest, over a period of up to 30 years following project completion, 10 percent of the total cost of construction of general navigation facilities, an amount presently estimated at $7,860,000. The Secretary of the Army may count against all or part of the 10 percent repayment, the amount of the local contribution for lands, easements, rights-of-way, dredged/demolition material disposal sites and relocations. In no case are these costs to count against the cash payment during construction, and in no case would the amount waived exceed 10 percent of project cost; and

c. The confined dike area construction is a non-Federal responsibility and is estimated to cost $70,156,000.

Terminal Facilities. Several privately owned docks and a municipal terminal. Port of Monroe Authority built a steel and concrete wharf on southeast side of turning basin for commercial use. Detail on actual port and harbor facilities is in Port Series No. 45 (revised 1996) prepared and published by the Water Resources Support Center. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition surveys, and miscellaneous inspections and reports performed by Government forces cost $43,812. Maintenance of the confined disposal facility performed by hired labor cost $5,672. The contract awarded last FY for maintenance dredging was completed this FY, removing 22,733 cubic yards of shoal material at a cost of $67,210. Supervision and administration cost $53,912.

Total cost of the existing project to end of FY was $62,611,303, of which $987,340 was for new work (includes $300,000 contributed by the Port Commission of Monroe) $22,934,381 for maintenance (includes $166,667 contributed funds:

$125,000 by Consolidated Paper Company and $41,667 by River Raisin Company) and $38,689,582 for diked disposal (includes $83,182 contributed funds).

33. MUSKEGON HARBOR, MI

Location. On east shore of Lake Michigan, 114 miles northeasterly from Chicago, IL, and 80 miles easterly from Milwaukee, WI. (See NOAA Nautical chart 19434.)

Previous Project. For details see page 1950 of Annual Report for 1915; page 1399, Annual Report for 1924; and page 1484, Annual Report for 1938.

Existing Project. A breakwater protected outer basin in Lake Michigan and an entrance channel from Lake Michigan to Muskegon Lake protected by piers and revetments. Project depths vary from 29 feet in the lakeward portion of the outer basin to 27 feet in the channel between the inner piers to Muskegon Lake. For additional details see page 1303 of Annual Report for 1963. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. Several privately owned wharves primarily for commercial use. Details on actual port and harbor facilities are in Port Series, No. 48 (revised 1981) prepared and published by the Water Resources Support Center. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Miscellaneous inspections and reports performed by Government forces cost $715. Engineering and design for maintenance dredging was completed at a cost of $9,930. A contract for this work was awarded and completed this FY in the amount of $323,350, removing approximately 65,000 cubic yards of shoal material.

Existing project, including latest project modification, was completed in 1965. For additional details on completion of existing project see page 1465 of Annual Report for 1962. Navigation structures are in good condition. Total cost of the existing project to end of FY was $31,903,026, of which $3,017,110 was for new work, $15,061,616 for maintenance, and $13,824,300 for rehabilitation.

34. ONTONAGON HARBOR, MI

Location. About 140 miles east of Duluth, MN, on south shore of Lake Superior, at mouth of Ontonagon River; provides the only refuge for small craft between the Keweenaw Waterway upper entrance and Black River Harbor. (See NOAA Nautical Chart 14965.)

Previous Project. For details see page 1931 of Annual Report for 1915, and page 1406 of Annual Report for 1938.

Existing Project. Provides for approach channel 16 feet deep, a channel between piers with 17- and 15-foot depths, an inner basin 12 feet deep, and maintenance of channels, basin, and entrance piers. Completed project cost $19,619. See page 1100 of Annual Report for 1966 for details. A modification authorized by 1962 River and Harbor Act provides for increasing depths of channels, construction of an inner basin and a sedimentation basin. (See Table 21-B for authorized legislation.)

The turning basin feature of the project for navigation at Ontonagon Harbor, Ontonagon County, MI, authorized by the River and Harbor Act of 1962, was deauthorized by the WRDA of 1986; PL 99-662 (Section 1002) Nov. 17, 1986, 99th Congress, Title X. The channel modification project authorized by the 1962 River and Harbor Act was deauthorized Dec. 31, 1989, in accordance with Section 1001 of the WRDA of 1986 (PL 99-662).

Local Cooperation. None required.

Terminal Facilities. There are no publicly owned wharves. There are three coal wharves, an oil receiving facility, and a few small fish wharves. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition and structure surveys, environmental studies, and miscellaneous inspections and reports performed by Government forces and contract cost $74,001. Breakwater repairs were performed using the U.S. Derrickbarge SCHWARTZ at a cost of $75,148. The basic requirement for the FY03 multi-year maintenance dredging contract was completed this FY in the amount of $4,739. Option year one began this FY, removing approximately 64,109 cubic yards of shoal material at a cost of $411,658. Engineering, design, surveys, and supervision and administration cost $84,572.

All work authorized under previous Acts was completed in 1938. Navigation structures range from fair to excellent condition. Several areas along the piers have had tie rod failures and repairs are underway. Total cost of the existing project to end of FY was $28,323,354, of which $953,903 was for new work, $27,348,451 for maintenance and $21,000 for diked disposal.

35. PENTWATER HARBOR, MI

Location. On east shore of Lake Michigan, 146 miles northeasterly from Chicago, IL, and 14 miles southerly from Ludington, MI. (See NOAA Nautical Chart 14907.)

Existing Project. Provides for widening old entrance channel to 150 feet between parallel piers and revetments, channel to extend from Lake Michigan to Pentwater Lake, with a depth of 16 feet. Piers and revetments are built of stone filled timber cribs and piling and capped with concrete. The 200-foot extension to south pier portion of project is considered inactive. Estimated cost (1954) of this portion is $65,100. (See Table 21-B for authorizing legislation.)

Local Cooperation. None required.

Terminal Facilities. Several small privately owned wharves on west end of Pentwater Lake. The City and Michigan Waterways Commission jointly constructed a dock on northwest side of Pentwater Lake for public use. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition and structure surveys, and miscellaneous inspections and reports performed by Government forces cost $44,997. A contract for maintenance dredging was awarded and completed this FY, removing 17,390 cubic yards of shoal material at a cost of $78,169. Engineering, design, surveys, and supervision and administration cost $40,069.

Existing project was completed in 1959 except for a 200-foot extension to the south pier, which is not considered necessary under present conditions. For additional details see page 1468 of Annual Report for 1962. Navigation structures are in excellent condition. Total cost of the existing project to end of FY was $15,564,951, of which $179,899 was for new work, and $15,385,052 for maintenance.

36. PORT AUSTIN HARBOR, MI

Location. On west shore of Lake Huron at extreme southeastern limit of Saginaw Bay, and 29 miles south of AuSable River (Oscoda). (See NOAA Nautical Chart 14863.)

Existing Project. A harbor of refuge at the mouth of Bird Creek, consisting of a harbor basin dredged to a depth of 10 feet protected by a breakwater structure, and for dredging an entrance channel to the harbor basin to a depth of 12 feet. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. A number of docks near mouth of Bird Creek and a State-owned dock inside breakwater. Facilities accommodate recreational craft and are considered adequate for existing traffic.

Operations During Fiscal Year. Maintenance: Condition surveys, and miscellaneous inspections and reports performed by Government forces cost $27,346. Safety maintenance performed by hired labor cost $176. A contract was awarded and completed this FY, removing 16,030 cubic yards of shoal material at a cost of $172,896. Engineering, design, surveys, real estate, and supervision and administration cost $38,210.

Navigation structures are in good condition. Total cost for existing project to end of FY was $5,811,026; of which $3,363,334 was for new work (includes $172,100 contributed funds), $2,288,692 for maintenance and $159,000 for diked disposal

37. PORT SANILAC HARBOR, MI

Location. On southwest shore of Lake Huron, 30 miles north of Port Huron, MI. (See NOAA Nautical Chart 14862.)

Existing Project. Provides for a harbor of refuge protected by breakwater structures extending to 12-foot depth contour in lake; for dredging a harbor basin 10 feet deep; for dredging an entrance channel 12 feet deep; a 70-foot extension of the south breakwater; a 300-foot arm added to the north breakwater; and riprap placed at the lakeward side of the breakwater addition. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. There is one privately owned dock used principally as a fishing terminal by owner and a municipally owned pier for recreational craft. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition surveys, and miscellaneous inspections and reports performed by Government forces cost $5,936. An adjustment of -$132 was made in supervision and administration cost to closeout FY03 maintenance dredging contract completed this FY.

The project was completed in 1951 except for latest modification that was completed in FY 76. The breakwaters are in good condition, with miscellaneous repairs programmed in the next 5 years. Total cost of the existing project to end of FY was $5,925,219, of which $1,733,071 was for new work (includes $487,108 contributed funds), $4,182,990 for maintenance (includes $115,000 contributed funds) and $9,158 for diked disposal.

38. PORT WASHINGTON HARBOR,WI

Location. On the west shore of Lake Michigan, about 53 miles south of Manitowoc and about 29 miles north of Milwaukee, WI. (See NOAA Nautical Chart 14904.)

Previous Project. For details, see page 1938 of Annual Report for 1915, page 1459 of Annual Report for 1938, and page 30-14 of Chicago District Annual Report for 1975.

Existing Project. See Chicago District Annual Report for 1979, Table 30-C, page 30-27.

Construction of a small boat harbor within the existing harbor was authorized by the Chief of Engineers, June 12, 1975, under authority of Section 107, 1960 River and Harbor Act, as amended.

Local Cooperation. Fully complied with.

Terminal Facilities. There is one coal wharf, a petroleum tank farm and several fishing wharves. City provided a wharf which is open to public use. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition and structure surveys, and miscellaneous inspections and reports performed by Government forces cost $6,585.

The existing project was completed in 1936. The 1958 modification was deauthorized in 1977. Navigation structures range from fair to good condition. Total cost of the existing project to end of FY was $8,038,059, of which $4,206,204 was for new work (includes $1,624,000 contributed funds), $3,821,234 for maintenance and $10,621 for diked disposal.

39. PORTAGE LAKE HARBOR, MI

Location. On east shore of Lake Michigan about 186 miles northeasterly from Chicago, IL, and about 37 miles northerly from Ludington, MI. (See NOAA Nautical Chart 14939.)

Existing Project. Provides for a harbor of refuge with an entrance channel from Lake Michigan to Portage Lake protected by piers and revetments. Project depth is 18 feet. For additional details see page 1297 of Annual Report for 1958. (See Table 21-B for authorizing legislation.)

Local Cooperation. None required.

Terminal Facilities. There are landing places and marinas at inner end of Portage Lake. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition and structure surveys, and miscellaneous inspections and reports performed by Government forces cost $25,594. Engineering and design for repair of the North and South Revetment (Phase II) continued at a cost of $8,048.

Existing project was substantially completed in 1912. For additional details on completion of existing project see page 1298 of Annual Report for 1958. Navigation structures are in generally poor condition and major repairs are underway. Total cost of the existing project to end of FY was $9,030,488 of which $256,129 was for new work and $8,774,359 for maintenance.

40. ROUGE RIVER, MI

Location. Rises in Oakland and Washtenaw Counties, MI, 30 miles long, flows southeasterly through Wayne County, and joins Detroit River at westerly limit of city of Detroit. (See NOAA Nautical Chart 14854.)

Previous Project. For details see page 1530 of Annual Report for 1932, and page 1558 of Annual Report for 1938.

Existing Project. Provides for: (a) Main channel from Detroit River through Short Cut Canal extending to upstream limit of the project, a distance of 3.5 miles. Project depths are 25 and 21 feet in navigation channel, 21 feet in turning basin, and 13 feet in upper reach of project. (b) Old Channel from Detroit River extending to junction of Old Channel with Short Cut Canal. Project depths are 25, 18, 17, and 21 feet. For additional details see page 1324 of Annual Report for 1963. In 1973, work authorized by the 1962 River and Harbor Act was reclassified from the active to inactive category. Estimated cost (1972) of this work is $880,000. Except for dredging 25-foot channel 1,150 feet upstream from mouth of Old Channel, work authorized in Act of Aug. 30, 1935, is considered inactive. Estimated cost (1958) of inactive portion is $255,000. Work authorized by Act of July 3, 1958, is considered inactive. Estimated cost (1960) of this work is $210,000. (See Table 21-B for authorizing legislation.)

Local Cooperation. Act of Oct. 23, 1962, requires local interests to provide lands and rights-of-way for construction upon request of the Chief of Engineers; hold the United States free from damages; provide terminal facilities to accommodate prospective commerce considered in report of District Engineer; dredge and maintain areas between the Federal improvement and terminal facilities to depths commensurate with improved Federal channel; make alterations in docks, bulkheads and other structures, and take such other measures as may be necessary to assure stability of banks adjacent to channel; and provide bridge protection. The assurances of local cooperation for the River and Harbor Act of 1962 were furnished by the Michigan State Waterways Commission and accepted on Jan. 7, 1965. Fulfillment of all items of local cooperation has not been accomplished.

Terminal Facilities. Numerous large commercial docks for handling various type cargo. Details on actual port and harbor facilities are contained in the Port Series No. 45 (revised 1984) prepared and published by the Water Resources Support Center. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition surveys, environmental studies, confined disposal facility monitoring, and miscellaneous inspections and reports performed by Government forces and contract cost $163,569.

Work authorized before 1962 modification is complete or deauthorized. For additional details on completion of existing project see Annual Report for 1962. Total cost of the existing project to end of FY was $40,235,295, of which $675,251 was for new work ($29,563 was expended from Emergency Relief Act Funds), $24,652,726 for maintenance and $14,907,318 for diked disposal.

41. SAGINAW RIVER, MI

Location. Formed by union of Tittabawassee and Shiawassee Rivers, 22 miles long, and flows northerly into extreme inner end of Saginaw Bay, Lake Huron. Cities of Saginaw and Bay City are on the river. (See NOAA Nautical Chart 14867.)

Previous Project. For details, see page 1957 of Annual Report for 1915; and page 1550 of Annual Report for 1938.

Existing Project. Provides for an entrance channel 27 feet deep and 350 feet wide from 27-foot contour in Saginaw Bay to river mouth; thence a channel 26 feet deep and 200 feet wide to New York Central Railroad Bridge at Bay City; thence 22 feet deep and 200 feet wide to C&O Railroad Bridge in Saginaw; thence 16.5 feet deep and 200 feet wide to upstream limit at Green Point. Project also provides for five turning basins; one 25 feet deep at Essexville, 600 feet wide with a maximum length of 1,850 feet; one 22 feet deep on east side of channel about 1 mile upstream from Cass Avenue in Bay City, 650 feet wide and 1,000 feet long; one 20 feet deep at Carrollton, 100 to 300 feet wide and 900 feet long; one 20 feet deep downstream from C&O Bridge in Saginaw, 650 feet wide and 1,000 feet long; and one 15 feet deep between Bristol Street Bridge and New York Central Railroad Bridge in Saginaw. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. Numerous large commercial docks for handling a great variety of cargo. Details on actual port and harbor facilities are in Port Series No. 45 (revised 1996) prepared and published by the

Water Resources Support Center. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition surveys, environmental studies, confined disposal facility monitoring, support of water control center and miscellaneous inspections and reports performed by Government forces and contract cost $447,219. Dredged material management plans study for the Upper Saginaw River continued at a cost of $113,727. Maintenance of confined disposal facility performed by hired labor cost $118,084. A contract for maintenance dredging of the bay and river was awarded and completed this FY, removing 144,149 cubic yards of shoal material at a cost of $533,482. Engineering, design, surveys, real estate, and supervision and administration cost $197,094.

Existing project is complete except for small part of the work authorized by the Act of October 23, 1962. Section D (Sixth Street Turning Basin) of the 1962 Act is complete except for the channel portion, which is pending modification. Total cost of the existing project to end of FY was $102,749,508, of which $14,930,727 was for new work (includes $13,600 for contributed funds), $66,866,893 for maintenance, and $20,951,888 for diked disposal.

42. ST. CLAIR RIVER, MI

Location. A 40 mile long section of Great Lakes connecting channels which flows southerly from Lake Huron and discharges into Lake St. Clair. (See NOAA Nautical Chart 14852.)

Existing Project. Provides for channels through St. Clair River, which, at low water datum, are suitable for vessels drawing 25.5 feet. Project also provides for improvement of North Channel outlet, 100 feet wide and 10 feet deep, for recreational craft. Project depths are referred to low water datums for Lakes Huron and St. Clair; 577.5 and 572.3 feet above mean water level at Rimouski, Quebec, IGLD 1985. (See Tables 21-B and 21-H for authorizing legislation and features of existing project.) Act of July 24, 1946, provides for widening and deepening of southeast bend and improvement of outlet of north channel at an estimated cost (1986) of $870,000; $435,000 Federal and $435,000 non-Federal. On June 16, 1969, the Director of Civil Works approved substitution of the middle channel of the St. Clair River for the authorized north channel. Subsequently, however, the work authorized by the River and Harbor Act of July 24, 1946, was deauthorized by the WRDA of 1986; PL 99-662, Nov. 17, 1986, 99th Congress, Title X.

Local Cooperation. None required.

Terminal Facilities. This improvement serves through commerce, between the upper and lower Great Lakes, and has not materially influenced terminal facilities along its route. A number of privately owned piers and wharves are at Port Huron, Marysville, St. Clair, and Marine City, MI, which handle coal, limestone, petroleum products, wood-pulp, salt and general cargo. These installations satisfy present commerce requirements.

Operations During Fiscal Year. Maintenance: Condition surveys, environmental studies, support of water control center, and miscellaneous inspections and reports performed by Government forces and contract cost $212,554. Dredged material management plan studies was continued at a cost of $78,139. Location and removal of obstructions was performed using the U.S. Cranebarge VELER and Survey Vessel WHEELER at a cost of $326,652. A contract for maintenance dredging was awarded in the amount of $499,500. The contract was 44% complete at the end of the FY, removing 23,500 cubic yards of shoal material at a cost of $216,255. Engineering, design, surveys, real estate, and supervision and administration cost $202,034.

Existing project is complete. Total cost of the existing project to end of FY was $52,125,857, of which $19,213,246 was for new work and $32,912,611 for maintenance

43. ST. JOSEPH HARBOR, MI

Location. On east shore of Lake Michigan, 60 miles easterly from Chicago, IL, and 24 miles southerly from South Haven, MI. (See NOAA Nautical Chart 14930.)

Previous Project. For details see page 1945 of Annual Report for 1915, and page 1470 of Annual Report for 1938.

Existing Project. Provides for protecting mouth of St. Joseph River by two piers, 250 to 325 feet apart at their inner and outer ends, respectively, having lengths of 2,758 feet on north side and 2,603 feet on south side; for a channel 21 feet deep from Lake Michigan to mouth of Benton Harbor Canal, a length of about 6,900 feet with widths of 265 feet at outer end of piers, 190 feet at inner end of piers and

revetments, thence generally 215 feet to lower end of turning basin, increasing to 250 feet above the turning basin to mouth of Paw Paw River, thence generally 110 feet in Paw Paw River to mouth of Benton Harbor Canal; for dredging channel in Benton Harbor Canal up to west line of Riverview Drive extended northerly, to 18 feet deep and 80 feet wide; and a turning basin 18 feet deep on north side of channel above mouth of Morrison Channel and a turning basin 18 feet deep near mouth of Paw Paw River. Public Law 88-88 declared a portion of Benton Harbor Canal a non-navigable stream. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. Several commercial wharves for handling coal, building materials, petroleum products, and miscellaneous commodities. A package freight terminal and a public docking facility is also available. Facilities considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition and structure surveys, environmental studies, and miscellaneous inspections and reports performed by Government forces cost $161,027. Environmental activities for a disposal area and polluted dredged material continued at a cost of $59,007. Confined disposal facility repairs by contract cost $30,625. Option year one of the multi-year contract for maintenance dredging the outer channel was completed this FY, removing 4,440 cubic yards of material at a cost of $62,824. Final option of FY02 multi-year contract was exercised this FY, removing approximately 17,887 cubic yards of shoal material at a cost of $177,513. This contract was also for beach nourishment. Engineering, design, surveys, real estate, and supervision and administration cost $45,312. **Banks lawsuit cost $90,122.** Monitoring in connection with Section 111 of P.L. 90-483 cost $54,911. Beach nourishment in conjunction with the above maintenance dredging of the outer channel contract cost $45,999. Supervision and administration under Section 111 cost $3,739.

Existing project was completed in 1956. For additional details on completion of existing project see page 1454 of Annual Report for 1962. Navigation structures are in generally good condition. Total cost of the existing project to end of FY was $35,621,475, of which $1,804,485 was for new work, $32,216,698 for maintenance, $638,076 for diked disposal and $962,216 for rehabilitation.

44. SAUGATUCK HARBOR AND KALAMAZOO RIVER, MI

Location. Harbor is on east shore of Lake Michigan, 90 miles northeasterly from Chicago, IL, and 22 miles northerly from South Haven, MI. (See NOAA Nautical Chart 14906.)

Previous Project. For details see page 1947 of Annual Report for 1915, and page 1475 of Annual Report for 1938.

Existing Project. Entrance channel protected by parallel piers at mouth of Kalamazoo River and a river channel to village of Saugatuck, MI. Project depths: 16 feet in entrance channel, 14 feet in river channel. Additional details on page 1456 of 1962 Annual Report. (See Table 21-B for authorizing legislation.)

Local Cooperation. None required.

Terminal Facilities. At city of Saugatuck, MI, there are several landing places for recreational craft and one for small commercial vessels. At village of Douglas, MI, there is a landing pier. Facilities are considered adequate for present traffic.

Operations During Fiscal Year. Maintenance: Condition and structure surveys, and miscellaneous inspections and reports performed by Government forces cost $37,635. Engineering and design for repair of the North and South Pier, Sections C-F, (Phase II), continued at a cost of $3,744. A contract for maintenance dredging was awarded and completed this FY, removing 26,192 cubic yards of shoal material at a cost of $159,056. Engineering, design, surveys, and supervision and administration cost $37,630.

Existing project was completed in 1903. Navigation structures are in excellent to poor condition and are programmed for major repair. Total cost of the existing project to end of FY was $10,809,304, of which $364,527 was for new work and $10,444,777 for maintenance.

45. SHEBOYGAN HARBOR, WI

Location. On west shore of Lake Michigan about 26 miles south of Manitowoc and about 55 miles north of Milwaukee, WI. (See NOAA Nautical Chart 14922.)

Previous Project. See page 1381 of Annual Report for 1962.

Existing Project. See Chicago District Annual Report for 1979, Table 30-C, page 30-27.

For detailed description see page 1230 of Annual Report for 1963. New work for project as completed cost $648,271, exclusive of amounts expended on previous projects. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. Three wharves for handling coal, petroleum products and miscellaneous commodities. City provided a public wharf. Facilities considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition and structure surveys, and miscellaneous inspections and reports performed by Government forces cost $54,728. Harbor and Breakwater repairs were performed using the U.S. Cranebarge MANITOWOC at a cost of $341,076. Supervision and administration cost $86,582.

Existing project was completed in 1904. Construction of north breakwater was commenced in October 1913 and completed in October 1915. Dredging entrance channel to existing project depth was commenced in June and completed in July 1938. Work on 1954 modification was completed in December 1956. Inner 260 feet of south pier was replaced with a revetment by private interests under permit granted July 16, 1931, by the Secretary of War. Piers, therefore, are maintained only for a length of about 2,490 feet. Sheboygan River is navigable about 2.4 miles above its mouth for craft drawing not more than 2 feet. Navigation structures range from fair to good condition. It is anticipated repairs will be required in the next 5 to 7 years. Total cost of the existing project to end of FY was $12,464,336, of which $1,136,088 was for new work, $9,811,428 for maintenance, $907,792 for diked disposal and $609,028 for rehabilitation.

46. SOUTH HAVEN HARBOR, MI

Location. On east shore of Lake Michigan, 77 miles northeasterly from Chicago, IL, and 24 miles northerly from St. Joseph, MI. (See NOAA Nautical Chart 14906.)

Previous Project. For details see page 1947 of Annual Report for 1915, and page 1473 of Annual Report for 1938.

Existing Project. An entrance channel protected by parallel piers and revetments at mouth of Black River, a river channel and a turning basin. Project depths are 21 feet in entrance channel and 19 feet in river channel and turning basin. For additional details see page 1455 of Annual Report for 1962. The turning basin feature was subsequently deauthorized by Section 116 of the WRDA of 1992 (PL 102-580). (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. Several wharves for handling coal, building materials, wood-pulp, fish, and miscellaneous commodities; two have warehouses. Facilities satisfy current commerce requirements.

Operations During Fiscal Year. Maintenance: Condition surveys, environmental studies, and miscellaneous inspections and reports performed by Government forces cost $38,166. Safety maintenance performed by hired labor cost $4,058. (CORRECTION: The structure repair contract awarded last FY was for North Revetment, Sections D1, E, F1, F and G; not the North Pier, Sections A-C, (Concrete Caps)). The contract was completed this FY at a cost of $636,195. Engineering and design during construction cost $7,055. An adjustment of $15,657 was made in contract cost and 1,011 in cubic yards to maintenance dredging completed last FY. Engineering, design, surveys, and supervision and administration cost $135,561. Monitoring in connection with Section 111 of P.L. 90-483 was performed at a cost of $21,225.

Existing project was completed in 1960. Project now being maintained to 14-foot and 12-foot depths, respectively (in lieu of the 21 feet and 19 feet authorized), which is adequate for current usage. For additional details on completion of existing project see page 1456 of Annual Report for 1962. Navigation structures are in good to fair condition and are under repair. Total cost of the existing project to end of FY was $13,632,128, of which $984,426 was for new work, $10,973,245 for maintenance, $42,381 for diked disposal and $1,632,076 for rehabilitation.

47. STURGEON BAY AND LAKE MICHIGAN SHIP CANAL, WI

Location. On west shore of Lake Michigan about 52 miles northeast of Green Bay and about 128 miles north of Milwaukee, WI. (See NOAA Nautical Chart 14919.)

Previous Project. See page 1373 of Annual Report for 1962.

Existing Project. See Chicago District Annual Report for 1979, Table 31-C, page 30-27. For detailed description, see page 1223, Annual Report for 1963. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. As the canal and connecting channel is a through waterway, only terminal facilities are in city of Sturgeon Bay, 4 miles from west end of revetted portion of canal. These facilities consist of two wharves for handling coal, petroleum products and miscellaneous commodities, and four shipbuilding yards. City of Sturgeon Bay provided a public wharf about 5 miles northwesterly from city of Sturgeon Bay. Two major shipyards are located in Sturgeon Bay where repair facilities are available including dry docks, marine railways and hoists. Facilities are considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition surveys, miscellaneous inspections and reports performed by Government forces cost $81,880. Safety repairs performed by hired labor cost $15,671. Engineering and design for repair of the South Revetment, Section N, continued at a cost of $11,885.

Navigation structures are in good to fair condition, the South Revetment, Section N, is in poor condition and is programmed for major repair. Total cost of the existing project to end of FY was $13,643,486, of which $1,059,722 was for new work, $11,387,746 for maintenance, $311,119 for diked disposal and $884,899 for rehabilitation. In addition, between April 25, 1893, and June 30, 1917, $235,940 was expended for operating and care of works of improvements under provision of permanent indefinite appropriations for such purposes.

48. TWO HARBORS, MN

Location. Harbor is on north shore of Lake Superior, 27 miles northeasterly from Duluth, MN. (See NOAA Nautical Chart 14966.)

Existing Project. Narrowing natural entrance by construction of two breakwaters, 1,628 and 900 feet long, from eastern and western points of bay, respectively; and dredging a maneuvering area on north side of harbor to 28 and 30 feet deep. A walkway on east breakwater is provided for public recreational use. For details see page 1026 of Annual Report for 1965. Dredging to deepen areas along easterly and northerly edges of channel was completed in 1980. This portion of project was reclassified from the “inactive” to “active” category in 1973. (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with. A section 221 local cooperation agreement was entered into with the City of Two Harbors on August 14, 1978.\

Terminal facilities. No publicly owned wharves. Three ore docks, tug wharf, an unused coal dock, and merchandise wharf are privately owned. Detail on actual port and harbor facilities is in Port Series No. 49 (revised 1999) prepared and published by the Water Resources Support Center. Facilities considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition surveys, and miscellaneous inspections and reports performed by Government forces cost $7,870. Strike removal and breakwater repairs were performed using the U.S. Derrickbarge SCHWARTZ at a cost of $109,320. Supervision and administration cost $8,617.

The existing project is complete. Navigation structures are in good condition. Total cost of the existing project to end of FY was $9,569,966, of which $4,170,710 was for new work and $5,399,256 for maintenance.

49. TWO RIVERS HARBOR, WI

Location. On west shore of Lake Michigan about 82 miles north of Milwaukee and about 101 miles from Green Bay, WI, via Sturgeon Bay Canal. (See NOAA Nautical Chart 14903.)

Previous Project. See page 1377, Annual Report for 1962.

Existing Project. See Chicago District Annual Report for 1979, Table 30-C, page 30-28.

For detailed description see page 1226 of Annual Report for 1963. Completed project cost $147,463, exclusive of the amount expended on previous projects. The 1935 River and Harbor Act portion of project is essentially complete, except for dredging a 10-foot width along each side of the entrance channel between the piers. The uncompleted portion of the project authorized by the 1935 R & H Act was deauthorized Dec. 31, 1989, in accordance with Section 1001 of the WRDA of 1986 (PL 99-662). (See Table 21-B for authorizing legislation.)

Local Cooperation. Fully complied with.

Terminal Facilities. A coal wharf and several fishing wharves. City provided a wharf for receipt of petroleum products and public use. Facilities considered adequate for existing commerce.

Operations During Fiscal Year. Maintenance: Condition surveys and miscellaneous inspections and reports performed by Government forces cost $34,616. Safety maintenance by hired labor cost $934. An adjustment of $8,685 was made in contract costs for FY02 repair of the South Entrance Pier completed last FY. Supervision and administration cost $28,737.

Existing project is complete except for portion deauthorized in December 1989. Present width of channel is considered adequate for present and reasonably prospective commerce. North Pier was completed in 1908. North Revetment, completed in 1917, was rebuilt in May to August 1962. Dredging entrance channel and inner basin to existing project depth was commenced in March and substantially completed in May 1937. Navigation structures range from fair to good condition and are under repair. Total cost of the existing project to end of FY was $13,010,969, of which $360,320 was for new work, $11,405,120 for maintenance, $1,187,472 for diked disposal and $58,057 for minor rehabilitation

50. WHITE LAKE HARBOR, MI

Location. On the east shore of Lake Michigan 120 miles northeasterly from Chicago, IL, and 45 miles southerly from Ludington, MI. (See NOAA Nautical Chart 14935.)

Existing Project. Parallel piers, revetments, and a channel 16 feet deep, 200 feet wide, 1,950 feet long, extending from Lake Michigan to White Lake. For additional details see page 1465 of Annual Report for 1962. (See Table 21-B for authorizing legislation.)

Local Cooperation. None required.

Terminal Facilities. A privately owned chemical shipping dock on the north side of the lake about 3 miles from the inner end of revetted entrance channel. Across the lake, at village of Whitehall, there are several installations serving light draft vessels. These terminals satisfy present recreational and commercial traffic requirements.

Operations During Fiscal Year. Environmental activities, and miscellaneous inspections and reports performed by Government forces cost $11,080. Monitoring in connection with Section 111 of P.L. 90-483 was performed at a cost of $28,023.

Existing project was completed in 1908. Stone was placed on the north and south revetments in FY 1972. Project now being maintained to 14-foot depth authorized, which is adequate for current usage. Navigation structures are in excellent condition. Total cost of the existing project to end of FY was $12,844,985, of which $457,562 was for new work and $12,387,423 for maintenance.

51. RECONNAISSANCE AND CONDITION SURVEYS

See Table 21-J.

52. OTHER AUTHORIZED NAVIGATION PROJECTS

See Table 21-C.

53. NAVIGATION WORK UNDER SPECIAL AUTHORIZATION

See Table 21-K.

BEACH EROSION CONTROL

54. AUTHORIZED BEACH EROSION CONTROL PROJECTS

River and Harbor Act of 1962, as amended, Beach Erosion Control. None.

55. EMERGENCY SHORE PROTECTION

See Table 21-L.

56. BEACH EROSION WORK UNDER SPECIAL AUTHORIZATION

See Table 21-M.

57. MITIGATION OF SHORE DAMAGES

See Table 21-N.

58. PROJECT MODIFICATION FOR IMPROVING THE QUALITY OF THE ENVIRONMENT

See Table 21-O.

FLOOD CONTROL

59. FORT WAYNE METRO AREA, IN

Location. Fort Wayne, which is located in northeastern Indiana in Allen County, is in the Maumee River drainage basin. In all, the Maumee basin covers an area of 6,586 square miles. Of this area, 4,856 square miles are in northwest Ohio, 1,260 are in northeast Indiana and 470 are in southeast Michigan. This basin is one of the largest and most important tributaries in the Great Lakes-St. Lawrence River system. There are four main tributary streams to the Maumee River: the Auglaize, Tiffin, St. Joseph and St. Marys Rivers. The St. Joseph and Tiffin Rivers originate in the hills of southern Michigan and flows southerly to the Maumee. The St. Marys and Auglaize originate in Ohio and flow northward. In the City of Fort Wayne, the St. Joseph and St. Marys Rivers join to form the headwaters of the Maumee River. From this point, the Maumee flows northeasterly and empties into Lake Erie at Toledo, Ohio. The central business district is located on the south side of the Maumee and the St. Marys Rivers. The St. Joseph River bisects primarily residential areas on the north side of the central business district. While some portions of the central business district are prone to flooding in the immediate vicinity of the St. Marys River, the majority of the business district is sufficiently elevated to avoid flood damages. The residential areas, however, are generally low lying and are prone to frequent flooding.

Existing Project. The Fort Wayne and Vicinity, Indiana, Flood Control Study was authorized by resolution of the Committee on Public Works, House of Representatives on October 12, 1972. The authorization requested that the Corps determine the advisability of providing improvements for flood control and allied purposes at and in the vicinity of Fort Wayne, Indiana. The study authorization resulted in completion of a Final Feasibility Report entitled "Fort Wayne and Vicinity, Indiana Flood Control Study," dated September 1987, and revised in April 1988, which identified and evaluated a number of different alternatives to flood control in the Fort Wayne area. The Final Feasibility Report also contained the "Final Environmental Impact Statement" for this project. Preparation of the General Design Memorandum began in August 1989 and was approved in December 1993. Construction was authorized in Section 101 of the Water Resources Development Act of 1990 (Title 1 Public Law 101-640). This project was a Congressionally added new construction start in FY 1994. The Project Cooperative Agreement (PCA) was executed in August 1994 and construction was initiated in September 1995. The project will provide a 100-year level of flood protection to a large part of the central area of the City of Fort Wayne, Indiana that has experienced numerous flooding events in the past. The project is located along the north side of the St. Marys River, the east and west banks of the St. Joseph River, and the north bank of the Maumee River. Junk Ditch and Spy Run Creek which are tributary to the St. Marys River will also have protection installed or improved along their north and east banks respectively. The project area has been broken into four (4) segments that provide flood protection to various areas within the project limits. The West Segment is located along the St. Marys River and the Junk Ditch Tributary. The Central Segment is located along the Spy Run Tributary to the St. Marys River, a short section of the St. Marys River itself (at the confluence with the St. Joseph River), and along the west bank of the St. Joseph

River. The East-North Segment is located along the east bank of the St. Joseph River and the East-South Segment is located along the north bank of the Maumee River. The total project length is approximately 54,000 feet. The project consists of several types of flood protection improvements. The most common type of flood protection improvements proposed are earth levees. The levees proposed are to have turf or rock protected slopes depending on the available space for their construction. Levees account for approximately 63 percent of the total project length. Concrete floodwalls are proposed in those areas where insufficient space exists to construct levees due to site constraints. Concrete flood walls account for 20 percent of the project length. An additional eight percent of the project length consists of a combination of a ½ Reduced levee and concrete L-Wall. The remaining length is composed of various types of road closures (stoplogs, clay dikes and high curbs), and 3,000 feet in several areas that do not require improvements due to adequate existing surface grades. The fully funded total project cost estimate is $50,104,000. The Federal cost is $37,222,000 and the non-Federal cost is $12,882,000.

Local Cooperation. The non-Federal sponsors for the project are the City of Fort Wayne and Allen County. A Project Cooperation Agreement (PCA) was executed with the Mayor of Fort Wayne and the Allen County Board of Commissioners on 22 August 1994. Under the terms of the PCA, the non-federal sponsors shall contribute a minimum of 25 percent, but not to exceed 50 percent, of the total project costs attributed to flood control purposes. This shall consist of all required lands, easements, rights-of-way and relocations for the project; and a cash contribution equal to a minimum of five percent of the total project flood control cost. The Assistant Secretary of the Army (CW) has approved a credit in the amount of $1,123,500 under Section 104 of the Water Resources Development Act of 1986. This will be applied to the non-Federal share of the project flood control cost. In addition to the above, the non-federal sponsor shall provide 50 percent of the total project recreation costs, 100 percent of all betterment costs, and shall operate and maintain all works after completion. Cash contributions totaling $8,022,221 have been provided through the end of FY 04. Real estate requirements for the East-South Segment were completed on July 27, 1995, East-North Segment on July 19, 1996, Central Segment on November 11, 1997 and the West Segment on April 8, 1999.

Operations During Fiscal Year. FY04 expenditures of $4,774 were made to finalize contract closeout and for the West (final) Segment. Of the funds expended, $0 was contributed by the City of Fort Wayne and Allen County. Total cost to end of FY was $45,281,758.

60. SEBEWAING RIVER, MI

Location. Sebewaing River drains an area of 105 square miles in Huron and Tuscola Counties on the westerly side of Thumb area of Lower Peninsula of Michigan and discharges into Saginaw Bay, an arm of Lake Huron, 20 miles northeast from mouth of Saginaw River. Village of Sebewaing is near mouth of River. (See NOAA Nautical Chart 14863.)

Existing Project. Enlarging present channel of Sebewaing River through village of Sebewaing, MI, to a capacity of 7,500 cubic feet per second from junction of Columbia and State drains to a point 4,500 feet lakeward from railroad bridge near mouth; altering railroad bridge and three highway bridges to permit free passage of ice; and removal of present dike on south side of channel lakeward from railroad bridge. Project is designed to provide protection for village of Sebewaing from floods with a frequency of once in 15 years and with a magnitude greater than the maximum flood of record. (See Table 21-B for authorizing legislation.)

Local Cooperation. Complied with except for furnishing easements and rights-of-way for removal of remaining portion of dike on south side of channel lakeward from railroad bridge.

Operations During Fiscal Year. Maintenance: Miscellaneous inspections and reports performed by Government forces cost $6,164. Total costs to the end of FY were $850,331 of which $365,642 was for new work and $484,689 for maintenance.

61. INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS

NAME OF PROJECT	DATE OF INSPECTION
Red Run, Clinton River, MI	Jun 2004

Operations During Fiscal Year. Maintenance: Miscellaneous inspections and reports performed by Government forces and contract cost $113,473.

Total cost to the end of FY was $3,969,520.

62. OTHER AUTHORIZED FLOOD CONTROL PROJECTS

See Table 21-E.

63. FLOOD CONTROL WORK UNDER SPECIAL AUTHORIZATION

Emergency Flood Control Activities, Flood Fighting (Public Law 84-99 and PL 93-288 and Antecedent Legislation).

Project and Location	FY Cost for Sep 30, 2004
Disaster Preparedness	$254,584
Emergency Operations	$10,794
Rehabilitation	$107,000
Advance Measures	$1,936,041

Flood control activities pursuant to Section 205 of the 1948 Flood Control Act, as amended.

See Table 21-P.

Flood control activities pursuant to Section 208 of the 1954 Flood Control Act. Snagging and clearing activities pursuant to Section 208 of the Flood Control Act of 1954, as amended. None.

64. SURVEILLANCE OF NORTHERN BOUNDARY WATERS AND INTERNATIONAL WATER STUDIES

International Activities. The Detroit District has successfully supported the International Joint Commission (IJC) for many years. This has included numerous engineering and scientific assignments supporting the Commission's boards of control, working committees, and study boards.

The Detroit District conducted the following activities, specifically for the IJC Boards and Committees:

a. Semi-Annual Meetings. Members of the Detroit District staff attended the semi-annual meetings of the three Great Lakes Boards of Control. They also attended the spring and fall appearances of the Boards before the IJC, in Washington, D.C. in April 2004, and the fall appearances, in Ottawa, Ontario in October 2004.

b. International Lake Superior Board of Control. The Detroit District Engineer is the United States Regulation Representative of this Board. In support of the U.S. Section of the Board, the District provided monthly Lake Superior outflow recommendations based upon a review of the hydrologic factors that influence the monthly regulation decisions for Lake Superior. These recommendations were based upon the use of probability forecasts of water supplies routed through the lakes using the approved operating regulation plan, Plan 1977-A. Plan 1977-A has been in operational use since June 1990. The District's program to evaluate the hydraulic rating of the Compensating Works in the St. Marys River was postponed in 2004 due to lower lake levels requiring only ½ gate open. During FY2004, flow measurements were conducted in the Edison Sault Electric Company power canals at Sault Ste. Marie, MI as part of an ongoing program to verify the power plant rating.

The Board is required by the IJC to hold at least one public meeting each year to inform them of the Board's activities and to solicit feedback regarding activities and current issues. As such, the District participated in the Board's FY2004 annual meeting held in June 2004. A new format was used for this meeting, held simultaneously at four locations: Duluth, Minnesota; Grand Haven, Michigan; Parry Sound, Ontario; and, Thunder Bay, Ontario. After similar presentations were made at each site, discussions were held between all sites via a conference call. The District also disseminates extensive Board information to the public, the media and user interests via news releases, letters and the Board's web page.

Hydropower peaking and ponding causes flow and water level variations in the St. Marys River downstream of the power plants. With water levels and Lake Superior outflows below average, these fluctuations have become a concern to commercial navigation. The District provided significant technical support to the Board to evaluate this issue and make a recommendation on peaking and ponding operations in early 2002. The Board submitted a follow-up report on St. Marys River hydropower plant peaking and ponding operations to the IJC in January 2004. In May 2004, the IJC approved continuation of peaking and ponding until March 2006, subject to prior approval by the Board at the beginning and middle of each month. District staff

provide ongoing technical support to the Board for these peaking and ponding recommendations.

Starting in August 2001, the District participated on a binational study team, formed by the IJC. The team developed a Plan of Study to review the existing Orders of Approval, the current regulation plan (Plan 1977-A) and various beneficial uses not currently being considered. The "Upper Great Lakes Plan of Study for Review of the Regulation of Outflows from Lake Superior" was submitted to the IJC in January 2002. District staff will have significant roles in the study once the study is initiated by the IJC.

c. International Niagara Board of Control, International Niagara Working Committee, and International Niagara Committee. The District provides direct technical support and consulting engineering services to this Board and its Committees. The Chief of the Great Lakes Hydraulics and Hydrology Office is a member of the Niagara Working Committee. Under the auspices of the Committee, the Detroit District, with Canada, computes, coordinates, and publishes the monthly flows in the Niagara River.

The Detroit District and the Water Survey of Canada routinely conduct discharge measurements in the lower Niagara River at the Cableway Section. This is part of a continuing effort to verify the Ashland Avenue stage-discharge equations. The Ashland Avenue equations are used to compute the flow out of the Maid-of-the-Mist Pool, which encompasses the total flow over the American and Canadian Falls, to ensure that the hydropower plants operate within the terms of the Niagara Treaty. Information is currently being evaluated to determine if the existing equations are adequate to represent the present hydraulic regime over the Niagara Falls. Discharge measurements at the Cableway Section, to verify the Ashland Avenue rating curve, are scheduled every three years. The last sets of measurements were made in 2001. The next series of measurements, originally scheduled for Spring 2004, were postponed until October/November 2004.

Discharge measurements are also made routinely in the Welland Canal. These are part of the continuing effort to verify the ratings for the Welland Canal supply weir. Data collected to date indicates that the present equations may be underestimating the flow. Revision of the ratings is being evaluated. The last sets of measurements were made in 2004 and the next measurements at this section are scheduled for 2007, in accordance with the three-year schedule.

Due to the dynamic nature of the Niagara River at the Niagara Falls, the District is also involved with periodic verification of the rating curves for the flow in the American Falls Channel and for the Niagara River flow out of Lake Erie. Discharge measurements are made in the American Falls Channel on a five-year schedule. The last set of measurements were made in 2000, and the next is scheduled for 2005. Due to an alteration of the bridge used for measurements, alternate sites are being investigated for the next scheduled series. Discharge measurements are made at the International Railway Bridge Section to verify the rating equations for the flow out of Lake Erie. The rating equation based on the Buffalo gage was recently revised based on measurements collected at this section since 1974. Measurements are made at the International Railway Bridge Section on a three-year schedule. The last set of measurements was made in 2003, and the next is scheduled for 2006.

d. Great Lakes Basin Studies The Detroit District participated in the International Lake Ontario - St. Lawrence River Study in 2004. The study was initiated in 2000 by the IJC to assess and evaluate the Commission's Order of Approval used to regulate outflows from Lake Ontario through the St. Lawrence River. The Study is evaluating the impacts of changing regulation and the resulting changes in water levels on environmental factors, shore erosion, flood damages, recreational boating, and tourism. The District provided technical support to the Coastal Technical Working Group and the Information Management Technical Working Group in 2004. This effort is expected to be completed in FY2005.

In FY2002 efforts were begun to develop a prioritization of areas on the upper Great Lakes (Lakes Superior, Huron, St. Clair, and Erie) that are susceptible to potential losses due to erosion, flooding, and low water. The analysis also identified available data for the upper Great Lakes that could be used in future studies. The importance of sensitive environmental issues, anthropogenic effects, and recreation and tourism were also prioritized on a county-by-county basis across the upper Great Lakes. This effort was completed in FY2003. Future investigations on other areas of the upper great Lakes will benefit from the results of this effort.

Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data. The Chief of the Great Lakes Hydraulics and Hydrology Office is the U.S. Secretary to this Committee. Other Office personnel also hold membership on the three

subcommittees: the Vertical Control-Water Levels, Hydraulics, and Hydrology.

The District continued its support of Committee operations pertaining to the coordination of basic hydraulic and hydrologic data with Canada. District efforts have also continued to closely coordinate the formats of the U.S. and Canadian water level bulletins in order to avoid confusion and to better inform the public.

Efforts continued in 2004 on refinement of a coordinated Great Lakes regulation and routing model (CGLRRM). The Corps uses this model to evaluate levels and flows in the Great Lakes system from Lake Superior to Lake Ontario. A user-friendly graphical user interface (GUI) is also being finalized. This GUI will allow the user to change input parameters easily to evaluate the effects of different scenarios on water levels. The CGLRRM has been developed under the guidance of the Coordinating Committee with support from Environment Canada, Buffalo District, and the Hydrologic Engineering Center (HEC).

During FY2004, the District continued development and/or supported development of 2-dimensional hydrodynamic models of all the Great Lakes connecting channels. These models can be used to analyze effects of dredging, channel encroachments, and any other changes to river cross-sections. These models will also serve as valuable tools in answering the many "what if" questions that are asked about the rivers.

Field Operations. In addition to field operations conducted in support of the IJC, and as a continuing and ongoing mission, the Detroit District conducts hydraulic flow measurements throughout the Great Lakes Connecting Channels and St. Lawrence River system. This capability is unique among the Corps Districts (and other federal agencies) on the Great Lakes. During FY2004, the Detroit District continued gathering hydraulic data using the ADCP (Acoustic Doppler Current Profiler) instrumentation at several sections on the lower St. Marys River, the upper and lower Detroit River, the St. Clair River, and the Niagara River. These hydraulic data sets are currently being used to develop two-dimensional flow models of the river systems, and to help refine the flow retardation estimates for weed conditions through the growing season.

As an ongoing mission, during the winter months the District monitors the extent of ice in the St. Marys, St. Clair, and Detroit Rivers. Water levels are monitored continuously at key water level gages in these rivers to detect possible ice jams and potential flooding. The Corps and other governmental agencies, including the National Weather Service and the Coast Guard, can use this information to provide advance warning to area residents and to trigger emergency actions. Currently, data are obtained through phone access of these gages or from a satellite data relay to the District's water management data system and remote laptop personal computers. These systems provide water level information to the District office within minutes of data collection.

Water Management Data System. In FY2004, the Detroit District continued to provide an extensive variety of water management products for the entire Great Lakes system, based on the water level gage network, on its Internet web pages. Weather information and meteorological data are also received and processed within the District and available on the Internet. The Detroit District has 21 active data collection platforms (DCPs). In FY2004, the Detroit District continued implementation of the Corps of Engineers Water Management Software (CWMS) suite with its initial prototype development being placed on modernizing the Lake Winnebago watershed outflow management.

Great Lakes Hydrology. The Great Lakes Hydraulics and Hydrology Office uses water supply forecasts routinely in forecasting water levels on all the Great Lakes and regulating the outflows from Lake Superior. Studies to improve the existing Great Lakes water level forecasting system, including investigations into the factors affecting the Great Lakes water balance relationship (i.e., runoff, over-lake precipitation, evaporation, ice retardation, etc.) and use of real-time hydrologic data such as the new National Weather Service Doppler radar networks were continued during FY 2004.

Great Lakes Water Levels. The Great Lakes Hydraulics and Hydrology Office continued to make routine short-term (30 day) and long-term (six month) Great Lakes still water level forecasts. These forecasts are distributed in the form of weekly, semi-monthly and monthly news releases and bulletins. The Monthly Bulletin of Lake Levels for the Great Lakes, containing a six-month projection of Great Lakes water levels, has a circulation of about 5,000 copies per month by mail and 1,000 by email. Included with the monthly bulletin on a quarterly basis is an informational enclosure entitled Great Lakes Update, which covers various topics of interest pertaining to the water resource management of the Great Lakes.

Water levels on the Great Lakes continued a trend of slowly rising closer to long-term average in FY 2004. Media and public attention has been increasing slightly due to these improved conditions. Office personnel provided essential expertise regarding water level forecasts, recorded lake levels, and the potential impacts of these water levels on interested parties. These parties include members of Congress, state and local officials, news media, navigation and power interests, property owners, and recreational boaters. Water level information is supplied to the public via the District's web pages, telephonic and written responses to inquiries, presentations to various interest groups, and interviews with the news media.

The total cost for FY2004 under the Surveillance of Northern Boundary Waters was $3,056,291.

MULTIPLE-PURPOSE PROJECTS INCLUDING POWER

65. ST. MARYS RIVER, MI

Location. A Great Lakes connecting channel about 63 miles long, flows southeasterly between State of Michigan and Providence of Ontario, Canada, from eastern end of Lake Superior into northern end of Lake Huron. (See NOAA Nautical Charts 14882, 14883, and 14884.) At Sault Ste. Marie, MI, about 14 miles downstream from Lake Superior, there are four parallel locks and a hydroelectric power plant.

Previous Project. For details see page 1955, Annual Report for 1915; and page 1529, Annual Report for 1938.

Existing Project. Channels permitting 25.5-foot draft navigation in St. Marys River and Lake Superior and Lake Huron approaches thereto; constructing and operating four locks and two canals; constructing an electric plant of 14,000 kilowatt capacity (45,000 kilowatt ultimate capacity) constructing anchorage areas in river above and below locks; and constructing various other works in conjunction with project. Subsequently, in 1932, the Unit 10 powerhouse was installed raising the capacity to 18,400 kilowatts (45,000 ultimate capacity). Original State Locks were operated and maintained under permanent indefinite appropriation from Jun. 9, 1881, to Nov. 2, 1886, after which they were destroyed by excavation for the Poe Lock in 1896. Weitzel Lock, destroyed in 1942 by excavation for the MacArthur Lock, was operated and maintained under the same appropriation from Sep. 1, 1881, to Jun. 30, 1935. Poe Lock was operated and maintained under the same appropriation from Aug. 3, 1896, Davis Lock from Oct. 21, 1914, and Sabin Lock from Sep. 18, 1919, to end of FY 1935. The 1,200-foot by 110-foot new Poe Lock was authorized in 1962 and put into operation in 1968. Details of existing project are set forth in Table 21-F.

Project depths are referred to low water datum corresponding to sloping surface of river as follows: Above locks: When water surface of Lake Superior is at elevation 601.1 feet and at upstream side of locks is 600.6 feet above mean water level at Rimouski, Quebec, IGLD 1985. Below locks: When water surface at downstream side of locks is at elevation 578.4 feet and Lake Huron is 577.5 feet above mean water level at Rimouski, Quebec, IGLD 1985. Estimated (1974) cost for new work is $163,087,000. (See Table 21-B for authorizing legislation.)

The WRDA of 1986 authorized construction of a second lock 1,294 feet in length, 115 feet in width, and 32 feet in depth, adjacent to the existing lock. The replacement lock is to be located in the North Canal of the St. Marys Falls Canal at Sault Ste. Marie, MI, on the site of the existing Davis and Sabin Locks. Material removed during construction of the replacement lock will be placed on the Northwest Pier to serve as a windbreak for downbound vessels approaching the lock. Estimated cost (Oct. 90) is $174,200,000 Federal and $93,800,000 non-Federal.

Local Cooperation. Fully complied with for completed portion of project. Local cooperation items for the newly authorized project in the WRDA of 1986 (PL 99-662), are as follows:

(a) Provide without cost to the United States all lands, easements, and rights-of-way necessary for implementation and later maintenance of the proposed project, and for aids to navigation upon the request of the Chief of Engineers, including suitable areas determined by the Chief of Engineers to be required in the general public interest for initial and later disposal of dredged/demolition material and including necessary retaining dikes, bulkheads, and embankments therefor, or the costs of such retaining works;

(b) Hold and save the United States free from damages due to the implementation and maintenance of the project, not including damages due to the fault or negligence of the United States or its contractors;

(c) Accomplish without cost to the United States such alterations and relocations of pipelines, powerlines, cables, sewer, water supply, drainage, and other utilities, structures, and improvements made necessary by the project. (Any such costs of the items on Federal property at the locks, would be part of the total construction cost and not separable local sponsor cost.);

(d) Contribute in cash 25 percent of the total cost of construction of general navigation facilities, exclusive of aids to navigation, a contribution presently estimated at $67,000,000. The estimated cash contribution of $67,000,000 to be paid in lump sum prior to initiation of construction, or in annual installments during the construction period at a rate proportionate to the proposed or scheduled expenditure of Federal funds as required by the Chief of Engineers, or under another arrangement satisfactory to the Secretary of the Army, the final apportionment of cost to be made after actual costs have been determined;

(e) Repay, with interest, over a period of up to 30 years following project completion, 10 percent of the total cost of construction of general navigation facilities, an amount presently estimated at $26,800,000. The Secretary of the Army may count against all or part of the 10 percent repayment, the amount of the local contribution for lands, easements, rights-of-way, dredged/demolition material disposal sites and relocations. In no case are these costs to count against the cash payment during construction, and in no case would the amount waived exceed 10 percent of project cost; and

(f) Any construction needed to prevent/mitigate for erosion or shoaling attributed to the lock would be cost
shared in the same proportion as the project.

Terminal Facilities. This improvement serves through commerce between Lake Superior and lower lakes and has not materially influenced terminal facilities at localities along its route. Three piers at Sault Ste. Marie receive coal and petroleum products. Limestone is shipped from a pier at Drummond Island. Vessel refueling stations are at Lime Island and village of DeTour; they receive coal and petroleum products. Present terminals satisfy current traffic requirements.

Operations During Fiscal Year. New Work: Construction of a replacement lock. The St. Marys River project includes four navigation locks: MacArthur, Poe, Davis and Sabin. Currently, the MacArthur and Poe service loaded commercial vessel traffic. The Davis Lock is rarely used and the Sabin Lock is in disrepair and has been closed for several years. The new lock will replace the Davis and Sabin Locks in the North Canal of the St. Marys Falls Canal. As a minimum, the new lock would have the same dimensions as the 1200-foot by 110-foot Poe Lock. FY04 funds in the amount of $1,861,811 were expended to complete the Engineering Technical Appendix for the Limited Reevaluation Report (LRR) to better define the design features. Also completed as part of this effort, was a detailed cost estimate.

Operations, maintenance, and care of locks: Two canals and three locks were operated (the fourth lock, Sabin, was in caretaker status) as required. Necessary repairs and improvements were made thereto and to appurtenant structures and equipment. Canals were open to navigation 306 days during the period 1 October 2003 through 30 September 2004. A total of 7,343 vessels, aggregating 81,801,456 short tons of freight and 93,913 passengers passed through the MacArthur, Davis and Poe Locks. Total cost for operation, maintenance, and care of the locks during the FY was $8,744,857. Total cost includes and adjustment of -$1,648 for preparation of plans and specifications to upgrade the MacArthur and Poe locks (automation) and -$197 for prepare plans and specifications for MacArthur Guard Gate rehabilitation.

Powerhouse and equipment: A total of 169,886,700 kilowatt-hours of power was generated this FY. Income from the sale of power, sent to the U.S. Treasury, amounted to $771,771. Total cost of operation and maintenance for two hydroelectric powerhouses during the FY was $1,425,234. Total cost includes $171,183 to continue the rehabilitation of governor, excitation, fire suppression system, and installation contracts, $167,595 for engineering and design during construction, and $85,667 for supervision and administration of the contracts. An adjustment of $3,044 was made in contract costs for the FY02 replacement of main power plant piping completed last FY. Supervision and administration to closeout the contract cost $7,254. Engineering and design to sandblast and paint the main power plant head and tailgates continued at a cost of $23,772. Preparation of plans and specifications for replacement of the Main Power Plant Station Service Switchgear cost $1,872

Other operation and care items: Buildings and grounds were operated and maintained, condition surveys, operations studies, environmental activities,

real estate, and miscellaneous inspections and reports cost $8,454,582, which includes a custodial, snow removal and grounds upkeep contract for $742,122 and a service contract for security measures for $720,000.

Channels and canals: St. Marys River channels and canal approach depths were surveyed by sweeping. Removal of shoals in the St. Marys River channels and canal approaches performed by hired labor using the U.S. Derrickbarges NICOLET and SCHWARTZ, and the U.S. Cranebarge HARVEY cost $2,499,843. The FY01 vidal shoals contract to deepen the federal channel in the Upper St. Marys River by one foot continued at a cost of $717,506, supervision and administration of the contract cost $167,277. The contract awarded last FY to replace the canal feeders continued at a cost of $175,697. Engineering and design during construction cost $18,600. Supervision and administration cost $40,024. The contract for deepening the Lower St. Marys River from the south approach to the locks down to the northerly entrance to the Rock Cut (Little Rapids Cut) was completed this FY at a cost of $725,128. Environmental studies, engineering, design, and supervision and administration cost $164,282.

Other miscellaneous items: The FY02 contract for repair of the West Center Piers was completed this FY at a cost of $736,825. Engineering and design during construction cost $19,820. Supervision and administration cost $91,435.

Recreational facilities: Information center, visitors center, comfort stations, park fountain, and observation and overlook platforms were operated and maintained at a cost of $111,789 which includes a custodial contract for the Information Center. Visitors entering the Soo Locks Visitors Center numbered 342,585. Visitors to the observation platforms overlooking the locks numbered 361,488. Total visitors to the Soo Locks Park numbered 458,797. A grand total of 543,214 people (includes tour boat visitors of 93,353) visited the Soo Locks.

Total project costs in FY04 amounted to $25,954,710.

Project in effect prior to modification of March 21, 1956, is complete and work authorized by 1956 modification to provide a safe draft of 25.5 feet for both upbound and downbound traffic is also complete. Public Works Acceleration Funds used for maintenance were $118,000. Total cost of the existing project to end of FY was $649,309,267, of which $166,605,059 was for new work and $482,704,208 for maintenance (includes $340,400 contributed funds).

GENERAL INVESTIGATIONS

66. SURVEYS

Project and Location	FY Cost for Sep 30, 2004
Reconnaissance and Feasibility Studies	
Belle Isle Shoreline Detroit, MI	$43,519
Cass River, Vassar, MI	$74
Detroit River Master Plan MI	$138,640
Detroit River Sewals MI	$45,975
Great Lakes Navigation System, MI	$1,442,407
John Glenn Great Lakes Basin Program MI	$92,344
John Glenn Great Lakes Biohydroloical	$29,000
John Glenn Great Lakes Recreational Boat	$220,414
Lansing,MI	$91,666
Watershed and Ecosystem Restoration Reconnaissance and Feasibility Studies	
Detroit River, Environmental Dredging, MI	$3,044
Fox River, Environmental Dredging, WI	$89
Great Lakes Fishery & Ecosystem Restor	$88,068
Lower Fox River, WI	$22,880
Muskegon Lake, MI	$2,357
Rouge River Environmental Dredging, MI	$3,735
Rouge River Watershed, MI	$1,810
Rouge River Supplemental Study, MI	$53,469
White Lake, MI	$494
St. Clair River & Lake St Clair, MI	$26,359
Coordination Studies with Other Agencies	
FERC Licensing Activities	$1,972
Interagency Water Resources Development	$3,188
North American Water Fowl Mgmt Planning	$1,399
National Estuary Studies	$3,587
Special Investigations	$10,088
Sec 22 Planning Assistance to States & Tribes:	
Great Lakes Remedial Action Program	$529,377

Federal amount shown, studies cost shared equally with partner include:

Fabius Township GIS	$29,774
Grand Traverse County, MI GIS	$30,716
Ingham County GIS	$36,033
Muskegon County, MI GIS	$137,318
PAS Negotiation Funds, MI	$9,575
PAS Onieda Nation GIS	$14,240

PAS Potawatomi Tribe GIS.....-$4,135
Three Rivers, MI GIS $83

67 PRECONSTRUCTION ENGINEERING AND DESIGN

Great Lakes Connecting Channels and Harbors, Replacement Lock

An adjustment of -$28,546 was made in costs on preconstruction engineering and design work activities.

The project, as authorized in the WRDA of 1986 and the WRDA of 1990, calls for constructing a second lock able to accommodate the largest vessels engaged in Great Lakes commerce. The authorized dimensions are 1,294 feet in length, 115 feet in width, and 32 feet in depth. The authorized cost (1985) is $227,428,000. The new lock would replace two existing locks that are only 80 feet in width and 23 feet in depth. The project had not been funded earlier due to lack of a local sponsor. The WRDA of 1996 eased the cost-sharing requirements for a non-Federal sponsor. Given the delay in initiating preconstruction engineering and design, the initial work effort was to prepare a limited re-evaluation report to assure that the project remained economically justified.

Project and Location	FY Cost for Sep 30, 2004
Fort Wayne, IN (410)	$83

68. COLLECTION AND STUDY OF BASIC DATA

Project and Location	FY Cost for Sep 30, 2004
Flood Plain Mgmt Services Program	
FPMS Unit	$51,455
Technical Services	$30,658
National Flood Proofing Committee	$1,097
Quick Responses	$6,135
HEC-GEO-RAS/HMS	$23,472
No Federal Emergency Management Agency's Community Assistance Program Study or Flood Insurance Studies in FY04.	
International Water Studies	$41,649

TABLE 21-A **COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sep. 30, 2004
1.	Alpena Harbor, MI	New Work					
		Approp.	0	0	0	0	337,394[1]
		Cost	0	0	0	0	337,394[1]
		Maintenance					
		Approp.	81,463	2,433	3,090	56,805	2,104,522
		Cost	81,404	2,483	3,149	51,525	2,099,242
2.	Arcadia Harbor, MI	New Work					
		Approp.	0	0	0	0	0
		Cost	0	0	0	0	0
		Maintenance					
		Approp.	95,817	122,163	128,600	96,800	5,742,511
		Cost	95,799	120,747	130,029	96,489	5,742,156
3.	Ashland Harbor, WI	New Work					
		Approp.	0	0	0	0	1,695,645
		Cost	0	0	0	0	1,695,645
		Maintenance					
		Approp.	7,629	3,258	185,206	344,000	4,927,961
		Cost	7,601	3,258	184,708	323,155	4,906,591
4.	Black River Harbor, MI	New Work					
		Approp.	0	0	0	0	480,244[2]
	(P.H.)	Cost	0	0	0	0	480,244[2]
	Contributed Funds	New Work					
		Contrib.	0	0	0	0	349,921
		Cost	0	0	0	0	349,921
		Maintenance					
		Approp.	33,577	54,377	491,400	295,100	2,412,742[3]
		Cost	33,895	54,303	328,714	457,801	2,412,683[3]
5.	Bolles Harbor, MI	New Work					
		Approp.	0	0	0	0	217,916
		Cost	0	0	0	0	217,916
		New Work					
		Contrib.	0	0	0	0	255,000
		Cost	0	0	0	0	255,000
		Maintenance					
		Approp.	262,899	25,800	14,570	210,185	4,161,394
		Cost	262,897	23,578	16,694	210,187	4,161,296
6.	Charlevoix Harbor, MI	New Work					
		Approp.	0	0	0	0	180,623
		Cost	0	0	0	0	180,623
		Maintenance					
		Approp.	170,746	61,800	63,500	198,900	11,086,114
		Cost	170,767	61,807	63,509	197,307	11,084,459

TABLE 21-A **COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sep. 30, 2004
6.	Charlevoix Harbor, MI (Continued)	Major (or Minor) Rehabilitation					
		Approp.	0	0	0	0	1,129,396
		Cost	0	0	0	0	1,129,396
7.	Detroit River, MI	New Work					
		Approp.	0	0	0	0	76,877,357[4]
		Cost	0	0	0	0	76,877,357[4]
		Maintenance					
		Approp.	3,017,964	4,283,743	3,833,000	4,792,000	185,705,589[5]
		Cost	3,020,417	4,305,016	3,822,439	4,694,454	185,594,412[5]
	Contributed Funds	Maintenance					
		Contrib.	0	0	0	0	361,235
		Cost	0	0	0	0	361,235
8.	Duluth-Superior Harbor, MN & WI	New Work					
		Approp.	0	0	0	0	16,894,658[6]
		Cost	0	0	0	0	16,894,658[6]
		New Work					
		Contrib.	0	0	0	0	331,685
		Cost	0	0	0	0	331,685
		Maintenance					
		Approp.	2,321,781	3,137,600	2,308,630	2,655,500	90,152,850[7]
		Cost	2,312,629	3,142,964	2,311,667	2,565,460	90,052,824[7]
		Major (or Minor) Rehabilitation					
		Approp.	0	0	0	0	11,555,410
		Cost	0	0	0	0	11,555,410
9.	Fox River, WI	New Work					
		Approp.	0	0	0	0	3,753,334[8]
		Cost	0	0	0	0	3,753,334[8]
		Maintenance					
		Approp.	4,394,807	4,146,100	7,955,412	12,434,000	93,208,401[9,10]
		Cost	4,433,137	4,111,716	4,192,543	16,238,131	93,172,583[9,10]
10.	Frankfort Harbor, MI	New Work					
		Approp.	0	0	0	0	1,923,450
		Cost	0	0	0	0	1,923,450
	Contributed Funds	New Work					
		Contrib.	0	0	0	0	31,709
		Cost	0	0	0	0	31,709

TABLE 21-A **COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sep. 30, 2004
10.	Frankfort Harbor, MI (Continued)	Maintenance					
		Approp.	133,120	175,700	179,000	264,500	12,300,242[11]
		Cost	117,513	184,454	185,299	265,164	12,300,202[11]
		Major (or Minor) Rehabilitation					
		Approp.	0	0	0	0	274,776
		Cost	0	0	0	0	274,776
11.	Grand Haven Harbor, MI	New Work					
		Approp.	0	0	0	0	1,283,469[12]
		Cost	0	0	0	0	1,283,469[12]
	Section 111	New Work					
		Approp.	0	0	0	0	175,000
		Cost	0	0	0	0	175,000
		Maintenance					
		Approp.	457,482	924,500	577,400	697,100	36,365,027[13]
		Cost	460,037	925,143	577,487	695,219	36,363,096[13]
	Contributed Funds	Maintenance					
		Contrib.	0	0	0	0	15,585
		Cost	0	0	0	0	15,585
		Maintenance					
	Section 111	Approp.	84,800	81,900	82,921	91,000	3,113,046
		Cost	84,734	81,825	81,220	92,800	3,113,005
		Major (or Minor) Rehabilitation					
		Approp.	0	0	0	0	813,613
		Cost	0	0	0	0	813,613
12.	Grand Marais Harbor, MI	New Work					
		Approp.	0	0	0	0	1,055,871
		Cost	0	0	0	0	1,055,871
		Maintenance	1,528	124,867	257,544	(32,579)	2,994,392
		Approp.	1,528	124,837	162,046	62,891	2,994,333
		Cost					
13.	Grand Traverse Bay Harbor, MI	New Work					
		Approp.	0	0	0	0	266,037
		Cost	0	0	0	0	266,037
	Section 111	New Work					
		Approp.	0	0	0	0	63,528
		Cost	0	0	0	0	63,528

TABLE 21-A **COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sep. 30, 2004
13.	Grand Traverse Bay Harbor, MI (Continued)	Maintenance					
		Approp.	3,070	54,560	216,055	1,361	2,683,708
		Cost	3,070	54,538	215,842	1,596	2,683,708
14.	Grays Reefs Passage MI	New Work					
		Approp.	0	0	0	0	190,521
		Cost	0	0	0	0	190,521
		Maintenance					
		Approp.	26,314	0	15,177	73,000	940,934
		Cost	26,314	0	15,177	65,676	933,910
15.	Green Bay Harbor, WI	New Work					
		Approp.	0	0	0	0	
		Cost	0	0	0	0	9,946,395[14,15]
		Maintenance					9,946,395[14,15]
		Approp.	1,607,573	3,220,000	2,745,200	2,065,600	
		Cost	1,611,212	3,218,858	2,702,373	2,086,261	
							61,143,375[16]
							61,119,822[16]
16.	Holland Harbor, MI	New Work					
		Approp.	0	0	0	0	736,122[17]
		Cost	0	0	0	0	736,122[17]
	Contributed Funds	New Work					
		Contrib.	0	0	0	0	35,705
		Cost	0	0	0	0	35,705
	Section 111	New Work					
		Approp	0	0	0	0	621,000
		Cost	0	0	0	0	621,000
		Maintenance					
		Approp.	877,154	499,100	373,000	903,600	30,406,764[18]
		Cost	876,579	500,644	372,686	902,494	30,405,000[18]
	Section 111	Maintenance	70,300	85,200	85,592	99,600	2,676,343
		Approp.	70,194	85,176	82,389	102,926	2,676,335
		Cost					
		Major (or Minor) Rehabilitation					
		Approp.	0	0	0	0	502,452
		Cost	0	0	0	0	502,452
17.	Inland Route, MI	New Work					
		Approp.	0	0	0	0	770,222
		Cost	0	0	0	0	770,222
	Contributed Funds	New Work					

TABLE 21-A **COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sep. 30, 2004
		Contrib.	0	0	0	0	148,000
		Cost	0	0	0	0	148,000
17.	Inland Route, MI (Continued)	Maintenance					
		Approp.	22,629	34,700	27,700	35,800	4,088,910[19]
		Cost	22,599	34,683	27,606	28,838	4,081,808[19]
18.	Kenosha Harbor, WI	New Work					
		Approp.	0	0	0	0	988,969[20,21]
		Cost	0	0	0	0	988,969[20,21]
		Maintenance					
		Approp.	78,811	299,000	3,366	80,000	
		Cost	78,776	298,988	3,366	79,580	12,348,222[22]
		Major (or Minor) Rehabilitation					12,347,755[22]
		Approp.	0	0	0	0	
		Cost	0	0	0	0	
							1,270,275
							1,270,275
19.	Kewaunee Harbor, WI	New Work					
		Approp.	0	0	0	0	
		Cost	0	0	0	0	758,333[23]
		Maintenance					
		Approp.	93,446	84,600	79,002	120,000	758,333[23]
		Cost	93,364	84,638	79,028	119,450	
		Major (or Minor) Rehabilitation					11,831,214[24]
							11,830,646[24]
		Approp.	0	0	0	0	
		Cost	0	0	0	0	
							617,300
							617,300
20	Keweenaw Waterway, MI	New Work					
		Approp.	0	0	0	0	5,974,141
		Cost	0	0	0	0	5,974,141
		Maintenance					
		Approp.	283,350	601,000	74,346	569,000	30,813,159[25]
		Cost	292,127	600,647	73,683	523,297	30,766,432[25]
21	Lac LaBelle Harbor, MI	New Work					
		Approp.	0	0	0	0	269,270[26]
		Cost	0	0	0	0	269,270[26]
		Maintenance					
		Approp.	14,199	50,941	2,516	6,948	863,387
		Cost	14,166	50,839	2,621	6,965	863,374

TABLE 21-A **COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sep. 30, 2004
22	Lake St. Clair, MI, Channels	New Work					
		Approp.	0	0	0	0	7,675,357[27]
		Cost	0	0	0	0	7,675,357[27]
		Maintenance					
		Approp.	54,015	106,500	94,700	116,600	14,469,431[28]
		Cost	60,116	96,444	107,660	115,786	14,468,446[28]
23.	Leland Harbor, MI	New Work					
		Approp.	0	0	0	0	672,950
		Cost	0	0	0	0	672,950
	Contributed Funds	New Work					
		Contrib.	0	0	0	0	354,139
		Cost	0	0	0	0	354,139
		Maintenance					
		Approp.	151,539	186,063	184,800	150,900	4,388,176
		Cost	151,510	186,008	184,843	150,484	4,387,718
		Major (or Minor) Rehabilitation					
		Approp.	0	0	0	0	70,678
		Cost	0	0	0	0	70,678
24.	Lexington Harbor, MI	New Work					
		Approp.	0	0	0	0	1,646,304
	Contributed Funds	Cost	0	0	0	0	1,646,304
		New Work					
		Contrib.	0	0	0	0	1,088,888
		Cost	0	0	0	0	1,088,888
	Section 111						
		New Work					
		Approp.	0	0	0	0	372,000
		Cost	0	0	0	0	372,000
		Maintenance					
		Approp.	973	3,304	142,500	(6,871)	1,205,574
		Cost	1,915	3,304	136,539	(889)	1,205,549
	Section 111						
		Maintenance					
		Approp.	7,000	1,300	95,654	0	2,199,402
		Cost	6,995	1,223	95,735	0	2,199,402
25.	Little Lake Harbor, MI	New Work					
		Approp.	0	0	0	0	542,808
		Cost	0	0	0	0	542,808
		New Work					
	Contributed Funds	Contrib.	0	0	0	0	57,670
		Cost	0	0	0	0	57,670
		Maintenance					
		Approp.	434,800	17,600	318,500	159,700	5,620,613

TABLE 21-A **COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sep. 30, 2004
		Cost	434,741	17,636	317,725	159,616	5,619,731
26.	Ludington Harbor, MI	New Work					
		Approp.	0	0	0	0	7,912,202[29]
		Cost	0	0	0	0	7,912,202[29]
26.	Ludington Harbor, MI (Continued)	New Work					
		Approp.	0	0	0	0	620,000
	Section 111	Cost	0	0	0	0	620,000
		Maintenance					
		Approp.	222,374	553,600	146,900	293,800	22,049,090[30]
		Cost	234,536	554,209	146,841	289,315	22,044,510[30]
		Maintenance					
	Section 111	Approp.	50,500	0	0	0	832,740
		Cost	50,465	92	0	0	832,740
		Major (or Minor) Rehabilitation					
		Approp.	0	0	0	0	357,913
		Cost	0	0	0	0	357,913
27.	Manistee Harbor, MI	New Work					
		Approp.	0	0	0	0	2,696,522[31]
		Cost	0	0	0	0	2,696,522[31]
		Maintenance					
		Approp.	592,115	61,300	82,000	556,700	13,321,214[32]
		Cost	592,086	61,286	82,002	556,714	13,321,187[32]
		Major (or Minor) Rehabilitation					
		Approp.	0	0	0	0	1,374,164
		Cost	0	0	0	0	1,374,164

TABLE 21-A **COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sep. 30, 2004
28.	Manitowoc Harbor, WI	New Work					
		Approp.	0	0	0	0	2,048,914[33]
		Cost	0	0	0	0	2,048,914[33]
	Contributed Funds	New Work					
		Contrib.	0	0	0	0	1,911,130
		Cost	0	0	0	0	1,911,130
		Maintenance					
		Approp.	182,413	570,300	105,400	72,700	13,207,674[34]
		Cost	179,126	573,541	105,431	72,654	13,207,612[34]
	Contributed Funds	Maintenance					
		Contrib.	9,206	3,700	0	0	79,648
		Cost	0	0	0	0	66,735
29.	Marquette Harbor, MI	New Work					
		Approp.	0	0	0	0	1,282,893[35]
		Cost	0	0	0	0	1,282,893[35]
29.	Marqette Harbor, MI (Continued)	Maintenance					
		Approp.	944	204,163	333,200	303,000	4,206,695[36]
		Cost	1,444	203,623	333,166	285,543	4,188,664[36]
.		Major (or Minor) Rehabilitation					
		Approp.	0	0	0	0	465,757
		Cost	0	0	0	0	465,757
30.	Menominee Harbor & River, MI & WI	New Work					
		Approp.	0	0	0	0	533,476[37]
		Cost	0	0	0	0	533,476[37]
	Contributed Funds	New Work					
		Contrib.	0	0	0	0	36,762
		Cost	0	0	0	0	36,762
		Maintenance					
		Approp.	78,880	99,500	179,700	30,400	4,267,360[38]
		Cost	79,051	99,523	179,735	30,355	4,267,308[38]
		Major (or Minor) Rehabilitation					
		Approp.	0	0	0	0	1,351,852
		Cost	0	0	0	0	1,351,852

TABLE 21-A **COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sep. 30, 2004
31.	Milwaukee Harbor, WI	New Work					
		Approp.	0	0	0	0	8,231,024[39]
		Cost	0	0	0	0	8,231,024[39]
		Maintenance					
		Approp.	396,239	458,000	548,661	302,800	55,477,206[40]
		Cost	395,059	458,724	549,290	302,584	55,476,989[40]
	Contributed Funds	Maintenance					
		Contrib.	0	0	0	0	322,471
		Cost	0	0	0	0	322,471
		Major (or Minor) Rehabilitation	0	0	0	0	12,715,560
		Approp.	0	0	0	0	12,715,560
		Cost					
32.	Monroe Harbor, MI	New Work					
		Approp.	0	0	0	0	687,340
		Cost	0	0	0	0	687,340
32.	Monroe Harbor, MI (Continued) Contributed Funds	New Work					
		Contrib.	0	0	0	0	300,000
		Cost	0	0	0	0	300,000
		Maintenance					
		Approp.	531,605	60,300	560,768	41,400	61,374,134[41]
		Cost	531,621	60,348	431,565	170,606	61,374,114[41]
		Maintenance					
		Contrib.	0	0	0	0	249,849[42]
	Contributed Funds	Cost	0	0	0	0	249,849[42]
33.	Muskegon Harbor, MI	New Work					
		Approp.	0	0	0	0	2,912,110[43]
		Cost	0	0	0	0	2,912,110[43]
	Section 111						
		New Work					
		Approp.	0	0	0	0	105,000
		Cost	0	0	0	0	105,000
		Maintenance					
		Approp.	26,493	457,750	98,000	415,715	11,877,736[44]
	Section 111	Cost	26,804	457,505	98,341	333,995	11,796,016[44]
		Maintenance					
		Approp.	0	0	0	0	3,265,600
		Cost	0	0	0	0	3,265,600
		Major (or Minor) Rehabilitation					

TABLE 21-A **COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sep. 30, 2004
		Approp.	0	0	0	0	13,824,300
		Cost	0	0	0	0	13,824,300
34.	Ontonagon Harbor, MI	New Work					
		Approp.	0	0	0	0	953,903[45]
		Cost	0	0	0	0	953,903[545]
		Maintenance					
		Approp.	508,359	1,991,890	939,328	660,000	27,379,568[46]
		Cost	539,609	1,991,532	939,565	650,118	26,369,451[46]
35.	Pentwater Harbor, MI	New Work					
		Approp.	0	0	0	0	179,899
		Cost	0	0	0	0	179,899
		Maintenance					
		Approp.	597,232	248,000	79,100	163,300	15,385,134
		Cost	597,231	247,998	79,089	163,235	15,385,052
36.	Port Austin Harbor, MI	New Work					
		Approp.	0	0	0	0	3,191,234
		Cost	0	0	0	0	3,191,234
	Contributed Funds	New Work					
		Contrib.	0	0	0	0	172,100
		Cost	0	0	0	0	172,100
36.	Port Austin Harbor, MI (Continued)	Maintenance					
		Approp.	20,861	81,000	24,809	238,300	2,447,747[47]
		Cost	13,861	87,758	24,668	238,628	2,447,692[47]
37.	Port Sanilac Harbor, MI	New Work					
		Approp.	0	0	0	0	909,963
		Cost	0	0	0	0	909,963
	Contributed Funds	New Work					
		Contrib.	0	0	0	0	487,108
		Cost	0	0	0	0	487,108
	Section 111	New Work					
		Approp.	0	0	0	0	336,000
		Cost	0	0	0	0	336,000
		Maintenance					
		Approp.	283,400	14,691	129,263	(5,164)	2,807,188[48]
		Cost	282,953	15,100	118,239	5,804	2,807,094[48]
	Contributed Funds	Maintenance					
		Contrib.	0	0	0	0	115,000
		Cost	0	0	0	0	115,000
	Section 111	Maintenance					
		Approp.	10,000	1,300	67,304	0	1,270,054
		Cost	9,895	1,372	67,337	0	1,270,054

TABLE 21-A COST AND FINANCIAL STATEMENT

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sep. 30, 2004
38.	Port Washington Harbor, WI	New Work					
		Approp.	0	0	0	0	2,582,204[49]
		Cost	0	0	0	0	2,582,204[49]
	Contributed Funds	New Work					
		Contrib.	0	0	0	0	1,624,000
		Cost	0	0	0	0	1,624,000
		Maintenance					
		Approp.	25,330	49,338	300,938	6,585	3,831,855[50]
		Cost	25,270	49,386	300,951	6,585	3,831,855[50]
39.	Portage Lake Harbor, MI	New Work					
		Approp.	0	0	0	0	256,129
		Cost	0	0	0	0	256,129
		Maintenance					
		Approp.	2,837,755	1,927,000	922,289	33,700	8,774,490
		Cost	2,837,030	1,926,529	923,621	33,642	8,774,359
40.	Rouge River, MI	New Work					
		Approp.	0	0	0	0	675,251[51]
		Cost	0	0	0	0	675,251[51]
		Maintenance					
		Approp.	179,603	182,200	876,786	161,900	39,560,702[52]
		Cost	178,867	182,785	874,609	163,569	39,560,044[52]
41.	Saginaw River, MI (Federal Funds)	New Work					
		Approp.	0	0	0	0	14,917,127[53]
		Cost	0	0	0	0	14,917,127[53]
	Contributed Funds	New Work					
		Contrib.	0	0	0	0	13,600
		Cost	0	0	0	0	13,600
		Maintenance					
		Approp.	1,950,876	1,391,700	2,292,525	1,407,500	87,820,069[54]
		Cost	1,939,543	1,391,696	2,301,905	1,409,606	87,818,781[54]
42.	Saint Clair River, MI	New Work					
		Approp.	0	0	0	0	19,213,246
		Cost	0	0	0	0	19,213,246
		Maintenance					
		Approp.	2,311,458	800,500	537,100	1,050,000	32,930,519[55]
		Cost	2,294,377	810,553	543,136	1,035,634	32,912,611[55]
43.	Saint Joseph Harbor,	New Work					

TABLE 21-A **COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sep. 30, 2004
	MI	Approp.	0	0	0	0	976,485[56]
		Cost	0	0	0	0	976,485[56]
	Section 111	New Work					
		Approp.	0	0	0	0	828,000
		Cost	0	0	0	0	828,000
		Maintenance					
		Approp.	995,832	496,200	503,000	624,000	24,038,964[57]
		Cost	992,969	496,952	501,793	626,430	24,036,130[57]
	Section 111	Maintenance					
		Approp.	130,900	120,000	73,922	102,900	8,818,736
		Cost	130,920	119,739	72,372	104,649	8,818,644
		Major (or Minor) Rehabilitation	0	0	0	0	962,216
		Approp.	0	0	0	0	962,216
		Cost					
44.	Saugatuck Harbor & Kalamazoo River, MI	New Work					
		Approp.	0	0	0	0	364,527[58]
		Cost	0	0	0	0	364,527[58]
44.	Saugatuck Harbor & Kalamazoo River, MI (Continued)	Maintenance					
		Approp.	482,600	177,300	24,750	238,000	10,444,812[59]
		Cost	482,563	177,145	24,842	238,065	10,444,777[59]
45.	Sheboygan Harbor, WI	New Work					
		Approp.	0	0	0	0	1,136,088[60]
		Cost	0	0	0	0	1,136,088[60]
		Maintenance					
		Approp.	105,076	415,400	341,100	506,000	10,742,847[61]
		Cost	104,980	415,132	341,451	482,386	10,719,220[61]
		Major (or Minor) Rehabilitation					
		Approp.	0	0	0	0	609,028
		Cost	0	0	0	0	609,028
46.	South Haven Harbor, MI	New Work					
		Approp.	0	0	0	0	452,426[62]
		Cost	0	0	0	0	452,426[62]
	Section 111	New Work					
		Approp.	0	0	0	0	532,000
		Cost	0	0	0	0	532,000
		Maintenance					
		Approp.	84,666	1,452,995	835,995	358	9,058,712[63]
		Cost	99,681	1,452,351	836,692	358	9,058,705[63]

TABLE 21-A **COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sep. 30, 2004
	Section 111	Maintenance					
		Approp.	(100)	0	29,906	(100)	1,965,939
		Cost	0	0	21,225	8,589	1,965,868
		Major (or Minor) Rehabilitation					
		Approp.	0	0	0	0	1,632,076
		Cost	0	0	0	0	1,632,076
47.	Sturgeon Bay, WI, and Lake Michigan Ship Canal, WI	New Work					
		Approp.	0	0	0	0	1,059,722[64]
		Cost	0	0	0	0	1,059,722[64]
		Maintenance					
		Approp.	237,401	95,900	109,400	86,400	11,785,313[65]
		Cost	237,450	95,867	109,436	86,386	11,785,251[65]
		Major (or Minor) Rehabilitation					
		Approp.	0	0	0	0	884,899
		Cost	0	0	0	0	884,899
48.	Two Harbors, MN	New Work	0	0	0	0	4,170,710[66]
		Approp.	0	0	0		4,170,710[66]
		Cost				0	
		Maintenance	1,379	1,607	18,051	135,000	5,408,498
		Approp.	1,379	1,607	18,002	125,807	5,399,256
		Cost					
49.	Two Rivers Harbor, WI	New Work					
		Approp.	0	0	0	0	360,320[67]
		Cost	0	0	0	0	360,320[67]
		Maintenance					
		Approp.	444,145	135,657	2,671,001	72,910	12,592,622[68]
		Cost	452,010	153,711	2,670,990	72,972	12,592,591[68]
		Major (or Minor) Rehabilitation					
		Approp.	0	0	0	0	58,057
		Cost	0	0	0	0	58,057
50.	White Lake Harbor, MI	New Work					
		Approp.	0	0	0	0	207,862
		Cost	0	0	0	0	207,862
	Section 111	New Work					
		Approp.	0	0	0	0	249,700
		Cost	0	0	0	0	249,700

TABLE 21-A **COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sep. 30, 2004
		Maintenance					
		Approp.	176,276	20,158	10,804	358	11,130,383
		Cost	176,190	19,971	11,080	358	11,130,383
	Section 111	Maintenance					
		Approp.	59,600	0	29,484	0	1,259,199
		Cost	59,587	(231)	28,023	1,703	1,259,101
59.	Fort Wayne Metro Area, IN	New Work					
		Approp.	1,554,000	315,000	0	0	37,260,000
		Cost	1,606,848	307,677	7,773	4,774	37,259,876
	Contributed Funds	New Work					
		Contrib.	222,221	75,000	0	0	8,022,221
		Cost	672,567	80,921	0	0	8,021,882
60.	Sebewaing River, MI	New Work					
		Approp.	0	0	0	0	365,642
		Cost	0	0	0	0	365,642
		Maintenance					
		Approp.	8,678	6,500	7,900	8,700	487,235
		Cost	8,591	6,527	7,950	6,164	484,689
64.	Surveillance of Northern Boundary Waters	New Work					
		Approp.	0	0	0	0	0
		Cost	0	0	0	0	0
		Maintenance					
		Approp.	3,093,366	3,227,400	3,252,703	3,049,600	83,710,432[69]
		Cost	3,116,939	3,185,141	3,264,393	3,056,291	83,655,968[69]
65.	St. Marys River, MI	New Work					
		Approp.	0	2,321,000	1,850,000	2,006,000	166,834,071[70]
		Cost	0	2,283,219	1,802,958	1,861,811	166,605,059[70]
		Maintenance					
		Approp.	22,268,620	26,252,210	22,878,841	19,974,747	482,726,150[71,72]
		Cost	22,080,895	21,790,725	23,088,548	24,092,899	482,363,808[71,72]
	Contributed Funds	Maintenance					
		Contrib.	0	0	0	0	340,400
		Cost	0	0	0	0	340,400

TABLE 21-A **COST AND FINANCIAL STATEMENT**

[1]Includes $18,889 for previous projects.
[2]Includes $85,849 for previous projects.
[3]Includes $12,008 for previous projects.
[4]Includes $2,097,254 for previous projects.
[5]Includes $42,470,585 for diked disposal.
[6]Includes $1,547,195 for previous projects.
[7]Includes $1,556,249 for diked disposal.
[8]Includes $3,239,910 for previous projects.
[9]Includes $89,309 for previous projects.
[10]Includes $42,084 expended for M&O of Dams. (Excludes $10 expended in FY99).
[11]Includes $1,204,500 for diked disposal.
[12]Includes $311,329 for previous projects.
[13]Includes $13,437 for previous project and $780,400 for diked disposal.
[14]Includes $506,437 for previous projects.
[15]Excludes $100,000 contributed funds.
[16]Includes $8,918 for previous projects and $7,642,642 for diked disposal.
[17]Includes $176,620 for previous projects.
[18]Includes $127,598 for previous projects and $1,663,300 for diked disposal.
[19]Includes $404,300 for diked disposal.
[20]Includes $453,839 for previous projects.
[21]Excludes $3,000 contributed funds.
[22]Includes $21,818 for previous projects and $4,378,600 for diked disposal.
[23]Includes $149,312 for previous projects.
[24]Includes $88,364 for previous projects and $2,961,461 for diked disposal.
[25]Includes $402,242 for previous projects and $1,523,500 for diked disposal.
[26]Excludes $38,190 contributed funds.
[27]Includes $656,000 for previous projects.
[28]Includes $235,346 for previous projects and $5,119,800 for diked disposal.
[29]Includes $491,416 for previous projects.
[30]Excludes $136,286 contributed funds.
[31]Includes $354,999 for previous projects.
[32]Includes $150,910 for previous projects.
[33]Includes $400,126 for previous projects.
[34]Includes $54,288 for previous projects and $3,081,756 for diked disposal.
[35]Includes $312,423 for previous projects.
[36]Includes $36,194 for previous projects.
[37]Includes $312,423 for previous projects.
[38]Includes $36,194 for previous projects and $593,660 for diked disposal.
[39]Includes $1,293,220 for previous projects.
[40]Includes $459,305 for previous projects and $6,380,925 for diked disposal.
[41]Includes $38,606,400 for diked disposal.
[42]Includes $83,182 contributed funds - diked disposal.
[43]Includes $613,408 for previous projects.
[44]Includes $446,183 for previous projects.
[45]Includes $284,802 for previous projects.
[46]Includes $113,326 for previous projects and $21,000 for diked disposal.
[47]Includes $121,600 for diked disposal.
[48]Includes $159,000 for diked disposal.
[49]Includes $9,158 for diked disposal.
[50]Includes $188,495 for previous projects.
[51]Includes $15,123 for previous projects and $10,621 for diked disposal.
[52]Includes $50,084 for previous projects.
[53]Includes $56,608 for previous projects and $14,907,318 for diked disposal.
[54]Includes $962,556 for previous projects.
[55]Includes $20,951,888 for diked disposal ($1,671,660 public works fund and $49,419 emergency relief funds)
[56]Includes $420,000 expended for M&O of Dams.
[57]Includes $503,113 for previous projects.
[58]Includes $638,076 for diked disposal.
[59]Includes $90,232 for previous projects.
[60]Includes $117,554 for previous projects.
[61]Includes $487,817 for previous projects.
[62]Includes $87,131 for previous projects and $907,792 for diked disposal.
[63]Includes $187,233 for previous projects.
[64]Includes $131,299 for previous projects and $42,381 for diked disposal.
[65]Includes $323,419 for previous projects.
[66]Includes $219,730 for previous projects and $311,119 for diked disposal.
[67]Includes $48,404 National Recovery Act for New Work Funds.
[68]Includes $212,857 for previous projects.
[69]Includes $33,113 for previous projects and $1,187,472 for diked disposal.
[70]Includes $3,973,897 for previous projects.
[71]Includes $2,904,807 for previous projects.
[72]Includes $13,100 for diked disposal.
[73]Includes $799,947 expended for M&O of Dams.

TABLE 21- B **AUTHORIZING LEGISLATION**

See Sec.	Date of Authorizing Act	Project and Work Authorized	Documents
1.		**ALPENA HARBOR, MI**	
	Sep. 19, 1890	Channel depth of 16 ½ feet.	Annual Report, 1889, p. 2288.
	Mar. 2, 1919 Sep. 22, 1922	Rubblemound breakwater for protecting channel on south side and widening entrance channel.	H. Doc. 830, 65th Cong., 2d Sess., and Rivers & Harbors Comm. Doc. 1, 67th Cong., lst Sess.
	Aug. 30, 1935	21 and 18½ foot channel depths and turning basin.	Rivers and Harbors Comm. Doc. 42, 72d Cong., lst. Sess.
	Oct. 27, 1965	Present project dimensions. New turning basin. Removal of old breakwater and construction of new breakwater.	H. Doc. 151, 88th Cong., 1st. Sess.[1]
	Nov. 17, 1986	Deauthorization of the feature authorized by the 1965 River and Harbor Act.	H. R. 6 (formerly S. 1567), 99th Cong., 2d Sess. (WRDA of 1986).
2.		**ARCADIA HARBOR, MI**	
	Mar. 3, 1905	Maintenance of existing 12-foot channel.	H. Doc. 194, 58th Cong., 2d Sess.
3.		**ASHLAND HARBOR, MI**	
	Aug. 5, 1886	Breakwater 7,900 feet long and dredging to remove a shoal.	H. Ex. Doc. 89, 48th Cong., 2d Sess. Annual Reports, 1886, p. 1674; and 1887, p. 1966.
	Aug. 11, 1888	Appropriation of $60,000 for 'Continuing improvements on enlarged project' (On completion of Poe Lock in 1896, with available depth of 20 feet, dredging at Ashland Harbor was carried to a similar depth.)	H. Ex. Doc. 89, 48th Cong., 2d Sess. Annual Reports, 1886, p. 1674; and 1887, p. 1966.
	Mar. 3, 1899 Jun. 6, 1990	Detached breakwater extending 4,700 feet out from shore at a point 2,600 feet east of main breakwater (prolonged) and parallel thereto.	
	Aug. 8, 1917	Project modified by omitting detached breakwater and defining depth and extend of channel to be dredged.	H. Doc. 1698, 64th Cong., 2d Sess.
	Jul. 3, 1930	Widening part of present channel for entrance channel and for basin in eastern part of harbor.	S. Doc. 133, 71st Cong., 2d Sess
	Aug. 30, 1935	Deepening east basin to 25 feet and west channel, as far as 8th Ave. West, extended to 21 feet.	Rivers and Harbors Committee Doc. 46, 82d Cong., 1st Sess.
	Mar. 2, 1945	Widening west channel to 750 feet at its westerly end	H. Doc. 337, 77th Cong., 1st Sess.
	Jul. 14, 1960	Deepening portions of east basin and west channel to 27 and 21 feet, respectively.	H. Doc. 165, 86th Cong., 1st Sess.[1]
4.		**BLACK RIVER, MI (PORT HURON)**	
	Sep. 19, 1890	Channel from mouth of Grand Trunk R.R. Bridge.	Annual Report, 1889, p. 2291.
	Jul. 13, 1892	Channel from Grand Trunk R.R. Bridge to Washington Ave.	No Printed Report.
	Sep. 22, 1922	Consolidation of projects for Black River at Port Huron and Mouth of Black River.	H. Doc. 436, 64th Cong., lst. Sess.
	Jul. 3, 1930	Settling Basin.	H. Doc. 162, 71st Cong., 2d Sess.
	Aug. 30, 1935	Deepening channel and settling basin to 20 feet, and widening to 100 feet 2 bends; 1 at the foot of 12th St., the other below the Grand Trunk R.R. Bridge.	Rivers and Harbors Committee Doc. 54, 72d Cong., 2d Sess.
	Apr. 23, 1970	Extension of existing channel.	Section 107, 1960 Rivers and Harbors Act.
5.		**BOLLES HARBOR, MI**	
	Jul. 6, 1965	Entrance channel in Lake Erie, Access channel in LaPlaisance Creek. Steel sheet pile revetment.	Section 107, 1960 Rivers and Harbors Act.

TABLE 21-B **AUTHORIZING LEGISLATION**

See Sec.	Date of Authorizing Act	Project and Work Authorized	Documents
6.		**CHARLEVOIX HARBOR, MI**	
	Aug. 14, 1876	Channel from Lake Michigan to Round Lake protected where needed by piers and revetments.	S. Ex. Doc. 16, 44th Cong., 1st 0ess. and Annual Report 1876, p. 523.
	Aug. 2, 1882	Channel from Round Lake to Lake Charlevoix.	No Prior Survey of Estimates.
	Jun 13, 1902	Project depth increased to 15 feet.	No Prior Survey of Estimates.
	Jun. 20, 1938	Project depth increased to 18 feet.	S. Doc. 163, 75th Cong., 3rd Sess.[1]
	Nov. 17, 1988	Restore recreational uses or provide comparable recreational uses at the South Pier.	H. Doc. 1098, 100th Cong., 2d Sess. Sec. 25 of the WRDA of 1988.
	Mar. 29, 1977	Project depth increased to 24 and 23 feet, and construction of revetment upstream of Highway Bridge.	Section 107, 1960 Rivers and Harbors Act.
7.		**DETROIT RIVER, MI**	
	Jun. 13, 1902 Mar. 3, 1905 Jun. 25, 1910	Amherstburg Channel and removal of Grosse Ile Shoal.	H. Doc. 712, 56th Cong., 1st. Sess. and 40, 58th Cong., 3rd Sess.
	Mar. 4, 1913	Fighting Island Channel.	H. Doc. 17, 62d Cong., 1st Sess.
	Mar. 2, 1907 Jun. 25, 1910 Mar. 2, 1919	Livingstone Channel.	H. Doc. 266, 59th Cong., 1st Sess.; 676, 61st Cong., 2d Sess.; and 322, 65th Cong., 1st Sess.
	Jul. 3, 1930	Channel Depths of 26 and 25 feet.	H. Doc. 253, 70th Cong., 1st. Sess.
	Aug. 30, 1935 [3]	Channel to Wyandotte 21 feet deep and 300 feet wide through Middle Ground opposite Head of Fighting Island.	Rivers and Harbors Committee Doc. 1, 72d Cong., 1st Sess.[1]
	Aug. 26, 1937	Trenton Channel and Turning Basin (West of Grosse Ile).	H. Doc. 205, 75th Cong., 1st Sess.
	Mar. 2, 1945	American Channel North of Belle Isle between Windmill Point and Fairway Slip, Detroit.	H. Doc. 734, 79th Cong., 2d Sess.
	Jul. 24, 1946 [22]	Deepen Westerly 300 feet of Amherstburg Channel and Ballards Reef Channel below Livingstone Channel to 27 feet to provide depths adequate for 24-foot draft navigation when governing Lakes are at Datum, with necessary widening at approaches and bends and construction of necessary compensating works, Detroit River.	H. Doc. 335, 80th Cong., 1st Sess.
	May 17, 1950 [4]	Extend Turning Basin in Trenton Channel 600 feet. Dredge through East Draw of lower Grosse Ile Bridge and extend 300-foot width of Channel North of lower Grosse Ile Bridge.	S. Doc. 30, 81st Cong., 1st Sess.[1]
	Mar. 21, 1956 [22]	Channel Depth of 28.5 feet throughout downbound and Two-Way Channels, except in upper (27.7-foot depth) and lower (29-foot depth), Livingstone Channel, and in upbound Channel; 27-foot depth in Ballards Reef Channel below junction with Livingstone Channel, 27.5-foot depth in westerly 300-foot width of Limekiln Crossing and Amherstburg Reaches, and 28.5-foot depth in westerly 300-foot width of Hackett Beach, with necessary compensation works. Also 28.5-foot depth in Lake Erie from Detroit River to Pelee Passage Shoal, inclusive.	S. Doc. 71, 84th Cong., 1st Sess.[1]
	Jul. 14, 1960	Trenton Channel: Deepen to 25 feet, where necessary, Wyandotte Reach from Detroit River to Upper Grosse Ile Bridge, about 5.5 miles, deepen to 28 feet and widen to 300 feet below Upper Grosse Ile Bridge to and including a Turning Basin 28 feet deep and 15 feet across in area outside project limits.	H. Doc. 319, 86th Cong., 2d Sess.[1]

TABLE 21- B **AUTHORIZING LEGISLATION**

See Sec.	Date of Authorizing Act	Project and Work Authorized	Documents
	Aug. 13, 1968 [22]	Trenton Channel: Deepen to 28 feet and widen to 300 feet from Upper Turning Basin at Trenton to Gibraltar, about 20,500 feet from downstream: Construct a Turning Basin at Gibraltar at a depth of 28 feet, width of 830 feet, and length of 1,500 feet: Build compensating works to maintain water levels.	H. Doc. 338, 90th Cong., 2d Sess.[1]
8.		**DULUTH-SUPERIOR HARBOR, MN AND WI**	
	Jun. 3, 1896	Dredging.	H.Ex. Doc. 59, 53d Cong., 3rd Sess. and Annual Report, 1895, p. 2538.
	Jun. 13, 1902	Rebuilding piers at Superior Entry.	
	Mar. 2, 1907	Enlarge plan for Superior Entry and additional dredging near draw span of Burlington Northern railway bridge.	H. Doc. 82, 59th Cong., 2d Sess.
	May 28, 1908 [5]	Dredging additional area of basin inside Duluth entrance to 22-foot depth.	H. Doc. 221, 60th Cong., 1st Sess.
	Jul. 27, 1916	Enlarging Superior Harbor Basin.	H. Doc. 651, 64th Cong., 1st Sess.
	Mar. 2, 1919	Removal of shoal point at southerly end of East Gate Basin.	H. Doc. 1018, 64th Cong., 1st Sess.
	Jan. 21, 1927 Jul. 30, 1930 [3]	Howards Bay Channel, 20 feet deep.	H. Doc. 145, 69th Cong., 1st Sess., and Rivers and Harbors Committee Doc. 32, 71st Cong., 2d Sess.
	Aug. 30, 1930 [3]	Deepening and widening channels and basins.	H. Doc. 482, 72d Cong., 2d Sess.
	Jul. 16, 1952 [4,6]	Deepen Superior Front Channel and a portion of East Gate Basin to 25 feet.	H. Doc. 374, 82d Cong., 2d Sess.
	Jul. 14, 1960 [7,22]	Present project dimensions of channels and basin.	H. Doc. 150, 86th Cong., 1st Sess.; H. Doc. 196, 86th Cong., 1st Sess.
	Oct. 4, 1961	Abandons northerly portion of 21st Avenue West Channel.	
	Nov. 17, 1986	Deepen portions of the North and South Channels, the entire Upper Channel and Minnesota Channel to 27 feet; widen the Cross Channel turning basin to 1,500 feet; widen the bend at the Arrowhead Bascule Bridge to 600 feet, and construct an upland CDF.	H. Doc. 204, 99th Cong., 2d Sess. Sec. 202a of WRDA of 1986.
9.		**FOX RIVER, WI**	
	Aug. 5, 1886	Improvement of Fox River.	Annual Report, 1885, pp. 2041-2045 (plan of a board approach Dec. 10, 1884, as modified by Corps of Engineers, May 14, 1886).
	Sep. 19, 1890	Dredging Fond du Lac Harbor on Lake Winnebago.	H. Ex. Doc. 24, 51st Cong., 1st Sess. Annual Report, 1890, p. 2390.
	Jun. 3, 1896	Improvement of Wolf River.	No prior survey or estimates.
	Jun. 3, 1896 Jun. 13, 1902 Mar. 2, 1907	Improvement of Stockbridge, of Calumet and Miller Bay, and of Brothertown Harbor, on Lake Winnebago.	No prior survey or estimates. No prior survey or estimates.
	Mar. 3, 1925 [8,22]	Increased depth in rock cuts on lower river, widen Neenah Channel, and a concrete retaining wall at Kaukauna.	H. Doc. 294, 68th Cong., 1st Sess.[1]
	Jun. 26, 1934 [9]	Operation and care of locks and dams provided for with funds from War Department appropriations for rivers and harbors.	
	Jul. 3, 1958 [10]	Sec. 108, Federal project structure, appurtenances, and real property of Upper Fox River, WI, be disposed of to State of Wisconsin.	S. Bill 3910, 85th Cong., 2d Sess.

TABLE 21-B **AUTHORIZING LEGISLATION**

See Sec.	Date of Authorizing Act	Project and Work Authorized	Documents
	Oct. 31, 1992	Sec. 332 authorized transfer of navigation system to Wisconsin subject to agreement, Federal government to continue water regulation/dam operation.	Public Law 102-580 (WRDA of 1992).
10.		**FRANKFORT HARBOR, MI**	
	Jun. 23, 1866 [11]	A New Outlet 12 feet deep protected by Piers and Revetments.	H. Doc. 482, 5th Cong., 2d Sess.
	Mar. 3, 1925	Exterior Breakwaters, removal of portions of Piers, Project Dimensions of Outer Basin.	H. Doc. 208, 68th Cong., 1st Sess.
	Aug. 26, 1937	Dredge the area in Lake Betsie.	
	Oct. 27, 1965	Deepen approach and entrance channels. Extend Inner Basin and Dredge recreational anchorage area.	H. Doc. 511, 74th Cong., 2d Sess., S. Doc 16, 89th Cong., 1st Sess.[1]
11.		**GRAND HAVEN HARBOR, MI**	
	Jun. 23, 1866	Piers and Revetments.	S. Ex. Doc 42, 35th Cong., 1st. Sess.
	Jun. 14, 1880	Piers and Revetments.	S. Ex. Doc 42, 35th Cong., 1st. Sess.
	Sep. 19, 1890	Piers and Revetments.	S. Ex. Doc 42, 35th Cong., 1st. Sess.
	Jul. 13, 1892	Piers and Revetments.	S. Ex. Doc 42, 35th Cong., 1st. Sess.
	Jul. 3, 1930	Present Project dimensions of Harbor channel to Grand Trunk Car Ferry Slip and River Channel. Eliminating all of that portion of Grand River above Bass River, Consolidation of Projects for Harbor and River.	S. Doc. 88, 71st Cong., 2d Sess.
	Aug. 26, 1937	Channel to Spring Lake.	Rivers and Harbors Committee Doc. 1, 75th Cong., 3rd Sess.[1]
	Mar. 2, 1945	Present Project Dimensions of Harbor Channel from Car Ferry Slip to Grand Trunk Railway Bridge and Turning Basin.	H. Doc. 661, 76th Cong., 3rd Sess.[1]
	Nov. 17, 1986	Deepen the harbor entrance channel and harbor river channel to 29 and 27 feet, respectively; provide a new and larger turning basin, trapezoidal in shape, 1,200 feet long at the channel, 300 feet long at the shore, 800 feet at a right angle to the channel, and 18 feet deep.	H. Doc. 227, 98th Cong., 2d Sess. Sec. 202a of WRDA of 1986.
12.		**GRAND MARAIS HARBOR, MI**	
	Jun. 14, 1880	Existing project, except for pile dike.	Specified in Act, Annual Report 1881, p. 2050
	Jun. 14, 1880	For pile dike.	Annual Report, 1895, p. 351
	May 17, 1950	800-foot extension of West Pier.	H. Doc. 751, 80th Cong., 2nd Sess.
13.		**GRAND TRAVERSE BAY HARBOR, MI**	
	Mar. 2, 1945	Two parallel piers, an entrance channel between piers and a harbor basin. Project depths are 12 feet between piers and 10 feet in basin. Projects area extended 200 feet upstream in 1966.	H. Doc. 446, 78th Cong., 2nd Sess.
14.		**GRAYS REEF PASSAGE, MI**	
	Aug. 30, 1935	Improvement of Passage Over a 3,000 Foot Width and a Depth of 25 Feet.	H. Doc. 5, 74th Cong., 2d Sess. [1]
15.		**GREEN BAY HARBOR, WI**	
	Jun. 23, 1866	Outer Channel and revetment at Grassy Island.[12]	Annual Report, 1867, p. 70.
	Jul. 13, 1892	Inner channel.[13]	Unpublished report approved Aug. 3, 1892.

TABLE 21- B **AUTHORIZING LEGISLATION**

See Sec.	Date of Authorizing Act	Project and Work Authorized	Documents
	Jun. 26, 1910	Turning basin at DePere.	H. Doc. 222, 61st Cong., 2d Sess.
	Aug. 8, 1917	Maintenance of turning basin at DePere.	H. Doc. 1017, 64th Cong., 1st Sess.
	Mar. 3, 1925	Increasing depth of inner channel and turning basin to 18 feet.	H. Doc. 294, 68th Cong., 1st Sess.
	Aug. 30, 1935 [2]	Deepen outer channel to 22 feet with widening and straightening inside of Tail Point Bend, widen channel in Fox River through city of Green Bay to 22 feet.	Rivers and Harbors Committee Doc. 40, 72d Cong., 2d Sess.
	Aug. 26, 1937	Turning basin above Chicago & North Western R.R. Bridge.	
	Mar. 2, 1945	Turning basin at mouth of East River.	Rivers and Harbors Committee Doc. 73, 74th Cong., 2d Sess.
	Oct. 23, 1962	Deepen and widen 9 miles of entrance channel to 26 by 500 feet; 3.6 miles of entrance channel to 24 by 300 feet; and 3.2 miles of existing Fox River to 24 feet deep.	H. Doc. 95, 76th Cong., 1st Sess. H. Doc. 470, 87th Cong., 2d Sess.[1]
	Nov. 17, 1986	Deepen the Fox River channel at Green Bay, WI, to 27 feet.	H.R. 6 (formerly S. 1567), 99th Cong., 2d Sess. (WRDA of 1986, Sec. 601c).
16.		**HOLLAND HARBOR, MI**	
	Aug. 30, 1852	Artificial channel between Lakes Macatawa and Michigan.[12]	S. Ex. Doc. 42, 35th Cong., 1st Sess.
	Mar. 2, 1867	Piers and Revetments.[12]	Annual Report, 1866, p. 106.
	Mar. 3, 1899	Extending Inner Piers.	H. Doc. 272, 51st Cong., 2d Sess.; and Annual Report 1887, p. 2950.
	Mar. 3, 1905	Converging Breakwater.	Annual Report, 1905, p. 2176;
	Jul. 3, 1930	Channel to Holland and Turning Basin at Holland.	H. Doc. 588, 69th Cong., 2d Sess.
	Aug. 30, 1935	Present Project Dimensions of Channels at Turning Basin.	Rivers and Harbors Committee Doc. 48, 74th Cong., 1st Sess.
	Sep. 3, 1954 [22]	Widen Bend in Revetted Entrance Channel into Lake Macatawa, Dredge Channel in Black River, and Widen and Extend Turning Basin.	H. Doc. 282, 83rd Cong., 2d Sess.
17.		**THE INLAND ROUTE, MI**	
	Sep. 3, 1954	Channel 30 feet wide and 5 feet deep through Lakes and Rivers with suitable jetties.	H. Doc. 142, 82d Cong., 1st Sess.[1]
	Sep. 2, 1964	Lock and Dam.	Chief of Engineers.
18.		**KENOSHA HARBOR, WI**	
	Mar. 3, 1899	Parallel piers and 600 feet of breakwater.[12]	H. Doc. 328, 54th Cong., 2d Sess.; Annual Report, 1897, p. 2772; H. Doc. 164, 55th Cong., 3rd Sess.; Annual Report, 1899, p. 1817.
	Mar. 2, 1907	Extending Breakwater 200 feet.	H. Doc. 62, 59th Cong., 2d Sess. and Rivers and Harbors Committee Doc. 3, 5th Cong., 2d Sess.
	Aug. 30, 1935 [2]	Present project dimensions of entrance channel and basin.	Rivers and Harbors Committee Doc. 19, 74th Cong., 1st Sess.
	May 17, 1950	Channel northwesterly from basin.	H. Doc. 750, 80th Cong., 2d Sess.
	Oct. 23, 1962 [22]	Deepen lake approach channel to 27 feet and 800 feet wide; deepen approach channel to 26 feet, entrance channel and inner basin to 25 feet.	H. Doc. 496, 87th Cong., 2d Sess.[1]
19.		**KEWAUNEE HARBOR, WI**	
	Mar. 3, 1881	Entrance piers.	Annual Report, 1881, p. 2082.
	Jun. 25, 1910	Turning basin.	H. Doc. 324, 60th Cong., 1st Sess.

TABLE 21-B AUTHORIZING LEGISLATION

See Sec.	Date of Authorizing Act	Project and Work Authorized	Documents
	Aug. 30, 1935 [2,14]	North breakwater, remove old north pier, widen and deepen entrance channel and turning basin to 20 feet and remove outer south shoal.	Rivers and Harbors Committee Doc. 43, 72d Cong., 1st Sess.[1] S. Doc. 19, 86th Cong., 1st Sess.[1]
	Jul. 14, 1960	Enlarge existing turning basin, extend existing project into north basin, and increase depth of north basin to 20 feet at a maximum width of 500 feet and eliminate removal of outer shoal.	
20.		**KEWEENAW WATERWAY, MI**	
	Sep. 19, 1890	Acquision of waterway; for a 16-foot channel of 70-foot bottom width, renew canal revetments, reconstruct and extend piers at upper entrance to 30-foot depth of water, and at proper time for increase of channel depth to 20 feet with bottom width of not less than 120 feet (increase in width and depth of channel approved May 15, 1898).	H. Ex. Doc. 105, 49th Cong., 2d Sess.; and Annual Report, 1887, p. 1977.
	Jun. 25, 1910	Anchorage basin just within lower entrance about one -half mile long, 800 feet wide; a mooring pier on its westerly side 2,000 feet in length, and for purchase of necessary land.	H. Doc. 325, 60th Cong., 1st Sess.
	Mar. 2, 1919	Princess Point Cutoff Channel.	H. Doc. 835, 63rd Cong., 2d Sess.
	Aug. 30, 1935 [15]	General deepening, widening and straightening of channels and basins to provide 25-foot depth with additional overdepth at entrances, extend lower entrance breakwater, and necessary alteration or replacement of structures due to deepening channels.	H. Doc. 55, 73rd Cong., 1st Sess.[1]
	Nov. 17, 1986	Deauthorization of the uncompleted portion of the project authorized by the 1935 Rivers and Harbors Act.	H.R. 6 (formerly S. 1567), 99th Cong., 2d Sess. (WRDA of 1986).
21.		**LAC LA BELLE HARBOR, MI**	
	Mar. 2, 1945	Two parallel piers at the entrance, 584 and 682 feet; an entrance channel between the piers 50 feet wide and 12 feet deep, 820 feet long with a flared approach and inner canal 50 feet wide, 10 feet deep, and 730 feet long.	H. Doc. 446, 78th Cong., 2d Sess. Annual Report, 1961, p. 1039.
22.		**LAKE ST. CLAIR, MI, CHANNELS**	
		Two Dikes.	Annual Report, 1885, p. 2150.
	Aug. 5, 1886	Deepening Canal and dredging Channel at Grosse Pointe.	H. Doc. 297, 51st Cong., 2d Sess.
	Jul. 13, 1892	Second Canal for downbound vessels.	H. Doc. 234, 56th Cong., 2d Sess.
	Jun. 13, 1902	21-foot depth in Grosse Pointe Channel for about 5.25 miles.	H. Doc. 188, 65th Cong., 1st Sess.
	Mar. 2, 1919	25-foot depth through Canals and Channel through Lake St. Clair.	H. Doc. 253, 70th Cong., 1st Sess.
	Jul. 3, 1930 Aug. 30, 1933 [3]	Removal of Center Dike and widening Channel to 700 feet.	Rivers and Harbors Committee Doc. 3, 72d Cong., 1st Sess.

TABLE 21- B **AUTHORIZING LEGISLATION**

See Sec.	Date of Authorizing Act	Project and Work Authorized	Documents
	Mar. 21, 1956	Deepening Channel to 27.5 feet and abandonment of Channel above mouth of Southeast bend cutoff Channel.	S. Doc. 71, 84th Cong., 1st Sess.[1]
23.		**LELAND HARBOR, MI**	
	Aug. 30, 1935	Entrance Channel protected by Piers.	Rivers and Harbors Committee Doc. 23, 74th Cong., 1st Sess.
	Oct. 23, 1962	Outer Breakwater, Anchorage Area, Approach Channel and removal of North Pier.	H. Doc. 413, 87th Cong., 2d Sess.
24.		**LEXINGTON HARBOR, MI**	
	Oct. 27, 1965	Approach Channel and Maneuver Area Protected by Breakwaters.[1]	H. Doc. 301, 88th Cong., 2d Sess.[1]
25.		**LITTLE LAKE HARBOR, MI**	
	Mar. 2, 1945	12-foot deep Channel from Lake Superior into Little Lake Breakwaters and Revetments.	H. Doc. 446, 78th Cong., 2d Sess.[1]
26.		**LUDINGTON HARBOR, MI**	
	Mar. 2, 1867	Entrance Piers.	Annual Report, 1867, p. 114.[16]
	Mar. 3, 1899	Pier Extension, Reconstruction and repairs to existing structures and present project dimensions of Channel.	H. Doc. 273, 54th Cong., 2d Sess.; and Annual Report, 1897, p. 2951.
	Mar. 2, 1907	Breakwaters, Shore Connections, and Removal of outer ends of the two inner piers.	H. Doc. 62, 59th Cong., 1st Sess.; and Rivers and Harbors Committee Doc. 3, 59th Cong., 2d Sess.[16]
	Dec. 31, 1970	Deepen Channels and widen opening between breakwaters.	H. Doc. 342, 91st Cong., 2d Sess.[1]
27.		**MANISTEE HARBOR, MI**	
	Mar. 2, 1867	Entrance Piers.	Annual Report, 1867, p. 115.
	Sep. 19, 1890	Extending Channel 8,000 feet to connect with Manistee Lake, and further Pier extension.	Annual Report, 1891, P. 2678.
	Jul. 25, 1912	Depth of 20 feet in Outer Harbor 570 feet wide to Outer end of South Pier 18 feet deep in river, South Breakwater with shore connection, and extend North Pier if required.	H. Doc. 599, 62d Cong., 2d Sess.
	Jul. 3, 1920	23-foot depths in entrance channel and 21-foot depths in River Channel.	S. Doc. 131, 71st Cong., 2d Sess. H. Doc. 380, 77th Cong., 1st Sess.
	Mar. 2, 1945	Remove old South Revetment, Construct new South Pier and Revetment, and widen river entrance Channel.	
	Jul. 14, 1960	Present project dimensions of Channel through Outer Basin and River, and Federal participation in cost of replacing Maple Street Bridge.	H. Doc. 358, 86th Cong., 2d Sess.
28		**MANITOWOC HARBOR, WI**	
	Mar. 2, 1907	Breakwaters.	H. Doc. 62, 59th Cong., 1st Sess., as modified by Rivers and Harbors Comm. Doc. 3, 59th Cong., 2d Sess.
	Aug. 30, 1935 [17]	Present project dimensions of channel through outer basin, removal of old north stub pier, and approach channel to a proposed city terminal south of shore end of south breakwater.	Rivers and Harbors Committee Doc. 39, 73rd Cong., 2d Sess.
	Aug. 26, 1937	Channel in river.	
	Oct. 23, 1962 [29]	Deepen Lake approach to 25 feet by 800 feet wide,	Rivers and Harbors Committee

TABLE 21-B AUTHORIZING LEGISLATION

See Sec.	Date of Authorizing Act	Project and Work Authorized	Documents
		deepen outer harbor to 25 feet, river channel to 23 feet to 8th Street, and Upper River Channel to 22 feet to Soo Line R.R.	Doc. 80, 74th Cong., 2d Sess. H. Doc. 479, 87th Cong., 2d Sess.
	Dec. 31, 1968 (Sec. 107 of 1960 R & H)	Dredge River Channel to 12 feet from Soo Line R.R. 720 feet upstream.	Jun. 1967 Detailed Project Report Apr. 1982 Supplement.[1]
	Jun. 26, 1979	Construct 765-foot long stone Breakwater, and rubblemound bulkhead; construct 360-foot long entrance Breakwater; dredge 16,500 cubic yards for entrance channel.	Sec. 107, 1960 Rivers and Harbors Act.
29.		**MARQUETTE HARBOR, MI**	
	Mar. 2, 1867	Breakwaters, 2,000 feet long.	H. Ex. Doc. 56, 39th Cong., 2d Sess., pts. 1 and 2; and Annual Report, 1866, pp. 8 and 77.
	Aug. 11, 1888	Extending the breakwater 1,000 feet.	Annual Report, 1889, pp. 272 and 2021.
	Jun. 25, 1910	Additional 1,500-foot extension to breakwater and removing a shoal in northerly part of harbor.	H. Doc. 573, 61st Cong., 2d Sess.
	Aug. 30, 1935	Deepening harbor to 25 feet.	Rivers and Harbors Committee Doc. 20, 72d Cong. , 1st Sess.
	Jul. 11, 1960	Deepening harbor to 27 feet.	H. Doc. 154, 86th Cong., lst Sess.[1]
30.		**MENOMINEE HARBOR AND RIVER, MI AND WI**	
	Mar. 3, 1871	Entrance piers.	Annual Report, 1867, p. 132.
	Jun. 13, 1902	Consolidation of project for harbor and river, and a channel 18 feet deep.	H. Doc. 419, 56th Cong., 1st Sess.
	Mar. 4, 1913 Jul. 3, 1930	Partial restoration of work above bridge which had been eliminated by Act of May 3, 1905.	
	Aug. 30, 1935	20-foot depth in channel and 18-foot depth in turning basin.	H. Doc. 171, 70th Cong., 1st Sess.
		21-foot depth in channel and turning basin and enlarge turning basin.	Rivers and Harbors Committee Doc. 28, 73rd Cong., 2d Sess.
	Mar. 2, 1945	Extend channel 12 feet deep to vicinity of Marinette Yacht Club.	H. Doc. 228, 76th Cong., 1st Sess.
	Jul. 14, 1960	Deepen existing approach channel to 26 feet, entrance and river channels to 24 feet and enlarge turning basin.	H. Doc. 113, 86th Cong., 1st Sess.
	Jun. 27, 1967 (Sec. 107)	Deepen 1,100 feet of river channel generally north of Marinette Corp. facilities to 19 feet.	Detailed Project Report, Dec. 1966.[1]
31.		**MILWAUKEE HARBOR, WI**	
	Aug. 30, 1852	North Pier.[12]	S. Doc. 175, 25th Cong., 2d Sess.
	Mar. 3, 1883	Inner 7,600 feet of breakwater.[12]	Annual Report, 1881, p. 2122.
	Mar. 2, 1907	South pier. Extending north breakwater 1,000 feet.	Annual Report, 1906, p. 1752 (No prior survey or estimate affecting breakwater extensions).
	Sep. 22, 1922	Extend north breakwater; a south breakwater; present project dimensions of inner entrance channel.	H. Doc. 804, 66th Cong., 2d Sess.
	Aug. 30, 1935 [22]	Dredging a portion of outer harbor to 21-foot depth.	H. Doc. 289, 72d Cong., 1st Sess.
	Mar. 2, 1945 [18]	Dredging river channels to 21-foot depth.	S. Doc. 29, 76th Cong., 1st Sess.
	Jul. 14, 1960	Deepen South Menominee and Burnham Canals to 21	H. Doc. 285, 86th Cong., 2d Sess.

TABLE 21- B **AUTHORIZING LEGISLATION**

See Sec.	Date of Authorizing Act	Project and Work Authorized	Documents
		feet.	
	Oct. 23, 1962	Deepen an approach channel to 30 feet by 800 feet wide and 300 feet wide through breakwater; deepen entrance channel 28 feet through piers, outer harbor to 28 feet south of entrance channel, and a channel to 27 feet in Milwaukee River to Buffalo Street, and in Kinnickinnic River to Chicago & North Western R.R. bridges.	H. Doc. 134, 87th Cong., 1st Sess.[1]
32.		**MONROE HARBOR, MI**	
	Feb. 24, 1835 [19]	9-foot channel, protecting Revetments and Piers.	Annual Report, 1872, p. 237.
	Jul. 3, 1930	21-foot channel, dikes and turning basin.[20]	Rivers and Harbors Committee Doc. 22, 71st Cong., 1st Sess.
	Jul. 14, 1932 [21]	Modified Conditions of Local Cooperation imposed by Act of Jul. 3, 1930.	Rivers and Harbors Committee Doc. 12, 72d Cong., 1st Sess.;
	Nov. 17, 1986	Deepen portion of existing navigation channel to 27 feet; deepen lake channel to 28 feet; widen the channel from 200 to 500 feet; dredge a new turning basin 24 feet deep, 1,600 feet wide at river's mouth; and construct a 190 acre CDF in Plum Creek Bay to enable creation of a 700 acre marsh behind the CDF.	45, 75th Cong., 1st Sess.[1] H. R. 6 (formerly S. 1567), 99th Cong., 2d Sess. (WRDA of 1986).
33.		**MUSKEGON HARBOR, MI**	
	Jun. 13, 1902	Piers and Revetments.	H. Doc. 104, 56th Cong., 2d Sess.
	Mar. 3, 1925	Breakwaters.	H. Doc. 494, 67th Cong., 4th Sess.
	Aug. 30, 1935	Repairing Revetments around Car Ferry Slip.	Rivers and Harbors Committee Doc. 64, 75th Cong., 1st Sess.[1]
	Oct. 23, 1962	Channel deepening and present project dimensions of channel. Piers and Revetments.	H. Doc. 474, 87th Cong., 2d Sess.[1]
34.		**ONTONAGON HARBOR, MI**	
	Jun. 25, 1910	Channel 17 feet deep and 150 feet wide through bar and 15 feet deep and 100 feet wide between piers, and pier maintenance.	H. Doc. 602, 61st Cong., 2d Sess.
	Aug. 26, 1937	Modified project widths and provide inner basin.	S. Committee print, 74th Cong., 2d Sess.
	Oct. 23, 1962 [29]	Enlarging and deepening the existing harbor basin.	H. Doc. 287, 87th Cong., 2d Sess.
	Nov. 17, 1986	Deauthorization of the turning basin feature of the project authorized by the 1962 Rivers and Harbors Act.	H. R. 6 (formerly S. 1567), 99th Cong., 2d Sess. (WRDA of 1986).
	Jan. 3, 1996	Reauthorization of the turning basin feature which was deauthorized (Sec. 1002) in WRDA 86.	Sec. 363 (e) of WRDA 1996
35.		**PENTWATER HARBOR, MI**	
	Mar. 2, 1867	Piers and revetments, dredging.	H. Ex. Doc. 70, 39th Cong., 2d Sess.
	Mar. 3, 1873	Piers and revetments, dredging.	H. Ex. Doc. 70, 39th Cong., 2d Sess.
	Jul. 5, 1881	Piers and revetments, dredging.	H. Ex. Doc. 70, 39th Cong., 2d Sess.
	Jul. 13, 1892	Piers and revetments, dredging.	H. Ex. Doc. 70, 39th Cong., 2d Sess.
	Mar. 25, 1907	Present project depth of channel.	H. Doc. 181, 39th Cong., 2d Sess.[1]
36.		**PORT AUSTIN HARBOR, MI**	
	Mar. 2, 1945	Breakwater, Anchorage Basin, Channel Dredging.	H. Doc. 446, 78th Cong., 2d Sess.
	Jul. 16, 1984	Construct a breakwater access for recreation purposes	H. R. 5653, 98th Cong., 2d Sess.
	Jul. 11, 1987	.Breakwater.	P. L. 98-360 (98Stat. 405) Sec. 106 P. L. 100-71.

TABLE 21-B **AUTHORIZING LEGISLATION**

See Sec.	Date of Authorizing Act	Project and Work Authorized	Documents
37.		**PORT SANILAC HARBOR, MI**	
	Mar. 2, 1945	Entrance Channel 12 feet deep, Anchorage Basin, Breakwater.	H. Doc. 446, 78th Cong., 2d Sess.
38.		**PORT WASHINGTON HARBOR, WI**	
	Jul. 11, 1870	North pier and south basin.[12]	H. Ex. Doc. 28, 41st Cong., 2d Sess. and Annual Report, 1879, p. 119.
	Aug. 14, 1876	North basin.	Annual Report, 1876, pt. 2, p. 379.
	Aug. 30, 1935 [27]	North breakwater, removal of 650 feet of north pier, outer turning basin, present project dimensions of channel and basin and extension of south breakwater.	H. Doc. 168, 72d Cong., 1st Sess. and Rivers and Harbors Committee Doc. 41, 74th Cong., 1st Sess.
	Jul. 3, 1958 [28]	Extending and raising of north breakwater and placing rubble along sides; removing 456 feet of south breakwater and dredging in outer basin.	H. Doc. 446, 83rd Cong., 2d Sess.[1]
	Jan. 3, 1996	Deauthorization of portion of the navigation project.	Sec. 501(17) of WRDA of 1996.
39.		**PORTAGE LAKE HARBOR, MI**	
	Mar. 3, 1879	Entrance channel 18 feet deep protected by piers and	Annual Report 1879, p. 1634 [30]
40.		**ROUGE RIVER, MI**	
	Aug. 8, 1917	21-foot channel via the Shortcut Canal	H. Doc. 1063, 64th Cong., 2d Sess.[23]
	Aug.30, 1935[2,24,25]	25-foot channel at mouth of Old Channel, 1,425 feet long and adjacent to latter; 21-foot channel extending from junction of Old Channel and Shortcut Canal into Old Channel to Detroit, Toledo & Ironton R.R. Bridge.	
	Jul. 3, 1958 [2]	Old Channel; 100 feet wide from Peerless Cement Corp. To Junction with Shortcut Canal widened to 150 feet at 2 bends.	H. Doc. 125, 85th Cong., 1st. Sess.
	Oct. 23, 1962 [2]	25-foot channel over modified limits from Detroit River to Jefferson Avenue (via Shortcut Canal).	H. Doc. 509, 87th Cong., 2d Sess.[1]
41.		**SAGINAW RIVER, MI**	
	Jun. 25, 1910	Channel 200 feet wide, with depth of 18.5 feet in Bay and 16.5 feet in River.	H. Doc. 740, 61st Cong., 2d Sess.
	ul. 3, 1930	Project Depth of 18.5 feet extended up River to Saginaw.	Rivers and Harbors Committee Doc. 30, 71st Cong., 2d Sess.
	Aug. 26, 1937	Turning Basin.	Rivers and Harbors Committee Doc. 21, 75th Cong., 1st Sess.
	Jun. 20, 1938	Present project channel dimensions from Bay to Sixth Street Bridge in Saginaw.	H. Doc. 576, 75th Cong., 3rd Sess.
	Sep. 3, 1954	New Channel in Bay, 350 feet wide and 24 feet deep from 24-foot contour to River Mouth, Project Depth of 24 feet in River Channel up to Detroit & Mackinac Railway Bridge, Project Depth of 22 feet in River Channel up to Sixth Street Bridge, Turning Basins at Essexville and Carrollton, and elimination of present Channel in Bay.	H. Doc. 500, 83rd Cong., 2d Sess.
	Oct. 23, 1962	Deepen Bay Channel, Deepen River Channel to Detroit & Mackinac Bridge, Extend 22-foot project above Sixth Street Bridge, Deepen Essexville Turning Basin, and Construct 2 new Turning Basins.[3]	H. Doc. 554, 87th Cong., 2d Sess.

TABLE 21- B **AUTHORIZING LEGISLATION**

See Sec.	Date of Authorizing Act	Project and Work Authorized	Documents
	Oct. 27, 1965	Deepen River Channel to 25 feet, from Detroit & Mackinac Bridge to New York Central Railroad Bridge.	H. Doc. 240, 89th Cong., 1st Sess.[1]
42.		**ST. CLAIR RIVER, MI**	
	Jul. 13, 1892	20-foot Channel in the River.	H. Doc. 207, 51st Cong., 2d Sess.
	Jul. 8, 1930	Deepen Channel to 25 and 26 feet, and Compensating Works.	H. Doc. 253, 70th Cong., 1st Sess.
	Mar. 2, 1945	Widening Channel at Southeast Bend to 700 feet.	H. Doc. 309, 77th Cong., 1st Sess.
	Jul. 24, 1946 [22]	Widen and deepen Southeast Bend and improve Outlet of North Channel, St. Clair River.	H. Doc. 335, 80th Cong., 1st Sess.
	Mar. 21, 1956 [22]	Deepen and further improve Channels in St. Clair River between limits of 27.1 to 30 feet to provide safe navigation by vessels with drafts of 25.5 feet. A cutoff Channel in Canada at Southeast Bend and abandon old Southeast Bend Channels.	S. Doc. 71, 84th Cong., 1st Sess.
	Nov. 17, 1986	Deauthorization of the work authorized by the Rivers and Harbors Act of Jul. 24, 1946.	H. R. 6 (formerly S. 1567), 99th Cong., 2d Sess. (WRDA of 1986).
43.		**ST. JOSEPH HARBOR, MI**	
	Mar. 3, 1875	Interior Revetments.[26]	H. Ex. Doc. 160, 43rd Cong., 2d Sess., and Annual Report, 1875, pt. 1, p. 162.
	Jun. 14, 1880	Benton Harbor Canal.[26]	Annual Report, 1880, pp. 2030, 2031, 2049, and 2055.
	Mar. 3, 1899	Present project dimensions of piers and a turning basin.	H. Doc. 307, 55th Cong., 2d Sess., and Annual Report, 1898, p. 2496.
	Aug. 30, 1935	Present project dimensions of the channel and turning basin near mouth of Paw Paw River.	Rivers and Harbors Committee Doc. 52, 74th Cong., 1st Sess.
	Jun. 2, 1937	Abandon easterly 1,000 feet of canal above west line of 9th Street.	
	Mar. 2, 1945	Turning basin above mouth of Morrison Channel and eliminate turning basin near mouth of Paw Paw River.	H. Doc. 129, 76th Cong., 1st Sess.
	Jul. 3, 1958	Maintenance of turning basin near mouth of Paw Paw River.	S. Doc. 95, 84th Cong., 2d Sess.[1]
44.		**SAUGATUCK HARBOR AND KALAMAZOO RIVER, MI**	
	Jun. 3, 1896	Entrance Channel, Piers and Revetments.	H. Doc. 912, 54th Cong., 1st Sess.; Annual Report, 1896, Vol. 2, Pt. 5, p. 2739.
	Mar. 2, 1907	Deepening entrance to 16 feet.	Annual Report, 1907, p. 6416.
	Jun. 25, 1910	Deepening Channel in River to 14 feet.	H. Doc. 635, 61st Cong., 2d Sess.
45.		**SHEBOYGAN HARBOR, WI**	
	Mar. 2, 1907	North breakwater.	H. Doc. 62, 59th Cong., 1st Sess.
	Jan. 21, 1927	Preserving south pier as part of project, providing turning basin, and elimination of proposed south breakwaters.	H. Doc. 475, 68th Cong., 2d Sess.
	Aug. 30, 1935	Present project dimensions of channel.	Rivers and Harbors Committee Doc. 47, 74th Cong., 1st Sess.

TABLE 21-B AUTHORIZING LEGISLATION

See Sec.	Date of Authorizing Act	Project and Work Authorized	Documents
	Sep. 3, 1954	Widen and deepen outer harbor entrance channel to 450 feet, widen and deepen river channel from present project limit to north side of Jefferson Avenue.	H. Doc. 554, 82d Cong., 2d Sess.[1]
46.		**SOUTH HAVEN HARBOR, MI**	
	Aug. 11, 1888	Channel from Inner End of Piers to Highway Bridge.[12]	No Prior Survey or Estimate.
	Mar. 3, 1905	Present dimensions of Piers and for a Turning Basin.	H. Doc. 119, 58th Cong., 2d Sess.
	Aug. 30, 1935	Present project dimensions of Channel and Turning Basin.	Rivers and Harbors Committee Doc. 9, 73rd Cong., 1st Sess.[1] and Unpublished review Report of Chief of Engineers, dated Dec. 21, 1934.
	Oct. 31, 1992	Turning Basin deauthorized.	Public Law 102-580 (Section 116 of WRDA of 1992).
47.		**STURGEON BAY AND LAKE MICHIGAN SHIP CANAL, WI**	
	Mar. 3, 1873	Breakwaters.[12]	H. Ex. Doc. 34, 42d Cong., 2d Sess.; Annual Report, 1872, p. 171.
	Jul. 13, 1892	Acquision of the canal.	H. Ex. Doc. 106, 49th Cong., 2d Sess.
	Jun. 13, 1902	Canal revetments and consolidation of canal and harbor works.	H. Doc. 117, 56th Cong., 2d Sess.
	Aug. 30, 1935	Present project dimensions of channels and elimination of turning basin immediately west of revetted canal.	Rivers and Harbors Committee Doc. 9, 74th Cong., 1st Sess.
	Mar. 2, 1945	Turning basin between city and Bushman wharves.	H. Doc. 421, 78th Cong., 2d Sess.
48.		**TWO HARBORS, MN**	
	Aug. 5, 1886	Breakwater and dredging.	H. Ex. Doc. 94, 48th Cong., 2d Sess.
	Aug. 5, 1886	Construction of two breakwater piers.	Annual Report, 1887, p. 1952.
	Aug. 30, 1935	Shore connection to east breakwater and dredging maneuvering area.	Rivers and Harbors Committee Doc. 17, 72d Cong., 1st Sess.
	Nov. 7, 1945	Construct new east breakwater and enlargement of maneuvering basin.	H. Doc. 805, 78th Cong., 2d Sess.
	Jul. 14, 1960	Deepen harbor project depths from 26 and 28 feet to 28 and 30 feet, respectively	H. Doc. 146, 86th Cong., 1st Sess.[1]
49.		**TWO RIVERS HARBOR, WI**	
	Mar. 3, 1871	South pier, 750 feet of north pier, and about 44 feet of north revetment.[12]	Annual Report, 1871, p. 123 (as modified by Chief of Engineers, Feb. 27, 1897).
	Mar. 2, 1907	Remainder of north pier and stilling basin.	H. Doc. 730, 59th Cong., 1st Sess., Modification of Plan A.
	Aug. 30, 1935 [22]	Deepening entrance channel and inner basin to 18 feet.	Rivers and Harbors Committee Doc. 25, 73rd Cong., 2d Sess.
	Jul. 3, 1958	Extend existing project in West Twin River to 18 feet deep and in East Twin River to 10 feet deep to 22nd Street Bridge.	H. Doc. 362, 84th Cong., 2d Sess.[1]
50		**WHITE LAKE HARBOR, MI**	
	Mar. 2, 1867	New Channel, with Piers and Revetments.	Unpublished Survey Report of 1868.
	Mar. 3, 1873	New Channel, with Piers and Revetments.	Unpublished Survey Report of 1868.

TABLE 21- B **AUTHORIZING LEGISLATION**

See Sec.	Date of Authorizing Act	Project and Work Authorized	Documents
	Jul. 5, 1884	New Channel, with Piers and Revetments.	Unpublished Survey Report of 1868.
	Jul. 13, 1892	New Channel, with Piers and Revetments.	No Prior Survey or Estimate.[31]
	Mar. 2, 1907	Present project depth of Channel.	
59.		**FORT WAYNE METRO AREA, IN**	
	Oct. 30, 1990	Provides 100-year level of flood protection to part of Central area of city of Fort Wayne, IN.	Public Law 101-640 (Section 101 of WRDA of 1990)
60.		**SEBEWAING RIVER, MI**	
	Aug. 18, 1941	Enlarging present Channel of Sebewaing River, altering Railroad and Highway Bridges, removal of Dike.	H. Doc. 286, 76th Cong. 1st Sess.[1]
65.		**ST. MARYS RIVER, MI**	
	Jul. 11, 1870	Weitzel Lock (Replaced in 1943 by MacArthur Lock), widen and deepen existing State Channel.[26]	Report by Maj. O.M. Poe, Corps of Engineers, not published.
	Aug. 5, 1886	Poe Lock.[1]	H. Ex. Doc. 72, 49th Cong., 2d Sess.
	Jul. 13, 1892	Dredging through shoals above falls and shoals below falls between lower end of Canal and upper entrance Channel into Lake Nicolet (formerly Hay Lake).	H. Ex. Doc. 207, 51st Cong., 2d Sess., and Annual Report, 1891, p. 2810.
	Jun. 13, 1902	Enlarging the Old Channel.	H. Doc. 138, 56th Cong., 2d Sess., and 215, 58th Cong., 3rd Sess.
	Jun. 13, 1902	Lake Nicolet and Neebish Channels work in that section of River below Locks.	H. Doc. 128, 56th Cong., 2d Sess.
	Mar. 2, 1905		H. Doc. 215, 56th Cong., 3rd Sess.
	Mar. 3, 1907	Davis Lock Second Canal, and Emergency Dam.	H. Doc. 333, 59th Cong., 2d Sess. (Plan 3).
	Mar. 3, 1909	Lease of Waterpower at Falls, Lease entered into with Michigan Northern Power Company provided for construction of remedial and compensating works.	
	Jul. 25, 1912	Fourth Lock (Renamed 'Sabin' Lock in 1943).	H. Doc. 65, 62d Cong., 1st Sess.
	Mar. 4, 1915	Deepen Tailrace of Power Plant.	
	Sep. 22, 1922	Widen upper approach to Canals through Vidal Shoals, extend anchorage and maneuver area below locks.	District Engineer Report, Oct. 29, 1920.
	Jan. 21, 1927	Remove Round Island, middle ground extension of Northwest Canal Pier, and widen Channels Middle Neebish Route.	H. Doc. 270, 69th Cong., 1st Sess.
	Jul. 3, 1930	Deepen Channels throughout downbound Route.	H. Doc. 253, 70th Cong., 1st Sess.
	Jun. 26, 1934 [9]	Operation and Care of Canal and Locks provided from War Department Appropriations for Rivers and Harbors.	
	Aug. 30, 1935	Widen Brush Point Turn and Channel from Brush Point to Point Louise.	Rivers and Harbors Committee Doc. 53, 74th Cong., 1st Sess.
	Mar. 7, 1942	Construct new (MacArthur) Lock on site of former Weitzel Lock, deepen approach Channels to 27 feet, and reconstruct approach Piers.	H. Doc. 218, 77th Cong., 1st Sess.
	Jun. 15, 1943	Name 'MacArthur' Lock and changed name of 'Fourth' Lock to 'Sabin' Lock.	
	Mar. 2, 1945	Remove Bridge Island and construct new Hydroelectric Power Plant.	H. Doc. 679, 78th Cong., 2d Sess., and 339, 77th Cong., 1st Sess.
	Jul. 24, 1946	Replace Poe Lock at St. Marys Falls Canal with a new structure 800 feet long, 100 feet wide and 32 feet deep with necessary construction of Nose and Center Piers,	H. Doc. 335, 80th Cong., 1st Sess.

TABLE 21-B **AUTHORIZING LEGISLATION**

See Sec.	Date of Authorizing Act	Project and Work Authorized	Documents
		and widen and deepen Channel across Point Iroquois Shoals and in Lake Nicolet to provide wider anchorage and maneuver areas in St. Marys River.	
	Mar. 21, 1956	Deepen to provide a Project Safe Draft of 25.5 feet over full width to downbound and 2-way Channels (including anchorage areas) and over Westerly 300-foot width of upbound Middle Neebish Channel, when levels of Lakes Superior and Huron are at their respective LWD's.	S. Doc. 71, 84th Cong., 1st Sess.[1]
	Jul. 9, 1956	Repeal Authorization of Bridge as a part of Project, authorize alteration with cost to be apportioned by Sec. 6, Truman Hobbs Act, Jun. 21, 1940.	None.
	Nov. 17, 1986	Construct a second large lock 1,294 feet in length, 115 feet in width, and 32 feet in depth, adjacent to the existing lock. The replacement lock is to be located in the North Canal of the St. Marys Falls Canal at Sault Ste. Marie, MI, on the site of the existing Davis and Sabin Locks.	H. R. 6 (formerly S. 1567), 99th Cong., 2d Sess. (WRDA of 1986).

TABLE 21- B AUTHORIZING LEGISLATION

[1]Contains latest published map.
[2]Including Emergency Relief Administration Work authorized May 28, 1935.
[3]Included in Public Works Administration Program September 6, 1933.
[4]This modification deauthorized August 5, 1977, under Section 12, Public Law 93-251.
[5]Administrative Act, Section 4.
[6]Public Law 568, 82d Congress.
[7]Public Law 388, 87th Congress.
[8]This portion inactive.
[9]Permanent Appropriations Repeal Act.
[10]Transfer completed June 1962.
[11]Amended 1868, 1879, 1892.
[12]Completed under previous project.
[13]Included in Public Works Administration Program January 3, 1934.
[14]Inactive portion; removal of 200 linear feet of north pier, widening inner 200 feet of channel through outer basin, and closing gap in north shore connection of breakwater.
[15]Latest published map is in Annual Report, 1914, p. 2974.
[16]Latest published map in Annual Report, 1914, p. 2914.
[17]Superseded by Act of October 23, 1962.
[18]Uncompleted portion was deauthorized in 1977 (dredging Milwaukee River from Buffalo Street Bridge to North Humboldt Avenue Bridge).
[19]Modified by Act of June 10, 1872.
[20]Riprapping of protecting dikes portion of project is inactive.
[21]War Department Appropriations Act.
[22]Uncompleted portion deauthorized December 31, 1989, under Section 1001, P.L. 99-662.
[23]Contains latest published maps. See also map with Rivers and Harbors Committee Doc. 19, 72d Cong., 1st Sess.
[24]Except for dredging 25-foot channel to 1,150 feet upstream of mouth of old channel, work authorized in this Act is considered inactive.
[25]This modification deauthorized August 5, 1977, under Section 12, Public Law 93-251.
[26]Completed under previous projects. Public Law 130, 75th Cong., 1st Sess.
[27]Work recommended in H. Doc. 588, 64th Cong., 1st Sess.
[28]Deauthorized in 1977.
[29]This modification deauthorized December 31, 1989, under Section 1001, P.L. 99-662.
[30]Latest published map is in H. Doc. 588, 64th Cong., 1st Sess.
[31]Latest published map is in H. Doc. 2053, 64th Cong., 2d Sess.

TABLE 21- C OTHER AUTHORIZED NAVIGATION PROJECTS

Project	Status	For Last Full Report See Annual Report for	Cost to Sep. 30, 2004 Construction	Cost to Sep. 30, 2004 Operation & Maintenance
Algoma Harbor, WI	Completed	2002	292,010[1]	1,711,597
Alternative Technology Project, Duluth	Active	---	0	984,820[2]
Ausable Harbor, MI	Completed	2002	209,776[3]	3,183,299
Bayfield Harbor, WI	Completed	1979	183,855	174,207[2]
Bay Port Harbor, MI	Completed	2003	93,597	823,695[4]
Bell River, MI	Completed	1980	24,301	135,377
Beaver Bay, MN	Active	1982	293,000	2,818
Big Bay Harbor, MI	Completed	2000	396,943[5]	1,727,348
Big Suamico River, MI	Completed	2003	20,243	1,924,125
Black River (lcona Co), MI	Inactive	1907	0	878
Black River (U.P.). MI	Completed	2003	383,350[6]	1,163,492
Caseville Harbor, MI	Completed	2000	587,314	2,027,751
Cedar River Harbor, MI	Completed	2002	408,000	3,663,229
Channels in Straits of Mackinac, MI	Completed	1991	2,832,629	263,180
Cheboygan Harbor, MI	Completed	1998	504,236	1,050,729[2]
Chippewa Harbor, Isle Royale, MI	Completed	1959	125,629	17,829
Clinton River, MI	Completed	2003	549,798[7]	8,309,313[8]
Clinton River Spillway, MI	Completed	2002	3,495,008	0
Cornucopia Harbor, WI	Completed	2002	462,653	1,461,179
DeTour Harbor, MI	Completed	1989	2,559,346	172,543[2]
Eagle Harbor, MI	Completed	1996	205,164[9]	142,528[2]
Grand Marais Harbor, MN	Completed	2002	450,972	2,565,639
Grays Reef Passage, MI	Completed	1970	190,521	867,934
Greilickville Harbor, MI	Completed	2000	369,557[10]	452,641
Hammond Bay Harbor, MI	Completed	1998	1,092,366	1,072,489[2]

TABLE 21- C OTHER AUTHORIZED NAVIGATION PROJECTS

Project	Status	For Last Full Report See Annual Report for	Cost to Sep. 30, 2004 Construction	Cost to Sep. 30, 2004 Operation & Maintenance
Harbor Beach Harbor, MI	Completed	2000	1,200,598	15,826,715[11]
Harrisville Harbor, MI	Completed	2002	2,639,392	1,631,494
Knife River Harbor, MN	Completed	2003	528,945	346,928
La Point Harbor, WI	Completed	2000	139,874	189,857
Les Cheneaux Island Channels, MI	Completed	1980	399,478	373,739
Little Bay De Noc, Gladstone Harbor, MI	Completed	1966	332,832	105,634
Lutsen Harbor, MN	Active	1982	357,000	0
Mackinac Island Harbor, MI	Completed	1989	334,089	1,816,628
Mackinaw City Harbor, MI	Completed	1986	136,286[12]	127,679[2]
Manistique Harbor, MI	Completed	2003	1,299,355[13]	7,310,803
New Buffalo Harbor, MI	Completed	2003	2,472,183	5,778,475
Northport Harbor, WI	Inactive	----	0	0
Oconto Harbor , WI	Completed	2003	130,754[14]	2,477,983[15]
Pensaukee Harbor, WI	Completed	1996	34,035	684,587[2]
Petoskey Harbor, MI	Completed	2000	123,839	963,539
Pine River, MI	Completed	1980	13,649	102,484
Point Lookout Harbor, MI	Completed	2003	2,642,584	4,703,009[16]
Port Wing Harbor, WI	Completed	2003	63,393	1,824,787
Presque Isle Harbor, MI	Completed	2003	1,252,192	2,028,856[17]
Saxon Harbor, WI	Completed	2003	711,777[18]	1,217,159
Sebewaing River, MI	Completed	2003	35,573	4,338,250[19]
Silver Bay Harbor, MN	Completed	1999	2,600,000	0
St. James, Beaver Island, MI	Completed	1957	49,171[20]	580,975
St. Joseph River, MI	Completed	1975	54,555	19,185
Tawas Bay Harbor, MI	Completed	1996	2,110,745	108,980[2]
Washington Island, WI	Completed	1950	62,838	108,823[2]
Whitefish Point Harbor, MI	Completed	2000	771,639	595,379

TABLE 21- C OTHER AUTHORIZED NAVIGATION PROJECTS

[1] Includes $92,774 for previous projects.

[2]Includes FY 01 cost not reported.

[3] Includes $114,786 for previous projects.

[4] Includes $792 for Diked Disposal.

[5] Excludes $56,500 Contributed Funds.

[6]Excludes $30,000 Contributed Funds.

[7]Includes $25,000 for previous projects.

[8]Includes $3,796,10 for previous projects.

[9] Excludes $27,800 for previous projects.

[10] Excludes $127,000 Contributed Funds.

[11] Includes $243,100 for Diked Disposal.

[12] Excludes $210,500 Contributed Funds.

[13]Includes $3,955 for previous projects.

[14]ncludes $84,569 for previous projects.

[15]Includes $8,181 for previous projects.

[16]Includes $121,600 for Diked Disposal.

[17]Includes $16,500 for Diked Disposal.

[18]Excludes $50,193 Contributed Funds.

[19]Includes $15,000 for previous projects.

[20]Excludes $7,500 Contributed Funds.

TABLE 21-E OTHER AUTHORIZED FLOOD CONTROL PROJECTS

Project	Status	For Last Full Report See Annual Report for	Cost to Sep. 30, 2004 Construction	Cost to Sep. 30, 2004 Operation & Maintenance
Kawkawlin River, MI [1,2]	Completed	1999	1,000,000	470,500
Kalamazoo River (Battle Creek) MI [3,4]	Deferred	1975	4,471,235	----
Paw Paw Lake, MI	Completed	1989	3,589,000	--
Saginaw River-1958 Act Flint MI	Completed	2003	24,928,359	6,453,831
Upper Peninsula of Michigan, MI[5]	Active	----		2,322,624
Upper River Rouge, MI[6]	Inactive	1968	7,935	
River Rouge, MI	Completed	1981	31,960,332	----

[1]Excludes $204,559 Contributed Funds.

[2]Excludes 228,748 Contributed Funds.

[3]Includes $108,335 Contributed Funds.

[4]Uncompleted portion deauthorized Dec. 31, 1989, in accordance with Section 1001 of the W.R.D.A. of 1986 (PL 99-662).

[5]Project authorized in FY02. No costs were expended in FY02.

[6]Planning indefinitely suspended due to lack of local cooperation.

TABLE 21-F MULTIPLE PURPOSE PROJECTS, INCLUDING POWER ST. MARYS RIVER, MI: EXISTING PROJECT

(SEE SECTION 65 OF TEXT)

Lock		Davis	Sabin	MacArthur	New Poe
Miles Above Mouth		47	47	47	47
Clear Width of Chamber	Feet	80	80	80	110
Length Between Gate Quoins	Feet	1,350	1,350	800	1,200
Lifts	Feet	21.7	21.7	21.7	21.7
Depth Over Upper Breast Walls[1]	Feet	24.3	24.3	31	32
Depth Over Lower Breast Walls[1]	Feet	23.1	23.1	31	32
Foundation		Rock	Rock	Rock	Rock
Type of Construction		Concrete	Concrete	Concrete	Concrete
Estimated Cost		$6,200,000[2]	$3,275,000[3]	$12,909,440	$39,000,000
Actual Cost		$2,200,000[5]	$1,750,000[6]	$12,718,806[4,7]	$34,813,066
Completed (Open to Commerce)		Oct. 21, 1914	Sep. 18, 1919	Jul. 11, 1943	Jun. 26, 1969
Emergency Dam for		South Canal		North Canal	
Miles Above Mouth		47		47	
Estimated Cost		-[9]		$300,000	
Type		Steel Stoplogs Recessed Into Lock Masonry		Steel Stoplogs Recessed Into Lock Masonry	
Cost Completed		-[9]		$169,224[8]	
Year Completed		1943		1922 (Modified 1963)	

[1]At low water datum 600.6 above and 578.4 below.

[2]Includes cost of North Canal.

[3]Includes cost of canal excavations to provide necessary approaches to lock, canal walls, piers, and emergency dam, $662,919.

[4]Excludes cost of deepening and enlarging South Canal, $1,653,378.

[5]Excludes cost of North Canal, $2,572,611.

[6]Excludes cost of canal excavation to provide necessary approaches to lock, canal walls, piers, and emergency dam, $662,919.

[7]Excluding cost of lower guard gates which were never installed.

[8]Including engineering office and inspection.

[9]Not separate from cost of locks.

Note: Limiting draft to locks is determined by depth over breast walls.

TABLE 21-G **DEAUTHORIZED PROJECTS**

Project	For Last Full Report See Annual Report For	Date Deauthorized	Federal Funds Expended	Contributed Funds Expended
Beaver Bay, MN (Mar. 2, 1945 R&H Act)	1982	Jul 1995	295,818	0
Berrien County, MI (St.Joseph Shore) beach erosion control (1958 Flood Control Act)	1963	Nov 1986	0	0
Black River Harbor, Alcona County, MI (Authorized Dec.17, 1979, under Section 201 of the 1965 Flood Control Act)	1971	Dec 1989	0	0
Black River Harbor, MI (Aug. 30, 1935 R&H Act)	1976	Nov 1977	0	0
Cross Village, MI (October 13, 2001 WRDA 96, Sec 328)	1983	Oct 2001	364,000	0
Detroit River, Trenton Chnl., MI (May 17, 1950 R&H Act)	1976	Aug 1977	0	0
Detroit River, Trenton Chnl., MI (Uncompleted portion) (Aug. 13, 1968 R&H Act)	1976	Dec 1989	159,300,000	0
Duluth-Superior Inner Harbor, MN and WI (Jul. 14, 1960 R&H Act)	1990	Dec 1989	14,562,100	0
Forestville Harbor, MI (1968 R&H Act)	1969	Nov 1986	0	0
Grand Haven Harbor, MI (Mar. 2, 1945 R&H Act)	1976	Nov 1977	0	0
Grand River at Grandville, MI (Oct. 27, 1965 Flood Control Act)	1966	Nov 1977	0	0
Great Lakes Connecting Channels, MI[1] (Uncompleted portion) (R&H Acts of 1946 and 1956)	1990	Dec 1989	93,993,349	0
Green Bay Harbor, Brown County, WI (1962 Modification)	1999	April 1999	4,030,000	1,970,000
Harbors of Washington Island, WI (R&H Act of 1937)	1950	Dec 1989	62,838	0
Holland Harbor Entrance Channel, MI (Uncompleted portion) (Sep. 3, 1954 R&H Act)	1962	Dec 1989	0	0
Kalamazoo River, Battle Creek, MI (Uncompleted portion) (1954 Flood Control Act)	1975	Dec 1989	6,656,668	108,332
Kalamazoo River, Kalamazoo, MI (Jul. 3, 1958 Flood Control Act)	1975	Dec 1989	416,822	0

TABLE 21-G (Continued) **DEAUTHORIZED PROJECTS**

Project	For Last Full Report See Annual Report For	Date Deauthorized	Federal Funds Expended	Contributed Funds Expended
Kenosha Harbor, WI (Uncompleted portion) (Oct. 23, 1962 R&H Act)	1990	Dec 1989	552,000	43,000
Kewaunee River, WI (1960 R&H Act)	1976	Aug 1977	0	0
Lansing (Grand River), MI (Jul. 3, 1958 Flood Control Act)	1971	Jun 1981	7,000	0
Lower Fox River, WI (Uncompleted portion) (Mar. 3, 1925 R&H Act)	1990	Dec 1989	3,753,334	0
Lutsen Harbor, MN (Mar. 2, 1945 R&H Act)	1990	Jul 1995	357,000	0
Manitowoc Harbor, WI (Oct. 23, 1962 R&H Act)	1990	Dec 1989	0	0
Milwaukee Outer Harbor, WI (Uncompleted portion) (R&H Act of 1935)	1990	Dec 1989	6,937,804	478,000
Northport Harbor, WI (Authorized in 1972 under Section 201 of the 1965 Flood Control Act)	-	Dec 1989	132,000	0
Ontonagon Harbor, MI (R&H Act of 1962)	1990	Dec 1989	27,482	0
Pentwater Harbor, MI (Jul. 13, 1892 R&H Act)	1976	Nov 1977	0	0
Port Washington Harbor, WI (Portion) (Sec. 501(17) of WRDA 1996)	2003	Jan 1996	0	0
Racine Harbor, WI (Mar. 2, 1907; Aug. 26, 1937; and Mar. 2, 1945 R&H Acts, and Section 107 of the 1960 R&H Act)	1963	May 1986	9,441,554	0
Red Run Drain, Lower Clinton River, MI (1970 Flood Control Act)	1983	Nov 1986	3,823,000	0
Rogers City Harbor, MI (Jun. 25, 1910 R&H Act)	1926	Aug 1977	5,892	0
Rouge River, MI (Oct 23, 1962 R&H Act)	1976	Aug 1977	22,000	0
Rouge River, MI (Jul. 3, 1958 R&H Act)	1976	Aug 1977	12,000	0
Rouge River, MI (Aug. 30, 1935 R&H Act)	1976	Aug 1977	0	0
Saginaw River, MI (Midland on Tittabawassee River)	1983	May 1997	5,125,000	1,611,500

TABLE 21-G (Continued) **DEAUTHORIZED PROJECTS**

Project	For Last Full Report See Annual Report For	Date Deauthorized	Federal Funds Expended	Contributed Funds Expended
St. Clair River Compensating Works, MI (Jul. 3, 1930 R&H Act)	1976	Aug 1977	0	0
South Milwaukee Harbor, WI (1836 Flood Control Act)	1906	Aug 1977	0	0
St. Marys River (MacArthur Lock Guard Gates), MI (Mar. 7, 1942 R&H Act)	1977	Oct 1978	0	0
Two Rivers Harbor, WI (Uncompleted portion) (Aug. 30, 1935 R&H Act)	1990	Dec 1989	147,463	0

[1]Includes Detroit and St. Clair Rivers.

TABLE 21-H FEATURES OF EXISTING PROJECT

Name of Channel	Length of Channel (Feet)	Miles from River Mouth	Upbound or Down-bound Vessels	Project Width (Feet)	Project Depth (Feet)	Project Datum Planes IGLD 1985 (Feet)	Year Com-plete
DETROIT RIVER, MI (SEE SECTION 7 OF TEXT)							
Channel north of Belle Isle[1]	---[2]	30	Both	200	21.0	571.9	1964
Channel at head of Detroit River	38,800	32	Both	800	28.5	572.1-571.5	1964
Misc. shoals and obstructions	44,500	25	Both	---	28.5	571.5-570.9	1964
Belle Isle to Fighting Island Channel							
Fighting Island Channel	24,800	17	Both	800	28.5	570.4	1962
Ballards Reef Channel north of	12,200	12	Both	600	28.5	570.4	1964
Junction with Livingstone Channel							
Livingstone Channel Upper	26,000	10	Down	450	27.7	570.4-569.2	1964
Livingstone Channel Lower:							
CS 260+00 to 368+87	10,887	5	Down	450-800	29.0	569.2	1961
CS 368+87 to 492+00	12,313	---	Both	800-1,200	29.0	569.2	1961
East Outer Channel	42,000	---	Both	1,200	28.5	569.2	1964
Misc. shoals and obstructions,	---	---	Both	---	28.5-29.5[3]	569.2	1964
Detroit River to Pelee Passage							
Pelee Passage Shoal	---	---	Both	---	29.5	569.2	---
Amherstberg Channel:							
Upper Section, Ballards Reef Channel	6,500	10	Up	600	27.5	570.4-570.1	1960
Middle Section	12,000	---	Up	600	21-27.5[4]	570.1-569.5	1960
Lower Section, Hackett Range	24,000	---	Up	600	21-28.5[5]	569.5-569.2	1960
West Outer Channel	21,000	---	Down	800	22.0	569.2	1929
Trenton Channel:							
Wyandotte Reach	31,500	17	Local	300	27.0		1964[6]
Trenton Channel (Upper)	5,100	---	Local	300	28.0	570.3-570.2	1964
Trenton Reach (Lower)	600	---	Local	250-300	28.0	570.2-569.4	1941
Grosse Ile Shoal	600	14	Local	---	20.0	570.4	1904
ST. CLAIR RIVER, MI (SEE SECTION 42 OF TEXT)							
Channel at foot of Lake Huron	26,500	44	Both	800	30.0	577.5-577.1	1961
Channel north of Blue Water Bridge	4,100	39	Both	800	30.0	577.1-576.5	1962
Port Huron to Stag Island:							
Widening at Upper and Lower	38,000	38	Both	1,000-	27.4	577.1-575.3	1961
Ends of Stag Island	37,600	31	Both	1,400	27.3	575.3-574.3	1962
St. Clair to Russell Island	77,000	24	Both	900-1,000	27.3	574.3-572.6	1962
Russell Island to Southeast Bend	20,600	11	Both	1,000	27.2	572.6-572.3	1962
Southeast Bend:				700-1,000			
CS 324+00 to 250+00	7,400	5	Both		27.1	572.3-572.2	1962
Cutoff Channel	30,300	---	Both	700	27.1	572.2	1962
North Channel Outlet	8,000	---	Small	700	10.0	572.2	---
			Craft	100			

[1]This is a side channel.
[2]Extends from deep water near Windmill Point to a point opposite Fairview Slip, about 3,000 feet.
[3]Project depth 29.5 feet over Rock Shoals and 28.5 feet over other than Rock Shoals.
[4]Project depth 21 feet in easterly 300-foot width of channel and 27.5 feet in westerly 300-foot width.
[5]Project depth 21 feet in easterly 300-foot width of channel and 28.5 feet in westerly 300-foot width.
[6]Project complete except for work authorized by Rivers and Harbors Act of 1950.

TABLE 21-I

FOX RIVER, WI: LOCKS AND DAMS
(SEE SECTION 9 OF TEXT)

Name of Lock and Dam	Miles from Green Bay	Nearest Town	Dis-tance (miles)	Clear Width (feet)	Depth at Normal Pool: Avail-able Length (feet)	Lift (feet)	Breast Wall[1] (feet)	Lower Miter Sill (feet)	Character of Foundation	Kind of Dam	Type of Construction	Year Com-plete	Actual Cost
DePere lock[2]	7.1	DePere	---	36.0	146.0	8.9	10.3	12.0	Rock	---	Concrete	1936	$229,308
DePere dam[2]	7.2	DePere	---	---	---	---	---	---	Rock	Fixed[3,4]	Concrete	1929	209,536
Little Kaukauna lock[2]	13.0	DePere	6	36.0	146.0	7.2	8.0	9.5	Clay	---	Concrete	1938	362,427
Little Kaukauna dam[2]	13.1	DePere	6	---	---	---	---	---	Clay & Gravel	Fixed[3,4]	Piers and concrete	1926	179,398
Rapide Croche lock[2]	19.2	Wrightstow	2	36.0	146.0	8.3	8.8	9.3	Rock	---	Concrete	1934	228,738
Rapide Croche dam[2]	19.3	Wrightstow	2	---	---	---	---	---	Rock	Fixed[3,4]	Concrete	1930	118,975
Kaukauna fifth lock[2]	22.8	Kaukauna	---	35.6	144.0	9.1	6.7	9.3	Rock	---	Composite	1898	13,310[5]
Kaukauna fourth lock[2]	23.1	Kaukauna	---	36.6	144.1	10.2	6.9	6.0	Rock	---	Stone masonry	1879	37,536
Kaukauna third lock[2]	23.3	Kaukauna	---	30.6	144.0	10.2	6.9	6.3	Rock	---	Stone masonry	1879	39,948
Kaukauna second lock[2]	23.4	Kaukauna	---	35.0	144.0	9.6	6.0	6.0	Rock	---	Stone masonry	1903	24,313
Kaukauna first lock[2]	23.6	Kaukauna	---	35.1	144.4	11.0	6.9	6.0	Rock	---	Stone masonry	1883	38,704
Kaukauna dam[2]	24.0	Kaukauna	---	---	---	---	---	---	Rock	Fixed[3,4]	Concrete	1931	123,763
Kaukauna guard lock	24.0	Kaukauna	---	40.0	---	---	9.4	---	Rock	---	Stone masonry	1891	12,630
Little Chute combined lock:													
Lower	24.4	Little Chute	1	35.4	146.5	10.9	6.0	8.6	Rock	---	Stone masonry	1879	102,304
Upper	25.4	Little Chute	1	36.3	144.1	10.6	7.6	6.0	Hardpan	---	Stone masonry	1879	---
Little Chute second lock[2]	26.4	Little Chute	---	35.0	144.2	13.8	8.0	6.1	Rock	---	Stone masonry	1881	48,555
Luttle Chute first (guard) lock[1]	26.5	Little Chute	---	35.4	---	---	6.6	---	Rock	---	Stone masonry	1904	7,817[5]
Little Chute dam[2]	26.6	Little Chute	---	---	---	---	---	---	Rock	Fixed[3,4]	Concrete	1932	82,554
Cedars lock[2]	27.3	Little Chute	1	35.0	144.0	9.8	6.8	7.3	Rock	---	Stone masonry	1888	34,972
Cedars dam[3]	27.4	Little Chute	1	---	---	---	---	---	Rock	Fixed[3,4]	Concrete	1933	84,973
Appleton fourth lock[2]	30.7	Appelton	1	35.0	144.0	7.6	8.1	7.9	Rock	---	Stone masonry	1907	40,893
Appleton lower dam[2]	30.9	Appleton	1	---	---	---	---	---	Rock	Fixed[3,4]	Concrete	1934	73,903
Appleton third lock[2]	31.3	Appleton	---	35.0	144.0	8.7	6.0	8.6	Rock	---	Stone masonry	1900	32,238
Appleton second lock[2]	31.6	Appleton	---	35.1	144.6	9.6	6.9	6.0	Clay	---	Stone masonry	1901	22,940
Appelton first lock[2]	31.9	Appleton	---	35.0	144.7	10.0	6.6	6.0	Rock	---	Stone masonry	1884	36,004
Appleton upper dam	32.2	Appleton	---	---	---	---	---	---	Rock	Fixed[3]	Concrete	1940	151,558
Menasha lock[2]	37.0	Menasha	---	35.4	144.0	8.5	7.2	8.0	Clay	---	Composite	1899	19,326[5]
Menasha dam[2]	37.8	Menasha	---	---	---	---	---	---	Hardpan	Fixed[3]	Concrete	1937	84,686

[1]Depth shown is on breast wall, which is controlling depth for upper pool.
[2]Original structure built prior to assumption of control by United States on Sep. 18, 1872.
[3]Provided with sluices.
[4]Flash boards used.
[5]Partially rebuilt.

TABLE 21-J RECONNAISSANCE & CONDITION SURVEYS

Name of Project	Date Survey Conducted
ALGOMA HARBOR, WI	AUGUST 2004
AUSABLE HARBOR, MI	JUNE 2004
BAYFIELD HARBOR, WI	JUNE 2004
BIG BAY HARBOR, MI	AUGUST 2004
CASEVILLE HARBOR, MI	JUNE 2004
CEDAR RIVER, MI	JUNE 2004
EAGLE HARBOR, MI	AUGUST 2004
GRAND MARAIS HARBOR, MN	MAY 2004
HAMMOND BAY HARBOR, MI	MAY 2004
HARBOR BEACH HARBOR, MI	JUNE 2004
LA POINTE HARBOR, WI	JULY 2004
PENSAUKEE HARBOR, MI	AUGUST 2004
POINT LOOKOUT HARBOR, MI	JUNE 2004
SEBEWAING RIVER, MI	JULY 2004
TAWAS BAY HARBOR, MI	JUNE 2004
WHITEFISH POINT HARBOR, MI	MAY 2004

TABLE 21-K NAVIGATION WORK UNDER SPECIAL AUTHORIZATION

PROJECT/STUDY/LOCATION	STATUS	Federal Costs for FY 04	Non-Federal Costs for FY 04	Total Costs for FY 04
Navigation activities pursuant to Section 107. Public Law 86-645 (pre-authorization).				
Navigation activities pursuant to Section 107 of the River and Harbor Act of 1960, as amended.				
Coordination Account	Coordination	5,298	---	5,298
City of Mackinac Island Harbor Breakwater, MI	Feasibility Activities	37,708	---	37,708
Detroit River Navigation Improvement,MI	Feasibility Activities	2,950	---	2,950
Duluth (McQuade Road) Harbor, MN	Plans and Specifications	130,601	---	130,601
Escanaba, MI	Feasibility Activities	16,261	---	16,261
Grand Portage Harbor, MN	Feasibility Activities	12,812	---	12,812
Harbor of Refuge, Big Suamico, MI	Feasibility Activities	0	---	0
Knife Harbor, MN	Feasibility Activities	12,761	---	12,761
Lakeshore State Park, Milwaukee, WI	Feasibility Activities	42,251	---	42,251
Ontonagon River, MI	Feasibility Activities	13,342	---	13,342
Rouge River, MI	Feasibility Activities	15,578	---	15,578
Saugatuck Harbor, Kalamazoo River, MI	Feasibility Activities	6,698		6,698
Saxon Harbor, WI	Feasibility Activities	5,149	---	5,149
Taconite Harbor, MN	Construction	0	---	0
Two Harbors, MN	Plans and Specifications	13,997	---	13,997
Total		315,406	__	315,406

TABLE 21-L EMERGENCY SHORE PROTECTION

PROJECT/STUDY/LOCATION	STATUS	Federal Costs for FY 04	Non-Federal Costs for FY 04	Total Costs for FY 04
Authority for emergency streambank and shoreline protection of public works and non-profit services (Section 14 Flood Control Act of 1946, as amended).				
Coordination Account	Coordination	18,573	---	18,573
Belle Isle Park, City of Detroit, MI	Planning and Design Analysis	19,211	---	19,211
Belle Isle South Shore, Detroit, MI	Planning and Design Analysis	20,074	---	20,074
Big Rapids, MI	Planning and Design Analysis	7,933	---	7,933
Combined Sewer Outfall #6, South Bend, MI	Planning and Design Analysis	11,568	---	11,568
Detroit River Shoreline, MI	Planning and Design Analysis	59,746	---	59,746
Gibraltar, MI	Planning and Design Analysis	23,741	---	23,741
Grand River (NOWS) Grand Haven, MI	Planning and Design Analysis	0	---	0
Kenosha Harbor, Retaining Wall, WI	Planning and Design Analysis	22,306	---	22,306
Kinnickinnic River, Milwaukee County, WI	Planning and Design Analysis	34,717	---	34,717
Leeper Park Island Wall, South Bend, IN	Construction	219,064	0	219,064
Marquette Lakeshore Boulevard, MI	Planning and Design Analysis	2,198	---	2,198
Maumee River, Fort Wayne, IN	Feasibility Activities	0	---	0
Mosel, Sheboygan County, WI	Planning and Design Analysis	189,302	0	189,302
North Shore Drive, City of South Bend, IN	Planning and Design Analysis	17,089	---	17,089
Rouge River, City of Southfield, MI	Construction	0	0	0
St. Joseph River, Niles, MI	Planning and Design Analysis	33,089	---	33,089
St. Joseph River, South Bend, IN	Planning and Design Analysis	13,502	---	13,502
Thieme Drive, Ft. Wayne, IN	Planning and Design Analysis	80,996	---	80,996
Underwood Creek, Milwaukee County, WI	Planning and Design Analysis	1,186	---	1,186
Water Resources Institute Lake Michigan, MI	Planning and Design Analysis	0	---	0
Water Treatment Plant, St. Joseph, MI	Planning and Design Analysis	65,666	---	65,666
Total		839,961		839,961

TABLE 21-M BEACH EROSION WORK UNDER SPECIAL AUTHORIZATION

PROJECT/STUDY/LOCATION	STATUS	Federal Costs for FY 04	Non-Federal Costs for FY 04	Total Costs for FY 04
Beach Erosion activities pursuant to Section 103 of the 1962 River and Harbor Act.				
Bay Point Peninsula, City of Luna Pier	Feasibility Activities	0	---	0
Lakewalk Park, Duluth, MN	Feasibility Activities	53,896	---	53,896
Total		53,896	---	53,896
Shoreline Erosion Control Development and Demonstration Activities pursuant to Section 227 of the Water Resources Development Act of 1966				
Shoreline Erosion Control Development & Demonstration Prgm		499,856	---	0

TABLE 21-N MITIGATION OF SHORE DAMAGES

PROJECT/STUDY/LOCATION	STATUS	Federal Costs for FY 04	Non-Federal Costs for FY 04	Total Costs for FY 04
Mitigation of Shore Damages pursuant to Section 111 of the River and Harbor Act of 1968				
Saugatuck Harbor, MI	Feasibility Activities	0	---	0
Grand River (NOWS) Grand Haven, MI	Feasibility Activities	62,280	---	62,280
Total		62,280		62,280

TABLE 21-O PROJECT MODIFICATION FOR IMPROVING THE QUALITY OF THE ENVIRONMENT

PROJECT/STUDY/LOCATION	STATUS	Federal Costs for FY 04	Non-Federal Costs for FY 04	Total Costs for FY 04
Project modification activities pursuant to Section 1135(b) of the Water Resources Development Act of 1986, as amended				
Coordination Account	Coordination	8,360	---	8,360
AuGres River, Arenac County, MI	Preliminary Restoration Plan	2,381	---	2,381
Bad River, Ashland County, WI	Planning and Design Analysis	68,869	---	68,869
Black Mallard Creek, MI	Planning and Design Analysis	26,811	---	26,811
Carp Lake River, MI	Planning and Design Analysis	158,499	---	158,499
Cheboygan River, Cheboygan County,MI	Preliminary Restoration Plan	2,358	---	2,358
Flint River & Swartz Creek, Flint, MI	Preliminary Restoration Plan	7,071	---	7,071
Harlow Creek, Marquette County, MI	Preliminary Restoration Plan	2,037	---	2,037
Hennepin Marsh Grosse Ile, MI	Feasibility Activities	2,363	---	2,363
Kid's Creek, Boardman River, MI	Planning and Design Analysis	18,866	---	18,866
Lake Poygan, WI	Feasibility Activities	7,817	---	7,817
Lower Rouge, Rotunda DR and 94 MI	Feasibility Activities	30,638	---	30,638
Rapid River, MI	Planning and Design Analysis	21,273	---	21,273
Rifle River, Arenac County, MI	Preliminary Restoration Plan	2,723	---	2,723
Rouge River Oxbow, Wayne Co., MI	Preliminary Restoration Plan	28,887	---	28,887
SB Galien River, Berrien County, MI	Planning and Design Analysis	69,300	---	69,300
Schmidt Creek, MI	Planning and Design Analysis	17,580	---	17,580
Sea Lamprey Barrier, Manistique, MI	Preliminary Restoration Plan	8,168	---	8,168
Sea Lamprey Barrier, Paw Paw Lake, MI	Planning and Design Analysis	47,362	---	47,362
Sea Lamprey Trap, St. Mary's River, MI	Preliminary Restoration Plan	161,471	---	161,471
St. Mary's River Restoration, Sault Ste. Marie, MI	Preliminary Restoration Plan	479	---	479
Sucker River, Alger County, MI	Preliminary Restoration Plan	2,084	---	2,084
Trail Creek, LaPorte County, IN	Planning and Design Analysis	41,299	---	41,299
Upper Rouge, MI Ave to Rotunda Dr., MI	Feasibility Activities	75,594	---	75,594
Total		812,290	---	812,290

TABLE 21-O PROJECT MODIFICATION FOR IMPROVING THE QUALITY OF THE ENVIRONMENT

PROJECT/STUDY/LOCATION	STATUS	Federal Costs for FY 04	Non-Federal Costs for FY 04	Total Costs for FY 04
Aquatic Ecosystem Restoration – Projects for aquatic ecosystem restoration and protection projects, for the purpose of improving the environment pursuant to Section 206 of the Water Resources Development Act of 1996.				
Coordination Account	Coordination	2,709	---	2,709
Belle Isle Piers, Detroit, MI	Feasibility Activities	4,766	---	4,766
Berrien County, Watervliet Dam, MI	Preliminary Restoration Plan	1,519	---	1,519
Cass River, Cit of Vassar, MI	Preliminary Restoration Plan	26,789		26,789
Centerville Creek, Cleveland, WI	Preliminary Restoration Plan	1,656	---	1,656
Cranbrook Institute, Bloomfield Hills, MI	Preliminary Restoration Plan	0	---	0
C.K. Eddy Creek, West Branch Township	Preliminary Restoration Plan	5,708	---	5,708
Clearwater Lake, MI	Preliminary Restoration Plan	5,930	---	5,930
Concordia University, WI	Preliminary Restoration Plan	3,546	---	3,546
Detroit River, City of Trenton, MI	Preliminary Restoration Plan	5,686	---	5,686
Dowagiac River, Cassopolis, MI	Preliminary Restoration Plan	988	---	988
Grayling Millpond Dam, Crawford County	Preliminary Restoration Plan	0	---	0
Homer Lake, St. Joseph River	Preliminary Restoration Plan	0	---	0
Houghton Lake, MI	Preliminary Restoration Plan	6,984	---	6,984
Kalamazoo County, MI	Feasibility Activities	0	---	0
Kinnickinnic River, WI	Preliminary Restoration Plan	0	---	0
Koontz Lake, IN	Plans and Specifications	4,815	---	4,815
Lake St. Clair, Metro Beach, MI		0	---	0
Lower Menomonee River Valley, Milwaukee,WI	Preliminary Restoration Plan	2,585	---	2,585
Mallett's Creek, Wastenaw County	Preliminary Restoration Plan	3,001	---	3,001
Marion Mill Pond, Village of Marion, Osceola	Preliminary Restoration Plan	54,513	---	54,513
Menomonee, WI	Feasibility Activities	38,122	---	38,122
Oak Creek, WI	Planning and Design Analysis	19,973	0	19,973
Otsego Lake, MI	Preliminary Restoration Plan	6,079	---	6,079
Pike River, WI	Preliminary Restoration Plan	0	---	0
Remy Chandler Drain Clinton/Ingram Co	Preliminary Restoration Plan	2,055	---	2,055
Secord and Smallwood Lakes, Gladwin Co.MI	Preliminary Restoration Plan	16,384	---	16,384
South Bend Dam, St. Joseph County, IN	Preliminary Restoration Plan	66,376	---	66,376
South Bend Dam, St. Mary's River, South		0	---	0
St. Marys River Restoration, Ste Sault Marie	Preliminary Restoration Plan	0	---	0
Trinity Creek, City of Mequon, WI	Preliminary Restoration Plan	0	---	0
Underwood Creek, Wauwatosa, WI	Preliminary Restoration Plan	4,787	---	4,787
Wolf River, WI	Planning and Design Analysis	0	---	0
Total		284,971	0	284,971

TABLE 21-O PROJECT MODIFICATION FOR IMPROVING THE QUALITY OF THE ENVIRONMENT

PROJECT/STUDY/LOCATION	STATUS	Federal Costs for FY 04	Non-Federal Costs for FY 04	Total Costs for FY 04
Aquatic plant control activities pursuant to Section 302 of the River and Harbor Act of 1965 (PL 89-298).				
Aquatic Plant Control		---	---	---
Total		---	---	---
Environmental infrastructure pursuant to Section 219e of the Water Resources Development Act of 1999, as amended				
Genesee County Drain, Genesee County, MI	Design Review	121,306	23,450	144,756
Nagaunee, MI	Design Review	117,090	3,425	120,515
Twelve Towns Darin Retention Treatment	Design Review	399,153	129,158	528,311
Total		637,549	156,033	793,582
Environmental infrastructure pursuant to Section 569 of the Water Resources Development Act of 1999, as amended.				
Northeastern Minnesota, MN (MV&LR)	Various Stages	1,154,464	---	1,154,464
Northern Wisconsin Env Assistance	Various Stages	262,229	---	262,229
Total		1,416,693	---	1,416,693
Ecosystem Restoration – Section 204 beneficial use of dredged material in connection with dredging. Projects in connection with dredging use of dredged material activities pursuant to Section 204 of the Water Resources Development Act of 1992, as amended.				
Cat Island Chain, Brown County, WI	Feasibility Activities	38,642	---	38,642
21st Avenue, West Channel, Duluth, MN	Feasibility Activities	0	---	0
Total		38,642	---	38,642

TABLE 21-P FLOOD CONTROL WORK UNDER SPECIAL AUTHORIZATION

PROJECT/STUDY/LOCATION	STATUS	Federal Costs for FY 04	Non-Federal Costs for FY 04	Total Costs for FY 04
Flood control activities pursuant to Section 205 of the 1948 Flood Control Act, as amended.				
Coordination Account	Coordination	4,290	---	4,290
Cass River, Spaulding Township, MI	Feasibility Activities	73,950	---	73,950
Detroit Beach, Lake Erie, Frenchtown Twp., MI	Feasibility Activities	3,423	---	3,423
Fairfield Ditch, Ft. Wayne, IN	Feasibility Activities	17,730	---	17,730
Flooding Warning System, Ft Wayne, IN	Feasibility Activities	16,761	---	16,761
Macomb County, MI	Feasibility Activities	0	---	0
Oak Creek, Milwaukee County, WI	Feasibility Activities	0	82,986	82,986
Red Mill Pond Dam, LaPorte, IN	Feasibility Activities	5,224	---	5,224
Root River, Milwaukee County, WI	Feasibility Activities	6,986	---	6,986
St. Mary's River, Ft. Wayne, IN	Feasibility Activities	12,464	---	12,464
Underwood Creek, Village of Elm Grove, WI	Feasibility Activities	6,561	---	6,561
Total		147,387	82,986	230,373

CHICAGO, ILLINOIS, DISTRICT

The district comprises Cook, McHenry, Lake, Kane, DuPage, and Will Counties in Illinois, and Lake and Porter Counties in Indiana, and a portion of La Porte County along Lake Michigan in Indiana.

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Navigation

1. BURNS WATERWAY HARBOR, IN

Location. Northwestern Indiana on the southern shore of Lake Michigan in Porter County, 28 miles southeast of Chicago Harbor. (See NOAA Nautical Chart Numbers 14905 and 14926.)

Previous Projects. None.

Existing Project. Provides for (a) a rubblemound north breakwater 4,630 feet long and a rubblemound breakwater west arm 1,200 feet long, for a total breakwater length of 5,830 feet; (b) an approach channel 30 feet deep and 400 feet wide; (c) an outer harbor 28 feet deep; (d) an east harbor arm 27 feet deep and 620 feet wide; and (e) a west harbor arm 27 feet deep and 620 feet wide. The project was authorized by the River and Harbor Act of October 27, 1965 (Public Law 89-298; House Document Number 160, 88th Congress, 1st Session). The authorizing act also provided the Secretary of the Army with the authority to reimburse the State of Indiana for expenditure of funds used to construct such portions of the project as approved by the Chief of Engineers and constructed under the supervision of the Chief of Engineers (See tables 22-B,C).

Local Cooperation. Fully complied with.

Terminal Facilities. Eleven berths are available at the facilities owned and administered by the Indiana Port Commission. One berth, committed to grain, is located on the outer harbor. Four berths on the East Harbor Arm are dedicated to handling dry and liquid bulk commodities. The East Harbor Arm also includes a small-boat harbor designed to accommodate working tugs for vessel assistance and barge movement. On the West Arm there are six berths. Although one berth is available for dry bulk cargoes, these berths are primarily used for the shipment and receipt of general cargo. Additionally, the Indiana Port Commission, through a lease, administers the west side of the West Harbor Arm for barge fleeting. The remaining available harbor berthing on the east side of the East Harbor Arm is privately owned.

Operations and Results During Period. Study of the effectiveness of the underwater reef was performed at a cost of $249,139 by other Corps of Engineers. Breakwater maintenance costs were $151,165 by other Corps of Engineers, $1,157,103 by construction contract, and $122,143 for the purchase of armor stone. Project operation costs were $411,798 for hired labor and other in-house services. Other contract and equipment costs were $79,632.

Condition at End of Fiscal Year. The existing project is complete. Total costs to September 30, 2004 were $39,807,720 of which $13,599,900 was for new work ($13,584,000 federal and $15,900 non-federal) and $26,207,820 ($26,099,458 federal and $108,362 non-federal) for was maintenance.

2. BURNS WATERWAY SBH, IN

Location. Northwestern Indiana on the southeast shore of Lake Michigan in Porter County, at the mouth of the Burns Waterway, approximately 27 miles southeast of Chicago Harbor. (See NOAA Nautical Chart Numbers 14905 and 14926.)

Previous Projects. None

Existing Project. Provides for (a) a rubblemound west breakwater 1,043 feet long; (b) a rubblemound north breakwater 678 feet long; and (c) channel improvements of 5,200 linear feet with 145,000 cubic yards of dredged material used for beach nourishment (See table 22-C).

Local Cooperation. Fully complied with.

Terminal Facilities. There are several marinas located along Burns Waterway and Burns Ditch. The principal marina, which is owned and operated jointly by the City of Portage and the Little Calumet River Basin Commission, was built in 1996 to comply with the local cooperation agreement. The commodities handled at this harbor are fresh fish caught as a result of charter boat fishing.

Operations and Results During Period. No work was performed on this project during the period.

Condition at End of Fiscal Year. Total costs of the existing project to September 30, 2004 were $7,833,191 of which $3,770,558 was for new work ($2,000,000 federal and $1,770,558 non-federal), and $4,062,633 for maintenance (federal).

3. BURNS WATERWAY HARBOR (MAJOR REHAB), IN

Location. The project is located in northwestern Indiana on the southern shore of Lake Michigan in Porter County.

Existing Project. The rehabilitation project

consists of constructing a segmented reef breakwater system, 75 feet lakeward of the northern section of the existing rubblemound breakwater. The project provides for seven reef segments, one 1,575 feet long and six 375 feet long with 25 feet spacing between segments

Local Cooperation. None required.

Operations and Results During the Period. New Work: Following construction completion in 1998, project closeout was completed in 1999.

Condition at the End of Fiscal Year. The construction contract was financially completed. The total cost of the existing project to September 30, 2004 was $13,384,161.

4. CALUMET HARBOR AND RIVER, IL and IN

Location. Northeastern Illinois, on the southwest shore of Lake Michigan in Cook County, 15 miles south of Chicago Harbor, within the corporate limits of the City of Chicago, except for breakwaters, and approach channel and an anchorage area which are in Indiana. (See NOAA Nautical Chart Numbers 14926 and 14929.)

Previous Projects. For details see page 1400 of Annual Report for 1962.

Existing Project. Provides for (a) a stone-filled timber crib breakwater 6,714 feet long; (b) a stone-filled double-row steel sheet pile detached breakwater 5,007 feet long; (c) an approach channel 29 feet deep and 3,200 feet wide; (d) an outer harbor anchorage area 28 feet deep and 3,000 feet wide; (e) an entrance channel 27 feet deep and 230 to 290 feet wide; (f) a channel in the Calumet River 27 feet deep and at least 200 feet wide to the north side of 130th Street; (g) three turning basins designated as numbers, 1, 3, and 5; and (h) a channel extending into Lake Calumet at a width of about 1,000 feet. The project was authorized by the River and Harbor Acts of March 3, 1899, June 13, 1902, August 30, 1935, July 14, 1960, October 23, 1962, and October 27, 1965 (See tables 22-B,C).

Local Cooperation. Fully complied with.

Terminal Facilities. Thirty six docks, wharves, and terminals are available. The Illinois International Port District owns four wharves, two grain elevators, one dock, and one terminal. The United States Government owns one stone dock. The most important cargoes handled are general cargo, grain, iron ore and concentrates, coal, and cement. Some docks are vacant and some docks are dedicated to handling barge traffic from the Illinois Waterway Project.

Operations and Results During Period. Routine operations were conducted at costs of $147,319 for in-house labor, $30,113 for work performed by other Corps, and $7,825 for miscellaneous services and supplies. The Dredged Material Manage Plan was initiated at a cost of $116,317 for in-house labor. Monitoring of Combined Disposal Facility was conducted at a cost of $75,789 for in-house labor and $10,293 for miscellaneous contracted services. Work on the Stone Dock continued at cost of $38,806 for in-house labor, $6,075 for work performed by other Corps, and $5,270 for miscellaneous services and supplies. Channel maintenance was conducted at costs of $399,855 for in-house labor, $17,001 for work performed by other Corps, $3,000 for work performed by other federal agencies, $1,210,001 for the dredging the contract, and $138,733 for miscellaneous services, supplies, and equipment. Routine breakwater maintenance was conducted at costs of $221,972 for in-house labor, $195,578 for work performed by other Corps, $16,091 for work performed by other federal agencies, and $338,939 for miscellaneous services, supplies, materials, and equipment.

Condition at End of Fiscal Year. The existing project is complete. Total costs of the existing project to September 30, 2004 were $80,392,545 of which $22,578,567 was for new work ($19,541,964 federal funds and $3,036,603 public works funds), $52,385,977 for maintenance ($51,549,310 federal and $836,667 non-federal funds) and $5,428,001 federal funds for rehabilitation.

5. CHICAGO HARBOR, IL

Location. Northeastern Illinois on the southwest shore of Lake Michigan in Cook County, within the corporate limits of the City of Chicago. (See NOAA Nautical Chart Numbers 14926, 14927, and 14928.)

Previous Projects. See page 1396 of Annual Report for 1962.

Existing Project. Provides for (a) a stone-filled timber crib shore and extension breakwater 2,250 feet long; (b) a stone-filled timber crib exterior

breakwater 5,421 feet long; (c) a rubblemound and stone-filled concrete caisson southerly extension to the exterior breakwater 4,944 feet long, exclusive of a 582-foot entrance gap enclosing an outer basin of about 970 acres; (d) a stone-filled timber crib north pier 960 feet long; (e) a stone-filled timber crib north inner breakwater 4,034 feet long with a 304-foot shore return and a 754-foot gap; (f) a stone-filled timber crib south inner breakwater 2,544 feet long, enclosing an inner basin of approximately 224 acres; (g) a lake approach channel 29 feet deep and 800 feet wide; (h) a channel and maneuver area inside the exterior breakwater and southerly extension breakwater 28 feet deep with a maximum width of 1,300 feet; (i) an entrance channel 21 feet deep and (j) the Chicago Harbor Lock. The Chicago Lock was constructed in 1938 by the Metropolitan Water Reclamation District of Greater Chicago. The deep-draft lock is 600 feet long, 80 feet wide, and 23 feet deep over the sill and is of steel cellular design.

The project was authorized by the River and Harbor Acts of July 11, 1870, June 14, 1880, March 3, 1899, July 25, 1912, March 2, 1919 and October 23, 1962 (See table 22-B).

Lock operation and maintenance responsibilities, in the interest of navigation, were transferred to the Federal Government pursuant to Public Law 98-63 approved July 30, 1983; Section 107 of the Public 97-88; and the Memorandum of Agreement between the Department of Army and the Metropolitan Water Reclamation District of Greater Chicago.

Local Cooperation. Fully complied with.

Terminal Facilities. There are five docks with 18 berths for passenger excursion boats and 10 berths for visiting large vessels. The most important cargoes handled through the lock are petroleum products, in addition to sugar and non-metallic minerals.

Operations and Results During Period. The Chicago Lock was operated by contract at a cost of $916,513. Lock maintenance costs were $663,901 by other Corps and $46,564 for miscellaneous maintenance contracts. Bulkhead storage lease was $14,167. Breakwater maintenance costs were $349,350 by other Corps and $31,707 for the purchase of armor stone. The Lock Control House design was prepared by AE contract for $562,494 and reviewed by other Corps for $29,853. In-house hired labor costs required to operate and maintain the project during the period were as follows: $195,016 for Lock Contract S&A; $60,244 for Lock Maintenance, $228,249 for Control House Design; $140,629 for Breakwater Major Rehabilitation Report; $71,299 for Harbor Condition Surveys; $18,684 for Breakwater Maintenance; $38,038 for Lock Property Maintenance (East Wall Improvement); and $36,570 for Project Management.

Condition at End of Fiscal Year. The existing project is complete. Total costs to September 30, 2004 were $65,611,778 of which $4,788,827 was for new work, $59,336,351 was for maintenance, $1,326,600 for rehabilitation and $160,000 Harbor and Dams funds. The approved Major Rehabilitation of the Lock (Gates, Control House and Concrete Repair) has not been completed.

6. CHICAGO RIVER, IL

Location. Northeastern Illinois, in Cook County within the corporate limits of the City of Chicago. (See NOAA Nautical Chart Numbers 14926, 14927 and 14928.)

Previous Projects. See page 1394 of Annual Report for 1962.

Existing Project. Provides for (a) a channel 21 feet deep in the main river from its mouth at Rush Street to the junction of the North and South Branches (0.7 miles); (b) a channel 21 feet deep in the North Branch from the junction to North Avenue (2.22 miles); (c) a channel 21 feet deep on the North Branch Canal (1.04 miles); (d) a 21-foot deep North Branch Turning Basin just south of North Avenue; and (e) a channel 9 feet deep in the North Branch from North Avenue to Addison Street (authorized but not constructed). The project was authorized by the River and Harbor Acts of March 3, 1899, June 13, 1902, March 2, 1907, and July 24, 1946 (See tables 22-B, C). The portion of the project authorized by the River and Harbor Act of 1946 is presently being restudied to confirm economic feasibility.

Local Cooperation. Fully complied with for completed modifications. The River and Harbor Act of July 24, 1946, which provided for the improvement of the channel, is subject to the condition that local interests furnish assurances that they will hold the United States government free from damages that may result from construction and maintenance of the improvement. Requirement has not been complied with.

Terminal Facilities. Six docks are available. The most important cargoes handled are sand, gravel and

crushed rock, non-metallic minerals and scrap iron.

Operations and Results During Period. Water control activities were performed by hired labor at a cost of $153,413, by other Corps of Engineers at a cost $16,457 and by other federal agency at a cost of $167,705.

Condition at End of Fiscal Year. The project is complete except for dredging the channel between North Avenue and Addison Street as authorized by the 1946 River Harbor Act. Channel maintenance for the reach from Clark Street to head of navigation has been deferred pending location and approval of suitable dredged material disposal site. Head of navigation for deep-draft vessels is North Avenue, 5.97 miles from the Michigan Avenue bridge. Total costs of the existing project to September 30, 2004 were $19,277,101 of which $1,500,565 was for new work and $17,776,536 was for maintenance.

7. INDIANA HARBOR, IN

Location. Northwestern Indiana, on the southwest shore of Lake Michigan in Lake County, 19 miles southeast of Chicago Harbor. (See NOAA Nautical Chart Numbers 14926 and 14929.)

Previous Projects. For details see page 1943 of Annual Report for 1915, and page 1520 of Annual Report for 1938.

Existing Project. Provides for (a) a northerly rubblemound breakwater 1,120 feet long; (b) an easterly concrete capped caisson breakwater 201 feet long with a rubblemound extension 2,324 feet long; (c) a lake approach channel 29 feet deep and 800 feet wide; (d) an anchorage and maneuver basin 28 feet deep; (e) a main canal entrance channel 27 feet deep and 280 feet wide; (f) a main canal 22 feet deep; (g) a turning basin 22 feet deep; (h) the Forks Turning Basin 22 feet deep; (i) the Lake George Branch 22 feet deep; and (j) the Calumet River Branch 22 feet deep. The project was authorized by the River and Harbor Acts of March 4, 1913, March 2, 1919, March 20, 1922, July 3, 1930, August 30, 1935, August 28, 1937, and July 14, 1960 (See tables 22-B, C).

Local Cooperation. Substantially complied with. See FY 1986 Annual Report for full requirements.

Terminal Facilities. Fifteen docks and wharves are available. Six docks handle iron ore and limestone. Six docks are for handling petroleum products and three docks for handling gypsum, scrap metal and steel, and bulk products. However, not all docks are presently being used for the shipment or receipt of waterborne commodities.

Operations and Results During Period. Routine operations were conducted at a cost of $183,307 for in-house labor. The preparation of dredging plans and specifications were initiated at costs of $79,383 for in-house labor and $21,870 for AE services.

Condition at End of Fiscal year. The existing project is complete. Total costs of the existing project to September 30, 2004 were $20,189,768 of which $4,909,648 ($4,897,148 federal and $12,500 non-federal contributed funds) was for new work and $15,281,120 (federal) for maintenance. Channel maintenance has been deferred pending construction of suitable Confined Disposal Facility.

8. INDIANA HARBOR AND CANAL CONFINED DISPOSAL FACILITY (CDF), IN

Location. The navigation project is located on the southwestern shore of Lake Michigan within the City of East Chicago, Lake County, Indiana, 4-1/2 miles east of the Indiana-Illinois state line and 17 miles from downtown Chicago, Illinois. A CDF will be constructed at the Energy Cooperative Incorporate (ECI) site in East Chicago, Illinois.

Existing Project. IHC is an authorized Federal navigation project with an entrance channel and outer harbor protected by breakwaters, and an inner harbor which includes the Indiana Harbor Canal and its two branches, the Lake George Branch, which extends west for a distance of 6,800 feet, and the Calumet River Branch which extends to the south for about 2 miles where it joins the Grand Calumet River. The harbor has not been dredged since 1972, when the United States Environmental Protection Agency determined that disposal in Lake Michigan was no longer acceptable due to the polluted character of the harbor sediments.

A 4.8 million cubic yards capacity CDF will be constructed on the 164 acres of land adjacent to the Lake George Branch of the IHC, formerly occupied by an oil refinery owned by the Atlantic Richfield Company and subsequently acquired by ECI. The ECI property currently has open Resource Conservation and Recovery Act (RCRA) status due to the contaminated soil and groundwater that exists on the site. Use of this site for the CDF is contingent upon the construction of specific RCRA closure and

corrective action features that will be integral aspects of the CDF construction. The elements of the CDF include construction of an impervious cutoff wall built around the 11,000 linear feet perimeter of the site to approximately 30-35 feet depths, tied into the clay layer below; groundwater monitoring and extraction wells and pumps to maintain an inward gradient and prevent any contaminated groundwater from leaving the site; an air monitoring system; an on-site water treatment facility to treat water from drying dredged materials, precipitation falling on the site and groundwater; dikes built in two 15 feet stages, with an impervious clay layer on the interior of the dikes; a re-handling area; and a cap constructed using 3 feet of clay, 6 inches of sand, 2 feet of clean fill and 6 inches top soil with grass cover. This cap configuration, used for both the CDF and the buffer areas, will satisfy the RCRA closure requirement for the ECI site.

Local Cooperation. The local sponsor is the East Chicago Waterway Management District (ECWMD). The local sponsor is required to provide all lands, easements and rights-of-way; provide all required relocations; and hold and save the United States government free from any damages due to construction or operation of the project. In addition, the ECWMD is required to pay a cash contribution to bring the total non-federal share to twenty-five percent of the costs allocated to general navigation facilities during construction and pay 100 percent of the costs of maintenance of CDF allocated to additional capacity provided for material from berthing areas and non-channel dredging. The local sponsor is also required to reimburse an additional 10 percent of the costs of the general navigation facilities allocated to commercial navigation within a period of 30 years following completion of construction, as partially reduced by a credit allowed for the value of lands, easements, rights of way, relocations, and dredged or excavated material disposal provided for commercial navigation. In addition, the ECWMD is required to pay 100 percent of the costs allocated to general navigation facilities during construction for the local service facilities (non-federal berthing areas) and 100 percent of costs for the local service facilities. The Project Cooperation Agreement for the project was executed 7 August 2000.

Operations and Results During the Period. Construction on Cutoff wall completed. Engineering and design work was continued to include Air Monitoring and Outreach Programs. Awarded Phase I Dikes and Obstruction removal construction contracts. Total cost of the project in FY04 was $6,524,418 ($5,293,384 was federal and $1,231,034 non federal.)

Condition at the End of Fiscal Year. Total cost of the existing project to September 30, 2004 was $23,774,729 ($19,188,667 federal and $4,586,062 non federal.)

9. LAKE MICHIGAN DIVERSION

Location. Northeastern Illinois on the southwest shore of Lake Michigan in Cook County, within the corporate limits of the City of Chicago. (See NOAA Nautical Chart Numbers 14926, 14927, and 14928.)

Previous Projects. See page 22-3 of Annual Report for 1988.

Operations and Results During Period. Operations: Water accounting studies and preparation of reports were performed at costs of $257,391 by hired labor and $105,502 by other Corps agency and $128,792 by contract.

Condition at End of Fiscal Year. Total cost of the existing project to September 30, 2004 was $8,959,205.

10. MICHIGAN CITY HARBOR, IN

Location. Northwestern Indiana, on the southeast shore of Lake Michigan in La Porte County, 38 miles southeast of Chicago Harbor. (See NOAA Nautical Chart Numbers 14905 and 14926.)

Previous Projects. See page 1407 of Annual Report for 1992.

Existing Project. Provides for (a) a stone-filled timber crib detached breakwater 1,304 feet long; (b) a pile and steel sheeting west pier 835 feet long; (c) a stone-filled timber crib, pile and steel sheeting east pier 2,276 feet long; (d) a stone-filled timber crib east breakwater 1,000 feet long; (e) an entrance channel 18 feet deep and 425 feet wide; (f) a turning basin No. 1, 18 feet deep; (g) a channel in Trail Creek 18 feet deep; (h) an outer basin 12 feet deep in the northerly portion and 8 feet deep in the southerly portion; and (i) a channel in Trail Creek 6 feet deep and 50 feet wide from turning basin No. 2 to the E Street bridge. The project was authorized by the River and Harbor Acts of March 3, 1899, March 3, 1905, January 21, 1927, August 30, 1935, and

Section 107 of July 14, 1960, River and Harbor Acts, September 30, 1966 (See tables 22-B, C).

Local Cooperation. Fully complied with.

Terminal Facilities. There are several marinas in the lower mile of Trail Creek. The commodity handled at this harbor is fresh fish.

Operations and Results During Period. Routine operations were conducted at costs of $47,257 for in-house labor and $1,048 for work performed by other federal agencies. The Dredged Material Management Plan was prepared at costs of $153,223 for in-house labor and for $4,547 for work performed by other Corps. Contracted breakwater repairs were conducted at costs of $272,205 for in-house labor, $675 for work performed by other federal agencies, and $1,747,900 for the construction contract. Routine breakwater maintenance was conducted at costs of $101,054 for in-house labor and $1,227 for work performed by other Corps.

Condition at End of Fiscal Year. Total costs of existing project to September 30, 2004 were $23,943,535 of which $1,574,158 was for new work ($1,543,646 federal and $30,512 non-federal funds), $20,750,707 for maintenance ($20,695,707 federal and $55,000 non-federal) and $1,618,670 for rehabilitation (federal funds).

11. WAUKEGAN HARBOR, IL

Location. Northeastern Illinois on the west shore of Lake Michigan in Lake County, 38 miles north of Chicago Harbor. (See NOAA Nautical Chart Numbers 14904 and 14905.)

Previous Projects. See page 1392 of Annual Report for 1962.

Existing Project. Provides for (a) a northerly stone-filled timber crib breakwater 588 feet long; (b) a stone-filled reinforced concrete caisson shore connection 270 feet long; (c) a stone-filled double-row steel sheeting shore connection 640 feet long; (d) a single-row steel sheeting shore connection 398 feet long; (e) a stone-filled timber crib north pier 998 feet long; (f) a single-row steel sheet piling north pier 444 feet long; (g) a steel piling revetment 632 feet long; (h) a stone-filled timber crib pier 1,399 feet long; (i) a stone-filled double-row pile and sheeting south pier 1,712 feet long; (j) an entrance channel 22 feet deep and 390 feet wide; (k) a channel between the piers 18 feet deep and 200 feet wide; (l) an inner basin 18 feet deep; and (m) an anchorage area in the southwest corner of the inner basin 8 feet deep. An authorized, but as yet unconstructed project modification provides for (a) an entrance channel 27 feet deep, (b) a channel between the piers 23 feet deep and (c) an inner basin and channel extension 23 feet deep. The project was authorized by the River and Harbor Acts of June 3, 1902, July 13, 1930, and March 2, 1945, and on December 17,1970 by delegated authority under Section 201 of the Rivers and Harbor Act of October 27, 1965. (See tables 22-B, C). The portion of the project authorized by the 1970 modification is being restudied to confirm economic feasibility.

Local Cooperation. Fully complied with for completed portions. The Dec. 17, 1970 modification, which provides for modifications to the channel, is subject to the conditions that local interests furnish assurances that they will hold the United States government free from damages from construction and maintenance of the improvement and that certain lands, easements and rights-of-way be provided.

Terminal Facilities. Four docks are available. The commodities handled at this harbor are gypsum and building cement.

Operations and Results During Period. Routine operations were performed at a cost of $46,244 for in-house labor. Outer harbor dredging was conducted at costs of $46,149 for in-house labor, $114,054 by contract, and $4,378 for other contractual services. South pier was repaired at costs of $89,330 for in-house labor, $474,234 by contract, and $234 for other federal agencies. Breakwater maintenance work was performed at costs of $34,653 for in-house labor, $49,888 for the purchase of armor stone, and $249,262 for work performed by other Corps.

Condition at End of Fiscal Year. The existing project is complete except for the 1970 modification, which is being restudied. Maintenance of the channel between the pier to the head of navigation has been deferred pending location, approval and probable construction of a suitable dredged material disposal site. Total costs of existing project to September 30, 2004 were $21,413,031 of which $823,026 was for new work and $20,590,005 was for maintenance.

12. RECONNAISSANCE AND CONDITION SURVEYS

In Fiscal Year 2004 Condition surveys were performed at a cost of $78,388.

13. NATIONAL EMERGENCY PREPAREDNESS

Fiscal Year 2004 costs for management and mobilization planning were $9,687.

Alteration of Bridges

14. OTHER AUTHORIZED BRIDGE ALTERATIONS

See table 22-D.

Beach Erosion Control

15. CASINO BEACH, IL

Location. Casino Beach is located along the Lake Michigan shoreline at Jackson Park in Chicago, Illinois.

Existing Project. The Casino Beach project was authorized by Section 501 (a) of the 1986 Water Resources Development Act. The project consists of rehabilitating 1,800 feet of the Casino jetty by encasing the existing timber pile and stone structure in steel sheet piling and a concrete cap.

Local Cooperation. The local project sponsor is the Chicago Park District. The local sponsor is required to provide all lands, easements and rights-of-way; complete all necessary relocations; hold and save the United States free from damages due to construction or operation of the project; operate and maintain the completed project; and make cash contribution toward the cost of construction.

Operations and Results During Period. No new work.

Condition at End of Fiscal Year. Construction is complete. The total cost of the existing project to September 30, 2004 was $2,465,517 federal and $2,499,481 non-federal.

16. CHICAGO SHORELINE, IL

Location. The project area includes 9.2 miles of revetment reconstruction within 24 miles of publicly owned shoreline along Lake Michigan in Chicago, Illinois.

Existing Project. The Chicago Shoreline project is not authorized. The Federally supportable plan consists of constructing rubblemound revetments along 16,750 and 25,400 feet of the shoreline in the Lincoln Park and Burnham Park areas, respectively. Other project features include: revetments near the Adler Planetarium and at Meigs Field; a breakwater to protect the South Filtration Plant near 78th Street; and nourishment of a short reach of shoreline near Fullerton Avenue and 31st Street. The local sponsor prefers to substitute steel sheet pile step stone revetments (the locally preferred plan, or LPP) for the rubblemound revetments in the Lincoln and Burnham Park areas. They have agreed to pay the increased cost above the federally supportable plan.The LPP is the authorized plan.

Local Cooperation. This project has three separate Project Cooperation Agreements (PCA's). The first PCA, for the Reach 5 breakwater reconstruction, was executed on 28 April 1997. The second PCA, for Section 215 work, was executed on 7 August 1998, and covers construction of three portions of the project: 1,000 feet of revetment at Belmont Harbor in Reach 2, an 800 foot stretch of shoreline at 31st Street beach in Reach 4 (both of these are being constructed by the non-federal sponsor), and revetment reconstruction from 31st to 33rd streets in Reach 4 (Corps work). The project Cooperation Agreement for the balance of the project work was executed on 17 May 1999, implementing section 206 of WRDA 92 which allows the non-federal sponsor to perform a significant portion of the work. Design and construction of the project is well underway. Project construction is estimated to be completed in the year 2007.

The local sponsor is required to provide all lands, easements, and rights-of-way; complete all necessary relocations; hold and save the United States free from damages due to construction or operation of the project; operate and maintain the completed project; perform work for credit towards their cash contribution; and make cash contribution toward the cost of any outstanding balance.

Operations and Results During Period. The Corps performed construction work on at Belmont to Diversey North, Montrose North, Diversey to Fullerton, and 37th to 43rd Street. Engineering and design work was continued on carious reaches. The non-federal sponsor provided cash in the amount of $15,204,000. Total expenditures for the fiscal year FY04 were $29,6710,53 of which $19,654,674 Federal and $10,016,379 non-Federal.

Condition at End of Fiscal Year. . The total cost of the existing project to September 30, 2004, was

$229,542,733of which ($134,082,410 Federal, $63,476,187 non-Federal cash) and $31,984,136 in non-federal in-kind services.

17. ILLINOIS BEACH STATE PARK, IL

Location. Northeastern Illinois on the west shore of Lake Michigan along the 9-mile reach of shoreline immediately south of the Illinois-Wisconsin State line. (See NOAA Nautical Chart Numbers 14901 and 14904.)

Previous Projects. None.

Existing Project. Provides for annual beach nourishment and construction of a sediment trap at the south end of the State Park. The project would entail placement of coarse-graded sediment at six stockpile sites at the rate of 124,000 cubic yards in the first year, 104,000 cubic yards in the second year, and 60,000 cubic yards in the third year. Thereafter, 60,000 cubic yards would be placed at the northernmost stockpile annually. The sediment trap would consist of a rubble-mound groin, with a total length of 600 feet from the base of the dunes (400 feet lakeward from the shoreline), with a crest height of about +8 feet above Low Water Datum (LWD). The project was conditionally authorized in Section 501 (b) of the 1986 Water Resources Development Act subject to a report by the Corps of Engineers and approval by the Secretary of the Army. A Feasibility Review Conference was held in April 1991. As a result, the District Engineer was directed to terminate work on this project and to submit a letter report to the Congress summarizing the feasibility study and the results of the Washington level review. Work on the feasibility report was resumed in FY 1994 as directed by the Assistant Secretary of the Army for Civil Works in response to a letter from Congressman John Porter, 10th Congressional District of Illinois.

Local Cooperation. The local project sponsor would be required to provide all lands, easements and rights-of-way; accomplish all required relocations; hold and save the United State free from damages; and provide a cash contribution.

Operations and Results During Period. No work was completed on the pre-construction engineering and design (PED) phase of the project. FY04 Work on the feasibility phase was continued in FY 2004 at a cost of $767.

Condition at End of Fiscal Year. Total cost of the existing Feasibility study to September 30, 2004 was $344,291 .

18. INDIANA DUNES NATIONAL LAKESHORE BANK PROTECTION, BEVERLY SHORES, IN

Location. Northwestern Indiana, on the southeast shore of Lake Michigan in Porter County, about 35 miles southeast of Chicago Harbor. (See NOAA Nautical Chart Numbers 14095 and 14926.)

Existing Project. Provides for placement of 13,000 feet of stone revetment and periodic repair of riprap to maintain the full length of Lake Front Drive in Beverly Shores, Indiana. The current project was authorized by Public Laws 97-88 and 98-63.

Local Cooperation. Fully complied with. Project lands are held by the National Park Service.

Operations and Results During Period. No work was performed during this reporting period.

Condition at End of Fiscal Year. Total costs of existing project to September 30, 2004 were $2,956,000 of which $660,000 was for new work and $2,296,000 was for maintenance.

19. INDIANA SHORELINE EROSION, IN

Location. On the south end of Lake Michigan along a two-mile reach of shore west of Michigan City Harbor, Indiana. (See NOAA Nautical Chart Numbers 14095 and 14926.)

Existing Project. The project consists of beach nourishment along approximately two miles of beach between Michigan City Harbor and Beverly Shores, Indiana, requiring an initial placement of 264,500 cubic yards of sand. Periodic replenishment of about 264,500 cubic yards of sand at five year intervals would be required throughout the life of the project. The project was authorized for construction by Section 501 of the Water Resources Development Act of 1986. Estimated federal cost (1997) for new work is $184,000,000, including future beach nourishment.

Local Cooperation. None required.

Operations and Results During Period. Monitoring of initial sand placement and impacts to fish was performed, and preparation of plans and

specifications for the next round of sand placement was initiated. There was no real estate related cost. Total Federal cost of the existing project was $774,315 in FY2004.

Condition at End of Fiscal Year. Initial construction was completed. Monitoring of project and preparation of plans and specifications for additional sand placement was continued. The total cost of the existing project to September 30, 2004 is $11,061,361 (Federal)

20. OTHER AUTHORIZED BEACH EROSION CONTROL PROJECTS

See table 22-E.

21. BEACH EROSION CONTROL UNDER SPECIAL AUTHORIZATION

Beach erosion control activities pursuant to Section 103 of the Rivers and Harbors Act of 1962, as amended. None.

Flood Control

22. CHICAGO RIVER, IL (NORTH BRANCH)

Location. Northern Illinois, in Cook and Lake Counties.

Existing Project. Provides for clearing the channel of the North Branch of the Chicago River of fallen trees, roots, and other debris and objects which contribute to the flooding, unsightliness, and pollution of the river. The project extends from Wolf Point in Chicago, Illinois, to its source just south of Rockland Road east of Libertyville, Illinois. The project was authorized by the River and Harbor Act of December 31, 1970 (Section 116) and amended by the River and Harbor Act of March 7, 1974 and the Water Resources Development Act of 1986.

Local Cooperation. The 1970 Act provided that local interests furnish without cost to the United States all lands, easements, rights-of-way, and disposal areas necessary for construction of the project; hold and save the United States free from damages due to construction; maintain and operate all works after completion without cost to the United States; and agree to bear all costs in excess of $200,000 for completing construction. The 1974 Act provided that the United States will maintain the channel free of trees, roots, debris and objects at a cost not to exceed $150,000 per year with non-federal interests paying 25 percent of the cost of maintenance. The 1986 Water Resources Development Act changed the cost sharing to require that non-federal interests pay 50 percent of the cost of maintenance plus the cost of disposal. The requirements are fully complied with.

Operations and Results During Period. No work was performed during this reporting period.

Condition at End of Fiscal Year. Total cost of existing project to September 30, 2004 was $4,775,908 of which $231,884 was for new work ($191,884 federal funds and $40,000 contributed funds), and $4,543,807 was for maintenance ($2,768,632 federal funds and $1,775,175 non-federal contributed funds).

23. DES PLAINES RIVER, ILLINOIS

Location. The Upper Des Plaines River is located in the northeastern Illinois counties of Lake and Cook. Its 67 miles flow through 33 communities, which are part of the Chicago metropolitan area.

Existing Project. The Des Plaines flood control project was authorized by Section 101(b) (10) of the 1999 Water Resources Development Act. The optimized project provides a maximum 0.12 foot reduction in stage for the 100-year flood, and the levee features meet the FEMA criteria for 100-year protection. The project consists of six features to construct (three in Lake County and three in Cook County), environmental mitigation, and a flood warning plan. The project adds 1,975 acre-feet of storage by constructing 6 features: a lateral storage area in Van Patton Woods (412 acre-feet); enlarging the existing North Fork Mill Creek Dam by elevating the crest of spillway (500 acre-feet); and excavating the existing reservoirs at Buffalo Creek (476 acre-feet) and at Big Bend Lake (587 acre-feet). The remaining 2 project features are levees with appurtenant interior drainage features. Levee 37 raises portions of Des Plaines River Road and Milwaukee Avenue between Palatine Road and Euclid Avenue from 0.5 to 5 feet over a total length of 8,500 feet. Levee 50 is a combination levee/flood wall in the City of Des Plaines between Dempster Road and the Chicago and Northwestern railroad. The length of this levee would be about 2,600 feet and the length of the floodwall would be 2,115 feet.

Local Cooperation. The nonfederal sponsor is the Illinois Department of Natural Resources (IDNR).

IDNR is required to provide all lands, easements and rights-of-way; complete all required utility relocations; hold and save the United States free from damages due to construction or operation of the project; provide the required interior drainage improvements; operate and maintain the completed project; and make a cash contribution toward the cost of construction.

Operations and Results During the Period. In 2004 Engineering and design work was continued at a Federal cost of $432 for (GI), $386,887 (CG) and non- Federal cost of –$20,258 (GI).

Condition at End of Fiscal Year. Total cost of the existing project to September 30, 2004 is $2,002,718 of which ($933,968 (GI), $682,258 (CG) and non-Federal cost $386,492).

24. LAKE GEORGE, HOBART, IN

Location. Lake George in Hobart, Indiana and Deep River watershed upstream of the lake through Lake Station, Indiana.

Existing Project. The project consists of the removal of silt, aquatic growth and other material and the construction of silt traps or other devices to prevent and abate the deposition of sediment. Project was authorized by Section 602 of the Water Resources Development Act (WRDA) of 1986.

Local Cooperation. Section 602(b), Water Resources Development Act of 1986 applies. By letter dated March 9, 1987 the City of Hobart, Indiana indicated that it was a potential local project sponsor and applied for credit for previous work applicable to the project under the provisions of Section 104 (d) of the 1986 WRDA. By letter dated March 19, 1999, the City of Hobart, Indiana withdrew it's interest in the project.

Operations and Results During Period. Project was terminated in FY 1999. Cost of $1,500 was incurred to respond to concerns from the locals in FY 2004.

Condition at End of Fiscal Year. Pre-construction engineering and design was terminated. Total cost of the existing project to September 30, 2004 is $1,314,167.

25. LITTLE CALUMET RIVER, IN

Location. The Little Calumet River project is located in northwest Indiana between the Illinois-Indiana State line and the Conrail Railroad in east Gary, Indiana.

Existing Project. The project consists of replacing 9.5 miles of existing spoil bank levees with 12.2 miles of new levees, floodwalls, closure and appurtenant structures between the Illinois-Indiana State line and Cline Avenue; construction of 9.7 miles of set-back levees in Gary; a diversion structure at Hart Ditch; permanent evacuation of 29 structures in the Black Oak area of Gary; flood proofing 38 residential structures in Gary; modifying 7 miles of channel and 3 accompanying bridge culvert modifications; modifying one highway bridge; construction of 16.8 miles of hiking trails and accompanying recreation support facilities; and preservation of 788 acres of wetlands with wildlife mitigation measures. The project was authorized by Section 401 of the Water Resources Development Act of 1986. The construction contract for Stages II-3A, III and V-1 levee segment and the Stage I-4 demolition contract were completed .Completed construction on East Remediation, and Stage IV-2B.

Local Cooperation. The local sponsor is the Little Calumet River Basin Development Commission. The local cooperation agreement was signed on August 16, 1990. The local sponsor is required to provide all lands, easements and rights-of-ways; provide all required relocations; and hold and save the United States from any damages due to construction or operation of the project. In addition, the local sponsor is required to pay a five percent cash contribution for structural flood control measures, fifty percent for recreation features and twenty-five percent for fish and wildlife enhancements. A memorandum of agreement with the local sponsor to design non-federal improvements was signed on May 20, 1992.

Operations and Results During Period. Continued construction work on wetland mitigation, Stage III remediation, pump 1A and Noth 5th pumps and continued work on engineering and design. Awarded VI-1 South construction contract.

At the end of FY 2004, total Federal cost was $3,577,567 and non-federal cost was $190,568 with a betterment cost of $0. Total project cost was $3,768,135.

Condition at End of Fiscal Year. Construction is in progress. Total cost of existing project to September

30, 2004 was $101,288,694 of which Federal cost was $92,125,722, required non-federal cost was $6,966,295 and non-federal betterment costs $2,196,677.

26. LITTLE CALUMET RIVER BASIN, CADY MARSH DITCH, IN

Location. Cady Marsh is located in Lake County, Indiana. The Ditch is a tributary of the Little Calumet River system in northwest Indiana and flows through the Towns of Griffith and Highland, Indiana.

Existing Project. The Cady Marsh Ditch flood control project was authorized by Section 401 (a) of the 1986 Water Resources Development Act. The project provides for diverting flood flows from Cady Marsh Ditch to the Little Calumet River through a diversion system under Arbogast Avenue in Griffith. Specifically, the project consists of improving 1,290 feet of Cady Marsh Ditch between Colfax and Arbogast Avenues in Griffith, constructing approximately 5,000 feet of large conduct pipes under Arbogast Avenue, excavating an open channel approximately 2,850 feet long from the north end of Arbogast Avenue to the Little Calumet River, and constructing interior drainage improvements.

Local Cooperation. The local project sponsor is the Town of Griffith, IN. The local sponsor is required to provide all lands, easements and rights-of-way; complete all required utility relocations; hold and save the United States free from damages due to construction or operation of the project; provide the required interior drainage improvements; operate and maintain the completed project; and make a cash contribution toward the cost of construction.

Operations and Results During the Period. Engineering and design was continued. Executed Project Cooperation Agreement. Awarded the tunnel construction contract. The total cost of the existing project in FY04 was $$1,113 (GI) and $1,310,595 (CG). There were no non-federal expenses.

Condition at End of Fiscal Year. Pre-construction engineering and design is in progress. The total cost of the existing project to September 30, 2004 was $3,380,585 (Federal cost).

27. McCOOK AND THORNTON RESERVOIRS, IL

Location. The McCook Reservoir will be located near the communities of McCook, Justin and Bedford Park, Illinois at the existing Metropolitan Water Reclamation Solids Management Area. The Thornton Reservoir will be located in the community of Thornton, Illinois at the existing Thornton Quarry.

Existing Project. The project consists of converting two quarries into flood storage reservoirs. The McCook Reservoir will have a storage volume of 21,400 acre-feet (7 billion gallons); the Thornton Reservoir will have a volume of 24,200 acre-feet (7.9 billion gallons). The reservoirs will store floodwater from tunnels constructed or under construction by the U.S. Environmental Protection Agency and the Metropolitan Water Reclamation District of Greater Chicago as part of the Tunnel and Reservoir Project (TARP). The project was authorized by Section 3 of the Water Resources Development Act of 1988.

Local Cooperation. The Metropolitan Water Reclamation District of Greater Chicago will be the local sponsor and provide the required local cooperation. The local sponsor is required to provide all lands, easements and rights-of-way; provide all required relocations; and hold and save the United States government free from any damages due to construction or operation of the project. In addition, local sponsors are required to pay a cash contribution to bring the total non-federal share of the flood control improvements to twenty-five percent of the total project cost. The Project Cooperation Agreement for the McCook Reservoir was executed on May 10, 1999.

Operations and Results During the Period. Continued construction work on the distribution tunnel and pump contracts. Completed construction on Test Grout contract. Continued engineering and design work. Total cost of the project in FY04 was $39,973,352 of which ($19,774,562 Federal and $20,198,790 non-Federal).

Condition at End of Fiscal Year.. Construction and engineering and design work are in progress. Total costs of the existing project through FY 2004 were $116,100,996 ($76,690,850 Federal and $39,410,146 non-Federal).

28. NORTH BRANCH, CHICAGO RIVER, IL

Location. The North Branch Chicago River Basin is located north of the City of Chicago in suburban Cook and Lake Counties.

Existing Project. The project was authorized by the Water Resources Development Act of 1986 and

consists of constructing two excavated floodwater storage reservoirs on the West Fork and one excavated reservoir on the Middle Fork. Section 401 of the 1986 Act also included authorization to reimburse non-federal interests 50 percent of the costs of planning and construction for three existing reservoirs on the West Fork, known as Techny Reservoirs, and the existing Mid Fork Reservoir on the Middle Fork. In July 1990, the federal government reimbursed the non-federal interests $4,467,298 for the Techny and Mid Fork Reservoirs. The total federal cost was $4,537,435 for these reservoirs. Reservoir 27 in the Village of Bannockburn, is located on the West Fork, 12.7 miles above its confluence with the North Branch Chicago River. It has a floodwater storage capacity of 525 acre-feet. The reservoir construction was completed in June 1990. Reservoir 29A is located 9.6 miles above the mouth of the West Fork and 3.1 miles south of Reservoir 27. The floodwater storage capacity is 575 acre-feet. Two project features, channel relocation and construction of two bridges, are a non-federal responsibility. Reservoir 29A was substantially completed in September 1994. Reservoir 15 is located near the City of Green Oaks on the Middle Fork, 22.1 miles above its confluence with the North Branch Chicago River. The floodwater storage capacity is 500 acre-feet. The reservoir is approximately 42 feet deep except in the sedimentation pool area which is about 15 feet deeper. Construction of Reservoir 15 was completed in May 1992. The local sponsor has contributed $550,100 for the non-federal improvements for Reservoir 29A.

Local Cooperation. The local sponsor is required to provide all lands, easements and rights-of-way; provide all required relocations; and hold and save the United States government free from any damages due to construction or operation of the project. In addition, local sponsors are required to pay a cash contribution to bring the total non-federal share of the flood control improvements to twenty-five percent of the total project cost.

Operations and Results During Period. Settled the claim with the contractor on Reservoir 29A. Total cost in FY04 was $31 Federal.

Condition at End of Fiscal Year. The existing project is 100% complete. Total costs of the existing project to September 30, 2004 were $31,758,840 of which $25,006,457 is federal and $2,259,085 is non-federal required contributions. This excludes the $4,493,298 non-federal cost for the Techny and Mid Fork Reservoirs. Non-federal betterment funds of $550,101 has been expended on bridge and channel betterments at Reservoir 29A. A total of $7,576,668 in non-federal funds has been expended on investigations in connection with the clean-up of soils contaminated with lead shot pellets at Reservoirs 29A. Non-federal betterment funds in the amount of $38,500 were expended for work on an impact assessment. A total of $11,166 (non-federal betterment) was spent at Reservoir 27 for the Illinois Tollway project.

29. O'HARE RESERVOIR, IL

Location. The reservoir is located in an unincorporated portion of Elk Grove Township in Northwestern Cook County, Illinois about 1 mile northwest of Chicago O'Hare International Airport.

Existing Project. The project consists of a 1,050 acre-foot capacity reservoir, excavated to a depth of 80 feet. The reservoir has been constructed at the terminus of the existing system of 6.6 miles of deep tunnels, constructed under the U.S. Environmental Protection Agency and the Metropolitan Water Reclamation District of Greater Chicago Tunnel and Reservoir Project (TARP). The project was authorized by Section 401 of the Water Resources Development Act of 1986.

Local Cooperation. The local sponsor is the Metropolitan Water Reclamation District of Greater Chicago. The local cooperation agreement for the first construction contract, creek relocation, was signed on July 31, 1990. The local sponsor is required to provide all lands, easements and rights-of-way; provide all required relocations; and hold and save the United States government free from any damages due to construction or operation of the project. In addition, the local sponsor is required to pay a cash contribution of five percent of the total project costs. The local cooperation agreement for the remainder of the project, reservoir excavation and lining, was signed July 29, 1991.

Operations and Results During Period. Initiated financial close-out on the project. There were no costs in FY 2004.

Condition at End of Fiscal Year. The total costs of the existing project to 30 September 2004 were $38,884,659 of which ($31,567,668 Federal and $4,664,510 non-Federal and non-Federal improvement costs were $2,652,481)

30. OTHER AUTHORIZED FLOOD CONTROL PROJECTS

See table 22-F.

31. FLOOD CONTROL WORK UNDER SPECIAL AUTHORIZATION

Emergency flood control activities, repair, flood fighting and rescue work (Public Law 99, 84th Congressional antecedent legislation).

Program	Fiscal Year Costs to September 30, 2004
Disaster Preparedness	$ 284,220
Disaster Assistance (FEMA)	$ 254,603

Flood control activities pursuant to Section 205 of Flood Control Act of 1965, as amended:

Fiscal Year 2004 costs were $836,245 federal and $120,212 non-federal for flood control activities. A total of $25,000 was spent on the Section 205 Coordination Account. Fox River, McHenry Co., IL, construction phase was completed at the cost of $0federal and $32,579 non-federal. Libertyville Estates, IL, construction phase continued at the cost of $182,962 federal and 45,051 non federal. Kankakee River and Newton Co. (Sumava) P&S was continued at the cost of $349,430 federal and $ 0 non-federal. City of Oak Forest (Natalie Creek) DPR completed at the cost of $59,357 federal and $22,514 non-federal. Stony Creek, IL, P&S discontinued at the cost of $138,465 federal. Deer Creek construction awarded at a cost of $76,527 federal. Monticello P&S continued at $4,476 federal.

Section 14, Emergency Streambank and Shoreline Protection:

Fiscal Year 2004 costs were $659,928 federal and $325,056 non-federal . A total of $9,681 was spent on Section 14 Coordination Account. Highland Park financial close-out was completed at $-9,752 federal and 9,797 non-federal. Melvina Ditch PDA was continued at $ 19 federal; Waukegan Sanitary construction completed at $149,818 federal and $79,100 non federal. Zion Sanitary construction was continued at $211,435 federal; and $129,000 non federal; North Park University PDA was initiated at a cost of $37,200 federal. Village of Riverside construction was initiated at $183,287 federal and $107,159 non –federal. Addison, North Riverside was discontinued due to no Federal project at $358 federal;. Fox Lake construction was initiated at $77,883 federal and $0 for nonfederal.

Section 208, Clearing and Snagging: Deep River PDA was initiated at a cost of $17,404.

Section 1135, Project modification to improve Environment:

Fiscal Year 2004 Federal costs were 3,101,961 and non-Federal cost $712,834. . A total of $4,000 was spent on Section 1135 Coordination Account. Indiana Ridge Marsh P&S was initiated at $19,687. Chicago Sanitary and Ship Canal P&S completed and construction initiated at a cost of $3,078,273 Federal and $712,834 non federal.

Section 206, Aquatic Ecosystem Restoration:

Fiscal Year 2004 costs were $1,427,884 federal and $50,944 non-federal. A total of $9,700 was spent on Section 206 Coordination Account. Sqaw Creek, Lake County, IL DPR continued at a cost of $31,350. Hickory Creek, Tinley Park, DPR continued at a cost of $322. Chicago Botanical Garden, IL, construction were continued at a cost of $21,839 federal and $18,400 nonfederal. Cuneo Press, Chicago River, construction was completed at $934 federal and $2,387 non-federal. Weed Street, Chicago River construction was completed at $8,005 federal and 5,747 non-federal. Northside PREP/Von Steuben Chicago construction continued at $17,912 federal and $24,409 non-federal. Butler Lake, IL, P&S continued at a cost of $126,735 federal. Hoffman Dam, IL, DPR continued at a cost of $21,025 federal.

Poplar Creek, IL, DPR continued at a cost of $15,051 federal. Illinois and Michigan Canal DPR was initiated at a cost of $12,950 federal. Horner Park PRP completed at a cost of $$726. Paul Douglas Woods – South Barrington PRP completed at a cost of $2,332. federal. Wolf Lake, IN, P&S initiated at a cost of $184,755. Grass Lake, Fox River, IL, PDA was continued at a cost of $26,899. Kankakee Sands, Fair Oak Farm, IN, DPR was continued at a cost of $160,535. Lockport Prairie Nature Preserve, IL, DPR was continued at $119,615. Cedar Lake, IN, DPR was continued at a cost of $27,845 . Sequoit Creek PRP continued at a cost of $ 433. Spring Creek Valley PRP completed at $5,018. Nippersink Creek PRP completed at $4,868. Burnham Prairie PRP completed at $2,596. Orland Park DPR continued at $42,176. South Fork of the South Branch DPR continued at $171,450. Eugene Field PDA initiated $51,355 Ping tom Park PDA intiated at $44,724. Long Lake DPR continued at $279,526. Winfield Creek PRP continued at $3,122. Yellow River PRP continued at $6,921. Blackberry Creek DPR was initiated at $7,156. Red Mill Pond Dam DPR initiated at $9,760. Morton Arboretum, PRP continued at

$8,293 federal

Section 107, Navigation Harbor:
Fiscal Year 2004 costs were $169,258 federal and $59,058 non federal. A total of $10,000 was spent on Section 107 Coordination Account. Whiting Shoreline DPR was continued at $92,475 Federal and $59,058 non-Federal. Evanston Shoreline DPR was continued at $66,782.

General Investigations

32. SURVEYS

Fiscal Year 2004 costs were $1,149,714 federal and $793,057 non-federal. Itemized as follows:

	Federal	Non-federal
Flood Damage Prevention Studies	$ 557,582	$ 303919
Shoreline Protection	$ 11,086	$ 0
Special Studies	$ 156,113	$ 0
Review Authorized Projects	$ 83,932	$ 42,013
Miscellaneous Activities	$46,000	$ 0
Coordination Studies	$ 148,808	$91,523

33. COLLECTION AND STUDY OF BASIC DATA

Fiscal Year 2004costs were $50,004 federal and $0 non-federal itemized as follows:

Flood Plain Management Services
Federal $ 50,004 Non Federal $ 0

TABLE 22-A COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	FY 01	FY 02	FY 03	FY 04	Total Cost To Sept. 30, 2004	
1.	Burns Waterway	New Work:						
	Harbor, IN	Approp.	0	0	0	0	13,584,000	
	(Federal Funds)	Cost	0	0	0	0	13,584,000	
	(O&M)	Maint:						
		Approp.	3,701,760	1,424,000	5,345,000	2,186,000	26,135,864	
		Cost	3,701,606	1,412,121	5,335,876	2,170,980	26,099,458	
	(Contributed	New Work:						
	Funds)	Contrib.	0	0	0	0	15,900	
		Cost	0	0	0	0	15,900	
		Maint:						
		Contrib.	0	0	0	0	108,362	
		Cost	0	0	0	0	108,362	
2.	Burns Waterway	New Work:						
	Small Boat Harbor, IN	Approp.	0	0	0	0	2,000,000	
	(Federal Funds)	Cost	0	0	0	0	2,000,000	
	(O&M)	Maint:						
		Approp.	0	120,000	714,000	0	4,063,935	
		Cost	2,052	114,318	719,668	- 1,288	4,062,633	
	(Contributed	New Work:						
	Funds)	Contrib.	0	0	0	0	1,770,558	
		Cost	0	0	0	0	1,770,558	
3.	Burns Waterway	New Work:						
	Harbor (Major Rehab), IN	Approp.	0	0	0	0	13,384,200	
	(Federal Funds)	Cost	39	0	0	0	13,384,200	
	(Contributed	New Work:						
	(O&M)	Contrib.	0	0	0	0	0	
		Cost	0	0	0	0	0	
4.	Calumet Harbor and	New Work:						
	River, IL and IN	Approp.	0	0	0	0	22,578,567	1/
	(Federal Funds)	Cost	0	0	0	0	22,578,567	1/
	(O&M)	Maint:						
		Approp.	3,383,769	4,139,000	2,820,000	3,006,000	51,583,168	2/
		Cost	3,388,639	4,106,234	2,850,330	2,978,977	51,549,310	2/
		Rehab:						
		Approp.	0	0	0	0	5,428,001	3/
		Cost	0	0	0	0	5,428,001	3/
	(Contributed	Maint:						
	Funds)	Contrib.	0	0	0	0	836,667	
		Cost	0	0	0	0	836,667	

TABLE 22-A COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	FY 01	FY 02	FY 03	FY 04	Total Cost To Sept. 30, 2004	
5.	Chicago Harbor, IL	New Work:						
	(Federal Funds)	Approp.	0	0	0	0	4,788,827	4/
	(O&M)	Cost	0	0	0	0	4,788,827	4/
		Maint:						
		Approp.	3,396,561	3,274,000	2,193,000	3,392,000	59,370,507	
		Cost	3,306,885	3,309,242	2,266,244	3,403,277	59,326,350	
		Rehab:						
		Approp.	0	0	0	0	1,326,600	
		Cost	0	0	0	0	1,326,600	
	(Harbor and Dam Funds)	Maint:						
		Approp.	0	0	0	0	160,000	
		Cost	0	0	0	0	160,000	
6.	Chicago River, IL	New Work:						
	(Federal Funds)	Approp.	0	0	0	0	1,500,565	5/
	(O&M)	Cost	0	0	0	0	1,500,565	5/
		Maint:						
		Approp.	328,222	356,000	330,000	338,000	17,782,116	6/
		Cost	329,389	356,390	330,440	337,575	17,776,536	6/
7.	Indiana Harbor, IN	New Work:						
	(Federal Funds)	Approp.	0	0	0	0	4,897,148	7/
	(O&M)	Cost	0	0	0	0	4,897,148	7/
		Maint:						
		Approp.	409,077	64,000	61,000	289,934	15,285,499	8/
		Cost	408,235	63,747	62,219	285,560	15,281,120	8/
	(Contributed	New Work:						
	Funds)	Contrib.	0	0	0	0	12,500	
		Cost	0	0	0	0	12,500	
8.	Indiana Harbor, Confined	New Work:						
	Disposal Facility, IN	Approp	2,758,000	4,201,000	5,708,000	5,410,000	20,237,000	
	(Federal Funds)	Cost	1,297,280	4,632,385	5,942,152	5,293,384	19,188,667	
	(CG 212-075535)							
	(Contributed	New Work:						
	Funds)	Conrib.	100,000	2,779,454	1,750,000	1,500,000	6,129,454	
		Cost	94,322	633,171	2,627,535	1,231,034	4,586,062	
9.	Lake Michigan	Maint:						
	Diversion, IL	Approp.	804,200	810,000	1,191,000	495,000	8,963,200	
	(Federal Funds)	Cost	804,167	798,141	1,203,312	491,685	8,959,205	
	(O&M)							
10.	Michigan City	New Work:						
	Harbor, IN	Approp.	0	0	0	0	1,543,646	9/
	(Federal Funds)	Cost	0	0	0	0	1,543,646	9/

TABLE 22-A COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	FY 01	FY 02	FY 03	FY 04	Total Cost To Sept. 30, 2004	
		Maint:						
		Approp.	394,407	2,647,000	1,725,000	2,331,000	20,697,961	
		Cost	387,185	2,647,264	1,732,750	2,329,136	20,695,707	
		Rehab:						
		Approp.	0	0	0	0	1,618,670	
		Cost	0	0	0	0	1,618,670	
	(Contributed	New Work:						
	Funds)	Contrib.	0	0	0	0	30,512	
		Cost	0	0	0	0	30,512	
		Maint:						
		Contrib.	0	0	0	0	55,000	
		Cost	0	0	0	0	55,000	
11.	Waukegan Harbor, IL	New Work:						
	(Federal Funds)	Approp.	0	0	0	0	823,026	10/
	(O&M)	Cost	0	0	0	0	823,026	10/
		Maint:						
		Approp.	1,055,832	765,000	793,000	1,118,000	20,626,600	11/
		Cost	1,051,616	763,799	799,271	1,108,426	20,590,005	11/
15.	Casino Beach, IL	New Work:						
	(Federal Funds)	Approp.	0	0	0	0	2,525,000	
	(CG 412-013047)	Cost	0	0	0	0	2,465,517	
	(Contributed	New Work:						
	Funds)	Contrib.	0	0	0	0	2,499,481	
		Cost	0	0	0	0	2,449,481	
16.	Chicago Shoreline, IL	New Work:						
	(Federal Funds)	Approp.	20,193,000	25,626,000	20,404,000	19,812,000	134,301,800	
	(CG 412-013099)	Cost	20,220,973	25,450,497	20,547,975	19,654,674	134,082,410	
	(Contributed	New Work:						
	Funds)	Contr.Credits	1,750,000	25,334,136	23,450,479	15,204,000	70,638,615	
		Cost	1,750,000	25,334,136	21,475,672	10,016,379	63,476,187	
17.	Illinois Beach State	New Work:						
	Park, IL	Approp.	182,121	126,121	25,000	0	345,150	
	(Federal Funds)	Cost	0	123,074	33,073	767	344,291	
	(GI 132-079225							
18.	Indiana Dunes National	New Work:						
	Lakeshore, Beverly	Approp.	0	0	0	0	660,000	
	Shores, IN	Cost	0	0	0	0	660,000	
	(Federal Funds)	Maint:						
	(O&M)	Approp.	0	0	0	0	2,296,000	
		Cost	0	0	0	0	2,296,000	

TABLE 22-A COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	FY 01	FY 02	FY 03	FY 04	Total Cost To Sept. 30, 2004
19.	Indiana Shoreline	New Work:					
	Erosion, IN	Approp.	838,000	840,000	815,000	773,000	11,130,800 12/
	(Federal Funds)	Cost	815,267	156,054	1,459,247	774,315	11,061,361 12/
	(CG 411-013038)						
22.	Chicago River North	New Work:					
	Branch, IL	Approp.	0	0	0	0	191,884
	(Federal Funds)	Cost	0	0	0	0	191,884
	(O&M)	Maint:					
		Approp.	113,500	2,000	0	0	2,768,850
		Cost	112,519	2,770	0	0	2,768,632
	(Contributed	New Work:					
	Funds)	Contrib.	0	0	0	0	40,000
		Cost	0	0	0	0	40,000
		Maint:					
		Contrib.	0	0	0	0	1,785,441
		Cost	121,403	30,977	0	0	1,775,175
23.	DesPlaines River (PED), IL	New Work:					
	(Federal Funds)	Approp.	539,000	0	0	0	933,968
	(GI ; 451- & 651-)	Cost	484,714	65,847	1,539	432	933,968
		New Work:					
	(Contributed	Contrib.	227,860	100,000	0	0	414,989
	Funds)	Cost	178,843	47,548	81,257	-24,689	386,492
	(CG 511-010249)	New Work:					
	(Federal Funds)	Approp.	0	220,000	131,000	309,000	708,968
		Cost	0	177,105	69,298	386,887	682,258
	(Contributed	New Work:					
	Funds)	Contrib.	0	0	0	0	0
		Cost	0	0	0	0	0
24.	Lake George, Hobart, IN	New Work:					
	(**CG 511-008196)**						
	Federal Funds	Approp.	0	0	0	0	1,320,000
		Cost	0	0	0	1,500	1,314,167
25.	Little Calumet River, IN	New Work:					
	(Federal Funds)	Approp.	8,289,000	5,695,000	3,542,000	3,990,000	92,751,300 13/
	(CG 511-075325)	Cost	8,570,093	4,761,653	4,347,312	3,577,567	92,125,722 13/
	(Contributed	New Work:					
	Funds Required)	Contrib.	540,272	350,000	316,000	256,000	7,111,872
		Cost	599,185	369,934	381,690	190,568	6,966,295
	(Non-Federal	New Work:					
	Improvements)	Contrib.	591,000	0	0	0	2,207,500
		Cost	671,918	0	0	0	2,196,677

TABLE 22-A COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	FY 01	FY 02	FY 03	FY 04	Total Cost To Sept. 30, 2004
26.	Little Calumet River,	New Work:					
	Cady Marsh Ditch, IN	Approp.	350,000	106,600	1,138,000	3,477,000	6,413,600
	(CG 511-012385)						
	(Federal Funds)	Cost	77,791	341,459	271,390	1,310,595	3,380,585
27.	McCook and Thornton	New Work:					
	Reservoirs, IL	Approp.	5,362,000	11,195,600	11,415,000	20,024,000	77,137,600
	(Federal Funds)	Cost	5,433,534	11,072,469	11,352,631	19,774,562	76,690,850
	(CG 511-012574)	New Work:					
	(Contributed	Contrib.	1,625,000	3,465,000	13,300,000	15,505,400	39,895,400
	Funds)	Cost	3,337,720	1,715,102	12,806,005	12,806,005	39,410,146
28.	North Branch	New Work:					
	Chicago River, IL	Approp.	2,565,000	200,000	(58,000)	0	25,012,500 14/
	(Federal Funds)	Cost	2,664,082	205,129	24,628	31	25,006,458 14/
	(CG 511-075311)						
	(Contributed	New Work:					
	Funds Required)	Contrib.	0	0	0	0	2,259,832
		Cost	0	0	0	0	2,259,085
	(Non-Federal	New Work:					
	Improvements)	Contrib.	1,080	0	0	0	550,102
		Cost	1,079	0	0	0	550,101
	(Non-Federal Lead	New Work:					
	Shot Clean-up)	Contrib.	1,242,100	0	0	0	7,577,270
		Cost	1,256,534	0	0	0	7,576,668
	(Non-Federal	New Work:					
	Impact Assessment)	Contrib.	0	0	0	0	38,500
		Cost	0	0	0	0	38,500
	(Non-Federal	New Work:					
	Res. 27 IL Tollway)	Contrib.	0	0	0	0	11,166
		Cost	0	0	0	0	11,166
29.	O'Hare Reservoir, IL	New Work:					
	(Federal Funds)	Approp.	275,000	300,000	0	0	31,572,000
	(CG 511-012412)	Cost	196,425	393,929	8,112	155	31,567,668
	(Contributed	New Work:					
	Funds Required)	Contrib.	0	0	0	0	5,131,200
		Cost	10,382	40,698	0	0	5,079,991
	(Non-Federal	New Work:					
	Improvements)	Contrib.	0	0	0	0	2,810,000
		Cost	0	0	0	0	2,625,481

TABLE 22-A COST AND FINANCIAL STATEMENT

1 Includes $855,973 for previous projects.
2 Excludes contributed funds in settlement pursuant to decree (No. 54-C-1608) regarding removal of flue dust and includes $45,230 for previous projects.
3 Includes $689,001 in settlement pursuant to decree regarding removal of flue dust.
4 Includes $446,005 for previous projects.
5 Includes $955,886 for previous projects.
6 Includes $109,463 for previous projects.
7 Includes $60,668 for previous projects.
8 Includes $2,509 for previous projects.
9 Includes $287,389 for previous projects.
10 Includes $218,233 for previous projects.
11 Includes $15,711 for previous projects.
12 Includes $107,000 of CP&E funds obligated prior to 1 Oct 1985 which are excluded from total project costs IAW EC 1105-2-159 dated 25 Sep 1985.
13 Includes $670,529 of CP&E funds obligated prior to 1 Oct 1985 which are excluded from total project costs IAW EC 1105-2-159 dated 25 Sep 1985.
14 Includes $489,310 of CP&E funds obligated prior to 1 Oct 1985 which are excluded from total project costs IAW EC 1105-2-159 dated 25 Sep 1985.

TABLE 22-B AUTHORIZING LEGISLATION

Acts	Work Authorized	Documents
	BURNS WATERWAY HARBOR, IN (See Section 1 and 3 of Text)	
Oct. 27, 1965	Provides for breakwater and channel to present dimensions and depths, a north breakwater, west bulkhead, approach channel and outer harbor, east and west harbor arms.	Public Law, 89-298, H. Doc. 160. 88th Cong., 1st Sess.
	BURNS WATERWAY SBH, IN (See Section 2 of Text)	
Jul. 14, 1960 Sec. 107	Provides for a 700-foot north breakwater, a 950-foot west breakwater an entrance channel 11-feet deep, a harbor-of-refuge area 10 feet deep and a channel in Burns Waterway 6 feet deep.	Detailed Project Report detailed February 1983.
	CALUMET HARBOR AND RIVER, IL AND IN (See Section 4 of Text)	
Mar. 3, 1899	Outer harbor protected by breakwaters.	Annual Report, 1896, pp. 2584 et Seq. and H. Doc. 277, 54th Cong., 1st Sess.
Jun. 13, 1902		
Mar. 3, 1905	Five turning basins.	H. Doc. 172, 54th Cong., 2nd Sess.
Jun. 25, 1910	Provided for shape and dimensions of turning basins.	H. Doc. 346, 60th Cong., 1st Sess.
Sep. 22, 1922	Consolidated the two projects for Calumet Harbor and Calumet River.	
Aug. 30, 1935[1,2]	Detached breakwater, dredging outer harbor to existing project depth and dimensions; deepen river entrance channel and river to existing project depths; widen and straighten river channel; five turning basins to same depth as adjacent channel.	H. Doc. 494, 72nd Cong., 2nd Sess.
Aug. 30, 1935	Dredging area A and B in south end of Lake Calumet and an entrance channel 300 feet wide and 21 feet deep.	H. Doc. 180, 73rd Cong., 2nd Sess.
Mar. 2, 1945[3]	An approach channel to harbor 3,200 feet wide and 28 feet deep through shoals outside breakwater and closing existing gap between breakwaters.	H. Doc. 233, 76th Cong., 1st Sess.
Jul. 14, 1960[13]	Depth of 29 feet in lake approach to 28 feet in outer harbor, and 27 feet in river entrance up to E.J. & E. Ry. Bridge.	H. Doc. 149, 86th Cong., 1st Sess.[8]
Oct. 23, 1962[13]	Deepen, widen and straighten channel in Calumet River from E.J. and E. Ry. Bridge, to and including turning basins 1, 3 and 5 to 27 feet; enlarge turning basins 3 and 5; channel into Lake Calumet to 27 feet deep for 3,000 feet and a width of 1,000 feet; and eliminate turning basins 2 and 4 from project.	H. Doc. 87th Cong., 2nd Sess.[5]
Oct 27, 1965[13]	Modification of Act of Oct 23, 1962. Protection for Elgin, Joliet and Eastern Railway Bridge over the Calumet River, to permit dredging to full width of the south draw to depth of 27 feet, and temporary protection for center pier and south abutment of the New York, Chicago and St. Louis Railroad Bridge (Nickel Plate) to permit dredging of full width of south bridge draw to depth of 27 feet prior to its replacement.	H.R. 973, 89th Cong., 1st Sess.

TABLE 22-B AUTHORIZING LEGISLATION

Acts	Work Authorized	Documents
	CHICAGO HARBOR, IL (See Section 5 of Text)	
Jul. 11, 1870	Inner breakwaters and inner basin.	H. Ex. Doc. 114, 41st Cong. 2nd Sess. and Annual Report 1870, pp. 1562-1567
Jun. 14, 1880	Exterior breakwater.	Annual Report 1870, pp. 1562-1567
Mar. 3, 1899	Present project depth in basin and entrance to Chicago River.	Annual Report 1897, pp. 2790-2791
Jul. 25, 1912	Shore-arm and southerly extension of exterior breakwater	H.Doc 710, Cong, 2d Sess
Mar. 2, 1919	Modification of area to be dredged in inner basin.	H.Doc 1303, 64th Cong, 1st Sess.
Mar 3, 1931	Shore-arm extension of exterior breakwater transferred to Lincoln Park Commissioners.	Public Law 797, 71st Cong
Mar. 2, 1945	Resumption of jurisdiction over shore-arm extension breakwater and over certain navigable waters in Lake Michigan which lie in northwestern part of outer harbor.	Public Law 14, 79th Cong.
Oct. 23, 1962	Deepen a lake approach channel to 29 by 800 feet wide for 6,600 feet; deepen channel and maneuver area inside harbor entrance to 28 by 1,300 feet wide.	H.Doc. 485, 87th Cong., 2nd Sess.[4]
Dec. 4, 1981 Jul. 30, 1983	Provides for lock operations and maintenance responsibilities in the interests of navigation.	Sec. 107 of P.L. 97-88 P.L. 98-63
	CHICAGO RIVER, IL (See Section 6 of Text)	
Mar. 3, 1899	For project depth of 21 feet in lieu of that fixed by act of Jun 3, 1896.	Specified in act.
Jun. 13, 1902	Turning basins	Specified in act.
Mar. 2, 1907	Interpreted by Chief of Engineers, April 11, 1908, as adopting new work of the then existing project for 21-foot depth.	H. Doc. 95, 56th Cong. 1st Sess. (Annual Report, 1900, p. 3863 and Annual Report 1909, p. 709)
Mar. 2, 1919	Eliminated all work except maintenance of main river.	H. Doc. 1294, 64th Cong. 1st Sess.
Jul. 24, 1946	Dredging channel 9 feet deep to within 30 feet of existing bulkheads and river banks from North Ave. to Belmont Ave., thence 9 feet deep and 50 feet wide to Addison St.	H. Doc 767, 78th Cong., 2nd Sess.[6,7]
	INDIANA HARBOR, IN (See Section 7 of Text)	
Jun 25, 1910	Maintenance of outer harbor. Maintenance of inner harbor channel when deeded free of cost to and accepted by the United States.	H. Doc. 1113, 60th Cong., 2nd Sess.
Mar. 4, 1913	Breakwaters.	H. Doc. 690, 62nd Cong., 2nd Sess.
Mar 2, 1919	Lighthouse crib, present length and alignment easterly and northerly breakwaters.	Rivers and Harbors Committee Doc. 6, 65th Cong., 2nd Sess.

TABLE 22-B AUTHORIZING LEGISLATION

Acts	Work Authorized	Documents
Mar. 20, 1922	Reduce channel length to be maintained in extension to Lake George	Public Law 176, 67th Cong
Mar. 3, 1925	Authorized Secretary of War to modify project so far as relates to length and alignment of breakwaters and to sell Youngstown Steel and Tube Co. about 1,180 linear feet of shoreward end of existing north breakwater.	
Mar. 2, 1929	Accept 2.3 acres of land for construction of the Forks Turning Basin.	
July 3, 1930[10]	Existing project channel width and depth in Lake George Branch and turning basin at the Forks	Rivers and Harbors Committee Doc. 21, 71st Cong., 2nd Sess.
Jul. 30, 1932	Authorized Secretary of War to sell to Inland Steel Co., about 1,903 linear feet of southerly end of existing east breakwater.	Public Law 219, 72nd Cong.
Aug. 30, 1935[11]	Extended easterly breakwater, dredge entrance channel and outer harbor, deepen channel between bulkhead fills, widen main stem of canal and portion of Calumet River Branch to 141st St.	Rivers and Harbors Committee Doc. 29, 72nd Cong., 1st Sess.
Aug. 28, 1937	Modified conditions of local cooperation required before enlargement of Indiana Harbor Canal is undertaken by United States.	Rivers and Harbors Committee Doc. 13, 75th Cong., 1st Sess.
Jul. 14, 1960	Increase authorized depths of 29 feet in outer harbor entrance channel, 28 feet in outer harbor and 27 feet in canal entrance channel to first E. J. and E. Ry. Bridge.	H. Doc. 195, 86th Cong. 1st Sess.
Oct. 27, 1965[12]	Deepen main canal from landward end of canal entrance channel to a point lakeward of Dickey Place Bridge over a modified channel width of 190 feet, except through bridge openings.	H. Doc. 227, 89th Cong. 1st Sess.
	INDIANA HARBOR CDF, IN (See Section 8 of Text)	
	LAKE MICHIGAN DIVERSION (See Section 9 of Text)	
Nov. 17, 1986	Responsible for monitoring of Lake Michigan Diversion.	Section 1142, WRDA of 1986
	MICHIGAN CITY HARBOR, IN (See Section 10 of Text)	
	East breakwater and old east pier enclosing the outer basin.	Recommendations of a Board of Engineers, Annual Report 1870, p. 123.
	Extension of east pier.	Reports of Boards of Engineers, Annual Rpt 1851, pp. 2187-2189; Annual Report 1882, p. 2264-2266.
Mar, 3, 1889	Extend east pier and construct detached breakwater.	Annual Report 1897, pp. 2903-2904.
Mar 3, 1905	Lower turning basin. Rebuild west pier as at present location. Present project dimensions of entrance channel.	Joint Resolution of Cong. approved May 13, 1908. Public Law 23.

TABLE 22-B AUTHORIZING LEGISLATION

Acts	Work Authorized	Documents
Jun. 21, 1927	Existing project depth in channel, and in lower and middle turning basins, eliminated improvement of Trail Creek above middle turning basin and uncompleted portion of detached breakwater, abandonment of old east breakwater and old east pier enclosing outer basin.	H. Doc. 279, 69th Cong., 1st Sess.
Aug. 30, 1935	Restore and repair westerly 1,000 feet of east breakwater, dredging outer basin and enlarging entrance to basin through east pier.	River and Harbors Committee Doc 34, 74th Cong., 1st Sess.
Jul. 14, 1960 Sec. 107	Dredge river channel 50 feet wide and 6 feet deep from upper turning basin to E. Street Bridge.	Detailed Project Report dated June 1965[8].
	WAUKEGAN HARBOR, IL (See Section 11 of Text)	
Jun. 14, 1880	Parallel piers and basins.	Annual Rpt 1880, p. 142
Aug. 3, 1882	Modified location of harbor entrance.	Annual Report 1882, pp. 277, 2162.
Jun. 13, 1902	Detached breakwater, extend piers, increase width of harbor at inner end of north pier and dredge channel and basin to depth of 20 feet.	H. Doc. 343, 56th Cong., 1st Sess.
Jul. 3, 1930	Extension of breakwater to shore, dredging near outer end of north piers and enlarging inner basin.	Rivers and Harbors Committee Doc 27, 71st Cong., 2nd Sess.
Mar. 2, 1945	Dredge an entrance channel to existing project dimensions from outer end of north pier to project depth in lake and dredge an anchorage area in southwest corner of inner basin to existing project depth. Abandonment of dredging triangular area in southwest corner of inner basin to 18 feet deep.	H. Doc. 116, 77th Cong., 1st Sess.
Dec. 17, 1970 Sec. 201 Oct. 27, 1965	Provides for deepening the existing entrance channel in the outer harbor to 25 feet and extending to the depth in Lake Michigan, at widths varying from 380 feet to 500 feet; deepening the channel between piers to a depth of 23 feet at a width of 180 feet and deepening the inner basin to 23 feet and extending its limits approximately 275 feet northward.	H. Doc. 368, 90th Cong., 2nd Sess.
	CASINO BEACH, IL (See Section 15 of Text)	
Nov. 17, 1986	Provides for encasing approximately 1,800 feet of the existing Casino Beach jetty in steel sheet piling and a concrete cap and replacing beach fill.	Feasibility Report dated Feb. 1983.
	ILLINOIS BEACH STATE PARK, IL (See Section 17 of Text)	
Nov. 17, 1986	Provides for 46 offshore breakwaters approximately 150 feet long, initial beach nourishment of 100,000 cubic yards and periodic nourishment of 100,000 cubic yards at 5-year intervals.	Feasibility Report dated June 1982.

TABLE 22-B AUTHORIZING LEGISLATION

Acts	Work Authorized	Documents
	INDIANA DUNES NATIONAL LAKESHORE, BEVERLY SHORES, IN (See Section 18 of Text)	
Dec. 4, 1981	Provides for emergency shore protection repairs to stone revetment initially constructed in 1973.	Public Law 97-88
Jul. 30, 1983	Provides for operations and maintenance of shore protection measures.	Public Law 98-63
	INDIANA SHORELINE EROSION, IN (See Section 19 of Text)	
Nov. 17, 1986	Beach nourishment of 2-mile reach of shore west of Michigan City Harbor, Indiana	Sec. 501, WRDA 1986
	DES PLAINES, IL (See Sections 23 of Text)	
Aug. 17, 1999	Project has six structural features: Prospect Heights (Levee 37), Des Plaines (Levee 50), Big Bend Lake expansion, North Fork Mill Creek dam raise, Buffalo Creek expansion, Van Patten Woods lateral storage area.	Sec. 101, WRDA 1999
	LAKE GEORGE, HOBART, IN (See Section 24 of Text)	
Nov. 17, 1986	Removal of silt, aquatic growth and construction of silt traps.	Sec. 602, WRDA 1986.
	LITTLE CALUMET RIVER, IN (See Section 25 of Text)	
Nov 17, 1986	Provides for levee construction, a diversion control structure at the mouth of Hart Ditch. Permanent evacuation of a portion of the Black Oak area of Gary and non-structural flood proofing measures in Gary.	Sec. 401, WRDA 1986
	LITTLE CALUMET RIVER BASIN, CADY MARSH DITCH, IN (See Section 26 of Text)	
Nov. 17, 1986	Widening and deepening 1,250 feet of Cady Marsh Ditch, installing 4,880 feet of pipe and excavating 2,850 feet of open channel.	Feasibility Report dated April 1984
	McCOOK AND THORNTON RESERVOIRS, IL (See Section 27 of Text)	
Nov. 17, 1988	Provides for construction of two floodwater storage reservoirs in the quarries of the same name.	Sec. 3, WRDA 1988
	NORTH BRANCH CHICAGO RIVER, IL (See Sections 22 and 28 of Text)	
Nov. 17, 1986	Construction of three reservoirs and reimbursement to locals for 50% of the costs of Techny and Mid-Fork Reservoirs	H. Doc. 100-72, 100th Cong., 1st Sess., Sec. 401, WRDA 1986.
Dec. 31, 1970	Clearing fallen trees, roots and other debris and objects which contribute to flooding.	River and Harbor Act (Sec. 116)

TABLE 22-B AUTHORIZING LEGISLATION

Acts	Work Authorized	Documents
	O'HARE RESERVOIR, IL	
	(See Section 29 of Text)	
Nov. 17, 1986	Provides for a 1,050 acre-foot excavated reservoir.	Sec. 401, WRDA 1986

1. Included in Public Works Administrative Program Sep. 6, 1943 and Dec. 16, 1933.
2. Uncompleted portion was deauthorized in 1977 (dredging in front of U.S. Steel Corp.)
3. Uncompleted portion was deauthorized in 1977 (breakwater closure).
4. Contains latest map of harbor. Uncompleted portion is inactive.
5. Contains latest map of river.
6. Latest published map is in Annual Report for 1914, opposite p. 2928.
7. Contains latest published map of North Branch above North Ave.
8. Contains latest published map.
9. Completed under previous project.
10. Uncompleted portion was deauthorized in 1977 (widen and deepen Lake George Branch).
11. Include in Public Works Administration Program Sep. 6, 1933 and Jul. 25, 1934. Uncompleted portion was deauthorized in 1977 (widen and deepen main canal and Calumet River Branch).
12. Project deauthorized in 1977.
13. Project deauthorized in 1989.

TABLE 22-C EXISTING NAVIGATION PROJECTS

Section In Text	Project	Item	Length (feet)	Width (feet)	Depth (feet)
1.	Burns Waterway Harbor, IN	North Breakwater	4,630	____	____
		West Breakwater	1,200	____	____
		Approach Channel	2,200	400	30
		Outer Harbor	3,700	Varies	28
		East Harbor Arm	2,100	620	27
		West Harbor Arm	3,800	620	27
2.	Burns Waterway SBH, IN	North Breakwater	678	____	____
		West Breakwater	1,043	____	____
		Approach Channel	1,200	200	11
		Burns Waterway	5,593	100	9
4.	Calumet Harbor and River, IL and IN	Northerly Crib Breakwater	6,714	____	____
		Southerly Steel Breakwater	5,007	____	____
		North Pier	2,450	____	____
		Chicago Confined Disposal Facility	2,979	____	____
		Approach Channel	9,700	3,200	29
		Outer Harbor	10,500	3,000	28
		River Entrance	3,000	290	27
		Elgin, Joliet & Eastern Railway Bridge to turning basin No. 3	21,000	200	27
		Turning Basin No. 3 to Turning Basin No.5	8,000	Variable	27
		Approach into Lake Calumet	4,000	400	27
		Extension in Lake Calumet	3,000	1,000	27
		Turning Basins 1, 3 and 5	____	____	27
5.	Chicago Harbor, IL	Shore Arm Extension	2,250	____	____
		Exterior Breakwater	5,421	____	____
		Exterior Breakwater Southerly Extension	4,944	____	____
		North Inner Breakwater	4,034	____	____
		South Inner Breakwater	2,544	____	____
		North Pier	960	____	____
		Approach Channel	6,600	800	29
		Channel and maneuver	2,200	1,300	28
		Lock	600	80	23
		Inner Basin	1,270	740	21
		Entrance Channel	7,300	190-470	21
6.	Chicago River, IL	Main Branch of Chicago River	3,800	190-390	21
		North Branch of Chicago River	11,100	91-390	21
		North Branch Canal	5,500	56-210	21
		North Branch Turning Basin	____	____	21

TABLE 22-C EXISTING NAVIGATION PROJECTS

Section In Text	Project	Item	Length (feet)	Width (feet)	Depth (feet)
7.	Indiana Harbor, IN	Northerly Breakwater	1,120	____	____
		Easterly Breakwater	2,525	____	____
		Approach Channel	7,200	800	29
		Outer Harbor	7,200	Varies	28
		Entrance Channel	3,600	65-280	27
		Main Channel	7,400	61-210	22
		Turning Basin	____	____	22
		Lake George Branch	3,700	64-160	22
		Calumet River Branch	2,500	160-260	22
9.	Michigan City Harbor IN	Detached Breakwater	1,304	____	____
		West Pier	835	____	____
		East Pier	2,276	____	____
		East Breakwater	1,000	____	____
		Entrance Channel	1,900	150-425	18
		Main Channel	2,400	120-150	18
		Outer Basin	900	900	8-12
		Trail Creek	3,000	50-100	8
		Trail Creek	2,300	50	6
10.	Waukegan Harbor, IL	North Breakwater and Shore Connection	1,896	____	____
		North Pier into North Revetment	2,074	____	____
		South Pier	3,111	____	____
		Entrance Channel	3,250	390	22
		Channel to Inner Basin	1,700	200	18
		Inner Basin	1,650	375-500	18
		Anchorage Area	____[1]	____[1]	8

[1]Area of about 6 acres.

TABLE 22-D OTHER AUTHORIZED BRIDGE ALTERATION

Project	Full Report See Annual Report For	Cost to September 30, 2004 For Last Construction	Cost to September 30, 2004 For Last Operation and Maintenance
Calumet River Bridges[1]	1967	$1,625,068	____

[1]Transferred to Department of Transportation in accordance with Section 6(g) of the Act of October 16,1966. P.L. 89-670

TABLE 22-E OTHER AUTHORIZED BEACH EROSION PROJECTS

Project	Full Report See Annual Report For	Cost to September 30, 2004 For Last Construction	Cost to September 30, 2004 For Last Operation and Maintenance
Mt. Baldy, Indiana Dunes National Lakeshore, IN	1984	$1,500,000	____
Hollywood-Ardmore Beach, Chicago, IL	1982	237,271	____
Evanston, IL	1979	766,052	____
Lake Michigan-Lake Bluff, IL	1976	244,889	____
Lake Michigan-Lake Forest, IL[1]	1975	65,611	____
Illinois Shore of Lake Michigan, Kenilworth, IL[2]	1975	5,200	____

[1]Authorized by River and Harbor Act of 1954.
[2]Uncompleted portion deauthorized in 1977.

TABLE 22-F OTHER AUTHORIZED FLOOD CONTROL PROJECTS

Project	Full Report See Annual Report For	Cost to September 30, 2004 For Last Construction	Cost to September 30, 2004 For Last Operation and Maintenance
Lake Michigan, Edgewater/Rogers Park Communities, Chicago, IL	1989	$2,062,347	____
Little Calumet River, IL	1984	583,000	____
Kankakee River Ice Management	1993	44,791	____

TABLE 22-G DEAUTHORIZED PROJECTS

	For Last Full Report See Annual Report For	Date Deauthorized	Federal Funds Expended	Contributed Funds Expended
Illinois Shore of Lake Michigan, Winnetka, IL	1975	1977	----	----
Illinois Shore of Lake Michigan, Chicago, IL	1975	1977	----	----
Kankakee River, IL and IN				
Levee between Shelby Bridge and Baum's Bridge in IN	1938	Nov 17, 1986	----	----
Little Calumet River, IL and IN				
Little Calumet River and Tributaries, IL and IN	1968	Nov 17, 1986	53,136	----
Calumet Harbor and River, IL and IN				
Widening and straightening the Calumet River in the vicinity of 106th Street and closing the gap between breakwaters, and dredging minor shoals in the outer harbor.	1990	Jan 1, 1990	----	----
Wilmington Ice Control Demonstration	----	Nov 18, 1991	----	----

NASHVILLE, TN, DISTRICT

This district comprises portions of southern Kentucky, southwestern Virginia, western North Carolina, northern Georgia and Alabama, northeastern Mississippi and practically all of Tennessee except western portion, and embraces drainage basins of Tennessee and Cumberland Rivers and their tributaries.

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NAVIGATION

1. CHICKAMAUGA LOCK AND DAM, TN

Location. Chickamauga Lock is seven miles northeast of Chattanooga at Tennessee River Mile 471.

Existing Project. The 60 feet x 360 feet lock has been in operation since 1940 and passes over 1.6 million tons of traffic each year. Soon after construction, TVA recognized that an alkali aggregate reaction problem (commonly called concrete growth) existed throughout the project. This expansion of the concrete leads to stability concerns throughout the structure and misalignment of mechanical components. The problem will continue to affect lock operations and eventually result in closure of the lock. TVA and the Corps have determined the lock could remain open until at least 2010 with annual aggressive maintenance but costs to maintain the lock will begin to exceed replacement costs.

Project Description. In February 1999 TVA provided funds ($1.5M) to initiate feasibility studies for a Chickamauga Lock replacement. WRDA 00 directed the Corps to use TVA funds to prepare a Chief of Engineer's Report for a replacement lock. FY01 Supplemental Appropriations Act language directed that $500K of Chickamauga O&M funds be used to complete the feasibility effort. The feasibility study was completed April 2002 at a cost of $2M. A Chief's Report was signed in May 2002 recommending construction of a 75-foot x 400-foot replacement lock adjacent to the existing structure. Preconstruction engineering and design (PED) funds were provided in FY02 ($364K) to evaluate innovative lock construction methods and initiate preliminary design. In FY03 Congress authorized a 110-ft x 600-ft lock replacement and funds ($2.8M) were provided for design of road and utilities relocations, model construction and testing, and subsurface exploration to determine foundation conditions for the new lock.

Activities during fiscal year. FY04 funds were used to continue design and initiate project construction through relocations of mussel species and utilities. Road and Bridge design was completed and design for cofferdam and lock features continued. Industry representatives played a significant role in model testing and selection of the guidewall configuration.

2. CUMBERLAND RIVER, TN AND KY

Location. Formed by junction of Poor and Clover Forks in Harlan County, KY, about 694.2 miles above its mouth, and flows west to Burnside, KY, from whence it makes a loop southwestward into Tennessee, passes Nashville, and returns northwestward to Kentucky, emptying into Ohio River near Smithland, KY (See Geological Survey base maps of Tennessee and Kentucky.)

Previous projects. For details see pages 1898 and 1901 of Annual Report for 1915, and page 1208 of Annual Report for 1938, and pages 1069 and 1070 of Annual Report for 1962.

Existing project. For details, see Annual Report for FY02.

Local cooperation. Under modified project for 9-foot navigation and multiple-purpose development, recreation features of reservoir components are subject to certain conditions of non-Federal cost-sharing under Federal Water Project Recreation Act of 1965.

Terminal facilities. There are 42 terminals on the Cumberland River (5 Municipally owned and open for public use; 5 government owned facilities and 32 privately owned facilities). A total of 18 terminals have railroad connections. Principal commodities handled are petroleum products, stone, sands, gravel, coal, coke, iron, steel, chemicals and grain. Facilities considered adequate for existing commerce. For further information see page 695 of Annual Report for 1969.

Operations during fiscal year. New work: None. Maintenance: Operations and Maintenance improvements included repair of the lower gates at Cheatham Lock. A heavily damaged mooring cell was repaired at mile 42.5. Major rehab studies were continued for Barkley Power Plant and Old Hickory Power Plant. Work started on facility protection improvements at Cordell Hull and continued at Barkley and Old Hickory. An estimated 22.5 million tons of commodities were locked through the Cumberland River Locks. Commercial lockages were approximately 4,400 and 4,600 recreational craft were also locked through. Total sales energy generated at Barkley Dam (880,574,102 kw-hr) was made available through Southeastern Power Association to the Tennessee Valley Authority, Southern Illinois Power Cooperative, Big Rivers Rural Electric Cooperative Corporation, and Indiana Statewide Rural Electric Cooperative, Inc., Hoosier Energy Division. Total sales energy generated at Cheatham Dam (258,067,948 kw-hr), Cordell Hull (514,546,235 kw-hr), and Old Hickory (663,774,410 kw-hr) was made available for distribution. Activities under reservoir management program comprising malaria control, shoreline sanitation, land management and disposal, and maintenance of public-use facilities continued.

3. KENTUCKY LOCK ADDITION, KY

Location. Kentucky Lock and Dam is located in western Kentucky at Mile 22.4 of the Tennessee River between Livingston and Marshall Counties.

Existing Project. Kentucky L&D was completed in 1945 by the Tennessee Valley Authority. TVA continues to operate the dam and powerhouse while operation of the 110'x600' navigation lock is the responsibility of the Nashville District. Products from 20 states pass through the system of Kentucky and Barkley Locks, the lower-most locks on the Tennessee and Cumberland Rivers, respectively. Over 80% of the commercial tows hauling these products pass through KY Lock instead of Barkley Lock because of difficult and costly navigation on the Cumberland River below Barkley. Since most of the tows are greater than 600' in length, they must perform a time-consuming double lockage to transit through the existing 600' long KY Lock. This results in average delays between three to five hours per tow under existing traffic levels. Since the traffic levels are expected to grow in

the near future, these delays will also increase. The last traffic forecast developed in 1995 estimated that 43 M tons of products would be transported through the Kentucky-Barkley system in the year 2000. Actual tonnage for the system in 1997 was 43.5 M tons and has leveled out and decreased slightly over the few years since. The system tonnage in 2004 was 39.6 M tons. It typically costs a tow over $400/hour to wait in line at the lock. Construction of a new 1200' lock would eliminate the delay time in the near term and drastically shorten it for forecasted traffic levels past the year 2020.

Project Description. The 1992 Kentucky Lock Feasibility report recommended a new 110' X 1200' lock adjacent and landward of the existing 110' X 600' lock. The project was authorized for construction in WRDA 96. Average annual benefits attributed to a new lock are $71M (October 2003). Most of these benefits are associated with improving the performance of the lock by reducing traffic delays and disruptive lock outages for maintenance and major rehabilitation work. Based on an estimated construction cost of $579M (October 2002), the new lock project has a Benefit/Cost ratio of 2.2 (@5.875%). Other project features in addition to the new lock itself are three major relocation efforts: 1) four large TVA transmission towers, 2) about 2 miles of the Paducah and Louisville Railway, including a major river bridge, and 3) about 2 miles of U.S. Highway 62, also on a new major river bridge.

Activities during fiscal year. FY04 funding of $22.6 M was used to advance the design of the project, complete one construction contract, and continue construction on two contracts: 1) the Tennessee River Bridges' Substructures (85% complete), and 2) the Upstream Cofferdam (79% complete). The West Bank Approaches to the Tennessee River Bridges construction was completed in FY04. Significant design activities that were progressed in the FY include design of the lock including advancements in wall monoliths and electrical/mechanical features. Plans and specifications were essentially completed for three anticipated contracts: 1) the East Bank Approaches to the Tennessee River Bridges, 2) the Superstructure for the Tennessee River Bridges, and 3) the Upstream Lock Excavation.

4. TENNESSEE RIVER, TN, AL AND KY

Location. Formed by junction of French Broad and Holston Rivers in eastern Tennessee, 4.4 miles above Gay Street Bridge at Knoxville, flows southwest into northern Alabama, thence in a generally westerly course across north Alabama, to northeast boundary of Mississippi, thence nearly due north across Tennessee and Kentucky, entering Ohio River at Paducah, 652.1 miles from junction of French Broad and Holston Rivers. (See Geological survey base map of Tennessee River Basin.)

Previous projects. For details see pages 1902-1906, Annual Report for 1915; pages 1190-1194, 1196-1216, and 1220-1222, Annual Report for 1929; and page 1216, Annual Report for 1938.

Existing project. Originally provided for permanent improvement of river for a navigable depth of 9 feet at low water from mouth about 650 miles to Knoxville, TN. Only work performed by the Corps was construction of locks at General Joe Wheeler Dam and Wilson Dam. Tennessee Valley Authority program provided for obtaining authorized 9-foot project by construction of high dams and locks and utilization of certain locks and dams previously constructed under jurisdiction of the Corps. (See Table 23-B for Authorizing Legislation.) Subsequent construction by the TVA of Melton Hill Dam extends navigable channel of Tennessee River system up the Clinch River about 38 miles above damsite (mile 23.1) to vicinity of Clinton, TN. (See table 23-I on Tennessee River.) In accordance with general navigation laws placing control and supervision over navigable waters under direction of Secretary of the Army, the Corps of Engineers operates and maintains all locks, and maintains navigation channels and safety harbors by performing all necessary maintenance dredging and snagging operations. For information concerning other functions of the Corps under division of responsibilities for Tennessee River since adoption of Tennessee Valley Authority Act of 1933, see page 1084 of Annual Report for 1962.

Local cooperation. Authorization requires no local cooperation in construction of alternate system of low dams. It does, however, provide that if high dams are built before the United States builds projected locks and low dams which are to be replaced, the United States shall contribute to cost of substituted structures an amount equal to estimated cost of works of navigation for which substitution is made.

Terminal facilities. There are 150 terminals on the Tennessee River (13 municipally owned, 15 government owned facilities and 122 privately owned facilities). A total of 79 terminals have railroad connections. Principal commodities handled are petroleum products, stone, sand, gravel, coal, coke, grain, chemicals, iron, and steel. Facilities considered adequate for existing commerce. A list of terminals is revised annually and can be obtained from Division Engineer, Ohio River Division, Corps of Engineers, Cincinnati, Ohio. For further information see page 698 of Annual Report for 1969.

Operations during fiscal year. Channel work by government plant and hired labor consisted of dredging and snagging at various locations, and maintenance of mooring facilities and safety harbors. Cost of channel maintenance was $15,404. Maintenance: Major maintenance included dewatering and repairs to Guntersville Main and Auxiliary Locks. A heavily damaged mooring cell was repaired at mile 43.7. An old dock structure was removed and approximately 2,000 cubic yards of silt was dredged from Florence Port, mile 256.5, and placed upland by hired labor channel maintenance dredging. An estimated 49 million tons of commodities were locked through the Tennessee River Locks. Commercial lockages were approximately 21,000 and 16,500 recreational craft were also locked through. The long-term program to maintain Chickamauga Lock was continued. Major maintenance to keep the lock operational included a

dewatering and numerous repairs. The grating and handrails were upgraded to allow for large machinery on the lock and for pedestrian safety. A prefabricated bridge was installed to allow for access of machinery on the riverside of the lock. The mooring cells were reworked to limit damage to the lock. A reconditioned valve was installed and the area reworked due to AAR growth. Analysis of the lock continued with close monitoring of the instruments during the dewatering for safety precautions.

5. TENNESSEE-TOMBIGBEE WATERWAY, AL AND MS

Location. West Central Alabama and Northeastern Mississippi; in Marengo, Sumter, Greene and Pickens Counties, Alabama, and Noxubee, Lowndes, Clay, Monroe, Itawamba, Prentiss and Tishomingo Counties, Mississippi.

Existing project. For details, see Annual Report for FY02.

Local cooperation. Authorization requires local interests to construct, maintain and operate all highway bridges, construct and maintain all highway relocations or alterations, make and maintain alterations as required to sewer, water supply and drainage facilities, assume cost of operation and maintenance of utility crossings, provide and maintain as required suitable and adequate river and canal terminals in accordance with plans approved by the Secretary of the Army and the Chief of Engineers.

Operations during fiscal year. The Mobile District is responsible for operation and maintenance of the entire Tennessee-Tombigbee Waterway. The project is 100% complete.

6. NAVIGATION WORK UNDER SPECIAL AUTHORIZATION

Navigation activities pursuant to Sec. 107, Public Law 86-645, as amended (preauthorization).

During FY04 a total of $50,328 were expended for Section 107 projects, $42,736 for Point Mallard Park, Decatur, AL, $2,495 for Tri-State Commerce Park, Luica, MS and $5,097 in the coordination account.

ALTERATION OF BRIDGES

7. AUTHORIZED ALTERATION OF BRIDGES

Work on Woodland Street Bridge, under Truman-Hobbs Act, was initiated in 1965 and completed in 1966. Costs were $987,632. For details see page 922 of Annual Report for 1967.

FLOOD CONTROL

8. BIG SOUTH FORK NATIONAL RIVER AND RECREATIONAL AREA, KY AND TN

Location. The project is located in Northeastern Tennessee and Southeastern Kentucky along the Big South Fork River and its tributaries in Pickett, Scott, Fentress, and Morgan Counties, Tennessee, and McCreary County, Kentucky.

Existing project. A National River and Recreation Area was established in accordance with the concept included in the interagency report prepared pursuant to section 208 of Flood Control Act of 1968. Total acreage was not to exceed 125,000 acres. The act specifically established the National Area for the purpose of preserving and interpreting the scenic, biological, archeological and historical resources of the river gorge area and developing the natural recreational potential of the area. The project was authorized by the Water Resource Development Acts of 1974, 1976, and 1986. (See table 23B for authorizing legislation). The authorized cost (ceiling) for the project was $156,122,000. $112,588,920 was appropriated to the Corps of Engineers for design and construction of park facilities. The first construction contract was awarded in June 1981. By Memorandum of Agreement dated 1 October 1990 jurisdiction of the area was transferred to The Department of Interior.

Local cooperation. None required.

Operation during fiscal year. The Memorandum of Agreement between the Department of Army and the Department of Interior, transferring jurisdiction of the Big South Fork National River and Recreation Area, itemized activities to be completed by the Army. No construction items were completed this fiscal year.

9. BLACK FOX, MURFREE, AND OAKLAND SPRINGS, TN

Location. Black Fox, Murfree, and Oaklands Springs, wetlands lie in Murfreesboro, Tennessee.

Existing project. Project features include trails, boardwalks, observation platforms, parking, removing exotic invasive vegetation, and planting native species. At Oaklands, the existing ante-bellum mansion will be enhanced by planting tree species native to Tennessee. Ecosystem restoration features include the creation of additional wetlands and in-stream structures. Murfree Springs plans include demolishing several existing buildings to provide space for an environmental education center and creating additional wetland habitat. Only ecosystem restoration measures will be constructed at Black Fox. Funding was provided from FY95 thru FY02 for Master Plan, Design, and Construction on Murfree, Oaklands and Black Fox. The Oaklands Phase I and Murfree Springs Phase II contracts were awarded in Sep 01 and construction continued through FY02 and FY03. Construction at Black Fox was initiated in Oct 01 and completed in Dec 02. A supplement to the decision document was completed in May 02 and approved by the Assistant Secretary of the Army for Civil Works in Dec 02. FY03 appropriations were used to bring the Phase I Oaklands and Phase II Murfree contracts to 99% completion. Design of Oaklands Phase II and Murfree Phase III and the interpretive features was also initiated

Local cooperation. The project authorization by WRDA 96 and the City of Murfreesboro, TN is the local sponsor. Cost

sharing is 75% Federal and 25% non-Federal. Real estate costs over 25% will be borne by the Federal Government.

Operations during fiscal year. FY04 appropriations were used to complete design of Oaklands Phase II and Murfree Phase III, initiate fabrication and installation of the signs and initiate a design contract to complete the project.

10. HAMILTON COUNTY STREAMBANK STABILIZATION, TN

Location. The project is on the Tennessee River, in central Chattanooga, TN from approximate river mile 464 to 468. The bank stabilization consists of stone protection at 5 sites along this reach of the river.

Existing project: High floodwaters have caused slope failures and erosion along both previously protected and unprotected areas of the riverbank. Endangered facilities include a large interceptor sewer line (which serves a major portion of North Chattanooga), riverwalk trails, observation decks, fishing piers, drain pipes, ramps, power poles, roads, bridge abutments and parks/recreation facilities. Streambank protection is stone armament using graded limestone (referred to as “riprap”).

Local cooperation: WRDA of 1996 authorized $7.5 M (Federal) for Streambank Stabilization. Hamilton County is the project's sponsor; the City of Chattanooga is also sponsoring the project through a separate agreement with Hamilton County. Chattanooga and Hamilton County provided funding to initiate a feasibility study in FY97 ($150K) under our Work for Others Program. This information was the basis for development of the decision document called a Detailed Project Report (DPR). Congress appropriated $6.0M through $1.5M increments each for FY98 through FY01. The Corps has received $4.23M in Federal funds during this time and has expended $4.1M through September 03. We have prepared a Detailed Project Report (DPR) and Environmental Assessment (EA), executed a Project Cooperation Agreement (PCA) and completed construction on 4-1/2 of 5 sites. Sites 1 through 4 (Coolidge Park, Heritage Landing and Manker Patten to Curtis Pole Road) were completed in 2000. Construction was completed on the lower two-thirds of Site 5 - Rivermont Park to Crutchfield Bar during FY02.

Operations during fiscal year: Final construction of bank protection at the Rivermont to Crutchfield site was completed. Final operation and maintenance (O&M) manuals are being compiled to recommend future work items to maintain the integrity of the bank protection.

11. MARTINS FORK LAKE, KY

Location. Dam located at mile 15.6 on Martins Fork of Clover Fork, Cumberland River, about 10 miles southeast of city of Harlan, with reservoir extending about 6 miles upstream within Harlan County, southeastern Kentucky.

Existing project. Multiple-purpose improvement Combining flood control with water quality control and recreation development adopted by 1965 Flood Control Act (H.Doc. 244, 89th Cong.), in general accordance with recommendations. Dam is concrete type, 504 feet long and rising 97 feet above streambed. Outlet works provide for release of water from reservoir at varying levels. Drainage area above damsite is 55.7 square miles. At full pool level, spillway crest at elevation 1341 above mean sea level, reservoir will cover 578 acres and contain 21,120 acre-feet of storage capacity. Provision is made for 17,450 acre-feet of reservoir capacity between elevations 1341 and 1300 for control of floods in winter and spring season, and 14,360 acre-feet (El. 1341-1310) during summer and fall, in conjunction with which storage of 3,090 acre-feet would be available on a seasonal basis to meet streamflow requirements for water quality control and fish life below the dam. A minimum permanent pool of 3,670 acre-feet, 274 acres in extent, is available during the potential flood seasons; and during late spring and summer when flood storage can be reduced, the lake is operated generally at a higher level (El. 1310) to maintain a larger surface area of 340 acres for recreation and provide the required seasonal storage for releases of water during critical low-flow periods. Project prevents a major portion of average annual flood losses at Harlan and results in significant stage reductions with related benefits along rural reaches and to other urban areas downstream. Actual cost of project including $95,000 code 710 funds is $20,479,911. First construction contract awarded in December 1972. Project completed for beneficial use in September 1978.

Local cooperation. Federal Water Project Recreation Act of 1965 (P.L. 89-72) applies in regard to non-Federal participation in recreation development, in addition to which local interests are to provide certain safeguards to ensure functioning of reservoir as intended. In May 1981 a final recreation cost-sharing contract with Harlan County was approved and certain recreation facilities have been jointly developed by the Corps and the County. These facilities, consisting of a swimming beach and a picnic area are now operated and maintained by Harlan County. Recreation investment to date (Corps and Local) is about $100,000.

Operations during fiscal year. New work: None. Maintenance: Only routine maintenance.

12. MIDDLESBORO, CUMBERLAND RIVER BASIN, KY

Location. At Middlesboro, Ky., on Yellow Creek, a tributary entering Cumberland River about 660 miles above its mouth.

Existing project. A system of canals and levees around one side of town, arranged so as to divert most headwaters of Yellow Creek away form present channel through heart of city. Protection is thus afforded in large measure to life and property within business district and a large part of residential section. For project details, see page 1088 of Annual Report for 1962.

Local cooperation. None required.

Operations during fiscal year. New work: None. Maintenance: Only routine maintenance.

13. TUG AND LEVISA FORKS OF THE BIG SANDY RIVER AND UPPER CUMBERLAND, WV, VA AND KY

Location. The project is located in the State of West Virginia and the Commonwealths of Kentucky and Virginia. The Cumberland portion consists of the Upper Cumberland River Basin, above Cumberland Falls, KY. The basin is approximately 100 miles in length, averaging 30 miles in width at the lower portion and 10 miles in width upstream at Harlan KY. The Big Sandy Basin is within the Huntington District and the Cumberland within the Nashville District.

Existing project. Provides for flood control measures for communities in the Tug and Levisa Forks and Upper Cumberland River Basins. The Cumberland portion has been assigned to the Nashville District. Only activities of the Nashville District are reported herein. Estimated Federal cost of new work under jurisdiction of the Nashville District is $474,616,000. The project was authorized by the Energy and Water Development Appropriation Act of 1981, Section 202 of PL 96-367.

Local cooperation. Flood protection cost for Williamsburg, Middlesborough and Clover Fork, KY are shared with their sponsors in accordance with provisions defined by WRDA 86. The sponsor has responsibility to operate and maintain such works upon completion of construction.

Operations during fiscal year. Nonstructural evacuations and floodproofings continued at the communities along the Clover Fork of the Cumberland River.

14. OHIO RIVER BASIN (NASHVILLE DISTRICT)

Location. A series of levees, floodwalls, channel improvements, and reservoirs in Ohio River Basin within Nashville District.

Existing project. The general comprehensive plans approved for flood control and other purposes in Ohio River Basin is set forth in legislation listed in Table 23-B. Individual projects, local protection projects and lakes, considered in comprehensive plan within Nashville District are listed in Table 23-K.

15. INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS

Flood Control Act of June 22, 1936, and subsequent acts, requires local interests furnish assurances 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 their respective districts. Maintenance inspections were made during fiscal year of completed protective works in localities transferred to local interests for maintenance and operation. Local interests were advised, as necessary, of measures required to maintain projects in accordance with standards prescribed by regulations. Fiscal year cost was $38,715. Total cost to September 30, 2004 was $651,897. For project inspection data see table 23-M.

16. FLOOD CONTROL WORK UNDER SPECIAL AUTHORIZATION

Flood control and coastal emergencies (Public Law 99, 84th Cong., and antecedent legislation). Actual Federal cost for the fiscal year was $253,168 for disaster preparedness.

MULTIPLE-PURPOSE PROJECTS, INCLUDING POWER

17. CENTER HILL LAKE, OHIO RIVER BASIN, TN

Location. Dam is on Caney Fork River, 26.6 miles above its confluence with Cumberland River (mile 309.2) at Carthage, TN. It is in DeKalb County, TN., about 55 miles east of Nashville, and 14 miles southeast of Carthage, TN. Reservoir extends about 64 miles up main stream and about 10 miles up Falling Water River and lies within DeKalb, Putnam, White, and Warren Counties, TN.

Existing project. A combination earth and concrete gravity-type dam, hydroelectric powerplant, and reservoir for primary purposes of flood control and power production, with a permanent pool for public use and conservation purposes. In addition to main dam structure, provision was made for a rolled-earth dike to close a saddle in reservoir rim near damsite. For further details, see page 1099 of 1962 Annual Report. Actual cost of project including $8,940,642 code 710 funds is $53,412,022.

Local cooperation. None required on completed project. Recreation development subject to certain conditions of non-Federal cost-sharing under Federal Water Project Recreation Act of 1965.

Operations during fiscal year. New work: None. Maintenance: Dam was operated and structure and its appurtenance maintained as required. Operation of powerplant was continuous except for normal interruptions and necessary shutdowns for inspection and maintenance purposes. Total sales energy generated (414,975,800 kw-hr) was made available through the Southeastern Power Association to Tennessee Valley Authority for distribution. Activities under reservoir management involved land management, public relations, and maintenance of public use facilities. Operations and Maintenance work included continued investigation of leakage through the rim of the dam. A major rehab study of the power plant was continued. Work started on facility protection improvements.

18. DALE HOLLOW LAKE, OHIO RIVER BASIN, TN AND KY

Location. Dam is on Obey River, 7.3 miles above its confluence with Cumberland River (mile 380.9) at Celina, TN. It is in Clay County, TN, and about 80 miles northeast of Nashville, TN 28 miles north of Cookeville, TN, and 3 miles

east of Celina, TN. Reservoir extends about 51 miles up main stream, 10 miles up East Fork, and 6 miles up West Fork of Obey River, and lies within Cumberland and Clinton Counties, KY, and Clay, Pickett, Overton, and Fentress Counties, TN.

Existing project. A concrete gravity-type dam, hydroelectric powerplant, and reservoir for primary purposes of flood control and power production with a permanent pool for public use and conservation purposes. See page 1096 of 1962 Annual Report for project details. Cost of project including $2,195,600 code 710 funds and $150,000 non-Federal funds recreation facilities under the completed projects program is $28,317,746.

Local cooperation. None required on completed project; future recreation development subject to certain conditions of non-Federal cost-sharing under Federal Water Project Recreation Act of 1965.

Operations during fiscal year. New work: None.
Maintenance: Dam was operated and structures and appurtenances maintained as required. Operation of powerplant was continuous except for normal interruptions and necessary shutdowns for inspection and maintenance purposes. Total sales energy generated (156,523,000 kw-hr) was made available through the Southeastern Power Association to Tennessee Valley Authority for distribution. Activities under reservoir management program involved public relations, and management and maintenance of public-use facilities. Work started on facility protection improvements.

19. J. PERCY PRIEST DAM AND RESERVOIR, OHIO, RIVER BASIN, TN

Location. Damsite is on Stones River, 6.8 miles above its confluence with Cumberland River (mile 205.9); in Davidson County, TN.; and about 7 miles east of Nashville, TN. Reservoir extends southeasterly from dam about 32 miles along main stream, 10 miles up East Fork, 6.5 miles up West Fork, and for shorter distances up other tributaries of Stones River; and lies within Davidson, Rutherford, and Wilson Counties, TN.

Existing project. A combination earth and concrete gravity-type dam, hydroelectric powerplant, and reservoir for primary purposes of flood control, power production and recreation. For further details see page 703 of 1969 Annual Report. Cost of project including $3,260,400 under code 710 funds and $46,000 non-Federal funds for recreation facilities under the completed projects program is $56,914,039.

Local cooperation. Recreation development subject to certain conditions of non-Federal cost-sharing under Federal Water Project Recreation Act of 1965.

Operations during fiscal year. New work: None.
Maintenance: Dam was operated and structures and appurtenances maintained as required. Total sales energy generated (70,198,400 kw-hr) was made available through Southeastern Power Association to Tennessee Valley Authority for distribution. Activities under reservoir management program involved public relations, fish and wildlife management, and maintenance of public-use facilities. Work started on facility protection improvements.

20. LAUREL RIVER LAKE, OHIO RIVER BASIN, KY

Location. Damsite is at mile 2.3 on Laurel River, a tributary of Cumberland River, in south-central Kentucky. The two streams meet about 9 miles below Cumberland Falls, a prominent physiographic feature at head of Lake Cumberland, which is formed by Wolf Creek Dam. Reservoir extends 19.2 miles upstream to site of Corbin, KY water-supply dam and lies within Laurel and Whitley Counties.

Existing project. Project approved in general accordance with recommendations of House Document 413, 86th Congress, by 1960 Flood Control Act, as amended by Public Law 88-253, was designed for purposes of flood control, power, and recreation as an integral unit of a coordinated plan for development of water resources of Cumberland River Basin. With the view of net gain in power potential on a system basis, the plan of improvement incorporated appropriate flood control storage in the proposed project and corresponding adjustment in operations of Wolf Creek Dam - Lake Cumberland for flood control and power, which in effect constituted a transfer of reservoir capacity without entailing a change in flood control benefits. Further detailed study giving full consideration to power capabilities and marketing arrangements indicated the advantage of maintaining present storage allocation at Wolf Creek and use of all available storage capacity of Laurel River Lake for power. The power plant is complete. Recreation was completed in FY86. Total cost is $56,741,232.

Local cooperation. None required.

Operations during fiscal year. New work: None.
Maintenance: Dam was operated and structures and Appurtenances maintained as required. Total sales energy generated (89,210,000 kw-hr) was made available through Southeastern Power Association for distribution. A replacement satellite system for remote operations was purchased.

21. WOLF CREEK DAM - LAKE CUMBERLAND, OHIO RIVER BASIN, KY

Location. Wolf Creek Dam is on Cumberland River at mile 460.0 (above mouth) in Russell County, KY, about 10 miles southwest of Jamestown and 12 miles north of Albany, KY. Lake Cumberland extends 101 miles up main stream, 48 miles up South Fork of Cumberland River, in Russell, Clinton, Wayne, Pulaski, McCreary, Laurel, and Whitley Counties, KY.

Existing project. A combination earth and concrete gravity-type dam, hydroelectric powerplant, and reservoir for primary purposes of flood control and power production, with a permanent pool for public-use and conservation purposes.

See page 1094 of 1962 Annual Report for project details. Cost of project is $188,267,195. This cost includes $3,259,372 code 710 funds, $880,000 non-Federal funds for recreation facilities under the completed pro-gram, and $104,999,237 for major rehabilitation. WRDA 96 authorized an Uprate Project of the hydroelectric power-plant. Activity involving the integrity of the structure began in 1968 when a leak or seepage developed in the embankment. The major rehab embankment contract was physically completed in September 1982.

Local cooperation. None required on completed project; future recreation development subject to certain conditions of non-Federal cost-sharing under Federal Water Project Recreation Act of 1965.

Operations during fiscal year. New work: None.
Maintenance: Dam was operated and structures and appurtenances maintained as required. Operation of powerplant was continuous except for normal interruptions and necessary shutdowns for inspection and maintenance purposes. Total sales energy generated (1,207,366,000 kw-hr) was made available through Southeastern Power Association to Tennessee Valley Authority for distribution. Activities under reservoir management program involved land management activities, public relations, and maintenance of public-use facilities. Operations and Maintenance work included anchoring of a concrete crack and continued investigation of seepage through the dam. Fabrication continued on floating plant for removal of debris. Work was continued for facility protection improvements at the dam. A major rehab study of the power plant was continued. Contracts were awarded for rehab of the powerplant overhead crane and rewind of generator unit 4.

G ENERAL INVESTIGATIONS

22. SURVEYS

Costs for this period were $627,421 for which $196,504 was for Navigation Studies, $236,839 for Flood Damage Prevention Studies, $132,289 for Special Studies, $33,055 for Miscellaneous Activities and $28,734 for Coordination With Other Agencies and Non-Federal Interests.

23. COLLECTION AND STUDY OF BASIC DATA

Costs for this period were $139,089, for which $131,081 was for Floodplain Management Services and $8,007 for General Hydrologic studies.

24. PRECONSTRUCTION ENGINEERING AND DESIGN

Costs for this period were $2,142 for Local Protection ($2,142 for Metro Center Levee, Nashville, TN).

TABLE 23-A COST AND FINANCIAL STATEMENT

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sept 30, 2004
1. Chickamauga Lock and Dam, TN		New Work					
		Approp.				3,684,000	3,684,000
		Cost	-	-	-	3,598,691	3,598,691
2. Cumberland River TN and KY		New Work					
		Approp.					320,252,240[1, 2, 3]
		Cost	-	-	-	-	320,252,240[1, 2, 3]
		Maint.					
		Approp.	26,539,201	28,394,07	26,262,011	25,063,897	596,360,669[4]
		Cost	26,044,500	23,494,463	26,387,012	29,950,783	595,885,053[5]
3. Kentucky Lock TN and KY		New Work					
		Approp.	24,142,000	19,684,000	23,003,900	22,582,000	134,327,900
		Cost	24,395,456	20,456,766	23,024,115	22,367,097	134,051,721
4. Tennessee River, TN, AL, and KY		New Work					
		Approp.	-	-	-	-	16,251,428[6]
		Cost	-	-	-	-	16,251,428[6]
		Maint.					
		Approp.	14,254,767	15,151,046	13,277,710	15,496,300	369,399,231[7]
		Cost	13,918,383	15,419,213	13,268,874	15,490,801	369,327,739[8]
		Rehab.					
		Approp.	-	-	-	-	400,000
		Cost	-	-	-	-	400,000
5. Tenn.-Tombigbee Waterway, AL and MS		New Work					
		Approp.	0	0	0	0	749,013,050
		Cost	0	0	0	0	749,013,050
8. Big South Fork National River and Rec. Area, KY and TN		New Work					
		Approp.	0	0	0	0	112,588,920[9]
		Cost	791	4,241	0	0	112,577,899[10]
9. Black Fox/Oaklands Springs, TN		New Work					
		Approp.	1,676,000	1,680,700	1,596,000	681,300	9,637,000
		Cost	1,248,025	3,189,928	2,115,739	508,139	9,003,604
10. Hamilton County, TN		New Work					
		Approp.	1,257,076	478,600	126,057	195,168	6,148,632[11]
		Cost	2,803,955	398,909	1,316,483	548,985	6,036,385[12]
11. Martins Fork Lake, KY		New Work					
		Approp.	-	-	-	-	20,479,911
		Cost	-	-	-	-	20,479,911
		Maint.					
		Approp.	654,465	711,151	639,000	684,000	14,922,456
		Cost	650,909	707,523	644,206	684,197	14,919,898
12. Middlesboro, Cumberland River Basin, KY		New Work					
		Approp.	-	-	-	-	817,830[13]
		Cost	-	-	-	-	817,830[13]
		Maint.					
		Approp.	71,785	50,000	50,000	86,000	2,724,451
		Cost	72,822	49,521	50,580	86,000	2,724,451
13. Tug & Levisa Forks of the Big Sandy & Cumberland River, WV, VA and KY		New Work					
		Approp.	12,011,300	7,456,940	10,664,000	17,287,331	392,892,106[14]
		Cost	11,490,106	8,042,451	7,267,6961	8,812,003	378,110,296[15]

TABLE 23-A *(continued)* COST AND FINANCIAL STATEMENT

See Section In Text	Project	Funding	FY01	FY02	FY03	FY04	Total to Sept 30, 2004
17.	Center Hill Lake, Ohio River Basin, TN	New Work					
		Approp.	-	-	-	-	53,412,022[16]
		Cost	-	-	-	-	53,412,022[17]
		Maint.					
		Approp.	5,629,947	4,993,828	5,241,000	5,823,865	125,913,716[18]
		Cost	5,678,972	4,977,694	5,127,370	5,583,007	125,496,236[19]
18.	Dale Hollow Lake Ohio River Basin, TN and KY	New Work					
		Approp.	-	-	-	-	28,317,746[20]
		Cost	-	-	-	-	28,317,746[21]
		Maint.					
		Approp.	4,111,988	4,744,947	4,433,000	4,954,427	109,838,389[22]
		Cost	4,117,903	4,533,147	4,543,553	4,809,799	109,592,392[23]
19.	J. Percy Priest Dam and Reservoir, Ohio River Basin, TN	New Work					
		Approp.	-	-	-	-	56,914,039[24]
		Cost	-	-	-	-	56,914,039[25]
		Maint.					
		Approp.	4,127,951	3,526,812	3,503,000	3,951,715	86,510,129[26]
		Cost	4,127,844	3,467,542	3,533,964	3,809,178	86,339,175[27]
20.	Laurel River Lake, Ohio River Basin, KY	New Work					
		Approp.	-	-	-	-	56,741,232
		Cost	-	-	-	-	56,741,232
		Maint					
		Approp.	1,262,082	1,362,474	1,354,000	1,351,466	29,148,965[28]
		Cost	1,283,774	1,356,396	1,341,716	1,335,410	29,111,066[29]
21.	Wolf Creek Dam and Lake Cumberland, Ohio River Basin, KY	New Work					
		Approp.	-	-	-	-	83,267,958[30]
		Cost					83,267,958[30]
		Maint.					
		Approp.	6,478,330	7,931,009	8,007,000	11,392,055	166,507,864[30]
		Cost	6,491,179	6,328,153	7,617,889	10,361,180	163,243,994[31]
		Rehab.					
		Approp	-	-	-	-	104,999,237[32]
		Cost					104,999,237[32]

1. Includes $9,707,354 for abandoned and/or replaced works under the old Cumberland River system. (Amount includes $826,253 for new work and $3,266,706 for maintenance on previous project.)
2. Includes $61,733 public works acceleration funds, and $102,966 contributed by the State of Kentucky and $6,750 contributed by metropolitan Nashville, TN.
3. Includes $298,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.
4. Includes $955,889 for special recreation use fees, and $2,628,257 for maintenance and operation of dams and other improvements of navigable waters, and $1,892,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.
5. Includes $955,889 for special recreation use fees, and $2,628,257 for maintenance and operation of dams and other improvements of navigable waters, and $1,892,000 funds provided
6. Includes $14,007,193 for new work and excludes $4,005,175 for maintenance on previous projects.
7. Includes $495,763 for maintenance and operation of dams and other improvements of navigable waters, and $764,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.
8. Includes $495,763 for maintenance and operation of dams and other improvements of navigable waters, and $764,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.
9. Includes $300,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.
10. Includes $300,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.
11. Includes $1,363,331 contributed by Hamilton County, TN
12. Includes $1,274,632 contributed by Hamilton County, TN
13. Includes $33,876 Emergency Relief Funds.
14. Includes $23,152,597 contributed by the State of Kentucky.
15. Includes $22,328,089 contributed by the State of Kentucky.
16. Includes $35,896 public works acceleration funds, and

TABLE 23-A **COST AND FINANCIAL STATEMENT**
(continued)

$148,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.

17. Includes $35,896 public works acceleration funds, and $148,000 funds provided from the Productive Employment Appropriation Act(PL 98-8) of 1983.

18. Includes $292,280 funds for special recreation use fees, and $1,083,678 for maintenance and operation of dams and other improvements of navigable waters, and $91,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.

19. Includes $292,280 funds for special recreation use fees, and $1,083,678 for maintenance and operation of dams and other improvements of navigable waters, and $91,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.

20. Includes $51,789 public works funds and $150,000 contributed by the State of Tennessee, and $341,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.

21. Includes $51,789 public works funds and $150,000 contributed by the State of Tennessee, and $341,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.

22. Includes $339,480 funds for special recreation use fees, and $1,083,678 for maintenance and operation of dams and other improvements of navigable waters, and $482,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.

23. Includes $1,083,678 funds for special recreation use fees, and $884,178 for maintenance and operation of dams and other improvements of navigable waters, and $482,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.

24. Includes $46,000 contributed by the Metropolitan Government, Nashville, TN.

25. Includes $46,000 contributed by the Metropolitan Government, Nashville, TN.

26. Includes $260,680 for special recreation use fees, and $1,226,978 for maintenance and operations of dams and other improvements of navigable waters, and $40,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.

27. Includes $260,680 for special recreation use fees, and $1,226,978 for maintenance and operations of dams and other improvements of navigable waters, and $40,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.

28. Includes $66,678 for maintenance and operations of dams and other improvements of navigable waters.

29. Includes $96,920 public works acceleration funds, and $880,000 contributed by the State of Kentucky.

30. Includes $82,048 public works acceleration funds, and $198,578 for maintenance and operation of dams and other improvements of navigable waters, and $278,780 funds for special recreation use fees, and $293,000 fund provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.

31. Includes $82,048 public works acceleration funds, and $198,578 for maintenance and operation of dams and other improvements of navigable waters, and $278,780 funds for special recreation use fees, and $293,000 funds provided from the Productive Employment Appropriation Act (PL 98-8) of 1983.

32. Includes $203,757 for claim paid on initial construction of switchyard.

TABLE 23-B AUTHORIZING LEGISLATION

See Section In Text	Date of Authorizing Act	Project and Work Authorized	Documents
1.		**CHICKAMAUGA LOCK AND DAM, TN**	
	Feb 20, 2003	Authorize the construction of a replacement lock	H. R. 108-10, 108th Congress, 1st sess
2.		**CUMBERLAND RIVER BELOW NASHVILLE**	
	Jul 13, 1892	Provision made for lock A	Annual Report, 1890, p. 2151
	Jun 25, 1910	Provision made for locks B to F, and for dredging below lock F.	H. Docs. 758, 60th Cong., 1st sess.; and 1481, 60th Cong., 2d sess.1
	Aug 30, 1935	Repairing dams A to F, inclusive, and surmounting same with movable crests	H. Doc. 38, 73d Cong., 1st sess.
	Jul 24, 1946	Provision of 9-foot channel by the construction of 3 moderate height dams below Nashville, via, Kuttawa (Eureka), Dover, and Cheatham.	H. Doc. 761, 79th Cong., 2d sess.
	Jun 19, 1952	Provision for hydroelectric power production as a function of Cheatham Dam.	
	Sep. 3, 1954	Construction of Barkley (Lower Cumberland) dam and reservoir project for navigation, flood control, hydroelectric power, and related purposes in lieu of Kuttawa and Dover navigation-only structures.	S. Doc 81, 83d Cong., 2d sess.
	Jul 14, 1960	Authorized change in alignment of Illinois Central Railroad.	H. Doc. 56, 86th Cong., 2d sess.
	Oct 12, 1996	Authorized construction of Kentucky Lock for navigation only.	WRDA 96
2.		**CUMBERLAND RIVER ABOVE NASHVILLE**	
	Aug. 5, 1886	Provision made for locks and dams; the Secretary of War to determine the final plan of improvement. Dimensions of the locks fixed in accordance with reports of Mar. 30, 1887, and Nov. 25, 1890.	Annual Report 1884, p. 1663 Annual Report 1888, p. 1622, and Annual Report 1892, p. 1933.
	Mar 2, 1907	Adoption of the report of the Board of Engineers, dated Feb. 26, 1906, limiting the lock and dam construction to locks and dams 1 to 7, and 21.	H. Doc. 699, 59th Cong., 1st sess.
	Mar 2, 1919	Provision made for locks and dams 8 to 17.	Rivers and Harbors Committee Doc. 10, 63d Cong., 2d sess.
	Jun 5, 1920	Authorizes work to proceed in Tennessee without waiting for action of local interests in Kentucky.	
	Jul 3, 1930	Raising dam 1, 3 feet.	Rivers and Harbors Committee Doc. 26, 70th Cong., 2d sess.
	Jun 26, 1934[2]	Operation and care of locks and dams provided for with funds from War Department appropriations for rivers and harbors.	
	Jul 24, 1946	Construction of Old Hickory, Cordell Hull (Carthage), and Celina Dams above Nashville for navigation and the development of power resources.	H. Doc. 761, 79th Cong., 2d sess.

TABLE 23-B AUTHORIZING LEGISLATION
(continued)

See Section In Text	Date of Authorizing Act	Project and Work Authorized	Documents
	Oct 1, 1980	Design and construct flood control measures for communities in the Upper Cumberland River basins.	Sec. 202, PL 96-367
	Oct 17, 1996	Authorized ecosystem restoration at three wetlands and historic sites in Murfreesboro, TN.	WRDA 96
	Oct 12, 1996	Authorized hydropower update at Wolf Creek Dam	WRDA 96
4.		**TENNESSEE RIVER**	
	Jul 3, 1930	Authorized navigable depth of 9 feet from mouth about 650 miles to Knoxville, Tennessee to be obtained by construction of low dams.	H. Doc. 328, 71st Cong., 2d sess.
	May 18, 1933	Authorized TVA to construct such dams in the Tennessee River as will provide a 9 foot channel.	
	Oct 12, 1996	Authorized flood damage reduction by nonstructural methods in Hamilton County, TN.	WRDA 96
	Oct 12, 1996	Authorized a study for a bank stabilization project on the Tennessee River in Hamilton County, TN.	WRDA 96
	Oct 12, 1996	Authorized assistance to non-Federal interests for environmental activities in Jackson County, AL.	WRDA 96
14.		**OHIO RIVER BASIN, NASHVILLE DISTRICT**	
	Aug 28, 1937	Construct levees, floodwalls, and drainage structures for protection of cities and towns in Ohio River Basin. Project to be selected by Chief of Engineers with approval of Secretary of War at a cost not to exceed $24,877,000 for construction.	Flood Control Committee Doc. 1, 5th Cong., 1st sess.
	Jun 28, 1938	Approved general comprehensive plan for flood control and other purposes in Ohio River Basin as may be advisable at discretion of Secretary of War and Chief of Engineers and for initiation and partial accomplishment of plan, authorized $75million for reservoirs and $50,300,000 for local flood protection works.	Flood Control Committee Doc. 761, 75th Cong., 3d sess.
	Aug 18, 1941	Additional $45 million for prosecution of comprehensive plan for Ohio River Basin.	
	Dec 22, 1944	Additional $70 million for further prosecution of comprehensive plan for Ohio River Basin.	H. Doc. 762, 77th Cong., 2d sess.
	Jul 24, 1946	Additional $125 million for further prosecution of comprehensive plan.	H. Doc. 506, 78th Cong., 1st sess.
	May 17, 1950	Additional $100 million for prosecution of comprehensive plan for Ohio River Basin.	
	Dec 30, 1963	Additional $150 million for further prosecution of comprehensive plan for flood control and other purpose in Ohio River Basin.	

TABLE 23-B *(continued)* AUTHORIZING LELGISLATION

See Section In Text	Date of Authorizing Act	Project and Work Authorized	Documents
	Jun 18, 1965	Additional $89 million for further prosecution of comprehensive plan for Ohio River Basin.	H. Doc. 6755, 89th Cong., 1st sess.
	Aug 13, 1968	Additional $35 million for further prosecution of comprehensive plan for Ohio River Basin.	S. 3710, 90th Cong., 2d sess.
	Jun 19, 1970	Additional $69 million for further prosecution of comprehensive plan for Ohio River Basin.	H. R. 15166 91st Cong., 2d sess.
	Mar 7, 1974	Authorized Big South Fork National River and Recreation Area, KY and TN. Total area not to exceed 125,000 acres.	H. R. 10203 93rd Cong. Water Resources Develop. Act of 1974 Amended by PL 94-587, 94th Cong.
	Mar 7, 1974	Additional $120 million for further prosecution of comprehensive plan for Ohio River Basin.	H. R. 10203 93rd Cong. River Basin Monetary Authorization Act of 1974.
5.		**TENNESSEE-TOMBIGBEE WATERWAY**	
	Jul 24, 1946	Construction of waterway to connect above rivers and provide a 9 foot channel and minimum bottom width of 170 feet in river and canal sections and 150 feet in the divide cut, with locks 110 by 600 feet clear inside dimensions.	H. Doc. 486, 79th Cong. 2d sess.
		Subsequent studies determined most practical plan consists of channel with bottom width of 300 feet (280 feet in divide cut), fewer locks with higher lifts resulted in reducing number of lifts from 18 to 10 and reduced length from 260 to 253 miles.	Page 1343, Part I, FY68 House Hearings

1. Contains latest published maps. Included in Public Works Administration Program Sept. 6, 1993.
2. Permanent Appropriation Repeal Act.

TABLE 23-C OTHER AUTHORIZED NAVIGATION PROJECTS (All Projects not Specifically Identified in Text)

Project	Status	For last Full Report see Annual Report	Cost to Sept, 2004 Construction	Cost to Sept, 2004 Operation and Maintenance
Caney Fork River, TN	abandoned	1895	$ 27,828	-
Clinch River, TN and VA	abandoned	1923	53,949	7,873
Duck River, TN	abandoned	1887	13,000	-
Elk River, AL and TN	abandoned	1904	4,000	-
French Broad and Little Pigeon Rivers, TN	abandoned	1931	249,605	33,554
Holston River, TN	abandoned	1911	5,714	-
Little Tennessee River, TN	abandoned	1888	5,510	-
Obey River, TN	abandoned	1887	11,500	-
Red River, TN	abandoned	1884	5,000	-
South Fork of Cumberland River, KY	abandoned	1892	11,967	-

TABLE 23-E OTHER AUTHORIZED FLOOD CONTROL PROJECTS (All Projects not Specifically Identified in Text)

Project	Status	For last Full Report see Annual Report	Cost to Sept, 2004 Construction	Cost to Sept, 2004 Operation & Maintenance
Barbourville, KY	completed	1963	$2,088,147	-
Coal Creek and Tributaries (Lake City), TN	completed	1962	460,134	-
Corbin (Lynn Camp Creek), KY	completed	1969	567,703	-
Middlesboro (Yellow Creek), KY	completed	1949	26,309	-
Paint Rock River, AL	completed	1967	544,173	-
Pineville, KY	completed	1963	1,679,126	-

1. Includes 9,950 contributed in funds.

TABLE 23-F OTHER AUTHORIZED MULTIPLE-PURPOSE PROJECTS (Including Power)

Project	Status	For last Full Report see Annual Report	Cost to Sept, 2004 Construction	Cost to Sept, 2004 Operation and Maintenance
Barkley Dam and Lake Barkley, KY and TN	beneficial use	-	$162,056,539[1]	$192,810,940[2]
Celina Dam, KY	inactive	-	222,575	-
Cheatham Lock and Dam, TN	beneficial use	-	31,682,762	139,214,331[2]
Cordell Hull Lock and Dam, TN	beneficial use	-	79,874,492	98,276,149[2]
Old Hickory Lock and Dam, TN	beneficial use	-	52,266,412	165,583,634[2]

1. Includes $15,557,895 cost for Cross Creek.

2. Details given under "Cumberland River, TN and KY " See Table 23-H

TABLE 23-G DEAUTHORIZED PROJECTS

Project	Status	For last full report see Annual Report	Cost to Sept, 2004 Construction	Cost to Sept, 2004 Operation & Maintenance
Three Islands Reservoir, Ohio River Basin, TN	1970	Authorized: FC Act 1938, PL 761, 75 Cong., 3rd sess.; FC Act 1946, PL 525, 79th Cong., 2d sess. Deauthorized: 5 Aug 1977.	$111,855	-
Middlesboro, Yellow Creek Bell County, KY	-	Authorized: FC Act, Dec 22, 1944, PL 534, 78th Congress. Deauthorized:17 Oct 1986. Water Resources Development Act of 1986, PL 99-662, 99th Cong., 2d sess.	-	-
Cumberland River above Nashville, TN	-	Authorized: River & Harbor Act, Aug 5, 1886. Deauthorized: 17 Oct 1986. Water Resources Development Act of 1986, PL 99-662, 99th Cong., 2d sess.	-	-
Hiwassee River, Polk and Bradley Counties, TN	1923	Authorized: River & Harbor Act Aug 14, 1876. Deauthorized: 17 Oct 1986. Water Resources Development Act of 1986, PL 99-662, 99th Cong., 2d sess.	123,065	-
Rossview Lake, Tennessee and Kentucky	-	Authorized: FC Act, Jan 28, 1938, PL 76175th Congress. Deauthorized: 17 Oct 1986. Water Resources Development Act of 1986, PL 99-662, 99th Cong., 2d sess.	6,779	-
Celina Lake, Kentucky and Tennessee		Authorized: Rivers and harbors Act of 1946. PL 79-522. Deauthorized: July 9, 1995, Section 1001 (B) (2) of PL 99-662.		

TABLE 23-H CUMBERLAND RIVER, TN AND KY: PRINCIPAL FEATURES (See Section 1 of Text)

Nearest town	Kuttawa, KY 11 miles.	Ashland City, TN 9 miles	Old Hickory, TN 3 miles	Carthage, TN 5 miles
Miles above mouth of river	30.6	148.7	216.2	313.5
Lock dimensions (feet)1	110 by 800	110 by 800	84 by 400	84 by 400
Lift at normal pool levels (feet)	57	26	60	59
Depths on guard-sills at minimum pool levels (feet)	11, upper; 13, lower	14, upper; 17, lower	14, upper; 13, lower	14, upper; 13, lower
Character of foundation	Rock	Rock	Rock	Rock
Dam:				
Type	Concrete gravity and earthfill	Concrete gravity	Concrete gravity and earthfill	Concrete gravity and earthfill
Height	157	75	98	93
Length, exclusive of lock section (feet)	9,959	800	3,605[2]	1,138[2]
Spillway:				
Gross length (feet)	804	480	325	291
Net length opening (feet)	660	420	270	225
Crest gates:				
Type	Tainter	Tainter	Tainter	Tainter
Number	12	7	6	5
Size (feet)	55 by 60	60 by 27	45 by 41	45 by 41
Operating levels at dam (feet, mean sea level):				
Maximum regulated	375	-	450[3]	508[3]
Normal operation:				
Full pool	359	385	-	508
Minimum pool	354	382	-	501
Minimum pool in advance of floods	346	-	442	499
Reservoir area (acres)	93,430	7,450	27,450	13,920
Reservoir capacity (acre-feet):				
Flood control	1,213,000[3,4]	-	125,000[5]	85,600[5,6]
Power drawdown	259,000	19,800[7]	63,000	20,500
Dead storage	610,000	84,200	357,000	204,800
Total	2,082,00	104,000	545,000	310,900
Canal:				
Length (mile)	1.75	-	-	-
Bottom width (feet)	400	-	-	-
Depth a minimum pool Level (feet)	11	-	-	-
Power Development				
Number of units	4	3	4	3
Generator rating (kilowatts)	32,500	12,000	25,000	33,333
Total installation (kilowatts)	130,000	36,000	100,000	100,000
Percent of project completion				
Year opened to navigation	1964	1952	1952	1973
Cost[9]	$ 162,056,539[10]	$31,682,762	$52,266,412	$79,874,492

TABLE 23-H *(continued)*

CUMBERLAND RIVER, TN AND KY: PRINCIPAL FEATURES
(See Section 1 of Text)

1. Clear width and length available for full width.
2. Exclusive of lock section.
3. Surcharge.
4. Normal operation (elv. 375-359) during nonflood season; flood control allowance to be increased to 1,472,000 acre-feet (elev. 375-354) during season of major floodflows.
5. Surcharge storage.
6. During flood season (3lev. 508-501); minimum 51,800 acre-feet (elev. 508-504) with normal operation during non-flood season.
7. Daily pondage allowance; run-of-river project.
8. Completed for full beneficial use.
9. Includes recreation facility costs.
10. Includes $15,557,895 cost for Cross Creek.

TABLE 23-I

TENNESSEE RIVER
(SEE SECTION 3 OF TEXT)

Project[1]	Miles Above Mouth	Miles from Nearest Town	Lift Dimensions: Width of Chamber (feet)	Length Available for Full Width (feet)	Lift: Normal (feet)	Lift: Maximum (feet)	Minimum on Guard Sills: Lower (feet)	Minimum on Guard Sills: Upper (feet)	Character of Foundation	Year Opened Navigation	Kind of Dam	Type of Construction	Cost of Each Lock and Dam
Kentucky	22.4	0.5 above Gilbertsville, KY	110	600	56	73.3	12.7	11.0	Limestone	1942	Fixed	Concrete and earthfill	2
Pickwick Landing:													
Auxiliary lock	206.7	4.4 above Hamburg, TN	110	600	55	63.0	12.8	10.0	Limestone	1937	Fixed	Concrete and earthfill	3
Main lock	206.7	4.4 above Hamburg, TN	110	1000	55	63.0	12.8	10.0	Limestone	1984	Fixed	Concrete and earthfill	3
Wilson:													
Auxiliary lock	259.4	2.9 above Florence, AL	60	292 300	94	100.0	11.0[4]	11.2	Limestone	1927	Fixed	Concrete and earthfill	$46,973,540[5]
Main lock	259.4	2.9 above Florence, AL	110	600	94	100.0	13.0	13.0	Limestone	1959	-	-	7
General Joe Wheeler:													
Auxiliary lock	274.9	18.4 above Florence, AL	60	400	48	51.5	13.2	14.7	Limestone	1934	Fixed	Concrete and earthfill	1,796,295[6]
Main lock	274.9	18.4 above Florence, AL	110	600	48	51.5	13.0	13.0	Limestone	1963	Fixed	Concrete and earthfill	7
Guntersville:													
Auxiliary lock	349.0	9.1 below Guntersville, AL	60	360	39	45.0	11.8	13.0	Limestone	1937	Fixed	-	3 & 7
Main lock	349.0	9.1 below Guntersville, AL	110	600	39	45.0	12.7	13.0	Limestone	1965	Fixed	Concrete and earthfill	7
Nickajack:													
Auxiliary lock	424.7	39.4 below Chattanooga, TN	110	600	39	41.0	13.0	13.0	Limestone	1967	Fixed	Concrete	7
Main lock	424.7	39.4 below Chattanooga, TN	110	800	39	41.0	13.0	13.0	Limestone		Fixed	Concrete	7
Chickamauga	471.0	6.9 above Chattanooga, TN	60	360	49	53.0	13.0	10.0	Limestone	1939	Fixed	-	3 & 7
Watts Bar	529.9	6.8 above Breedenton, TN	60	360	58	70.0	11.8	12.0	Shale	1941	Fixed	Concrete and earthfill	3
Fort Loudon	602.3	1.3 above Lenoir City, TN	60	360	72	80.0	11.8	12.0	Limestone	1943	Fixed	Concrete and earthfill	3
Melton Hill (Clinch R.)	23.1	22.1 above Kingston, TN	75	400	54	60.0	13.0	13.0	Limestone	1963	Fixed	Concrete	2

TABLE 23-I **TENNESSEE RIVER**
(continued) **(SEE SECTION 3 OF TEXT)**

1. H. Doc 328, 71 Cong., 2d sess, contains table, pp. 98 and 99, giving pertinent information concerning low dams contemplated under 1930 project. Annual Report for 1938, pp. 1218 and 1219, contains similar information pertaining to low dams in addition to existing locks and dams, including those constructed or under construction by Tennessee Valley Authority.
2. Lock and dam constructed by Tennessee Valley Authority.
3. Lock and dam constructed by Tennessee Valley Authority.
   Design for lock prepared with Corps forces and funds.
4. Tailwater in canal; flight of 2 locks.
5. Constructed by the Corps under authority of sec. 124, National Defense Act of June 3, 1916, (H. Doc. 1262, 64th Cong., 1st sess.).
   Actual cost of lock and dam.
6. Actual cost of lock only as constructed by the Corps; dams constructed by Tennessee Valley Authority.
7. Constructed by Tennessee Valley

TABLE 23-J TENNESSEE RIVER, TN, AL, AND KY TOTAL COST OF EXISTING PROJECTS TO SEPT 30, 2004 (See Section 3 of Text)

Funds	New Work	Channel Maintenance	Operation & Maintenance	Total
Regular	$2,244,236[1,2]	$15,118,045	$354,215,714	$371,577,994
Maintenance	-	-	11,665	11,665
Increase of compensation rivers and harbors, 1919 (certified claims)	-	5	-	5
Total	$2,244,236[1,2]	$15,118,050	$354,227,379	$371,589,664

1. In addition, surplus property valued at $54,336 was transferred from the project without reimbursement. Excludes $4,005,175 expended between 18900 and June 30,1935, on operation and care of works of improvement under provisions of appropriation for such purposes.
2. Excludes $14,007,192 previous construction cost.

TABLE 23-K OHIO RIVER BASIN (NASHVILLE DISTRICT) LOCAL PROTECTION PROJECTS

Location	Type of Protection	Estimated Cost Federal	Non-Federal	Total
Cumberland, KY	Channel Improvement	$520,000	$240,000	$760,000[1]

TABLE 23-L RESERVOIRS

Tributary Basin and Reservoir	Stream	Total Federal Cost
Center Hill Lake	Caney Fork	$53,412,022[1]
Dale Hollow Lake, TN and KY	Obey River	28,167,746[1,2]
J. Percy Priest Dam & Reservoir, TN	Stones River	56,868,039[1,3,4]
Laurel River Lake, KY	Laurel River	56,741,232[5]
Martins Fork Lake, KY	Martins Fork	20,479,911

1. Details of this project are in individual report.
2. Excludes $150,000 contributed by the State of Tennessee.
3. Excludes $46,000 contributed by Metro Gov't of Nashville, TN.
4. Formerly Stewarts Ferry Reservoir.
5. See "Other authorized multiple-purpose projects."

TABLE 23-M INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS

(See Section 14 of Text)

Project	Date of Inspection
Barbourville, KY	13 April 2004
Corbin, KY	12 April 2004
Harlan, KY	15 April 2004
Lake City, TN	16 April 2004
Middlesboro, KY (Yellow Creek)	15 April 2004
Middlesboro, KY (Diversion Canal)	15 April 2004
Muscle Schoals, AL	16 June 2004
Pineville, KY	14 April 2004
Spring City, TN	16 April 2004
Sunbright, TN (Whiteoak Creek)	16 April 2004
Walls End, Ky	14 April 2004
Williamsburg, KY	12 April 2004

TABLE 23-N FLOOD CONTROL WORK UNDER SPECIAL AUTHORIZATION

Flood Control activities pursuant to Section 205
P.L. 858, 80th Congress, as amended

Project	FY04 Cost
Section 205 Coordination Account	$ 7,311
Little Limestone Cr, TN	91,708
Muscle Shoals, AL	-18,472
Emily Avenue/Tim. St., TN	154,996
Little River, Hopkinsville, KY	20,863
Oak Grove, Christian Co., KY	4,530
Buena Vista Pipeline, Muscle Shoals, AL	-61,044
Shoal Creek, Lawrenceburg, TN	2,500
Beaver Creek & Tribs, Bristol, VA	12,613
Beaver Creek & Tribs, Bristol, TN	6,642
Metro Center Levee, Nashville, TN	92,448
Mouse Creek, Cleveland, TN	5,599
Tazewell, VA	33,487
Richland Creek, Nashville, TN	35,993
Chilhowie, VA	40,061
E. Fork Stons river, Greenwood Estates	3,445
Swords Creek, Russell Co, VA	26,154
Kimball, TN LRN 516	9,421
Total	$ 468,253

TABLE 23-N *(continued)* FLOOD CONTROL WORK UNDER SPECIAL AUTHORIZATION

Emergency Bank Protection (Section 14 of the 1946 Flood Control Act, P.L. 526, 79th Congress)

Project	FY04 Cost
Section 14 Coordination Account	$25,169
Blannahassett Island, French Broad River	16,079
Lakeshore Park, Knoxville, TN	34,868
North 1st Sewer, Nashville, TN	180,099
Rivers Landing Drive, New Hope, TN	18,334
Ditto Landing, Phase II, Huntsville, AL	128,902
Red River Streambank Stabilization, TN	-76,909
Gay Street, Nashville, TN	11,013
Damascus, Va	20,364
Sheffield Park, Sheffield, AL	29,038
Terminal Road, Chattanooga, TN	39,028
Cowan Street, Nashville, TN	34,650
Lee Drive, Lenoir City, TN	24,849
Total	$485,483

LOUISVILLE, KY DISTRICT

This district encompasses southwestern Ohio, all of Central Kentucky and portions of western and eastern Kentucky, the southern 3/4 of Indiana, and southeastern Illinois, all included in the drainage basin of the Ohio River and its tributaries (exclusive of Tennessee and Cumberland Rivers) from mile 438 (below Pittsburgh) immediately upstream from Foster, KY., to the mouth of the Ohio.

All cost and financial statements for projects are listed at the end of this chapter. All other tables are referenced in text and also appear at the end of this chapter.

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Navigation - Channels and Harbors

1. OPEN CHANNEL WORK, LICKING RIVER, KY

Location. The Licking River originates in southeastern Kentucky and flows generally northwesterly to its confluence with the Ohio River at Covington, KY, mile 470.2 below Pittsburgh, PA. The Licking River Basin includes the drainage area of the Licking River, and all other left bank tributaries of the Ohio River from Markland Locks and Dam (Ohio River Mile 531.5) upstream to Meldahl Locks and Dam (Ohio River Mile 436.2).

Existing project. There are no locks and dams on the Licking River. However, a navigable depth of 9 feet is maintained up to mile 7.0 on the Licking River.

Local Cooperation. None.

Terminal facilities. Facilities for bulk commodities, oil products, and coal are considered adequate for existing traffic.

Operations during fiscal year. New Work: None. Maintenance: None.

Navigation - Locks and Dams

2. CONSTRUCTION OF LOCKS AND DAMS, OHIO RIVER

For report on this improvement, see the heading under Ohio River.

3. GREEN AND BARREN RIVERS, KY

Location. Green River rises in Casey County, KY, flows northwesterly 370 miles, and empties into the Ohio River about 8 miles above Evansville, IN. Barren River rises in Monroe County, KY, flows northwesterly 130 miles, and empties into Green River 1/2 mile above Lock 4 and 149.5 miles above the mouth of Green River.

Existing project. Six locks and dams on Green River and one on Barren River were constructed in pools of dams to provide a navigable depth of 9 feet and width of 200 feet from the Ohio River to mile 103 Green River, 3.2 miles upstream from Paradise, KY and a navigable depth of 5.5 feet from mile 103 Green River to Mammoth Cave, KY, mile 197.8 Green River, and from mouth of Barren River mile 149.5 Green River to Bowling Green, KY, mile 30.1, Barren River. Of these facilities, only Green River L&D 1 and 2 are still operational. Green River L&D 3, 4, 5, 6 and Barren River L&D 1 are maintained by the Corps in a caretaker status.

Fluctuations in stage vary considerably at different locks. At Lock 3, Green River, ordinary high stages are from 12 to 15 feet above pool level, and at Lock 1, Barren River, from 7 to 10 feet above pool. Maximum stages of record are 34 feet above normal pool stage at Lock 3, Green River, and 29 feet at Lock 1, Barren River, obtained during floods of 1937 and 1913, respectively.

(See Table 24-B for authorizing legislation and Table 24-H for principal features of the locks and dams.)

The Louisville District has prepared a draft report regarding the disposal of Locks and Dams 3 through 6 on the Green River and Lock and Dam 1 on the Barren River. The report recommends filling the lock chambers at all of the sites and removal of the dam at Green River L&D 6. A final report will be released to the public in January 2005.

Local Cooperation. Fully complied with.

Terminal facilities. Coal handling facilities located on the Green River between miles 81.5 and 108.1 near South Carrollton, Rockport, Paradise and Rochester, Kentucky, are considered adequate for existing commerce.

Operations during fiscal year. New Work: None. Maintenance: Routine maintenance was performed.

Condition at end of fiscal year. Locks and Dams 1 and 2, Green River, are in good condition. Dam 3 on the Green and Dam 1 on the Barren are in fair condition and the locks at those locations are in poor condition. Lock 4, Green River, is in poor condition. Dam 4, Green River, failed May 24, 1965, when 120 feet washed out. Breach later widened, and repairs have been permanently deferred. Pool of Dam 1, Barren River, is maintained for local small boat use, but navigation through lock is suspended because of loss of lower pool. Operation activity was discontinued at Lock 4 Green River and Lock and Dam 1 Barren River in January 1974 and at Lock 3, Green River in September 1981. The residences and associated buildings and certain real estate at Lock 4 Green River and Lock and Dam 1 Barren River were disposed of in January 1975. Operation of Locks 5 and 6, Green River, was discontinued August 1951, as they were no longer used by river traffic. Controlling project depth in lower 103 miles of Green River is 9 feet; controlling depth from mile 103 to Bowling Green, KY, is 5.5 feet. Channel of Green River above Lock 3 is no longer maintained.

4. KENTUCKY RIVER, KY

Location. Formed by confluence of its North and Middle Forks about 4 miles east of Beattyville in east central Kentucky, (South Fork joins the main stream at that location), flows northwesterly and empties into Ohio River at Carrollton, KY, mile 545.8 below Pittsburgh, PA.

Existing project. Provides for 14 locks and fixed dams to give, in connection with improvement of Ohio River, slack water navigation of 6 feet minimum depth from Ohio River to places on the three forks that are short distances above Beattyville, KY. Length of 6-foot-depth project on main stem of Kentucky River is 258.6 miles to confluence of Middle and North Forks. Cost of

completed new work is $7,084,252. River frequently rises to 35 feet or higher. Extreme height at Lock 1 due to flood backwater from Ohio River is 60.3 feet, while extreme floods reach height of 47.6 feet at Lock 4, and 35.5 feet at Lock 14. At some intermediate locks extreme height of floods exceeds 40 feet. All flood heights refer to upper pool gages. Existing project was adopted by 1879 River and Harbor Act (H. Ex. Doc. 47, 45th Cong., 3d Sess., and Annual Report, 1879, p. 1398). Operation and care of locks and dams were included in project July 1, 1935, under provision of Permanent Appropriations Repeal Act of June 26, 1934. (See Table 24-H for principal features of the locks and dams.)

On December 19, 1976, the lock operation schedules for commercial traffic and recreational craft on the Kentucky River System were reduced from continuous 24-hour year-round operation to two-shift year-round operation of Locks 1 through 4, intermittent daily operation of Locks 5 through 10, and intermittent operation five days weekly of Locks 11 through 14. Since that time the hours for operation of Locks 5 through 14 have been reduced in several increments. On October 1, 1981, Locks 5 through 14 were closed to traffic and placed in caretaker status. On May 21, 1985 Locks 5 though 14 were leased to the Commonwealth of Kentucky and were operated on weekends during the summer boating seasons through October 15, 1989 when the lease expired. The Commonwealth of Kentucky continued operation again under a lease agreement signed in 1990 with several extensions that allow the Commonwealth to operate the Locks until 2019. In 2001 the last commercial operator in pool 4 ceased operations ending federal interest in operating Locks and Dams 1 through 4. The Commonwealth of Kentucky now operates and manages Locks and Dams 1through 4 under Department of the Army Lease for Public Park and Recreation, which was granted March 1, 2002.

The FY 1993, 1994, 1996, 2000 and 2001 Energy and Water Development Appropriation Acts provided a total of $14.75 million to the Corps to repair the Kentucky River Locks and Dams 5 through 14 to ensure water supply prior to and in preparation for a direct transfer of ownership to the Commonwealth of Kentucky. This construction work was all completed by December 2001. During fiscal year 2002 construction of a visitors pavilion and restrooms were also initiated at Lock and Dam 14 and the work was completed in September 2003. In December 1996 the Assistant Secretary of the Army (CW) signed the first quitclaim transfer deed for Lock and Dam 10 for direct transfer from the Corps to the Commonwealth. The Kentucky River Authority (KRA) currently manages the facility. The Corps continues efforts to transfer the remaining Locks and Dams 5 through 9 and 11 through 14 to the Commonwealth. Locks 1-14 are now operated or maintained by the Kentucky River Authority.

Although Lock and Dam 10 was transferred to the Commonwealth of Kentucky, FY 2001 authorization language directed the Corps to take all measures to further stabilize and renovate Lock and Dam 10 for the purpose of extending the design life of the structure. The Corps is currently performing a detailed evaluation of the existing facility that will ultimately recommend a long-term method to “stabilize and renovate” Lock and Dam 10. The results of this evaluation will be presented in a report, which is scheduled for completion in 2005. Since construction of the plan that will be recommended is several years away, the Corps and KRA are also investigating what needs to be done to assure near-term safety and stability.

Licenses. Federal Regulatory Commission License No. 539, to Kentucky Utilities Co., at Dam 7, Kentucky River, Annual charge, $4,400; total collections through September 30, 2004, $359,205.

Terminal facilities. Facilities for bulk commodities are considered adequate for existing traffic.

Operations during fiscal year. New Work: None. Maintenance: None.

Condition at end of fiscal year. Existing project was completed in 1917. Work accomplished was rehabilitation of the five old State locks and dams and construction of new Locks and Dams 6 to 14 inclusive. Repairs have been made to deteriorated locks and dams as required to keep locks in operation and maintain pool levels above dams except in extreme dry weather, when some pools fall below normal levels, details in Annual Reports for 1963, 1964, and 1965. Channel work was performed as required to provide for existing river traffic. Controlling navigable depth in length of river covered by existing project was 6 feet at end of fiscal year.

5. OPEN CHANNEL WORK, OHIO RIVER

For report on this improvement, see this heading under Ohio River.

6. OTHER AUTHORIZED NAVIGATION PROJECTS

See Table 24-C.

7. NAVIGATION WORK UNDER SPECIAL AUTHORIZATION

None.

Flood Control - Local Protection

8. BEARGRASS CREEK, KENTUCKY

Location. The project is located in eastern Jefferson County in the suburbs of Louisville, Kentucky, along the South Fork of Beargrass Creek and Buechel Branch.

Existing Project. The project consists of construction of eight detention basins, about 2,000 linear feet of channel improvement, and 1,400 linear feet of floodwall/levee on the South Fork of Beargrass Creek and Buechel Branch. The project will provide protection to 830 structures (combination of residential and

commercial). Of those structures, an estimated 314 will be removed from the 100-year flood plain. The 100-year flood plain will be reduced an average of 1.5 feet, as a result of project implementation. The project was authorized by the Water Resource Development Act of 1999. Estimated cost of the new work is $13,097,000 of which $8,513,000 is federal cost and $4,584,000 is non-federal cost.

Local Cooperation. The non-Federal cost sharing partner is the Louisville and Jefferson County Metropolitan Sewer District (MSD). A Preconstruction, Engineering and Design (PED) Phase cost sharing agreement with MSD was executed in January 1998. The Chief of Engineers report approved the project in May 1998. A Project Cooperation Agreement (PCA) with MSD was executed in September 2001.

Operations during fiscal year. Work this year included preparation of plans and specifications for Phase II-B and continuation of work on Phase I and Phase II-A construction contracts.

Conditions at end of fiscal year. The project is about 60% complete. Design is complete for the first and second construction contracts. The first contract was awarded 4th quarter FY2002 and the second contract was awarded 4th quarter FY2003.

9. COMBINED SEWER OVERFLOWS, INDIANPOLIS, IN

Location. Indianapolis, IN.

Existing Project. The existing project consists of providing the City of Indianapolis technical, planning and design assistance for implementation of their Long Term Control Plan. The Long Term Control Plan is designed to improve water quality in Marion County and modernize the City's 19th century sewer system that discharges raw sewage to local streams at 135 overflow points during wet weather events. Work was authorized under Section 219 of the Water Resources Development Act of 1992, as amended.

Local Cooperation. The non-federal cost sharing partner is the City of Indianapolis, Indiana. The Corps and the City of Indianapolis signed the Design Agreement in March 2003.

Operation during fiscal year. A scope of work for the Fall Creek Reach Evaluation study was completed. Preliminary design work was initiated for the Fall Creek reach.

Condition at end of fiscal year. Preliminary design work is underway for the Fall Creek reach. Scopes of Work are being developed to initiate additional areas of technical design assistance.

10. DUCK CREEK, OH

Location. The project area is located in the City of Cincinnati and the Village of Fairfax in Hamilton County, Ohio. The project encompasses 3.2 miles of the stream and begins approximately 2 miles upstream of the confluence of Duck Creek with the Little Miami River.

Existing project. The project consists of approximately 7,100 feet of concrete flood wall, 3,300 feet of earth levee, 8,500 feet of riprapped stream bank, 1,200 feet of channel relocation, 1,150 feet of culvert, demolition of an abandoned highway bridge, widening of a railroad bridge, a pump station, and automatic road closure, and an emergency access road. Estimated cost of new work is $37,193,000 of which $32,993,000 is Federal and $4,200,000 is non-Federal. The project was originally authorized by the Water Resources Development Act of 1996 and reauthorized by the Water Resources Development Act of 2000.

Local Cooperation. The non-Federal sponsors are the City of Cincinnati and the Village of Fairfax. The Project Cooperation Agreement (PCA) was executed in December 1997.

Operations during fiscal year. Work this year included continuation of the Phase 3 contract involving the construction of a concrete arch culvert, floodwalls and stone protection within the Village of Fairfax, Ohio.

Condition at end of fiscal year. The project is about 45 percent complete overall with design approximately 85 percent complete.

11. HOLES CREEK, OH

Location. Project area is located on Holes Creek in West Carrollton, Montgomery County, Ohio. West Carrollton is situated in the southwestern portion of Ohio and is a suburb of Dayton. Holes Creek drains 28.2 square miles and empties into the Great Miami River at river mile 72.6.

Existing project. Project construction completed to date consists of approximately 4,300 feet of channel widening (80-foot bottom width) with associated bank protection. The box culvert type railroad bridge was replaced with a 70-foot clear span structure. Completed project provides protection to 420 structures in West Carrollton and Moraine. Remaining project includes construction of 2400-foot long by up to 6 feet high earthen levee/floodwall to protect five commercial/ industrial structures, purchase and demolition of three structures and development of 4.1 acres of wetland habitat. Estimated total cost (including additional work) is $12,376,000 Federal and $1,305,650 non-Federal.

Local Cooperation. The non-Federal cost-sharing partner is the Miami Conservancy District (MCD). MCD formed the Holes Creek/Owl Creek Conservancy Subdistrict to act as formal sponsor for this project. The Subdistrict entered into the Project Cooperation Agreement (PCA) with the Government in September 1996. Funds were provided to the Subdistrict by Montgomery County, the City of West Carrollton, the City of Moriane, and Miami Township. The PCA was amended subsequent to enactment of Section 594(a) of the Water Resources Development Act of 1999 to cap the non-Federal cost share amount to $1,305,650.

Operations during fiscal year. Work this fiscal year included development of a Limited Reevaluation Report

to address a small remaining area requiring additional protection.

Conditions at end of fiscal year. Limited Reevaluation Report was approximately 95% complete. Amendment to the Project Cooperation Agreement to facilitate design and construction of a small levee, and wetland area and associated property acquisition were approximately 95% complete. Plan for FY05 is to complete the LRR, execute the PCA, initiate design and acquisition of required real estate.

12. LOUISVILLE WATERFRONT PARK, LOUISVILLE, KY

Location. Louisville, Jefferson County, Kentucky, on the left bank of the Ohio River at river mile 603.

Existing Project. The existing project is for design of Phases II and III of the Ohio River Shoreline public access and recreation project. The design is focused on restoration of the Big 4 Bridge for pedestrian use, and includes a spiral earthen mound to facilitate a bicycle path and potential emergency vehicle access. The design was authorized by the Conference Report for the Omnibus Consolidated and Emergency Supplemental Appropriations. The current language permits the Corps to prepare the complete design of Phases II and III of the Master Plan for the project. In order to move into the construction phase, authorization is needed in the next Water Resources Development Act. Estimated total cost is $2,700,000 Federal and $675,000 non-Federal.

Local Cooperation. The Pre-Construction Engineering and Design (PED) agreement was executed with the non-Federal cost sharing partner, the Louisville Waterfront Development corporation (LWDC) in September 2004. $1,000,000 of Federal funds have been appropriated, and $250,000 in non-Federal funds were received in September 2004 to begin design.

Operations during fiscal year. Work this year consisted of negotiating the PED agreement with the LWDC for Phases II and III of the project.

Conditions at end of fiscal year. Initiating design.

13. MILL CREEK, OH

Location. Project is located along the 18-mile length of Mill Creek and three-fourths mile length of East Fork.

Existing project. 17.5 miles of channel improvement, 2 miles of levees, three pumping plants, modification of 29 bridges, and the addition of two pumping units at the present Mill Creek Barrier Dam, located near the Ohio River, are included in the project. Acquisition and development with appropriate landscaping of 620 acres along the creek will be provided for high-density urban oriented recreational use.

Local Cooperation. Section 3, Flood Control Act of 1936 as amended, applies. An assurance agreement covering local cooperation requirements for the project consistent with Section 221 of the 1970 Flood Control Act and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 was executed by the Millcreek Valley Conservancy District February 6, 1975, and for the Secretary of the Army March 28, 1975. A recreation cost-sharing contract was executed by the Conservancy District February 25, 1975, and approved by the Secretary of the Army May 28, 1975. A Contributed Funds Agreement for the General Reevaluation Report was executed in August 1998. An Operations and Maintenance Agreement for the completed portions of the project was also executed in August 1998.

Operations during fiscal year. The U.S. Army Corps of Engineers has continued work on a General Reevaluation Report that would provide a new course of action for completing the project. Additional planning and engineering studies have been performed and a draft report and draft Environmental Impact Statement (EIS) were completed and are undergoing independent technical review. In addition construction was substantially completed for repairs to one previously constructed section of the project (Section 3) in order to turn it over to the local sponsor for assumption of full maintenance on that portion of the total project. A Flood Warning System was installed with completion in September 2004.

Condition at end of fiscal year. Construction of channel and levee-Sections 1, 2 ,3, 4A,7A, Phase 1, are complete. Original channel modification project is about 45 percent complete overall. The Draft General Reevaluation Report is undergoing independent technical review and will be available for public review in December 2004. The final GRR and EIS will be completed by 1 March 2005.

14. OHIO ENVIRONMENTAL INFRASTRUCTURE SECTION 594 PROGRAM

Location. The project location includes the entire state of Ohio, which includes portions of the Louisville, Huntington, Buffalo, and Pittsburgh Districts. The program is for the design and construction assistance of environmental infrastructure projects.

Existing Projects: Under the Section 594 Authority, we have 5 projects selected and in progress in Clark and Montgomery counties, OH.

Clark County – Springfield, OH Southern Interceptor Sewer Project: PCA for design/construction was signed in September 2002.

Clark County – Springfield, OH #2 Southern Interceptor Sewer Project: PCA execution anticipated in November 2004 for construction.

Clark County – Lower Mad River and Clark county project: Prepare sewer, water and drainage infrastructure for a proposed industrial site. Design PCA expected in FY05.

Montgomery County – Tech Town Infrastructure Project: Design and construction of sewer infrastructure for High Tech Industrial site in Dayton, OH. PCA executed in FY04.

Montgomery County – Dayton International Airport

Project: Design and construction of rental car campus to include sewer, water and drainage. PCA execution expected in March 2005.

Local Cooperation. Project Cooperation Agreements are required for each project.

Operations during fiscal year. Work continued to develop PCAs for all projects.

Conditions at end of fiscal year. Work continued on two projects and three new projects were identified.

15. OHIO RIVER FLOOD PROTECTION (INDIANA SHORELINE), IN

Location. The six existing local flood protection projects are located along the Indiana shore from Ohio River mile 492 in Lawrenceburg downstream to mile 792 in Evansville. They are in the communities of Evansville, Tell City, Cannelton, New Albany, Jeffersonville-Clarksville, and Lawrenceburg.

Existing project. Each of the six local flood projects was constructed by the Corps and have been locally operated and maintained. All six projects were constructed to protect against the 1937 flood plus three feet of freeboard. Rehabilitation measures are necessary at each of the six sites in order to maintain their integrity and to insure that they continue to provide the benefits for which they were designed. Rehabilitation would consist of slip lining (or where necessary replacement) of all pipes and culverts which are part of the flood protection facilities, replacing aging pump station equipment, restoring expansion joints and closures, and repairing, as needed, floodwalls and other structures. Estimated cost of new work is $7,390,000 of which $5,542,500 is Federal and $1,847,500 is non-Federal.

Local Cooperation. The following Project Cooperation Agreements (PCA) have been executed with the communities: Lawrenceburg PCA - September 1998, Evansville - November 1998, Tell City PCA - June 1998, Cannelton PCA - September 1999, New Albany – November 1999 and Jeffersonville-Clarksville – November 1999.

Operations during fiscal year. Construction is complete at Tell City, Lawrenceburg, Evansville and Cannelton.

Conditions at the end of fiscal year. Project is about 60 percent overall with design 100 percent complete. Federal funds of $650,000 were included as a Congressional Add to the energy and Water Development Appropriations Act of 2004 (PL108-37) for the purpose of initiating construction of the New Albany and Jeffersonville-Clarksville projects. The Corps of Engineers will use those funds, and the non-Federal sponsors' proportionate shares, to begin rehabilitation of critical structures and equipment by mid FY2005.

16. OHIO RIVER GREENWAY PUBLIC ACCESS, IN

Location. The Ohio River Greenway is a seven-mile linear corridor that extends from the City of Jeffersonville through the Town of Clarksville to the City of New Albany, Indiana, along the Ohio River Shoreline. The project extends from the Ohio River Mile 602 to Ohio River Mile 609. The corridor adjoins the McAlpine Locks and Dam project and the Falls of the Ohio National Wildlife Conservation Area on the Indiana side of the river.

Existing project. The project features consist of a vehicular parkway, pedestrian and multi-use paths, a bridge, and two levee cuts for additional access to the river. The project was authorized by the Water Resources Development Act of 1996. Estimated cost for the project is $41,700,000 of which $20,850,000 is federal cost and $20,850,000 is non-federal cost.

Local Cooperation. There are four non-federal sponsors: The Ohio River Greenway Development Commission, the City of New Albany, the Town of Clarksville, and the City of Jeffersonville. The Project Cooperation Agreement was executed 2 June 2003.

Operation during fiscal year. Work this year included completion of the first construction contract, Mill Creek Bridge in Clarksville, Indiana. Design of a segment in both Jeffersonville and New Albany was also initiated.

Condition at end of fiscal year. The project was approved for construction by the ASA(CW) in April 2000. Construction of the first segment in Clarksville was completed in 2004. The project is 15% complete overall.

17. POND CREEK, LOUISVILLE, KY

Location. The project is located in the central and eastern portions of the 126 square mile Pond Creek watershed in southern Jefferson County, Kentucky.

Existing project. The project consists of constructing a 1500 acre-feet detention basin storage facility along Northern Ditch. An existing abandoned rock quarry adjacent to Fishpool Creek will be converted to a detention basin. Approximately 2.4 miles of the Pond Creek channel will be enlarged as well as 1.5 miles of Northern Ditch. A multi-purpose maintenance road/recreation trail will be constructed along the length of the Pond Creek channel improvement. In addition, three inactive settling basins owned by the local sponsor will be converted into an environmental restoration site. Estimated cost for the project is $20,724,000 of which $15,224,000 is Federal and $5,500,000 is non-Federal. The project was authorized by the Water Resources Development Act of 1996.

Local Cooperation. The non-Federal cost-sharing partner is the Louisville and Jefferson County Metropolitan Sewer District (MSD). MSD has included all funds necessary for their cost share of the project in their capital budget plan. The Project Cooperation Agreement (PCA) was executed in March 1998.

Operations during fiscal year. Work this year included completion of Phase III Melco Basic

construction and initiation of Phase IV Channel Improvements.

Conditions at end of fiscal year. The project is about 82 percent complete. Design is complete. The first three phases of the construction project have been completed. The local sponsor is acquiring the real estate needed prior to the award of Phase IV.

18. SALYERSVILLE, KY

Location. Project is located along the banks of the Licking River from approximately mile 266 and 271 in Magoffin County, Kentucky along the Mountain Parkway about 75 miles southeast of Lexington, Kentucky.

Existing Project. The most cost-effective and feasible plan to provide the authorized level of protection (1978 flood protection) is called the "Cut-Thru Plan" and includes two channel cut-thrus, a barrier dam at the upstream cut-thru, and an 0.8-mile reach of channel improvement connecting the two cut-thrus. Estimated total cost of new work is $8,541,000 of which $7,730,000 is Federal and $811,000 is non-Federal.

Local Cooperation. The local sponsor qualifies for an "ability to pay" reduction pursuant to Section 103(m) of the 1986 Water Resource Development Act. Based on current costs and economics, the local sponsor share would be 9.5 percent of the total project cost. The Project Cooperation Agreement (PCA) was executed in August 1995. The construction contract was awarded in September 1996 and completed in July 1998.

Operations during fiscal year. Construction was completed in FY 99.

Conditions at the end of fiscal year. Project is complete, except for pending real estate actions on two tracts of land.

19. SOUTHERN AND EASTERN KENTUCKY ENVIRONMENTAL INFRASTRUCTURE SECTION 531 PROGRAM

Location. The project location comprises a 27 county region in southern and eastern Kentucky, which includes portions of Louisville, Huntington, and Nashville Districts. The program is for the design and construction assistance of environmental infrastructure projects.

Existing Projects. Under the Section 531 Authority, to date we have 3 projects physically complete. These projects all lie within Menifee, Floyd, and Laurel counties. We also have 8 wastewater related designs in progress in the counties of Bath, Jackson, Magoffin, Pulaski, Leslie, Perry, and Laurel.

Bath County – Preston, KY Decentralized Wastewater Treatment System project: PCA executed in FY03 for design and construction. Design initiated in FY04.

Jackson County – McKee Utility Improvement Project: PCA executed September 2000. Design continued in FY 2004.

Magoffin County – Salyersville/Magoffin County Sewer line Extension Project: PCA executed June 2000. Design continued in FY 2004.

Pulaski County – Science Hill Sewer Project: PCA executed September 2001. Design continued in FY 2004.

Leslie County – Hyden Sewer Project: PCA executed September 2001. Design continued in FY 2004.

Perry County – Vicco Wastewater Treatment and Collection Project: PCA executed November 2001. Design continued in FY 2004.

Laurel County – Northland Estates Sewer Project: PCA executed November 2001. Design continued in FY 2004.

Laurel County - Wood Creek Wastewater Treatment Project: PCA executed September 2003. Design initiated in FY2004.

Work is authorized under Section 531 of the Water Resources Development Act of 1996 (P.L. 104-303).

Local Cooperation. Project Cooperation Agreements have been executed for Pulaski County, Leslie County, Menifee County, Floyd County, Laurel County, Magoffin County, Perry County and Jackson County.

Operations during fiscal year. Work this year included initiation or continuation of design on all projects.

Condition at end of fiscal year. Three projects are physically complete. Designs were initiated or continued on eight projects.

20. WHITE RIVER, INDIANAPOLIS CENTRAL WATERFRONT, IN

Location. Project is located along the White River in the City of Indianapolis, IN.

Existing project. Project consists of infrastructure improvements such as public access parking, walkways, pedestrian bridges, landscaping, lighting, and water features. The project also includes continuous public access along both sides of the White River waterfront through the construction of walkways, bike paths, landscaped promenades, and the rebuilding and reconfiguring of the existing concrete slopewalls. Estimated cost of new work is $113,804,500 of which $52,475,000 is Federal and $61,329,500 is non-Federal.

Local Cooperation. The non-Federal sponsors are the White River State Park (State of Indiana) and the City of Indianapolis. All lands for the project have been acquired by the sponsors. The Project Cooperation Agreement (PCA) was executed in December 1997. Amendments to the PCA were executed in June 1999 to add the Upper Canal feature to the Project and in February 2001 to add the Beveridge Paper feature.

Operations during fiscal year. Work this year included substantial completion of one construction contract, and approximately 75% completion of the final construction contract (Upper West Bank.)

Condition at end of fiscal year. Project is about 98 percent complete overall with design 100 percent complete and construction about 98 percent complete.

21. WHITE RIVER INDIANAPOLIS (NORTH), IN

Location. The project is located in metropolitan Indianapolis, Indiana, along the northern reaches of the White River within Marion County.

Existing project. The project is located along 3 miles of the White River in the City of Indianapolis, IN, and consists of a combination of levees and floodwalls, rehabilitation of an existing pump station, two mitigation sites, and a flood warning system. Estimated cost of the project is $19,000,000 of which $14,250,000 is Federal and $4,750,000 is non-Federal.

Local Cooperation. The non-Federal cost-sharing partner is the City of Indianapolis, Department of Public Works.

Operations during fiscal year. Work this fiscal year included physical completion of contracts for rehabilitation of the existing Warfleigh Pump Station (Phase 1) and construction of the 7600 foot Warfleigh section of the floodwall/levee (Phase 3A). Design activities also continued on the remaining sections of floodwall and earthen levee.

Conditions at the end of fiscal year. The project is 40 percent complete. Construction is authorized and funding provided. The flood warning system is complete. A construction contract for the Monon-Broad Ripple section of the floodwall (Phase 3C) will be awarded after receipt of adequate Federal appropriations.

Flood Control - Reservoirs

22. BARREN RIVER LAKE, KY

Location. Dam is on Barren River, 79.5 miles above its confluence with Green River and 10 miles northeast of Scottsville, KY. A flood control pool reservoir extends upstream about 40 miles in Barren and Allen Counties, KY. (See U.S. Geological Survey map of Lucas, KY.)

Existing project. A reservoir for flood control and allied purposes. Dam is rolled earth and rockfill, 146 feet high and 3,970 feet long, with gate-controlled outlet works and uncontrolled open-cut spillway. Total storage capacity is 815,200 acre-feet (768,000 for flood control and 46,600 for water supply storage). For further details, see page 1125 of Annual Report for 1962. Cost of the completed project is $27,479,717 including $2,335,055 Federal funds and $108,418 non-Federal funds for construction of recreation facilities under the completed projects program. Project was authorized by Flood Control Act of 1938.

Local Cooperation. None required by authorizing act. Under provision of Water Supply Act of 1958, contract with City of Glasgow for water supply storage was approved by Secretary of Army on October 4, 1965. Terms require City to pay $23,433, which is project cost allocated to water storage plus capitalized prepayment of proportionate share of operation, maintenance, and major replacement costs. A contract, with the Commonwealth of Kentucky for development of additional campsites, shoreline protection and breakwater extension at Barren River Lake State Park under the cost-sharing category of the completed projects program was approved by the Secretary of the Army November 4, 1977.

Operations during fiscal year. New work: None.. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $6,360,000 were prevented. Visitor expenditures were $39,196,530.

Condition at end of fiscal year. Construction started in March 1960 and all major construction and relocation items were completed in October 1964. Project was placed in operation in March 1964. Land acquisition is complete.

23. BROOKVILLE LAKE, IN

Location. Dam site is on East Fork of Whitewater River, 2.4 miles above confluence with West Fork, and about 1-1/2 miles north of Brookville, Indiana. The reservoir lies in Franklin and Union Counties, Indiana. (See U.S. Geological Survey map of Brookville, IN.)

Existing project. A reservoir for flood control and allied purposes. Dam is earthfill, 182 feet high and 3,004 feet long, with gate-controlled outlet works, and uncontrolled open spillway. Total storage capacity is 359,600 acre-feet (214,700 for flood control, 89,300 for water supply, and 35,500 for conservation). A minimum pool of 20,100 acre-feet is maintained. Cost of completed new work is $45,402,565 of which $37,905,073 is Federal cost and $7,497,492 is non-Federal contribution for water supply storage. Project was authorized by 1938 Flood Control Act.

Local Cooperation. None required by authorizing act. Contract with State of Indiana for water supply storage under provisions of Water Supply Act of 1958 was approved by Secretary of Army, August 5, 1965. Under terms of contract, State paid initial costs allocated to water supply feature of project plus capitalized prepayment of proportionate share of operation and maintenance costs.

Operation during fiscal year. New work: None. Maintenance: Routine maintenance was performed. During 2004 flood season flood damages of $739,000 were prevented. Visitor expenditures were $21,697,095.

Condition at end of fiscal year. Construction was started in November 1965 and project was placed in operation January 1974. Construction and land acquisition are complete.

24. BUCKHORN LAKE, KY

Location. Dam is on Middle Fork of Kentucky River, 43.4 miles above mouth, and 0.5 mile upstream from Buckhorn, Perry County, KY. Reservoir extends upstream about 34 miles and lies in Leslie and Perry Counties, Kentucky. (See U.S. Geological Survey map of Buckhorn, KY.)

Existing project. A reservoir for flood control and allied purposes. Dam is earth and rockfill type, with gate controlled outlet works. Total storage capacity is 168,000 acre-feet, of which 157,600 are for flood control. For further details, see page 1120 of Annual Report for 1962. Cost of completed new work is $12,466,206 including $386,707 for construction of recreation facilities under the completed projects program. Existing project was authorized by general authorization for Ohio River Basin in 1938 Flood Control Act.

Local Cooperation. Department of Parks of the Commonwealth of Kentucky has undertaken management of certain lands and recreational facilities in accordance with license granted by Secretary of the Army on June 29, 1962.

Operations during fiscal year. New work: None. Maintenance: A new hoist was installed in the Tower and the cables on the spillway hoists were replaced. Operation for flood control during 2004 flood season prevented damages of $5,021,000. Visitor expenditures were $39,880,631.

Condition at end of fiscal year. Construction started in September 1956 and project was placed in operation in August 1960. All construction and land acquisition is complete for original project. A contractor began construction of a shower house and Class A campground facilities at the Trace Branch recreation area in late FY2003. These facilities, funded with the FY2002 Construction General appropriations, were physically complete in the 4th quarter of FY 2004.

25. CAESAR CREEK LAKE, OH

Location. Dam site is on Caesar Creek, about 3.0 miles above its confluence with Little Miami River, in Warren County, OH, about 3.5 miles southeast of Waynesville, OH, and 10.5 miles northeast of Lebanon, OH. Reservoir lies in Warren, Clinton, and Green Counties, OH. (See U.S. Geological Survey map of Oregonia, OH.)

Existing project. Provides for construction of a reservoir for flood control and allied purposes. It includes an earth and rockfill dam, four saddle dams, outlet works and an uncontrolled saddle spillway. Total storage capacity of reservoir is 242,200 acre-feet, of which 148,500 acre-feet are reserved for flood control storage. Cost of new work is $62,881,010 Federal and $5,037,000 non-Federal reimbursement for water supply storage. Existing project was authorized by general authorization for Ohio River Basin in 1983 Flood Control Act.

Local Cooperation. None required. However, the State of Ohio requested inclusion in the project of storage for future municipal and industrial water supply uses. Contract with State of Ohio for water supply storage under provisions of Water Supply Act of 1958, as amended, was approved by Secretary of the Army, May 20, 1970. Under terms of contract, State will reimburse the Federal Government for costs allocated to water supply storage over a period not to exceed 50 years after use of this storage is initiated plus estimated annual amount for cost of operation, maintenance and major capital replacements required for the water supply facilities.

Operations during fiscal year. New work: Investigated and repaired roof leaks. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $18,908,000 were prevented. Visitor expenditures were $45,846,036.

Condition at end of fiscal year. Construction was started in January 1968 and the project was placed in operation January 1978. Land acquisition is complete. All relocation and construction features are complete.

26. CAGLES MILL LAKE, IN

Location. Dam is on Mill Creek, 2.8 miles above its confluence with Eel River, in Putnam County, IN, and about 25 miles east of Terre Haute, IN. Reservoir extends upstream about 11 miles and is in Putnam and Owen Counties, IN. (See U.S. Geological Survey map of Poland, IN.)

Existing project. A reservoir for flood control and allied purposes. Dam is earth and rockfill embankment. Total storage capacity is 228,100 acre-feet, of which 201,000 acre-feet are for flood control. For details, see Annual Report for 1962, page 1136. Cost of new work is $4,369,997, which includes $4,256,903 Federal funds, and $113,094 contributed funds for construction of recreation facilities under the completed projects program. Existing project was selected for construction under general authorization for Ohio River Basin in 1938 Flood Control Act.

Local Cooperation. None required. State of Indiana has undertaken development and management of recreation facilities for use of the public in reservoir area in accordance with license granted by Secretary of the Army on January 17, 1952. A contract with the Indiana Department of Natural Resources for expanding the boat ramp and parking area at Site 3, Lieber State Park, under the cost sharing category of the completed projects program was signed by the State of Indiana on August 26, 1981 and approved by the Deputy Chief of Engineers on March 26, 1982.

Operations during fiscal year. New Work: None. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $7,332,000 were prevented. Visitor expenditures were $8,407,695.

Condition at end of fiscal year. Construction started in July 1948 and completed in June 1953. Recreation facilities constructed under the cost-sharing category of the completed projects program are complete.

27. CARR CREEK LAKE, KY

Location. Dam site is 8.8 miles above mouth of Carr Fork, a tributary of North Fork of Kentucky River, 16

miles upstream from Hazard, KY. The reservoir lies entirely within Knott County. (See U.S. Geological Survey maps of Carrie and Vicco, KY.)

Existing project. Provides for construction of a reservoir for flood control and allied purposes. Dam is rock and earth fill with impervious core, 720 feet long and 130 feet high, with uncontrolled open cut spillway through left abutment. Outlet works has two control gates and 8-foot diameter conduit to stilling basin. Total storage capacity is 47,700 acre-feet (31,600 for flood control and 4,300 for water quality control). A higher-level seasonal pool for recreation is provided. Cost of completed work is $51,854,826 including $76,724 for recreation facilities under the completed projects program. Project was authorized by the 1962 Flood Control Act.

Local Cooperation. None required for reservoir project. Division of Flood Control and Water Usage of Commonwealth of Kentucky gave assurance that encroachments on downstream channel capacity will be prevented. Under the terms of a new lease, the State of Kentucky assumed operation of the Irishman Creek Beach and Campground in 1996. This establishes a State Park at the lake and also provides the impetus for additional resort development. Project name was changed from Carr Fork Lake, KY to Carr Creek Lake, KY effective February 16, 1997 by Public law 104-303, October 12, 1996.

Operations during fiscal year. New work: Construct additional Campgrounds, phases 1, 2, 3 complete except for 40% of phase 3. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $7,894,000 were prevented. Visitor expenditures were $10,519,264.

Condition at end of fiscal year. Project was placed in operation January 1976. Construction started in January 1966 is complete.

28. CAVE RUN LAKE, KY

Location. Dam site is on Licking River, about 4 miles upstream from U.S. Highway 60 near Farmers, KY, and 7 miles southwest of Morehead, KY. Reservoir will be in Rowan, Bath, Morgan, and Menifee Counties, KY. (See U.S. Geological Survey maps of Salt Lick and Morehead, KY.)

Existing project. Plan provides for construction of a reservoir for flood control and allied purposes. Dam is rolled earthfill, with gate controlled outlet works and uncontrolled open spillway. Total storage capacity is 614,700 acre-feet (438,500 for flood control and 28,300 for water quality control). Cost of new work is $81,159,541 of which $6,900,000 is U.S. Forest Service cost. Project was authorized by Flood Control Acts of June 22, 1936 and June 28, 1938.

Local Cooperation. None required.

Operations during fiscal year. New work: None. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $18,891,000 were prevented. Visitor expenditures were $12,233,488.

Condition at end of fiscal year. Project has been in operation since February 1974. Construction was started in June 1965 and is complete. Land acquisition is complete. All relocation and construction features are complete.

29. CECIL M. HARDEN LAKE, IN

Location. Dam is on Raccoon Creek, 32.4 miles above its confluence with Wabash River, and 25 miles northeast of Terre Haute, IN. At flood control pool, reservoir extends upstream about 15 miles in Parke and Putnam Counties, Indiana. (See U.S. Geological Survey Map of Mansfield, IN.)

Existing project. A rolled earth dam and reservoir, for flood control and allied purposes. Total storage capacity is 132,800 acre-feet of which 116,600 acre-feet area for flood control. For details, see Annual Report for 1962, page 1132. Cost of completed new work is $6,987,807 made up of $6,260,134 for the initial project and $373,678 Federal cost and $353,995 non-Federal contribution in kind for recreation facilities under the completed projects program. Project was selected for construction under general authorization for Ohio River Basin in 1938 Flood Control Act. Project name was changed from Mansfield Lake to Cecil M. Harden Lake by Public Law 93-521, December 14, 1974.

Local Cooperation. State of Indiana has undertaken management of lands and recreational facilities in accordance with license granted by Secretary of the Army on April 19, 1961. A contract with the Indiana Department of Natural Resources, approved by the Secretary of the Army in May 1974, provided for that agency to design and construct certain additional recreation facilities at Cecil M. Harden, Huntington, Mississinewa, Monroe and Salamonie Lakes under the cost-sharing category of the completed projects program.

Operation during fiscal year. New work: None. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $2,406,000 were prevented. Visitor expenditures were $25,883,544.

Condition at end of fiscal year. Construction started in October 1956 and all major items of work were completed December 1961. Land acquisition is complete. Project has been in operation since August 1960. Cost shared recreation facilities constructed by the State of Indiana under the completed projects program are completed.

30. CLARENCE J. BROWN DAM & RESERVOIR, OH

Location. Dam site is just east of Springfield, Clark County, OH, at mile 7.3 of Buck Creek, a tributary of Mad River. (See U. S. Geological Survey maps of New Moorefield and Springfield, OH.)

Existing project. A reservoir for flood control and allied purposes. It includes an earthfill dam, 6,620 feet long and 72 feet high, with gated outlet works and open cut spillway with concrete chute through right abutment. Total storage capacity of reservoir is 63,700 acre-feet (32,900 for flood control and 20,800 for water quality control). Federal cost of completed project is $22,083,660. Project was authorized by 1962 Flood Control Act. Project name was changed from Buck Creek Dam and Reservoir to Clarence J. Brown Dam and Reservoir by Public Law 90-46, July 4, 1967.

Local Cooperation. Assurances from City of Springfield, Springfield Conservancy District, and Clark County, Ohio, covering protection against detrimental channel encroachment below dam to mouth of Buck Creek, were accepted March 5, 1964.

Operations during fiscal year. New work: Construct bike trail and rehab bridge. Maintenance: Routine maintenance was performed. During the 2004 flood season $477,000 in damages were prevented. Visitor expenditures were $25,943,050.

Condition at end of fiscal year. Construction started in September 1966. Land acquisition and all major project features were completed in November 1973. The project was placed in operation in January 1974.

31. GREEN RIVER LAKE, KY

Location. Dam site is 305.7 miles above mouth of Green River in Taylor County, KY, about 8 miles south of Campbellsville. Reservoir lies in Taylor and Adair Counties. (See U.S. Geological Survey map of Cane Valley, KY.)

Existing project. A reservoir for flood control and allied purposes. Dam is earth and rockfill, 141 feet high and 2,350 feet long. Outlet works is slide gate-controlled and spillway open and uncontrolled. Total storage capacity is 723,200 acre-feet (560,600 for flood control and 64,500 for low-flow augmentation). Cost of completed new work is $33,462,330, consisting of $33,105,184 initial project funds, $40,001 for water supply, and $317,145 Federal funds for construction of recreation facilities under the completed projects program. Existing project was authorized under general authorization for Ohio River Basin in 1938 Flood Control Act.

Local Cooperation. None required by authorizing act. Taylor County, by lease approved by Secretary of Army February 15, 1968, undertook operation and maintenance of Smith Ridge public access area. In May 1980, the lease was amended to turn back responsibility for maintenance and operation of the site to the Corps. Under provision of Water Supply Act of 1958, contract with City of Campbellsville for water supply storage was approved by Secretary of Army April 23, 1969. Terms require city to repay, with interest and annual charges for operation, maintenance and major replacement, the investment cost of $85,765 allocated to its water supply storage space. The Department of Parks of the Commonwealth of Kentucky, by lease approved by Secretary of Army, October 4, 1971, has undertaken the management of the Lone Valley public access area.

Operations during fiscal year. New work: Several repairs were completed including the tower elevator, hoist, multi-level assembly, hydraulic cylinder and safety rails. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $6,370,000 were prenvented. Visitor expenditures were $32,963,319.

Condition at end of fiscal year. Construction began in August 1965 and all major construction and relocation items were completed in 1972. Project has been in operation since February 1969. Project including all land acquisition complete in 1973. Construction of sanitary dump station for boats at Dam Site in conformance with EPA and State standards and rehabilitation of sewage treatment facilities, washhouses and restrooms at Smith Ridge site is complete.

32. J. EDWARD ROUSH LAKE, IN

Location. Dam site is on Wabash River, about 2 miles from Huntington, IN, and 411.4 miles above mouth. Reservoir is in Huntington and Wells Counties, IN. (See U.S. Geological Survey maps of Majenica and Mt. Etna, IN.)

Existing project. A reservoir for flood control and allied purposes. Dam consists of a rolled earth embankment 4,700 feet long and 89 feet high, a concrete spillway and outlet section 155 feet long, and a concrete gravity section 310 feet long. Spillway is controlled by three gates, and outlet works by six sluices. Project also provides local flood protection for Markle, IN. Total storage capacity of reservoir is 153,100 acre-feet, of which 149,000 acre-feet is reserved for flood control storage. Cost for new work is $19,621,777 made up of $19,428,355 Federal cost for the initial project and $193,422 non-Federal contributed funds for low flow augmentation storage, and $155,354 non-Federal contribution in kind for recreation facilities under the completed projects program. Project was authorized by Flood Control Act of 1958. Project name was changed from Huntington Lake, IN to J. Edward Roush Lake, IN effective 16 February 1997 by Public law 104-303, 12 October 1996.

Local Cooperation. Local interests must contribute in cash an amount equal to one percent of project first cost. State of Indiana has met this obligation. Contract with the Indiana Department of Natural Resources, approved by the Secretary of the Army May 17, 1974, provided for that agency to design and construct certain additional recreational facilities at Cecil M. Harden, Huntington, Mississinewa, Monroe and Salamonie Lakes under the cost shared category of the completed projects program.

Operations during fiscal year. New work: Rehabbed sewage lift station, repaired corbels, replaced emergency

generator and made modification/repairs at the Markle Pump Plant. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $15,158,000 were prevented. Visitor expenditures were $5,622,147.

Condition at end of fiscal year. Land acquisition and all major construction complete. Project was placed in operation January 9, 1969. Cost shared recreation facilities constructed by the State of Indiana under the completed projects program are complete.

33. MISSISSINEWA LAKE, IN

Location. Dam site is 7.1 miles above mouth of Mississinewa River, which flows into Wabash River about 2 miles upstream from Peru, IN. At flood control pool level, reservoir extends upstream about 28 miles, in Wabash, Grant, and Miami Counties, IN. (See U.S. Geological Survey map of Peoria, IN.)

Existing project. Provides for construction of a reservoir for flood control and allied purposes. It includes an earthfill dam 137 feet high and 8,100 feet long, gate-controlled outlet works, and an uncontrolled open spillway through right abutment. Total storage capacity of reservoir is 368,400 acre-feet, of which 345,100 acre-feet are reserved for flood control storage. Cost for completed new work is $64,089,395 made up of $23,791,816 Federal cost for the initial project, $239,200 non-Federal contributed funds for low flow augmentation storage. $174,392 Federal cost and $174,392 non-Federal contribution in kind for recreation facilities under the completed projects program, and $39,709,595 for major rehabilitation. Project was authorized by the Flood Control Act of 1958.

Local Cooperation. Local interests must contribute in cash an amount equal to 1 percent of project first cost. State of Indiana assumed this obligation. A contract with the Indiana Department of Natural Resources, approved by the Secretary of the Army in May 1974, provided for that agency to design and construct certain additional recreation facilities at Cecil M. Harden, Huntington, Mississinewa, Monroe and Salamonie Lakes under the cost-sharing category of the completed projects program.

Operations during fiscal year. New work: None. Maintenance: Construction contract for placement of 2600 feet of concrete cut-off wall in the right embankment 150’ to 180’ depth to rock foundation to remediate poor foundation conditions was continued. The initial contract amount was $29,800,000 and has a three-year performance period. After preliminary construction activity on roads, construction of the cut-off wall test section began April 4, 2002. During initial excavations the contractor experienced sudden and complete loss of bentonite slurry used to support the excavation. He then moved to the far end of the 100-foot test section and attempted another excavation with the same result. The contractor was issued a stop work order on May 17, 2002. Analysis of the problem has shown the upper layer of rock foundation contains excessive voids requiring pre-treatment with grout to enable the cut-off wall excavation to then proceed with minimal slurry loss. The grouting program was initiated on July 10, 2002, completed November 17, 2003, and will add up to $20,000,000 to the contract cost. Cut-off wall excavation in the test section resumed October 2002 and was completed in February 2003. Construction of the cut-off wall resumed August 4, 2003 and continues. Project completion date is May 2005. Total cost of cut-off wall is now estimated at $55,000,000. The project is on the HQUSACE High Priority List. During the 2004 flood season estimated damages of $10,318,000 were prevented. Visitor expenditures were $11,654,429.

Condition at end of fiscal year. Project was placed in operation in May 1968. Cost shared recreation facilities constructed by the State of Indiana under the completed projects program are complete. Construction continued on cut-off wall contract and construction was 46% complete at the end of September 2004. Because of the uncertainty regarding the conditions under which the embankment is performing, the Mississinewa Lake will be operated with restricted reservoir elevations until construction of the cut-off wall is complete.

34. MONROE LAKE, IN

Location. Dam is on Salt Creek, a tributary of White River, 25.9 miles above mouth, and 2 miles east of Harrodsburg, Monroe County, IN. At flood control pool level, reservoir will extend upstream 44 miles in Monroe, Brown, and Jackson Counties. (See U.S. Geological Survey map of Clear Creek, IN.)

Existing project. A reservoir for flood control and allied purposes. Dam is earth core and rock shell, with gate-controlled outlet works and uncontrolled open spillway. Total storage capacity is 441,000 acre-feet (258,800 for flood control and 159,900 for low flow augmentation.) Cost of completed new work is $16,570,774 consisting of $7,032,484 Federal funds, $7,797,604 non-Federal contributed funds for low-flow regulation storage and $870,343 Federal cost and $870,343 non-Federal contribution in kind for recreation facilities under the completed projects program. Project was authorized by 1958 Flood Control Act, modifying comprehensive plan for Ohio River Basin.

Local Cooperation. Section 3, 1944 Flood Control Act applies. Local interests must contribute 54.1 percent of project cost, this being the proportion allocated to low-flow regulation feature, plus a capitalized amount representing that part of average annual maintenance and operation cost allocated to low-flow regulation. State of Indiana assumed this cost-sharing obligation. A contract with the Indiana Department of Natural Resources, approved by the Secretary of the Army in May 1974, provided for that agency to design and construct certain additional recreation facilities at Cecil M. Harden, Huntington, Mississinewa, Monroe and Salamonie Lakes

under the cost-sharing category of the completed projects program.

Operations during fiscal year. New work. Replaced motor control center in tower. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $815,000 were prevented. Visitor expenditures were $33,110,737.

Condition at end of fiscal year. Project is complete and was placed in operation in February 1965. Cost shared recreation facilities constructed by the State of Indiana under the completed projects program are complete.

35. NOLIN LAKE, KY

Location. Dam is on Nolin River 7.8 miles above its confluence with Green River, about 70 air miles southwest of Louisville, KY. Reservoir extends upstream about 57 miles and is in Edmonson, Grayson, Hart, and Hardin Counties, KY. (See U.S. Geological Survey maps of Nolin Reservoir and Dickeys Mill, KY.)

Existing project. A reservoir for flood control and allied purposes. Dam is rockfill-earth core type with gate-controlled outlet works, and uncontrolled open spillway. Total storage capacity is 609,400 acre-feet, of which 545,600 acre-feet is for flood control. For further details of project, see Annual Report for 1962, page 1124. Cost of new work is $17,193,278 including $2,594,274 for construction of recreation facilities. Project was selected for construction under general authorization for Ohio River Basin in 1938 Flood Control Act.

Local Cooperation. None required for authorized project. State of Kentucky contributed $18,195 for increased width of dam for public road. Kentucky assumed responsibility of the Brier Creek site to establish a State Park in 1996. Improvements are planned by Kentucky.

Operations during fiscal year. New work: None. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $1,880,000 were prevented. Visitor expenditures were $39,529,467.

Condition at end of fiscal year. Construction started in January 1959. Project was completed and placed in operation in March 1963.

36. OHIO RIVER BASIN (Louisville District)

Location. Works covered by this project are a series of levees, floodwalls, channel improvements, and reservoirs in Ohio River Basin within Louisville District.

Existing project. Individual projects considered in comprehensive plan within the Louisville District. (See Table 24-B for authorizing legislation and Table 24-I for cost and listing of projects in the basin plan.)

Operations during fiscal year. No costs were incurred except for the projects for which individual reports are given.

37. PATOKA LAKE, IN

Location. Dam site is in Dubois County, IN, 118.3 miles above mouth of Patoka River, and 50 miles west-northwest of New Albany, IN. Reservoir extends into Dubois, Orange, and Crawford Counties. (See Geological Survey map of Cuzco, IN.)

Existing project. Reservoir for flood control and allied purposes. Dam is earth and rock fill, 1,550 feet long and 85 feet high, with gate-controlled outlet works and uncontrolled open spillway. Total storage capacity is 301,600 acre-feet (121,000 for flood control and 167,500 for water supply and water quality control). Cost of new work is $76,243,083 of which $56,060,638 is Federal cost for other construction, and $20,182,445 is non-Federal contribution for water supply storage and recreation facilities. Project was authorized by 1965 Flood Control Act, and emergency measures and snagging and clearing the Patoka River downstream of Patoka Lake to ensure effective operation of the project for flood control was directed by 1981 Appropriation Act for Energy and Water Development.

Local Cooperation. Local interests are required to reimburse the Federal Government for costs allocated to water supply storage presently estimated at 29.316 percent of the joint-use facilities cost, exclusive of interests, plus $287,000 for the cost of operating and maintaining water supply storage for a period of 50 years, plus $42,000 for the cost of major capital replacements required for water supply storage space for a period of 50 years. Local interests are also required to pay, contribute in kind, or repay (which may be through user fees) with interest, one-half of the separable first cost of the project allocated to recreation. Present laws of the State of Indiana require that agency to make cash contributions during construction of the project. Local interests must also agree to prevent encroachments on channel of Patoka River from dam to mouth, and to pay allocated initial and annual maintenance and operation costs for water supply storage. Formal assurances of local cooperation, executed by the Indiana Natural Resources Commission, were accepted August 27, 1970. Contracts with State of Indiana for water supply and recreation were approved by the Secretary of the Army November 2, 1970.

Operations during fiscal year. New work: None. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $4,430,000 were prevented. Visitor expenditures were $20,725,037.

Condition at end of fiscal year. Construction was started in July 1972. Engineering studies are complete. Real Estate relocation work is complete. All major features are complete. Permanent impoundment was started in February 1978 and the project was placed in operation about August 1980.

38. ROUGH RIVER LAKE AND CHANNEL IMPROVEMENT, KY

Location. Dam is on Rough River, 89.3 miles above its confluence with Green River, 160.3 miles above Ohio River, and about 60 miles southwest of Louisville, KY. Reservoir extends upstream about 30 miles and is in Breckinridge, Hardin, and Grayson Counties, KY. Channel improvement work is on Rough River, Barnett Creek, and West Fork of Barnett Creek. (See U.S. Geological Survey maps of McDaniels and Falls of Rough, KY.)

Existing project. Reservoir is for flood control and allied purposes. Dam is rolled earthfill type, with gate-controlled outlet works. Storage capacity is 334,380 acre-feet, of which 314,210 acre-feet is for flood control. Project also includes channel clearing of lower Rough River, and channel improvement on Barnett Creek, a tributary of Rough River. For further details, see page 1126 of Annual Report for 1962. Cost of completed new work is $10,667,542 including $890,008 Federal funds and $22,612 non-Federal funds for construction of recreation facilities under the completed projects program. Existing project was selected for construction under general authorization for Ohio River Basin in 1938 Flood Control Act. Modification of previously approved plan to include channel improvement items was authorized by the 1944 Flood Control Act.

Local Cooperation. None required for construction of reservoir unit. Provisions of Section 3, Flood Control Act of 1936, are applicable to channel improvements. Assurances were obtained from Ohio County for channel improvement. Department of Parks, Commonwealth of Kentucky, has undertaken management of certain lands and recreation facilities in accordance with license granted by Secretary of the Army on August 18, 1961. A contract with the Commonwealth of Kentucky to improve and pave road at the Below Dam Area - State Park under the cost-sharing category of the completed projects program was approved by the Secretary of the Army November 4, 1977.

Operations during fiscal year. New work: Replace emergency/utility hoist, rehab 4 comfort stations and repair/replace deteriorated concrete and patch wing wall. Maintenance: Routine maintenance was performed. Deficiencies in the dam at Rough River have been identified through Dam Safety Assurance Program activities. Deficiencies existing at the dam are as follows: Embankment – a sinkhole formed on the downstream face of the dam in fall 2002. Indications are it resulted from the lack of a filter between the interior of the dam and a buried downstream rock toe. Stilling Basin – preliminary analysis show the stilling basin is inadequate resulting in expensive periodic repairs using Operation and Maintenance funds. Basin needs to be extended as much as double its present length. Spillway – Preliminary analysis show that the spillway is inadequate. A Dam Safety Assurance Evaluation Report (DSAER) defining scope of corrective actions needed for the deficiencies was prepared and approved 1 July 2004. Approval of the DSAER provides authorization to proceed with the repairs. Design will begin in October 2004. Total cost of repairs is estimated at $4.7 million. During the 2004 flood season estimated damages of $4,808,000 were prevented. Visitor expenditures were $57,143,068.

Condition at end of fiscal year. Construction started in November 1955 and reservoir was placed in operation in June 1959. Land acquisition and all major items of construction and relocation are complete. The DSAER was approved 1 July 2004.

39. SALAMONIE LAKE, IN

Location. Dam site is 3.1 miles above mouth of Salamonie River, which enters Wabash River about 6 miles upstream from Wabash, IN. Reservoir extends upstream about 27 miles at flood control pool and lies in Wabash and Huntington Counties, IN. (See U.S. Geological Survey maps of Lagro and Majenica, IN.)

Existing project. Provides for construction of a reservoir for flood control and allied purposes. It includes an earthfill dam with a maximum height of 133 feet and length of 6,100 feet, gate-controlled outlet works with a 16-foot-diameter conduit and an uncontrolled open spillway through right abutment. Total storage capacity of reservoir is 263,600 acre-feet, of which 250,500 acre-feet is for flood control storage. Cost for new work is $17,039,321 made up of $16,244,356 Federal cost for the initial project and $163,867 non-Federal contributed funds for low-flow augmentation storage and $315,549 Federal cost and $315,549 non-Federal contribution in kind for recreation facilities under the completed projects program. Project was authorized by Flood Control Act of 1958.

Local Cooperation. Local interests must contribute in cash an amount equal to one percent of project first cost. State of Indiana assumed this obligation. A contract with the Indiana Department of Natural Resources, approved by the Secretary of the Army in May 1974, provided for that agency to design and construct certain additional recreation facilities at Cecil M. Harden, Huntington, Mississinewa, Monroe, and Salamonie Lakes under the cost-sharing category of the completed projects program.

Operations during fiscal year. New work: Replaced sluice gate. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $12,487,000 were prevented. Visitor expenditures were $14,033,669.

Condition at end of fiscal year. Land acquisition and all major construction and relocation contracts are complete. Reservoir was placed in operation in spring 1967. Cost shared recreation facilities constructed by the State of Indiana under the completed projects program are complete.

40. TAYLORSVILLE LAKE, KY

Location. Dam site is in Spencer County, KY, 60.0 miles above the confluence of Salt River and Ohio River, 4 river miles above Taylorsville and 36.9 river miles above Shepherdsville, KY. (See U.S. Geological Survey map of Taylorsville, KY.)

Existing project. A reservoir for flood control and allied purposes. Dam is an earth and rock fill structure, 164 feet high and 1,280 feet long. Outlet works are slide gate controlled and spillway is uncontrolled open cut. Total storage capacity is 291,670 acre-feet (211,230 for flood control, winter months), and 52,245 for water quality and fish and wildlife. Cost of completed new work is $87,004,456, including $82,991,363 federal funds and $4,013,093 non-federal funds. Project was authorized by 1966 Flood Control Act.

Local Cooperation. Local interests must agree to administer project land and water areas for recreation; pay, contribute in kind, or repay (which may be through user fees) with interest one-half of the separable first costs of the project allocated to recreation; bear all costs of operation, maintenance, and replacement of recreation lands and facilities under P.L. 89-72. Local interests must also agree to prevent encroachments on flow-carrying capacities of stream channels below the reservoir to the extent needed to provide reasonably effective reservoir operation. Commonwealth of Kentucky has indicated intent to fulfill requirements for recreation cost sharing and has assumed responsibility for channel encroachments and pollution control. The Commonwealth furnished assurance agreements covering prevention of encroachment on capacity of stream channels in April and May 1973 and executed the recreation cost sharing contract in April 1973. On April 2, 1980, the U.S. District Court for the Western District of Kentucky ruled that the 1973 recreation cost sharing contract between the Commonwealth and the United States that provided for repayment after completion was invalid under the Kentucky Constitution which prohibits one General Assembly from obligating future appropriations that would be binding on a subsequent legislature. In response to the Court's ruling, the Commonwealth and the United States entered into a new contract providing for cash contributions. Contract was approved by the Secretary of the Army June 11, 1980. The contract was found to be valid and enforceable by the Court July 14, 1980.

Operations during fiscal year. New work: Replaced tower roof. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $3,807,000 were prevented. Visitor expenditures were $21,953,489.

Condition at end of fiscal year. Engineering and design studies are complete. Land acquisition is 100 percent complete. Construction was started in June 1974. All major construction items are complete. The dam gates were closed in January 1983 for permanent impoundment. Dedication ceremony was May 28, 1983. Two sections of county road were washed out by heavy rainfall. Both sections were originally upgraded for project operation prior to washout. The repairs were completed by the Corps in 1996-97 at a cost of $700,000.

41. WABASH RIVER BASIN

Location. Works covered by this project are located in the Wabash River Basin, a drainage area of 33,100 square miles, covering parts of Indiana, Illinois, and Ohio.

Existing project. One local protection project and five reservoir projects were authorized for this basin plan. (See Table 24-B for authorizing legislation and Table 24-J for project list and total cost of basin plan.)

42. WEST FORK OF MILL CREEK LAKE, OH

Location. Dam is on West Fork of Mill Creek 6.5 miles above its junction with Mill Creek and 2 miles northeast of Mount Health, OH, and 10 miles north of downtown Cincinnati. Reservoir extends upstream about 3 miles and is in Hamilton County, OH. (See U. S. Geological Survey map of Glendale, OH.)

Existing project. An earth embankment dam and a reservoir for flood control and allied purposes. Total storage capacity of reservoir is 11,300 acre-feet, of which 9,850 acre-feet is for flood control. For further details, see page 1119 of Annual Report for 1962. Cost of completed new work is $4,722,463 made up of $3,092,941 Federal cost for the initial project, $520,800 non-Federal cost for sewer relocation and dam, $50,000 non-Federal contributed funds in fulfillment of project authorization and $529,361 Federal cost and $529,361 non-Federal contribution in kind for recreation facilities under the completed projects program. Existing project selected for construction under additional authorization for Ohio River Basin in 1946 Flood Control Act.

Local Cooperation. Local interests were to release necessary land under their control and give assurance that future channel encroachment below dam site would be prevented. For enlargement of reservoir to include a conservation pool, local interests would contribute one-half additional cost of such pool, including one-half cost of relocation of sanitary sewer, and agree to hold the United States free from damages resulting from its provision. Board of County Commissioners of Hamilton County, Ohio, adopted a resolution October 8, 1947, signifying willingness to fulfill requirements including provision of conservation pool. Assurances were executed on same date. A contract with the United States for relocation of sanitary sewer outside reservoir area in order to include conservation pool in project was accepted by Hamilton County, in which the United States paid one-half cost of such relocation work. Hamilton County Commissioners furnished $50,000, required as a local contribution toward additional cost of providing conservation pool. Hamilton County Park District has undertaken development and management of recreation facilities in reservoir area for use of the public in

accordance with the license granted by Secretary of the Army on October 31, 1951. Contract for cost shared recreation development under the completed works program was executed by the Board of Park Commissioners, Hamilton County Park District, Ohio, in September 1975 and approved by the Chief of Engineers in December 1975.

Operations during fiscal year. New work: None. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $1,521,000 were prevented. Visitor expenditures were $17,576,626.

Condition at end of fiscal year. Construction started in March 1949 and reservoir was placed in operation in December 1952. Project is complete. Cost shared recreation development under the completed projects program is complete.

43. WILLIAM H. HARSHA LAKE, OH

Location. Dam site is on East Fork of Little Miami River between Batavia and Williamsburg, OH, about 6.0 miles above Batavia and 32.6 miles above mouth of the Little Miami River. Entire project lies in Clermont County, OH. (See U.S. Geological Survey map of Batavia, OH.)

Existing project. A reservoir for flood control and allied purposes. It includes an earthfill dam, outlet works, an uncontrolled saddle spillway, and a dike to close a saddle north of spillway. Total storage capacity of reservoir is 294,800 acre-feet, of which 210,600 acre-feet is reserved for flood control storage. Cost of completed new work is $52,023,157 and a estimated $3,485,840 non-Federal reimbursement for water supply storage. Existing project was authorized by general authorization for Ohio River Basin in 1938 Flood Control Act. Project name was changed from East Fork Lake to William H. Harsha Lake effective January 4, 1981, by Public Law 96-383, October 6, 1980.

Local Cooperation. None required. However, the State of Ohio requested inclusion in the project of storage for future municipal and industrial water supply uses. Contract with State of Ohio for water supply storage under provisions of Water Supply Act of 1958, as amended, was approved by Secretary of the Army, May 20, 1970. Under terms of contract, State will reimburse the Federal Government for costs allocated to water supply storage over a period not to exceed 50 years after use of this storage is initiated plus estimated annual amount for cost of operation, maintenance, and major capital replacements required for the water supply facilities.

Operations during fiscal year. New work: None. Maintenance: Routine maintenance was performed. During the 2004 flood season estimated damages of $1,861,000 were prevented Visitor expenditures were $37,597,162.

Condition at end of fiscal year. Construction was started in May 1970. Project is complete and reservoir was placed in operation in February 1978.

44. INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS

Flood Control Act of June 22, 1936, and subsequent acts require local interests to maintain and operate local protection projects in accordance with regulations prescribed by Secretary of the Army. Inspections were made to determine extent of compliance and to advise interests as necessary to measures required to correct deficiencies. (See Table 24-K for the latest dates of inspection performed on the local protection projects, channel improvements, and bank revetments).

Fiscal year costs were $272,435. Total costs to September 30, 2004, were $6,473,357.

45. OTHER AUTHORIZED FLOOD CONTROL PROJECTS

See Table 24-E.

46. FLOOD CONTROL WORKS UNDER SPECIAL AUTHORIZATION

Environmental restoration activities pursuant to Section 1135, 1986 Water Resources Act, as Amended. Costs for fiscal year were $14,485 for four planning & design analysis; $297 for one project under construction; $36 for one preliminary restoration plan; and $5,000 for coordination activities.

Reflects federal cost only, for full costs see table 24-L.

Flood control activities pursuant to Section 205, 1948 Flood Control Act, Public Law 858, 80th Congress, as amended. Cost for fiscal year were $551,323 for sixteen feasibility reports; $49,548 for plans and specifications on two projects; $38,674 for one projects under construction; -$44,701 for two projects completing construction; $73,956 for terminated studies on five projects; and $31,095 for coordination activities.

Reflects federal cost only, for full costs see table 24-L.

Emergency bank protection (Section 14, 1946 Flood Control Act, Public Law 526, 79th Congress). Costs for fiscal year were $356,808 for ten planning and design analyses; -$583 for one project completing construction; $45 for one study terminations; and $21,250 for coordination activities.

Reflects federal cost only, for full cost see table 24-L.

Aquatic Ecosystems Restoration (Section 206). Cost for fiscal year was $34,257 for eight planning and design analyses; $2,194 for one feasibility report; $4,136 for coordination activities; and $6,808 for four preliminary restoration plans.

Clearing and Snagging (Section 208). Cost for fiscal year was $24,844 for one Planning Design Analysis.

Navigation – Rivers & Harbors (Sec. 107). Cost for fiscal year was $29,972 for one Feasibility Report.

EMERGENCY MANAGEMENT and SECURITY BRANCH

Emergency flood control; activities pursuant to Public Law 99, 84th Congress, and antecedent legislation. The Louisville District participated in the following emergency management activities.

Private Dam Leak, Brown Co , IN: On 14 January 2004, Indiana SEMA requested technical assistance with a leaking private dam located in Brown County, IN. The dam impounds a lake approximately 2 acres in area and 12 feet in depth. Two houses are located in the floodway downstream from the dam. SEMA engineers inspected the dam and determined that USACE technical assistance was not required and cancelled the request..

Indiana/Kentucky Storms: On 28 May 2004, a series of storms over a five day period moving through Southern Indiana and Northern Kentucky, resulted in saturated ground conditions and high run off amounts, causing substantial flooding. A total of 40 confirmed tornados hit Indiana and 8 confirmed tornados hit Kentucky. The main stem Ohio River, and most of its tributaries, rose to flood stage. The District furnished a Debris Removal SME to assist the state and City of Marengo, IN with debris removal planning. GIS team deployed to Marengo, IN, to survey damage and geo-locate specific damaged areas and buildings. Data is being compiled to create a special damage map for FEMA. Four (4) PDA teams deployed and Mr. Steve Rager deployed as the ESF#3 TL in Indianapolis. Steven Hite and Terry Sullivan, were sent to Salem, IN, to assist with the evaluation of a City water supply dam, which experienced structural problems. The issue was a foundation problem with the spillway. A plan was developed by a team from INSEMA, IDNR, the County Engineer, and two Corps Representatives. The City will execute the plan.

Support for Hurricane Charlie, Francis, Ivan, and Jeanne: During the period of 1 Sep-17 Dec 04, the Louisville District supported sister District's with personnel to perform mission requirements in the aftermath of the 4 hurricanes that devastated the State of Florida and surrounding areas A total of 32 personnel were deployed to Florida and surrounding areas to support humanitarian actions and clean up missions. Personnel were deployed for periods of 1 to 3 months.

The Operations Division GIS Team, Louisville District, conducted modeling efforts to support HQUSACE readiness for Hurricanes Charley, Frances, Ivan and Jeanne. The team is assigned the mission to prepare estimates of possible debris that may be generated from a land falling hurricane, the amount of ice and water that may be needed on a "first-day" basis, and the possible number of homes that may need temporary roofing assistance and also the number of housing units that may need to be replaced on a temporary basis. Tropical Storms Alex (later upgraded to Hurricane Alex) and Bonnie were monitored but no modeling effort occurred due to storms not making landfall with at least Category 1 winds. Alex occurred in late July 2004 and Bonnie made landfall in the first week of August 2004. Starting on about August 9, 2004, the GIS team began tracking the progress of Hurricane Charley as it approached the coast of the United States. Preliminary estimates were made as the storm was still south of Cuba as concern for a landfall in the Tampa-St Petersburg area was high. First model results were published on ENGLink on August 1, 2004. Modeling of Charley continued as the hurricane proceeded from the Gulf Coast of Florida until the storm made a second land fall in South Carolina. Charley was a Category 4 hurricane at landfall. Tropical storms Danielle and Earl were monitored with no additional work. Models were begun during the last days of August 2004 for Hurricane Frances, a storm that made landfall on the Florida Atlantic Coast on September 5, 2004 as a Category 2 storm but a very widespread storm in it's effect on Florida resources. Frances had been forecasted to make landfall as a Category 3 storm which would have created significant damage, more than occurred with the storm as it ultimately died down before landfall. Hurricane Ivan was tracked for a significant distance as it grew to a significant storm as it crossed the Windward Islands in the Caribbean Sea. While much speculation occurred over the possible landfall site, models were run over 6 days prior to landfall to provide responders with the best possible information regarding storm effects. Ivan made landfall on September 16, 2004 as a Category 3 hurricane and caused significant damage in both Florida and Alabama with Pensacola, Florida being hardest hit. Hurricane Jeanne followed closely behind Ivan for a second Atlantic coast Florida landfall hurricane during 2004. Jeanne was followed for almost ten days as it meandered thru the Atlantic Ocean after dropping large amounts of rain on Jamaica and then circling through the Bahamas. Landfall finally occurred on September 26, 2004 following a path very similar to that taken by Hurricane Frances. All hurricanes were modeled and support to HQUSACE, Planning and Response Teams and Subject Matter Experts were provided in terms of cubic yard of debris likely, liters of water and pounds of ice needed, and number of roofs needing substantial repair and need for temporary housing. All information was posted through the ENGLink system for world-wide distribution to Corps of Engineers assets. In addition, model results were shared with Federal Emergency Management Agency (FEMA) and state emergency agencies to aid in their planning and response actions.

Tropical Storm Flooding in Ohio: On 30 Sep 2004, Tropical Storm Ivan dumped over 8 inches of rain into Eastern Ohio, Western Pennsylvania, and Western West Virginia. The storm caused extensive flooding in 15 counties in Ohio; 8 counties in Pennsylvania; and 8 counties in West Virginia. In Ohio, most of the flooding

occurred in the Muskingum River basin and counties adjacent to the Ohio River. LRL received the missions of debris removal and demolition of condemned homes. LRL had sixteen representatives on site. Four Hundred Thirty Seven (437) sites investigated and sixty five (65) approved for debris removal. Fifty Six (56) sites out of Two Hundred Ninety One (291) sites surveyed were approved for demolition.

During FY 04, the Emergency Management and Security Branch executed $3,399,319 in emergency operation activities

Critical Project Security Program (CPSP): Infrastructure Security Assessments have been conducted at all eleven **critical** USACE facilities in the Louisville District: Smithland L&D, L&D #52, John T. Myers L&D, Newburgh L&D, Cannelton L&D, McAlpine L&D, Markland L&D, West Fork Lake, Brookville Lake, Mississinewa Lake, and C.J. Brown Dam & Reservoir. The assessment reports for these projects have been approved by LRD and HQUSACE.

HQUSACE has funded the **critical** projects listed below for upgraded security, as identified in RAM-D reports: Smithland ($1,694,000); Markland L&D ($2,622,000); McAlpine L&D ($3,523,000); Cannelton L&D ($1,841,000); Newburgh L&D ($1,998,000); John T. Myers L&D ($1,995,000); L&D 52 ($1,289,000); West Fork Lake ($669,000).

Design charrettes have been conducted at the eight Phase I funded projects listed above. The follow-up 35% design packages have been completed for these projects, and the Independent Technical Review (ITR) team has completed its review of all those projects. The ITR has also completed their review of the 95% design which was submitted for Smithland, Markland, Cannelton, Newburgh, JT Myers, McAlpine and L/D 52 The 95% designs for West Fork Lake have not yet been awarded to the contractor. Brookville, Mississinewa, and CJ Brown were divided into two phases for each project. Requests for proposals were submitted to the District's IDIQ contractor for design/build delivery orders at all seven Phase I lock and dam projects. Phase I for these three projects have been awarded, designed and built. The IDIQ has provided all proposals , and all delivery orders have been awarded for physical, electrical and electronic security improvements. We have received approval to proceed with procurement and construction of all of the improvements at all of the Locks & Dams with the exception of the ESS at L/D 52 The current expenditures for the Critical Project Security Program design and initial construction totals approximately $6,159,000 for FY04 at the seven locks and dams and $802,000 for the three Phase 1 lack projects. Negotiations for the remaining improvements noted below are currently in progress: West Fork Lake (all security improvements); Locks & Dam 52 (ESS); Markland L&D (highway bridge improvements).

Force Protection Infrastructure Security Assessments have been completed at 14 of the district's 19 remaining non-critical USACE Facilities.

Costs for fiscal year 2004 were: $313,794 for Disaster Preparedness; $2,779,098 in reimbursable funds for emergency operations; and $13,991 for inspection of non-federal flood control works

General Investigations

47. SURVEYS

Fiscal year costs was $260,225 for one navigation study; $446,610 for eight flood damage prevention studies; $442,689 for seven special studies; $28,564 for one review of authorized projects; and $55,163 for four miscellaneous activities.

Reflects Federal cost only, for full cost see Table 24-M.

48. PRECONSTRUCTION ENGINEERING AND DESIGN

Fiscal year costs were $1,006,474 for one Navigation project; $28,745 for two flood control projects.

Reflects Federal cost only, for full cost see Table 24-M.

49. COORDINATION WITH OTHER AGENCIES

Fiscal year total cost was $6,006 for one coordination with other agencies project and $99,597 for seven planning assistance to states projects.

Reflects federal cost only, for full costs see Table 24-M.

50. COLLECTION AND STUDY OF BASIC DATA

Fiscal year total cost was $217,037 for five flood plain management projects; and $4,997 for one hydrologic study.

TABLE 24-A CONTINUED

COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	2001	2002	2003	2004	Total to Sep 30, 2004	
	Navigation - Channels and Harbors							
1	Open Channel Work, Licking River	New Work						
		Approp.	$ 0	$ 0	$ 0	$ 0	$ 0	
		Cost	$ 0	$ 0	$ 0	$ 0	$ 0	
		Maint.						
		Approp.	0	0	0	0	187,816	
		Cost	0	0	0	0	187,816	
3	**Navigation - Locks and Dams**							
	Green and Barren Rivers, KY	New Work						
		Approp.	0	0	0	0	13,808,222	1
		Cost	0	0	0	0	13,808,222	1
		Maint.						
		Approp.	1,305,186	1,428,205	1,938,658	2,153,451	55,836,811	2,3
		Cost	1,305,039	1,422,384	1,939,630	2,158,320	54,323,657	
4	Kentucky River, KY	New Work						
		Approp.	1,996,000	390,875	0	650,825	7,214,449	62
		Cost	104,780	999,214	925,077	878,433	7,084,252	
		Maint.						
		Approp.	1,944,654	1,071,921	76,265	21,756	85,386,582	4,5,45
		Cost	1,943,526	1,069,220	86,112	21,791	85,386,581	4,5,46
		Minor Rehab.						
		Approp.	0	0	0	0	556,956	
		Cost	0	0	0	0	556,956	
	Flood Control, Local Protection							
8	Beargrass Creek	New Work						
		Approp.	70,000	377,500	2,549,000	3,434,000	6,430,500	63
		Cost	68,367	357,076	2,559,558	3,451,234	6,436,235	64
9	Duck Creek	New Work						
		Approp.	362,700	1,611,400	7,220,700	5,246,000	18,481,800	55
		Cost	545,925	1,633,199	6,779,924	5,428,155	18,193,859	56
10	Holes Creek, OH	New Work						
		Approp.	201,000	78,408	786,067	15,000	8,187,265	51
		Cost	424,950	528,428	679,855	54,222	8,116,205	52
11	Indianapolis CSO	New Work						
		Approp.	0	16,000	244,000	314,000	574,000	67
		Cost	0	14,948	29,965	325,500	370,414	
12	Louisville Waterfront Park	New Work						
		Approp.	100,000	20,000	0	30,000	150,000	
		Cost	60,504	55,936	3,265	1,502	121,206	
13	Mill Creek, OH	New Work						
		Approp.	361,000	1,874,700	4,568,000	4,892,000	112,790,376	6
		Cost	517,123	1,835,349	4,709,388	4,889,846	112,755,609	7
14	Ohio Environmental Infrastructure	New Work						
		Approp.	620,000	1,510,000	277,000	1,120,000	3,527,000	
		Cost	566,417	828,461	130,037	1,791,226	3,316,141	

TABLE 24-A
CONTINUED

COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	2001	2001	2003	2004	Total to Sep 30, 2004	
15	Ohio River Flood Protection (Indiana Shoreline), IN	New Work						
		Approp.	214,146	(1,446)	(5,304)	2,000	4,272,866	57
		Cost	1,270,049	121,359	2,301	1,484	4,267,090	58
16	Ohio River Greenway	New Work						
		Approp.	607,000	625,000	954,000	1,483,000	3,669,000	8
		Cost	601,034	606,384	778,023	1,611,909	3,597,351	
17	Pond Creek, KY	New Work						
		Approp.	4,185,000	378,000	858,152	294,000	9,142,336	53
		Cost	4,004,512	627,813	737,958	315,032	8,831,781	54
18	Salyersville, KY	New Work						
		Approp.	0	(700,000)	0	0	8,480,019	10
		Cost	68,640	4,321	0	0	8,416,441	11
19	Southern & Eastern, KY	New Work						
		Approp.	1,000,00	0	1,428,000	205,000	4,142,000	59
		Cost	292,850	713,889	170,169	1,106,699	3,158,112	60
20	White River, Indpls Central Waterfront, IN	New Work						
		Approp.	9,980,000	9,000,000	4,227,000	0	49,056,000	9
		Cost	7,591,011	6,678,694	3,739,984	4,828,268	47,159,153	
21	White River, Indpls (North), IN	New Work						
		Approp.	983,700	1,551,200	4,857,300	1,654,000	9,201,200	65
		Cost	565,646	1,758,846	3,769,595	2,131,525	8,354,448	66
	Flood Control - Reservoirs							
22	Barren River Lake, KY	New Work						
		Approp.	0	0	0	0	27,479,717	12
		Cost	0	0	0	0	27,479,717	12
		Maint.						
		Approp.	2,478,457	2,413,729	2,626,968	2,237,074	46,020,267	13,14,15
		Cost	2,472,913	2,406,559	2,591,726	2,276,450	46,011,574	13,14,15
23	Brookville Lake, IN	New Work						
		Approp.	0	0	0	0	45,402,565	16
		Cost	0	0	0	0	45,402,565	16
		Maint.						
		Approp.	699,618	764,500	642,960	918,878	15,718,892	47
		Cost	699,959	657,157	748,055	920,628	15,717,669	47

TABLE 24-A
CONTINUED

COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	2001	2002	2003	2004	Total to Sep 30, 2004	
24	Buckhorn Lake, KY	New Work						
		Approp.	0	700,000	0	0	12,466,206	17
		Cost	0	346,586	125,006	225,815	12,463,613	17
		Maint.						
		Approp.	1,653,171	1,487,094	1,291,101	1,369,947	28,732,027	18
		Cost	1,652,161	1,445,706	1,313,846	1,368,048	28,728,376	18
25	Caesar Creek Lake, OH	New Work						
		Approp.	0	0	0	0	62,881,010	
		Cost	0	0	0	0	62,881,010	
		Maint.						
		Approp.	1,252,042	1,202,171	1,270,437	1,222,291	23,011,288	48
		Cost	1,252,043	1,176,978	1,291,562	1,221,421	23,006,330	48
26	Cagles Mill Lake, IN	New Work						
		Approp	0	0	0	0	4,369,997	19
		Cost	0	0	0	0	4,369,997	20
		Maint.						
		Approp.	653,388	705,525	640,416	598,349	14,934,049	
		Cost	652,421	677,173	662,271	605,133	14,933,369	
27	Carr Creek Lake, KY	New Work						
		Approp.	0	1,000,000	0	0	51,854,826	21
		Cost	0	5,252	1,026	976	50,862,081	21
		Maint.						
		Approp.	1,367,678	1,643,629	1,444,844	1,590,028	28,487,213	22
		Cost	1,369,048	1,626,096	1,422,403	1,619,346	28,476,557	22
28	Cave Run Lake, KY	New Work						
		Approp.	0	0	0	0	81,159,541	23
		Cost	0	0	0	0	81,159,541	23
		Maint.						
		Approp.	887,116	872,413	744,165	828,433	17,560,553	49
		Cost	885,737	843,419	771,040	831,933	17,560,554	49
29	Cecil M. Hardin Lake, IN	New Work						
		Approp.	0	0	0	0	6,987,807	24
		Cost	0	0	0	0	6,987,807	24
		Maint.						
		Approp.	791,012	693,058	650,789	631,974	18,226,290	
		Cost	790,491	665,957	676,239	637,443	18,226,257	
30	Clarence J. Brown Dam & Reservoir, OH	New Work						
		Approp.	0	0	0	0	22,083,660	
		Cost	0	0	0	0	22,083,660	
		Maint.						
		Approp.	770,716	842,097	981,257	1,259,643	16,226,005	61
		Cost	770,717	806,573	1,005,017	1,232,801	16,187,400	61
31	Green River Lake, KY	New Work						
		Approp.	0	0	0	0	33,462,330	25
		Cost	0	0	0	0	33,462,330	25
		Maint.						
		Approp.	2,484,281	2,582,226	2,145,346	2,131,306	41,191,074	26
		Cost	2,507,644	2,552,101	2,151,679	2,150,740	41,186,357	26

TABLE 24-A CONTINUED

COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	2001	2002	2003	2004	Total to Sep 30, 2004	
32	J. Edward Roush Lake, IN	New Work						
		Approp.	0	0	0	0	19,621,777	27
		Cost	0	0	0	0	19,621,777	28
		Maint.						
		Approp.	850,326	689,183	805,401	1,009,466	17,202,045	
		Cost	853,814	659,676	778,369	1,066,518	17,201,917	
33	Mississinewa Lake, IN	New Work						
		Approp.	312,000	11,262,000	16,350,800	11,802,000	64,106,600	29
		Cost	307,007	11,243,752	16,348,887	11,809,949	64,089,395	67
		Maint.						
		Approp.	803,680	739,138	662,738	993,002	17,741,509	
		Cost	804,439	730,674	672,343	994,290	17,740,287	
34	Monroe Lake, IN	New Work						
		Approp.	0	0	0	0	16,570,774	30
		Cost	0	0	0	0	16,570,774	30
		Maint.						
		Approp.	676,347	651,559	643,789	677,245	17,312,754	31
		Cost	675,422	629,000	665,872	675,850	17,309,877	31
35	Nolin Lake, KY	New Work						
		Approp.	0	0	0	0	17,193,278	32
		Cost	0	0	0	0	17,193,278	33
		Maint.						
		Approp.	2,210,711	2,062,665	2,085,062	2,132,879	47,991,731	34
		Cost	2,205,983	2,044,604	2,100,068	2,140,206	47,991,230	34
36	Ohio River Basin Louisville District	New Work						
		Approp.	0	0	0	0	1,526,142	
		Cost	0	0	0	0	1,526,142	
37	Patoka Lake, IN	New Work						
		Approp.	2,676,000	(16,308)	0	-385,925	76,243,083	35
		Cost	2,683,093	4,458	0	0	76,243,083	36
		Maint.						
		Approp.	578,774	690,063	608,299	633,983	13,202,258	
		Cost	577,686	669,626	628,977	634,471	13,201,897	
38	Rough River Lake & Channel Improvement, KY	New Work						
		Approp.	0	0	0	25,000	10,668,001	37
		Cost	0	0	0	24,541	10,667,542	37
		Maint.						
		Approp.	2,358,397	2,098,460	2,511,657	2,829,769	47,546,861	38
		Cost	2,381,912	2,125,338	2,448,593	2,888,752	47,524,781	38
39	Salamonie Lake, IN	New Work						
		Approp.	0	0	0	0	17,039,321	39
		Cost	0	0	0	0	17,039,321	40
		Maint.						
		Approp.	667,980	573,391	546,848	647,794	14,615,648	
		Cost	667,519	556,276	555,858	654,361	14,613,022	

TABLE 24-A CONTINUED **COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	2001	2002	2003	2004	Total to Sep 30, 2004
40	Taylorsville Lake, KY	New Work					
		Approp.	0	0	0	0	87,004,456 [41]
		Cost	0	0	0	0	87,004,456 [42]
		Maint.					
		Approp.	834,249	808,328	755,318	896,048	17,233,312
		Cost	857,795	786,951	765,365	905,464	17,231,364
42	West Fork of Mill Creek Lake, OH	New Work					
		Approp.	0	0	0	0	4,722,463 [43]
		Cost	0	0	0	0	4,722,463 [43]
		Maint.					
		Approp.	357,116	414,779	1,104,124	-198,772	10,773,421
		Cost	356,422	393,553	489,144	437,739	10,773,033
43	William H. Harsha Lake, OH	New Work					
		Approp.	0	0	0	0	52,023,157 [44]
		Cost	0	0	0	0	52,023,157 [44]
		Maint.					
		Approp.	719,366	780,330	767,739	692,067	15,823,689 [50]
		Cost	718,866	753,229	792,328	692,478	15,821,086 [50]

[1] Includes $85,000 public works funds.
[2] Includes $2,000 emergency relief funds, $204,444 “maintenance and operation of dams and improvements of navigable waters” and $3,842,667 expended from 1888 to 30 June 1936, for operation and care from permanent indefinite appropriation.
[3] Includes $725,715 from Productive Employment Appropriation Act (PL 98-8) of 1983.
[4] Includes $316,871 under “maintenance and operation of dams and other improvements of navigable waters”, and $6,405,372 expended between July 5, 1885 and June 30, 1937 on operation and care from permanent indefinite appropriation.
[5] Includes $149,700 from Productive Employment Appropriation Act (PL 98-8) of 1983.
[6] Includes $52,734 in contributed funds.
[7] Includes $68,448 contributed funds.
[8] Includes $1,150,000 contributed funds.
[9] Includes $4,227,000 contributed funds.
[10] Includes $550,019 contributed funds.
[11] Includes $541,992 contributed funds.
[12] Includes $2,224,948 Code 711 funds, $110,107 Code 713 Federal funds and $108,418 Code 713 non-Federal funds.
[13] Includes $100,000 Supplemental funds.
[14] Includes $326,900 Special Recreation Use Fees.
[15] Includes $668,025 "maintenance & operation of dams and other improvements of navigable water".
[16] Includes $7,497,492 contributed funds and $100,706 Code 711 funds.
[17] Includes $61,451 public work acceleration executive 1963 funds, $143,088 Code 711 funds, and $243,619 Code 712 funds.
[18] Includes $52,240 Special Recreation Use Fees and $336 “maintenance and operation of dams and other improvements of navigable water.”
[19] Includes $35,814 Code 711 funds, $113,321 Code 713 funds, and $113,094 contributed funds.
[20] Includes $35,814 Code 711 funds, $113,321 Code 713 funds, and $113,094 contributed funds.
[21] Includes $76,724 Code 711 funds.
[22] Includes $51,854 Special Recreation Use Fees.
[23] Includes $6,900,000 of U.S. Forest Service Funds.
[24] Includes $19,683 Code 711 funds, $353,995 Code 713 funds, & $353,995 non-Federal contributions in kind for recreation facilities.
[25] Includes $133,413 Code 711 funds, $183,732 Code 713 funds, and $40,001 contributed funds.
[26] Includes $114,280 Special Recreation Use Fees and $664,025 under "maintenance and operation of dams and other improvements of navigable water".
[27] Includes $155,354 Code 713 funds and $193,422 contributed funds.
[28] Includes $155,354 Code 713 funds and $193,422 contributed funds.
[29] Includes $215,000 Code 711 funds, $174,392 Code 713 funds, $239,200 contributed funds and $174,392 non-Federal contribution in kind for recreational facilities, $39,726,800 in Code 817 funds for major rehab..
[30] Includes $1,185 Code 711 funds, $869,158 Code 713 funds, $7,797,604 contributed funds and $870,343 non-Federal contribution in kind for recreational facilities.
[31] Includes $54,460 from Productive Employment Appropriation Act (PL 98-8) of 1983.
[32] Includes $21,897 public works acceleration executive 1963 funds and $2,594,274 Code 711 funds.
[33] Includes $21,897 public works acceleration executive 1963 funds and $2,594,274 Code 711 funds.
[34] Includes $204,920 Special Recreation Use Fees and $52,000 Supplement Funds, $527,225 "maintenance and operation of dams and other improvements of navigable water".

[35] Includes $20,568,369 contributed funds.
[36] Includes $20,182,445 contributed funds.
[37] Includes $196,306 public works acceleration executive 1963 funds and $867,396 Code 711 funds, $22,612 Code 713 funds, and $22,612 contributed funds.
[38] Includes $236,640 Special Recreation Use Fees and $668,025 under "maintenance and operation of dams and other improvements of navigable water".
[39] Includes $315,549 Code 713 funds, $163,867 contributed funds, and $315,549 non-Federal contribution in kind for recreation facilities.
[40] Includes $315,549 Code 713 funds, $163,867 contributed funds, and $315,549 non-Federal contribution in kind for recreation facilities.
[41] Includes $4,013,093 contributed funds.
[42] Includes $4,013,093 contributed funds.
[43] Includes $529,361 Code 713 funds, $50,000 contributed funds, $529,361 non-Federal contribution in kind for recreation facilities, and $520,000 non-Federal cost for sewer relocation and dam.
[44] Includes $58,571 for preconstruction planning, engineering and design completed before FY 1953.
[45] Includes $57,000 contributed funds.
[46] Includes $45,194 contributed funds.
[47] Includes $3,511 "maintenance and operation of dams and other improvements of navigable water."
[48] Includes $5,476 "maintenance and operation of dams and other improvements of navigable water."
[49] Includes $8,126 "maintenance and operation of dams and other improvements of navigable water."
[50] Includes $8,764 "maintenance and operation of dams and other improvements of navigable water."
[51] Includes $418,970 contributed funds.
[52] Includes $418,971 contributed funds.
[53] Includes $964,000 contributed funds.
[54] Includes $677,528 contributed funds.
[55] Includes $1,228,000 contributed funds.
[56] Includes $948,178 contributed funds.
[57] Includes $999,135 contributed funds.
[58] Includes $999,135 contributed funds.
[59] Includes $914,090 Code 511 funds and $3,022,910 Code 772 funds.
[60] Includes $555,698 Code 511 funds and $781,789 Code 772 funds.
[61] Includes $573 “maintenance and operation of dams and other improvements of navigable water”.
[62] Includes $495,000 contributed funds.
[63] Includes $1,057,000 contributed funds.
[64] Includes $707,424 contributed funds.
[65] Includes $1,862,300 contributed funds.
[66] Includes $1,467,389 contributed funds.
[67] Includes $215,000 Code 711 funds, $174,392 Code 713 funds, $239,200 contributed funds and $174,392 non-Federal contribution in kind for recreational facilities and $39,709,595 in Code 817 funds for major rehab.

LOUISVILLE, KY DISTRICT
AUTHORIZING LEGISLATION

Acts	Work Authorized	Documents
	GREEN AND BARREN RIVERS, KY (See Section 3 of Text)	
Aug 11, 1888	Purchase of original improvement	H. Doc 111, 49th Cong., 2d Sess., Ann. Rept. 1887, p.1903
Mar 3, 1893 [1]	Construction of Lock 2, Green River	Annual Report, 1891, p. 2439
Jul 13, 1892	Construction of Lock 5, Green River	
Jul 13, 1902	Construction of Lock 6, Green River	Annual Report, 1891, p. 2478
Mar 3, 1905 [2]	Appropriated $5,000 for continuing improvements of Green River above mouth of Big Barren River, with provision "That the Secretary of War may, in his discretion, expend such portion of said amount as may be necessary for removal of snags in Nolin River."	
Mar 3, 1909	Construct new Lock 1 and new Lock and Dam 2, Green River	S. Doc. 82, 83d Cong., 2d Sess.
Jul 3, 1930 [2]	Construct new locks at Dam 5, Green River and Dam 1, Barren River; modification of Dam 5, Green River, widens bends in Bear Creek, KY	Rivers and Harbors Committee Doc. 2, 71st Cong., 1st Sess., and H. Doc. 685, 69th Cong., 2d Sess.
Jun 26, 1934 [3]	Operation and care of locks and dams with War Department Appropriations for rivers and harbors	
Aug 30, 1935 [2]	Improvement of Nolin River	H.D. 480, 72d Cong., 2d Sess.
Sep 3, 1954	Channel enlargement of lower 103 miles of Green River revocation of authorities for improvement of Bear Creek and Nolin River	S.D. 82, 83d Congress, 2d Sess.
	KENTUCKY RIVER (See Section 4 of Text)	
1879	Existing project was adopted	H. Ex, Doc 47, 45th Cong., 3d Sess., Ann. Rept. 1879, p.1398
Jun 26,1634 [3]	Operation and care of locks and dams	
Aug 26,1999	Appropriated $2,000,000 for work on lock and dam #10	Public Law 106-377, 106th Congress, 1st Session
Dec 21, 2000	Authorization to stabilize and renovate lock and dam #10	Public Law 106-553, 106th Congress 1st Session
	OHIO RIVER BASIN (Louisville Dist.) (See Section 36 of Text)	
Aug 28, 1937	Construct levee, floodwalls, and drainage structures for protection of cities and towns in Ohio River Basin, projects to be selected by Chief of Engineers with approval of Secretary of War, at a cost not to exceed $24,877,000 for construction	Flood Control Committee Document 1, 75th Congress, 1st Session
Jun 28, 1938	Approved general comprehensive plan for flood control and other purposes in Ohio River Basin as may be advisable in discretion of Secretary of War and Chief of Engineers, and for initiation and partial accomplishment of plan, authorized $75 million for reservoirs and $50.3 million for local protection works, individual projects to be selected and approved by Chief of Engineers, subject to provision that authorization shall include diversion of Cache River above Cairo, Illinois, and protection of area north of Cairo drainage district by levees at an estimated cost of $2 million	Flood Control Committee Document 1, 75th Congress, 1st Session
Aug 18, 1941	Additional $45 million for further prosecution of comprehensive plan for Ohio River Basin	
Dec 22, 1944	Additional $70 million for further prosecution of comprehensive plan for Ohio River Basin, including plan of improvement for flood control and other purposes in Kentucky River Basin	H. Doc. 504, 78th Congress, 2d Session
	Flood protection works at Taylorsville, KY at an estimated cost of $129,350	S.D. 105, 78th Cong., 1st Sess.
	Channel improvement of lower Rough River and Barnett Creek at an estimated cost of $360,000	H.D. 535, 78th Congress 2d Session
Jul 24, 1946	Additional $125 million for further prosecution of comprehensive plan, including plan of improvement for flood control in Wabash River Basin, Illinois, and Indiana, at an estimated cost of $9,629,000	H.D. 197, 80th Congress 1st Session
	Also, West Fork of Mill Creek at an estimated cost of $1,527,000.	H.D. 198, 80th Cong., 1st Session

TABLE 24-B AUTHORIZING LEGISLATION
CONTINUED

Acts	Work Authorized	Documents
May 17, 1950	Additional $100 million for prosecution of comprehensive plan for Ohio River Basin, including necessary bank stabilization measures at New Harmony Bridge, Indiana, at an estimated cost of $500,000.	
Jul 3, 1958	Flood control Act of 1958 modified comprehensive plan to provide for Monroe Reservoir on Salt Creek, White River Basin, Indiana, at an estimated cost to the United States of $4,350,000; cost to local interests, $5,141,000.	H.D. 192, 85th Congress, 1st Session
Oct 23, 1962	Flood Control Act of 1962 deleted Jessamine Creek Reservoir on Kentucky River, Kentucky, from comprehensive plan for Ohio River Basin	H.D. 423, 87th Congress, 2d Session
Dec 30, 1963	Additional $150 million for further prosecution of comprehensive plan for Ohio River Basin	Pub. Law 88-253, 88th Cong., 1st Session
Jun 18, 1965	Additional $89 million for further prosecution of comprehensive plan for Ohio River Basin	Public Law 89-42, 89th Cong., 1st Session
May 12, 1967	Additional $38 million for further prosecution of comprehensive plan for Ohio River Basin	Public Law 90-17, 90th Cong., 1st Session
Aug 13, 1968	Additional $35 million for further prosecution of comprehensive plan for Ohio River Basin	Public Law 90-483, 90th Cong., 2nd Session
Jun 19, 1970	Additional $69 million for further prosecution of comprehensive plan for Ohio River Basin	Public Law 91-282, 91st Cong., 2nd Session
Mar 7, 1974	Additional $120 million for further prosecution of comprehensive plan for Ohio River Basin Fifty-four local protection projects and one reservoir project in comprehensive plan for Ohio River Basin were deauthorized August 5, 1977, under Section 12, Water Resources Development Act of 1974 Two additional local protection projects in comprehensive plan for Ohio River Basin were deauthorized November 6, 1977, under Section 12, Water Resources Development Act of 1974	Public Law 93-251, 93rd Congress, 2nd Session
Nov 13, 1995	Directed use of $1,000,000 of funds appropriated in PL 104-46 for construction of the Ohio River Flood Protection, Indiana Project.	Public Law 104-46, 104th Congress, 2nd Session
	WABASH RIVER BASIN (See Section 41 of Text)	
Aug 13, 1968	Construction of five multipurpose reservoirs and one local protection project in Wabash River Basin, IL & IN, with provision that construction of Big Walnut Lake, IN, project must be approved by the President. Authorization of $50 million for initiation of partial accomplishment of project	S.D. 96, 90th Congress, 2nd Session
Dec 29, 1981	Two multiple purpose reservoirs in Wabash River were deauthorized.	Public Law 97-128, 97th Congress, 2nd Session
May 1, 1997	Two Additional reservoir projects were deauthorized	Public Law 99-662, 99th Congress, 2nd Session Public Law 100-676 100th Congress, 2nd Session
	MIAMI RIVER BASIN, PLEASANT RUN, VICINITY FAIRFIELD, OH	
Nov 17, 1986	Three dry bed reservoirs and a channel improvement were authorized in Section 401 of the Water Resource Development Act of 1986.	Public Law 99-662, 99th Congress, 2nd Session
	HAZARD, KENTUCKY	
Nov 17, 1988	Approximately 6 miles of channel improvement were authorized in Section 3 of the Water Resources Development Act of 1988.	Public Law 100-676, 100th Congress, 2nd Session
Nov 28, 1990	Flood control measures to prevent a January 1957 flood reoccurrence in the vicinity of Hazard, Kentucky at a total cost of $30,000,000 was authorized for design and construction in Section 108 of the Water Resource Development Act of 1990.	Public Law 101-640, 101st 2nd Session

TABLE 24-B CONTINUED

Acts	Work Authorized	Documents
	HOLES CREEK, OHIO	
Nov 17, 1986	The project for flood control, Miami River, Little Miami River, Interim Report No2, West Carrollton - Holes Creek, Ohio: Report of the Chief of Engineers dated December 23, 1981, at a total cost of $8,910,000, with an estimated first Federal Cost of $6,230,000 and an estimated first non-Federal cost of $2,680,000.	Public Law 99-662, 99th Congress, 2nd Session
Aug 17, 1999	Holds the total amount projected as the non-federal share as of September 30, 1996 in the Project Cooperation Agreement executed on that date; and 100% of the amount of any increases in the cost of the locally preferred plan over the cost estimated in the Project Cooperation Agreement.	Public Law 106-53 106th Congress, 1st Session
	SALYERSVILLE, KENTUCKY	
Nov 17, 1986	Flood control measures to prevent a December 1978 flood reoccurrence in the vicinity of Salyersville, Kentucky at a total project cost of $7,000,000 was authorized for design and construction in section 401(e)(1) of the Water Resource Development Act of 1986. With respect to the project, Congress has determined that the benefits exceed the cost of such flood control measures.	Public Law 99-662, 99th Congress, 2nd Session
Nov 5, 1990	Provided $400,000 to construct the Salyersville, Kentucky cut-through as authorized by PL 99-662 401(e)(1) in accordance with the Special Project Report for Salyersville, Kentucky, concurred in by the Ohio River Division Engineer on or about July 26, 1989.	Public Law 101-514, 101st Congress, 2nd Session
Aug 17, 1991	Provided $600,000 to continue construction of the Salyersville, Kentucky cut-through as authorized by PL 99-662 section 401(e)(1) in accordance with the Special Project Report for Salyersville, Kentucky, concurred in by the Ohio River Division Engineer on or about July 26, 1989.	Public Law 102-104, 102nd Congress, 1st Session
Sep 12, 1996	Additional $3,000,000 to continue construction of the Salyersville, Kentucky cut-through.	H.D. 3816, 104th Congress, 2nd Session
	FRANKFORT, SOUTH FRANKFORT, KENTUCKY	
Nov 28, 1990	Flood protection in accordance with Plan R-1 of the Louisville District Commander's Re-evaluation Report, dated June 1990 and a executed LCA no later than October 1991 was authorized in Section 102 of the Water Resources Development Act of 1990.	Public Law 101-640, 101st Congress, 2nd Session
	POND CREEK, JEFFERSON COUNTY, KENTUCKY	
Sep 25, 1996	Provide $10,993,000 to construct the Pond Creek, Jefferson County, Kentucky project for flood control in accordance with the Report of the Chief of Engineers dated June 28, 1994. The major components of the Recommended Plan include detention basin storage and channel enlargement, in addition to wetland restoration and recreation.	Public Law 104-303, 104th Congress, 2nd Session
	DUCK CREEK, CINCINNATI, OHIO	
Sep 25, 1996	Provide $11,960,000 to construct the Duck Creek, Cincinnati, Ohio flood damage reduction project in accordance with the Chief of Engineers Report dated June 24, 1994. The project consists of floodwalls/ levees and channel relocation.	Public Law 104-303, 104th Congress, 2nd Session
Jan 24,2000	Modified to authorize the Secretary to carry out the project at a Total cost of $36,323,000 and non-Federal share of the cost Of the project shall not exceed $4,200,000.	Public Law 406-541, 106th Congress, 2nd Session

TABLE 24-B AUTHORIZING LEGISLATION

CONTINUED

Acts	Work Authorized	Documents
	NEW HARMONY, INDIANA	
Sep 25, 1996	Provide $2,100,000 for streambank erosion protection along the Wabash River at the town of New Harmony, Indiana.	Public Law 104-303, 104th Congress, 2nd Session
	WHITE RIVER, INDIANAPOLIS CENTRAL WATERFRONT, INDIANA	
Sep 12, 1996	Provide $7,000,000 for construction of recreation facilities and rehabilitation of existing flood protection features in downtown Indianapolis along the White River.	H.D. 3816, 104th Congress, 2nd Session
Aug 17, 1999	Authorized to undertake the riverfront alterations described in the Central Indianapolis Waterfront Concept Plan, dtd Feb 1994 for the Canal Development(Upper Canal feature) and the Beveridge Paper feature, at a total cost not to exceed $25,000,000 of which$12,500,00 is the estimated Federal cost and $12,500,000 is the estimated non-federal cost.	Public Law 106-553, 106th Congress, 1st Session
	BEARGRASS CREEK, KENTUCKY	
Aug 17, 1999	The project for flood control, Beargrass Creek, Kentucky: Report of the Chief of Engineers dtd May 12, 1998 at a total cost of $11,171,300 with an estimated Federal cost of $7,261,500 and an estimated non-federal cost of $3,909,800.	Public Law 106-553, 106th Congress, 1st Session

[1] Deficiency act.

[2] Authorization for Nolin River and Bear Creek revoked by Act of Sep. 3, 1954

[3] Permanent Appropriations Repeal Act.

TABLE 24-C **OTHER AUTHORIZED NAVIGATION PROJECTS**
(See Section 6)

Name of Project	Status	For Last Full Report See Annual Report	Cost to Sep 30, 2004 Construction	Cost to Sep 30, 2004 Operation and Maintenance
Licking River	Completed	1901	$ 13,045	$ 139,108
Rough River, KY	Completed	1951	105,500	101,196
Tradewater River, KY	Completed	1858	18,568	33,331
White River, IN	Completed	1909	119,312	0

TABLE 24-E OTHER AUTHORIZED FLOOD CONTROL PROJECTS

Project and Status [1]	For Last Full Report See Annual Report	Cost to Sep 30, 2004 Construction	Cost to Sep 30, 2004 Operation and Maintenance
Local Protection:			
Completed:			
Boone County, KY (Ohio River, Rabbit Hash)	1977	$ 392,443	-
Brevoort Levee, IN (Wabash River)	1954	1,240,299	-
Brookport, IL	1958	597,493	-
Cannelton, IN	1959	2,068,391	-
Canoe Creek, Henderson, KY [2]	-	1,206,852	-
Chaplin River, Perryville, KY [2]	-	832,700	-
Cincinnati, OH	1957	10,150,935	-
Covington, KY	1965	7,862,937	-
Dayton, KY	1987	13,177,345	-
Delphi, IN (Wabash River)	1953	144,563	-
England Pond Levee, IL (Wabash River)	1972	734,498	-
English, IN (Little Blue River) [2]	1965	372,353	-
Evansville, IN	1997	43,906,502	-
Frankfort, KY (North Frankfort) (Kentucky River) [3 8]	1979	2,960,970	-
Frankfort, South Frankfort, KY	1998	11,164,720	
Gill Township Levee, IN (Wabash River)	1948	561,200	-
Golconda, IL	1960	565,333	-
Grassy Creek, Jackson County, IN (Muscatatuck River) [2]	1953	70,304	-
Greenfield Bayou, IN (Wabash River)	-	157,935	-
Harrisburg, IL	1959	870,015	-
Hawesville, KY	1955	969,318	-
Indianapolis, IN (Fall Creek Section) (White River)	1953	1,788,840	-
Indian Creek, Corydon, IN [2]	1964	300,143	-
Indianapolis, IN (Warfleigh Section) (White River)	1976	153,410	-
Jackson, KY (Kentucky River)	1957	130,952	-
Jeffersonville-Clarksville, IN	1959 & 1996	4,836,361	-
Lawrenceburg, IN	1953	2,473,414	-
Lebanon Junction, KY (Salt River) [2]	1967	130,417	-
Levee Unit No. 5, Wabash River, IN	1987	7,517,464	-
Levee Unit No. 8, White River, IN	1952	700,534	-
Louisville, KY [9]	-	415,000	-
Louisville, KY [4]	1975	26,721,438	-
Lyford Levee Unit, IN (Wabash River)	1944	267,391	-
Mason J. Niblack Levee, IN (Wabash River) [5]	1987	4,337,617	-
Miami River Basin, Pleasant Run, Vicinity Fairfield, OH [9] (Great Miami River)	-	514,964	-
Mill Creek, Jefferson County, KY [2]	1973	292,710	-
Mount Carmel, IL (Wabash River)	1972	1,980,675	-
Muncie, IN (White River)	1956	887,835	-
Neon-Fleming, KY (Kentucky River)	1963	86,532	-
New Albany, IN	1957	5,375,471	-
New Harmony Bridge, IL & IN (Wabash River) [2 7]	1959	297,624	-
Newburgh, IN (Ohio River) [6]	1974	52,061	-
Newport, KY	1959	7,512,987	-
Paducah, KY	1959	4,761,551	-
Panther Creek, KY (Green River) [2]	1970	254,031	-
Portland, IN (Salamonie River) [2]	1962	237,657	-
Reevesville, IL (Cache River)	1954	600,300	-
Rochester & McCleary's Bluff Levee, IL (Wabash River)	1972	1,079,236	-
Rosiclaire, IL	1954	622,544	-
Saline River & Tributaries, IL	1981	7,826,219	-
Shawneetown, IL [7]	-	91,000	-
Sturgis, KY	1972	1,826,778	-
Taylorsville, KY (Salt River)	1952	378,050	-
Tell City, IN	1956	932,229	-
Terre Haute (Conover Levee), IN (Wabash River) [7]	1965	14,913	-
Town Creek, Harrodsburg, KY [2]	1967	56,505	-

TABLE 24-E CONTINUED **OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Project and Status [1]	For Last Full Report See Annual Report	Cost to Sep 30, 2004 Construction	Cost to Sep 30, 2004 Operation and Maintenance
Triplett Creek, Morehead, KY (Licking River) [2]	1972	893,094	-
Southwestern Jefferson County, KY	2003	70,049,492	-
Uniontown, KY	1956	1,070,926	-
Vincennes, IN (Wabash River) [7]	1964	3,308,941	-
Wabash River, New Harmony	2003	3,239,025	-
West Fork Mill Creek, OH (Winton Road) [9]	-	477,649	-
West Terre Haute, IN (Wabash River)	1977	1,095,704	-
Whitewater River, Hagerstown, IN [2]	-	641,398	-
Active:			
Inactive:			
Blue River, Salem, IN	-	15,000	-
Cache River, Upper Basin, Ill	-	44,000	-
Columbus, IN	-	283,000	-
Fairfield, OH	-	-	-
Hazard, KY	-	-	-
Kentucky River National Recreation Area	-	-	-
Licking River, KY	-	-	-
Mount Vernon, IN	-	30,000	-
Southwest Ohio Urban Waterfront Development	-	-	-
Vincennes, IL (Wabash River)	1964	-	-
Wabash River, York Township, Clark County, IL	-	-	-
West Fork Drakes Creek, TN & KY	-	58,000	-
Whitewater River & Tributaries, IN & OH	-	112,000	-
Reservoirs:			
Active:			
Inactive:			
Eagle Creek Lake, KY	1975	702,471	-

[1] All projects are on Ohio River unless otherwise noted.
[2] Authorized by the Chief of Engineers under Section 205, 1984 Flood Control Act, as amended.
[3] Cost includes $161,098 cash contribution consisting of $105,118 from the City of Frankfort, KY and $55,980 from the Commonwealth of Kentucky.
[4] Cost includes $1,716,301 cash contributions from the City of Louisville, KY.
[5] Cost shown are for levee and pump plants.
[6] The Water Resources Development Act of 1974 modified the Newburgh Locks & Dam project to include the bank protection works at Newburgh Locks & Dam project to include the bank protection works at Newburgh, IN.
[7] Partially completed to form a useful unit. Remaining portions of project inactive.
[8] Partially completed to form a useful unit. Remaining portions of project are active and inactive.
[9] Advance Engineering and Design funded with General Investigations Appropriation.

TABLE 24-G DEAUTHORIZED PROJECTS

Project	For Last Full Report See Annual Report For	Date Deauthorized	Federal Funds Expended	Contributed Funds Expended
Flood Control - Local Protection:				
Adams Levee, IN (Wabash River)	-	1978	$ -	-
Alton, IN	-	1977	-	-
Anderson, IN (White River)	1940	1986	5,724	-
Aurora, IN	-	1977	35,420	-
Bellevue, KY	-	1977	19,023	-
Bonpas Creek, IL (Wabash River)	-	1981	-	-
Bromley, KY	-	1977	-	-
California (Cincinnati), OH	-	1977	16,465	-
Carrollton, KY	-	1977	9,713	-
Caseyville, KY	-	1986	-	-
Cave-in-Rock, IL	-	1977	-	-
Cincinnati, OH (Unit 2)	-	1977	-	-
Cincinnati, OH (Unit 4)	-	1977	-	-
Cleves, OH	-	1977	6,343	-
Clinton, IN	-	1977	6,848	-
Cloverport, KY	-	1986	-	-
Concordia, KY	-	1986	-	-
Deer Creek, Prairie Levee, IN	-	1977	-	-
Derby, IN	-	1977	-	-
Elizabethtown, IL	-	1977	-	-
Evansville, Howell II	-	1992	-	-
Falmouth Lake	-	1998	944,386	-
Fletcher & Sunshine Gardens Levee, IN	-	1977	3,361	-
Frankfort, KY (Benson Creek) (Kentucky River)	1979	1992	-	-
Gallatin County Streambank Erosion, Area 1, Ohio River	-	2002	-	-
Grandview, IN	-	1977	8,497	-
Honey Creek Levee, IN	-	1977	-	-
Island Levee, IN (Wabash River)	-	2002	355,963	-
Leavenworth, IN	-	1977	-	-
Levee Unit 1, Eel River, IN	-	1977	-	-
Levee Unit 2, Eel River, IN	-	1977	-	-
Levee Unit 2, East Fork White River, IN	-	1977	-	-
Levee Unit 3, East Fork White River, IN	1938	1977	275	-
Levee Unit 1, IL (Wabash River)	1973	1986	60,000	-
Levee Unit 1, Little Wabash River, IL	-	1977	-	-
Levee Unit 2, Little Wabash River, IL	-	1977	-	-
Levee Unit 2, Wabash River, IL	-	1977	-	-
Levee Units 3 and 4, Wabash River, IL	1938	1977	216	-
Levee Unit 6, Wabash River, IL	-	1977	9,922	-
Levee Unit 17, Wabash River Basin, IN	-	1977	-	-
Levee Unit 1, White River, IN	-	1977	-	-
Levee Unit 7, White River, IN	-	1977	-	-
Levee Unit 9, White River, IN	-	1977	-	-
Levee Unit 10, White River, IN	-	1977	-	-
Lewisport, KY	-	1990	-	-
Louisville, KY (Partial)	-	1986	-	-
Louisville Lake	-	1998	2,355,395	-
Ludlow, KY	-	1977	14,503	-
Madison, IN	-	1977	-	-
Mauckport, IN	-	1977	-	-
Marion, IN (Wabash River)	1979	1986	209,975	-
McGinnis Levee, IN	1950	1977	71,049	-
Metropolis, IL	-	1986	10,575	-

TABLE 24-G CONTINUED **DEAUTHORIZED PROJECTS**

Project	For Last Full Report See Annual Report For	Date Deauthorized	Federal Funds Expended	Contributed Funds Expended
Flood Control - Local Protection (Cont'd.)				
Milton, KY	-	1977	-	-
Moscow, OH	-	1977	-	-
New Amsterdam, IN	-	1977	-	-
New Harmony, IN	-	1977	-	-
New Richmond, OH	-	1977	7,104	-
Newport-Wilder, KY	-	1990	-	-
Orleans, IN	1972	1977	13,158	-
Owensboro, KY	-	1990	-	-
Patriot, IN	-	1977	-	-
Prestonville, KY	-	1977	-	-
Raccoon Creek Levee, IN	-	1977	-	-
Rising Sun, IN	-	1977	-	-
Rockport, IN	-	1977	-	-
Rome, IN	-	1977	-	-
Russell and Allison, IL	-	1992	52,088	-
Shawneetown, IL	-	1986	25,367	-
Shoals, IN (East Fork White River)	1938	1977	-	-
Shufflebarger Levee, IN	1950	1977	64,487	-
Smithland, KY	-	1992	-	-
Sugar Creek Levee, IN	1961	1977	28,061	-
Terre Haute, IN	-	1977	-	-
Tolu, KY	-	1986	-	-
Tri Pond Levee, IL	1972	1977	65,510	-
Troy, IN	-	1977	-	-
Utica, IN	-	1978	-	-
Vevay, IN	-	1977	-	-
Vincennes, IN (Partial)	1964	1986	-	-
Westport, KY	-	1977	-	-
Wilders, KY	-	1990	-	-
Flood Control - Reservoirs				
Big Blue Lake, IN	1980	1981	1,079,867	-
Big Pine Lake, IN (Wabash River)	1977	2002	1,270,590	-
Big Walnut Lake, IN (Wabash River)	1980	2002	1,009,188	-
Booneville Lake, KY (Kentucky River)	1976	2002	1,038,595	-
Camp Ground Lake, KY (Salt River)	1983	2002	235,615	-
Clifty Creek Lake, IN	1979	1981	1,016,358	-
Downeyville Lake, IN (Wabash River)	-	1992	-	-
Helm Lake, IL	1976	1981	41,616	-
Lafeyette Lake, IN (Wabash River)	1977	2002	1,200,920	-
Lincoln Lake, IL	1979	1981	1,331,844	-
Metomora Lake, IN	-	1977	-	-
Mining City Lake, KY (Green River)	-	2002	350,747	-
Red River Lake, KY (				
Taylorsville Lake, Floyd’s Fork, KY	-	2002	-	-
Navigation				
McAlpine Lock & Dam, KY & IN, Alteration of Railroad Bridge	-	2002	-	-

TABLE 24-H

REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2004
NAVIGATION LOCKS AND DAMS
PRINCIPAL FEATURES - GREEN & BARREN RIVERS AND KENTUCKY RIVER NAVIGATION SYSTEMS

Lock and Dam	Miles above Mouth of River	Distance from Nearest Town	Width of Chamber	Lock Dimensions Greatest Length Available For Full Width (feet)	Lift (feet)	Upper Normal Pool Elevation (feet msl)	Depth of Miter Sills Upper (feet)	Depth of Miter Sills Lower (feet)	Character of Foundation	Percent Complete	Year Opened to Navigation	Cost of Lock and Dam
CONSTRUCTION OF LOCKS AND DAMS, OHIO RIVER - For report on this improvement see this heading under Ohio River.												
GREEN AND BARREN RIVERS, KY (See Section 3 of Text)												
Green River												
New 1	9.1	Spottsville, KY	84.0	600.0	11.8	349.1	12.1	11.3	Shale and Coal	100	1956 [2]	$5,101,978 [3]
New 2	63.1	0.3 miles below Calhoun, KY	84.0	600.0	14.3	363.4	15.0	11.7	Shale	100	1956 [4]	4,799,271 [5]
3	108.5	0.3 miles below Rochester, KY	35.8	137.5	17.0	380.4	7.3	5.6	Rock	100	1836 [6]	121,377
4	149.0	Woodbury, KY	35.8	138.0	16.4	396.8	7.1	6.5	Rock	100	1839 [7]	125,718
5	168.1	0.3 miles below Glenmore, KY	56.0	360.0	15.2	412.0 [8]	12.0	9.3	Piles and Rock	100	1934 [9]	1,020,868 [10]
6	181.7	2.8 miles above Brownsville, KY	36.0	145.0	9.2	421.1	8.0	8.8	Gravel	100	1905 [9]	168,415
Barren River												
1	15.0 [11]	0.3 miles above Greencastle, KY	56.0	360.0	15.2	412.0	12.0	9.3	Gravel	100	1841 [12]	871,565 [13]
TUCKY RIVER, KY (See Section 4 of Text)												
tucky River												
1	4.0	3.8 miles above Carrolton, KY	38.0	145.0	8.2 [14]	430.0	8.2	4.8	Rock and Clay	100	1839 [15]	-
2	31.0	Lockport, KY	38.0	145.0	13.9	443.9	7.6	6.1	Rock	100	1839 [15]	-
3	42.0	Gest, KY	38.0	145.0	13.2	457.1	8.6	6.5	Rock	100	1844 [15]	1,350,385 [16]
4	65.0	1.0 mile below Frankfort, KY	38.0	145.0	13.2	470.3	6.4	6.3	Rock	100	1844 [15]	-
5	82.2	2.8 miles below Tyrone, KY	38.0	145.0	15.0	485.3	10.0	6.4	Rock	100	1844 [15] [17]	-
6	96.2	21.6 miles below High Bridge, KY	52.0	147.0	14.0	499.3	9.4	6.4	Rock and Piles	100	1894 [17]	314,847
7	117.0	0.8 mile below High Bridge, KY	52.0	147.0	15.3	514.6	9.1	6.8	Rock	100	1897 [17]	290,788
8	139.9	4.7 miles above Camp Nelson, KY	52.0	146.0	18.7	533.6	10.6	6.0	Rock	100	1900 [17]	275,463
9	157.5	Valley View, KY	52.0	148.0	17.3	550.6	10.0	6.6	Rock	100	1907 [17]	237,646
10	176.4	1.0 mile below Ford, KY	52.0	148.0	17.0	567.6	9.0	6.0	Rock	100	1907 [17]	221,500
11	201.0	17.2 miles below Irvine, KY	52.0	148.0	18.0	585.6	10.0	6.0	Rock	100	1906 [17]	296,593
12	220.0	Ravenna, KY	52.0	148.0	17.0	602.6	9.6	6.0	Rock	100	1910 [17]	425,693
13	239.9	2.2 miles below Willow, KY	52.0	148.0	18.0	620.6	9.6	6.0	Rock	100	1915 [17]	461,476
14	249.0	Heidelberg, KY	52.0	148.0	17.0	63.6	8.6	6.0	Rock	100	1971 [17]	392,902

1 At normal pool Dam 48, Ohio River, Elev. 337.3, Green River datum (Elev. 338.0 Ohio River datum)

2 New Lock 1 placed in operation May 25, 1956, old Dam 1, completed 1835-40, replaced with new cellular concrete masonry dam constructed 1970-71 with O&M funds at cost of $822,000.

3 Does not include $179,110 cost of old Lock and Dam 1.

4 New Lock and Dam 2, placed in operation June 18, 1956.

5 Does not include $295,696 cost of old Lock and Dam 2.

6 Operation discontinued September 30, 1981.

7 Breaching of dam on May 24, 1965, stopped through traffic to Bowling Green, KY.

8 With moveable A-frame crest 3 feet high.

9 Operation discontinued August 1, 1951.

10 Does not include $179,434 cost of old Lock and Dam 5. Transferred to State, December 1996.

11 Distance from mouth of Green River is 164.5 miles. Lock closed to navigation as the result of loss of pool at Green River Lock and Dam 4 on May 24, 1965.

12 Piles in old gravel dam completed in 1934.

13 Includes $729,269 for new large lock completed in 1934.

14 At normal pool McAlpine Dam, Ohio River Elev. 421.8 Kentucky River datum (Elev. 420 Ohio River datum).

15 Reconstruction completed by United States in 1882.

16 Built by State of Kentucky. Cost given is for repairs by United States to Locks and Dams 1 through 5. Original construction costs to State were: L&D 1, $220,300; L&D 2, $151,983: L&D 3 $135,857; L&D 4, $131,607; and L&D 5, $137,436.

17 Lock was closed to traffic and placed in caretaker status in September 1982.

TABLE 24-I

LOUISVILLE, KY DISTRICT
OHIO RIVER BASIN
TOTAL COST OF BASIN PLAN
(See Section 36 of Text)

LOCAL PROTECTION		**Estimated Cost**		
Project and Status [1]	**Type of Construction**	**Federal**	**Non-Federal** [2]	**Total**
Completed:				
Barnett Creek, KY (Rough River) [3] [4]	Channel improvement	$ 144,000	$ 18,000	$ 162,000
Boone County, KY	Bank Protection	392,443	83,000	475,443
Brookport, IL [5] [6]	Wall and levee	597,493	8,500	605,993
Cannelton, IN [5] [7]	Wall and levee	2,068,391	29,105	2,097,496
Cincinnati, OH [5] [8]	Wall and barrier dam	10,150,935	1,309,146	11,460,081
Covington, KY [5] [9]	Wall and levee	7,862,937	1,051,102	8,914,039
Dayton, KY	Wall and levee	13,117,345	2,013,000	15,130,345
Delphi, IN (Wabash River) [5] [10]	Levee	144,563	17,164	161,727
England Pond Levee, IL (Wabash River) [11]	Levee	734,498	107,000	841,498
Evansville, IN [4]	Wall and levee	43,906,502	5,500,000	49,406,502
Frankfort, KY, North Frankfort (Kentucky River) [5]	Wall and levee	2,960,970	272,100	3,233,070
Frankfort, KY (Kentucky River) South Frankfort [5]	Wall	8,373,540	2,791,180	11,164,720 [36]
Golconda, IL [5] [12]	Wall and levee	565,333	10,900	576,233
Harrisburg, IL [5] [10]	Wall and levee	870,015	20,000	890,015
Hawesville, KY [5] [13]	Levee	969,318	42,593	1,011,911
Jackson, KY (Kentucky River) [5] [8]	Cutoff channel	130,952	3,000	133,952
Jeffersonville-Clarksville, IN [7]	Wall and levee	4,226,361	590,888	4,817,249
Lawrenceburg, IN [5]	Wall and levee	2,473,689	284,725	2,758,414
Louisville, KY [5] [14]	Wall and levee	25,005,137	1,716,301	26,721,438
Mason J. Niblack Levee, IN (Wabash River) [4] [5]	Levee and pump plants	4,337,617	109,200	4,446,817
New Albany, IN [5] [8]	Wall and levee	5,375,471	740,000	6,115,471
New Harmony Bridge, IL & IN (Wabash River) [5] [7]	Bank Protection	297,624		297,624
Newport, KY [5] [7]	Wall and levee	7,512,987	298,506	7,811,493
Paducah, KY [5] [7]	Wall and levee	4,761,551	232,000	4,993,551
Perryville, KY, Chapin River	Channel Improvement	823,700	11,000	834,700
Reevesville, IL (Cache River) [5] [15]	Levee	600,300	40,000	640,300
Rochester and McCleary's Bluff Levee, IL (Wabash River) [11]	Levee	1,079,236	100,000	1,179,236
Rough River, KY [3] [4]	Channel improvement	654,000	5,000	659,000
Southwest Jefferson County	Wall and Levee	60,207,439	9,842,053	70,049,492
Sturgis, KY (Tradewater River) [11]	Levee	1,826,778	93,000	1,919,778
Taylorsville, KY (Salt River) [5] [16]	Levee	378,050	63,309	441,359
Tell City, IN [5] [14]	Wall and levee	932,229	32,707	964,936
Uniontown, KY	Levee	1,070,926	72,153	1,143,079
Vincennes, IN [5] [17] (Wabash River)(completed portion) [5]	Wall and levee	3,308,941	285,000	3,593,941
Wabash River, New Harmony, In	Erosion Control	2,429,269	809,756	3,239,025
West Terre Haute, IN (Wabash River)	Levee	1,095,704	150,000	1,245,704
Active:				
Salyersville, KY	Channel Improvement	9,348,600	981,400	10,330,000
Inactive:				
Hazard, KY	Channel Improvement	-	-	-

TABLE 24-I **OHIO RIVER BASIN**

CONTINUED **TOTAL COST OF BASIN PLAN**

(See Section 36 of Text)

LOCAL PROTECTION		Estimated Cost		
Project and Status [1]	**Type of Construction**	**Federal**	**Non-Federal** [2]	**Total**
Deauthorized:				
Adams Levee, IN (Wabash River) [32]	Levee	$ 292,000	$ 14,000	$ 306,000 [27]
Alton, IN [30]	Levee	255,000	40,000	295,000
Aurora, IN [31]	Wall and levee	4,300,000	1,190,000	5,490,000
Bellevue, KY [30]	Wall and levee	1,570,000	400,000	1,970,000
Bonpas Creek, IL (Wabash River) [5] [33]	Channel Improvement	1,080,000	630,000	1,710,000 [28]
Bromley, KY [30]	Wall and levee	1,250,000	925,000	2,175,000
California (Cincinnati), OH [31]	Wall and levee	1,750,000	720,000	2,470,000
Carrollton, KY [30]	Wall and levee	2,220,000	97,000	2,317,000
Caseyville, KY [5] [34]	Levee	396,000	35,000	431,000
Cave-in-Rock, IL [30]	Levee	661,000	125,000	786,000
Cincinnati, OH (Unit 2) [30]	Wall and levee	16,800,000	2,900,000	19,700,000
Cincinnati, OH (Unit 4) [30]	Wall	14,900,000	621,000	15,521,000
Cleves, OH [30]	Levee	1,240,000	67,000	1,307,000
Clinton, IN (Wabash River) [30]	Levee	77,000	9,000	86,000
Cloverport, KY [5] [34]	Wall and levee	728,000	193,000	921,000
Concordia, KY [5] [34]	Levee	590,000	55,000	645,000
Deer Creek Prairie Levee, IN (Wabash River) [30]	Levee	213,000	10,000	223,000 [24]
Derby, IN [30]	Wall and levee	553,000	67,000	620,000
Elizabethtown, IL [30]	Wall and levee	559,000	153,000	712,000
Fletcher and Sunshine Gardens Levee, IN (Wabash River) [30]	Levee	548,000	26,000	574,000 [24]
Frankfort, KY (Kentucky River) Benson Creek [5]	Wall and Levee	3,340,000	1,150,000	4,490,000 [22]
Grandview, IN [30]	Levee	580,000	133,000	713,000
Greenfield Bayou Levee, IN (Wabash River) [5] [35]	Levee	4,600,000	1,087,000	5,687,000 [23]
Honey Creek Levee, IN [30]	Levee	653,000	32,000	685,000
Island Levee, IN (Wabash River) [5] [35]	Levee	4,630,000	528,000	5,158,000 [23]
Leavenworth, IN [30]	Wall and levee	1,470,000	266,000	1,736,000
Levee Unit 1, Eel River, IN [30]	Levee	204,000	40,000	244,000
Levee Unit 1, Little Wabash River, IL [30]	Levee	2,850,000	164,000	3,014,000 [27]
Levee Unit 1, White River, IN [30]	Levee	2,180,000	116,000	2,296,000 [27]
Levee Unit 17, IN [30]	Levee	1,580,000	118,000	1,698,000 [28]
Levee Unit 2, Eel River, IN [30]	Levee	2,090,000	715,000	2,805,000
Levee Unit 2, Little Wabash River, IL [30]	Levee	3,410,000	136,000	3,546,000 [28]
Levee Unit 2, White River, IN [30]	Levee	724,000	73,000	797,000 [27]
Levee Unit 6, Wabash River, IL [30]	Levee	1,160,000	56,000	1,216,000
Levee Unit 7, White River, IN [30]	Levee	1,490,000	88,000	1,578,000 [27]
Lewisport, KY [5] [35]	Wall and levee	610,000	243,000	853,000 [24]
Ludlow, KY [30]	Wall and levee	2,540,000	745,000	3,285,000
Madison, IN [30]	Levee	3,820,000	360,000	4,180,000
Mauckport, IN [30]	Levee	506,000	105,000	611,000
McGinnis Levee, IN (Wabash River) [30]	Levee	1,820,000	104,000	1,924,000
Metropolis, IL [5] [34]	Wall and levee	3,070,000	431,000	3,501,000
Milton, KY [30]	Wall	2,480,000	41,000	2,521,000
Moscow, OH [30]	Levee	1,170,000	372,000	1,542,000
New Amsterdam, IN [30]	Levee	476,000	13,000	489,000
New Harmony Bridge, IL & IN (Wabash River) [37]	Bank Protection	664,376	99,000	763,376 [25]
New Harmony, IN (Wabash River) [30]	Levee	616,000	25,000	641,000
Wilder, KY [35]	Wall and levee	10,800,000	959,000	11,759,000 [26]

[1] All projects are on an Ohio River unless otherwise noted. [2] Latest cost estimate revision 1954 unless otherwise noted.

[3] Part of Rough River Reservoir and Channel Improvement Project, KY.
[4] Details of this project are in individual report.
[5] Also see "Other authorized flood control projects."
[6] See Annual Report for 1958 for details.
[7] See Annual Report for 1959 for details.
[8] See Annual Report for 1957 for details.
[9] See Annual Report for 1965 for details.
[10] See Annual Report for 1953 for details.
[11] See Annual Report for 1972 for details.
[12] See Annual Report for 1960 for details.
[13] See Annual Report for 1955 for details.
[14] See Annual Report for 1962 for details.
[15] Substitute project for Belknap, Karnak, and Ullin, IL, complete. See Annual Report for 1954 for details.
[16] See Annual Report for 1952 for details.
[17] See Annual Report for 1956 for details.
[18] Latest cost estimate revision 1988.
[19] Latest cost estimate revision 1986.
[20] Latest cost estimate revision 1984.
[21] Latest cost estimate revision 1983.
[22] Latest cost estimate revision 1976.
[23] Latest cost estimate revision 1978.
[24] Latest cost estimate revision 1960.
[25] Latest cost estimate revision 1971.
[26] Latest cost estimate revision 1977.
[27] Latest cost estimate revision 1961.
[28] Latest cost estimate revision 1973.
[29] Latest cost estimate revision 1989.
[30] Deauthorized Aug 05, 1977 under Section 12, Water Resources Development Act of 1971 (P.L. 93-251).
[31] Deauthorized Nov 06, 1977 under Section 12, Water Resources Development Act of 1974 (P.L. 93-251).
[32] Deauthorized Oct 03, 1978 under Section 12, Water Resources Development Act of 1974 (P.L. 93-251).
[33] Deauthorized May 06, 1981 under Section 12, Water Resources Development Act of 1974 (P.L. 93-251).
[34] Deauthorized Nov 17, 1986 under Section 12, Water Resources Development Act of 1974 (P.L. 93-251).
[35] Deauthorized Jan 01, 1990 under Section 1001 (b)(1), Water Resources Development Act of 1986 (P.L. 99-662).
[37] Deauthorized Jul 19, 1992.

TABLE 24-I
CONTINUED

OHIO RIVER BASIN
TOTAL COST OF BASIN PLAN
(See Section 36 of Text)

RESERVOIRS

Tributary Basin Reservoirs	Status	Stream	Estimated Cost [1] Federal	Non-Federal	Total
Great Miami River:					
Brookville Lake, IN [2]	Complete	East Fork of Whitewater River	$ 37,905,073	$ 7,497,492 [3]	$ 45,402,565
Metamora Lake, IN	Deauthorized	West Fork of Whitewater River	35,300,000		35,300,000 [4]
Green River:					
Barren River Lake, KY [2]	Complete	Barren River	27,371,299	108,418 [5]	27,479,717
Green River Lake, KY [2]	Complete	Green River	33,238,597	223,733[13]	33,462,330
Mining City Lake, KY	Deauthorized	Green River	69,100,000		69,100,000 [4]
Nolin Lake, KY [2]	Complete	Nolin River	17,193,278		17,193,278
Rough River Kentucky [2]	Complete	Rough River	10,620,389	22,612	10,643,001
Kentucky River:					
Booneville Lake, KY	Deauthorized	South Fork of Kentucky River	60,700,000		60,700,000 [8]
Buckhorn Lake, KY [2]	Complete	Middle Fork of Kentucky River	11,766,206		11,766,206
Carr Fork Lake, KY [2]	Complete	North Fork of Kentucky River	50,854,826		50,854,826
Eagle Creek Lake, KY	Inactive	Eagle Creek	27,800,000	-	27,800,000 [14]
Red River Lake, KY	Deauthorized	Red River	38,551,692	1,794,308	40,346,000
Licking River:					
Cave Run Lake, KY [2]	Complete	Licking River	81,162,282		81,162,282 [7]
Falmouth Lake, KY	Deauthorized	Licking River	125,000,000		125,000,000 [8]
Little Miami River:					
Caesar Creek Lake, OH [2]	Complete	Caesar Creek	62,893,882	5,037,000 [9]	67,930,882
William H. Harsha Lake, OH [2]	Complete	East Fork of Little Miami River	52,023,157	3,485,840 [9]	55,508,997
Mill Creek:					
West Fork of Mill Creek Lake, OH [2]	Complete	West Fork of Mill Creek	3,622,302	1,100,161[10]	4,722,463
Wabash River:					
Cagles Mill Lake, IN [2]	Complete	Mill Creek	4,256,903	113,094 [5]	4,369,997
Cecil M. Harden Lake, IN [2]	Complete	Raccoon Creek	6,633,812	353,995 [5]	6,987,807
Monroe Lake, IN [2]	Complete	Salt Creek	7,902,827	8,667,947[11]	16,570,774
Patoka Lake, IN [2]	Complete	Patoka River	53,095,790	20,568,369	73,664,159

[1] Latest cost estimate revision 1989 unless otherwise noted.
[2] Details of this project given in individual report.
[3] Cash contributions for water supply storage.
[4] Latest cost estimate revision 1954.
[5] For Code 713 recreation development.
[6] Latest cost estimate revision 1975.
[7] Includes $6,900,000 United States Forest Service cost.
[8] Latest cost estimate revision 1979.
[9] Reimbursement for water supply storage.
[10] Includes $520,800 for non-Federal cost for sewer relocation and dam, $50,000 for contributed funds in fulfillment of project authorization, and $529,361 for Code 713 recreation development.
[11] Includes $7,797,604 cash contribution for storage for low-flow regulation and $870,343 non-Federal contribution in kind for recreational facilities.
[12] Includes $14,180,677 cash contribution for water supply storage, and $6,387,692 for initial recreation development.
[13] For $183,732 Code 713 recreation development and $40,001 contributed funds.
[14] Latest cost estimate 1974

TABLE 24-J

WABASH RIVER BASIN
TOTAL COST OF BASIN PLAN
(FLOOD CONTROL)
(See Section 41 of Text)

Projects	Type of Construction or Stream	Status	Estimated Cost Federal	Non-Federal	Total
LOCAL PROTECTION					
Marion, IN	Wall and Levee	Inactive	$ 3,900,000	$ 854,000	$ 4,754,000 [2]
RESERVOIRS					
Big Blue Lake, IN	Big Blue River	Deauthorized	87,200,000	53,836,000 [3]	141,036,000 [4]
Big Walnut Lake, IN	Big Walnut Creek	Deauthorized	81,800,000	45,069,000 [5]	126,869,000 [4]
Downeyville Lake, IN	Flatrock and Little Flatrock Rivers	Inactive	74,200,000	64,448,000 [6]	138,648,000 [1]
Helm Lake, IN	Skillet Fork	Deauthorized	25,171,000	14,829,000 [7]	40,000,000 [8]
Louisville Lake, IL	Little Wabash River	Deauthorized	113,000,000	14,435,000 [9]	127,435,000 [10]

[1] Latest cost revision 1984 unless otherwise noted.

[2] Latest cost estimate revision 1977.

[3] Includes $38,190,000 reimbursable by non-Federal interests for water supply and $15,656,000 reimbursable for initial recreation facilities.

[4] Latest cost estimate revision 1979.

[5] Includes $26,663,000 reimbursable by non-Federal interests for water supply and $18,406,000 reimbursable for initial recreation facilities.

[6] Includes $53,084,000 reimbursable by non-Federal interests for water supply, $8,749,000 reimbursable for initial recreation facilities.

[7] Includes $12,696,000 reimbursable by non-Federal interests for water supply and $2,133,000 reimbursable for initial recreation facilities.

[8] Latest cost estimate revision 1975.

[9] Includes $8,402,000 reimbursable by non-Federal interests for water supply and $6,033,000 reimbursable for initial recreation facilities.

[10] Latest cost estimate revision 1982.

TABLE 24-K

INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS
(See Section 44 of Text)

Projects	Date of Inspection
Local Protection Projects	
Bardstown, KY	Mar 2004
Brevoort Levee, IN	Aug 2004
Brookport, IL	Sep 2003
Cache River Levee, IL	Aug 2003
Cannelton, IN	Dec 2004
Cincinnati, OH	Aug 2004
Covington, KY	Aug 2004
Dayton, KY	Aug 2004
Delphi, IN	May 2004
England Pond Levee, IL	Aug 2004
Evansville, IN	May 2004
Frankfort, KY, North Frankfort	Mar 2004
Gill Township Levee, IN	Aug 2004
Golconda, IL	Aug 2003
Harrisburg, IL	Aug 2003
Hagerstown, IN	Jul 2004
Hawesville, KY	Dec 2004
Indianapolis, IN	Jun 2004
Jeffersonville-Clarksville, IN	Jul 2004
Lawrenceburg, IN	Aug 2004
Lebanon Junction, KY	Jul 2004
Levee Unit No. 5, Wabash River, IN	Sep 2004
Levee Unit No. 8, Wabash River, IN	Aug 2004
Louisville, KY	Jun 2004
Lyford Levee, IN	Aug 2004
Mason J. Niblack Levee, IN	Aug 2004
Mount Carmel, IL	Sep 2004
Muncie, IN	Jun u2004
New Albany, IN	May 2004
Newport, KY	Aug 2004
Paducah, KY	Sep 2003
Perryville, KY	Mar2004
Reevesville, IL	Aug 2003
Rochester-McClearys Bluff Levee, IL	Sep 2004
Rosiclare, IL	Aug 2003
Rushville, IN	Jun 2004
Shawneetown, IL	Jul 2004
Southwestern Jefferson County, KY	Jun 2004
Sturgis, KY	Jul 2004
Taylorsville, KY	Jul 2004
Tell City, IN	Dec 2004
Terre Haute (Conover Levee), IN	May 2004
Uniontown, KY	Jul 2004
Vincennes, IN	Aug 2004
West Terre Haute, IN	May 2004
Channel Improvements	
Canoe Creek, Henderson, KY	Jul 2004
Cypress Creek, McLean County, KY	Sep 1998
Eel River, Brazil Waterworks, IN	May 2003
English, IN (Little Blue River)	Jun 1994
Grassy Creek, Jackson County, IN	Sep 1995
Harrodsburg, KY (Town Creek)	Apr 2003
Indian Creek, Corydon, IN	Nov 2003
Jackson, KY (North Fork Kentucky River)	Sep 1998

TABLE 24-K
CONTINUED

INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS

(See Section 44 of Text)

Projects	Date of Inspection
Channel Improvements Con't.	
Lancassange Creek, Clark Co, IN	Apr 2003
Lick Creek, Hartford City (Blackford County), IN	Oct 2002
Mill Creek, Jefferson County, KY	Apr 2003
Muscatatuck River, Crothersville, IN	Oct 2002
Neon-Fleming, KY (North Fork Kentucky River)	Nov 2002
Nicholasville (Town Fork) Vicinity, KY	Apr 2003
Panther Creek, Curdsville, KY	Sep 1998
Plum Creek, Spencer County, KY	Apr 2003
Portland, IN (Salamonie River)	Oct 2002
Rough River, Hartford, Ohio County, KY	Nov 1999
Salamonie River, Wells County, IN	Oct 2002
Saline River and Tributaries, IL	Jul 2004
Tripplett Creek, Morehead, KY	Nov 2002
Troublesome Creek, Hindman, KY	Sep 1998
Wabash River, Adams County, IN	Nov 1999
Whitesburg, KY (North Fork Kentucky River)	Aug 1998
Bank Revetments	
Crooked Creek, City Garage, Madison, IN	Mar 2004
Crooked Creek, John Paul Park, Madison, IN	Mar 2004
Eagle Creek, Indianapolis, IN	Jun 2003
East Fork White River, Brownstown, (Jackson County), IN	Mar 2003
Eighteen Mile Island, Oldham County, KY	Jun 1993
Great Miami River, Sidney, OH	Aug 1995
Green River, Calhoun, KY (River Mile 63.6)	Sep 1995
Green River, Calhoun, KY (River Mile 63.4)	Sep 1998
Indian Creek, Burton Lane, Morgan County, IN	Oct 1999
Licking River, Butler, KY	Aug 1995
Lusk Creek, Golconda, IL	Jul 2002
Little Miami River, Indian Hill, OH	Nov 1999
Little Miami River, Milford, OH	Apr 1995
Nameless Creek, Warren County, IN	Jun 1995
North Fork, Kentucky River, Whitesburg, KY	Oct 2002
Great Miami River, Ice Jam Flooding, Port Jefferson, OH	Nov 1999
Ohio River, Brandenburg, KY	Apr 2003
Ohio River, Carrolton, KY	Feb 2003
Ohio River, Cloverport, KY	Nov 2002
Ohio River, Daviess County, KY	Sep 1998
Ohio River, Fort Massac State Park, IL	Nov 1999
Ohio River, Hawesville, KY	Sep 1998
Ohio River, Lewisport, KY	Nov 2002
Ohio River, Madison, IN	Mar 2004
Ohio River, Moscow, OH	Jan 2000
Ohio River, Mount Vernon, IN	Jul 2004
Ohio River, Newburgh, IN	Jul 2004
Ohio River, Ohio Street, Evansville, IN	Jul 2004
Ohio River, Otter Creek Park, KY	Mar 2004
Ohio River, Owensboro, KY	Sep 1998
Ohio River, Owensboro Riverport Authority, KY	Feb 1995
Ohio River, Rabbit Hash, Boone County, KY	May 2004
Ohio River, Rockport/Rockport Landing, IN	Aug 1998
Ohio River, Sellersburg, IN	Nov 2002
Ohio River, SR 66, Cannelton, IN	Nov 2002
Ohio River, Troy, IN	Nov 2002

TABLE 24-K
CONTINUED

INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS

(See Section 44 of Text)

Projects	Date of Inspection
Bank Revetments Con't	
Ohio River, Upper River Road, Jefferson County, KY	Jul 1991
Ohio River, Vanderburg County, IN	Aug 1998
Patoka River, Jasper, IN	Oct 1993
Patoka River, Winslow, IN	Jul 1995
South Fork of Wildcat Creek, County Road 7 East, Tippecanoe County, IN	May 2004
Stoner Creek, North Middletown, KY	Jul 1994
Wabash River, near Merom, IN	Aug 2004
Wabash River, New Harmony, IN	Sep 2004
Wabash River, Terre Haute STP Outfall	Oct 1999
Wabash River, Vigo County, County Road 83 West	Oct 1999
Wabash River, Vigo County, Little Road	Oct 1999
White River, Morgan County, Blue Bluff Road, IN	Oct 1999
White River, Petersburg (Pike County), IN	Jul 1995
Whitewater River, Levee Road, near Brookville, IN	Apr 1995
Wastewater Treatment Plant, Great Miami River, Ross, OH	Apr 1995

TABLE 24-L

FLOOD CONTROL WORK UNDER SPECIAL AUTHORIZATION

(See Section 46 of Text)

	Fiscal Year Cost		
	Federal	**Non-Fed**	**Total**
Environmental Restoration (Section 1135)			
Cane Ridge, IN RA [1]	11,473	-	11,473
Coordination Accounting Fund [8]	5,000	-	5,000
Green River Headwater [4]	297	-	297
Hovey Lake Wildlife Area, IN [1]	1,409	-	1,409
Monroe Lake, IN RA [1]	629	-	629
Mt. Etna/Mt. Hope Wetlands Salamonie Lake, IN [1]	974	-	974
Preliminary Restoration Plan [7]	36	-	36
Flood Control (Section 205)			
Amberley Creek, Cincinnati, OH [2]	214	4,765	4,979
Banklick Creek, Kenton County, KY [2]	99,941	50,024	149,965
Beaver Creek, Frenchburg, KY [2]	48,570	-	48,570
College Corner, OH [2]	59,116	-	59,116
Coordination Account [8]	31,095	-	31,095
Cow Creek & McPherran Branch, IN [2]	16,970	-	16,970
Dugan Run, Urbana, OH [2]	25,068	-	25,068
Elizabethtown, KY [2]	30,948	-	30,948
Feather Creek, Clinton, IN [3]	8,857	-	8,857
Franklin Co., KY [2]	19,139	-	19,139
Hinkston Creek Mt. Sterling, KY [2]	110,842	5,016	110,842
Knox County Kelso Creek, IN [2]	2,302	-	2,302
Lamotte Creek, Palestine, IL [2]	24,148	-	24,148
Licking River Flood Warning System, KY [5]	-11,339	27,967	16,628
Little Duck Creek, OH [2]	3,665	-	3,665
Mattoon, IL [2]	16,644	-	16,644
Mississenewa River, Marion, IN [2]	28,742	-	28,742
North Fork, Kentucky River, Jackson, KY [5]	-33,362	33,362	0
North Panther Creek, Daviess County, KY [6]	101	-	101
Olney, IL [2]	34,483	-	34,483
Owl Creek, West Carrolton, OH [6]	2,650	-	2,650
Pankey Branch, Harrisburg, IL [6]	31,732	-	31,732
Pleasant Creek, Greenwood, IN [2]	30,531	27,462	57,993
Rolling Fork River, Lebanon Junction, KY [4]	38,674	59,950	98,624
Shelly Creek, Montgomery Co., IN [6]	39,573	-	39,573
White River, Anderson, IN [3]	40,691	-	40,691
Whitewater River, Connersville, IN [6]	-100	-	-100
Emergency Bank Protection (Section 14)			
Blue Lick, KY [1]	59,175	-	59,175
Clear Creek Mapleturn Utilities, IN [1]	4,457	-	4,457
Coordination Account [8]	21,250	-	21,250
Crooked Creek, Madison, IN [1]	7,081	-	7,081
Hodgenville, KY [1]	52,355	-	52,355
Little Miami River Anderson Township, OH [1]	59,387	-	59,387
Ohio River, Perry County, IN [5]	-583	5,351	24,223
Rockport, IN [1]	40,297	-	40,297
Rough River Hartford, KY [1]	62,184	40,810	102,994
South Harrison Co., IN [1]	19,855	-	19,855
South Harrison Co., Water Corp, IN [1]	38,087	-	38,087
Southern Ditch, Louisville, KY [6]	45	-	45
White River, Knox County, Hwy 358, KY [1]	13,930	-	13,930
Snagging & Clearing (Section 208)			
Deer Creek, Webster Co., KY [1]	24,844	-	24,844

TABLE 24-L
CONTINUED

FLOOD CONTROL WORK5
UNDER SPECIAL AUTHORIZATION

(See Section 46 of Text)

	Fiscal Year Cost		
	Federal	**Non-Fed**	**Total**
Aquatic Ecosystem Restoration (Section 206)			
Beargrass Creek Louisville, KY Wetlands [1]	6,132	-	6,132
Bloomington IN Wetlands RA [1]	588	-	588
Chapman Lake, IN Wetlands RA [1]	4,772	-	4,772
Coordination Account Fund [8]	4,136	-	4,136
East Fork White River RA [1]	7,158	-	7,158
Freeman Lake Wildlife Refuge [7]	2,000	-	2,000
Kenton County, Sewer District No. 1 [7]	1,552	-	1,552
Lexington Road Park Greenway [7]	3,229	-	3,229
Log Creek Church Rd, Pike Co, IN [2]	2,194	-	2,194
Lost River Valley, Bowling Green [1]	11,069	-	11,069
Lower Beargrass Creek [7]	27	-	27
Ohio River Garvin Brown [1]	2,539	-	2,539
White River Muncie, IN [1]	1,000	-	1,000
Yellowbank WMA KY RA [1]	999	-	999
Navigation – River & Harbors (Section 107)			
Horseshoe Bend, Henderson, KY [2]	29,972	-	29,972

[1] Planning and Design Analysis (PDA).
[2] Feasibility Report.
[3] Plans and Specifications.
[4] Construction Funds Received or Construction Underway.
[5] Construction Completed.
[6] Study Terminated.
[7] Preliminary Restoration Plan.
[8] Coordination Account.

TABLE 24-M

GENERAL INVESTIGATIONS

(See Sections 47, 48, 49, & 50 of Text)

Projects	Fiscal Year Cost Federal	Non-Fed	Total
SURVEYS			
Navigation Studies			
Ohio River Mainstem, Uniontown, KY, IL, IN	$ 260,225	-	260,225
Flood Damage Prevention Studies			
Licking River Watershed, Cynthiana, KY	47,672	62,165	109,837
Metro Louisville, Beargrass Creek, KY	(1,165)	1,165	0
Metro Louisville, Mill Creek, KY	11,829	-	11,829
Mississinewa River, Marion, IL	5	-	5
North Fork Licking River, KY	17		17
Ohio River & Trib Recon St. (Metro Louisville S.W.)	261,454	134,447	395,901
Polk Run Creek, OH	63,022	-	63,022
Williamstown Lake, KY	63,776	-	63,776
Special Studies			
Columbus Waterfront Development, IN	86,904	-	86,904
Covington Waterfront Development, KY	88,737	-	88,737
Licking River, Cynthiana, KY	50,821	-	50,821
Metropolitan Louisville, Jefferson Co., KY	13,315	-	13,315
Ohio Riverfront Study, Cincinnati, OH	12,837	-	12,837
Vicennes Waterfron t Development, IN	69,860	-	69,860
White River Central Waterfront, IN	120,215		120,215
Review of Authorized Projects			
Green River L&D #6	28,564	-	28,564
Miscellaneous Activities			
Federal Energy Regulatory Commission	7,234	-	7,234
Intra-Agency Water Resources Development	13,980	-	13,980
N. American Waterfowl Management Plan	1,575	-	1,575
Special Investigation, KY	32,374	-	32,374
PRECONSTRUCTION ENGINEERING AND DESIGN			
Navigation Project - Lock and Dams			
John T. Myers Locks and Dam	1,006,474	-	1,006,474
Flood Control Projects - Local Protection			
Ohio Riverfront Study, Cincinnati, OH	28,858	-	28,258
Paducah, KY	487	-	487
COORDINATION WITH OTHER AGENCIES			
Coordination with other Agencies and Non-Federal Interest			
Coop w/other Water Agencies	6,006	-	6,006
Planning Assistance to States			
PAS-IN-Indianapolis Three Dam Study	24,005	9,678	33,683
PAS-OH- Colerain Twp H&H IS	4	60	64
PAS Negotiation Funds	58,045	-	58,045
PAS-KY-Elk Creek Lake Master Plan	2,009	-	2,009
PAS-KY-Jefferson County	205	1,753	1,958
PAS-KY-Union County	1,501	22,626	24,127
PAS-OH-City of Middleton	13,648	16,925	30,753

TABLE 24-M
CONTINUED

GENERAL INVESTIGATIONS

(See Sections 47, 48, 49, & 50 of Text)

Projects	Fiscal Year Cost Federal	Non-Fed	Total
COLLECTION AND STUDY OF BASIC DATA			
Flood Plain Management Services			
Flood Plain Management Services	34,206	2,172	36,378
Quick Responses	7,500	-	7,500
SS-Fall Creek, Indianapolis	147,268	-	147,268
SS-Hazard ND FPI	7	-	7
Technical Service, General	28,056	-	28,056
Hydrologic Studies			
Hydrologic Studies	4,997	-	4,997

HUNTINGTON, WV, DISTRICT

All cost and financial statements for projects are listed at the end of this chapter. All other tables are referenced in the text and also appear at the end of this chapter.

The Huntington District includes central and south-eastern Ohio, all of West Virginia except the northern panhandle and northeastern portion, the eastern portion of Kentucky, a portion of midwestern Virginia, a very small portion of northwestern North Carolina, embraced in the drainage basin of the Ohio River and its tributaries from approximate river mile 127 (below Pittsburgh, PA) to approximate river mile 438, immediately upstream from Foster, KY. The drainage area of the Huntington District is approximately 44,914 square miles.

Improvements

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NAVIGATION

1. CONSTRUCTION OF LOCKS AND DAMS ON THE OHIO RIVER

See this heading under Chapter 19 – Ohio River.

2. KANAWHA RIVER, WV

Location. The Kanawha River is approximately 97 miles in length and is formed by the junction of the New and Gauley Rivers, a short distance above Kanawha Falls, WV, and flows generally northwesterly to the confluence with the Ohio River at Point Pleasant, WV.

Previous projects. For details of previous projects see the Annual Reports for 1875, 1915 and 1938.

Existing project. The existing project consists of three navigation structures on the Kanawha River. London Locks and Dam are located approximately 83 miles above the mouth of the Kanawha River and approximately two miles downstream from Montgomery, WV. Marmet Locks and Dam are located approximately 68 miles above the mouth of the Kanawha River at Marmet, WV. Winfield Locks and Dam are located approximately 31 miles above the mouth of the Kanawha River at Winfield, WV. Each structure has twin locks with usable dimensions of 56 feet by 360 feet. Another structure, Robert C. Byrd Locks and Dam, is located on the Ohio River at approximate river mile 279 and approximately nine miles below Gallipolis, OH. This structure has two parallel locks; the main lock is 110 feet by 1,200 feet. The existing project was completed at a cost of $27,853,699. Construction was initiated in 1931 and completed in 1937. This system of locks and dams provides a navigable depth of nine feet from the mouth of the Kanawha River to a point approximately 91 miles upstream. For further cost details see Table 17-B, see also, Appendix C. Public Law 99-88 authorized the initiation of Engineering and Design and Real Estate Acquisition for Winfield Locks and Dam Replacement. Feasibility studies for modernization have been completed. The plan includes construction of an additional lock chamber (800’x110') adjacent to the existing locks and continued use of the riverward lock chamber and the navigation dam. The contract for Lock Replacement – Phase I was awarded in April 1990 and is complete. The contract for Construction of Additional Lock and Gate Bay, Phase IIA, was awarded in May 1993 and is complete. The contract for lock replacement, Phase IIB, was awarded in January 1994 and is complete. The full funding estimate for new work is $235,900,000, which is 50 percent Federal cost and 50 percent Inland Water Ways Trust Fund cost. Public Law 104-303 authorized construction of a new lock chamber at Marmet Locks and Dam. The plan includes construction of a new lock chamber (800'x110') on the right descending bank landward of the existing locks and the continued use of the current twin 360'x56' chambers and the navigation dam. Feasibility studies for modernization are complete. Pre-construction engineering and design work is complete. Real estate acquisition activities, begun in FY 1998, are continuing. The contract for lock replacement was awarded in May 2002 and is 40% complete. The full funding estimate for new work is $333,000,000, which is 50% Federal cost and 50% Inland Waterways Trust Fund cost. The new lock is scheduled to be operational in 2008 with all construction complete in 2009. Major rehabilitation work has been initiated at London Locks and Dam. The plan for rehabilitation includes lengthening the river lock chamber by moving existing upper miter gates and reinstalling them upstream at the emergency dam sill, but within the confines of existing lock walls, and replacing the upper guard wall. The contract for Phase 2C, major rehabilitation at London, was awarded in January 2002 and is complete. The full funding estimate for major rehabilitation is $24,600,000 which is 50% Federal cost and 50% Inland Waterways Trust Fund cost.

In addition to the navigation structures on the Kanawha River, the Corps of Engineers participated with the City of Charleston in construction of a riverfront park on the right descending bank near downtown Charleston. The total cost of the project was $8,755,242. The federal share was $4,370,121 and the non-federal share was $4,385,121. The additional $15,000 in the non-federal share was for betterments paid for by the City of Charleston. The project was completed in January 1999.

Local cooperation. All requirements for local cooperation have been completed.

Terminal facilities. There are 100 terminals along the Kanawha River located from the mouth of the river to 30 miles east of Charleston, WV. These terminals are constructed principally of steel and wood mooring piles and steel pile mooring cells. Eighteen of these terminals have railroad connections. Five terminals are paved wharves and one is owned by the City of Charleston, WV. The remaining terminals are privately owned. The

principal commodities handled are coal, chemicals, acids, cement, gasoline and oil, and sand and gravel. For further details see the 1962 Annual Report.

Operations during the fiscal year. The Locks and Dams were operated as required and necessary repairs and improvements were made to the locks and dams as well as to the appurtenant structures and grounds. Channel inspections were conducted periodically. In FY 2004 dredging by contract on the Kanawha River totaled 91,672 cubic yards at $604,083

3. OPEN CHANNEL WORK, OHIO RIVER

See this heading under Chapter 19 – Ohio River.

4. OTHER AUTHORIZED NAVIGATION PROJECTS

See Table 25-C.

Article I. FLOOD CONTROL

5. ALUM CREEK LAKE, OH

Location. The damsite is located in Delaware County, OH, on Alum Creek, a tributary of Big Walnut Creek, approximately 26 miles above the mouth of Alum Creek and 15 miles north of Columbus, OH, and approximately 157 miles above the mouth of the Scioto River.

Existing project. The existing project consists of a rolled earthfill dam 93 feet in height and 10,000 feet in length with a gate controlled spillway located in the right abutment. The reservoir provides a total storage of 134,800 acre-feet and controls a drainage area of approximately 123 square miles. See also Appendix A. Construction of the dam and appurtenant works was initiated in August 1970 and completed in July 1974. The 405 tracts of land required for the project have been acquired. The Federal cost of the project was $56,267,422. The Sponsor will reimburse the Government an estimated $27,880,000, exclusive of interest, for cost allocated to water supply.

Local cooperation. For details of required local cooperation see the 1981 Annual Report.

Operations during the fiscal year. The entire project is complete. The project was operated for the benefit of flood control as required and necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented flood damages estimated to be $12,914,000. To date, the project has prevented an estimated $95,527,000 in flood damages.

6. BEECH FORK LAKE, WV

Location. The damsite is located in Wayne County, WV, on Beech Fork Creek, a tributary of Twelvepole Creek, approximately four miles above the mouth of Beech Fork Creek and 20 miles above the confluence of Twelvepole Creek and the Ohio River.

Existing project. The existing project consists of a rolled earth-fill dam 86 feet in height and 1,080 feet in length, an uncontrolled spillway landward of the left abutment of the dam with a control structure at the upstream end. The reservoir provides a total storage of 37,540 acre-feet and controls a drainage area of approximately 78 square miles. Construction of the dam was initiated in December 1972 and completed in February 1977. See also Appendix A. A total of 485 tracts of land were acquired for the project. The total cost of the project was $41,987,500.

Local cooperation. None required.

Operations during the fiscal year. The entire project is complete. The project was operated for flood control as required and necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented flood damages estimated to be $714,000. To date the project has prevented an estimated $18,438,000 in flood damages.

7. BLUESTONE LAKE, WV

Location. The damsite is located on the New River in Summers County, WV, approximately three miles above Hinton, WV, and one mile from the confluence of the New and Greenbrier Rivers. The reservoir is located in Summers County, WV, and Giles County, VA.

Existing project. The existing project consists of a concrete gravity dam 180 feet in height and 2,048 feet in length. Appurtenant structures consist of a gated spillway 790 feet in length located in the channel section of the dam. The stilling pool is formed by a 23-foot-high weir located 364 feet

downstream of 16 gated sluices through the spillway section and discharging into the stilling pool. Penstocks were installed at the time of construction to permit the future installation of hydropower. The reservoir provides for a total storage of 631,000 acre-feet. See also Appendix A. Construction of the dam was initiated in January 1942 and completed in April 1952. A total of 338 tracts of land were acquired for the project. The Federal cost of the project was $29,458,652, which includes expenditures under the recreation at completed projects program. For further details see the 1939 and 1962 Annual Reports.

In FY 2000 Dam Safety Assurance activities were initiated at Bluestone Dam. Modifications include increasing the height of the dam 13 feet; installing 309 anchors and thrust blocks; constructing gate closures across State Route 20; modifying penstocks to supplement discharge capacity; and relocating electrical lines. The Phase 1 contract, consisting of construction of a temporary access bridge, modification to existing penstocks, and construction of concrete thrust block; and design of Phase 2 of project, was awarded in September 2000, and is 97% complete. The full funding estimate for this work is $118,000,000 (full Federal expense).

Public Law 106-53, Section 361, directed the Corps to implement a plan for debris management at Bluestone Lake. In April 2001, a contract to construct a multi-level release tower and tunnel was awarded and is 91% complete. The full funding estimate for this work is $15,120,200.

Local cooperation. None required.

Operations during the fiscal year. The entire project is complete. The reservoir was operated for flood control as required and necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented flood damages estimated to be $161,775,000. To date, the project has prevented an estimated $2,055,615 in flood damages.

8. BURNSVILLE LAKE, WV

Location. The damsite is located in Braxton County, WV, on the Little Kanawha River, approximately two miles above Burnsville, WV, and 124 miles above the confluence of the Little Kanawha River and the Ohio River.

Existing project. The existing project consists of an earth embankment dam 80 feet in height and 1,000 feet in length with a gated spillway in the left abutment. The outlet works is an integral part of the spillway, consisting of five sluice gates and one low flow sluice. The reservoir provides for a total storage of 65,400 acre-feet and controls a drainage area of approximately 165 square miles. Construction of the dam was initiated in June 1973 and completed in February 1976. See also Appendix A. The 357 tracts of land required for the project have been acquired. The Federal cost of the project to date has been $57,166,839.

Local cooperation. None required.

Operations during the fiscal year. The project is completed. The project was operated for flood control as required and necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented flood damages estimated to be $19,991,000. To date, the project has prevented an estimated $131,739,000 in flood damages.

9. CENTRAL WEST VIRGINIA ENVIRONMENTAL INFRASTRUCTURE

Location: The project area consists of 20 counties in Central West Virginia and includes portions of Huntington, Pittsburgh, and Baltimore Districts. The program purpose is to provide design and construction assistance for environmental infrastructure and resource protection and development, including projects for wastewater treatment, water supply, and surface water resource protection and development. Only those projects which are publicly owned may participate in the program.

Existing project: In 2004 there were three projects underway in Huntington District: North Putnam County PSD, Silverton PSD, and Flatwoods – Canoe Run PSD. Work is authorized by Sec 571 of the Water Resources Development Act of 1999 (PL 106-53).

Local Cooperation. All requirements of local cooperation have been met.

Operating during the fiscal year: During the year, $139,753 was expended in Huntington District in the various activities related to this program.

10. DEER CREEK LAKE, OH

Location. The damsite is located in Pickaway County, approximately seven miles south of Mount Sterling, OH, on Deer Creek, a tributary of the Scioto

River, approximately 21 miles above the mouth of Deer Creek and approximately 106 miles above the mouth of the Scioto River.

Existing project. The existing project consists of a rolled earth-filled dam 93 feet in height and 3,880 feet in length, a 741-foot concrete gravity channel section controlled by three tainter gates, an outlet works consisting of five gated sluices through a concrete spillway section discharging into a stilling basin and an earth dike 15 feet by 4,600 feet in a saddle located approximately four miles southwest of the damsite. The reservoir provides a total storage of 102,540 acre-feet and controls a drainage area of approximately 278 square miles. Construction of the dam was completed in May 1968. The 138 tracts of land required for the project have been acquired. For further project details see the 1965 Annual Report. See also Appendix A. The Federal cost of the project is $20,406,545, including expenditures under the recreation at completed projects program.

Local cooperation. For details of required local cooperation see the 1981 Annual Report.

Operations during the fiscal year. The entire project is complete. The reservoir was operated for flood control as required and necessary repairs were made to the structure and appurtenances. The project prevented an estimated $11,178,000 in flood damages during the fiscal year. To date, the project has prevented an estimated $45,334,000 in flood damages.

11. DELAWARE LAKE, OH

Location. The damsite is located on the Olentangy River, approximately six miles above and north of Delaware, OH, and approximately 32 miles above the confluence of the Olentangy and Scioto Rivers at Columbus, OH. The reservoir is located in Delaware, Marion and Morrow Counties, OH.

Existing project. The existing project consists of a rolled earth-fill dam with a gate controlled ogee type spillway and five outlet conduits in the channel. The dam is 18,600 feet in length and 92 feet in height. The project provides for storage of 132,800 acre-feet and controls a drainage area of approximately 381 square miles. Construction of the dam was initiated in April 1946 and completed in July 1948. For further details see the 1962 Annual Report. See also Appendix A. Total real estate requirements of 7,703 acres of fee acquisition and 2,428 acres of flowage easements have been completed. The Federal cost for the project was $7,631,821.

Local cooperation. None required.

Operations during the fiscal year. All construction work is complete. The reservoir was operated for the benefit of flood control as required and necessary repairs were made to the structure and appurtenances. The project prevented an estimated $10,965,000 in flood damages during the fiscal year. To date, the project has prevented an estimated $97,104,000 in flood damages.

12. DEWEY LAKE, KY

Location. The damsite is located on Johns Creek, approximately seven miles southeast of Paintsville, KY, and approximately six miles above the confluence of Johns Creek and the Levisa Fork of the Big Sandy River.

Existing project. The existing project consists of an earthfill dam 118 feet in height and 913 feet in length, a controlled outlet works discharging through a channel excavated in the left abutment, and a rolled earth-fill dike blocking a low divide to Brandykeg Creek and the Levisa Fork. The reservoir provides a total storage of 93,300 acre-feet and controls a drainage area of approximately 207 square miles. Construction of the dam was initiated in March 1946 and completed in July 1949. For further project detail see the 1965 Annual Report. See also Appendix A. Total real estate requirements for the project were 12,458 acres in fee and 1,170 acres in flowage easements. The Federal cost of the project was $7,845,547, including expenditures for recreation under the completed project program.

Dam Safety Assurance activities are underway at Dewey Dam. Modifications include raising the height of the main dike with compacted earth, construction of a parapet wall across the dam, addition a 125-foot auxiliary spillway, and restricting the existing spillway to its original design capacity by providing vertical restriction walls on each side. A construction contract was awarded in May 2000 and is 100% complete. Dam safety assurance activities at Dewey Dam are about 99% complete. The full funding estimate for this work is **$19,538,400** (full Federal expense).

Local cooperation. None required.

Operations during the fiscal year. All construction activities are complete. The reservoir

was operated for the benefit of flood control as required and necessary repairs were made to the structure and appurtenances. The project prevented an estimated $2,900,000 in flood damages during the fiscal year. To date, the project has prevented an estimated $80,687,000 in flood damages.

13. DILLON LAKE, OH

Location. The damsite is located on the Licking River, approximately six miles above the confluence of the Licking and Muskingum Rivers at Zanesville, Ohio.

Existing project. The existing project consists of a rolled earth-fill dam 118 feet in height and 1,400 feet in length, a controlled outlet works discharging through a 20-foot conduit in the right abutment, and an ungated 280-foot spillway adjacent to the left abutment of the dam, and two rolled earthfill dikes. The reservoir provides for a total storage of 261,110 acre-feet and controls a drainage area of approximately 748 square miles. Construction of the dam was completed in July 1959. For further project details see the 1962 Annual Report. See also Appendix A. Total real estate required for the project consists of 8,232 acres in fee and 5,380 acres of flowage easements. See also Appendix A. Federal cost of the project was $30,218,135.

Local cooperation. None required.

Operations during the fiscal year. All construction work is complete. The project was operated as required for flood control, and necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented flood damages estimated to be $54,383,000. To date, the project has prevented an estimated $352,437,000 in flood damages.

14. EAST LYNN LAKE, WV

Location. The damsite is located in Wayne County, WV, approximately six miles southeast of Wayne, WV, 10 miles above the mouth of East Fork and 42 miles above the confluence of Twelvepole Creek and the Ohio River.

Existing project. The existing project consists of an earth-fill dam 113 feet in height and 638 feet in length, an uncontrolled spillway near the left abutment of the dam, and a 13-foot reinforced concrete tunnel in the right abutment with a control structure at the upstream end. The reservoir provides for a total storage of 82,500 acre-feet and controls a drainage area of approximately 133 square miles. The required 552 tracts of land have been acquired. See also Appendix A. The Federal cost of the project was $85,872,963.

Local cooperation. None required.

Operations during the fiscal year. All construction work is complete. The project was operated for flood control as required and necessary repairs were made to the structure and appurtenances. During the fiscal year, the project prevented flood damages estimated to be $9,241,000. To date, the project has prevented an estimated $83,649,000 in flood damages.

15. FISHTRAP LAKE, KY

Location. The damsite is located in Pike County, KY, on the Levisa Fork of the Big Sandy River, approximately 15 miles upstream from Pikeville, KY, approximately three miles above the confluence of Levisa and Russell Forks and 103 miles above the mouth of the Levisa Fork.

Existing project. The existing project consists of a rock-fill dam 195 feet in height and 1,100 feet in length, a controlled spillway containing four tainter gates located in the valley wall adjacent to the left abutment of the dam, the outlet works consists of an intake structure with three conduits controlled by slide gates and discharging into a horseshoe shaped tunnel. The reservoir provides for a total storage of 164,360 acre-feet and controls a drainage area of approximately 395 square miles. The dam was completed in February 1969. The 1,301 tracts of land required for the project have been acquired. See also Appendix A. The Federal costs for the project was $54,754,126, which includes expenditures under the recreation at completed projects program.

Local cooperation. None required.

Operations during the fiscal year. All construction work is complete. The project was operated for flood control as required, and necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented flood damages estimated to be $2,547,000. To date, the project has prevented an estimated $448,226,000 in flood damages.

16. GRAYSON LAKE, KY

Location. The damsite is located in Carter County, KY, on the Little Sandy River approximately 49 miles above the confluence with the Ohio River, and 11 miles upstream from Grayson, KY.

Existing project. The existing project consists of a random earthfill dam 120 feet in height and 1,460 feet in length, a controlled outlet works discharging though a 14-foot spillway beyond the left abutment. The reservoir provides for a total storage of 119,000 acre-feet and controls a drainage area of approximately 196 square miles. The dam was completed in January 1968. The 484 tracts of land required for the project have been acquired. See also Appendix A. Federal costs for the project was $19,162,741, which includes expenditures for recreation facilities under the completed projects program.

Local cooperation. None required.

Operations during the fiscal year. All construction work is complete. The reservoir was operated for flood control as required and necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented flood damages estimated to be $11,271,000. To date, the project has prevented an estimated $98,733,000 in flood damages.

17. JOHN W. FLANNAGAN DAM AND RESERVOIR, VA

Location. The damsite is located in Dickenson County, VA, approximately four miles northwest of Haysi, VA, on the Pound River approximately two miles above the confluence of the Pound River and Russell Fork and approximately 150 miles above the mouth of the Big Sandy River.

Existing project. The existing project consists of a rock-fill dam 252 feet in height and 970 feet in length, an outlet tunnel located near the left abutment of the dam with a control structure at the upstream end, a spillway controlled by six tainter gates located in a saddle just upstream from the damsite. The reservoir provides for a total storage of 145,700 acre-feet and controls a drainage area of approximately 222 square miles. The project was modified to include water quality control by adding control gates to the previously uncontrolled spillway, which increased the total storage capacity by 39,000 acre-feet. The dam was completed in December 1963. The 382 tracts of land required for the project have been acquired. See also Appendix A. The Federal cost for the project was $20,444,383, which includes expenditures for recreation under the completed projects program.

Local cooperation. None required.

Operations during the fiscal year. All construction work is complete. The project was operated for flood control as required and necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented flood damages estimated to be $**992,000**. To date, the project has prevented an estimated $**243,836,000** in flood damages.

18. LEVISA AND TUG FORKS OF THE BIG SANDY AND CUMBERLAND RIVERS, WV, VA, AND KY

Location. The Levisa and Tug Forks form the Big Sandy River at Louisa, KY. The Cumberland portion is the Upper Cumberland River Basin above Cumberland Falls, KY. The basin is approximately 100 miles in length and averages approximately 30 miles in width in the lower portion and approximately 10 miles in width above Harlan, KY. The Big Sandy Basin is within the Huntington District, and the Cumberland Basin is within the Nashville District. This report covers that portion of the project located in the Huntington District.

Existing project. The authorization language (Section 202 of PL 96-367, 1981) directs the Corps of Engineers to design and construct, at full Federal expense, such flood control measures as are determined to be necessary and advisable for the communities in the Tug and Levisa Forks and Upper Cumberland River basins. The authorization further states that such flood control measures would be located at or in the vicinity of Pikeville, KY, and Grundy, VA, on the Levisa Fork; Pineville, KY, on the Cumberland River; and Williamson and Matewan on the Tug Fork, in order to afford the named communities and other flood damaged locations and their immediate environs a level of protection against flooding at least sufficient to prevent any future losses from the likelihood of flooding such as occurred in April 1977. Subsequent legislation (WRDA 1986), required that non-Federal interests cost share construction at no less than 5%. The full funding estimate for the project is $2,056,272,000, which includes $112,540,000 non-federal contributions.

Local cooperation. All requirements of local cooperation have been met.

Operations during the fiscal year. Engineering studies are underway to determine what is necessary and advisable to address the flooding problems in both the Levisa Fork Basin and in the Tug Fork tributary stream areas.

Structural measures have been completed at West Williamson and Williamson, WV; South Williamson, KY; Matewan, WV; and Kermit, WV. Flood warning systems have been completed for the Levisa Basin and Tug Basin.

Non-structural measures are complete at Williamson, WV; Matewan, WV; and South Williamson, KY.

Non-structural measures are underway at Hatfield Bottom, Lower Mingo County, Upper Mingo County, Wayne County and McDowell County in WV; at Pike County, Martin County, and the Town of Martin in KY; in the Levisa Basin, VA and KY; and at Grundy, VA. At Grundy, two contracts are underway: Redevelopment Site, awarded April 2001 is 99.5% complete; and Access Bridge, awarded in September 2003, is 96.9% complete. Town of Martin redevelopment awarded June 2004 is 10% complete. Kimball Town Hall, McDowell County awarded in September 2004**.**

Operations during the fiscal year. To date, flood damages prevented in the area include: South Williamson, KY: $1,826,000; and Williamson LPP, WV: $3,801,000.

19. MASSILLON, OH

Location. The project is located in Stark County, on the Tuscarawas River, approximately 200 miles above the mouth of the Muskingum River.

Existing project. The existing project consists of channel improvement to the Tuscarawas River, combined with the construction of drainage facilities, levees and pump stations. For further details see the 1962 Annual Report. Construction was initiated in July 1940 and completed in October 1951.

Local cooperation. None required. See the 1962 Annual Report for details of local contribution of work beyond the scope of the project. To date, the system has prevented an estimated $5,711,000 in flood damages.

Operations during the fiscal year. Routine inspections were conducted to determine that the improved channel was maintained in satisfactory condition.

20. MUSKINGUM RIVER LAKES, OH

Location. The Muskingum River lies in Southeast Ohio and including tributaries, drains approximately 8,000 square miles. The headwaters rise about 25 miles south of Lake Erie and flow into the Ohio River at Marietta, OH, 172 miles below Pittsburgh, PA.

Existing project. The existing project consists of the construction and operations and maintenance of 14 reservoirs and appurtenant works in the Muskingum River Basin. The existing project originally authorized by the Public Works Administration in February 1934. Construction of the system was initiated in January 1935 and completed in November 1938. The system was initially operated and maintained by the Muskingum Watershed Conservancy District of Ohio, the sponsoring agency, from July 1938 to August 1939 when operation and maintenance became the responsibility of the Corps of Engineers in accordance with the provisions of the 1939 Flood Control Act. For further project details, see the 1962 Annual Report. See also Appendix A. The cost of the project was $41,247,815, which includes expenditures for recreation facilities under the completed project program.

A significant Major Rehabilitation program was approved in December 1977 in order to assure the integrity of the existing 14 structures under the originally designed maximum pool conditions. Underseepage and abutment seepage problems are being corrected through the installation of downstream blankets, toe drains and/or relief wells and grouting.

A related but separate program entitled Dam Safety Assurance has been initiated. Under current hydrologic design standards, deficiencies exist in the spillways at the 14 projects in the system. Corrective measures include widening present spillways, constructing new spillways and installing parapet walls on top of the dams have been completed at 7 projects. Seven remaining projects with deficiencies need corrective measures. New seismic criteria will require all dams to be evaluated for seismic deficiencies. If deficiencies are found, corrective measures will be required. Dam Safety Assurance activities are 100% complete at Beach City Lake.

Modifications involved upgrading spillway adequacy including raising the dam and dike, constructing a parapet wall, raising roadways, and modifying a railroad stoplog closure. The full funding estimate for this work is $34,590,000, which includes $8,000,000 from the non-Federal sponsor, the Muskingum Watershed Conservancy District. Work was begun at Magnolia Levee, which protects the town of Magnolia during flood events, and is a part of the Bolivar Dam area. Magnolia Levee experiences a seepage problem during high water and is in danger of failure.

Local cooperation. All requirements for local cooperation have been met. For further details see the 1942 Annual Report.

Operations during the fiscal year. The reservoirs were operated for flood control as required, and the necessary repairs were made to the structures and appurtenances. The system prevented an estimated $478,489,000 in flood damages during the fiscal year. To date, the system has prevented an estimated $2,715,265,000 in flood damages.

21. NEWARK, OH

Location. The project is located in Licking County at the junction of the North and South Forks of the Licking River, approximately 29 miles above the confluence with the Muskingum River at Zanesville, OH.

Existing project. For details of the existing project see the 1981 Annual Report. Construction of the existing project was initiated in July 1940 and completed in November 1941. As a result of the 1968 Flood Control Act the existing project was modified to include improvement of the interior drainage facilities, construction of Log Pond Run diversion channel and modification of the North Fork Channel. Construction of the Log Pond Run diversion channel was awarded in September 1980 and completed in December 1981. The total cost of the project is $11,151,232.

Local cooperation. For details of required and completed local cooperation see the 1981 Annual Report.

Operations during the fiscal year. Routine inspections were conducted to determine that the improved channel was maintained in satisfactory condition. To date, the project has prevented an estimated $3,299,000 in flood damages.

22. NORTH BRANCH OF KOKOSING RIVER LAKE, OH

Location. The damsite is located in Knox County, OH, on the North Branch of Kokosing River, approximately nine miles above the confluence of the Kokosing and North Branch Rivers, and two miles northwest of Fredericktown, OH.

Existing project. The existing project consists of a rolled-earth dam, 70 feet in height and 1,400 feet in length with an uncontrolled spillway adjacent to the right abutment, and an uncontrolled, reinforced concrete outlet work located in the right abutment of the dam. The reservoir provides for a total storage of 14,885 acre-feet and controls a drainage area of approximately 45 square miles. The 56 tracts of land required for the project have been acquired. Construction of the dam was completed in May 1972. See also Appendix A. The Federal cost for the project was $6,665,985, which includes expenditures under the recreation at completed projects program.

Local cooperation. None required.

Operations during the fiscal year. All construction work is complete. The reservoir was operated for flood control as required and the necessary repairs were made to the structure and appurtenances.

23. NORTH FORK OF POUND RIVER LAKE, VA

Location. The damsite is located in Wise County, VA, on the North Fork of Pound River, approximately one mile upstream from the confluence of the North and South Forks which form the Pound River and approximately three miles upstream from Pound, VA.

Existing project. The existing project consists of a rockfill dam, 130 feet in height and 600 feet in length, an uncontrolled spillway in a saddle upstream from the dam, and an outlet tunnel in the right abutment with a control structure at the upstream end. The reservoir provides a total storage of 11,300 acre-feet and controls a drainage area of approximately 17 square miles. The 127 tracts of land required for the project have been acquired. Construction of the dam was completed in January 1966. See also Appendix A. The Federal cost for the project was $6,186,901, which includes expenditures for recreation under the completed projects program.

Local cooperation. None required.

Operations during the fiscal year. All construction is complete. The project was operated as required for flood control and the necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented an estimated $66,000 in flood damages. To date, the project has prevented an estimated $12,920,000 in flood damages.

24. OHIO ENVIRONMENTAL PROGRAM

Location: The program provides environmental infrastructure assistance to communities throughout the State of Ohio and includes portions of Huntington, Louisville, Pittsburgh, and Buffalo Districts. This includes project design and construction assistance for wastewater treatment and related facilities, combined sewer overflows, water supply and storage and related facilities, mine drainage, environmental restoration, and surface water resource protection and development. Reimbursable projects are allowed.

Existing project: Within Huntington District there are 3 projects underway in Ohio: Hamden, Hartford, and Whitehall. Work is authorized by Sec 594 of the Water Resources Development Act of 1999 (PL 106-53).

Local cooperation: Reimbursable construction PCAs, 75% federal and 25% non-federal, were executed with the appropriate local sponsors.

Operating during the fiscal year: During the year, $152,698 was expended in Huntington District in the various activities related to this program.

25. OHIO RIVER BASIN (HUNTINGTON DISTRICT)

Location. The work covered by this project consists of a series of levees, floodwalls, channel improvements and dams and lakes in the Ohio River Basin within the Huntington District.

Existing project. The existing project consists of the individual projects considered in the Ohio River Basin comprehensive plan within the Huntington District.

Operations during the fiscal year. The completed local protection projects, which are operated and maintained by local interests, except for those local protection projects for which individual reports have been included. During the fiscal year, the project prevented an estimated $87,331,000 in flood damages. To date the project has prevented flood damages of an estimated cumulative total of $1,025,119,000.

26. PAINT CREEK LAKE, OH

Location. The damsite is located in Ross County, OH, on Paint Creek, a tributary of the Scioto River, approximately 37 miles above the mouth of Paint Creek and 100 miles above the mouth of the Scioto River and approximately four miles east of New Parkersburg, OH.

Existing project. The existing project consists of a rock and random earth fill dam, 118 feet in height and 700 feet in length, a gate controlled spillway located near the right abutment, an outlet tunnel located in the right abutment with a control structure at the upstream end, and a random rockfill dike located at the right abutment of the spillway. The reservoir provides for a total storage of 145,000 acre-feet and controls a drainage area of approximately 576 square miles. Construction of the dam was completed in July 1973. The 257 tracts of land required for the project have been acquired. See also Appendix A. Federal cost for the project was $26,969,962, which includes expenditures under the recreation at completed projects program.

Local cooperation. For details of required local cooperation see the 1981 Annual Report.

Operations during the fiscal year. All construction work is complete. The reservoir was operated for flood control as required and the necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented an estimated $10,965,000 in flood damages. To date, the project has prevented flood damages estimated to be $91,616,000.

27. PAINTSVILLE LAKE, KY

Location. The damsite is located in Johnson County, KY, on Paint Creek, a tributary of the Levisa Fork of the Big Sandy River, approximately eight miles above the mouth of Paint Creek, and four miles west of Paintsville, KY.

Existing project. The existing project consists of a rockfill dam 153 feet in height and 1,560 feet in

length, an uncontrolled spillway located southwest of the right abutment of the dam, and an outlet tunnel in the right abutment with a control structure at the upstream end. The reservoir provides for a total storage of 76,642 acre-feet and controls a drainage area of approximately 93 square miles. The 635 tracts of land required for the project have been acquired. Construction of the dam was initiated in September 1976 and was completed in September 1980. See also Appendix A. The total cost of the project to date has been $60,194,986. The local sponsor has reimbursed the Government $377,000 for the cost sharing portion of recreation development.

Operations during the fiscal year. The reservoir was operated for flood control as required and necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented flood damages estimated to be $1,581,000. To date, the project has prevented flood damages estimated to be $17,082,000.

28. R. D. BAILEY LAKE, WV

Existing project. The damsite is located in Wyoming County, WV, on the Guyandotte River approximately 108 miles above the confluence with the Ohio River and one mile east of Justice, WV.

Existing project. The existing project consists of a rolled rockfill dam with a concrete face, 305 feet in height and 1,330 feet in length, an uncontrolled spillway located in a saddle in the right abutment of the dam, and an outlet tunnel in the left abutment with a control structure located at the upstream end. The reservoir provides for a total storage of 203,700 acre-feet and controls a drainage area of approximately 540 square miles. Construction of the dam was initiated in November 1973 and completed in December 1979. See also Appendix A. A total of 2,109 tracts of land were acquired for the project. The total cost of the project to date has been $261,251,678.

Local cooperation. None required.

Operations during the fiscal year. The reservoir was operated for flood control as required and necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented flood damages estimated to be $26,572,000. To date, the project has prevented flood damages estimated to be $174,400,000.

29. ROSEVILLE, OH

Location. The project is located in Muskingum and Perry Counties, on Moxahala Creek, approximately six miles from the confluence with Jonathan Creek, a tributary of the Muskingum River.

Existing project. The existing project consists of 7,291 feet of channel improvement; 6,400 feet of levee and railroad embankment enlargements; and the necessary appurtenances for interior drainage. Total Federal cost of the project was $910,785. Construction was initiated in August 1959 and completed in October 1960.

Local cooperation. All requirements for local cooperation have been completed. See also the 1962 Annual Report. Total costs of local requirements were $62,000.

Operations during the fiscal year. Routine inspections of the improved portion of the project were conducted to determine that the project was maintained in satisfactory condition. During the fiscal year the project prevented flood damages estimated to be $15,000. To date, the project has prevented an estimated $1,302,000 in flood damages.

30. SOUTHERN AND EASTERN KENTUCKY ENVIRONMENTAL INFRASTRUCTURE

Location: The project area consists of a 27 county region in southern and eastern Kentucky, which includes portions of the Huntington, Nashville, and Louisville Districts. The program provides for design and construction assistance of environmental infrastructure projects. The focus of the program is on wastewater treatment and collection systems. Reimbursable projects are allowed.

Existing project: Within Huntington District, eleven projects were underway in 2003 in eastern Kentucky, These were South Williamson, David, Manchester, Rolling Acres, Fleming-Neon, Tug Valley Sewer, Henry Clay Area, Booneville, Pikeville – Indian Hills, Barrenshee Creek and Oak Dale Christian High school. Work is authorized by Sec 531 of the Water Resources Development Act of 1996 (PL 104-303); as amended by Sec 532 of Water Resources Development Act of 1999.

Local cooperation: Reimbursable construction PCAs, 75% federal and 25% non-federal, were executed with the appropriate local sponsors.

Operating during the fiscal year: During the year, $715,074 was expended in Huntington District in the various activities related to this program.

31. SOUTHERN WEST VIRGINIA ENVIRONMENTAL INFRASTRUCTURE

Location. The project area consists of 16 counties in southern West Virginia (all within Huntington District). The program provides for design and construction assistance of environmental infrastructure, largely water supply and wastewater treatment facilities, in that region.

Existing project. In 2004, six projects were underway in the program: Krouts Creek, Boone County, Kilsyth, Cool Ridge/Flat Top, Piney Creek and Oak Vale Road PSD. Work is authorized under Section 340 of the Water Resources Development Act of 1992 (PL 102-580).

Local Cooperation. All requirements of local cooperation have been met.

Operating during the fiscal year: During the year, $253,500 was expended in this program.

32. SUMMERSVILLE LAKE, WV

Location. The damsite is located at Ruckers Bend in Nicholas County on the Gauley River approximately 35 miles above the confluence of the Gauley and New River at Gauley Bridge, WV.

Existing project. The existing project consists of a rockfill dam having a height of 357 feet and a length of 2,280 feet, an outlet tunnel in the right abutment with a control structure located at the upstream end, an uncontrolled spillway located west of the right abutment and two earthfill dikes. The reservoir provides for a total storage of 413,800 acre-feet and controls a drainage area of 803 square miles. See also Appendix A. Construction of the dam was initiated in March 1960 and completed in March 1966. A total of 9,346 acres of land were acquired for the project. The Federal cost of the project was $48,375,884, which includes expenditures under the recreation at completed projects program.

Local cooperation. None required.

Operations during the fiscal year. All construction work is complete. The project was operated for flood control as required and necessary repairs were made to the structures and appurtenances. During the fiscal year the project prevented flood damages estimated to be $140,958,000. To date, the project has prevented an estimated $609,499,000 in flood damages.

33. SUTTON LAKE, WV

Location. The damsite is located on the Elk River in Braxton County approximately one mile above Sutton, WV, and 101 miles above the mouth of the Elk River.

Existing project. The existing project consists of a concrete gravity dam having a height of 220 feet and a length of 1,178 feet, a gated spillway in the channel section of the dam, comprised of six tainter gates supported by piers, an outlet works comprised of five gate sluices through the spillway section. The reservoir provides for storage of 265,300 acre-feet and controls a drainage area of 537 square miles. See also Appendix A. Construction of the dam was initiated in 1949 and completed in June 1960. The total cost of the project was $37,029,585.

Local cooperation. None required. See the 1981 Annual Report for contributed funds.

Operations during the fiscal year. All construction work is complete. The project was operated for flood control as required and necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented flood damages estimated to be $96,304,000. To date, the project has prevented an estimated $358,187,000 in flood damages.

34. TOM JENKINS DAM, OH

Location. The damsite is located in Athens County, on the East Branch of Sunday Creek, a tributary of the Hocking River, approximately three miles north of Glouster, OH, and 57 miles above the mouth of the Hocking River.

Existing project. The existing project consists of a rolled-earth dam, 84 feet in height and 944 feet in length, a controlled works discharging through a tunnel in the left abutment, and an uncontrolled spillway in the ridge running south from the damsite. The reservoir, known as Burr Oak Lake, provides for a total storage of 26,900 acre-feet and controls a

drainage area of approximately 33 square miles. See also Appendix A. Construction of the project was initiated in March 1948 and completed in February 1950. A total of 100 acres of land were acquired for the project. The Federal costs of the project were $2,086,503, which includes expenditure for recreation at completed project.

Local cooperation. All requirements of local cooperation have been met. See also the 1962 Annual Report. Contributed funds in the amount of $575,000 have been received from the State of Ohio.

Operations during the fiscal year. All construction work is complete. The project was operated for flood control as required and necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented flood damages estimated to be $3,636,000. To date, the project has prevented an estimated $26,195,000 in flood damages.

35. WEST COLUMBUS, OH

Location. The project is located on the right bank of the Scioto River in the western part of the City of Columbus, OH, across the river from the downtown area in Franklin County. It is generally bounded by the Scioto River on the north, Interstate 71 on the east, and Frank Road on the south. The area being protected, approximately 2,800 acres, is completely urban with a mix of residential, industrial and commercial development.

Existing project. The project under construction consists of a 7.2-mile system including levee, floodwall and high ground. It protects 6,170 structures and 2,800 acres of lands. Fourteen gate closures, interior drainage facilities and construction of two new pump stations and reworking two existing pump stations are included. .

Local cooperation. Local interests are required to provide all lands, easements, and rights-of-way; to verify or relocate buildings; utilities, roads, bridges (except railroad bridges), and other facilities where necessary. Pay a cash contribution of at least 5%, as required by the Water Resources Development Act of 1986, of the costs allocated to flood control, and bear all costs of operation, maintenance, and replacement of flood control facilities.

Operations during the fiscal year. Funds to initiate preconstruction engineering and design were appropriated in Fiscal Year 1989 and funds to initiate construction were appropriated in Fiscal Year 1993. The total estimated cost of the project is $140,000,000 of which $37,624,957 is non-Federal. Construction contracts underway in 2003 include:

Phase IIIC, awarded Nov 2000, 99.9% complete.

Phase IIIB, awarded Mar 2001, 99.4% complete.

Reliable Power, awarded Dec 2001, 79.2% complete.

Phase IIE, awarded Jan 2003, 100% complete.

Scioto Main Sanitary Sewer, awarded May 2003, 99.97% complete.

36. YATESVILLE LAKE, KY

Location. The damsite is located in Lawrence County, on Blaine Creek, a tributary of the Big Sandy River, approximately five miles west of Louisa, KY, and 18 miles above the mouth of Blaine Creek.

Existing project. The existing project consists of an earth and rockfill dam, 104 feet in height and 760 feet in length, an uncontrolled spillway located one-half mile southeast of the right abutment of the dam. The outlet works consists of a 13-foot diameter tunnel through the left dam abutment. The reservoir provides for a total storage of 86,951 acre-feet and controls a drainage area of approximately 208 square miles. The 778 tracts of land required for the project have been acquired. Construction was completed in May 1995. See also Appendix A. The total cost of the project to date has been $99,453,537.

Operations during the fiscal year. The reservoir was operated for flood control as required and necessary repairs were made to the structure and appurtenances. During the fiscal year the project prevented flood damages estimated to be $2,204,000. To date the project has prevented an estimated $19,820,000 in flood damages.

37. INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS

The Flood Control Act of June 22, 1936, and subsequent acts require local interest to furnish assurances that they will operate and maintain certain local protection projects after completion in accordance with regulations prescribed by the Secretary of the Army. District Engineers are responsible for the administration of these regulations within their respective districts. Maintenance inspections were made during the fiscal year of those completed units transferred to local interests for operation and maintenance. Local interests were

advised, as necessary, of measures required to maintain the projects in accordance with the standards prescribed by regulations. Total costs for fiscal year 2004 were $181,158. Total cost to September 30, 2004 were $2,449,872. The flood control works inspected and the dates of inspection are tabulated in Table H.

38. FLOOD CONTROL WORK UNDER SPECIAL AUTHORIZATION

Emergency bank protection activities pursuant to Section 14 of the 1946 Flood Control Act (PL 79-526), are tabulated as follows:

Location	FY 2004 Cost
Sec 14, Coordination Account	$20,314
Paden City, WV	181,025
Kanawha River, Charleston, WV Magic Island	4,313
Minersville, OH	885,608
Tuscarawas Co, Johnson Co. Road, OH	4,313

Flood control activities pursuant to Section 205 of the 1948 Flood Control Act (PL 80-852), are tabulated as follows:

Location	FY 2004 Cost
Sec 205, Coordination Account	$17,962
Brush Ck, Glady Fork, Princeton, WV	19,060
Mercer County, WV	-3,084
Olive Hill, KY	29,191
Hoods Creek, KY	49,809
Magazine Branch, Elk River, WV	66,372

No activities pursuant to Section 208 of the 1954 Flood Control Act (PL 83-780) were underway in FY 2003.

Activities pursuant to Section 107 of the 1960 River and Harbor Act (PL 86-645) for small navigation projects are tabulated as follows:

Location	FY 2004 Cost
Greenup Slackwater Harbor, KY	$8,315

Activities pursuant to Section 1135 of WRDA 1986 (PL 99-662) for Project Modifications to Improve the Environment are tabulated as follows:

Location	FY 2004 Cost
Sec 1135, Coordination Account	$ 8,508
Wills Creek, Linton Road Mine, OH	8,568
Wills Creek, Mason Mine 280, OH	40,401

Activities pursuant to Section 206 of WRDA 1996 (PL 104-303) for Aquatic Ecosystem Restoration are tabulated as follows:

Location	FY 2004 Cost
Sec 206, Coordination Account	$7,288
Ore Knob, NC	29,337
Watauga, NC	17,128
Huff Run, OH	5,841
Big Darby Creek, OH	3,053
Three Creeks Environmental Restoration, OH	17,677
St. Louisville, OH	338,659
Hocking R. Wetlands, Lancaster, OH	17,072
5th Avenue Dam Removal, Columbus, OH	8,198

Work performed under special legislation pursuant to Water Resources Development Act of 1996 (PL 104-303) as follows:

Location	FY 2004 Cost
Greenbrier River, Marlinton, WV	$1,180,442
Lower Mud River, Milton, WV	1,249,954

Flood control and coastal emergency activities pursuant to PL 84-99 were conducted as required during FY 2004 at a cost of $1,779,048.

National emergency management activities were accomplished by the district as required. The costs for these activities during FY 2004 were $29,605.

GENERAL INVESTIGATIONS

39. SURVEYS

Fiscal year 2004 costs were $4,061,979 itemized as follows:

Location	FY 2004 Cost
Navigation Studies	$615,183
Flood Damage Prevention Studies	318,435
Special Studies	486,917
Comprehensive Basin Studies	22,739
Review of Authorized Projects	0
Miscellaneous Activities	179,703
Coordination with Other Agencies	22,884
Collection and Study of Basic Data	106,335
Preconstruction Engineering and Design (Projects not Fully Authorized)	2,065,898
Preconstruction Engineering and Design (Projects Fully Authorized)	243,885

Table 25-A Cost and Financial Statement

See Section In Text	Project	Funding	FY 01	FY 02	FY 03	FY 04	Total Cost to Sep. 30, 2003	
2	Kanawha River, WV	New Work						
	(existing project)	Approp					27,853,699	1
		Cost					27,853,699	1
		Maint						
		Approp	6,487,816	7,678,843	10,195,697	8,597,431	211,849,232	2
		Cost	6,433,269	7,479,955	10,051,433	9,041,728	211,822,581	2
		Rehab						
		Approp					130,984	3
		Cost					130,984	3
2	Elk River Harbor, WV	Maint						
		Approp	304,510	-5,096	272,118	0	2,992,655	
		Cost	299,414	-5,096	272,118	0	2,987,359	
2	Charleston Riverfront	New Work						
	Park, WV	Approp	0	0	0	0	4,370,121	
		Cost	0	0	0	0	4,370,121	
2	Winfield L&D	New Work						
		Approp	42,000	394,000	39,656	460,000	228,237,656	4
		Cost	247,614	290,037	224,075	428,756	228,200,377	5
2	Marmet L&D	New Work						
		Approp	13,948,000	28,788,000	38,588,972	54,338,000	158,624,972	6
		Cost	13,710,285	28,789,324	38,748,329	54,348,055	158,526,079	7
2	London L&D	New Work						
		Approp	1,270,000	8,810,000	12,085,488	10,000	23,501,488	8
		Cost	1,305,006	8,849,284	12,112,141	9,278	23,394,531	9
5	Alum Creek Lake, Oh	New Work						
		Approp					56,267,422	
		Cost					56,267,422	
		Maint						
		Approp	969,519	696,311	685,354	892,465	16,488,224	10
		Cost	780,461	884,845	687,747	882,870	16,478,361	10
6	Beech Fork Lake	New Work						
		Approp					41,987,500	
		Cost					41,987,500	
		Maint						
		Approp	1,149,417	1,000,536	980,376	937,025	21,647,526	
		Cost	1,143,991	1,014,609	988,024	938,496	21,647,340	

Table 25-A (Cont'd) Cost and Financial Statement

See Section In Text	Project	Funding	FY 01	FY 02	FY 03		Total Cost to Sep. 30, 2004	
7	Bluestone Lake	New Work						
		Approp					29,458,652	11
		Cost					29,458,652	11
		Maint						
		Approp	4,115,643	5,466,866	4,567,079	4,567,079	55,013,582	12
		Cost	3,913,298	5,646,306	4,157,506	4,157,506	54,149,681	12
		Dam Safety						
		Approp	7,904,000	9,982,000	10,047,090	4,236,000	35,518,090	
		Cost	7,735,109	9,861,138	11,081,555	4,229,440	35,498,091	
8	Burnsville Lake	New Work						
		Approp					57,166,839	
		Cost					57,166,839	
		Maint						
		Approp	1,819,970	1,608,956	1,688,582	1,573,710	31,865,341	13
		Cost	1,808,463	1,623,061	1,699,721	1,571,049	31,859,398	13
9	Central WV	New Work						
	Environmental	Approp	122,000	111,000	-33,000	144,000	344,000	
	Infrastructure	Cost	83,414	64,044	52,449	139,753	339,660	
10	Deer Creek Lake	New Work						
		Approp					20,406,545	14
		Cost					20,406,545	14
		Maint						
		Approp	672,483	653,099	851,838	1,235,185	17,704,713	15
		Cost	667,429	654,823	773,812	1,321,597	17,715,967	15
11	Delaware Lake	New Work						
		Approp					7,631,821	
		Cost					7,631,821	
		Maint						
		Approp	870,970	727,235	770,970	806,900	22,310,883	16
		Cost	862,363	739,284	737,593	846,599	22,310,947	16
12	Dewey Lake	New Work						
		Approp					7,845,547	17
		Cost					7,845,547	17
		Maint						
		Approp	1,330,685	1,394,082	1,523,950	1,155,780	35,432,377	18
		Cost	1,342,517	1,273,566	1,662,674	1,147,280	35,432,793	18
		Dam Safety						
		Approp	8,888,000	4,890,109	988,152	917,900	19,500,220	
		Cost	8,836,123	5,188,052	960,720	954,316	20,492,716	
13	Dillon Lake	New Work						
		Approp					30,218,135	19
		Cost					30,218,135	19
		Maint						
		Approp	723,150	545,655	655,467	856,000	16,473,952	20
		Cost	698,624	553,370	687,785	838,049	16,456,001	20

Table 25-A (Cont'd) Cost and Financial Statement

See Section In Text	Project	Funding	FY 01	FY 02	FY 03		Total Cost to Sep. 30, 2004	
14	East Lynn Lake	New Work						
		Approp					85,872,963	
		Cost					85,872,963	
		Maint						
		Approp	1,847,637	1,787,486	1,681,320	1,623,528	35,475,801	21
		Cost	1,812,927	1,783,136	1,735,236	1,621,446	35,473,577	21
15	Fishtrap Lake	New Work						
		Approp					54,754,126	22
		Cost					54,754,126	22
		Maint						
		Approp	1,754,255	1,841,837	1,788,177	1,607,107	31,660,246	23
		Cost	1,746,772	1,787,542	1,864,741	1,591,759	31,726,566	23
16	Grayson Lake	New Work						
		Approp					19,162,741	24
		Cost					19,162,741	24
		Maint						
		Approp	1,223,795	1,265,122	1,068,466	980,534	24,401,478	
		Cost	1,228,744	1,265,914	1,076,592	975,089	24,405,237	
17	J. W. Flannagan	New Work						
		Approp					20,444,383	25
		Cost					20,444,383	25
		Maint						
		Approp	1,310,385	1,308,547	1,218,260	1,201,474	31,522,202	26
		Cost	1,268,970	1,318,435	1,248,863	1,205,244	31,518,741	26
18	Levisa and Tug Forks	New Work						
		Approp	18,161,859	32,427,000	34,356,600	38,547,000	524,479,246	27
		Cost	16,954,129	31,763,448	28,639,694	35,514,101	505,780,582	27
19	Massillon, Ohio	New Work						
		Approp					8,139,406	28
		Cost					8,139,406	28
		Maint						
		Approp	19,320	13,695	15,152	17,000	423,710	
		Cost	19,288	13,726	15,152	16,913	423,622	
20	Muskingum River Dams and Lakes	New Work						
		Approp					41,247,815	29
		Cost					41,247,815	29
		Maint						
		Approp	7,357,638	6,562,745	6,809,465	9,318,199	163,999,515	30
		Cost	7,224,978	6,785,467	6,825,770	9,236,473	162,980,955	30
		Maint (Rehab)						
		Approp					982,300	
		Cost					982,300	
		Rehab						
		Approp					22,172,945	31
		Cost					22,172,945	31

Table 25-A (Cont'd) Cost and Financial Statement

See Section In Text	Project	Funding	FY 01	FY 02	FY 03		Total Cost to Sep. 30, 2004	
20	Muskingum River	Dam Safety						
	Dams and Lakes (Cont.)	Approp	822,000	296,391	9,905	0	31,441,540	
		Cost	786,930	431,464	10,156	0	30,989,162	
21	Newark Ohio	New Work						
	(Previous Project)	Approp					845,916	
		Cost					845,916	
		Maint						
		Approp					758,673	
		Cost					758,673	
	(Existing Project)	New Work						
		Approp					11,151,232	32
		Cost					11,151,232	32
22	North Branch of	New Work						
	Kokosing River	Approp					6,665,985	33
		Cost					6,665,985	33
		Maint						
		Approp	623,305	203,044	249,146	174,000	5,956,617	
		Cost	644,199	212,185	250,475	172,589	5,955,208	
23	North Fork of	New Work						
	Pound River Lake	Approp					6,186,901	34
		Cost					6,186,901	34
		Maint						
		Approp	493,919	326,662	338,463	336,000	10,690,258	35
		Cost	478,246	340,529	341,204	335,504	10,779,396	35
24	Ohio Environmental	New Work						
	Program	Approp	157,000	93,000	64,649	1,954,000	2,268,649	
		Cost	46,876	63,572	166,600	152,698	429,746	
25	Ohio River Basin	New Work						
		Approp					355,861	36
		Cost					355,861	36
26	Paint Creek Lake	New Work						
		Approp					26,969,962	37
		Cost					26,969,962	37
		Maint						
		Approp	805,003	688,688	730,510	743,700	16,488,273	38
		Cost	813,910	694,571	734,280	728,930	16,472,104	38
27	Paintsville Lake	New Work						
		Approp					60,194,986	
		Cost					60,194,986	
		Maint						
		Approp	1,137,462	1,137,599	956,734	836,400	18,365,904	
		Cost	1,131,038	1,140,871	964,395	833,832	18,358,816	

Table 25-A (Cont'd) Cost and Financial Statement

See Section In Text	Project	Funding	FY 01	FY 02	FY 03		Total Cost to Sep. 30, 2004	
28	R. D. Bailey Lake	New Work						
		Approp					261,251,678	39
		Cost					261,251,678	39
		Maint						
		Approp	1,563,200	1,399,543	1,586,158	2,032,600	34,436,548	40
		Cost	1,551,729	1,407,664	1,576,574	2,018,095	34,400,538	40
29	Roseville, Ohio	New Work						
		Approp					910,785	
		Cost					910,785	
		Maint						
		Approp	2,500	956	31,013	8,000	292,954	
		Cost	569	2,887	30,942	7,816	292,699	
30	Southern and Eastern Kentucky Env. Infrastructure	New Work						
		Approp	992,000	3,999,550	-1,041,000	-998,000	6,537,550	
		Cost	1,186,626	1,027,373	868,876	715,074	4,788,144	
31	Southern West Virginia Env. Infrastructure	New Work						
		Approp	2,514,010	2,521,000	-2,521,544	215,000	9,644,446	41
		Cost	1,153,703	1,230,293	249,363	589,936	9,607,197	41
32	Summersville Lake	New Work						
		Approp					48,375,884	42
		Cost					48,375,884	42
		Maint						
		Approp	1,599,759	1,664,997	1,699,318	1,838,755	41,673,324	43
		Cost	1,617,539	1,658,176	1,712,467	1,839,508	41,665,283	43
33	Sutton Lake	New Work						
		Approp					37,029,585	44
		Cost					37,029,585	44
		Maint						
		Approp	1,828,429	2,235,881	2,165,518	2,023,291	47,887,303	45
		Cost	1,818,914	2,221,050	2,179,520	2,002,783	47,834,063	45
34	Tom Jenkins Dam	New Work						
		Approp					2,086,503	46
		Cost					2,086,503	46
		Maint						
		Approp	338,239	232,721	295,110	424,646	5,098,277	
		Cost	334,393	238,624	296,516	423,450	9,092,922	
35	West Columbus	New Work						
		Approp	8,812,000	12,592,500	5,877,777	5,338,300	95,131,818	47
		Cost	9,596,620	14,315,179	6,030,742	5,469,341	95,165,855	47

Table 25-A (Cont'd) Cost and Financial Statement

See Section In Text	Project	Funding	FY 01	FY 02	FY 03		Total Cost to Sep. 30, 2004
36	Yatesville Lake	New Work					
		Approp					99,456,500
		Cost					99,453,537
		Maint					
		Approp	1,117,713	947,420	1,046,158	837,762	13,838,602
		Cost	1,104,747	953,665	1,062,312	836,192	13,834,531

Notes for Table 25-A

[1]Includes $4,294,612 for new work for previous projects, $4,498,636 Emergency Relief funds, $9,004,800 Public Works funds and $686,317 Code 713 funds.

[2]Includes $3,883,513 for maintenance of previous projects and $546,090 Maintenance and Operation funds.

[3]Public Works Acceleration funds.

[4]Includes $249,828 Inland Waterways Trust funds.

[5]Includes $309,936 Inland Waterways Trust Fund.

[6]Includes $46,463,486 Inland Waterways Trust funds.

[7]Includes $46,569,889 Inland Waterways Trust funds.

[8]Includes $6,042,744 Inland Waterways Trust funds.

[9]Includes $6,061,033 Inland Waterways Trust funds.

[10]Includes $1,063 Maintenance and Operation funds.

[11]Includes $543,960 Emergency Relief funds, $9,698 Public Works Acceleration funds, $211,850 Code 711 funds and $75,000 Code 713 funds.

[12] Includes $2,795 Maintenance and Operation funds.

[13]Includes $748,281 Maintenance and Operation funds.

[14]Excludes $225,090 contributed funds. Includes $590,000 Code 711 funds.

[15]Includes $130,000 provided by the Productive Employment Act of 1983.

[16]Includes $240,000 provided by the Productive Employment Act of 1983.

[17]Includes $23,087 Public Works Acceleration funds, $1,089,940 Code 711 funds and $231,105 Code 713 funds.

[18]Includes $82,900 Special Recreation Use Fee Funds and$747,028 Maintenance and Operations Funds.

[19]Includes $100,000 provided from the Productive Employment Act of 1983.

[20]Includes $1,924 Maintenance and Operations funds.

[21]Includes $209,918 Special Recreation Use Fee Funds and $747,028 Maintenance and Operations Funds.

[22]Includes $362,649 Code 711 funds and $10,000 Code 712 funds.

[23]Includes $38,000 Special Recreation Use Fee Funds and $748,714 Maintenance and Operations Funds.

[24]Includes $406,919 Code 711 funds and $2,317 code 713 funds.

[25]Includes 422,983 Code 711 funds

[26]Includes $88,710 special recreation use funds.

[27]Includes Cost from Ohio River Division of $696,000. Excludes $20,819,782 cumulative contributed funds.

[28]Includes $477,813 contributed funds.

[29]Includes $27,190,000 National Industrial Recovery funds and $528,288 Code 711 funds.

[30]Includes $206,815 Maintenance and Operations funds.

[31]Includes $61,945 public Works Acceleration funds.

[32]Excludes $160,082 contributed funds.

[33]Includes $45,177 Code 711 funds.

[34]Includes $64,233 Code 711 funds.

[35]Includes $68,200 special recreation use fees.

[36]Includes $10,920 Emergency Relief funds.

[37]Includes $14,153 Code 711 funds.

[38]Includes $31,496 special recreation use fee funds.

[39]Includes $5,534 Consolidated Army funds.

[40]Includes $60,000 provided from the Productive Employment Act of 1983, and $85,233 Maintenance and Operations Funds.

[41]Excludes $1,386,692 cumulative contributed funds.

[42]Includes $300,062 Code 711 funds.

[43]Includes $214,112 special recreation use fee funds, $300,000 provided from the Productive Appropriations Act of 1983, and $100,016 Maintenance and Operation Funds.

[44]Includes $1,837,337 Code 711 funds and $287,843 Accelerated Public Works funds. Excludes $62,800 contributed funds.

[45]Includes $267,634 special recreation use fee funds, $215,000 provided from the Productive Employment Appropriations Act of 1983, and $144,562 Maintenance and Operations Funds.

[46]Includes $8,064 Code 711 funds and $30,000 Public Works Acceleration funds. excludes $575,000 contributed funds.

[47]Excludes $6,878,109 cumulative contributed funds.

Table 25-B **Authorizing Legislation**

See Section In Text	Date of Authorizing Act	Project and Work Authorized	Documents
2		**KANAWHA RIVER LOCKS AND DAMS, WV**	
	Aug 30, 1935	Construction of three locks and dams on the Kanawha River and one on the Ohio	H. Doc 31, 73rd Cong., lst Sess.
	Aug 15, 1985	Engineering and Design and Land Acquisition to Winfield Locks and Dam.	P.L. 99-88, 1st Sess.
	Oct 12, 1996	Construction of 110' x 800' replacement lock to replace 56' x 360' twin lock chambers at Marmet Locks and Dam.	P.L. 104-303, (WRDA '96)
5		**ALUM CREEK LAKE, OH**	
	Oct 23, 1962	Construction of Flood Control Reservoir	H. Doc 587, 87th Cong 2nd Sess.
6		**BEECH FORK LAKE, WV**	
	Oct 23, 1962	Construction of Flood Control Reservoir	H. Doc 587, 87th Cong 2nd Sess.
7		**BLUESTONE LAKE, WV**	
	Jun 28, 1938	Construction of Flood Control Reservoir	H. Doc 91, 74th Cong 2nd Sess.
	Dec 22, 1944	Added Recreation; Deleted Power	P.L. 78-534, 2nd Sess.
	Oct 31, 1992	Authorization for Drift & Debris Removal	P.L. 102-580 (WRDA '92) P.L. 104-303 (WRDA '96) P.L. 106-53 (WRDA '99)
8		**BURNSVILLE LAKE, WV**	
	Jun 28, 1938	Construction of Flood Control Reservoir	Flood Control Comm. Doc 1, 75th Cong, lst Sess.
	Dec 22, 1944	Added Recreation	P.L. 78-534, 2nd Sess.
9		**CENTRAL WEST VIRGINIA ENVIRONMENTAL INFRASTRUCTURE**	
	Aug 17, 1999	Design and Construction Assistance for Environmental Infrastructure	P.L. 106-53, Sec 571 (WRDA '99)
10		**DEER CREEK LAKE, OH**	
	Jun 28, 1938	Construction of Flood Control Reservoir	Flood Control Comm. Doc 1, 75th Cong, 1st Sess.

Table 25-B (Cont'd) **Authorizing Legislation**

See Section In Text	Date of Authorizing Act	Project and Work Authorized	Documents
11		**DELAWARE LAKE, OH**	
	Jun 28, 1938	Construction of Flood Control Reservoir	Flood Control Comm. Doc 1, 75th Cong, lst Sess.
	Dec 22, 1944	Added Recreation	P.L. 78-534, 2nd Sess.
12		**DEWEY LAKE, OH**	
	Jun 28, 1938	Construction of Flood Control Reservoir	Flood Control Comm. Doc 1, 75th Cong, lst Sess.
	Dec 22, 1944	Added Recreation	P.L. 78-534, 2nd Sess.
13		**DILLON LAKE, OH**	
	Jun 28, 1938	Construction of Flood Control Reservoir	Flood Control Comm. Doc 1, 75th Cong, lst Sess.
	Dec 22, 1944	Added Recreation	P.L. 78-534, 2nd Sess.
14		**EAST LYNN LAKE, OH**	
	Jun 28, 1938	Construction of Flood Control Reservoir	Flood Control Comm. Doc 1, 75th Cong, lst Sess.
	Dec 22, 1944	Added Recreation	P.L. 78-534, 2nd Sess.
15		**FISHTRAP LAKE, OH**	
	Jun 28, 1938	Construction of Flood Control Reservoir	Flood Control Comm. Doc 1, 75th Cong, lst Sess.
	Dec 22, 1944	Added Recreation	P.L. 78-534, 2nd Sess.
16	Jul 14, 1960	**GRAYSON LAKE, KY**	
		Construction of Flood Control Reservoir	H. Doc 440, 86th Cong 2nd Sess.

Table 25-B (Cont'd) **Authorizing Legislation**

See Section In Text	Date of Authorizing Act	Project and Work Authorized	Documents
17		**JOHN W. FLANNAGAN DAM AND RESERVOIR, VA**	
	Jun 28, 1938	Construction of Flood Control Reservoir	Flood Control Comm. Doc 1, 75th Cong, lst Sess.
	Dec 22, 1944	Added Recreation	P.L. 78-534, 2nd Sess.
18		**LEVISA AND TUG FORKS OF THE BIG SANDY RIVER, AND CUMBERLAND RIVER, KY, WV, AND VA**	
	Oct 01, 1980	Construction of such Flood Control Measures as deemed Necessary and Advisable	P.L. 96-367, Sec 202
19		**MASSILLON , OH**	
	Jun 28, 1938	Construction of Channel Improvement Project	Flood Control Comm. Doc 1, 75th Cong, lst Sess.
20		**MUSKINGUM RIVER LAKES, OH**	
	Feb 20, 1934	Construction of 14 Flood Control Reservoirs	Public Work Admin
	Jun 28, 1938	Reimbursement to the Muskingum Conservancy District a sum not to exceed actual expenditures for project construction	Flood Control Comm. Doc 1, 75th Cong, lst Sess.
	Aug 11, 1939	Operations and Maintenance assigned to the Corps of Engineers	P.L. 76-396, 1st Sess
21		**NEWARK, OH**	
	Jun 28, 1938	Construction of Channel Improvement Project	Flood Control Comm. Doc 1, 75th Cong, lst Sess.
	Aug 13, 1968	Modification to Existing Project and Additional Channel Improvement and Drainage Facilities	H. Doc 337, 90th Cong, 2nd Sess.
22		**NORTH BRANCH OF KOKOSING RIVER LAKE, OH**	
	Oct 23, 1962	Construction of Flood Control Reservoir	H. Doc 220, 87th Cong

Table 25-B (Cont'd) **Authorizing Legislation**

See Section In Text	Date of Authorizing Act	Project and Work Authorized	Documents
			2nd Sess.
23		**NORTH FORK OF POUND RIVER LAKE, VA**	
	Jul 14, 1960	Construction of Flood Control Reservoir	H. Doc 645, 86th Cong, 2nd Sess.
24		**OHIO ENVIRONMENTAL PROGRAM**	
	Aug 17, 1999	Design and Construction Assistance for Environmental Infrastructure	P.L. 106-53, Sec 594 (WRDA '99)
25		**PAINT CREEK LAKE, OH**	
	Jun 28, 1938	Construction of Flood Control Reservoir	Flood Control Comm. Doc 1, 75th Cong, lst Sess.
	Dec 22, 1944	Added Recreation	P.L. 78-534, 2nd Sess.
26		**PAINTSVILLE LAKE, KY**	
	Oct 27, 1965	Construction of Flood Control Reservoir	H. Doc 246, 89th Cong, 1st Sess.
27		**R. D. BAILEY LAKE, WV**	
	Oct 23, 1962	Construction of Flood Control Reservoir	H. Doc 569, 87th Cong, 2nd Sess.
28		**ROSEVILLE, OH**	
	Jun 28, 1938	Construction of Channel Improvement Project	Flood Control Comm. Doc 1, 75th Cong, lst Sess.
29		**SOUTHERN AND EASTERN KENTUCKY ENVIRONMENTAL INFRASTRUCTURE**	
	Oct 12, 1996	Design and Construction Assistance for Environmental Infrastructure	P.L. 104-303 (WRDA'96), as amended by P.L. 106-53 (WRDA '99)
30		**SOUTHERN WEST VIRGINIA ENVIRONMENTAL INFRASTRUCTURE**	
	Oct 31, 1992	Design and Construction Assistance for Environmental Infrastructure	P.L. 102-580 (WRDA'92)

Table 25-B (Cont'd) **Authorizing Legislation**

See Section In Text	Date of Authorizing Act	Project and Work Authorized	Documents
31		**SUMMERSVILLE LAKE, WV**	
	Jun 28, 1938	Construction of Flood Control Reservoir	Flood Control Comm. Doc 1, 75th Cong, lst Sess.
	Dec 22, 1944	Added Recreation	P.L. 78-534, 2nd Sess.
32		**SUTTON LAKE, WV**	
	Jun 28, 1938	Construction of Flood Control Reservoir	Flood Control Comm. Doc 1, 75th Con lst Sess.
	Dec 22, 1944	Added Recreation	P.L. 78-534, 2nd Sess.
33		**TOM JENKINS DAM, OH**	
	Dec 22, 1944	Construction of Flood Control Reservoir	P.L. 78-534, 2nd Sess.
34		**WEST COLUMBUS, OH**	
	Nov 17, 1986	Construction of Local Protection Project	P.L. 99-662
35		**YATESVILLE LAKE, KY**	
	Oct 27, 1965	Construction of Flood Control Reservoir	H. Doc. 246, 89th Cong. 2nd Sess.
36		**INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS**	
	Jun 22, 1936	Inspection of Local Maintenance of Federally Constructed Local Protection Projects	P. L. 74-738

Table 25-C **Other Authorized Navigation Projects**

Project	Status	For Last Full Report See Annual Report For	Cost to Sep 30, 2004 Construction	Operation and Maintenance	Contributed Funds Expended
Big Sandy River, WV and KY including Levisa and Tug Forks [1 and 2]	completed	1952	1,586,236	15,698,111	131,473
Elk River, WV[3]	completed	1903	30,259		
Gauley River, WV[4]	completed	1903	14,761		
Guyandotte River, WV[5]	completed	1915	27,500		
Little Kanawha River, WV[6]	completed	1960	470,536	1,023,854	
Muskingum River, OH[7]	completed	1955	301,912	6,171,897	6,041
New River, WV and VA[5]	completed	1899	109,691		
Scioto River at Portsmouth, OH [8]	completed	1953	10,951	16,593	

[1]In addition, $140,068 expended from funds transferred from Department of Commerce, Under accelerated public works program, for repairs of eroded bank at Lock 3 on Big Sandy River, at Louisa, KY.

[2]Operations and maintenance suspended June 30, 1952.

[3]Work closed September 1902. Property transferred to Kanawha River improvements.

[4]Work closed September 1902. Abandonment recommended in H. Doc 467, 69th Congress.

[5]Work suspended.

[6]Operation and maintenance suspended June 30, 1951.

[7]Collections from licensed non-Federal hydroelectric utilities for use of dams on Muskingum River for fiscal years 1923-1953 were $79,154.

[8]P.L. 954, August 31, 1954, authorized Secretary of Treasury to pay Portsmouth Sand and Gravel Co. $75,000 in full settlement of claims against government for damages resulting from change in Scioto River Channel.

Table 25-E **Other Authorized Flood Control Projects**

Project	Status	For Last Full Report See Annual Report For	Cost to Sep 30, 2004 Construction	Operation and Maintenance	Contributed Funds Expended
Ashland, KY, LPP	Completed	1954	3,718,839	---	---
Athens, OH, LPP	Completed	1979	5,313,700	---	---
Augusta, KY	Inactive	---	11,577	---	---
Catlettsburg, KY, LPP	Completed	1963	3,854,361	---	---
Ceredo-Kenova, WV, LPP	Completed	1955	2,753,551	---	---
Chillicothe, OH, LPP	Completed	1986	20,373,314	---	---
Coal River, WV	Inactive	1979	472,229	---	---
East Rainelle, WV, LPP	Completed	1962	614,598	---	---
Galax, VA, LPP	Completed	1953	480,536	---	---
Haysi, VA	Inactive	---	2,656	---	---
Huntington, WV, LPP	Completed	1956	7,172,840	---	---
Ironton, OH, LPP	Completed	1952	2,604,646	---	---
Kehoe Lake, KY	Deferred	1981	1,272,740	---	---
Martin, KY	Active with no current year expenditures	1983	212,048	---	---
Maysville, KY, LPP	Completed	1959	6,493,747	---	---
Newark, OH (Interior Drainage)	Deferred	1983	---	---	---
Oceana, WV	Deferred	1981	611,000	---	---
Parkersburg, WV, LPP	Completed	1955	6,652,827	---	---
Pt. Pleasant, WV, LPP	Completed	1955	2,919,578	---	---
Portsmouth - New Boston, OH, LPP	Completed	1956	9,806,424	---	---
Princeton, WV, LPP	Completed	1962	808,750	---	---
Russell, KY, LPP	Completed	1953	552,493	---	---
Vanceburg, KY	Inactive	---	---		
Williamson, WV, LPP	Completed	1964	1,056,166	---	---

Table 25-G **Deauthorized Projects**

Projects	For Last Full Report See Annual Report For	Date	Federal Funds Expended	Contributed Funds Expended
All projects listed in this table have been deauthorized in accordance with Section 12 of the Water Resources Development Act of 1974, P. L. 251, 93rd Congress				
Local Protection Projects				
Aberdeen, OH	---	May 1981	1,334	---
Athalia, OH	---	Aug 1977	---	---
Belpre, OH	---	Nov 1977	---	---
Brooklyn, WV	---	Nov 1979	---	---
Buena vista, OH	---	Aug 1977	---	---
Chambersburg, OH	---	Nov 1986	---	---
Cheshire, OH	---	Nov 1977	---	---
Chilo, OH	---	Aug 1977	---	---
Clifton, WV	---	Aug 1977	11,237	---
Coal Grove, OH	---	Jan 1990	3,389	---
Columbus, OH	---	Aug 1977	---	---
Dover, KY	---	Jan 1990	---	---
Friendly, WV	---	Aug 1977	---	---
Fullerton, KY	---	Jan 1990	---	---
Gallipolis, OH	---	Aug 1977	---	---
Greenup, KY	---	Jan 1990	4,962	---
Hanging Rock, OH	---	Aug 1977	---	---
Hartford, WV	---	Aug 1977	---	---
Henderson, WV	---	Aug 1977	---	---
Higginsport, OH	---	Oct 1978	---	---
Hockingport, OH	---	Aug 1977	---	---
Killbuck, OH	---	Apr 2002	---	---
Letart, WV	---	Aug 1977	---	---
Letart Falls, OH	---	Aug 1977	---	---
Lower Guyandotte, River Basin, WV	---	Nov 1986	17,721	---
Manchester, OH	---	May 1981	---	---
Mansfield, OH	---	Apr 2002	---	---
Mapleshade, OH	---	Oct 1978	---	---
Marietta, OH	---	Nov 1981	---	---
Mason, WV	---	Aug 1977	---	---
Middleport, OH	---	May 1981	9,783	---
Miller, OH	---	Aug 1977	---	---
Millwood, WV	---	Aug 1977	---	---
Nelsonville, OH	---	Apr 2002	---	---
New Martinsville, WV	---	Nov 1979	---	---
New Matamoras, OH	---	Aug 1977	---	---
Newport, OH	---	Aug 1977	---	---
Normal, KY	---	Jan 1990	---	---

Table 25-G (Cont'd) Deauthorized Projects

Projects	For Last Full Report See Annual Report For	Date	Federal Funds Expended	Contributed Funds Expended
North Chillicothe, OH	---	Apr 2002	---	---
Pomeroy, OH	---	Aug 1977	---	---
Portland, OH	---	Aug 1977	---	---
Proctorville, OH	---	Nov 1986	---	---
Racine, OH	---	Aug 1977	---	---
Ripley, OH	---	Oct 1978	7,523	---
Riverview, WV	---	Aug 1977	---	---
St. Mary's, WV	---	Aug 1977	---	---
Sardis, OH	---	Aug 1977	---	---
Sciotoville, OH	---	Aug 1977	---	---
Sistersville, WV	---	Aug 1977	---	---
South Point, OH	---	Nov 1986	---	---
South Portsmouth, KY	---	Jan 1990	---	---
Syracuse, OH	---	Aug 1977	---	---
Waverly, WV	---	Aug 1977	---	---
Williamstown, WV	---	Nov 1979	---	---
Zanesville, OH	---	May 1981	---	---
Reservoirs and Lakes				
Big Bend, WV	---	Aug 1977	---	---
Big Darby, OH	1969	Nov 1979	3,349,568	---
Birch, WV	---	Nov 1986	---	---
Frazeysburg, OH	---	May 1981	5,000	---
Kehoe Lake, KY	---	Jul 1992	1,273,000	---
Leading Creek, WV	1974	Jan 1990	272,880	---
Logan, OH	---	Oct 1985	---	---
Millersburg, OH	---	May 1981	---	---
Mill Creek, OH	1981	Nov 1985	1,602,702	---
Moores Ferry, VA	---	Nov 1986	22,879	---
Mud River, WV	---	Nov 1979	---	---
Panther Creek, WV	1976	Nov 1986	---	---
Poca, WV	---	May 1981	---	---
Rocky Fork, OH	1950	Aug 1977	91,321	---
Salt Creek, OH	1975	Nov 1986	1,089,943	---
Utica, OH	1975	Jan 1990	757,550	---
West Fork, WV	1974	Jan 1990	663,192	---
White Oak Creek, OH	---	Nov 1981	---	---

Table 25-H **Inspection of Flood Control Projects (See Sec 33 of Text)**

Flood Control Works Inspected	Dates of Inspection
Ashland, KY	SEP 04
Athens, OH	SEP 04
Berwind, WV	NOT INSPECTED
Bramwell, WV	SEP 02
Cairo, WV	SEP 04
Canton (Nimishillen), OH	NOT INSPECTED
Catlettsburg, KY	JUN 04
Ceredo-Kenova, WV	APR 04
Chillicothe, OH	APR 04
East Rainelle, WV	SEP 04
Fourpole Creek, Huntington, WV	SEP 04
Galax, VA	SEP 04
Grahn, KY	NOT INSPECTED
Hargus Creek, Circleville, OH	NOT INSPECTED
Huntington, WV	APR 04
Inez, KY	SEP 04
Ironton, OH	JUN 04
Massillon, OH	NOT INSPECTED
Matewan, WV	SEP 04
Maysville, KY	NOT INSPECTED
Montcalm, WV	SEP 04
Mount Vernon, OH	SEP 04
Newark, OH	SEP 04
Olive Hill, KY	NOT INSPECTED
Paint Creek at Chillicothe, OH	NOV 02
Paint Creek at Washington Court House, OH	SEP 04
Parkersburg, WV	JUL 04
Pax, WV	SEP 04
Point Pleasant, WV	MAY 04
Portsmouth-New Boston, OH	AUG 04
Prestonsburg, KY	APR 04
Princeton, WV	SEP 04
Richwood , WV	SEP 04
Ripley, WV	SEP 04
Roseville, OH	SEP 04
Russell, KY	NOT INSPECTED
South Williamson, KY	OCT 04
South Williamson (Hospital), KY	OCT 04
Spencer, WV	SEP 04
Utica, OH	AUG 04
West Columbus, OH	NOT INSPECTED
West Union, Middle Island, WV	SEP 04
West Williamson, WV	SEP 04
Williamson, WV	SEP 04